



Building Tune-up Guide

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Introduction

This guide is designed to help building owners and managers meet the building tune-up requirements of the City of Madison's Building Energy Savings Program (BESP). Per Section 29.40 of the Madison General Ordinances, commercial buildings 50,000 sq. ft. and larger are required to tune-up every four years. Buildings that are already very energy efficient or buildings that have recently taken actions that substantially improve energy efficiency may be eligible for an alternative compliance pathway. The [Covered Buildings List](#) includes all buildings that must comply with the Building Energy Savings Program and shows the year of their next required tune-up.

A building tune-up is a process of reviewing energy systems, controls, and maintenance practices, and making minor adjustments and fixes as needed to bring them up to a good state of performance. This guide provides step-by-step instructions for completing the tune-up process, including filling out and submitting the Tune-up Reporting Workbook.

[Click here to download the Tune-up Report Workbook from the BESP website.](#)

Compliance Options

Buildings owners can choose between four compliance pathways:

1. **Complete a building tune-up.**
2. **Choose an Alternative Compliance Pathway.** Buildings that are already highly energy efficient, or those that have recently undergone improvements that substantially improve energy efficiency can apply for an Alternative Compliance Pathway by submitting proof of one of the follow conditions or certifications:
 - a. Certified ENERGY STAR score of +75 in the year preceding tune-up
 - b. LEED Gold or Platinum (O+M) within last 3 years
 - c. Complete full commissioning or retro-commissioning within last 3 years
 - d. Net Zero Energy Certification within last 3 years
 - e. +10% improvement in energy efficiency over the last 4 years
 - f. Completing ASHRAE Level II audit and implemented recommendations with a simple payback of <2 years within last 2 years
 - g. Demonstrate building has energy use intensity (EUI) of 20 kBtu/sq. ft. for at least 2 of the last 3 years
 - h. Received any of the following awards within the last 3 years:
 - i. Dane County Climate Champion recognition in the category of Building Energy Use



- ii. Better Buildings Goal Achievers recognition from the U.S. Department of Energy's Better Buildings Challenge
- iii. BOMA 360 designation and received +6 points for Energy Star Benchmarking, Building Energy Management, and Energy Audit and System Commissioning
- iv. BOMA TOBY award in the Office or Earth categories with +5 or +6 points, respectively, for Benchmarking & Performance Rating

3. Apply for a 1-year extension if you meet one of the qualifying criteria:

- a. Recent change in building ownership
- b. +50% of the building is vacant and not leased for at least 6 months of the previous year
- c. Building is undergoing a major renovation
- d. A building's owner is experiencing financial hardship such as bankruptcy or foreclosure

4. Apply for an exemption if the building is being demolished.

If you are interested in pathways 2, 3, or 4, visit the [program website](#) for more information.

All buildings completing a tune-up to comply with the Building Energy Savings Program must complete and submit a Tune-up Report Workbook to the City using the [Building Owner Portal](#).

How to Complete a Tune-up

The building tune-up process has 4 major steps that are usually completed over the course of several weeks. Tuning-up a building the first time requires coordination with building staff, information gathering, and in some cases, collaboration with service providers, so make sure to allow adequate time to complete all the tasks noted below. Start the process of tuning-up your building as early as possible to ensure that the Tune-up Report Workbook can be completed and submitted to the City by the October 31 deadline.

1. Select a Tune-up Specialist

Tune-up must be carried out by a qualified tune-up specialist or a team under their supervision. It is the tune-up specialist's job to make sure that building systems are operating per the needs and expectations of the building owner and are not in need of maintenance or repair. A tune-up specialist can be on-site staff or a contracted service provider, as long as they have the proper qualifications.

A tune-up specialist must have at least three years of experience in building commissioning, tune-ups, energy auditing, or building energy system management, and hold one of the following certifications:



- Professional Engineer (PE) in Mechanical or Architectural Engineering licensed in Wisconsin
- [Building Operator Certification \(BOC\) Level II](#) administered by Midwest Energy Efficiency Alliance (MWEEA)
- Certified Energy Manager (CEM), Certified Building Commissioning Professional (CBCP), or Existing Building Commissioning Professional (EBCP), issued by the [Association of Energy Engineers \(AEE\)](#)
- Building Commissioning Professional (BCxP) or Building Energy Assessment Professional (BEAP), issued by the [American Society of Heating, Refrigerating, and Air-Conditioning Engineers \(ASHRAE\)](#)
- Existing Building Commissioning Process Provider (EBCxP), Qualified Commissioning Process Provider (QCxP), Accredited Commissioning Process Authority Professional (CxAP), Accredited Commissioning Process Manager (CxM), Accredited Commissioning Process Technical Service Provider (CxTS), and Accredited Green Commissioning Process Provider (GCxP) issued by the [University of Wisconsin-Madison College of Engineering's Interdisciplinary Professional Programs](#)
- [Certified Commissioning Professional](#) administered by the Building Commissioning Certification Board
- [Commissioning Authority \(CxA\)](#) administered by the AABC Commissioning Group (ACG)
- [Energy Management Professional \(EMP\) certification](#) issued by the Energy Management Association (EMA)
- [Certified Healthcare Facility Manager \(CHFM\)](#) issued by the American Hospital Association

