

# Existing Building Condition Assessment Guide

## PUBLIC COMMENT DRAFT

(March 11, 2024)

### PREFACE

This Guideline defines the minimum timeframe and schedule for building maintenance and periodic assessments to occur, in order for an interested party (*Owner, Manager, AHJ*) to identify if any visible current building conditions are in need of attention by the *Code Official, a Qualified Professional, and/or a Registered Design Professional* for action, supplemental assessment, or evaluation for repair. Such building maintenance and professional assessments and their associated recommended timeframes are outlined herein. This Guideline presents three types of assessments: Maintenance, Supplemental, and Periodic *Condition Assessments*, which are recommended to be performed as described herein, at a minimum. This Guideline is not intended to be used for any other purpose. This Guideline and its recommended timeframes for the assessments are intended to provide an interested party with a clear path from “item observed” during a maintenance assessment; to “item needing attention” during a visual assessment; to “item resolved” with an evaluation (which is not within scope of the Guideline, rather is the purview of International Existing Building Code). This Guideline also provides several appendices that include additional resources for the user.

To accommodate the standardization of this guideline into local law, the text passages of the guideline may need to be interpreted in a specific manner. Where definitive procedures are needed, mandatory language will become necessary and the following substitutions, definitions and rules can be applied to conform to definitive procedures with mandatory language.

☑The words “may,” “should,” “could” and “can” are permissive in nature. Where definitive procedures must be followed, the mandatory words of “must,” “shall” and “will” should be interpreted or substituted for the permissive words found in the guideline as follows:

#### Permissive Words

may



should



could



#### Mandatory Words

must

shall

will

☑The use of “and” in a provision means that “all” elements in the provision must be complied with, or must exist to make the provisions applicable.

☑Where compliance with one or more elements suffices, or where existing of one or more elements make the provision applicable, “or, (rather than “and”) applies.

## INTRODUCTION AND PURPOSE

### 1.1 Introduction

Maintaining the integrity of the structural, fire and life safety, envelope, plumbing, mechanical, electric, and fuel gas components and systems of a building throughout its life is of paramount importance to maintain the health, safety and welfare of the occupants and public. Because building systems work together, it is not enough to just consider one system while overlooking others. The fundamental purpose of an Existing Building Safety *Condition Assessment* program is to establish the minimum timeframes for visual condition assessments, therefore enabling the building *owners* to reasonably maintain their buildings, such that any potential or current *unsafe* conditions have been noted and remedied. This document is intended to be a guide and under no circumstances are these minimum recommendations intended to relieve building *owners* of their responsibilities under applicable codes, laws, ordinances, or regulations nor supplant proper professional judgment of those performing the *condition assessments*.

This guide provides the framework for an Existing Building *Condition Assessment* program that can be used by jurisdictions interested in developing and implementing a program to supplement provisions in other codes (such as the International Existing Building Code (IEBC), the International Property Maintenance Code (IPMC), and the International Fire Code (IFC). While this guide is not written as a complete template nor in model ordinance language, it is meant to convey important concepts related to *condition assessments* of existing buildings that should be considered by jurisdictions as well as building *owners*.

In general, codes such as the IPMC and IFC require *owners* to continually maintain their buildings in good repair- including the structural components; the exterior building envelope (including the roof); the electrical, plumbing, mechanical, and fuel gas equipment and systems; and the operational capacity of life safety systems (such as means of egress and active and passive fire protection systems- so as to not pose a threat to safety, health, and welfare of occupants and the general public. This guide recommends the minimum timelines, action, and assessment types that can be performed in order to promote adequate building maintenance.

It is important to note that a *condition assessment* inherently is limited to what can be readily seen and, due to that fact, may not sufficiently identify all current *unsafe* conditions or conditions that might lead to a future *unsafe* condition. In some cases, signs of an *unsafe* condition are hidden by finished surfaces and would not be noticed without removal of such finishes, which is beyond the scope of a visual *condition assessment*. Furthermore, a visual *condition assessment* does not consider other conditions that may contribute to potential *unsafe* conditions including but not limited to whether the original design complies with the applicable code at time of construction permit, whether the original construction or use has deviated from the permitted design, whether there are defects in the original construction, whether there have been unpermitted changes or additions to the original permitted design.

Depending on certain parameters affecting a particular building or any building in a particular region, including but not limited to local climate conditions and exposure to natural hazards, occupancy type, materials, structural systems, era of construction, the local jurisdiction developing and implementing such a program may need to consider additional types of assessments or investigations beyond a visual *condition assessment* that may be appropriate or required to achieve a more thorough evaluation of the existing conditions. Finally, this guide is not intended to serve as a replacement for requirements outlined in the IPMC including requirements intended to maintain a minimum level of safety and sanitation for both the general public and the occupants of a structure.

### 1.2 Scope

The scope of this document is to establish the base framework for an Existing Building Safety *Condition Assessment* Program, by recommending minimum timeframes for visual *condition assessments* throughout the lifespan of the building. The recommended minimum timeframes and visual *conditions assessments* presented herein are intended to assist a building owner if addressing items that identify and addressing potential or current *unsafe* conditions. This document is intended to be a guide and under no circumstances are these minimum recommendations intended to relieve building owners of their responsibilities under applicable codes, laws, ordinances, or regulations nor supplant proper professional judgment of those performing the condition assessments.

The visual *condition assessments* discussed herein should be performed on a regular and predetermined schedule, beginning with issuance of the certificate of occupancy or other similarly recognized authorizations for occupancy by the Authority Having Jurisdiction (AHJ). The recommendations in this guideline provide a framework for AHJ's to consider as a baseline as they develop an annual maintenance and periodic assessment schedule.

### 1.2.1 Condition Assessment.

A *condition assessment* is a tool used to identify neglect, damage, dilapidation, *deterioration*, or disrepair. Unusual conditions and/activities that reduce the service-life of a building or signify the end of the service life of a building may warrant shorter timeframes for the assessments, and more diligent attention than routine maintenance. AHJ's should closely consider local conditions and adjust the recommended time frames accordingly.

### 1.2.2 Items that are not in Scope of this Document.

Evaluation and repair existing building condition(s) are governed by existing building codes such as the International Existing Building Code (IEBC) and such evaluations and repairs are not within the scope of this document. Evaluations include detailed to determine code compliance and/or adequate demand-capacity ratios, the results of such contribute to the determination of necessary repairs or remediations. These guidelines do not cover any intent to verify that construction follows the design documents used to build the structure. If *structural distress* is exhibited, it is recommended that an in-situ evaluation be performed by a qualified individual to understand the reason for such distress. This Guideline presents three types of assessments: Maintenance, Supplemental, and Periodic *Condition Assessments*, which are recommended to be performed as described herein, at a minimum. This Guideline is not intended to be utilized for any other purpose.

## 1.3 Methodology

It is recommended that *qualified professionals* perform the *condition assessment(s)* as described herein. Multiple professionals with varying areas of expertise may be required to assess the building and all systems. The *condition assessment* should be conducted throughout all habitable and non-habitable areas of the building, as deemed necessary by the assessing professional. During the assessment, the professionals should critically consider visible cues that may be indicative of *neglect, damage, dilapidation, deterioration, or disrepair*. The IEBC contains provisions for repair, alternations, change of occupancies addition to, and relocation of existing buildings. The IFC includes existing building provisions for emergency planning and preparedness, fire and smoke protection features, fire safety provisions for interior finishes, and operation, testing and maintenance of fire protection systems. The IFC further contains provisions for life safety systems such as means of egress. The IPMC requires both the interior and exterior of the building to be maintained in good repair, structurally sound, and not pose a threat to public health, safety and welfare. *Unsafe* structures and equipment are addressed in Section 109 of the IPMC. Below are excerpts from the 2024 edition of the IPMC:

**109.1.1 Unsafe structures.** An *unsafe* structure is one that is found to be hazardous to the life, health, property, or safety of the public or the occupants of the structure by not providing minimum safeguards to protect or warn occupants in the event of fire, or because such structure contains *unsafe* equipment or is *dangerous*.

**109.1.2 Unsafe equipment.** *Unsafe* equipment includes any boiler, heating equipment, elevator, moving stairway, electrical wiring or device, flammable liquid containers or other equipment on the *premises* or with in the structure that is in such disrepair or condition that such equipment is a hazard to life, health, property, or safety of the public or occupants of the *premise* or structure.

**109.1.3 Structure unfit for human occupancy.** A structure is unfit for human occupancy whenever the *code official* finds that such structure is *unsafe*, unlawful or, because of the degree to which the structure is in disrepair or lacks maintenance, is unsanitary, vermin or rat infested, contains filth and contamination, or lacks ventilation, illumination, sanitary or heating facilities or other essential equipment required by this code, or because the location of the structure constitutes a hazard to the occupants of the structure or to the public.

