CHAPTER 2
MASS APPRAISAL MODULE
TOPICS AND OBJECTIVES

A. TOPICS

1. Definition of "Market Value" and "Mass Appraisal."
2. Types of information needed to generate a sales file.
3. Types of information needed to generate property values.
4. Types of statistical analyses needed to gage assessment levels and equity.
5. Types of valuation systems for residential, commercial and industrial properties.
6. The details of reassessment programs.

B. OBJECTIVES

1. Participants will understand what determines "Market Value" and how a "Mass Appraisal" is done.
2. Participants will understand what information needs to be included in the sales file.
3. Participants will understand what information is needed to generate property values.
4. Participants will understand the different types of statistical analyses and what they measure.
5. Participants will understand the differences in the types of valuation systems used to value all real property.
6. Participants will understand what is expected of them in undergoing a reassessment program.

CHAPTER 2
MASS APPRAISAL MODULE

1.0 OVERVIEW AND DEFINITIONS

1.1 Property Valuation

The primary responsibility of assessors is to value all real and personal property in their municipality each year for tax assessment purposes.

Every five years, these valuations must be reviewed by the Department of Revenue (DOR) and certified as meeting legal standards. Valuations in years between this five year certification must also meet legal standards, but they are not certified by DOR.

1.2 Market Value

Assessors are required by Massachusetts law to assess all real and personal property at its fair cash value as of January 1 each year.[1] Fair cash value means fair market value, which is the price a willing buyer and a willing seller would settle upon in an open market transaction.[2]

To determine market value, assessors must evaluate a number of factors that impact the amount a willing buyer and seller would agree to, including:

- **Sales** – The time, volume, and price of sales for the same type of property in the general area.
- **Location** – The location of the property.
- **Supply and demand** – The number of properties available for sale relative to the number of buyers seeking them.

1.3 Mass Appraisal

Mass appraisal is defined as the use of standardized procedures for collecting data and appraising property to ensure that all properties within a municipality are valued uniformly and equitably. It is the process of valuing a group of properties as of a given date, using common data, employing standardized methods and conducting statistical tests to ensure uniformity and equity in the valuations.

Assessors use mass appraisal procedures and techniques when determining the fair cash value of properties in their municipalities.

2.0 SALES DATA

2.1 Sales Information

Assessors must gather and analyze property sales data in order to conduct a mass appraisal program. The sales prices of comparable properties that sold in close proximity to the assessment date are the primary indicators of property values in a municipality.

2.2 Sales Identification

Assessors should use a variety of sources to identify all of the real property sales that occurred in their communities.

2.2.1 Registry of Deeds

The registry of deeds generally sends to each of the communities in its jurisdiction, copies of new deeds recorded each month with their book and page numbers shown on the copies. The registry information will generally list all of the real estate included in each sale and disclose the selling price.

2.2.2 Real Estate Transfer Publications

Periodicals like *Bankers and Tradesman* regularly publish information about real estate sales transactions, setting out selling prices, names of buyers and sellers, and property classes and uses.

2.2.3 Newspaper Articles

Newspapers frequently contain real estate sections with information about real estate transactions.

2.2.4 Local Real Estate Brokers

Real estate brokers generally have information about property sales. Frequently, they can provide distinctive information, such as what was included in a sale.

2.2.5 Bank and Estate Appraisers

Bank and estate appraisers may also have information about a community's sales market.

2.3 Sales Selection

The validity of a sales analysis depends on the identification and selection of arms-length sales.

2.3.1 Arms-Length Sales

An arms-length sale is a transfer of property ownership between:

- A willing seller not under compulsion to sell, and
- A willing buyer not under compulsion to buy.

The transaction is between two unrelated parties, each of which is reasonably knowledgeable of market conditions and under no pressure to buy or sell. The property should be exposed to the market for a reasonable period of time.

A sale is not considered arms-length if there is some special situation that does not reflect market value. Examples of sales not usually considered indicative of market value include sales involving any of the following circumstances:

- **Family sales** - Sales between family members, involving reduced or nominal prices.

- **Foreclosure sales** - Sales involving properties foreclosed by a bank or another lending institution where the creditors are trying to make the best of a bad bargain and willing to sell property at whatever they can get to mitigate their loss.

- **Paper transactions** - Transfers involving businesses reassigning assets for bookkeeping purposes.

- **Donations** - Sales to charitable, educational or religious organizations that involve or are tantamount to donations.

- **Court ordered sales** – Sales ordered by a court that are tantamount to no more than the buyout price between the former co-owners, *e.g.*, a property settlement as part of a divorce.

2.3.2 Sales Verification

Assessors can use a number of methods to determine if a sale involved any special circumstances. These methods include:

- **Sales questionnaires** – Questionnaires are sent to new property owners asking them for details about the sale and if any special circumstances were present.

- **Property visits**– A visit can be made to the property shortly after the sale to interview the new owner about any special circumstances and to inspect the property to determine its condition at the time of sale.

- **Interviews or phone calls** - The seller can also be interviewed in person or by phone, as can any real estate agents, appraisers, or other third parties who may have knowledge of the the sale and the details surrounding it.