2. Building Assessment

The tune-up specialist will use the Tune-up Report Workbook as a guide for assessing the building's systems or subsystems that use energy or impact energy consumption, including:

- building envelope;
- HVAC systems (heating, ventilation, and air conditioning);
- domestic hot water systems, including water softening equipment;
- and electrical and lighting systems.

For each system, the following elements (if present) are checked to make sure they are meeting the specifications defined by the building owner:

- Sensors



- Schedules
- Set points
- Outside air control/ventilation
- Equipment controls
- Maintenance or repair needs
- Design recommendations

First, the tune-up specialist will connect with the building owner/manager to understand the building’s characteristics and operational needs – that is, the way the building should be running to meet the current needs of occupants. In commissioning and retro-commissioning processes, this is often referred to as establishing the ‘building owner’s requirements.’ These are often determined by commitments to tenants in leasing documents and informed by the building’s design or specific use(s).

The tune-up specialist also collects basic building information, reviews benchmarking data, and analyzes energy bills to understand current building energy performance.

Then, the tune-up specialist does a building walk-through to check building energy systems and identify “corrective actions” to improve energy efficiency or fix operational problems with building systems. Corrective actions may be required or voluntary.

- **Required corrective actions.** That means a tune-up specialist checks to see if these elements meet the specifications determined by the building owner or manager. A ‘deficiency’ is when an element does not meet the building owner’s requirements or is in need of maintenance or repair.
 - An operational adjustment to the schedule, settings, or calibration of an element is required only if they are found to be outside of building owner/manager specifications. An appropriate operational adjustment can be made to existing equipment without purchasing new equipment.
 - This also means that repairs or basic maintenance on equipment must be made if needed. An appropriate maintenance action is one that is commonly considered to be standard or normal maintenance.
- **Recommended corrective actions.** That means that a tune-up specialist looks at these elements and provides recommendations that, if implemented, would reduce energy waste, help equipment run better/last longer, or improve the overall energy performance of the building.

These findings are documented in the Tune-up Report Workbook and shared with you, the building owner.



3. Implement and Verify Corrective Actions

Required corrective actions must be implemented by in-house staff, service providers, or the specialist. The specialist verifies implementation and ensures systems function as intended. Voluntary actions may be completed at any time.

Implementation and verification may require site visits by one or more service providers. Please allow ample time to complete this step in the tune-up process.

4. Electronically Submit the Tune-up Report Workbook

Once all required corrective actions have been verified, the tune-up specialist completes and reviews the tune-up report with you, the building owner. Both the tune-up specialist and the property owner, or their designee, must sign off on the tune-up workbook. The building owner is responsible for ensuring that the Tune-up Report Workbook is submitted electronically to the City through the Building Owner Portal by the October 31 deadline.

Filling Out the Tune-up Report Workbook

The BESP Tune-up Report Workbook is a spreadsheet built in Excel (.xls) format and is organized into 10 tabs or pages. The tabs are labelled A-I. Section A is the instructions page for the document, and the subsequent tabs (B-J) must be completed to show compliance with the tune-up requirement. Cells that are red in color require data to be entered into them. Fields that are not colored or white only require data entry in specific circumstances. See the instructions on each tab of the report for more information. You can find these instructions or tips by hovering your cursor over the red triangle in the upper right corner of certain cells. If a cell does not have a red triangle, it does not have further guidance.

For each element assessed (see column B in the tabs E-H), the tune-up specialist will note if there is a deficiency - a 'deficiency' is when an element does not meet the building owner's requirements or needs maintenance or repair. If a deficiency is found, the color of cells in column C indicate whether the action to correct the deficiency is required or voluntary.

- Corrective actions in green are required.
- Corrective actions in yellow are voluntary.

There are also optional notes sections on Tabs E-H for use by the tune-up specialist for tracking and/or for communications and recommendations intended for the building owner/operator.

Detailed Guidance For Specific Tabs

Instructions is an introductory page that orients the user to the report template. It contains similar information as this guide.



A. General Building Info & B. Tune-up Specialist Info. These tabs are where basic information about the building, the owner, the tune-up specialist, and, if applicable, the building manager or owner’s representative is collected. It does not require a site visit. This information will be used to verify qualifications and assist in any required follow-ups that may occur during the review process.

