Certification Standards

(Guidelines for Development of a Minimum Reassessment Program)
Revised April 2024

Bureau of Local Assessment

Informational Guideline Release 24-13

DLS
DIVISION OF LOCAL SERVICES
MA DEPARTMENT OF REVENUE

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Informational Guideline Release

Bureau of Local Assessment
Informational Guideline Release (IGR) No. 24-13
April 2024

Supersedes IGR 19-08
and
Any Prior Written Inconsistent Statements

CERTIFICATION STANDARDS
GUIDELINES FOR DEVELOPMENT OF A MINIMUM REASSSESSMENT PROGRAM

(G.L. c. 40, § 56; c. 58, §§ 1, 1A and 3; c. 59, §§ 2A and 38)

This Informational Guideline Release (IGR) provides guidance to local assessors on the minimum standards of assessment performance their proposed property valuations must meet for the Commissioner of Revenue to certify they are assessing at full and fair cash valuation.

Questions should be directed to the Bureau of Local Assessment.

Topical Index Key:

Assessment Administration
Valuation

Distribution:

Assessors

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(G.L. c. 40, § 56; c. 58, §§ 1, 1A and 3; c. 59, §§ 2A and 38)

These guidelines provide guidance to local assessors on the requirements and policies that they must follow for the Commissioner of Revenue to certify they are assessing at full and fair cash valuation under Massachusetts General Laws. c. 40, § 56 and c. 59, §§ 2A and 38.

The guidelines prescribe minimum standards of assessment performance that proposed property valuations must meet and set forth the policies that apply to the Commissioner's review of proposed valuations for certification purposes. G.L. c. 58, §§ 1, 1A and 3.

These standards and policies are effective beginning with certification of assessed valuations as of January 1, 2023, for fiscal year 2023. They supersede those found in Informational Guideline Release (IGR) 19-08, *Certification Standards* (April 2019) and any prior written inconsistent publications or statements.

BUREAU OF LOCAL ASSESSMENT CHRISTOPHER WILCOCK, BUREAU CHIEF

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SIGNIFICANT CHANGES FOR FY 2024

The following are changes incorporated in these standards. They are effective beginning with assessments as of January 1, 2023, for fiscal year 2024.

- Additional guidance on 10-year cyclical re-inspection program. See page 4.
- Additional guidance on Digital Imaging Technology. See page 5-6.
- Additional guidance on 3rd Year Check In. See page 7.

INTRODUCTION

These materials have been prepared by the Bureau of Local Assessment (BLA) to assist assessors to plan and carry out the reassessment program necessary to achieve full and fair cash value in accordance with the requirements of G.L. c. 40, § 56 and c. 58, §§1, 1A and 3. These Certification Standards (*The Guidelines for Development of a Minimum Reassessment Program*) specify technical, procedural, administrative practices and assessing expectations.

An assessment is the value placed upon all real and personal property for the purpose of local property taxation. An analysis of market conditions along with the assessment level and uniformity must be performed annually as of January 1 whether for the five-year certification or for an interim year adjustment.

The five-year certification review is conducted by BLA staff to ensure the proposed values were derived utilizing a methodology based on generally accepted mass appraisal practices, are supported with current market evidence, and are uniformly and equitably applied to all property. The data quality, all cost and depreciation tables, and land schedules will be reviewed for all real property. In addition, income producing property will be reviewed for income and expense analysis, development of the economic rent schedules, capitalization rates and correlation of the values derived from two appraisal approaches. Personal property accounts will be reviewed for appropriate listing and valuation of assets along with the cost and depreciation schedules.

The statistics must conform to the Commissioner's minimum standards for certification as established in these Guidelines and will be used for the purpose of measuring the level and uniformity of assessments before and after the revaluation. Conforming statistics are not solely determinative that the proposed valuations are appropriately derived or applied.

Statistical medians and CODs alone are not to be considered market evidence.

Assessors may be requested to provide additional documentation, to supplement the standardized reports, during the certification review as questions arise.

Questions pertaining to these Standards or program development may be addressed to the Bureau at bladata@dor.state.ma.us or call:

Boston	(617) 626-2300
Worcester	(508) 792-7300
Springfield	(413) 452-3800

Information is also available on the DOR web site at www.mass.gov/dls

PROPERTY ASSESSMENT CONTRACTS

Municipalities for various reasons may need to contract with an independent revaluation contractor to perform revaluations or other property assessment services.

All requests for consulting services must conform to G.L. c. 30B, the Uniform Procurement Act. For additional information, please refer to the "Chapter 30B Manual: Procuring Supplies, Services and Real Property" (May 2023) issued by the Massachusetts Office of the Inspector General.

Open PDF file, 1.28 MB, The Chapter 30B Manual: Procuring Supplies, Services and Real Property - Legal Requirements, Recommended Practices and Sources of Assistance, 9th Edition

A contract by a municipality for revaluation or other assessing services should contain the following topics: The agreement, scope of work to be completed, time and expected delivery of the completed materials, compensation, general requirements pertaining to performance bonds, time frame for submission of the proposals, rights reserved by the municipality etc.

All contracts should be reviewed and discussed with town/city counsel.

FIVE-YEAR CERTIFICATION REVIEW

The Bureau of Local Assessment certification process consists of, but is not limited to, a data quality review, a statistical ratio studies review, and a valuation review to ensure that proper appraisal methodology was utilized while uniformly and equitably applied to all property.

A revaluation program should be based on the mass appraisal process utilizing the components of an acceptable mass appraisal system. The mass appraisal system is comprised of the following: data management, valuation, performance analysis, administration and appeals.

After determining the scope of the reassessment program, the assessors must prepare a work plan for its accomplishment and submit it to the BLA, as explained in detail under the Minimum Program Components section.

The valuation system should have the capability to maintain data, readily update the values, and produce all reports necessary to meet the minimum standards for certification. Refer to CF-6, CF-7, Certification Check List.

Minimum Program Components

Revaluation Workplan

BLA will require a Revaluation Workplan to be completed and submitted by the municipality on Gateway online prior to the start of the five-year revaluation. A carefully prepared and written workplan is a tool by which the assessors can define the specific tasks required, manage their staffing and financial resources, and monitor the progress of the program, thereby ensuring the timely and satisfactory implementation of the new valuations.

When developing a workplan, the assessors must evaluate the capability, relevance, and cost effectiveness of the current assessment system, appropriate adequate funds to implement the program, and establish a realistic timetable allowing for the Bureau of Local Assessment's review and the public's notification of the proposed values. Additionally, the community's prior certification directives issued by the Bureau of Local Assessment should be reviewed and any outstanding issues should be addressed in the work plan.

The Revaluation Workplan should address the program components being utilized for each class of property, whether in-house and/or professional assistance is required to complete the project and the specific responsibilities of each participant.

The workplan should also include a work schedule with projected date of completion and the timeframe for obtaining adequate funding to complete the task. It is recommended that funding be appropriated two years in advance of the certification year. Assessors should discuss the work schedule dates with their advisor to ensure that the dates are realistic prior to the Workplan submission.

See Bulletin 2019-2 "Recertification and Tax Rate Target Dates" (June 2019)
https://dlsgateway.dor.state.ma.us/gateway/DLSPublic/BulletinMaintenance/Index/482

Basic workplan information shall be reported prior to the start of the revaluation program. The workplan should be completed in the "Revaluation Workplan" section of the "Certification Tab" in Gateway. Additionally, the workplan may be submitted by the appropriate field advisor on behalf of the assessors. (See Commonly Used Forms, page CF2)

If there are any prolonged certification delays or significant modifications to the workplan, the assessors shall submit a revised plan for review.

In addition, the BLA may request a copy of an appropriate valuation contract if necessary.

Data Collection Manual

A comprehensive data collection manual is essential to ensure that property data is collected

and recorded in a consistent manner. The data collection manual should contain a set criteria used to identify building styles and story heights applied in the community. Any subjective data such as quality of construction (grade), condition, application of the depreciation and any applicable views should be clearly defined and illustrated in the data collection manual. This manual must be retained in the assessors' office and adhered to by all assessing and data collection personnel. A copy should be presented to the field advisor upon request or during the certification review process.

Real Property Data Collection

The collection and maintenance of current and accurate property inventory data is a critical element in the development of uniform and equitable market values.

The assessor should accurately measure to the nearest foot all improvements and prepare a complete outline sketch of the property noting all dimensions, story heights, additions, porches, and other attributes which contribute to value on the property record card (PRC) in accordance with the data collection manual.

The collection of property data can be the costliest part of the revaluation process. Unless such data is regularly maintained, a community will inevitably face the requirement of an expensive community-wide data recollection effort to provide uniform assessments and meet certification requirements.

There are several factors that must be considered in determining when a property inspection program meets certification requirements. These include, for example, the quality of the original data collection, the conversion to a new valuation system that may require different data components (data components not previously collected), the frequency of property renovation and remodeling in the community, and the presence of a systematic program to inspect all properties in addition to those that have sold or for which building permits have been issued.

The BLA requires that a periodic data inspection program provide for the inspection of each parcel at least once every **ten years.** BLA's expectation is that no property data is older than ten years at any given point in time. An inspection of the property should be a full measure and listing of the exterior and a concerted effort demonstrated for interior inspections. All condo units must be included in the ten-year cyclical inspection program. In some instances, virtual inspections may be used but must comply with requirements listed below in the Digital Imaging Technology section below. All real property parcels from all use classes must be included in the ten-year cyclical inspection program. It is recommended that this be an ongoing program to ensure that current accurate data be used in the valuation process and to spread out the data collection cost.

The BLA may require, for example, an inspection program be completed prior to its normal schedule if it is determined that the current data quality is insufficient or if the assessors are unable to determine when properties were last inspected.

For Condominium data collection and sketches:

- Assessor's criteria for condo data collection should be discussed in the data collection manual for the community.
- All complexes should have a master card in which to record all amenities, common area structures and sketches.

Individual Condo Units

- For garden style (apartment building conversions) and 2 or 3 family conversions, the individual unit property record card should list the unit SF and interior data components (SF would typically be from Master Deed)

Townhouse and Free Standing

While BLA recommends that the exterior measurements of **townhouse and free-standing condo units** be utilized, living area listed in the master deed and reconciled to "as built" plans may also be used.

- Square footage must be segmented into living area such as first and second floor, basement, attic and garage areas.
- The assessor will review the master deed and reconcile the square footage with the "as built" plans (not the developers unit lay out plans).
- Unit property record cards must contain all interior unit data, percentage of common interest and square footage as reflected in the master deed and/or "as built" plans.
- If the square footages used for valuations is different than that recorded in the master deed, the master deed square footage should also be noted on the PRC.

The assessors may choose to conduct a study at the onset of a revaluation of all real property to determine the quality of their data or should the Bureau of Local Assessment determine that a data quality study be conducted.

Refer to the Appendix, pages A2-A3, for a guide in conducting a data quality study, should one be necessary.

Digital Imaging Technology

Assessors may wish to consider employing digital imaging technology programs to **supplement <u>not replace</u>** the data collection activities in the field. Provided that initial physical inspections are timely completed and that an effective system of building permits or other methods of routinely identifying physical changes is in place, jurisdictions may employ a set of digital imaging technology tools to supplement field inspections with a computer-assisted office review. These imaging tools should include the following:

- Current high-resolution street-view images (at a sub-inch pixel resolution that enables quality grade and physical condition to be verified).

- Orthophoto images (minimum 6-inch pixel resolution in urban/suburban and 12-inch resolution in rural areas, updated every 2 years in rapid-growth areas or 6-10 years in slow-growth areas).

- Low-level oblique images capable of being used for measurement verification (four cardinal directions, minimum 6-inch pixel resolution in urban/suburban and 12-inch pixel resolution in rural areas, updated every 2-5 years in rapid-growth areas or 6-10 years in slow growth areas).

If using alternative methods to collect property data (digital imagery, MLS, etc.), a desktop review comparing the property record card against the alternate source must be undertaken. Any resulting change to the data should be verified in the field. The expectation is these alternative methodologies should not exceed 30% of the total data collection process. Additionally, the community must use unique visit history codes to identify which parcels used any alternate source.

Visit History Report

Every certification year and during a community's 3rd year check in, BLA will request a visit history report, exported into excel, to measure the progress of the cyclical inspection program within each community. A best practice is for the assessors to review this report annually.

The visit history report should contain at a minimum the following column headers.

A Key, PID or Parcel ID – Unique identifier for each parcel.
B Street Number
C Street Name
D Land Use Code (LUC) – Example, expressed as 101 or 1010, not 101-Single Fam
E Inspection Date – only the most current qualified inspection date for each parcel. Do not include multiple dates.
F Inspection Code – Code used in communities CAMA for the type of inspection.
G Inspection description
H Inspection Notes – Any further brief description that is relevant.

All real property parcels should be included in this report. There should be no duplicate entries or entries for visits that do not qualify as a cyclical inspection (i.e., field review, phone calls, mailing of I&E of FOL forms, etc.). Property visits that qualify as a cyclical inspection include exterior measurements & interior inspection, exterior measurement only, interior inspection, sales inspection, abatement inspection, permit inspection only if exterior and/or interior data was confirmed, digital imagery and tools including aerial imagery and real estate listings in certain circumstances (see Digital Imaging Technology section above).

Tax Maps

Every community requires adequate tax maps, which may include a geographic information system (GIS) conforming to the MassGIS parcel mapping standard, which can be found at https://www.mass.gov/service-details/massgis-standard-for-digital-parcels-and-related-data-sets.
The recommended map maintenance with Mass GIS Standard for Digital Parcels can be found on A-20, A-21. Without tax maps, assessors may not have a readily accessible, complete parcel inventory or detailed land area information, such as frontage and square foot area, for each parcel. As a result, they may be unable to precisely analyze market influences on the value of land, such as, size, shape and frontage, or develop a land valuation system based on these accurate measures of market value. Moreover, without accurate land information, existing appraisal systems cannot produce uniform assessments.

Assessors in communities that do not have adequate tax maps must include the development and implementation of a tax-mapping program as the initial component of their reassessment program.

Assessors in all communities must provide for the maintenance and updating of their tax maps as a component of their reassessment program.