2.3.3 Sales Database and Maps

After verifying arms-length sales, assessors should create a sales database containing information about each sale property.

The database should include a photograph of each property depicting the physical condition of the property at the time of sale.

Also included as part of the database should be a set of property maps showing the location of all arms-length sales. Sales maps are a valuable tool for identifying market trends within the municipality. The maps should provide the following information:

- Locations of sale parcels.
- Sale prices.
- Sale dates.
- Property types, *e.g.,* single family home, residential lot, etc.

3.0 TAX MAPS

3.1 Land Valuation Tool

Assessors must prepare tax maps that locate and provide essential land area information about every real property in their municipality. In mass appraisal programs, tax maps are essential to the development and application of a land valuation schedule with accurate measures of market value, such as square footage, front footage and site. The maps must be updated annually to reflect changes in parcel configurations.

3.2 Parcel Identification System

Tax maps establish a unique identification number for each parcel of real estate. Most mapping systems identify the parcels by map-lot number or map-block-lot number. Each map is numbered. If the maps also contain divisions, they are called blocks and are identified by a different number. A unique number is then assigned to each parcel.

3.3 Parcel Information

Tax maps must accurately delineate every parcel and display its land area, based on the legal description in the deed or other title document. All roadways should be displayed and identified by name.

Maps that include the following information about each parcel enable assessors to more precisely analyze market influences:

- **Frontage and depth** - Road frontages and property depth measurements on tax maps assist assessors determine conformity to zoning by-laws and development potential.

- **Zoning, improvements and topography** - Boundaries of zoning areas, diagrams, or footprints of buildings and other improvements, and topographical data also assist assessors in determining conformity to other land use regulations, such as wetlands protection laws and local by-laws.

4.0 PROPERTY INVENTORY DATA

4.1 Property Record Card

Assessors must collect and maintain data on each parcel of real, and item of personal property. Accurate property data is essential for developing uniform valuations of comparable properties in a mass appraisal program. This data is usually referred to as a property inventory or property record card.

4.2 Real Property Descriptive Data

Property inventories for real property parcels should include the following information about ownership and physical characteristics that may affect valuation:

- **Ownership history** – The current and prior owners, acquisition dates and title references.

- **Land information** – Acreage, frontage and other data needed to apply the land valuation system.

- **Building measurements** – The precise external measurements for each structure on the property in order to calculate usable or living areas.

- **Construction quality** – The quality of the craftsmanship of the builder and the worth and durability of the materials used in the construction of each building and other structure.

- **Story heights** - The story height of each section of all buildings in order to calculate living area above the first floor.

- **Style** -The style of the building, *e.g*., colonial, ranch, cape, etc.

- **Construction date** – The date of construction of each building, *i.e*., its age.

- **Current condition** – The current physical condition of every building, *i.e*., its degree of maintenance.

- **Other amenities** – All other amenities of a property that affect the property's market value, such as additional bathrooms, central air conditioning, garages, swimming pools, sheds and barns.

- **Moderating features** - Any features or characteristics that diminish the property's value, such as easements, nuisances and rights-of-way.

4.3 Property Inspections

Assessors must conduct a periodic, cyclical inspection program to continuously inspect properties to verify and update existing data. The time period depends on a number of factors, such as quality of the original data collection effort, the absence of data on certain characteristics needed to accurately measure market trends in a new valuation system, the frequency of property renovation and remodeling and the level of property reinspections. Generally, DOR certification guidelines require that all properties be inspected at least once every 10 years.

4.3.1 Community-wide Data Collection ("Full Measure and List")

A program to recollect all exterior and interior data at one time, *i.e*. a full measure and list program, usually takes place during a relatively short period of time, such as one calendar year. A full measure and list program is time consuming and generally requires the hiring of extra temporary staff or a revaluation company.

4.3.2 Cyclical Data Collection

Assessors using a cyclical program continually check their data over a set period, depending on property turnover in their community and their resources. This data collection procedure spreads costs over a longer period and minimizes the need for additional staff.

4.4 New Construction Data

Assessors must collect data on properties that have had new construction, alterations or demolitions each year and update their property inventory records to reflect the physical status of each parcel as of January 1, or June 30 if the municipality has accepted a local option reflecting the physical status of real property as of June 30 assessed on January 1.[3]

4.4.1 Building Permits

Assessors should make arrangements to receive copies of all building and demolition permits issued in the municipality so they can identify and collect the following construction data:

- New structures.
- Additions to existing structures.
- Renovations and other remodeling.

4.4.2 Partial Construction Valuation

Assessors must determine the percentage of completion of any new construction on the status date. That percentage is applied to the estimated value of the structure as completed. That amount is then added to the land value to determine the property's valuation for the year.

Example

For fiscal year 1, a new house is 60% complete. The parcel's valuation equals the land value plus 60% of the full value of the house as completed.

For fiscal year 2, an additional 20% of the construction is completed. The parcel's valuation equals the land value plus 80% of the full value of the house as completed.

For fiscal year 3, the house is completed. The parcel's valuation equals the land value plus the completion value of the house.