C. Building Characteristics. A site visit to the building is required to record basic information about major building components in this section, such as primary heating, cooling, ventilation, and domestic hot water systems. The tune-up specialist is also required to characterize the building envelope and whether the building has a building automation system on this page.

Also on this tab, the tune-up specialist must list the 5 most energy intensive space uses for the building using Energy Star Portfolio Manager’s [classifications](#) (i.e. office, retail, etc.). Up to 5 uses can be listed and should be ordered from the largest energy use to the smallest use. For example, a 100,000 square foot (sq. ft.) mixed use commercial building that is mostly office but also contains retail space would be characterized as:

- 85,000 sq. ft. Commercial Office
- 15,000 sq. ft. Retail

D. Summary of Tune-Up Findings. This tab is typically completed last, once all portions of the building have been reviewed and all energy saving opportunities in both the ‘required’ and ‘voluntary’ categories have been assessed. The tune-up specialists will identify and note here the five best opportunities that will result in the most savings from both categories.

The tune-up specialist must also summarize their approach to sampling building elements if sampling was used in the Tune-Up process. Sampling may be applied to assessing multiple pieces of repetitive, identical equipment (e.g. fan coils, plumbing fixtures, or lighting sensors on the same schedules). The sample must include at least 15 percent of each identical piece of equipment, but no fewer than ten (10) of each in buildings 50,000 - 99,999 sq. ft. and no fewer than 20 in buildings 100,000 sq. ft. or larger.

As noted above, if sampling is employed, the tune-up specialist must describe the sampling approach. Example responses may include: full census (no sampling); 15% by floor area; 15% by equipment; or response may reference a commonly used industry standard such as the [International Performance Measurement & Verification Protocol](#) and its guidance for determining energy and water savings.

E-H. Assessment Tabs for Major Building Components. For each tab, the tune-up specialist must first assess ALL elements in the Assessment Element column (column B). For each Assessment Element, the tune-Up specialist must indicate whether a deficiency was observed



or not using the Tune-Up Finding drop-down list (column D). This is required for all Assessment Elements.

A 'deficiency' is when an element does not meet the building owner's requirements or needs maintenance or repair.

- An operational adjustment to the schedule, settings, or calibration of an element is required only if they are found to be outside of building owner/manager specifications. An appropriate operational adjustment can be made to existing equipment without purchasing new equipment.
- This also means that repairs or basic maintenance on equipment must be made if needed. An appropriate maintenance action is one that is commonly considered to be standard or normal maintenance.

Implementation of corrective action(s) is required when the Corrective Action field (column C) is highlighted in green, or voluntary when highlighted in yellow. Implementation may be completed by the tune-up specialist or someone else qualified, such as in-house staff or another vendor. The tune-up specialist must verify the completion of the work and indicate whether the corrective action was implemented in the Status of Tune-Up Corrections drop-down list (column E). If no deficiency was observed, no response is required in column E.

When the End Condition/Current Condition field (column H) is not greyed out, the tune-up specialist will describe either the end condition or current condition. If a deficiency was observed and the corrective action(s) has been implemented, this should represent the end condition post implementation. Otherwise, this should represent the current condition. Please make sure to address the topics described in column G.

The Description of Extenuating Circumstances field (column I) should be filled out when there are reasons preventing the corrective action from being done.

I. Certification Page. When tabs C-H are complete, the tune-up specialist will digitally sign the report by typing their full name and date in the requisite boxes, certifying that they have shared the tune-up findings with the building owner and that all the information and statements in the workbook are correct to the best of their knowledge.

J. Submittal Page. When all other tabs are complete, the property owner or their designee will digitally sign the report by typing their full name and date in the requisite boxes, certifying that they have reviewed the Tune-up Report Workbook and approve its submittal to the City of Madison.



Submitting the Tune-up Report Workbook

To submit the Tune-up Report Workbook, you must log in to the BESP [Building Owner Portal](#). If your building is required to tune-up during the current year, you will be prompted to submit your tune-up documentation after your benchmarking submission is complete. You will be able to select from all of the different compliance options via a drop-down menu. Select the ‘tune-up report’ option. Once this is selected, the Building Owner Portal will prompt you to upload your tune-up report in .xlsx format. Note, all reports must be saved in .xlsx format. Other formats such as PDF or .csv will not be accepted. You can upload your tune-up report by selecting the document ‘upload button’. If your document is successfully uploaded, you will instantly receive a “success” message in the portal.

If you have questions about any part of the tune-up process or require assistance, contact the BESP Help Desk at: <https://madisonbesp.opentech.eco/support/tickets/new>