Parcel Classification

Assessors shall classify all property as of January 1 according to its use. Assessors must refer to the *Property Type Classification Codes* booklet prepared by the BLA.

Property Record Cards

Property record cards (PRCs) shall be completed for all parcels indicating the name and mailing address of the property owner. PRCs should contain all information regarding improvements and land required by the appraisal system to produce equitable assessments along with the visit/inspection history, sale information and assessment history. Additionally, the PRC should contain a sketch and photograph or digital image.

Prior Certification Directives

The Bureau of Local Assessment certification directives **must** be reviewed for compliance when developing the revaluation program. Please note that failure to address prior directives could result in delays to your certification.

Third Year Check In

On a community's third interim year, the BLA advisor will request a current visit history report from the assessors to review the progress of the cyclical reinspection program. Additionally, assessors are required to review the prior certification BLA directives in Gateway and comment

on their progress in addressing these directives. The Gateway forms can be found under the Certification tab in Gateway under BLA Directives – Directive Progress Status.

APPROACHES TO VALUE

As applicable, assessors shall consider the market, cost, and income approaches in the valuation of all vacant and improved parcels using the computer assisted mass appraisal system (CAMA) in place in the community.

The assessors must develop a program to collect and analyze three categories of data; general, specific, and comparative to be used in all approaches to value. General data consists of neighborhood characteristics, trends and factors which affect value. Specific data consists of site, external influences, and improvement information. Comparative data consists of cost, sales, and income and expense information.

To understand the current market conditions, the assessor should collect all sales data that has occurred in the community. Current asking prices, used as a guide in the determination of value, should be investigated and reviewed.

The validity of any sales analysis is dependent on the use of the arms-length sales. An arms-length, (market value) sale implies the consummation of a sale as of a specific date, the passing of a title from seller to buyer whereby certain conditions are upheld: the seller and buyer are typically motivated, well informed and acting in their own best interest; the property has been exposed to the open market for a reasonable amount of time; payment is made in terms of dollars; and the price represents the normal consideration for the sold property unaffected by special financing or sales concessions.

All sold properties should be an onsite inspection which will enable the assessors to validate the sale price, circumstances of the sale, verify existing property data and monitor property changes.

To obtain sales data and circumstances relevant to the sales, the assessors should send sales verification questionnaires to buyers and sellers to determine the type of transaction, financing arrangements and any special circumstances of the sale. Local real estate brokers and the Multiple Listing Services are also valuable sources for such information. Assessors utilizing MLS to review sales in lieu of a visit should be cautious as these properties can be professionally staged and/or photoshopped. Significant data changes should be verified in the field. MLS sales review is considered an alternate cyclical review and is included toward the 30% maximum allowable for the data collection process.

The assessors should obtain information necessary to determine the fair cash value of property by requesting that owners and/or lessees of such property make a written return in accordance with G.L. c. 59, § 38D (applicable to real property) and c 59, § 38F (applicable to personal property). The returns can be used to request sale information, income and expense data,

property descriptive information, cost, condition and age of personal property assets as well as annual reports filed with regulatory agencies or any other information required by the assessors to determine value.

Sales Comparison Approach (Market Approach)

The sales comparison approach is an interpretation of comparable sales data to arrive at an estimate of value for the subject property. Similarities and differences which affect market value including financing terms, market conditions, location, and physical characteristics of recently sold properties are analyzed and adjusted to estimate the market value of the subject property. The sales comparison approach is based on the principles of supply and demand (principle of change), contribution, and the principle of substitution. Adjustments to market conditions are based on the principle of change. Adjustments to individual items which affect value are based on the principle of contribution. The principle of substitution assumes that a prudent person will pay no more for a property than it would cost to purchase a comparable substitute property.

In developing the sales comparison approach the assessor should attempt to interpret and measure the actions of parties involved in the marketplace, including buyers, sellers, and investors.

Cost Approach

Utilizing the cost approach, the value of a property can be estimated by totaling the land value and the depreciated value of any improvements. This approach is most reliable when used on newer structures and less reliable when applied to older properties. The cost approach may be the most reliable approach in dealing with specialty use properties.

The assessor shall value improvements in accordance with generally accepted mass appraisal practices, cost service manuals with applicable updates and/or use of local building costs, where available. Construction costs should be updated before each assessment cycle and can be verified for accuracy by applying them to recently constructed improvements of known cost. **All data must be documented and presented for certification**.

In using the cost approach, base costs shall be determined as appropriate for each improvement style or type. Current local modifiers and costs appearing in a generally accepted cost calculator can be adjusted where necessary and documented by an analysis of local construction costs and market sales data.

Accrued depreciation, including physical deterioration, functional and economic obsolescence must be accurately documented by market evidence prior to deduction from the replacement costs. Functional and economic obsolescence should be applied in accordance with generally accepted appraisal practices. These adjustments should be noted on the PRC, clearly defined and substantiation presented during certification.

In reference to commercial and industrial property, the CAMA system must utilize all cost components necessary to value the various uses within the community. This should include

type and size of the structure(s), story height, paved areas, signage, lighting, etc.

Income Approach

The income approach is used primarily to value investment properties. Since this approach is intended to model the expectations and/or behaviors of a typical investor it is the most applicable valuation methodology for income producing properties.

For certification purposes, a second independent approach to value must be developed and applied to all properties bought and sold on investor' expectations. The two approaches to value should correlate within 15%.

In valuing income producing properties, the assessor must collect current community specific information from owners, tenants, realtors, financial institutions, and any other sources for use in the valuation process. There are sample cover letters and income and expense forms located at the DOR website at valuation-publications in the Local Assessment section under Property Assessment and Valuation Publications-Income and Expense Templates.

If sufficient data cannot be obtained locally then data should be obtained from alternate sources of information such as regional information from similar neighboring municipalities, the internet, or national/regional services. This data must be sufficient to develop verifiable schedules for all income producing property. Data to be analyzed shall include rental information, vacancy rates, and expense information.

The capitalization rate (cap rate) is used to indicate the rate of return that is expected to be generated on a real estate investment property. The measurement is computed based on the net income which the property is expected to generate and is calculated by dividing the net operating income by the property asset value and is expressed as a percentage. See A-12 for examples.

Proper cap rate development should represent market conditions such as financing terms, discount rates, recapture rates, yield requirements and local debt coverage ratios for the various uses within the community.

All data and analyses used in the determination of value should be documented and presented for certification.

STATISTICAL ANALYSES

Once the arms-length sales have been identified and verified, the assessors should undertake a statistical analysis to determine both the level and uniformity of existing assessments and to identify the source(s) of any existing inequities.

The total number of arms-length sales used in the analysis submitted on the LA3 Sales Report of all major use classes should be at least 2% of all parcels in that use class or 10 sales in the class, whichever number is greater. If insufficient sales exist to meet the applicable requirement in

the base calendar year, twenty-four months of sales for that class must be analyzed and submitted to the BLA for review, time adjusted as needed. A third year is not required. The major use classes referred to are listed on the next page. If a time adjustment is performed an analysis must be presented for certification. The analysis of the various classes of property must use sales from the same time period when obtaining the required number of sales. If time adjustments are necessary, a local home price index may be applied if available and applicable to the community. See pages A4– A8 in the Appendix for additional Time Trend Analysis information or refer to the time adjustment tools in the LA3 tab in Gateway.

The effective date of the analysis is the January 1st prior to the fiscal year. For example, the assessment date for FY2024 is January 1, 2023, and the base year sales to be analyzed are those occurring in calendar year 2022 (January 1, 2022, through December 31, 2022).

Since the object of the valuation program is to estimate fair market value as of January 1st of a particular year, the ratio study used to evaluate that program should reflect market conditions as of that same January first. If two years of sales are needed, the addition of the sales from the previous calendar year can also be used or assessors may supplement their calendar year analysis with sales that occurred, 6 months previous and 6 months after the calendar year. It should be noted that the calendar year sales along with any supplemental sales must meet all statistical requirements and that the same time period be used for all classes requiring additional sales.

The community-wide median assessment/sales ratio (ASR) and coefficient of dispersion (COD) about the median must be calculated first for the residential class of properties having the largest number of parcels. This is the predominant class. Then the ASR and COD for all other property classes should be calculated.

For certification and interim review purposes, the following chart describes the range in which the median ASR must fall and the maximum COD for all classes of property.

TYPE	CLASS CODE	MEDIAN ASR	MAX COD
Single Family	101	90-110%	10.0%
Condominiums	102	90-110%	10.0%
Two Family	104	90-110%	12.0%
Three Family	105	90-110%	12.0%
Multiple Dwellings	109	90-110%	15.0%
Apartments	111-112	90-110%	15.0%
Vacant Land	130-132	90-110%	20.0%
Commercial	300’s	90-110%	20.0%
Industrial	400’s	90-110%	20.0%
Mixed Use	013-031	90-110%	20.0%

The difference in the median ASR of the predominant class and the median ASR of any other class should be 5% or less but may **not** go below 90% or above 110%.

If a sufficient number of sales exist for any property class, the assessors should stratify the sales into subgroups, for example, date quartile (irregular quartile statistics may indicate a time adjustment is necessary), neighborhood (e.g., location), sales price quartile, style, grade, age, etc. The median ASR and COD must be computed for each group. The median ASR of the subgroups must be within 5% of the property class median. The COD should be no higher than that indicated for the appropriate class in the preceding chart. These group statistics, if outside the parameters when compared with the overall median ASR and COD for each class of property, may indicate assessment inequities.

For each property use class having 40 or more sales in the analysis period, the median ASR for each price quartile should be computed. Arraying the selling prices from low to high and dividing them into four groups having approximately equal numbers of sold properties establishes the price quartiles. The median for each price quartile should fall within a range of 5% of the median for the entire class. The date quartiles are established by arraying sale dates from the beginning to the end of the year and dividing them into four three-month groups. If two years of sales were used, Gateway divides them into four six-month groups.

For each class of property having at least 20 but less than 40 sales, array the sales as directed for price analysis. However, analyze them in two rather than four groups.

The Price –Related Differential (PRD) statistic may also assist the assessor with measuring assessment regressivity or progressivity. (See Appendix A-9)

For each condominium complex having 5 or more sales, the median ASR should be within 5% of that of the condominium class as a whole and the COD no higher than 10%.

As a best practice, any group or subgroup with a sample size of less than five sales can be enlarged if the assessor desires to increase the reliability of statistical measures. Assessors can use sales that span a period of up to five years; however, adjusting the sale price for time may be necessary and significant property characteristics must not change. While these sales are not included on the submitted LA3, they can be used as support.

When market value indicators, other than vacant land sales, are used for the **development of land values** (i.e., residual or abstraction analyses; see Appendix page A-10), the analysis should also be done by neighborhood, lot size and zoning if applicable. It should be estimated from the analysis that typical sites in the neighborhoods indicate a range in value.

Individual vacant land sales should correlate with the neighborhood indicated land value derived from the residual analysis.

The LA3 Sales Report must be signed and submitted through the Division of Local Services interactive internet program, Gateway. Refer to the BLA publication *Property Type Classification Codes* for information on sale coding and the spreadsheet report format.

LAND VALUATION

Neighborhoods for appraisal purposes must be delineated and analyzed by the prime lot indicated land value. A map depicting neighborhood delineations should be submitted at the start of the certification review. The map must clearly define all residential, commercial, and industrial neighborhoods. The map shall be of adequate size employing distinct colors to enable the reader to identify the appraisal neighborhoods and street names.

It is also acceptable to present two separate maps, one reflecting the residential neighborhoods and the other the commercial and industrial neighborhoods.

In addition to the vacant land sales analysis, an analysis using an alternative method should be conducted. See A-10 to A-15 for various methods. When estimating land values by the land residual method, the following contributory values must be considered: primary improvement (dwelling), accessory improvements (garage, pools, etc.), and site improvements (water and sewer).

All land factors and/or value adjustments must be supported by market evidence within the neighborhood in which they are being applied. One sale is not considered support for multiple adjustments. Please see the Appendix page A17, for matched pair examples

When analyzing sales to determine rear/excess acre values, the indicated prime lot value as demonstrated by the residual analysis and not the schedule value should be used. See A10-11 for indicated land value example. The excess acreage of any parcel must be of sufficient size to render a meaningful analysis. If the land schedule calls for a rear acre value adjustment by neighborhood, there must be market evidence to support this adjustment.

Additional land segmentation such as secondary lots, front foot and unbuildable land must use the above procedures and be supported by market data.

Land schedules for income producing properties (such as apartments, mixed use, commercial and industrial) should be supported with market evidence and model the expectations of typical investors. Market evidence could include appropriate vacant land sales, land residuals from appropriate improved sales (A10) or income land residuals (A11). It could also include any of the methods detailed in A12-A15. Consult with your advisor as to which method, combination of methods and sample sizes will be used.

The apartment land schedule, if a price per unit is utilized, should reflect neighborhood differences and/or the quality and desirability of the complex.

Mixed use land schedules should consider the primary use of the property in determining the appropriate land schedule.

Assessors must determine commercial and industrial land segments (e.g., prime site, secondary site, expansion, buffer and/or excess land) through set criteria.

Commercial and industrial land schedules should properly reflect the primary site as determined by land to building ratios considering local zoning requirements and property use which are defined and uniformly applied.

Land schedules must be supplied in Excel format. Please refer to the Commonly Used Forms section on **page CF1 for the land schedule format, (referred to as Land Form 1),** and the Appendix, pages A10-A15 for valuation examples.

MULTIPLE REGRESSION ANALYSIS

To determine whether a certain Multiple Regression Analysis (MRA) model is the best predictor of a given group of sales, appropriate statistics and program outputs must be achieved in the modeling process. The following statistical standards should be represented in the overall model.

The Coefficient of Determination (R^2) equals the percentage of the variation in sales prices explained by the MRA model. An R^2 percentage equal to or above 90% is desirable.

Standard Error of the Estimate (SEE) provides an estimate of the variation (the amount of deviation between actual and estimated sale prices) that is likely to be observed when making estimates of value using a specific model. The SEE must be a positive number. A low number relative to the overall sale price is a better indicator of predictability.

Coefficient of Variation (COV) is the SEE expressed as a percentage. This statistic describes the standard of deviation of the regression as a percentage of the mean sales price. In general, residential models which have sale price as the dependent variable, a COV of approximately 20 % is acceptable, while a COV of approximately 10 % indicates a very good result. A COV is expected to be equal to or below 20%.