4.5 Property Data Conversions

When a municipality changes valuation systems, assessors must include as a component of their mass appraisal program a full field review of every parcel. This is required by DOR reassessment program guidelines regardless of whether a new data collection program is being conducted or existing data is being used. The purpose is to ensure the data has been accurately captured and the new valuations are uniform.

4.5.1 Drive-by Inspection or Desktop Review

To perform a full field review, assessors should first conduct a drive-by inspection of all properties, checking building style, quality and condition and examining other visible data characteristics. The Bureau of Local Assessment (BLA) will consider a community's request for a desktop review of the data from a conversion provided certain criteria are met as found in DOR's certification standards.

4.5.2 Physical Inspection

For all properties appearing to have numerous discrepancies in their visible data, assessors must conduct a physical inspection.

4.6 Data Quality Analysis

A data quality analysis is a tool to determine the quality of the existing property data and assess the scope of data collection or verification required as part of a mass appraisal program. Properties are selected at random for inspection and a complete check of all of the information in the existing database is made.

4.6.1 Sample Method and Size

The sample should consist of a randomly selected two to five percent of all properties, and should be representative of all the typical property attributes, in the municipality. The sample should include:

- **Neighborhoods** - Representative properties from all the community's typical neighborhoods.

- **Property types** - Representative properties from each of the residential, commercial and industrial property classes. Within each class, the sample should contain buildings of all styles, types of construction and age.

4.6.2 Property Data Comparison

The preferred method for inspecting properties and comparing the results is to use blank property record cards and measure and list each property as if it were a new data collection.

An alternative method is to conduct a data verification inspection and mark discrepancies on the existing property record cards at the time of inspection.

4.6.3 Sample Classification

The first step in analyzing the results of the data quality study is to classify the reviewed properties into the following four categories:

- **None** - Properties with no discrepancies found between the existing data and the data obtained upon reinspection.

- **Drive-by inspection** - Properties for which a field review would have identified the discrepancies found, *i.e.*, discrepancies are for features such as building style, quality of construction, condition and/or story height.

- **Exterior measurement** - Properties for which an exterior measurement would have been required to identify the discrepancies found.

- **Interior inspection** - Properties for which an interior inspection would have been required to identify the discrepancies found, *i.e.*, discrepancies are for features such as an extra bathroom or fireplace or a finished living area in a basement or attic that was believed to be unfinished.

4.6.4 Statistical Analysis

A statistical analysis must be completed to evaluate the results of the data quality study.

Step 1 **Compute Dollar and Percentage Impact of Discrepancies**

- For each property, calculate the dollar difference between the existing assessed value and the value the property would have had if the data had been accurate.
- For each property, determine the percentage difference by dividing the dollar difference by the existing value.

Example	
Assessed valuation	**$100,000**
Valuation with accurate data	**$115,000**
Dollar difference	**$15,000**
Percentage difference	**15%**
	(15,000 ÷ 100,000)

Step 2 **Calculate Mean Dollar and Percentage Difference**

- For the entire sample, and for each of the discrepancy categories identified in Section 4.6.3 above, calculate the mean dollar and mean percentage difference.
- The mean for each is the average difference and is calculated by adding the difference for each property and dividing that total by the number of properties.

Step 3 **Calculate Median Dollar and Percentage Difference**

- For the entire sample, and for each of the discrepancy categories identified in Section 4.6.3 above, calculate the median dollar and median percentage difference.
- The median for each is found by arraying the differences from high to low (or low to high) and locating the midpoint, with an equal number located above and below.

4.6.5 Corrective Action

The results must be evaluated to determine whether corrective actions are needed.

- **Median over 10%** - Assessors should conduct a full data collection program if the median in any category, class or type of property is greater than 10 percent.

- **Median between 5% and 10%** - Assessors should begin a three or six year, cyclical inspection program.

- **Median below 5%** - Assessors should continue ongoing maintenance and carry out a six or 10 year, cyclical inspection program.

5.0 MARKET ANALYSIS

5.1 Analysis Period

Once arms-length sales have been identified and verified, assessors must conduct a sales analysis to determine assessment level and uniformity. An analysis is

conducted before beginning a mass appraisal program to compare the level and uniformity of existing assessments with the current market and identify the valuation adjustments that need to be made. Once the program is complete, another analysis is conducted to ensure that the resulting values comply with DOR certification standards of fair cash value.

Taxes for a fiscal year are assessed as of the January 1st preceding the fiscal year. January 1 is the effective date of the analysis since assessors are to determine the value of properties as of that date. The sales analysis should be based on sales that occurred during the preceding calendar year.

Example

January 1, 2021 is the assessment date for fiscal year 2022, which begins on July 1, 2021. Calendar year 2020 sales are analyzed for fiscal year 2022.

5.2 Sample Size

Assessors must include all valid arms-length sales that occurred in the analysis period. In the example above, all valid sales that took place in calendar year 2020 would be used.

5.2.1 Minimum Sample

The sample should be at least two percent of the number of parcels in the class, or 10 sales in the class, whichever is greater. For residential properties, a separate analysis should be conducted for each of the following:

- Single-family homes.
- Condominiums.
- Two-family homes.
- Three-family homes.
- Apartment buildings (4 units and above).
- Residential vacant land.