Section 109.1.5 of the IPMC further identifies specific hazardous conditions or defects that must be remedied to provide the requisite level of safety to the occupants.

An important criterion for the establishment of the existing building *condition assessment* program and frequency is based on one or more of the following characteristics:

- Age of the building (or era of construction) and applicable code at time of construction
- Construction type
- Construction materials and method(s) of construction
- The building system or component
- Environmental factors for the building's location
- History of environmental hazards or other damaging events

Table 4 provides recommended thresholds where *condition assessments* are required and guidance for the *condition assessment* types and frequencies based on the parameters above.

#### 1.4 Planning and Preparation

Planning and preparation can help provide useful documents and information when performing a visual building assessment and can include research and collection of pertinent building documents and an interview with the building *owner*, construction, or maintenance management personnel familiar with the building.

#### 1.5 Building Systems:

##### 1.5.1 Structural Condition Assessment

Structural *condition assessments* are performed in the accessible, available, and exposed areas of the building in order to determine whether *structural distress* or an *unsafe* structural condition exists in an existing building. A condition of *structural distress* refers to a condition that is observed during the time of the assessment which may negatively affect the structural integrity of the building. An *unsafe* structural condition refers to a condition that is observed during the time of the assessment that meets the definition of *dangerous*. In general, the scope of the visual structural *condition assessment* described herein is limited to an initial visual observation of the currently exposed, accessible, and available conditions to determine if the capacity of structural elements may be affected by any *structural distress* or if *dangerous* structural conditions are present.

Conditions that may negatively affect the structural integrity of a building include any structural element, material or assembly of a building that exhibits visual signs of decreased structural capacity or other indication of lack of adequate capacity. Structural integrity may be reduced by observed *structural distress* or may be reduced by an observed condition that could lead to *structural distress* in the future.

The *condition assessment* does not include detailed assessment or analysis of whether elements are capable of safely supporting loads that are currently imposed or are required by past or current building codes. Similarly, the visual condition assessment is not a validation that the original design and construction nor any additions or alterations met the applicable codes at the time of construction nor current codes.

Following the completion of the structural *condition assessment*, additional assessment and/or evaluation may be recommended or necessary. Depending on the conclusion(s) of the structural visual *condition assessment*, the following actions are likely to be recommended by the *registered design professional*:

- “Indication of *structural distress* observed” likely prompts additional structural *condition assessment* by means of exploratory, nondestructive, or destructive testing in order to confirm or verify if *structural distress* is present.

- “Actual *structural distress* observed” likely prompts additional structural *condition assessment* by means of exploratory, nondestructive, or destructive testing in order to determine the extent of the *structural distress*, and/or additional structural evaluation to determine the appropriate repair, retrofit, replacement, or other action needed to remedy the *structural distress*. Such a condition may also require shoring and/or limited access.
- “Indication of *dangerous* condition observed” generally prompts immediate notification of the *owner* and additional structural evaluation to determine the appropriate repair, retrofit, replacement, or other action needed to remedy the conditions. Such a condition may also require shoring and/or limited access.
- “Actual *dangerous* condition observed” generally prompts immediate notification of the *owner* and the *code official*. This conclusion also generally prompts additional structural evaluation to determine the appropriate repair, retrofit, replacement, or other action needed in order to remedy the *dangerous* condition. Such a condition may also require shoring and/or limited access.

Remediation of *structural distress* will always require a structural evaluation, the result of which may require a repair. The type and extent of repair, however, is generally governed by the International Existing Building Code, and will depend upon several factors, including but not limited to the role of the member in the structural system, and degree of distress. Cosmetic type repairs may suffice in certain situations provided that the remaining sound material is sufficient for the required function. For members carrying assigned gravity or other loads, cosmetic type repairs will only be permitted if it can be demonstrated by rational analysis during a structural evaluation, that the remaining material, if protected from further *deterioration*, can still perform its assigned function at acceptable stress levels. Failing that, adequate repairs or reinforcement will be considered mandatory.

From a structural perspective, buildings are not considered the same even where their occupancy, size, or height is similar. Each building must be considered unique based on its site location due to concerns in response to the following. If the below conditions or information are not available or accessible at the time of the assessment, the assessment conclusions must state which items were not able to be identified:

- Structural design and construction type: structural systems, layout, and materials used.
- Occupancy and Use Classification of interior areas.
- *Risk Category*
- Areas of high risk of natural hazard occurrence: earthquake, wind, rain, flood, snow, etc.
- History of exposure or damage from natural hazard(s) or other event(s)
- Environmental influences such as humidity, temperature, presence of salt air, presence of chlorides, etc.
- Age of the building, era of construction, and applicable code(s) at time of construction
- Geotechnical conditions or hazards may affect foundation systems.

## 1.5.2 Non-Structural Condition Assessments

### 1.5.2.1 Envelope

The building’s exterior envelope plays an important role in maintaining the requisite weather resistance of the building, its structural elements and building service equipment to make sure the interior is free from water penetration into the building. A possible *unsafe* condition due to water infiltration may exist where the envelope, including the roof assembly, is not maintained to be weather resistant or watertight. This includes proper roof flashing and drainage as well as exterior wall flashing at protruding decks, windows, and doors.

### **1.5.2.2 Life Safety/Means of Egress**

A safe, continuous, and unobstructed path of travel should be provided and maintained from any point in a building or structure to the public way. The means of egress to the public way is a fundamental and important component of a safe building. The basic components of the egress path of the building should be confirmed to be in place and maintained to be used in emergency circumstances.

### **1.5.2.3 Passive Fire Protection Systems**

Existing fire-resistance ratings of building elements including structural building elements, walls, firestops, shafts, smoke barriers, floors, and penetrations should have protection maintained to ensure a safe built environment. These elements need to be accessed for the suitability of fire-resistance as intended and repaired, restored, or replaced where damaged, altered, breached, or penetrated.

### **1.5.2.4 Active Fire Protection Systems**

Active fire protection systems are an important and vital part of life and property safety that typically require continuous testing and maintenance. These systems need to be confirmed operational to provide an effective level of protection for the building occupants and a safe building for continued use and occupancy.

### **1.5.2.5 Electrical**

Electrical systems in an existing building can cause *unsafe* conditions for the occupants and the building due to lack of maintenance and exposure to adverse environmental conditions. Electrical *condition assessments* are intended to assess the electrical system for potential shock, electrocution, fire, or arc-flash hazards, deficiencies, damage or non-compliant installations. These are often qualified under the following:

1. Electric service and other power production sources; and
2. Feeders, branch circuits, wiring methods and materials.

### **1.5.2.6 Plumbing**

Plumbing fixtures must provide sanitary and potable water services to a building. Such fixtures need to be properly maintained in working order; free from obstructions, leaks, and defects; and capable of performing the function for which such fixture is designed. Potential hazards to the occupants may be the result of inadequate service and venting, cross connection, back siphonage, improper installation or *deterioration*.

### **1.5.2.7 Mechanical**

Mechanical equipment and appliances provide safe, healthy, and comfortable occupancy of a building. These systems should be properly installed and maintained in a safe working condition and capable of performing the intended function.

### **1.5.2.8 Fuel Gas**

Fuel gas piping and equipment must be properly installed and maintained in a safe working condition and capable of performing the intended function.

## **1.6 Summary**

Existing building structural, envelope, egress components, active and passive fire protection systems, plumbing, mechanical, fuel gas, and electrical considerations warrant special attention in terms of maintenance, periodic, *condition assessments* in accordance with this guide.



## 2. RESPONSIBILITIES

The *owner* or *owner's* authorized representative of the building bears the responsibility for the maintenance of the building, retention and filing of all maintenance records and *condition assessment* records. The *owner* or *owner's* authorized representative should be responsible for the routine servicing and regular *condition assessments* that are essential elements of ensuring public safety. A *condition assessment* summary should be submitted to the *code official* at the conclusion of each *condition assessment* required by Section 4. Any *unsafe, dangerous, or hazardous* condition shall be reported to the *code official* immediately but no later than the next business day by the *owner* or *owner's* authorized representative. In the event that an imminent hazard or *dangerous* condition exists, the *owner* or *owner* authorized agent shall take immediate action to protect the public.

Building elements are intended to comply with the codes-in-effect at the time the building was built. Routine *condition assessments* are not meant to evaluate whether building elements comply with current codes.

*Registered design professionals* should be used when required by Section 5.

The *code official* is authorized to require that all existing buildings are maintained by the *owner* or *owner's* authorized representative in accordance with this IPMC or another applicable codes, regulations, or laws.

The *condition assessments* required by Section 4 are in addition to those required by the applicable laws, ordinances, and statutes of the *jurisdiction*.

See Section 8 for considerations that are unique to each *jurisdiction*.