Average Percentage Error is the average absolute difference between the actual and the predicted sales price. A low number is a better indicator of predictability.

FIELD REVIEW

There are two types of field review to be undertaken by the assessors as noted below. The first to be discussed is a review of the valuations and the second is a field review of data due to a conversion. *Field reviews do not constitute an individual property inspection and would not be included in a community's periodic data inspection program described on page 4.

Valuation Field Review

Regardless of the methodology applied to value property, as best practices, the assessors should visit assigned areas on an annual basis to observe changes in neighborhood conditions, trends and property characteristics, review of the proposed values once finalized for certification, ensure uniformity, and maintain equity between the property classes.

New Valuation System or Conversion

The BLA recommends that a **full data quality field review** of all real property data be performed immediately upon implementation of a new valuation system and/or data conversion program. A field review is crucial whether the current property data is being retained or a new data collection program is being undertaken. A full field review ensures data components necessary for valuation in the new appraisal system have converted properly.

A request for a desktop review of the data from a conversion will be considered in place of a "full data quality field review" by BLA provided that initial physical inspections are timely completed and that an effective system of building permits or other methods of routinely identifying physical changes is in place. Jurisdictions should employ a set of digital imaging technology tools to supplement field review with a computer-assisted office review. In order for us to consider the request, assessors must complete and submit a Request to Desktop Review for CAMA Conversion (CF-5) to their advisor for review prior to the conversion.

Assessors must keep comprehensive records documenting the review along with its results. If systemic errors are identified, it is expected that appropriate corrective measures will be undertaken to ensure accurate data. Therefore, the field or desktop review of data must be completed early in the valuation process to allow for these corrections to be made.

BLA may require a full field review of data if it is determined through a data quality study there are sufficient systemic errors that necessitate correction. Until the new CAMA system conversion is reviewed and approved by BLA, the assessor should maintain all property data in both the old and new systems.

PERSONAL PROPERTY

Personal Property market value can be defined as the price that dealers in the assets would accept, and purchasers are willing to pay when the assets are bought and sold in the normal course of business.

Personal property should be valued annually in accordance with an acceptable appraisal methodology.

An annual review of personal property accounts should be undertaken to ensure accurate valuation. This review should include identifying the owners of personal property located in the

community as of January 1 to determine taxable status, information on the taxable assets and the valuation of those assets.

Annual discovery of new accounts should take place through a review of building permits, business permits issued by the town clerk, a review of the business directory and/or other newspaper and internet sources and by field review.

The assessors' record for each personal property account should include the owner's legal name, business name, tax billing address, business location in the community, asset listing and value. The asset listing should identify specific items and include for each item the age, count, replacement cost new, the depreciation percent and the replacement cost new less depreciation (RCNLD) value. After itemization, the taxable value of each category of personal property should then be totaled (e.g., fixtures, furniture, machinery, inventory, etc.).

Verifying or completing a listing of the individual items of taxable personal property for each account should be based on on-site inspections or review of Forms of List. Each account **must be inspected at least once every five years** and review of Forms of List should be performed annually. In the absence of either a current on-site inspection or Form of List the account assets should be estimated based on similar accounts or business models to account for any possible acquisitions or dispositions.

Valuation of the taxable property must be performed in accordance with an appropriate and uniformly applied appraisal methodology. All cost and depreciation tables need to reflect the current valuation date and be applied to each account in a consistent manner. Taxable items should be valued and depreciated through the tables and schedules established.

Non-taxable accounts must be set up in the appraisal system and contain the owner's legal name, business name, tax billing address, business location in the community, asset listing, value, and the reason the account is not taxable.

Accounts that are not taxable due to falling below a small personal property exemption adopted by the community must be reviewed annually for compliance.

Second Home Personal Property

Second home personal property may be valued by on-site inspections or Forms of List, as is business personal property, unless the allocation method is used.

The use of the allocation method requires an analysis of residential second home personal property which must be conducted **every 5 years**. This review must consist of inspecting or reviewing the Forms of List of a minimum of 2% of all second home accounts but under no circumstances should it be less than 10 accounts.

The allocation % must be derived from the study and applied consistently to all second home RCNLD.

UTILITY ACCOUNT VALUATION

The Electric Utility Restructuring Act, Chapter 164 of the Acts of 1997, separated the generation of electricity from its transmission and distribution. Independent, non-utility producers in a deregulated environment generating electricity and the plants' valuation must reflect market value. For information of the valuation of generating plants see IGR 2021-17 VALUATION AND TAXATION OF ELECTRIC GENERATING FACILITIES.
For information on the valuation of transmission and distribution of electricity (Class 504) please see the Appendix pages A18, A19 Utility Property, for information on determining value.

STATE OWNED LAND VALUATION

The Commissioner of Revenue, through the Bureau of Local Assessment (BLA) determines the fair cash value of certain tax-exempt state-owned land (SOL) to be used to determine the Cherry Sheet Payment in Lieu of Tax (PILOT) distributed to the city or town each year. Criteria for reimbursement under the SOL PILOT program generally depends upon three factors: taxable status at the time of state acquisition, land use, and the particular state agency owning or "holding" the land G.L. c.58, § 13-17 (use next button for §§ 14-17) and c. 59, § 5G. Land valuation does not include any improvements to the properties (such as buildings) or personal property. All state-owned lands are being used for public purposes and as such are exempt from local taxation.

How is SOL Valued?

Before the Municipal Modernization Act, St. 2016, c. 218, the value of SOL in each community was individually determined every four years after a hearing and appeal process. Starting in FY 19, the process for valuing SOL changed. Under the new process, BLA determined a **base year** SOL valuation for each community as of January 1, 2017. After a hearing and appeal process, base year SOL valuations were finalized and then used to determine the FY 2019 PILOT payments distributed to participating cities and towns. Under the new process base year valuations were adjusted in FY 2020 and continue to be adjusted every two years thereafter by a percentage equal to the change in a city or town's equalized cash value (EQV). SOL valuations are also updated annually to include the value of any SOL acquisitions and/or dispositions in a community.

There is no appeal of the commissioner's determination under the new SOL procedure. Therefore, communities should be aware of the appeal process for determining its EQV because, as previously indicated, a community's EQV will form the basis of the adjustment factor for its SOL valuation. The Department of Capital Asset Management (DCAM) notifies the BLA of acquisitions, deletions, and agency transfers.

Upon receipt of an acquisition assessors will be notified via email and must supply the following documentation on Gateway through the State-Owned Land module, located in section Other Apps:

recorded deed or order of taking and
copy of commitment book entry for year prior to taking.

Land no longer being used for reimbursable SOL purposes will be deleted and reimbursement will cease.

Should documentation be found, e.g., by the Bureau of Local Assessment (BLA) or another state agency, showing that land not previously reimbursed is eligible for reimbursement, the site will be added to the PILOT Program. Conversely, if it becomes evident that land was erroneously reimbursed in the past, it will be removed from the PILOT Program.

Assessors' property record cards must show the proper use class codes for reimbursable SOL and reflect the full and fair cash value as well. While municipal land values may change annually due to the real estate market, SOL values for reimbursement remain fixed until the next SOL valuation every two years. SOL valuation, for reimbursement purposes, will only change between SOL valuations when there are additions or deletions to the SOL inventory (except watershed).

FARMLAND VALUATION

The Farmland Valuation Advisory Commission (FVAC) adopts the range of recommended agricultural, horticultural and forest land use values for the various categories of land classified under G.L. c. 61 and c. 61A . These value ranges are to be used in conjunction with the assessors' appraisal knowledge, judgment and experience as to agricultural, horticultural and forest land values.

When a Board of Assessors determines local valuations for land classified as agricultural, horticultural or forest land under these chapters, they must consider only those indicia of value that such land has for agricultural, horticultural or forest uses. Any income, sales or other appraisal information considered by the assessors is limited to data specific to the crop or product being grown or produced.

If a Board of Assessors adopts values outside the range of values recommended by the FVAC, the determination must be supported by a comprehensive study of local factors influencing the agricultural, horticultural or forest use value, and include a detailed description of the selected valuation models and resulting use value estimates. The FVAC valuations must be considered in all local analyses.

Any sales of farmland, income data or other appraisal information being considered by the

assessors should be limited to data specific to the crop or product being grown or produced. Any indicia of use value derived from sales must come from comparable sales of agricultural, horticultural or forest land to buyers who purchase the property to continue its current agricultural, horticultural or forest use. Assessors should ensure that sales used to support their valuations are comparable with respect to tillable land, pasture, meadow, woodland, mountainside, and marsh, etc. In addition, they should identify and consider all other circumstances about the transactions that may have influenced the prices paid for the land, e.g., sales during crop growing season, irrigation and personal or business motivations of the parties.

When analyzing these sales, they should be grouped into crop or product categories like those recognized by the FVAC. If the number of sales is inadequate, regional data from comparable communities should be considered.

Rental income is a reliable means for deriving an estimate of market value using the income capitalization approach. When income data is available, local farm rental rates per acre for various land classifications should be used. Care should be taken to ensure that only the productivity of the land is evaluated and not the other income sources such as retail sales. The rental income method requires fewer assumptions, less dependence on management performance, and rental patterns are relatively consistent within the farming community.

PUBLIC DISCLOSURE

It is important to build and maintain public trust and confidence in the assessment administration system. This can be accomplished by keeping taxpayers informed of the legal requirements regarding assessments and of the assessors' responsibilities and actions in complying with those requirements. An informed taxpayer can alert the assessor to any inadvertent data inaccuracies preventing unnecessary abatement applications and undue burden on the overlay account. Assessor’s websites should be informative and provide easy access to information. Websites should include the following features:

- Office hours, locations, contact information
- Annual update of property information, including property characteristics, sales history, and current valuation
- News releases
- Appeals Process
- Exemptions
- Frequently Asked Questions (FAQ’s)
- Tax Maps
- Taxpayers Forms

All communities are required to undertake a public disclosure program of all real and personal property valuations prior to receiving final certification. The program must be undertaken for a minimum of five (5) business days after the Bureau's issuance of preliminary certification. The

public disclosure notice can be listed in the local newspaper, be posted on the municipality's website, or both. The notice is not required to be a paid legal ad. A copy of the notice (or notices) should be uploaded into Gateway under the **"Certification Tab"** in the LA10, Assessment Adjustment List section.

The public disclosure notice **must** address the basis of the valuation changes, the program's overall effect on assessments, and the manner and time period in which taxpayers may review the proposed new assessments prior to tax billing. See example on A-1.

It is expected that communities with a significant number of non-resident taxpayers will send or email impact notices. It should be noted that communities sending or emailing impact notices are still required to submit the public information release for publication in the newspaper or on the municipality's website.

The assessors must provide adequate opportunity, either during or after regular office hours, for taxpayers to make telephone or office inquiries regarding the proposed new values. Any changes to assessed values as a result of public disclosure should be made prior to submission of the LA10 and not through the abatement process. The LA10 should be completed and submitted on Gateway, even if there are no changes, the assessor must sign and submit.

If the assessors conducted a full revaluation program, which includes a full recollection of all property data and the development of a new valuation system, they are required to send impact notices to all taxpayers and must hold informal hearings. The impact notice must contain all pertinent legal information along with the previous and proposed values.

INTERIM YEAR ADJUSTMENTS

Performance analyses should be calculated to determine assessment levels and uniformity within the assessing jurisdiction. If there has been a change in market conditions which warrant property valuation adjustments, property values must be adjusted in a fair and equitable manner to reflect full and fair cash value as of January 1 in accordance with G.L. c. 59 § 2A.

Assessors must annually adjust valuations to reflect changes in the tax base due to new construction, alterations, or demolitions. In years between five-year certification, the assessors may undertake and complete a valuation adjustment program without the prior review or approval of the Bureau of Local Assessment. This is called an interim year adjustment. A plan, which includes analyses and application of appropriate appraisal methods, must be used to develop any valuation adjustments. After completion of the program, the community's assessments should be equitable and consistent within and between all property classes, as evidenced by conformity with accepted mass appraisal measures of assessment level and uniformity.

Documentation to support valuation changes must be prepared and retained by the assessors for a period of five (5) years or in accordance with the records retention schedule as

determined by the Secretary of State (whichever is longer). This documentation should include a complete market analysis, sales ratio studies, income, expense and capitalization rate analyses and any data which supports the valuation changes being made.

All assessors must annually submit their sales report (LA3) of all real property to the Bureau of Local Assessment for analysis whether or not an adjustment was necessary. The sales report should be compiled according to the LA3 Sales Report guidelines, https://www.mass.gov/info-details/certification-of-real-and-personal-property-values, signed and submitted via Gateway, the Division of Local Services online program. The statistical results of the sales are automatically calculated on the form "Interim Year Adjustment Report" (LA15). The LA15 should be reviewed and signed and submitted.

Valuations must conform to the assessment level and uniformity outlined in the **Statistical Analyses** section of these guidelines. It must be received with the Form LA4 "Assessment/Classification Report."

The completed form will be sufficient, although more detailed information may be requested. Examples of the LA15 online in Gateway are located on page CF3 of the Commonly Used Forms section.

APPENDIX

Public Disclosure Example

Town of Yourtown
Board of Assessors
12 Smith Lane
Yourtown, Massachusetts 01010
Tel: (617) XXX-XXXX
www.yourtownma.gov

PUBLIC DISCLOSURE EXAMPLE

Following state statutes and Department of Revenue (DOR) regulations, the Board of Assessors is completing the FY20XX Quinquennial Revaluation of all real and personal property in Yourtown. Revaluation is a year-long process when the DOR examines in detail all assessing methodologies used by the town, as well as the values derived through the mass appraisal system.

These valuations have been preliminarily approved and are pending final certification approval by the Massachusetts Department of Revenue. The values are subject to change within this disclosure period. The public review will run from Tuesday, October 18, 20XX, to Monday, October 31, 20XX.

The revaluation process includes a public disclosure requirement to let property owners know that there are proposed new values. A listing of all proposed residential property values is accessible on Your town's website, www.yourtown.com. Listings of the proposed new values will also be available for viewing at the Town House, Public Library, and the Community Center. If you wish to obtain a copy of your property record card, you should call the Assessor's Office and one will be mailed to you. The Assessor's office number is (617) XXX-XXXX.