5.2.2 Insufficient Sample

If the sample is less than two percent, or 10 sales, the assessors should include an additional 12 months of sales in the analysis in order to obtain an adequate sample. The additional months can be from either the year before the base year, or the six months before and the six months after the base year. The time period used must be the same for all classes analyzed that require an additional year.

Example

Calendar year 2020 sales of apartment buildings are insufficient. The assessors use the last 6 months of 2019 and the first 6 months of 2021 to obtain an adequate sample. The sales study for any other class requiring sales in a second year such as single-family homes, condominiums, two-family homes, three-family homes or residential vacant land, must also include sales from those months.

5.3 Time Adjustments

Assessors may need to adjust the sales prices forward or backward to the assessment date before conducting the analysis if the real estate market is changing at a dramatic pace. This is only one method of determining the time adjustment. Other methods may be obtained from IAAO's publication, *Property Appraisal & Assessment Administration*.

5.3.1 Inflation/Deflation Rate

To determine a proper adjustment, assessors should first compute the sales/assessment ratio for earlier months of sales.

S/A Ratio Example

An analysis of s/a ratios for 2020 sales shows that:

- **January sales were, on average 100% of the current assessments.**
- **July sales were on average, 95% of the current assessments.**
- **December sales were, on average 90% of the current assessments.**

Deflation occurred at a 10% rate over the year.

$$\frac{90\ \% - 100\ \%}{100\ \%} = -10\%\ \text{(decrease)}$$

5.3.2 Monthly Trend Factor

Adjustments in the sales price are made by computing a monthly adjustment factor. The factor is calculated by dividing the annual inflation rate by 12 months.

Example

Deflation occurred at a 10% rate over the year. The monthly adjustment factor is .83% (10 ÷ 12).

- **October sales occurred 3 months before the assessment date and are adjusted by - 2.5% (-.83 x 3).**
- **May sales occurred 8 months before the assessment date and are adjusted by – 6.67% (-.83 x 8).**

5.4 Ratio Studies

Ratio studies can be used to analyze existing assessments by (1) assessment level and (2) assessment uniformity. Assessment level measures the degree to which the assessments approximate current market value. Assessment uniformity measures the degree to which properties in the same class or subclass are assessed at the same percentage of current market value.

5.4.1 Assessment Level

5.4.1.1 Assessment/Sales Ratio

Assessment level is determined by calculating the median assessment/sales ratio (ASR) for the class or subclass being analyzed. The first step is to calculate the ASR for each property in the sample. The ASR is calculated by dividing the current assessed valuation of the property by the sales price.

An ASR of 1.00 represents 100% market value. An ASR below 1.00 indicates the property is assessed for less than its market value. An ASR above 1.00 indicates the property is assessed for more than its market value.

Example
A property assessed at $100,000 sold for $135,000. The ASR is .74 (100,000 ÷ 135,000). This property's assessment is below market value, *i.e.*, is 74% of its market value.

5.4.1.2 Median Assessment/Sales Ratio

The median ASR is then calculated for the municipality, class or subclass being analyzed. The median is generally a better measurement of assessment level than the mean (average) because it is not swayed by outlying sales.

Step 1	**Calculate ASRs** • Compute the ASR for each sale in sample.
Step 2	**Calculate Median ASR** • Array the ASRs from high to low (or low to high). • The median is the midpoint, with an equal number of ASRs located above and below.

5.4.2 Assessment Uniformity

Assessment uniformity is determined by calculating the coefficient of dispersion (COD) for the class or subclass being analyzed. The COD measures how sales prices for properties within the sample vary from the median ASR.

Step 1	**Calculate Absolute Deviation from Median**
	• Compute the amount by which the ASR for each sale in the sample deviates from the median ASR, *e.g.*, if the median ASR is .97 (97%), the deviations for sales with ASRs of .95 and .99 would both be .02.
	• The deviation for the sale or sales that established the median should be calculated and included.
	  • If 1 sale determined the median, the deviation for that sale would be 0.
	  • If 2 sales determined the median, one at .96 and the other at .98, resulting in a median of .97, the deviations for both sales would be .01.

Step 2	**Calculate Average Absolute Deviation from Median** • Add the absolute deviations of each sale in the sample. • Divide the total by the number of sales. **Example** **The total of absolute deviations for a sample of 25 sales is 2.56 (256%). The average absolute deviation is (2.56 ÷ 25) which equals .102 or 10.2%**
Step 3	**Calculate the Coefficient of Dispersion** • Divide the average absolute deviation by the median ASR. • Multiply that quotient by 100. **Example** **The average absolute deviation is 10.2%. The median ASR is 97%. The COD is (.102 ÷ .97 x 100) which equals 10.5**

5.5 Certification Statistical Standards

5.5.1 ASR and COD Standards

For certification, the sales analysis must indicate the following mass appraisal standards of assessment level and uniformity for each type of property for which there is a sufficient sales sample*:*

Type	Use Classes	Median ASR (Range)	COD (Maximum)
Single-family	101	90-110%	10%
Condominiums	102	90-110%	10%
Two-family	104	90-110%	12%
Three-family	105	90-110%	12%
Apartments	111-112	90-110%	15%
Vacant Land	130-132	90-110%	20%
Commercial	300s	90-110%	20%
Industrial	400s	90-110%	20%
Mixed Use	013-031	90-110%	20%

5.5.2 ASR Differential

Certification standards also require that the difference in the median ASR of the residential subclass with the largest number of parcels and the median ASR of any other subclass of residential property should be five percent or less. The difference in the median ASR of the residential class use code with the largest number of parcels and the median ASR of any other class should be 5% or less, but the median may not go below 90% or above 110%.