## 3. TERMS

The following terms used in this guide are shown in *italics* and defined based on the applicable International Code for specific use in this guide. Where terms are not defined in this guide and are defined in the International Codes such terms should have the meanings ascribed in those codes. Where terms are not defined, such terms shall have ordinarily accepted meanings as the context implies.

**ABANDONED BUILDING.** A *deteriorated*, unoccupied, and not maintained building premises which has been identified as unoccupied, or abandoned for a certain amount of time whether fixture or furnishings exist or not within the building and absent of connected utilities.

**CODE OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this guide, or a duly authorized representative. For purposes of this guide, the general term “code official” is used and is intended to reflect the multiple *condition assessment* disciplines covered in this guide.

**CONDITION ASSESSMENT.** An observation of the existing building, facility, system(s) or component(s) and review of records, where available, resulting in a written report.

1. A visual observation, performance or testing of building elements or equipment, as noted in this guideline, to assess non-structural elements or equipment for obvious defects, damage, or disrepair that would render the building unfit for occupancy, *unsafe, dangerous, or otherwise* a create hazard to the occupants.
2. A visual observation of exposed, accessible, and available conditions, to determine if the capacity of structural elements may be affected by any *structural distress* or if *dangerous* structural conditions exist. A visual structural condition assessment does not include performing additional structural calculations, analysis, or evaluation, or testing of the existing conditions beyond the visual observation.

**CONSTRUCTION DOCUMENTS.** As defined in the International Building Code

**DANGEROUS.** As defined in the International Building Code

**DETERIORATION.** Disintegration, cracking, spalling, corrosion, rust, rot, decay, or other weakening that results in loss of strength, stiffness, function, or other measures of effectiveness.

**IMMINENT DANGER.** As defined in the International Property Maintenance Code.

**JURISDICTION.** The governmental unit that has adopted or enforces this guide.

**OWNER.** As defined in the International Building Code.

**POSTIVE ROOF DRAINAGE.** A design that accounts for deflections from all design loads and has sufficient additional slope to ensure that drainage of the roof occurs within 48 hours of precipitation.

**QUALIFIED PROFESSIONAL.** An individual who by education, experience, licensure and/or certification that has the specialize knowledge and understanding in specific discipline(s) of building element(s), demonstrated to the approval of the *code official*, to perform assessments required by this guideline.

**REGISTERED DESIGN PROFESSIONAL.** As defined in the International Building Code.

**RISK CATEGORY.** As defined in the International Building Code.

**STRUCTURAL DISTRESS.** An observed actual or indication of potential decreased structural capacity or potential lack of adequate a capacity due to damage, *deterioration*, or potential alteration, as compared to apparent original condition,

**UNSAFE.** As defined in the International Existing Building Code.

**VACANT BUILDING.** A lawfully maintained occupiable building premises which is unoccupied for a certain amount of time whether fixture or furnishings exist or not within the building.

## 4. BUILDING CONDITION ASSESSMENT

### 4.1 Required Condition Assessment.

**4.1.1 Occupied or Vacant Buildings.** Each building should be assigned a minimum frequency of required *condition assessments* in accordance with this section. The frequency intervals between all required *condition assessments* should be maintained for the life of the building. The frequency should begin on the date of the building's certificate of occupancy, or an equivalent date established by the local *code official*.

**Exceptions** – The following are exempted from the required *condition assessments* of this section:

1. Detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height.
2. Other buildings and facilities where a national, state, or local authority and/or organization provides systematic approach to building *condition assessment* that is determined to provide the requisite level of occupant safety.
3. Other occupancies and building types as determined by the *jurisdiction*.

**4.1.1.1 Condition Assessment Intervals.** This guideline provides recommended assessment timeframes (see Table 4) for the maintenance and periodic assessments along with timeframes for assessments where environment conditions may exist in a jurisdiction or a project site (see section 4.1.4.1). The guideline assessment intervals were developed for a broad range of building characteristics that may or may not exist in any specific *jurisdiction*. The frequency of these assessments may be modified by the AHJ, based on consideration of *risk category*, occupancy type, occupant load, building height, known structural vulnerabilities, or other factors based on the specific needs of the *jurisdiction*. Where any condition exists that either a reduction or increase in *condition assessment* frequency for the building is necessary, such a determination should be subject to approval of the *jurisdiction*.



**4.1.2 Maintenance Condition Assessments.** Routine maintenance plays a pivotal role in ensuring the safety of the occupants. The maintenance *condition assessment* is intended to identify potential problems before they occur. Accordingly, maintenance *condition assessments* are required to be performed on all buildings at least annually, except as exempted in Section 4.1. See Section 5.1 for details.

**4.1.3 Supplemental Condition Assessments.** Supplemental *condition assessments* may be necessary based on observations from maintenance *condition assessments* to provide an additional level of review and attention to detail. See Section 5.2 for additional details.

**4.1.4 Periodic Condition Assessment.** Periodic *condition assessments* are performed less frequently and are intended to provide an assessment of the condition of the existing building to ensure that an *unsafe* condition does not exist. Such *condition assessments* should be performed in accordance with Table 4 for the structural and envelope system. See Section 5.2 for details.

**4.1.4.1 Periodic Condition Assessment with Environmental Factors.** Environmental factors potentially shorten the life of building and system components and warrant more frequent *safety condition assessments*, as well as more diligent attention to routine maintenance.

**4.1.4.1.1 Geographic Factors.** Environmental factors based on geographical location typically impact all buildings within a given area or region. Geographical factors may include but are not limited to extremely dry or humid climates, proximity to a corrosive environment, unique environmental loading poor soil conditions, known termite infestation, known decay fungi and insect attack.

**4.1.4.1.2 Site-specific factors.** Environmental factors based on site-specific conditions typically impact only the building(s) located on that site and may not apply to adjacent sites. Site-specific factors may include but are not limited to: work performed near the assessed building such as utility trenching, foundation excavations, dewatering and installation of foundations.

**4.1.4.1.3 Component or System Factors.** Specific building components or systems may have a higher probability or consequence of failure based on their purpose, use, exterior exposure, or method of construction. Component or system factors may include but are not limited to: structural elements located outside of the building envelope, façade components, exterior decks and balconies, handrails, guards, exterior egress systems (walkways, stairs, fire escapes), and canopies or overhangs.

**Table 4 Condition Assessment Frequencies for Existing Buildings <sup>a</sup>**

Discipline	Maintenance Assessment <sup>b</sup>	Periodic Assessment Frequency <sup>c</sup>	Periodic Assessment Frequency with Environmental Factors <sup>d,e</sup>
General 6.1	Yearly	15	10
Structural 6.2	Yearly	15	10
Envelope 6.3	Yearly	15	10
Life Safety/MOE 6.4	Yearly	15	NA
Passive Fire Protection 6.5	Yearly	15	NA
Active Fire Protection 6.6	Yearly	15	NA
Electrical 6.7	Yearly	15	NA
Plumbing 6.8	Yearly	15	NA
Mechanical 6.9	Yearly	15	NA
Fuel Gas 6.10	Yearly	15	NA

- a. See Section 4.1.1 for building exempted from the required *condition assessment*.
- b. See Section 5.1 for maintenance *condition assessment*.
- c. The initial periodic *condition assessment* interval is relative to the original certificate of occupancy.
- d. The AHJ should consider implementing more-frequent periodic assessments based on the types and severity of environmental factors that are present. The frequency and scope of such assessments when environmental factors are present may vary for different construction types and materials relative to the environmental hazards present. The 10-year recommendation is used to indicate the frequency of assessments should be in this timeframe or shorter, depending on the decision of the AHJ when environmental hazards are present.
- e. See 4.1.4.1.1, 4.1.4.1.2 and 4.1.4.1.3

**4.2 Vacant Buildings.** Each building should be assigned a minimum frequency of required *condition assessments* in accordance with Table 4, above.

**4.3 Abandoned Buildings.** Buildings, structures and premises for which an *owner* cannot be identified or located by dispatch of a certificate of mailing to the last known or registered address, which persistently or repeatedly become unprotected or unsecured, which have been occupied by unauthorized persons or for illegal purposes, or which present a danger of structural collapse or fire spread to adjacent properties should be considered to be abandoned, declared *unsafe* and abated by demolition or rehabilitation in accordance with the [International Property Maintenance Code](#) and the [International Building Code](#).

**4.3.1 Abandoned buildings** due for Periodic Assessments can remain for a period of up to five years without an assessment when scheduled for demolition, all utilities remain disconnected, and the building remains unoccupied.

## 5. BUILDING CONDITION ASSESSMENT SCOPE AND QUALIFICATIONS

The *condition assessments* noted in this guideline should include the following observations:

### 5.1 Maintenance Condition Assessment

Maintenance *condition assessment* required by Section 4.1.2 should be visual surveillance by the *owner* or *owner's* authorized representative and include the *condition assessment* of the building for obvious defects or damage and the documentation thereof.