Using the mass appraisal method, the goal is to arrive at values that are at 100% of market value. Valuations are based on sales, using the last full calendar year before the beginning of the applicable fiscal year. Calendar 2022 sales were used in the Fiscal 2024 value analysis.

Market trends may indicate that different property types may change in value more or less than other property types. On average, class 101, single-family homes increased in value by 9.5%, class102, condominiums increased by approximately 4%. Apartments class 111's increased by 14-15%, class 112's increased on average 20-25%. The commercial class increased by 4% and the industrial class by 4%. Individual parcel valuations may vary from the average class increase due to typical differences, data updates and corrections, new construction, and the effect of market trends for specific characteristics.

Please access our website for the most up to date information and contact the Assessors' Office during the public disclosure period to ask questions and review your property information.

The Assessor's Office is open from 8:30 am to 4:30 pm Monday thru Thursday and 8:30 a.m. to 12:30 p.m. on Friday.

Formal Data Quality Study Guide

Completion and documentation of an initial data quality study is essential to establish that the quality of the existing data currently on file is acceptable.

Sampling Method and Sample Size

Selection of a random, representative sample of 2% to 5% of all properties is necessary. The sample should consist of all classes of property from within each of the neighborhoods of various styles and ages. The sampling process should be sufficient to ensure that existing property data is accurate for each significant type of property. Heterogeneous areas of the community may require a larger number in the sample selected to ensure accuracy of the existing data.

After an inspection (including an interior inspection) of each property subject to review has been completed, the assessors should correct any errors in the data. The values should then be rerun using the schedules from the mass appraisal system currently in place.

The original value is then compared with the value that would have been generated had the data on the property been accurate (old versus new). If the average level of discrepancy is more than 10% the assessor must evaluate whether there is sufficient data integrity to produce certifiable values.

There are two principal methods for inspecting the properties in the study and recording the results. The first is to use a new, blank property record card in the field and conduct the data verification inspection similar to a full measure and list inspection of the property for the first time. The second method is to use the existing property record card in the field and mark where the differences are identified.

Assessors must keep copies of the data inspection records documenting the changes in a separate file for review if requested by the BLA.

Properties should be coded as follows to track the severity of the data issue.

1) No discrepancies found
2) Discrepancies that would have been identified by a field review
3) Discrepancies that would only have been found by an exterior inspection
4) Discrepancies that would only have been found by an interior inspection

The mean and median of both value (dollar) and percentage differences should be computed for the entire sample, as well as for each of the four categories listed above.

The assessors should also stratify the sample by characteristics such as neighborhood, style, age, date, price quartiles, etc.

Corrective Action (as necessary)

A median in excess of 10% in any category, class, or type of property may indicate a need for prompt appropriate corrective action (full field review or complete measure and list as deemed necessary).

A median below 10% in any category may be corrected through the cyclical reinspection program.

Results of any data quality study performed must be reviewed with the BLA certification advisor before certification planning proceeds.

Time Trend Analysis

Resale Analysis

$$\frac{\text{Sale Price 2 - Sale Price 1}}{\text{Sale Price 1}} = \text{Time Adjustment Factor for Entire Period}$$

$$\frac{\text{Time Adjustment Factor}}{\text{Time Period}} = \text{Time Adjustment Factor per Time Unit}$$

Example: A three-bedroom Ranch sells twice during the year

Sale Date 1: 1/16/22 Sale Price 1 : $ 350,000

Sale Date 2 : 9/16/22 Sale Price 2 : $ 400,000

$$\frac{400{,}000 - 350{,}000}{350{,}000} = \frac{50{,}000}{350{,}000} = .1420 \text{ or } 14\%$$

Time Period between Sales = 8 Months
Time Adjustment Factor = .14 / 8 = .0175 or 1.75 % Per Month
1.75 % x 12 Months = Time Adjustment Factor of 21 % Per Year

Paired Sales Analysis

This technique is rooted in the Sales Comparison Approach to Value. Similar properties sold at different times are adjusted to account for physical differences, leaving any remaining difference attributed to time.

Example: The similar properties are two homes in the same neighborhood built by the same developer.

Property 1:	Ranch	3 Bedrooms	1 Bath	$ 285,000	Sold 2/22
Property 2:	Ranch	3 Bedrooms	2 Baths	$ 330,000	Sold 12/22

Assume that appraisal models indicate that the 2nd bath is valued at $15,000. The older sale is then adjusted to the more recent sale.

$ 285,000 Property 1 Sale Price (includes only 1 Bath)
\+ $ 15,000 Value difference of 2nd Bath
$ 300,000 Adjusted Sale Price of Property 1

Apply Formula:

$$\frac{\text{Property 2 Sale Price - Property 1 Adjusted Sale Price}}{\text{Property 1 Adjusted Sale Price}}$$

$$\frac{330{,}000 - 300{,}000}{} = \frac{30{,}000}{} = .10 \text{ for } 10 \text{ months}$$

$$\frac{300{,}000}{} \qquad \frac{300{,}000}{}$$

$$\frac{.10}{10} = .01 \text{ or } 1\% \text{ per month}$$

Multiple Regression Analysis

If Time of Sale is one of the Independent Variables, its effects on Sales Prices can be estimated to determine a Time Adjustment Factor.

Example: If the Regression Analysis determines a Value, or Coefficient, for month of sale of $5,250, and the Average Sale Price is $350,000, then the indicated rate of change is:

$$\frac{\text{Time Value}}{\text{Average Sale Price}} = \text{Indicated Rate of Change Per Month}$$

$$\frac{\$5{,}250}{\$350{,}000} = .015 \text{ or } 1.5\% \text{ Per Month}$$

1.5 % x 12 = 18 % Per Year

Sales Ratio Trend Analysis

Normally, Sales Ratios are computed by this formula: **Ratio = Assessment / Sale**

$$R = A / S$$

But comparing Ratios is not the same as comparing Sale Prices!

For Example:

Sale 1: A / S = 250,000 / 200,000 = 1.2500

Sale 2: A / S = 250,000 / 300,000 = 0.8333

** Note that the Assessment remains constant which is a critical assumption in using this method.*

$$\frac{\text{Sale 2 - Sale 1}}{\text{Sale 1}} = \text{Time Adjustment Factor for Entire Period}$$

$$\frac{300{,}000 - 200{,}000}{200{,}000} = \frac{100{,}000}{200{,}000} = .50 \text{ or } 50\%$$

But, using the Ratios in the same manner produces different results.

$$\frac{0.8333 - 1.2500}{1.2500} = \frac{-.4167}{1.2500} = -.3333 \text{ or } -33\%$$

Sale/Assessment Ratios (S/A)

Reciprocal Ratios, called Sale/Assessment Ratios, must be computed and used in the formula in order to get the correct results. Computing the S / A Ratio for the example:

Sale 1: S / A = 200,000 / 250,000 = 0.8000

Sale 2: S / A = 300,000 / 250,000 = 1.2000

When these Sale / Assessment Ratios are used, they produce the same Time Adjustment Factor found by comparing Sale Prices.

$$\frac{1.200 - .8000}{.8000} = \frac{.4000}{.8000} = .50 \text{ or } 50\%$$

Since Ratios are Fractions,

Ratio 2 - Ratio 1 =	$\frac{\text{Assessment}}{\text{Sale 2}}$ -	$\frac{\text{Assessment}}{\text{Sale 1}}$	Cannot be subtracted since denominators are different
But,	$\frac{\text{Sale 2}}{\text{Assessment}}$ -	$\frac{\text{Sale 1}}{\text{Assessment}}$	Can be subtracted since the denominators are exactly the same.

Time Adjusting Sales to the Assessment Date

To apply the Time Adjustment Factor to the Sales Database, the following formula is used:

$$TAS = S(1 + rt)$$

Where,

"TAS" is the Time Adjustment Sale Price

"S" is the Unadjusted or Original Sale Price

"r" is the monthly (or quarterly) rate of change

"t" is the number or months (or quarters) from the sale date to the assessment date

Example:

A $150,000 sale occurring 6 months before the assessment date would be adjusted as follows, using the 2.5 % per month time adjustment factor from above:

$$TAS = \$\ 150{,}000\ [\ 1 + (.025)(6)]$$

$$= \$\ 150{,}000\ (\ 1\ +\ .15)$$

$$= \$\ 150{,}000\ (\ 1.15\ )$$

$$= \$\ 172{,}500$$

Time Adjusting Sales Using Sales Ratio Analysis

When using this method, the Assessment Date Median Ratio is used as the point of reference - whether the sale occurs before or after this date.

$$\frac{\text{Mdn S/A Ratio Assmnt Date} - \text{Mdn S/A Ratio Qtr (or Monthly)}}{\text{Quarterly (or Monthly) Median S/A Ratio}} = \text{Time Adj Factor for Entire Period}$$

Consider the following Table of Median Sales/Assessment Ratios:

Qtr	Year	Sale Price	Jan 1, 2023 Assessment		S/A Ratio	Trend Factor Per Quarter
1	2022		180,000	200,000	0.900	0.08325
2	2022		200,000	200,000	1.000	0.06666
3	2022		220,000	200,000	1.100	0.04545
4	2022		240,000	200,000	1.200	0.00000
1	2023		240,000	200,000	1.200	0.00000
2	2023		250,000	200,000	1.250	-0.02000

The Median S/A Ratio for the Assessment Date of 1/1/23 is the average of the 4th Quarter of 2022 and the 1st Quarter of 2023 or 1.20.

Example: Time Adjustment Factor for the 1st Quarter of 2022:

$$\frac{1.20 - 0.90}{0.90} = \frac{0.30}{0.90} = .333 / 4 = .08325 \text{ Per Quarter}$$

Time Adjustment Factor for the 2nd Quarter of 2022:

$$\frac{1.20 - 1.25}{1.25} = -.04 / 2 = -.02 \text{ per Quarter}$$

Multiple Time Adjustment Factors

Sometimes, a series of Time Adjustment Factors are needed to accurately reflect Sale/Assessment Ratio Analysis results. These market trends can be seen on a graph plotting time against S/A Ratios.

Assume a S/A Ratio Analysis reveals a 2% per month inflation for the first 6 months and a 1% per month inflation for the next 6 months. A formula reflecting this trend would be:

$$TAS = S [1 + (.02)(t1) + (.01)(t2)]$$

Where,

t1 = the number of months in the first time period
t2 = the number of months in the second time period

Example:

A sale of $400,000 occurs 9 months before the assessment date. It would be adjusted as follows:

$$TAS = \$400,000 [1 + (.02)(3) + (.01)(6)]$$

$$= \$400,000 [1 + .06 + .06]$$

$$= \$400,000 (1.12)$$

$$= \$448,000$$

PRICE RELATED DIFFERENTIAL

The **Price-Related Differential (PRD)** is a statistic for measuring assessment progressivity or regressivity. It is calculated by dividing the mean by the weighted mean. PRD's should typically, except for in small samples, range from .98 to 1.03. A PRD below .98 would indicate progressivity, where high-value properties are *over-assessed* relative to low-value properties. A PRD greater than 1.03 would indicate regressivity, where high-value properties are *under-assessed* relative to low-value properties. The PRD only provides an indication of assessment bias or inequity. Assessors should utilize it as a supporting method in determining assessment levels. ***(Small sample size is only used to illustrate PRD calculations)***

Example 1 – NO BIAS

Sale Number	Assessed Value	Sales Price	ASR
1	$130,000	$120,000	1.083
2	$124,000	$130,000	.954
3	$131,000	$140,000	.936
4	$140,000	$150,000	.933
5	$160,000	$160,000	1.000
6	$179,000	$170,000	1.053
	$864,000	**$870,000**	**5.959**

Mean= .993 (5.959/6)
Weighted Mean=.993($864,000/$870,000)
PRD=1.000 (.993/.993)

Example 2 – REGRESSIVITY

Sale Number	Assessed Value	Sales Price	ASR
1	$180,000	$120,000	1.500
2	$131,000	$140,000	.936
3	$140,000	$150,000	.933
4	$179,000	$170,000	1.053
5	$175,000	$230,000	**.761**
6	$230,000	$260,000	**.885**
	$1,035,000	**$1,070,000**	**6.068**

Mean= 1.011 (6.067/6)
Weighted Mean=.967($1,035,000/$1,070,000)
PRD=1.045 (1.011/.967)

Example 3 – PROGRESSIVITY

Sale Number	Assessed Value	Sales Price	ASR
1	$75,000	$115,000	**.652**
2	$90,000	$125,000	**.720**
3	$115,000	$130,000	.885
4	$135,000	$150,000	.900
5	$160,000	$160,000	1.000
6	$179,000	$170,000	1.053
	$754,000	**$850,000**	**5.210**

Mean= .868 (5.210/6)
Weighted Mean=.887($754,000/$850,000)
PRD=.978 (.868/.887)

Land Valuation

LAND ANALYSIS—ABSTRACTION METHOD (LAND RESIDUAL ANALYSIS)

Sale Price (SP) minus RCNLD of Buildings equals Indicated Land Value (ILV)

SP – RCNLD = ILV

Indicated land value, not the land schedule value, should be analyzed to determine all land segment values.

Land segments consist of:

Prime Lot = size per zoning or predominant lot size
Excess/Rear = size in excess of the zoning or predominant lot size
Secondary Lot, Front Feet or Front Acre = Criteria must be established by the Assessor (zoning, predominant lot size or other)

Applicable zoning for examples 1-3: 1 acre with 200 feet of road frontage

Example 1: Prime Lot Value Determination

Sale Price: $430,000
RCNLD: $230,000
Size/Shape: 1 acre with 200 feet of road frontage

SP – RCNLD = ILV Prime
SP ($430,000) – RCNLD ($230,000) = ILV ($200,000)

Example 2: Excess/Rear Land Value Determination

Sale Price: $460,000
RCNLD: $240,000
Size/Shape: 3 acres with 200 feet of road frontage

SP – RCNLD = ILV – ILV Prime = ILV Excess
SP ($460,000) – RCNLD ($240,000) = $220,000 – ILV Prime ($200,000) = ILV Excess ($20,000)

ILV Excess / Number of Acres = Excess Land Value per Acre
ILV Excess ($20,000) / 2 acres = Excess Land Value per Acre ($10,000)

Example 3: Secondary Lot Determination (Front Feet and Front Acre calculation not shown)

Sale Price: $570,000
RCNLD: $250,000
Size/Shape: 4 acres with 400 feet of road frontage
Criteria: Each segment of 1 acre with 200 feet of road frontage above zoning requirements

SP – RCNLD = ILV – ILV Prime – ILV Excess = Secondary Lot Value
SP ($570,000) – RCNLD ($250,000) = ILV ($320,000) – ILV Prime ($200,000) –
ILV Excess ($20,000) = Secondary Lot Value ($100,000)

Example 4: Income Property Land Value (Income Land Residual Analysis)
*This method can be used to estimate land values for income producing properties along with other methods listed on pages A13-A16. The income value is the final value derived from the income approach.