Example

The largest or predominate residential class is single-family homes and has a median ASR of 97%. All other residential classes would be required to have a median ASR of 92% to 102% to meet certification standards.

5.6 Sales Stratification

Assessors can and should stratify sales in a residential class into subgroups in order to more precisely identify the factors influencing market value. Subgroups can be based on such factors as:

- Neighborhood.
- Building style.
- Building grade.
- Building age.
- Selling price.

The median ASR and COD should be calculated for each subgroup. The median for each subgroup should fall within five percent of the median of the corresponding residential use class. The COD for each subgroup should be within the range allowed for the class.

6.0 VALUATION METHODOLOGIES

6.1 Valuation Systems

Communities should already have a valuation system in place, commonly referred to as a Computer Assisted Mass Appraisal (CAMA) System. These systems have the ability to apply market changes to all comparable properties within the municipality.

6.1.1 Adjustment of Existing Valuation System

Sales analyses and other market data are used to identify what adjustments need to be made to the existing valuation system for improvements and land. This typically involves updating the CAMA system valuation models, such as land, cost, and depreciation tables. Adjusting these tables maintains the integrity of the existing system because the values of all comparable properties would change at the same rate.

Examples

The existing land valuation schedule would be adjusted if the source of dispersion appears to be neighborhood differences.

The existing building valuation models, base cost tables or depreciation schedules would be adjusted if the source of dispersion appears to be a specific style or age of property.

6.1.2 Trending or Factoring Existing Valuations

In some cases, sales analyses may be used to adjust the assessments of a group of properties by a uniform percentage, rather than adjusting the CAMA system valuation models. This approach is effective when the underlying data is current and accurate and when separate trending factors are developed for comparable properties (such as by location, age, style, etc.) that appreciated or depreciated in value at the same rate. It may be an inappropriate appraisal technique where values have been previously factored and applying another factor would magnify underlying inequities.

Example

Sales of homes in a particular neighborhood indicate an ASR of 90%. The current valuations of all homes in a particular neighborhood are increased by 10%.

6.2 Residential Property

The sales comparison approach *or "market approach"* is most often relied upon to value residential properties.

However, it's important to remember that when using a mass appraisal system, the **unique components of an individual property** have to be identified and valued, such as number of bathrooms, heating system, finished basement, etc. Within the database, there are pricing tables. These tables provide a base price per square foot for each style and grade of a dwelling. There are also tables used to identify the unique attributes of an individual property that are applied to help fine tune the value.

Usually this is calculated applying the **replacement cost new of the structures, less the depreciation and adding in the *market value* of the land. "RCNLD "is a common acronym used to describe Replacement Cost New Less Depreciation."** Thus, the **total value will equal RCNLD of the building(s) plust the Land Value.** Quite often, assessors will refer to this approach in CAMA as applying "Market Adjusted Cost", but essentially, they are relying on the market sales for the valuation model.

Example

Subject property is a 20-year-old, 2,000 square feet (SF) single family home.

Updated construction costs are $175/SF. The RCN = $250,000 (2,000SF x $125/SF).

Updated depreciation tables indicate a 20-year-old home has lost 10% of its value.

RCNLD = $225,000 [250,000 – 25,000 (10% of 250,000)].

Residential house lot market value is $175,000.

Final value is $400,000 (225,000 (RCNLD) + 175,000(Land Value)).

6.3 Vacant and Improved Land

The approach to valuing vacant and improved land depends on the sales database. The most reliable method is to analyze sales of vacant, raw land. Additionally, a land residual analysis should be conducted. This method subtracts the value of all improvements on a parcel from its sales price leaving an indicated land value. The results of both approaches should support the adjustments the assessors make to existing land valuation schedules for all classes to ensure that their application reflects current market value.

Example

A single-family home sells for $300,000.

The RCNLD = $200,000.

The residual or indicated land value is $100,000.

6.4 Commercial and Industrial Property

Commercial and industrial properties are bought and sold on investor expectations. In valuing these properties, adjustments are specific to the approaches to value that were used to determine their original base values.

Certification guidelines require that assessors use at least two valuation methods to estimate the values of all investment properties.

The three methods used to value commercial and industrial properties are:

6.4.1 Cost Approach

This method calculates the current cost to replace the building, adjusts for depreciation due to age or condition and adds a separately determined land value.

Example

Subject property is a 10-year-old, 20,000 SF office building.

Updated construction costs for this type of structure are $50/SF.

The RCN = $1,000,000 (20,000SF x 50/SF).

Updated depreciation tables indicate a 10-year-old office building has lost 10% of its value.