Maintenance *condition assessments*, which are less detailed but more frequent, are intended to recommend a supplemental *condition assessment* when observations warrant an additional level of review. Surface imperfections such as cracks, distortion, sagging, excessive deflections, significant misalignment, signs of water leakage or water ponding, and peeling of finishes should be viewed critically as indications of possible structural vulnerability and of need of a supplement *condition assessment*.

Maintenance *condition assessments* that identify signs of *deterioration*, conditions that could cause potential future *deterioration*, or suspected reduction of capacity or function, should result in a notification to the *owner* that a supplemental *condition assessment* is required to be conducted by a *registered design professional* or another *qualified professional* with the necessary expertise and experience.

Written reports should be required for all *condition assessment* and note the description of the type of *condition assessment* and how the *condition assessment* was performed, noting problem areas and recommended repairs. All repairs requiring a building permit shall be submitted and approved by the *code official*.

### 5.2 Supplemental Condition Assessment

Supplemental *condition assessment* required by the results of a maintenance *condition assessment* should be a visual *condition assessment* performed by a *registered design professional* (RDP) or *Qualified Professional*. At a minimum, the *condition assessment* must be conducted throughout all habitable and non-habitable areas of the building, as deemed necessary by the RDP to determine if an *unsafe* condition exists.

The *owner* or *owner's* authorized representative, other than the contractor, may employ one or more approved *registered design professionals* or *qualified professionals* to provide supplemental visual *condition assessment*.

All *condition assessment* results, as well as any corrective measures necessary, must be documented and should be provided to the *code official*.

The *registered design professional* or *qualified professional* shall notify the *code official* immediately of any *imminent danger* which requires immediate action to ensure occupant safety. This may result in immediate occupant evacuation as directed by the *code official*.

### 5.3 Periodic Condition Assessment

Periodic *Condition Assessments* required by Table 4 should be performed by a *registered design professional*. The *owner* or *owner's* authorized representative may employ one or more *registered design professionals*. The *registered design professional* shall be qualified and registered in the discipline for the system being evaluated in accordance with the professional registration laws of the state or jurisdiction in which the building is located. See Appendix C for Recommended Periodic *Condition Assessment* Checklists for each of the disciplines covered in this guide.

Periodic Assessments established by Table 4 take into account different cycles depending on the building's exposure to varying environmental factors. The initial cycle occurs from the date the certificate of occupancy is issued, or an alternate date established by the *code official*.

The RDP should provide a final report to the *owner*, documenting the results of the *condition assessment* and additional recommended follow up steps.

The *owner* should keep records of *condition assessments* and tests for the life of the building and should submit reports of *condition assessments* and tests to the *code official*.

The *registered design professional* shall notify the *code official* immediately of any *imminent danger* that requires immediate action to ensure occupant safety. This may result in immediate occupant evacuation as directed by the *code official*.

The *code official* may require additional *condition assessments* as necessary to approve the corrective action(s) necessary.

## 6. CONDITION ASSESSMENT TYPES OF INSPECTIONS

Periodic *condition assessments* are intended to be a visual in nature of the system where accessible. The following is the recommended scope of *condition assessments* necessary to ensure buildings are evaluated for a general assurance that no *unsafe* conditions exist in the building. As stated previously, existing buildings are unique which may warrant individual attention and *condition assessments* customized to address potential hazards to the occupants and the public. The elements to be assessed should be in accordance with the code in which it was built under and, where adopted, the provisions of Chapter 11 of the *International Fire Code*.

See Appendix C for Recommended Periodic *Condition Assessment* Checklists for each of the disciplines covered in this guide.

### 6.1 General:

1. The use of the building is consistent with the issued Certification of Occupancy or the last known approved use or occupancy.
2. Additions, alterations, and repairs of the building have been properly permitted and inspected by the *jurisdiction*, where required.

### 6.2 Structural Condition Assessment Items:

The structural *condition assessment* should visually review the condition of the structural systems and components for potentially *dangerous* structural conditions, including those described in the International Property Maintenance Code Section 304.1.1.

The visual *condition assessment* should identify all observed conditions that may be reasonably considered to contribute to a structural safety or stability vulnerability, when the observed conditions are exposed, accessible, and available during the assessment. Such conditions include but are not limited to the following:

- Any sign of *deterioration*, distress, or alteration that appears to reduce load-carrying capacity;
- Surface imperfections or irregularities such as cracks, spalling, etc;
- Excessive deflections;
- Misalignment (differential displacement) or leaning (out-of-plumbness) of structural components;
- Signs of water leaking, intrusion, ponding, or related damage (or the potential of such to occur);
- Signs of condensation or related damage (or the potential of such to occur);
- Signs of soil subsidence, settlement, heaving, or other conditions that may affect the foundation;
- Peeling of finishes;
- Apparent changes of use and/or structural layout, which increase loading on a load-carrying member; and
- Conditions which meet the definition of *dangerous*, as defined herein.

The areas reviewed for the visual *condition assessment* should include the reasonably accessible and exposed areas of the building, including but not limited to the following:

- Characteristic locations of critical structural load-bearing members, including the roof, floor, walls, and foundation components and connections reasonably accessible to view without removal of finishes;
- Exterior wall(s) and wall joints, including connections, and finishes;
- Exterior cladding, joints, and connections reasonably accessible to view; and
- Roof(s)

Depending on other aspects of the existing building, specific conditions may warrant specific attention and/or may warrant an additional investigation beyond a visual *condition assessment*, including but not limited to the following:

- Exposed elevated exterior elements located or connected one level or more above grade plane including stairs, decks, balconies, walkways, handrails, guardrails, canopies, overhangs, and similar elements and their connections;
- Any other areas or elements supporting significant gravity loads that are exposed to weather that are difficult to view, even if such elements are designed to be protected by a waterproofing system (for example, exterior spaces with pavers and/or waterproofing systems regardless of type of construction);
- Inaccessible areas of structural significance; and
- Areas of known unpermitted past work on structural members.

### 6.3 Envelope Condition Assessment Items:

#### 1. Building Façade

- i. The building façade for general conditions identifying any surface defects, unsecure or loose elements, signs of leaks or damage – see also Item 6 of Section 6.2.
- ii. Cementitious (concrete or masonry) building façade elements for cracking, spalling, displacement, exposed reinforcing, or mortar damage.
- iii. Verification that the structural framing elements on balconies and other elevated walking surfaces exposed to weather-exposed surfaces have a moisture resistive barrier that has been maintained in satisfactory condition.
- iv. The building façade, being part of the envelope of the building, includes appurtenances which are elements somehow mechanically attached or adhered that in time must be assessed to make sure they continue to be properly attached to the building and will not become a falling object.

The list of elements includes but are not limited to:

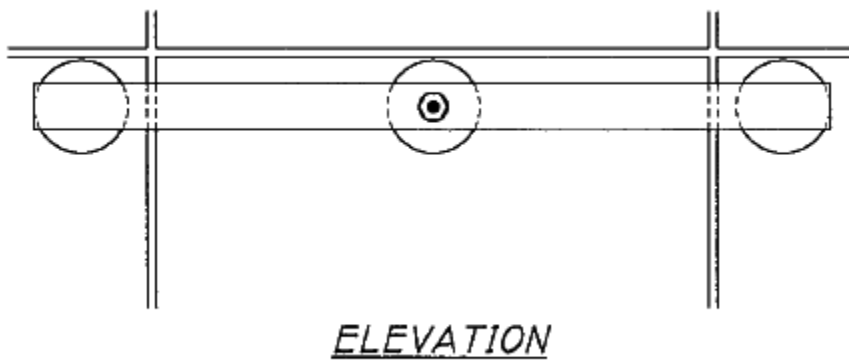
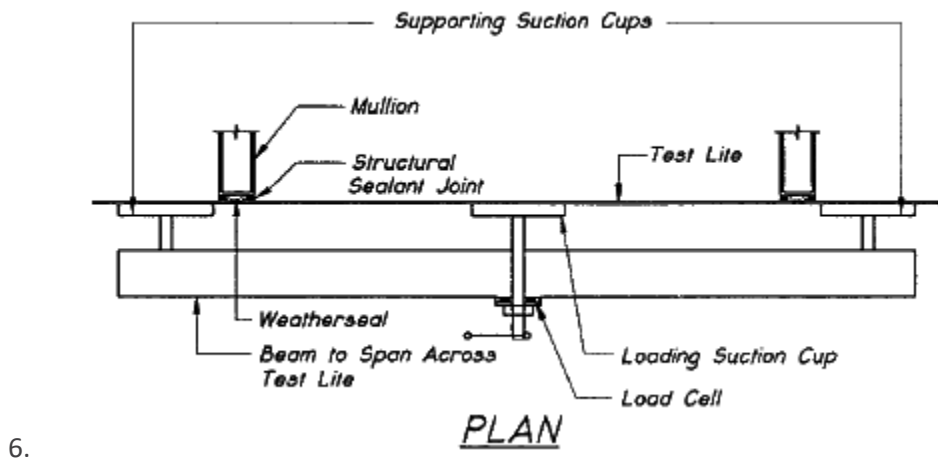
1. Cladding materials
  2. Precast appliques
  3. Exterior fixtures
  4. Fire escapes
  5. Signs
  6. Mansard and Parapets
  7. Railings and Guardrails
  8. Antennas
- v. Available standard: ASTM E2270-14(2019), “Standard Practice for Periodic Inspection of Building Facades for Unsafe Conditions”, ASTM E2841-19, “Standard Guide for Conducting Inspections of Building Facades for Unsafe Conditions”, and ASTM E3036-15(2021), “Standard Guide for Notating Facade Conditions in the Field”.