Income Value (IV) - RCNLD of building(s) = Indicated Land Value (ILV)
IV – RCNLD = ILV

Income Value = $1,000,000
RCNLD =$650,000
IV ($1,000,000) – RCNLD ($650,000) = ILV ($350,000)

ALLOCATION METHOD

The **Allocation Method**, also known as the land ratio method, essentially creates land sale comparables by calculating the **ratio** of the contributory value of land **from improved property sales**, based on the ratio of land value to improved property value from sales in other, similar areas or uses.

Points to consider and keep in mind-

- Used to support land value when no land sales are available
- Properties used in analysis should be improved to their highest and best use or technique is less applicable
- The ratio from one area or property type is not necessarily transferable to another area or property type
- Is less reliable on older properties because estimating accrued depreciation is too subjective
- Should not be used to establish land values directly, more effective as a supporting method

Office Sale Price	- RCNLD	= Land Portion	Land/Total %
$750,000	$480,000	$270,000	36%
$900,000	$585,000	$315,000	35%
$1,025,000	$630,000	$390,000	38%
$1,200,000	$755,000	$445,000	37%
$1,300,000	$780,000	$520,000	40%

Indicated land portion = 37%

Now you could test this indicated land portion against the portion you are currently using. In this case you could sum all the assessed office land values in your community and divide by the sum of all the total assessed values of office properties and adjust as needed. You should consider performing this exercise for different property classes and/or market areas as deemed necessary.

Once you have reconciled to an adjusted percentage you could apply to the entire population as follows:

Total Assessed Value X	Land Factor =	Land Value	Lot Size	Per SqFt
$875,000	.37	$322,750	20000	$16.14
$1,075,000	.37	$397,750	30000	$13.26
$1,300,000	.37	$481,000	43560	$11.04
$1,450,000	.37	$536,500	60000	$8.94

LAND RESIDUAL CAPITALIZATION

Technique

To assist in the development of land values for commercial & industrial property, including apartments, in the absence of market sales or land leases, assessors can use the land residual capitalization technique to estimate a land value and develop land value per unit (sq.ft.) tables.

The first requirement to use this technique is that the building value must be known. Properties selected for analysis should include newer buildings where replacement cost and accrued depreciation can be estimated by the assessor and where the existing building is considered the highest and best use for the land. If the land is vacant, or the existing building is not considered the highest and best use, the improvement can be hypothetical.

Technique Steps:

1. Estimate the value of the building & other improvements using the cost approach (RCNLD).
2. Estimate the annual net income to the property before recapture (depreciation) and real estate taxes (effective tax rate) as of the assessment date.
3. Estimate a capitalization rate for:
4. Land (discount rate + effective tax rate)
5. Building (discount rate + recapture rate + effective tax rate)
6. Calculate the Building Income by multiplying *the RCNLD times (x) the Building Cap. Rate*
7. Calculate the Land Income by *subtracting the Building Income from the Total Income*
8. Calculate the Land Value by *dividing the Land Income by the Land Cap. Rate*
9. Divide the Indicated Land Value by the Land Area to Estimate the Land Value per Unit.

Capitalization Rate Development [For Demonstration Purposes]

Land Capitalization Rate	**Building Capitalization Rate**
Discount Rate = 5.0%	Discount Rate = 5.0%
	Recapture Rate = 2.0% (1/ 50-year life)
Effective Tax Rate = 1.0%	Effective Tax Rate = 1.0%

Example: Solve for Land Value; given the following assumptions:

LAND 6.0% - BUILDING 8.0% $200,000 - TOTAL NOI $25,000, Lot size:3000 sq. ft

	Income	**Cap Rate**	**Value**
Land	**$9000**	**6.0%**	**$150,000**
Building	$16,000	8.0%	$200,000
	$25,000 (NOI)		

Once the land value is estimated it can be used **on a per unit basis for comparable parcels**.
Indicates: Land value at $150,000 divided by 3000 SF =$50 per SF

CAPITALIZATION OF GROUND RENT

This procedure is used when land rents and land capitalization rates are readily available. Net ground rent, the net amount paid for the right to use and occupy the land, is estimated and divided by a land capitalization rate. Either actual or economic rents can be capitalized using rates that can be supported in the market.

What is ground rent?

Ground rent is the amount paid for the right to use and occupy the land according to the terms of the ground lease. It corresponds to the value of the landowners' interest in the land, the lease fee interest.

For specialty properties, such as cell towers, billboards, and solar facilities, it may be necessary to value the land and the improvements separately. If the tenant is responsible for paying the taxes for the entire property, as if in fee simple, remember to include this rent as an expense item on the income and expense report for the tower, billboard or solar facility. In order to value the land using the capitalized ground rent, it is important to know how much of the land is being leased, and a copy of the lease should be reviewed. Only that portion of the land included in the lease should be capitalized and valued.

Example

For this example, a cell tower is located on a 10,000 square foot parcel of land which is being leased for $2,500 per month, and you have established that the land capitalization rate is 10%. All expenses are paid by the tenant in this scenario, and the annual rent is $30,000.

Using the IRV formula (Income/Rate = Value), the estimated land value for this parcel, using the capitalized ground rent method is $300,000.

ANNUAL INCOME	CAP RATE	INDICATE FULL AND FAIR CASH VALUE
$30,000	**divided by .10 equals**	**$300,000**

ANTICIPATED USE METHOD
(DISCOUNTED CASH FLOW, SUBDIVISION DEVELOPMENT ANALYSIS)

The rationale to use this appraisal method is to estimate a price an investor would pay to purchase land which has subdivision potential.

To apply the method properly, the assessor must be familiar with the development process and perform analyses of all market conditions which affect the indicated land value. The analyzed market data must come from the community in which the appraised property is located. Any unsupported adjustments will destroy the credibility of the approach.

The hypothetical lot subdivision of the appraised property must be physically possible, legally permissible and economically feasible.

Projected Selling Price (PSP) of developed lots minus Total Development Costs, direct and indirect (TDC) = Indicated Land Value (ILV)

PSP – TDC = ILV

Simplified Example:

Prime Lot Value (PLV) = $200,000 (PLV is determined utilizing sales comparison approach to value)
Prime Lot Total (PLT) = 22 lots

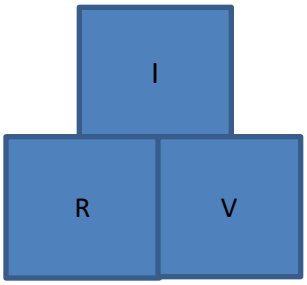
PLV x PLT = PSP
(PLV) $200,000 x (PLT) 22 = (PSP) $4,400,000
Direct Cost (DC) + Indirect Cost (IC) + Profit (P) = Total Dev. Cost (TDC)
(DC) $1,100,000 + (IC) $1,100,000 + (P) $1,100,000 = (TDC) $3,300,000

PSP – TDC = ILV
(PSP) $4,400,000 – (TDC) $3,300,000 = (ILV) $1,100,000

ILV / PLT = PLV
(ILV) $1,100,000 / (PLT) 22 = (PLV) $50,000

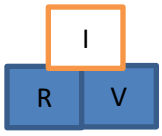
CAPITALIZATION PROCESS

IRV FORMULA

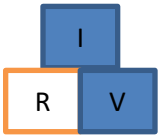


Income (I) *use annual net income
Rate
Value (V)

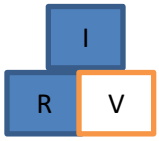
The following three formulas are basic to the proper use of the income approach. When any two factors are known the third factor can be derived. For examples below the blue shading denotes known factors and clearly denotes the unknown you are trying to solve for. The formulas demonstrate that the property income, capitalization rate and value are all related to one another.



Example #1: Solve for unknown (I) where (R) = 0.08 and (V) = $750,000
(I)=(R)x(V)
0.08 x $750,000 = $60,000 yearly net income



Example #2: Solve for unknown (R) where (I) = $72,000 and (V) = $800,000
(R)=(I)/(V)
$72,000/$800,000 = 0.09



Example #3: Solve for unknown (V) where (I) = $48,000 and (R) = 0.075
(V)=(I)/(R)
$48,000/0.075 = $640,000

Matched Pair Analysis

There is an appraisal technique used to determine the contributory value of one particular attribute of a property.

The appraiser analyzes two or more sales where the only difference is the value of the attribute sought.

EXAMPLE 1 (Beach Front)

	Sale 1	**Sale 2**
Beach Front	**Yes**	**No**
Lot size	10,000 sf	10,000 sf
Loc./Valuation Neighborhood	Green Harbor	Green Harbor
Style	Colonial	Colonial
Effective Age	10	10
Grade	Good	Good
Condition	Average	Average
Gross Living Area	2,000	2,000
Amenities	deck	deck
Sales Price	**$1,000,000**	**$750,00**
Sales Date	01/05/2018	01/14/2018
TASP	NA	NA

Sale 1 price ($1,000,000) – Sale 2 Price ($750,000) =
Contributory value of the Beach Front ($250,000)

EXAMPLE 2 (Fireplace)

	Sale 1	**Sale 2**
Lot Size	15,000 sf	15,000 sf
Neighborhood	R1	R1
Style	Cape	Cape
Fireplace	**No**	**Yes**
Effective Age	12	12
Grade	Average	Average
Condition	Average	Average
Gross Living Area	1,600 sf	1,600 sf
Amenities	Shed	Shed
Sales Price	**$350,000**	**$356,500**
Sales Date	09/02/2018	09/10/2018
TASP	NA	NA

Sale 2 price ($356,500) – Sale 1 price ($350,000) =Contributory Value of the Fireplace ($6,500)

Utility Property

Data Collection — Transmission and Distribution

As of the valuation date the assessors should collect the following data and information for each utility account:

a) Information on the physical plant located in the community and subject to taxation. This information may be obtained from the Form of List, (State Tax Form 2, 504-E & 504-G), submitted by each utility company.

b) Information on the dollars invested in the physical plant in the community. This information may be obtained by requesting the utility company's historical (gross and net book) costs.

c) System-wide financial and statistical data. This data may be obtained by requesting a copy of the annual return filed by each utility company with the Accounting Division of the Massachusetts Department of Telecommunications and Energy. In addition, rate base information, such as the rate of return allowed on the book cost and the return on common stock equity should be obtained.

Valuation

a) Cost

(1) Historical

(a) Net book
(b) Gross book less an approved rate of depreciation.

(2) Reproduction cost new less depreciation, provided proper allowances are made for physical and functional depreciation and economic obsolescence.

(a) Trending, using a generally accepted manual or index, (i.e., Handy-Whitman Index)
(b) Re-pricing.

b) Income

Income attributable to taxable personal property must be isolated from system-wide income data.

c) Market

(a) Stock and debt approach
(b) Comparable sales approach.

Documentation

For certification purposes, the assessors must submit the appraisal documentation used to arrive at an opinion of fair market value. The appraisal documentation must include:

a) A complete inventory listing the proposed values for each category of inventory, including the Form of List;

b) Depreciation estimates fully documented by type;

c) Relevant data supporting any opinion of value. This data must:

(1) Identify the existence of special circumstances that indicate a fair market value in excess of net book. Special circumstances enumerated by the Supreme Judicial Court that might induce a buyer to pay more than net book and might indicate a fair market value in excess of net book include, but are not limited to:

(a) The return actually being earned by the utility may exceed or be expected to exceed the rate of return approved by the regulatory agency in the allowed rate.

(b) The prospective buyer's allowed return on its investment may exceed the return available in the market for an investment having the same or greater risk.

(c) The applicable rules of law or regulatory agency policies may be changed so as to make the investment more attractive. For example, the regulatory agency may allow an increase in the rate of return allowed the utility or may abandon its existing carry-over rate base policy which provides that when a utility company sells an asset to another regulated utility company, the buyer's return is limited to the rate base value in the hands of the seller and not in any higher purchase price that the buyer might have paid. The prospect of any change must be a reasonable one.

(d) The potential for growth in a utility's business may warrant paying more than the utility's net book cost of particular property.

(e) A non-utility buyer, not subject to the governmental restrictions on its earnings, might purchase part of the property in the system.

(f) A municipality may be considering forming a municipal utility and might purchase the property.

(2) Show why special circumstances would influence a buyer to pay more than net book value for utility assets, *e.g.* *“*”the applicable rules of law or governing agency decisions might be changed so as to make an investment in the company more attractive.” *See* ***NSTAR Electric Co. v. Assessors of Boston,*** 94 Mass App. Ct. 1129 (Memorandum and Order pursuant to Rule 1:28, February 22, 2019), *slip op. at 3, 7.* In the ***NSTAR*** case, the Appeals Court affirmed a valuation methodology giving equal weight to net book value and reproduction cost new less depreciation (RCNLD) of utility property. Substantial evidence showed that the Department of Public Utilities no longer follows a strict carry-over rate base regulatory policy and might allow adjustments to a purchaser’s rate base to reflect a prudent purchase price above the plant’s net book case. The Court affirmed the finding that NSTAR actually received a return on equity greater than net book value would explain. (For more information, see LFO-2019-1, Assessing Utility Properties.)

d) The final total estimate of the full and fair cash value of the property.

Recommended Best Practice for Map Maintenance

The recommended best practice for map maintenance is compliance with the *MassGIS Standard for Digital Parcels*. Implement this by using the specification below in contracts or scopes of work for parcel map maintenance. Use the specification either with consultants or with in-house providers of map maintenance services. Edit the list of delivered products to include only those products you want.