RCNLD = $900,000 [1,000,000 – 100,000 (10% of 1,000,000)].

Commercial land value is $200,000.

Final value is $1,100,000 (900,000 + 200,000).

6.4.2 Income Approach

This method requires the assessor to estimate the rental income from a property and capitalize that income into an estimate of current value. The approach recognizes that potential buyers demand property because they anticipate a future income stream. Assessors should collect current information on a community and regional level about rents, income, expenses, financing rates and terms and other data needed to develop capitalization rates. The necessary information can be obtained from a questionnaire, interviews with taxpayers, or from third party sources.

The formula that relates income to value under this approach is:

Value (V) = Income (I) ÷ Capitalization Rate (R).

Example

Subject property is expected to provide a perpetual net income of $50,000 a year.

The rate of return on investments of similar safety is 10%.

Final value is $500,000 (50,000 ÷ .10).

6.4.3 Market Approach

This method analyzes recent commercial and industrial sales to develop units of value. These unit values may then be applied to comparable non-sold properties. Sales from surrounding communities with comparable

property bases and market influences may also be used for analytical purposes.

Example

A 40,000 SF office building sells for $3,000,000.

The dollar per square foot unit of value is $75/SF (3,000,000 ÷ 40,000SF).

7.0 REASSESSMENT PROGRAMS AND WORKPLANS

7.1 Interim Years

Assessors must value all property at fair cash value as of January 1 each year. In the years between the five year certification review of their assessments, this means they must adjust valuations to reflect changes in the tax base due to new construction, alterations, demolitions or other physical changes. They must also monitor the market and, if there has been a change in market conditions, adjust their valuations as needed, so that all property valuations reflect current fair cash value.

7.1.1 Valuation Adjustment Plan

Assessors may undertake or complete a valuation adjustment program in years between their five year certification review without the prior review or approval of BLA. Appropriate analytical and appraisal methods must be used to develop any valuation adjustments. Once the program is completed, the new valuations must be equitable and consistent within and between all property classes, *i.e.*, they must meet the same mass appraisal measures of assessment level and uniformity as required for certification. See Section 5.5 above.

Example

Initial analysis indicates the following ASRs for subclasses of residential properties:

- **75% Single family.**
- **70% Condominiums.**
- **95% Vacant land.**
- **96% Two-family.**

Assessors must adjust single family and condominium valuations. After adjustments are made, all residential subclasses must have ASRs between 90-110% and the ASRs must be within 5% of each other.

Assessors must prepare and retain documentation supporting the new valuations. This documentation might include, for example, income, expense and capitalization rate analyses, sales ratio studies or any other data

that support the type and extent of the valuation changes made by the assessors.

7.1.2 Valuation Adjustment Report

Assessors must report the results of their analyses to BLA whether or not any valuation adjustments are made. The report is made on the form LA-15 "Interim Year Adjustment Report" in Gateway (see page 2-23). It should be submitted as early as possible during the tax rate process, but must be received by the time the Form LA-4 "Assessment/Classification Report" is submitted.

7.2 Certification Year

Assessors must develop a reassessment program for meeting certification requirements and submit a workplan to accomplish it to BLA.

7.2.1 Evaluate Current Capability

Assessors must thoroughly evaluate the resources available to them to complete a reassessment program, including the following:

7.2.1.1 CAMA System

The current CAMA system must be evaluated to determine if it has the capability to maintain the database, update the current valuation tables and produce required certification documentation.

7.2.1.2 Personnel

A reassessment program requires a substantial amount of time and labor. Assessors must determine if they have sufficient, qualified personnel to complete the program in-house in a timely manner. In-house personnel must have the appraisal knowledge, training and experience, and working knowledge of the CAMA system required to complete assigned tasks.

7.2.1.3 Professional Assistance

Assessors may contract for professional assistance if they determine that in-house resources are not sufficient to complete all or portions of the program. Assessors may select from a wide range of data processing, appraisal, consulting or other professional services to revalue property, update an existing valuation system or otherwise assist them. Assessors are legally responsible for ensuring that valuations meet legal standards even if professional assistance is used.

If the plan includes any professional assistance, assessors should review procurement procedures and standards with their procurement officer and municipal counsel. The Uniform Procurement Act[4] covers procurement of professional services

generally, but the specific bidding procedures that apply depend on the type and value of the contract. Additional information is available from the Office of the Inspector General at **www.mass.gov/ig**. There may also be local bidding provisions that apply.

Assessors should consider a number of factors in addition to cost when choosing a contractor, including the contractor's:

- Familiarity with the municipality and area.
- Familiarity with the CAMA system used.
- Experience working with municipalities of similar size and complexity.
- Performance record.

7.2.1.4 Budget

Assessors must review the financial resources needed to implement and complete the program, prepare a program budget and request any additional funds needed. Funds should be appropriated two years in advance of the year certification is scheduled.

7.2.2 Prepare Workplan

Assessors must determine the program components needed to meet certification standards based on their analysis of market trends, data quality, CAMA system capability and BLA certification directives.

They must then prepare and submit a workplan in Gateway (see page 2-24) to document program components, personnel and timetable. The workplan is a valuable tool that allows assessors to:

- Define specific project tasks.
- Manage their limited human and financial resources.
- Monitor the progress of the program.