2. Roof System
  - i. Overall roof covering for signs of *deterioration* and to identify any leaks or damage.
  - ii. Flashing and penetration of the roof covering for obvious signs of water damage, open seams, deformation, punctures, and missing flashing.
  - iii. Roof accessories (equipment, ladders, railings, lighting rods, etc.) for missing, broken, or loose items.
  - iv. The roof surface exhibits *positive roof drainage* and is free of ponding water. Roof drainage systems for clogged drains or scuppers, missing parts of drainage systems, or loose gutters. Roof water should not be discharged in a manner that creates a public nuisance.
  - v. Plumbing vents should be free of visible obstructions and defects.
  - vi. Available standard: ASTM D7053-17, “Standard guide for determining and evaluating the causes of water leakage of low-slope roofs.”
3. Fenestration System
  - i. Glass curtain walls and/or vision panels for water intrusion, buckling, loose gaskets, corrosion, lose or missing beads.
  - ii. Window and doors as part of the exterior façade for water damage and/or evidence of leaks including weatherstripping damage, broken hardware, incomplete closure, racking or warping, corrosion, or threshold damage.
  - iii. Structural Glazing
    1. The building envelope may include a curtain wall system composed of Structural Sealant Glazing or SSG. Silicone structural glazing is a method utilizing a silicone adhesive to attach glass, metal, or other panel material to the structure of a building. Wind load and other impact loads on the façade are transferred from the glass or panel, through the structural silicone sealant to the structure of the building. The silicone sealant must maintain adhesive and cohesive integrity as the façade is subjected to wind load and thermal stresses.
    2. ASTM C1394 standard adopts the three-level evaluation approach for assessing SSG for performance. The recommended timeframe for inspections includes, perform a Level 1 between 1 and 2 years after substantial completion, a Level 1 after 5 years, a Level 2 after 10 years, a Level 1 after 15 years (if Level 2 was performed as recommended after 10 years), and a Level 2 after 20 years and each successive 10 years thereafter.
    3. **Level 1 evaluation.** Perform all the following evaluation procedures:
      - a. Review project documentation, including original design drawings, shop drawings, mock-up testing report, and previous evaluation reports. Review original SSG design calculations, or if not available, perform calculations to determine stress on sealant from thermal and wind loading (and, where appropriate, seismic loading);
      - b. Interview building management and maintenance personnel and tenants regarding breakage history of lites and other distress. Map findings on elevation drawings, and assess whether a pattern exists; and
      - c. Perform a cursory visual assessment from the interior, and from the exterior ground, roofs, and balconies.
    4. **Level 2 evaluation.** Perform the following, plus all the procedures of Level 1 (unless a Level 1 evaluation has been performed previously and the documentation recommended to be kept by the *owner* is available.):
      - a. Perform a close-up visual evaluation from the interior;
      - b. Observe weather seal joints and structural joints from the exterior. Document distress and assess whether a pattern exists. Utilize high-powered optical tools to assist in observing from remote viewing areas, or from suspended scaffolding. Choose scaffold “drops” to represent the entire building, including



different wind zones, elevations, exposures, details, and construction times;  
and

- c. Qualitatively measure the sealant adhesion by pressing in with a thumb. Alternatively, semi-quantitative adhesion strength data can be obtained using a Chatillon spring load indicator or pulling cut tabs to failure and measuring the elongation.
5. **Level 3 evaluation.** Perform all the following procedures under the field supervision of a qualified person, plus the procedures of Levels 1 and 2 (except that Level 1 may be eliminated if it has been performed previously and the documentation recommended to be kept by the *owner* is available).
- a. Consider whether the existing conditions indicate that evaluation of all lites is warranted. If not, develop a rational approach for evaluating a representative sample of the total lites. There is a trade-off between accuracy and the cost of the study. For quantitative tests and measurements, it is recommended that the number of specimens or test be selected to ensure achieving at least a 90% confidence interval with a maximum 20% margin of error. Different levels of study may require stricter parameters; and
  - b. Perform in-situ load testing on selected lites, either by uniform load (air pressure) or point load (suctions cups). One applicable test method is described in ASTM C1392. ( ) See Fig. 1 & 2)



**FIG. 1 Schematic of Field Loading Device**

b.

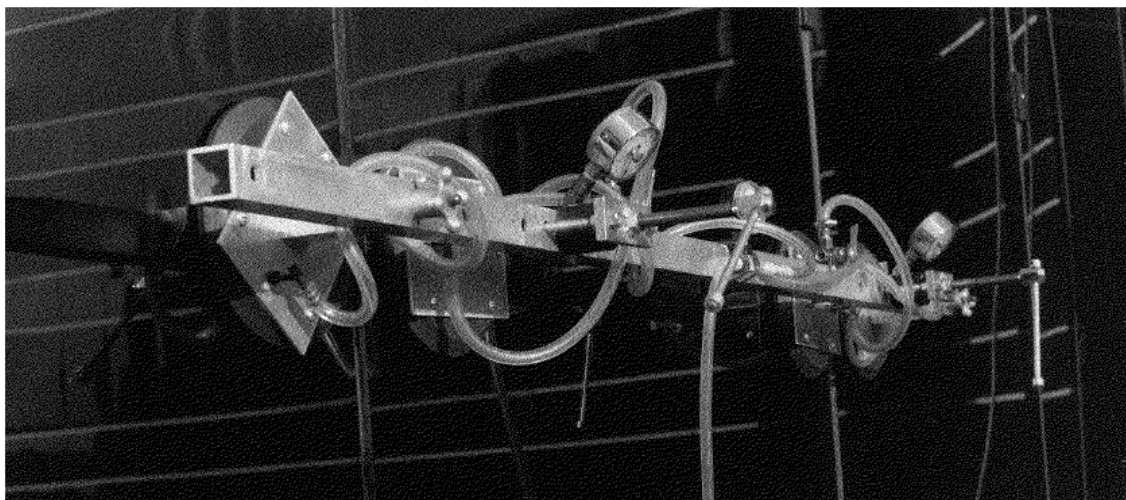


FIG. 2 Example of a Field Loading Device Mounted on a Wall

1.

4. Available standard: ASTM E2128-20, "Standard Guide for Evaluating Water Leakage of Building Walls."
5. Establish a life expectancy and cost of replacement for the various envelope components.

#### 6.4 Life Safety Condition Assessment (Means of Egress) Items:

1. The number of exits or access to exits is capable of serving the occupant load for the area served.
2. Exit signage provided is consistent with the exit arrangement.
3. The path of egress travel is clear and unimpeded.
4. Egress doors are operational, swing in the direction of travel and are not locked, chained, or prevented from being used.
5. Path of travel leads to a public way or safe dispersal area.
6. The means of egress is provided with illumination devices required at the time of construction or Chapter 11 of the *International Fire Code*.
7. The stairways are in good condition and suitable for the intended use.
8. Where applicable, exit stair tower signage for re-entry should be in place at each floor level.
9. Establish a life expectancy and cost of replacement for the various life safety/means of egress components.

#### 6.5 Passive Fire Protection Systems Items:

1. Structural building element and roof covering protection for continuity of protection.
2. Fire-resistance rated walls for integrity and maintenance of the assemblies.
3. Opening protectives in fire-resistance-rated assemblies.
4. Fire-resistance-rated breach protection for where penetrating items pass through walls and floors for compliance based on penetration type and listing, assembly.
5. Through and membrane penetrations in floor-ceiling assemblies in-place and maintained to prevent the passage of fire, and where applicable, smoke, unless contained within a rated shaft assembly.
6. Fire-resistance-rated stair enclosures and exit passageways protection maintained and the integrity of the fire-resistance-rated assembly provides the requisite protection.
7. Automatic door closers at fire-resistance-rated assemblies and at elevator lobbies (where installed) operate as intended and not intentionally modified to remain open.
8. Fire rated door assembly (door, frame, hardware) labels available and readable.
9. Establish life expectancy and cost of replacement for the various passive fire protection system components.