Advantages of the MassGIS Standard:

- In many communities the standardized data provides better quality mapping
- It ensures a very high match rate between maps and assessing data and vice versa
- It provides seamless integration with parcel data from adjacent communities, whether for supporting emergency response, complete abutter notifications, planning, or development review.
- It is a complete specification for a map maintenance consultant
- It lowers software application costs because consultants don't have to customize their application for non-standardized parcel mapping.
- It enables tight integration between parcel data and other land records (for example, permit records and registry records)
- It enables much better address matching (mapping addresses as point locations)
- It enables state or regional level on-line viewing of parcel data
- The MAAO, https://maao.org, endorses the MassGIS Standard as a best practice.

Specification Template

The assessor parcel mapping for *<your city/town name>* must be maintained in full compliance with all aspects of the MassGIS Standard for Digital Parcel Files (hereafter "the standard").

Compliance includes:

a) incorporating a CAMA extract provided by *<your city/town name>* Assessing Department and containing the standard's unique location identifier ("LOC_ID" for short), and
b) meeting or exceeding the standard's requirements for a match rate between the parcel mapping and the CAMA extract and vice-versa.

Note: In complying with this specification, it is essential that existing LOC_IDs be changed only when a parcel is subdivided or combined with others or is otherwise substantially reconfigured; a parcel is considered to be substantially reconfigured if its area changes by more than 10%.

Stages in implementing this specification:

1) Assemble the deeds, plans, and other source materials from which to complete the map updates and give them to your map maintenance service provider.
2) The map maintenance service provider completes map updates and returns a "CAMA update list" list of new or changed parcels identified by map ID (e.g., map and lot number or equivalent); each map ID on the list has its corresponding LOC_ID created by the service provider.
3) The assessor finds the CAMA record for each map ID in the CAMA update list and uses computer mouse controls to "copy" and "paste" each LOC_ID to its correct location in the CAMA record. If the new parcel has condominiums, then each condominium record needs to receive the LOC_ID for that single parcel.
4) Once the LOC_IDs are updated, the assessor delivers to the map maintenance service provider a) a fresh "MassGIS extract" from their CAMA system and b) a description of any custom use codes identified by the map maintenance service provider as needing a description.
5) The map maintenance service provider returns the products below.

Products to be Delivered:

1) A fully standards-compliant updated digital parcel file in ESRI file geodatabase format and in shape file format (on mutually agreed upon medium)
2) The <*name of third-party or internal service provider*> loads a copy of the ESRI file geodatabase to MassGIS' web site.

Website:

https://www.mass.gov/service-details/massgis-standard-for-digital-parcels-and-related-data-sets

Commonly Used Forms

Bureau of Local Assessment
Certification Standards
Land Form 1- Format for Land Schedule Submission

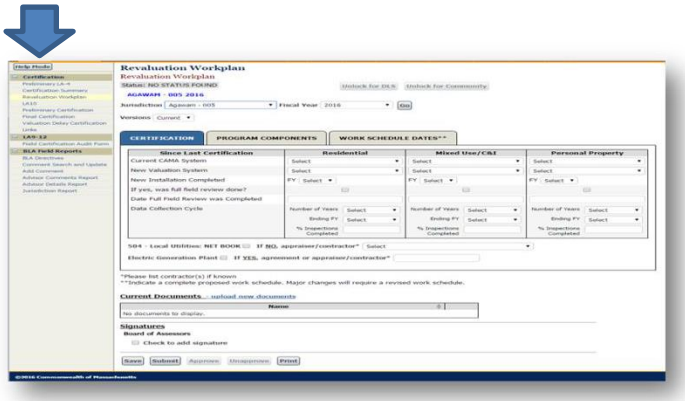
Submission is to be made in Excel Format

Square Foot Gradations should be incremental have a range starting, at least, at 5,000sf and continue at least, up to the maximum square footage required for a primary lot within each neighborhood.

A. Gradation intervals should contain, at least, principal break points as applicable to the municipality. These could be 1000sf, 2000sf, 2500sf or other intervals as applicable to the zoning or custom.

B. If the size of the prime lot varies by zoning and zoning can vary within a neighborhood then the schedule should separate each neighborhood into the various allowable zones. If a neighborhood has two separate zones, then it should be broken down into two separate lines. {For example: Neighborhood 3, Zone 10,000sf should be one line and Neighborhood 3, Zone 20,000sf should be another line}

Revaluation Workplan is submitted in Gateway:



Printed version .pdf

MASSACHUSETTS DEPARTMENT OF REVENUE
DIVISION OF LOCAL SERVICES

Acushnet
City / Town / District

Revaluation Workplan - Fiscal Year 2017

Version: 7/12/2016 2:35:06 PM (Not current, valid before)

Billing	Submitted By	Position
Q		

Certification

Since Last Certification	Residential	Mixed Use/C&I	Personal Property
Current CAMA System			
New Valuation System			
New Installation Completed			
If yes, was full field review done?	N	N	N
Date Full Field Review was Completed			
Data Collection Cycle	Number of Years: Ending FY: % Inspections Complete to Date:	Number of Years: Ending FY: % Inspections Complete to Date:	Number of Years: Ending FY: % Inspections Complete to Date:

504 - Local Utilities - NET BOOK: N **If NO, appraiser/contractor:**

Electric Generation Plant: N **If YES, agreement or appraiser/contractor:**

Program Components

	Residential		Mixed Use/C&I		Personal Property	
	Inhse	Contractor Name	Inhse	Contractor Name	Inhse	Contractor Name
Partial field review	N		N		N	
Full field review	N		N		N	
Data collection	N		N		N	
Formal data quality study	N		N		N	
Valuation	N		N		N	
Valuation field review	N		N		N	

New Mapping Program? N **GIS?** N **Integrated with CAMA?** N **Last Updated?**

Impact Notices? N **Classes:** **Notification to 2nd home Owners Required?** N

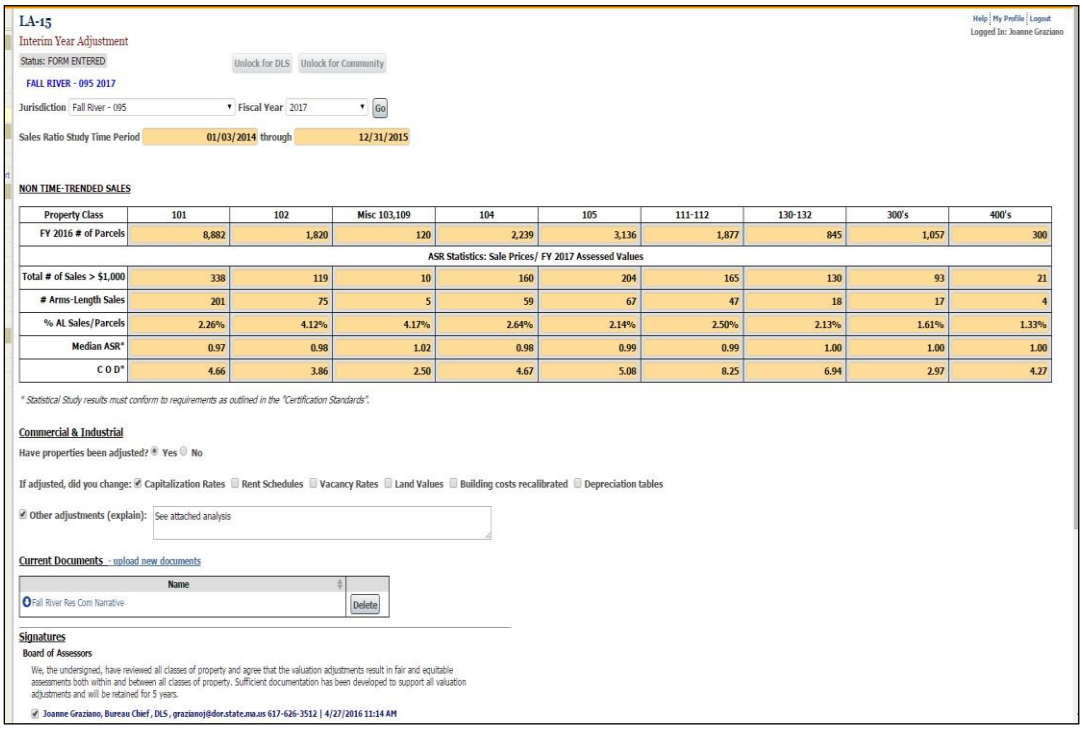
Adequate Funds for Revaluation: N **Appropriation:**

Work Schedule Dates

	Start Date	End Date
Sales analysis		
Value generation		
Value review		
DOR review		
Public disclosure		
Tax rate set		

LA-15 Interim Year Adjustment Review

The LA-15 report to is located within the LA-3 Tab in Gateway. To complete the submission process for the Interim Year Adjustment program, you must go to the **LA-15** form. The Parcel Counts for the LA-15 will be auto filled from prior year's LA4. Statistics will display.



LA-15

Interim Year Adjustment

Help | My Profile | Logout
Logged In: Joanne Graziano

Status: FORM ENTERED Unlock for DLS Unlock for Community

FALL RIVER - 095 2017

Jurisdiction: Fall River - 095 Fiscal Year: 2017 Go

Sales Ratio Study Time Period: 01/03/2014 through 12/31/2015

NON TIME-TRENDED SALES

Property Class	101	102	Misc 103,109	104	105	111-112	130-132	300's	400's
FY 2016 # of Parcels	8,882	1,820	120	2,239	3,136	1,877	845	1,057	300
ASR Statistics: Sale Prices/ FY 2017 Assessed Values									
Total # of Sales > $1,000	338	119	10	160	204	165	130	93	21
# Arms-Length Sales	201	75	5	59	67	47	18	17	4
% AL Sales/Parcels	2.26%	4.12%	4.17%	2.64%	2.14%	2.50%	2.13%	1.61%	1.33%
Median ASR*	0.97	0.98	1.02	0.98	0.99	0.99	1.00	1.00	1.00
C O D*	4.66	3.86	2.50	4.67	5.08	8.25	6.94	2.97	4.27

* Statistical Study results must conform to requirements as outlined in the "Certification Standards".

Commercial & Industrial

Have properties been adjusted? Yes No

If adjusted, did you change: Capitalization Rates Rent Schedules Vacancy Rates Land Values Building costs recalibrated Depreciation tables

Other adjustments (explain): See attached analysis

Current Documents - upload new documents

Name	
Fall River Res Com Narrative	Delete

Signatures

Board of Assessors

We, the undersigned, have reviewed all classes of property and agree that the valuation adjustments result in fair and equitable assessments both within and between all classes of property. Sufficient documentation has been developed to support all valuation adjustments and will be retained for 5 years.

Joanne Graziano, Bureau Chief, DLS, grazianoj@dor.state.ma.us 617-626-3512 | 4/27/2016 11:14 AM

After reviewing the resulting sales statistics for compliance with program requirements, and answering the questions pertaining to the C & I updates, if ready for formal submission, the majority of the Board of Assessors (or its authorized designee) should **save and sign and submit** the form at the bottom of the screen.

Note: When reviewing C&I adjustments, "No" is the default (for having no adjustments.
When you click Yes, all the boxes become active.

LA4 – Assessment Classification Report

In the *Chapter Land Columns*, Mixed Use chapter parcel count is broken out.

- The count for mixed chapter land goes on the left.
- The count for regular chapter land goes on the right.
- The count for regular mixed use goes under mixed use but does NOT contain the count for mixed use chapter.

Classes 450-452and 550-552 are segregated on the report:

Exempt Parcel count is added.

LA-4 Preliminary and Final

Property Type	Parcel Count		Class1 Residential	Class2 Open Space	Class3 Commercial	Class4 Industrial	Class5 Pers Prop
101	3,762		1,137,181,200				
102	713		160,142,500				
MISC 103,109	26		9,703,350				
104	185		52,060,700				
105	79		18,061,600				
111-125	85		112,869,000				
130-32,106	279		13,829,900				
200-231	0			0			
300-393	205				173,134,900		
400-442	53					17,516,200	
450-452	0					0	
CH 61 LAND	0	0		0	0		
CH 61A LAND	0	1		0	1,600		
CH 61B LAND	0	4		0	40,000		
012-043	80		15,816,564	0	15,134,986	0	
501	190						2,037,900
502	232						9,063,400
503	0						0
504	4						17,980,800
505	2						6,047,600
506	0						0
508	4						1,558,900
550-552	0						0
TOTALS	5,904		1,519,664,814	0	188,311,486	17,516,200	36,688,600
Real and Personal Property Total Value							1,762,181,100
Exempt Parcel Count & Value						6,464	131,497,500

For CH 61, 61A and 61B Land: enter the mixed use parcel count in the left-hand box, and enter the 100% Chapter land parcel count in the right-hand box.

Request to Desktop Review for CAMA Conversion

Community:	Submitted by:
Current CAMA System:	Proposed CAMA System:
Fiscal Year to be Complete:	Consultant:

The Bureau of Local Assessment would like to consider your request for a desktop review of a CAMA conversion. Please answer the following questions and submit your responses to your advisor.

1. Is funding in place to fully implement this program, and if not, please explain the community's plan?
2. Provide a list of the (potential) hardware and/or software required for successful implementation and when it will be installed.
3. Who will provide technical support and is in-house training included with conversion?
4. When was the last cyclical inspection cycle completed? Also, when was the last full field review conducted?
5. Will this process (desk top review) be used for all classes of properties?
6. There must be appropriate criteria (e.g. Data Collection Manual) in place that make use of proper appraisal practices. Who will determine the proper physical elements of the conversion?
7. How much of the process is automated and how much requires manual data entry? *For example, will commercial sketches require data entry?*
8. How will income data be converted?
9. How will the condo class property details be converted?
10. How will exempt class be converted? Are there sketches?
11. What digital tools will be used for street views? For example, there are many software tools that integrate oblique (3D) imagery and orthogonal imagery, that will assist you.
12. Please include information on who will be performing the various functions, including their job titles and expertise.
13. What type of quality control program and performance measures will be in place to assure the data is being reviewed accurately and consistently?
14. What's the timeframe for implementation?
15. Which party is responsible for the valuation tables and producing final assessed values?