The workplan submitted to BLA includes following:

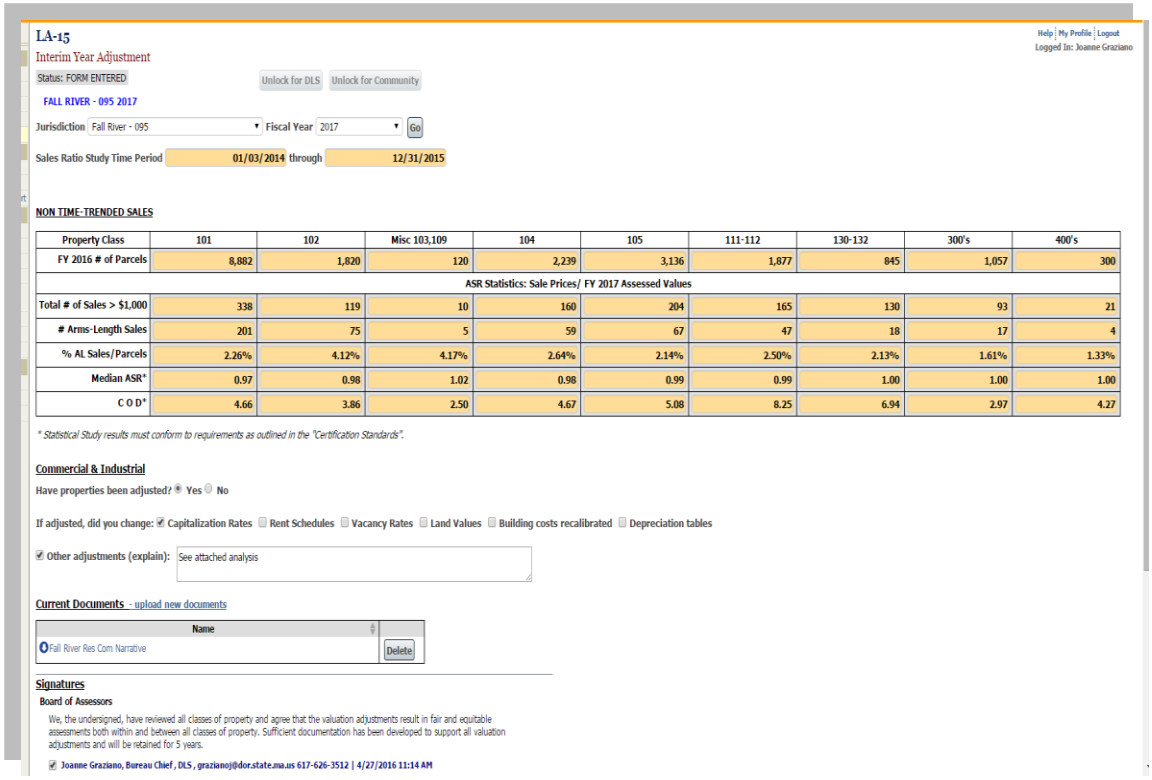
- Data maintenance and valuation system information.
- Program data collection, valuation and field review components for all property classes and who is responsible for completing them, in-house personnel or a contractor.
- Public disclosure activities (Individual impact notices required for certification only for full revaluation programs, *i.e.*, new data collection and valuation system, or, to second-home owners).
- Appropriation status.
- Schedule for completing major steps in certification process. BLA will not accept a workplan unless a work schedule with projected completion dates is submitted.

For their own monitoring purposes, assessors should prepare a more detailed projectworkplan based on realistic estimates of the necessary work and time needed to complete it.

[1] G.L. c. 59, § 38.
[2] *Boston Gas Company v. Assessors of Boston,* 334 Mass. 549 (1956) defines fair cash value as "fair market value, which is the price an owner willing but not under compulsion to sell ought to receive from one willing but not under compulsion to buy."
[3] G.L. c. 59, § 2A(a), as added by St. 1989, c. 653, § 40.
[4] G.L. c. 30B.

LA15 Interim Year Review

The LA15 is located on the LA3 Tab in Gateway. To complete the submission process for the Interim Year Adjustment program, you must go to the **LA15** form. The Parcel Counts for the LA15 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

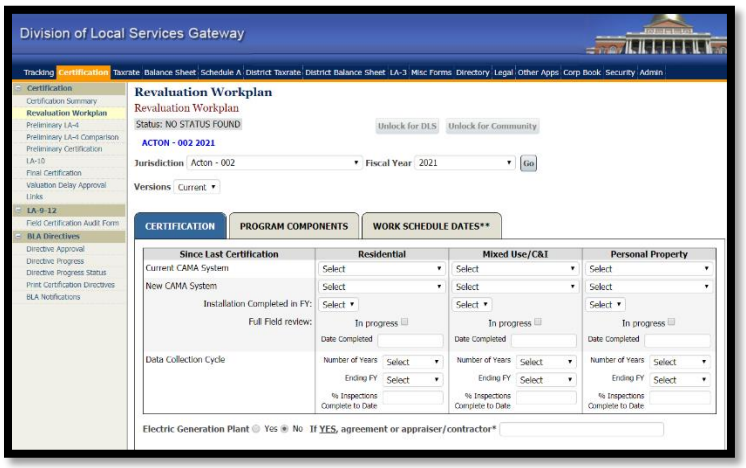
We, the undersigned, have reviewed all classes of property and agree that the valuation adjustments result in fair and equitable assessments both within and between all classes of property. Sufficient documentation has been developed to support all valuation adjustments and will be retained for 5 years.