## 6.6 Active Fire Protection System Items:

1. Fire alarm systems, supervising station alarm systems, public emergency alarm reporting systems, fire and carbon monoxide detection and warning equipment, and emergency communications systems (ECS), and their components in good working condition without corroded parts and do not appear to have been modified, altered, or damaged.
2. Fire sprinklers for signs of damage, replacement that does not match existing heads, leakage, or painted that was not factory applied.
3. Fire sprinkler systems for building elements or alterations installed after the Certification of Occupancy that would alter sprinkler coverage.
4. Standpipe systems for signs of damage or missing elements.
5. Fire, smoke, heat, and carbon monoxide detection equipment in good working condition, have not be modified, altered, or painted that was not factory applied.
6. Fire department connections are in good working condition, visible, and not missing essential parts.
7. Fire sprinkler piping, equipment, and appurtenance connections in satisfactory working condition to support the equipment or devices.
8. Fire protection system software and cybersecurity protocols have been updated and remain current.
9. Establish a life expectancy and cost of replacement for the various active fire protection system components.

## 6.7 Electrical Condition Assessment Items:

1. Service equipment, disconnecting means and overcurrent protection identified and documented by ratings (voltage, amperage, phase).
2. Service equipment has appropriate working space and dedicated equipment space.
3. Electrical rooms have the required clearances, means of egress, illumination, warning signage, and general condition of the room.
4. Branch circuits for general condition, noting *deterioration*. Where branch circuits are not identified, a qualified individual should locate the branch circuits.
5. Ground and bonding of systems and equipment for general condition.
6. Wiring methods and materials (by type) for general condition.
7. Feeder conductors for general condition.
8. Emergency, legally-required standby and optional standby systems, where installed, for general condition.
9. The installation of special equipment such as onsite renewal energy systems, solar photovoltaic systems, wind generating systems, energy storage systems, and electric vehicle power transfer system equipment, where installed, for general condition.
10. Exterior wiring methods and materials (parking garages, parking areas, swimming pools, accessory buildings and structures) for general condition.
11. Thermographic Imaging inspection for systems operating at 400 amps or more. The fundamental test procedures described in Chapter 7 of NFPA 70B Standard for Electrical Equipment Maintenance should be used.
  - a. Infrared Thermography Inspection for electrical systems operating at 400 amperes or greater, accompanied by a written report of the following electrical equipment such as busways, switchgear, panelboards (except in dwelling unit load centers), disconnects, VFDS, starters, control panels, timers, meter centers, gutters junction boxes, automatic/manual transfer switches, exhaust fans and transformers. The infrared inspection of electrical equipment shall be

performed by a Level-II or higher certified infrared thermographer who is qualified and trained to recognize and document thermal anomalies in electrical systems.

12. Field testing and test methods shall be conducted in accordance with Chapter 8 of NFPA 70B Standard for Electrical Equipment Maintenance to assess the overall condition of electrical equipment and systems and to accomplish the following objectives:
  - a. Ascertain the ability of the device under test to continue to perform its function as designed.
  - b. Determine whether any corrective maintenance or replacement is necessary.
  - c. Document the condition of the equipment over its service life
  - d. Provide results to ascertain the overall condition of maintenance of the device under test.
13. Existing dwellings shall be inspected in accordance with NFPA 73 Standard for Electrical Inspections for Existing Dwellings
14. Establish a life expectancy and cost of replacement for the various electrical components.
15. Power-limited and Fault-Managed Power Circuits, where installed, for general condition.
16. Communication systems, where installed for life safety, fire safety, means of egress or emergency communications for general condition.

#### **6.8 Plumbing Items:**

1. Underground building sanitary and storm sewers, branches, and storm drains for blockages and cracking.
  - a. Perform a video inspection of underground sewage lines to determine the condition of horizontal lines and to determine condition of any cast iron piping.
2. Lift stations, foundation drainage sumps and pumps to ensure proper operation.
  - a. Verify the condition of any elevator sump pump and the discharge point.
  - b. Lift station visual inspection of pumps, tank, and electrical system.
3. Pipe chases for signs of water, DWV leaks or shifting of piping and adequate hanger system capacity.
4. Cross-connection and backflow assemblies maintained and confirmed operational.
  - a. Inspect backflow preventer for leaks and operation.
5. Cross-connection components for onsite alternative water sources maintained and confirmed operational.
6. Grease interceptors should be visually inspected, and maintenance logs verified.
7. Domestic hot water boilers and water heaters for leaks, or damage.
8. Take carbon monoxide readings to determine any excessive exposure limit.
9. Electrical connections to plumbing appliances or fixtures – see Section 6.7.
10. Piping and plumbing equipment and appurtenance connections in satisfactory condition to support the equipment or devices.
11. Location of site cleanouts and condition
  - a. Manhole location(s) and condition
  - b. Water main material condition, like galvanized pipes.
12. Water tank condition
  - a. Roof top locations
  - b. Mechanical room locations
  - c. Adequacy of supporting structure
13. Highrise buildings
  - a. Assess booster pump condition.
  - b. Assess pressure reducing valves.

14. Swimming pools
  - a. Equipment and visible piping condition.
  - b. Condition of niche light(s).
  - c. Effective grounding of all metal within proximity of water's edge.
15. Establish a life expectancy and cost of replacement for the various plumbing components.

### 6.9 Mechanical Items:

1. Stairways and shafts with stairwell pressurization operational.
  - a. Assess mechanical equipment.
  - b. Assess door operation into the stairway.
  - c. Is there a functioning sequence of operation plan.
2. Mechanical ventilation system operational.
  - a. Working units
3. Natural ventilation in good repair and operational.
4. Commercial Type I and Type II vents hoods comply with manufacturers' specifications and listing(s).
  - a. Filter maintenance.
  - b. Exhaust fan operation.
  - c. Confirm make-up air.
5. Process and heating/hydronic boilers comply with manufacturers' specifications and listing(s).
6. Electrical connections to mechanical systems, appliances or apparatuses – see Section 6.7.
7. Mechanical equipment and appurtenance connections in satisfactory condition to support the equipment or devices.
8. Cleanliness of ducts.
9. Maintenance of drain pans and condensate lines/p-traps, including adequate point of disposal.
10. Maintenance of air handler and condensing unit coils.
  - a. Cooling Towers Operation of chemical treatment and balancing.
  - b. Condition of water bleed system.
11. Boilers
  - a. Take carbon monoxide readings to determine any excessive exposure limit.
    1. Regulatory Levels (See Table C-1 ANSI.ASHRAE Standard 62.1-2016)
      - a. The OSHA personal exposure limit (PEL) for CO is 50 parts per million (ppm). OSHA standards prohibit worker exposure to more than 50 parts of CO gas per million parts of air averaged during an 8-hour time period. The 8-hour PEL for CO in maritime operations is also 50 ppm. Maritime workers, however, must be removed from exposure if the CO concentration in the atmosphere exceeds 100 ppm. The peak CO level for employees engaged in roll-on roll-off operations during cargo loading and unloading is 200 ppm.
      - b. The ASHRAE Standard 62.1-2016, "Ventilation for Acceptable Indoor Air Quality" agrees with the US Environmental Protection Agency and the World Health Organization limit of 9 ppm over an 8-hour exposure.
      - c. It is recommended that any reading above Zero PPM be reported and have the equipment serviced before remeasuring.
    - b. Check for any state inspection requirements in your laws.

12. Chillers
  - a. Condition of chilled water piping
  - b. Condition of condensate piping
13. Pump condition
14. Water Source Heat Pump condition
15. Heat Exchanger condition
16. Condensing Unit condition
  - a. Cleanliness
  - b. Leak-free
17. Generator maintenance
  - a. Exhaust piped
  - b. Fuel tanks and lines
  - c. Exercise schedule
18. Establish a life expectancy and cost of replacement for the various mechanical units.

#### **6.10 Fuel Gas Items:**

1. Fuel gas piping system for leaks.
2. Fuel fired appliance venting systems are operational.
3. Pipe chases for signs of shifting of piping and adequate hanger system capacity.
4. Electrical connections required to fuel gas systems or venting of appliances or apparatuses - see Section 6.7.
5. Fuel gas piping, equipment, and appurtenance connections in satisfactory condition to support the equipment or devices.
6. Establish a life expectancy and cost of replacement for the various fuel gas components.

#### **6.11 Condition Assessment Results and Follow-up Action:**

Where the *condition assessment* identifies needed repairs or replacements to be performed, such repairs or replacements should be conducted in accordance with the process and procedures of the *jurisdiction*.

In all cases, where a potential *unsafe* or *dangerous* condition(s) exists, the *code official* shall be notified as soon as possible to determine if an *imminent dangerous* exists such that an order may be issued to require the occupants to vacate the building or portions thereof or take other appropriate action(s) to ensure occupant safety.