	Certification Check List	Final Version Date Accepted
1	Review the status of Previous Directives (Gateway, CF-2)	
2	Certification workplan reviewed with advisor. Submitted in Gateway-Advisor approves	
3	Visit History Report in excel (last inspected report) includes all real property parcels (p.6, RP-13)	
4	Data Quality Study performed/approved by advisor. Random sampling	
5	LA3 Sales Report sign/submit in Gateway (See Property Type Classification Codes in DLS website)	
6	Sales analysis of all major use classes (see p.11)	
7	101 class sales analysis overall, NHBD, style, age, building style, sales price quartiles or halves (RP-2,3)	
8	102 class class sales analysis overall, complex, style, sales quartiles or halves (RP-2,3)	
9	Sales analysis classes 104, 105, 111-112, 130-132, 300 class & 400 class	
10	Vacant land sales and "P" code sales combined (RP-4,5)	
11	"P" code sales analysis. (parcels sold as vacant land subsequently built on and assessed as improved)(RP-4,5)	
12	*Land residual analysis in Excel (performed on all residential sales except 111-125, overall, over/under standard lot size or zoning, NHBD)(p.A-10, RP-5)	
13	Neighborhood Map (Res & C&I) updated for current FY (RP-3)	
14	Land rate tables from CAMA system (RP-3)	
15	Land form 1 in Excel (pgs. CF-1 & RP-4)	
16	Residential Cost & Depreciation tables from CAMA RP-6)	
17	All real property detail review spreadsheet in Excel (include all parcels of all use classes)(p. RP-8)	
18	Land review spreadsheet in Excel (include all parcels of all use classes) (p. RP-6)	
19	Condominium review spreadsheet in Excel (all condominiums) (p. RP-7)	
20	Apartment, Commercial, Industrial Cost & Depreciation tables from CAMA	
21	Actual Income & Expense reports in Excel (rents, vacancy, expenses)	
22	Capitalization Rate Development (RP-10,11)	
23	I&E counts from all income producing properties (013-041, 111, 112, all 300-400 classes)	
24	Economic rent, expense, vacancy, cap rate tables from CAMA (RP-9)	
25	*Income land residuals performed on all significant income producing properties classes 013-041, 111-125, 300-400. (p. A-11)	
26	Income detail review spreadsheet in Excel from CAMA. Include all income producing properties. (RP-12)	
27	Cost Value to Income Value correlation report. (p. RP-12)	
28	Exempt review spreadsheet in Excel (if not included in all real property detail review) (RP-13)	
29	Chapter Land (provide access to liens for review, updated FVAC tables, should be included in all real property detail review)	
30	Top 5 Taxpayer Analysis (ranked by prior FY and compared to current FY. Does not include 504-508 use codes) (RP-13)	
31	Personal Property Cost & Depreciation Tables	
32	PP CAMA reports old to new, listing by dba, owner, address in Excel (RP-14)	
33	504 use appraisals	
34	2nd home PP analysis if applicable (RP-14)	

35	# forms of list returned, # accounts inspected, # accounts estimated by model, # accounts exempted if applicable	
36	LA4 entered, saved, submitted in Gateway	
37	LA4 detail report from CAMA	
38	Specialty Appraisals if applicable (i.e. electric generating plants)	
39	Solar facilities valuation (PP, real property record cards and value agreements)	

* if residual analysis not used must provide alternative method to support applicable land values.
See pgs. A 12-15

RECOMMENDED REPORT SPECIFICATIONS FOR CERTIFICATION REVIEW

Overview

These specifications detail the recommended report information and analysis data that will need to be made available to your certification advisor. It is recommended that the documentation submitted for the certification review include the content, statistics, and data characteristics in the required formats following the suggested spreadsheet column headings. During the scheduled meeting with your certification advisor to plan for certification review you may discuss the specific content appropriate for your community as local property types and market trends may indicate the need for additional review and analysis data or may indicate that a listed report may not be relevant.

Each item contains a brief description, stratifications and sort orders, recommended file layout, format requirements, and statistics to be included. The Certification Standards should be referred to for all statistical analysis requirements. For ease of use, the required Certification Review Documentation has been designed to flow with the Certification Checklist found in the Commonly Used Forms.

Common Terms

The parcel identification referenced throughout these specifications will be referred to as the **MBLU** and must contain all components of the unique identification assigned to a parcel.

MBLU = all designations for map, block, lot, and unit

The assessment to sale ratio, referenced throughout these specifications, will be referred to as the **ASR**. This is the measure of the proposed assessment divided by the sale price or the time adjusted sale price. *ASR = (proposed assessment ÷ sale price or TASP, the time adjusted sale price)*

The **Value Change Percen**t, referenced throughout these specifications, is calculated by taking the difference between the proposed new value and the prior year value and then dividing that difference by the prior year value.

Value Change Percent = ((proposed assessment-prior year value) ÷ prior year value)

I. Assessment to Sale Ratio Studies

Assessment to sale ratio (ASR) studies has a wide range of uses for various parties. In the certification process they are used to determine if the proposed property assessments produced by the valuation system meet the requirements found in the Certification Standards for levels of assessment and uniformity. The amount of market activity and the nature and characteristics of a community will influence varying needs and types of ratios studies.

Stratifications and Sort Order: An analysis should be presented for each property use code with valid sales. For the predominant class in the community and for property uses with sufficient sales, at minimum stratify by building style, neighborhood/site index, age groups, sale price and sale date quartiles or halves, and other influences such as water, views, traffic, etc. Other stratifications could include construction grade, square feet of area (living, gross, rentable, or land), and condition or effective age. It may also be necessary to combine stratifications.

Stratifications for residential condominiums include complex /neighborhood and other influences such as condominium style, unit location, number of bedrooms, finished basement, etc.

Recommended File Layout

MBLU	Street #	Street	GIS Location ID	Use Code	NBHD or Site Index	Zone	Land Size	Bldg Style	Story Height	SFLA	Grade	Year Built	Condition /EYB	Total Proposed Value	Sale Date	Sale Price	TASP	ASR	ABS DEV

Recommended File Layout- Condominium

MBLU	Street #	Street	GIS Location ID	Use Code	Complex Name	Complex Code or NBHD	Market Adjustment	Location Adjustment	Condo Style	Story Height	SFLA	# Bdrms	Grade	Year Built	Condition/ EYB	Total Proposed Value	Sale Date	Sale Price	TASP	ASR	ABS DEV

Format: electronic in Excel preferred, .pdf, .jpg, or printout accepted

Statistics: The results of each ratio study should include median, coefficient of dispersion, and count. Other statistics to consider are the mean and the price related differential.

II. Neighborhood Maps

A neighborhood map is a map depicting all neighborhood delineations including sub-neighborhoods, site indexes, and locational variables and adjustments used to price land that meet the definition of a neighborhood. The neighborhood map must be presented in a sufficient size and with a color composition that will clearly distinguish each of the neighborhood delineations. The neighborhood map should include annotations of street names and a legend identifying the neighborhoods. If available, the neighborhood map should be prepared using integrated CAMA system parcel data and GIS mapping. Consideration should be given to preparing separate maps for the residential and commercial/industrial land schedules depending on the community's parcel make-up and number of neighborhoods. Mapping of condominium neighborhoods should be discussed with the certification advisor.

Format: electronic preferred in .pdf, .png, or .jpg, printout accepted

III. Land Analysis and Documentation

Land Pricing Instructions

Land pricing instructions should be provided describing the method of pricing for all lot types formatted, including primary lot, excess or residual land, secondary or front foot lots, and unbuildable land as well as how neighborhood and modifier adjustments are applied.
Format: electronic preferred in Excel, Word, .pdf, or .jpg, printout accepted

Land Pricing Tables

A copy of all the land pricing tables from the CAMA system (including residential, apartment, and commercial and industrial tables) must be provided showing all land types used including primary, secondary, front foot, excess, per-unit, residual, undevelopable, wetland, etc. The land tables must show the base land prices, unit

types, all neighborhood adjustments and site modifiers for ranges used by the CAMA system for each land type. A copy of the tables for all condominium locational factors should also be provided to the certification advisor.

Format: electronic preferred as CAMA system export in .pdf or .jpg, printout accepted

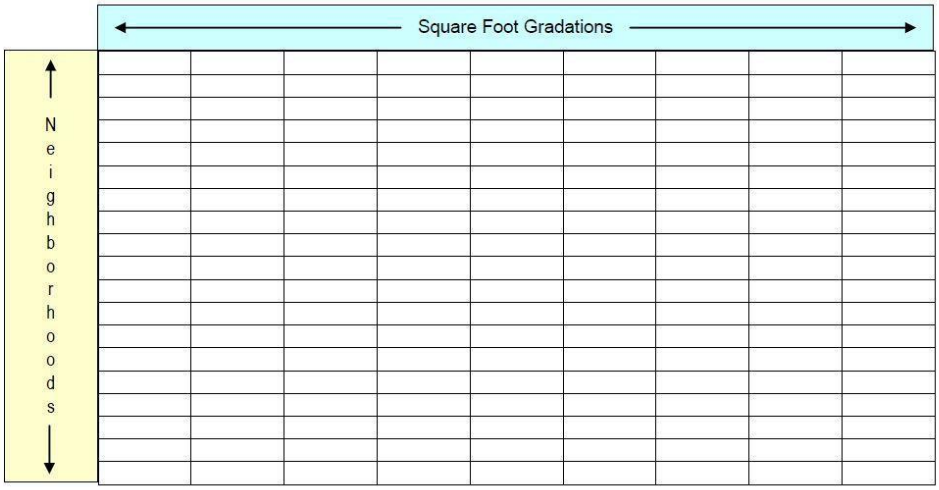
Land Pricing Schedule

Referred to as **Land Form 1**, each different base land price of the primary land type should be shown on the land pricing schedule by listing the value of each incremental land size gradation up to the maximum size covered by the land schedule. Land form 1 should also be provided for the commercial and industrial primary land schedule and any other land schedule types.

Recommended File Layout- Land Form 1

Format for Land Schedule Submission

Submission is to be made in Excel Format



Square Foot Gradations should be incremental have a range starting, at least, at 5,000sf and continue, at least, up to the maxim square footage required for a primary lot within each neighborhood.

A. Gradation intervals should contain, at least, principle break points as applicable to the municipality. These could be 1000sf, 2000sf, 2500sf or other intervals as applicable to the zoning or custom.
B. If the size of the prime lot varies by zoning and zoning can vary within a neighborhood then the schedule should separate each neighborhood into the various allowable zones. If a neighborhood has two separate zones then it should be broken down into two separate lines. {For example: Neighborhood 3, Zone 10,000sf should be one line and Neighborhood 3, Zone 20,000sf should be another line}

Format: electronic in Excel

IV. Land Analysis Studies

B. Vacant Land and "P" sales

The vacant land sale ratio study shows how the proposed land assessments compare to vacant land sales or alternate indicators of value. To support land values, an adequate number of sales and sufficient data are required for each stratification of the land pricing schedule.

Stratifications and Sort Order: The basic stratifications for the land sales analysis include all vacant land sales, "P" sales and all vacant and "P" sales combined. *("P" sales are sales of land which was valued and classified as vacant land at the time of the sale and then subsequently improved as of the January 1st assessment date.)*
The ratio study should be stratified by neighborhood delineation including all land factors, modifiers, sub-neighborhoods, site indexes, and other locational variables used to price land. Other stratifications include property use code, land influence adjustments, lot size, and land types such as front foot, secondary lot, and per-unit price.

Recommended File Layout

MBLU	Street #	Street	GIS Location ID	Use Code	NBHD or Site Index	Zone	Land Size	Prior Assessed Value	Proposed Assessed Land Value	Value Change Percent	Sale Date	NAL Code	Sale Price	TASP	ASR (Proposed Land Value to Sale Price)

Format: electronic in Excel preferred, .pdf, .jpg, or printout accepted

Statistics: The results of each ratio study should include median, coefficient of dispersion, and count.

C. Residual or Abstraction Analysis

In addition to or in the absence of sufficient vacant land sales, alternate land valuation methods may be used including residual analysis also referred to as abstraction to support proposed land values.

Residual analysis uses the sale price of an improved parcel minus the replacement cost new less depreciation of all of the improvements to arrive at the indicated land value. Building costs should be at 100% of market value and be based on updated cost tables as of the January 1 valuation date. A residual analysis should include all sales of improved residential property uses which have a land value component. Any sales trimmed from the residuals analysis should be flagged in the analysis so they can be reviewed by the certification advisor.

Stratifications and Sort Order:

1. By neighborhood delineation (or other applicable land factor)
2. Less than or equal to standard prime lot size or zoning if applied
3. Greater than standard prime lot size or zoning if applied
4. If excess land prices vary by neighborhood, also stratify by greater than standard prime lot size or zoning if applied and neighborhood delineation

Recommended File Layout

MBLU	Street #	Street	Use Code	NBHD or Site Index	Zone	Land Size	Land Adjustments	Proposed Land Value	Bldg Style	Story Height	SFLA	Grade

Year Built	Condition /EYB	RCNLD*	Sale Date	Sale Price	Indicated Land Value**	Land Residual Ratio***	ABS DEV	Prior Assessed Land Value	Value Change Percent

**RCNLD must include total value of all improvements including buildings, outbuildings, and special features*
***Indicated Land Value= Sale Price minus RCNLD*
****Land Residual Ratio=Proposed land value divided by indicated land value*

Format: electronic in Excel

Statistics: The results of each ratio study should include median, coefficient of dispersion, and count.

V. Land Line Review

This spreadsheet is composed of the land line segmentations for every parcel in the community, with each segmentation being a data row/line. It is used by the certification advisor to review parcel data, proposed land assessments, and to check the application of the various land schedules and adjustments for consistency.