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

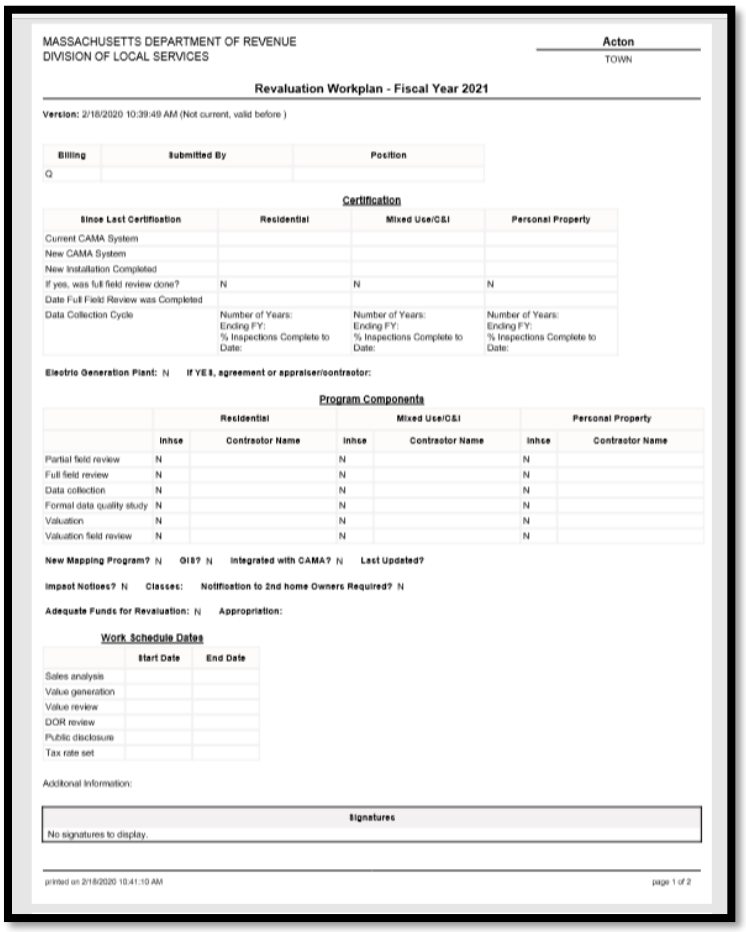
After reviewing the resulting sales statistics for compliance with program requirements, and answering the questions pertaining to the C & I updates, if ready for formal submission, the majority of the Board of Assessors (or its authorized designee) should save and sign and submit the form at the bottom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

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

I. **Revaluation Workplan is submitted in Gateway:**



Printed version .pdf



MASSACHUSETTS DEPARTMENT OF REVENUE
DIVISION OF LOCAL SERVICES

Acton
TOWN

Revaluation Workplan - Fiscal Year 2021

Version: 2/18/2020 10:39:49 AM (Not current, valid before)

Billing	Submitted By	Position
Q		

Certification

Since Last Certification	Residential	Mixed Use/C&I	Personal Property
Current CAMA System			
New CAMA 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:

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		

Additional Information:

Signatures
No signatures to display.

printed on 2/18/2020 10:41:10 AM page 1 of 2

MASS APPRAISAL
ADDITIONAL RESOURCES

The following are additional resources on Mass Appraisal produced by DLS that are available on our website: **www.mass.gov/dls**.

- ***DLSLAW Library*** – A searchable data base of current DLS Informational Guideline Releases (IGRs), Local Finance Opinions (LFOs) and Bulletins that is accessed by clicking the "Search DLSLAW Library" link appearing under "Public Reports and Databases" on the **DLS Gateway** login page.

- ***Certification Standards (Guidelines for Development of a Minimum Reassessment Program)***(***April 2019***) - Explains requirements for developing reassessment programs that will result in fair cash values meeting triennial certification requirements. Addresses sales analyses, property inspections, valuation methodologies and public disclosure programs. **Supplements the course handbook.**

- ***Property Type Classification Codes, Non-Arms Length Codes and Sales Report Spreadsheet Specifications (April 2019)*** - Guidelines that establish coding system assessors must use in designating usage classification of property and documenting sales analysis. **Supplements the course handbook.**

- ***Guidelines for Annual Assessment and Allocation of Tax Levy*** – Annual Informational Guideline Release (IGR) that details standards and procedures for annually determining property tax assessments, including five-year certification, classifying property according to use and allocating the tax levy among the property classes.

- ***In-house Revaluation Cost-Benefit Analysis (March 2003)*** – Provides framework for local assessors to evaluate the activities required to complete an in-house revaluation program and determine the associated costs.