## **7. CONDITION ASSESSMENT RECORDS**

### **7.1 Code of Record/Design and Construction Documents.**

The code of record used for the initial building design should be the basis for the minimum building design requirements. Where such documents are available, certified copies of all building permits and approved *construction documents*, including as-built drawings, listings, manufacturers installation instructions, maintenance instructions, and Certificate of Occupancy (or other similarly recognized authorizations for occupancy by the AHJ) should be maintained by the *owner* and available on site.

Appendix A includes recommended original *construction documents* that the *owner* should have available on site. This appendix also includes construction documents for subsequent additions, alterations and repairs and the related *condition assessment* records as well as identification of any maintenance records.



## 7.2 Original Construction Documents Not Available or Incomplete

If there are no copies of the approved *construction documents* available for the existing building, an assessment of the existing building should be performed to document the existing building conditions to be used as the basis for an assessment of the type of *condition assessment(s)* to be performed. In such instances, it is imperative that the assessment is representative of the as-built construction of the building.

## 7.3 Existing Building Safety Condition Assessment Log

An Existing Building Safety *Condition Assessment Log* should be created and maintained to provide an overview of the building, the basic data of the *condition assessment* and the permit documents. This log will serve as a reliable source of information for the *condition assessments* required by Section 4.

Appendix B includes the recommended minimum content of an Existing Building Safety *Condition Assessment Log*. The log should be referenced while performing all *condition assessments* noted in this guide and should also be maintained as an electronic document in PDF format.

## 8. JURISDICTION RESPONSIBILITIES

This guide recognizes the fact that the administration of any type of regulation or guide to be used by local *jurisdictions* to address the challenges in ensuring the safety of occupants in existing buildings requires considerable flexibility relative to the implementation of procedures, processes, timeframes, repairs, and the like. For jurisdictions that do not already have enforcement provisions in place, the *International Property Maintenance Code* provides examples of correcting or addressing violations in Sections 107 through 111. Accordingly, assessment details that are left to the *jurisdiction* include, but not limited to, the following:

- Extension of time requests with justification and indications that a building can continue to be occupied while the inspection process is ongoing.
- Issuance of a certificate from the local code *official* that the building has satisfied the requirements of the periodic inspection.

## APPENDIX A

### RECOMMENDED DOCUMENTS FROM THE ORIGINAL CONSTRUCTION IN ORDER TO PERFORM EXISTING BUILDING SAFETY CONDITION ASSESSMENTS

Prior to visiting the building, research for existing available documentation can be conducted. Documents may include the original design and construction documents including shop drawings and material testing reports. Documents may also include permits, previous assessment reports or construction documents for any additions, alterations or repairs that may have occurred over the building's history. Review of ongoing maintenance records can be useful. The documents can help the design professional performing the building assessment to better understand the buildings layout and systems and to identify if permitted or non-permitted additions, alterations or repairs have occurred since original construction. The available documents can be used by the design professional to verify by observation and measurements non-concealed elements of the original construction and any additions, alterations or repairs that may have occurred since original construction. If some or none of the documents are not available, Interviews with relevant parties such as building owners, maintenance staff and property managers can yield useful information that may not be reflected in the available building documents. This information may include the age of the building, an account of un-documented additions, alterations, and repairs that may have occurred, areas of distress, corrosion, cracking, water leaking or signs of condensation, unusual static and dynamic loading conditions including vibrations, and ongoing maintenance concerns.

1. Building permits
2. Approved geotechnical/soil investigation reports.
3. Approved *construction documents*, as necessary
4. Structural design analysis and assumptions
5. Fire-resistance designs, manufacturers installation, repair, and maintenance instructions.
6. Approved fabrication drawings for pre-cast or prefabricated structural elements.
7. Approved erection plans
8. As-built drawings
9. Reports by the *registered design professional* of record
10. Material test reports and *condition assessment* records
11. Final special *condition assessment* reports
12. *Construction documents* for any subsequent additions, alterations, and repairs
13. Inspection/*condition assessment* records for the original structure and any subsequent additions, alterations, and repairs
14. Maintenance records
15. Certification of Occupancy or equivalent
16. Code-in-effect when constructed

## APPENDIX B

### RECOMMENDED MINIMUM EXISTING BUILDING SAFETY CONDITION ASSESSMENT LOG CONTENT

1. Title sheet
2. Contents
3. Drawings
4. Inspection/*condition assessment* documents
5. Photos of inspection components
6. Copies of all building permits
7. Copies of all property *owner condition assessment* results
8. Copies of all *condition assessment* results
9. Copies of all special inspection/*condition assessment* agency reports and test results in accordance with Chapter 17 of the International Building Code
10. Public records search for any issued Notice of Violations and/or *Unsafe Structures* declaration.
11. Any testing conducted on the building.

## APPENDIX C

# RECOMMENDED CONDITION ASSESSMENT REPORT TEMPLATES /CONDITION ASSESSMENT CHECKLISTS

The report templates in this appendix are intended to serve as the recommended minimum standard for the Periodic *Condition Assessments* in this guide. The report templates do not substitute for proper professional judgment where conditions would suggest a more detailed *condition assessment*, testing, or investigation is warranted; nor conditions where in the opinion of the *registered design professional* an *unsafe or dangerous* condition exists. In the case of *unsafe or dangerous* condition(s), the *code official* shall be notified as soon as possible to determine if an *imminent danger* exists such that an order may be issued to require the occupants to vacate the building or portions thereof or take other appropriate action(s) to ensure occupant safety.

The report templates in this appendix are provided for each discipline identified in the guide and refer to those building system categories in Section 6. The “*Condition Assessment Items*” for each building system report template are to be developed by the jurisdiction depending on how the *condition assessment* program has been developed and adopted for the community. A report template has been included for each of the following building system *condition assessment*:

- **STRUCTURAL**
- **ENVELOPE**
- **ELECTRICAL**
- **LIFE SAFETY – MEANS OF EGRESS**
- **PASSIVE FIRE PROTECTION**
- **ACTIVE FIRE PROTECTION**
- **PLUMBING**
- **MECHANICAL**
- **FUEL GAS**

## Periodic Condition Assessment Report Template Structural System

Building Description					
Building Name:					
Address:					
Year Built/Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Structural Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits/NOV's					
Items that were not Accessible or Available at the time of the Assessment					
Condition Assessment		No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
<b>Structural Condition Assessment Items</b>	<b>Actual Dangerous Condition Observed:</b>	<b>Indication of Dangerous Condition Observed:</b>	<b>Actual Structural Distress Observed:</b>	<b>Indication of Structural Distress Observed:</b>	<b>Recommended periodic inspection interval:</b>

Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC “ASSESSMENT ITEM” ENTRIES FOR THIS REPORT TEMPLATE TO BE DEVELOPED BY THE JURISDICTION.**



## Periodic Condition Assessment Checklist Building Envelope System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**

## Periodic Condition Assessment Checklist Electrical System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**

## Periodic Condition Assessment Checklist Life Safety (Means of Egress) System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**

## Periodic Condition Assessment Checklist Active Fire Protection System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**

## Periodic Condition Assessment Checklist Passive Fire Protection System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)		Yes    No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**

## Periodic Condition Assessment Checklist Plumbing System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**



## Periodic Condition Assessment Checklist Mechanical System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**

## Periodic Condition Assessment Checklist Fuel Gas System

Building Description					
Building Name:					
Address:					
Building Age:		Risk Category:			
Building Occupancy(ies):		Occupant Load:			
Building Height (stories):					
Building Envelope Systems and General Description:					
Contact Information					
Owner's Name:					
Owner's Mailing Address:					
On-Site Representative:					
Email address:					
Design Professional:					
Design Firm:					
Email Address:					
Address:					
Additional Inspectors:					
Identification of Available Construction Documents					
Construction Documents (see Appendix A, if none see section 7.2)					
Building Permits					
Condition Assessment	Yes	No	Certificate of Occupancy(ies)	Yes	No
Condition Assessment Checklist					
Condition Assessment Items	Good	Fair	Poor	Fail	N/A
Assessment Item #1:					
Comment:					
Assessment Item #2:					
Comment					