Recommended File Layout

MBLU	Street #	Street	Use Code	Zone	Land Size	Line #	NBHD or Site Index	NBHD Factor	Segment Type*	Unit Type**	Segment Size	Base Unit Price	Adjust-ments ***	Land Segment Value	Total Land Value	Sale Date	NAL Code	Sale Price	TASP	ASR	Prior Assessed Land Value	Value Change Percent

**Primary, secondary, residual, excess, front foot, etc.*
*** Square feet, acres, number of units, etc.*
****Adjustments include influences, modifiers, conditions, factors and conditions. Provide as many columns as needed to list all adjustment types and factors separately.*

Format: electronic in Excel

VI. Building Pricing and Depreciation Schedules

B. Cost Approach

The certification advisor must be provided a copy of all cost pricing and depreciation schedules for all property classes along with any necessary supporting documentation. Cost schedules include base building cost rates, special features, yard items, and condominium adjustments.
Any factors or coefficients used to adjust values from the base schedules must be separately documented. Examples are size adjustments, building construction quality grading, condition and effective year and subarea adjustments.

Format: electronic preferred as CAMA system export in .pdf or .jpg, printout accepted

VII. Multiple Regression Analysis

The following items are needed as minimum documentation for the Bureau to properly evaluate the multiple regression modeling process:

1. definition of neighborhoods and/or modeling regions
2. narrative overview of the modeling process
3. description of process data stratification and sub-model development
4. definitions of all data elements
5. definitions of data transformations
6. methods used in time adjusting sales
7. appropriate statistics and program outputs used in the modeling process:
   a) coefficient of determination (R2)
   b) standard error of the estimate
   c) coefficient of variation (COV)
   d) average percentage error
   e) F statistic
   g) residuals, or plotback report
   h) distribution analysis of variables & candidate variables
8. data editing methodology
9. sales screening methods, including documentation for sales reported on the sales reports (LA-3) but excluded from modeling process.

Format: electronic preferred in Excel, Word, .pdf, or .jpg, printout accepted

VIII. Condominium Review

This spreadsheet contains the inventory of condominium use parcels in a community and is used by the certification advisor to review parcel data and proposed assessments. It includes data specific to condominium properties.

Stratifications and Sort Order: In communities with condominiums in various property classes, consideration should be given to preparing separate reports by property class.

Recommended File Layout

MBLU	Street #	Street	Use Code	Complex Name	Complex Code or NBHD	% Common Interest	Complex Amenities	Market Adjust-ment	Location Adjust-ment

Condo Style	Style Adjust-ment	Story Height	SFLA	Grade	Year Built	Condition /EYB	# Rooms	# Bdrms	# Full Baths	# Half Baths

Proposed Total Value	Sale Date	NAL Code	Sale Price	TASP	ASR	Prior Assessed Value	Value Change Percent

Optional fields are:

Outbuildings Special Features*	View Factors	Finished Basement Area	Extra Fixtures	Assessed Value per SF	Sale Price per SF

**Garages, Parking Spaces*

Format: electronic in Excel

IX. Residential Review

This spreadsheet contains the inventory of residential use parcels in a community and is used by the certification advisor to review parcel data and proposed assessments. Parcels with more than one building or structure may be displayed in multiple rows/lines in the report with a row/line for each building. This spreadsheet may also contain the complete parcel inventory of all property uses in a community including exempt depending on the capability and structure of the communities CAMA system.

Recommended File Layout

MBLU	Street #	Street	Use Code	Zone	NBHD or Site Index	Land Size	Building Style	Story Height	SFLA	Grade	Year Built
Condition /EYB	Physical Dep.	Economic Dep.	Functional Dep.	Other Dep. /Percent Complete	RCNLD	Outbuilding Special Feature Value	Land Value	Total Building Value			
Total Proposed Value	Sale Date	NAL Code	Sale Price	TASP	ASR	Prior Total Assessed Value	Value Change Percent				

Format: electronic in Excel

X. Apartment, Mixed Use, and Commercial & Industrial Land Methodology

A brief explanation should be prepared for the certification advisor detailing the development of the pricing methodologies used to develop land valuations for the certification year for the apartment, mixed use, commercial, and industrial classes.

To support proposed land values, consideration should be given to using one or more of the various land valuation methods including:

- Sales Comparison- vacant land sales
- Abstraction
- Allocation
- Land residual capitalization
- Capitalization of ground rent
- Residential applied (rural communities)
- Anticipated use
- Other

Format: electronic preferred as CAMA system export in Excel, Word, .pdf, or .jpg, printout accepted

XI. Income Approach Schedules

The certification advisor must be supplied with copies of the various schedules used in the income approach including economic rent, vacancy rates, expense adjustments, and capitalization rates.
Factors used to adjust values from the base schedules for economic rent, vacancy rates, and expenses should be separately documented. Explanations for all the various adjustments to base capitalization rates should be provided by property type. If a method other than market is used to develop the capitalization rates, documentation should be included showing how the selected method and various rates used were developed.

B. Income and Expense Form Tracking

Maintenance of a tracking spreadsheet for income and expense forms will allow for both the community and certification advisor to have information regarding the mailings and returns which are reported on the Community Certification Report.

Stratifications and Sort Order: Report may be sorted by property class use code.

Recommended File Layout

MBLU	Street #	Street	Use Code	Owner	Mail Street1	Mail Street2	City	State	Zip Code	Mailing Date 1	Return Flag 1	Mailing Date 2	Return Flag 2

Format: electronic preferred in Excel, Word, .pdf, or .jpg, printout accepted

Statistics: The results of the tracking should include counts and return rate.

C. Development of Economic Rent using Income and Expense Analysis

This spreadsheet will detail and document the development of the proposed rents, vacancy, and expense and their respective adjustments. It must contain sufficient information to support the proposed rates and adjustments for each property type.

Stratifications and Sort Order: Report should be sorted by property class use code.

Recommended File Layout- Apartment

MBLU	Street #	Street	Use Code	# of Units	Unit Type or Floor Location	Bedroom Count	Rent per Unit	Gross Rent	Actual Vacancy Rate	Actual Expenses Rate	Indicated NOI	Notes

Recommended File Layout- Commercial, Industrial, Mixed Use

MBLU	Street #	Street	Use Code	NBHD or Site Index	Use Code of Tenant	Lease Date	Lease Term	Leased Area	Actual Rent

	Actual Rent per SF	Actual Vacancy Rate	Actual Expense Amount	Actual Expenses Rate	Other Income	Indicated NOI	Notes

Format: electronic in Excel preferred, .pdf, .jpg, or printout accepted

Statistics: The results of each study should include median, mean, and count.

XII. Development of Capitalization Rate

An analysis must be presented to show the development of the capitalization rates used for each residential, apartment, mixed use, commercial, and industrial property uses valued by the income approach.

B. Market (Overall) Approach

This spreadsheet documents the development of the capitalization rates used for each residential, apartment, mixed use, commercial, and industrial property use valued by the income approach.
The indicated overall market cap rate is derived from dividing the reported net operating income by the sale price.

Recommended File Layout- Apartment Use

MBLU	Street #	Street	Use Code @Sale	# of Units	Reported Annual Income	Gross Income per Unit	Reported Vacancy	Reported Expenses	Indicated NOI		Sale Date	Sale Price	Overall Cap Rate

Recommended File Layout- Commercial, Industrial, Mixed Use

MBLU	Street #	Street	Use Code @Sale	NBHD or Site Index	Leased Area (GLA)	Reported Annual Income	Gross Income per SF	Reported Vacancy	Reported Expenses		Indicated NOI	Sale Date	Sale Price	Overall Cap Rate

Format: electronic in Excel preferred, .pdf, .jpg, or printout accepted

C. Band of Investment Approach

Another method to develop overall capitalization rates is the band of investment technique using mortgage debt and equity components. The sum of the debt and equity portions must total 100%.
The debt and equity portions are each multiplied by their respective rates to calculate their weighted rates which are summed to arrive at the unloaded capitalization rate. The effective tax rate, being the property class tax rate from the prior fiscal year, is then added to the discount rate to arrive at the loaded capitalization rate.

Stratifications and Sort Order: property use code

Recommended File Layout

Property Types Description	Example: Office
Use Code	340
Data Source	Industry
Loan to Value Ratio (a)	0.75
Debt Rate (b)	0.085
Weighted Debt Rate (a*b)	0.06375
Equity Portion (c)	0.25
Equity Yield Rate (d)	0.12
Weighted Equity Rate (c*d)	0.03
Basic Cap Rate	0.09375
Effective Tax Rate	0.015
Overall Cap Rate	0.10875
Cap Rate	**10.9%**

Format: electronic preferred in Excel, Word, .pdf, or .jpg, printout accepted

XIII. Apartment, Mixed Use, and Commercial & Industrial Review

B. Correlation of Approaches to Value

This report is used by the certification advisor to review the correlation between the two required approaches to value to be developed and applied to all properties bought and sold on investor' expectations. This report should also show the calculated proposed value by each approach (cost or market adjusted cost, income, and market), which approach to value was selected, property sales, and the value change percent.

Stratifications and Sort Order: Report should be produced for each property class use for 013, 031, 111, 112-121, 300's, 400's (as applicable).

Recommended File Layout

MBLU	Street #	Street	Use Code	NBHD or Site Index	Land Size	Bldg Style	Leased Area or # Units	Outbuilding Special Feature Value	Land Value	Building Value	Proposed Value Cost Approach

Proposed Value Income Approach	Proposed Value Market Approach	Selected Value Approach	Total Proposed Value	Correlation Ratio of Value Approaches	Sale Date	Sale Price	NAL	TASP	ASR	Prior Total Assessed Value	Value Change Percent

Format: electronic preferred as CAMA system export in Excel, .pdf, or .jpg, printout accepted

Statistics: The results of each ratio study should include median, coefficient of dispersion, and count.

C. Income Detail Review

The income detail review report is used to demonstrate the parcel data, rates, and adjustments used in the development of each approach to value. The certification advisor reviews the report to check that the rates and adjustments used are reasonable and comparable to the developed income schedule.

Stratifications and Sort Order: Report should be produced for each property class use for 013, 031, 111, 112-121, 300's, 400's (as applicable).

Recommended File Layout

MBLU	Street #	Street	Use Code	NBHD or Site Index	Grade	Condition /EYB	Gross Building Area	# of Units	Net Leasable Area per Unit	Use by Unit	Economic Rent per Unit

Gross Rent	Vacancy Rate	Expense Rate	NOI	Cap Rate	RCNLD	Outbuilding Special Feature Value	Land Size	Total Land Value	Income Approach Value	Final Proposed Assessed Value

Format: electronic preferred as CAMA system export in Excel, .pdf, or .jpg, printout accepted

Statistics: The review report should include counts.

XIV. **Exempt Review**

This spreadsheet contains the inventory of exempt use parcels in a community and is used by the certification advisor to review parcel data, proposed assessments, and value percent changes.

Recommended File Layout

MBLU	Street #	Street	Use Code	Zone	NBHD or Site Index	Land Size	Grade	Year Built	Condition /EYB	Physical Dep.	Economic Dep.	Functional Dep.	Other Dep. /Percent Complete	RCNLD	Outbuilding Special Feature Value	Land Value	Total Building Value	Total Proposed Value	Prior Total Assessed Value	Value Change Percent

Format: electronic in Excel

XV. **Top Five Taxpayers Report**

The top taxpayer report is reviewed by the certification advisor to see how the revaluation affects the proposed assessments of the highest tax paying valued property owners. The criteria for the top five taxpayers report emphasize ownership and amount of taxes value. For purposes of this report, a taxpayer is the assessed owner of a parcel/account or of multiple parcels/accounts having the same exact legal ownership. Communities with split tax rates must apply the prior year tax rates from the appropriate property classes to the prior year values to calculate the top taxpayers. The report includes both real and personal property with the exception of property use codes 504-508. The top taxpayer report is not a list of highest assessed parcels.

Stratifications and Sort Order: The report should be sorted by prior year (current) total value beginning with the highest.

Recommended File Layout

Owner	MBLU or Account #	Street #	Street	Use Code	Prior Total Value	Proposed Total Value	Value Percent Change	Taxpayer Rank	Notes*

**Taxpayers with a value percent change > 10% from the average percent change of their respective property class require an explanation to be provided.*

Format: electronic in Excel preferred, Word, .pdf, .jpg, or printout accepted

XVI. **Visit History or Last Inspected Report**

This report is requested to show the status and progress of a community's required cyclical inspection programs which are tracked on the Revaluation Workplan. The report should be produced for all taxable and exempt non-vacant parcels.

Stratifications and Sort Order: Sorts should be discussed with the certification advisor. The ability to sort this report by location and state use code is preferred.

Recommended File Layout

MBLU	Street #	Street	Use Code	Assessed Value	NBHD or Site Index	Date Last Inspected	Inspection Type	Inspection Result

Format: electronic preferred as CAMA system export in Excel, .pdf, or .jpg, printout accepted

XVII. Personal Property

B. Account Review

During the personal property certification review, the certification advisor must be provided with copies of personal property cost tables and depreciation tables. Available for review should be documentation including Forms of Lists, personal property record cards showing all taxable items with descriptions, status, age, replacement cost new, depreciation, depreciated value, and the proposed value of each item. The certification advisor will review the report by business type, use code and growth value to check for consistency and if the proper item is being assessed in relation to their property class.

Stratifications and Sort Order: Sorts should be discussed with the certification advisor. The ability to sort this report by business type, use code, growth value, and value change is preferred.

Recommended File Layout

Account ID #	Business Name/ DBA	Owner	Business Type	Location	Use Code	Machinery/ Equipment Value	Furniture & Fixtures Value	Inventory Value	Growth Value	Proposed Total Value	Prior Value	Value Change Percent

Format: electronic preferred as CAMA system export in Excel, .pdf, or .jpg, printout accepted

Statistics: The report should include counts, total prior values, and total proposed values.

C. Second Home Study

In communities with second or summer homes, a second home study must be provided for review by the certification advisor **every 5 years correlating with a community's revaluation cycle**. A detailed analysis of the data compiled from property owner returns of State Tax Form 2HF is used to develop the second home study. The allocation ratio is derived by dividing the personal property reported value by the assessed building value of the real estate parcel.

Recommended File Layout

PP Account ID #	MBLU (Real Estate Parcel)	Street #	Street	Reported Value Contents of Second Home	Assessed Building Value (Real Estate)	Allocation Ratio	Proposed Value PP Account

Format: electronic in Excel preferred, Word, .pdf, .jpg, or printout accepted

For Assistance or Guidance

Contact your BLA Community Advisor
Or Email us at
bladata@dor.state.ma.us