**NOTE: THE SPECIFIC ENTRIES FOR THIS CHECKLIST TO BE DEVELOPED**

**APPENDIX D**

**SUMMARY OF SELECTED ORDINANCE REQUIREMENTS**

Location and ordinance	Ordinance description						
	Façade	Structural	Occupancy / Type	Age	Criteria	Frequency	Subject
San Francisco, CA, Ord. 67-16	F		Type I, II, III, IV construction	Any	> 5 stories	Based on age for first survey; then every 5 years	100% walls; 100% balconies; 100% parapets
State of Florida, Statute 553.71		S	Condominium cooperative	30 years; 25 years if within 3 miles of coast		10 years	Structural elements
Broward County, FL, Broward County Building Safety Inspection Program		S	Except 1- and 2-family and government or tribal buildings	40 years	≥ 3500 ft <sup>2</sup>	10 years	Structural elements
Dade County, FL, §8-11		S	Except 1- and 2-family and government or tribal buildings	40 years	≥ 2,000 ft <sup>2</sup>	10 years	Structural elements
Chicago, IL, Rules for the Maintenance of High-Rise Exterior Walls and Enclosures	F		All	Any	> 80 ft	2 years critical exam; every 4 years	50% walls; 100% cornices; 100% terracotta
Boston, MA, Ord. 9.9-12	F		All	Any	> 70 ft	5 years	100% walls
Detroit, MI, Ord 15-88, § 9-1-35	F		All	Any	≥ 5 stories	5 years	100% cornices; 100% projections
St. Louis, MO, Ord. 68791	F		Any	Any	> 6 stories	5 years	100% walls
Jersey City, NJ, Ord. 21-054		S	All	Any	> 6 stories	10 years	Foundations, balconies, structural elements
Jersey City, NJ, Ord. 21-054	F		All	Any	> 6 stories; masonry	5 years	Foundations, balconies,

					façades > 4 stories		structural elements
New York, NY, Law 11 of 1998	F		All	Any	≥ 6 stories	5 years	100% walls; 100% appurtenances
New York, NY, Title 28, Art. 323		S	Parking, except for 1- and 2-family homes	Any	Any	3 years	Structural elements
Cincinnati, OH, Ch. 1127	F		All	≥ 15 years	> 5 stories;> 65 ft	8 and 12 years based on category	100% walls by Category IV – reinforced with corrodible metal
Cincinnati, OH, §1101.43		S	Commercial	Per director	N/A	Per director	
Cleveland, OH, Ord. 3143.02	F		All	≥ 30 years	> 75 ft	5 years	100% walls
Columbus, OH, Ord 1296-85, §4109.073	F		All	≥ 20 years	N/A*	5 years	100% walls
Philadelphia, PA, §PM-304.0	F		All	Any	≥ 6 stories	5 years	100% walls
Pittsburgh, PA, §304	F		Except R3, including single family residences	Any	Any	5 years	100% walls;100% extensions; 100% decorative features; 100% chimneys
Milwaukee, WI, Ch 275, §32-13	F		All	15 years	> 5 stories	5, 8, or 12 years (based on age)	100% walls

\*Within 10 ft of right of way

Note: 1 ft = 0.3 m; 1 ft<sup>2</sup> = 0.1 m<sup>2</sup>

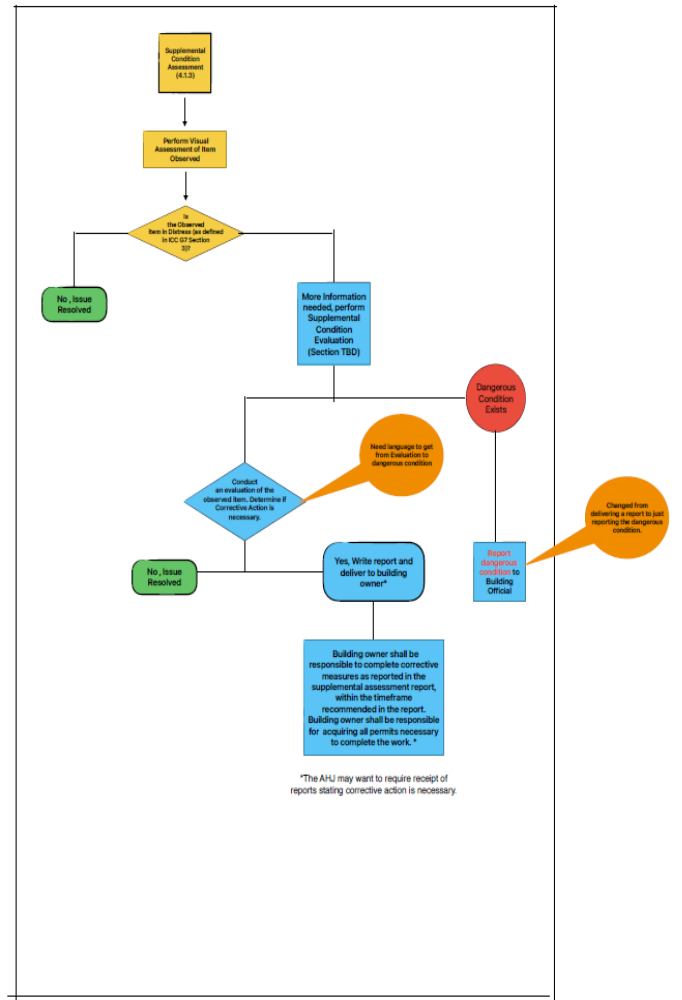
## APPENDIX E

# DECISION TREE FLOWCHARTS

Condition Assessment Flow Chart



Diagram 1.1 Supplemental Condition/ Evaluation Assessment Flowchart



## APPENDIX F

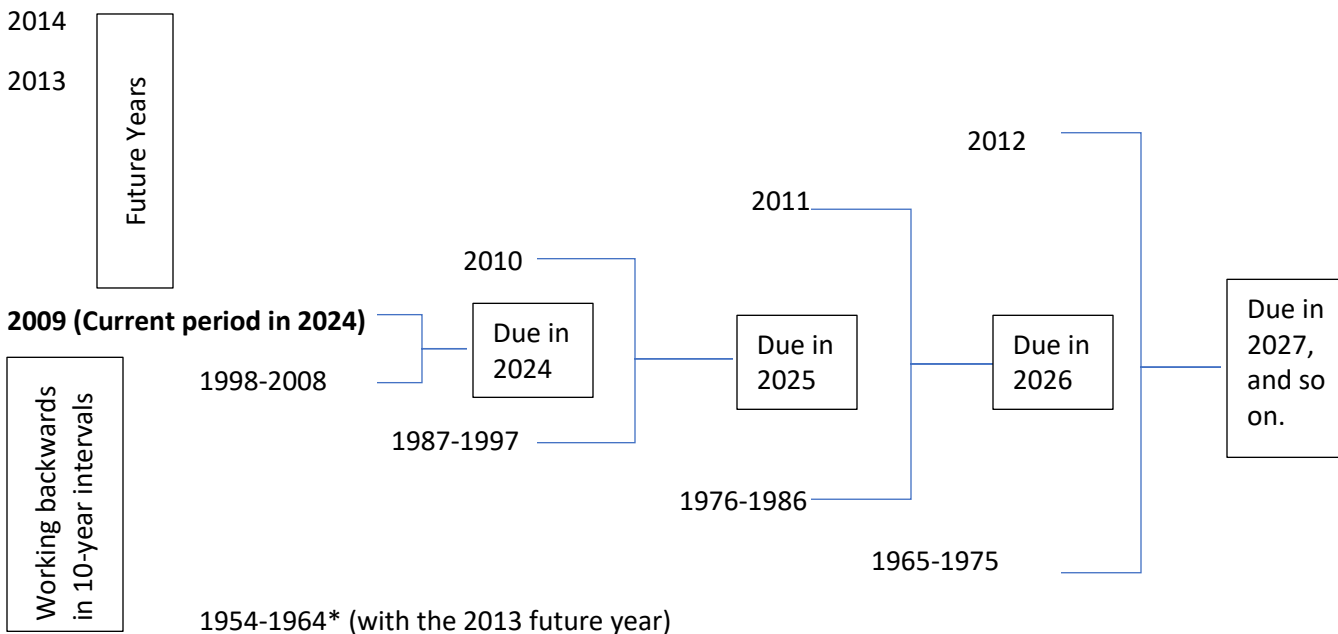
### TRANSITIONING BUILDINGS INTO THE PERIODIC ASSESSMENT PROGRAM

Transitioning buildings into the periodic assessment program requires consideration to avoid overwhelming the resources of the local building official and design professionals. The following recommendation considers the number of buildings that would fall within the periodic assessment program based on Table 4.1 and the age range of existing buildings. The proposal below begins by working backwards from the current date. Maintenance assessment by the building *owner* would begin immediately for all existing buildings, as this does not require the local building official or design professional resources.

Procedure based on a 15-year Periodic Assessment frequency:

1. Determine the number of buildings that fall within the periodic assessment based on Table 4.1.
2. From the number of buildings found, how many buildings are older than 15 years from the year built of the building. Make an adjustment based on the initial periodic assessment frequency selected for your *jurisdiction*.
3. Group the number of existing buildings built in the same year built. Ex.: all buildings built in 1990 within the jurisdiction are grouped together.
4. If the population of the jurisdiction is less than 5,000<sup>1</sup> people, group the buildings in number 3 in ten-year intervals. If the population is over 5,000 people, then group the buildings in 5-year intervals or less.
5. Each year, in addition to those buildings turning 15 years of age, notifications for periodic assessment due will be sent to the group of older buildings.
6. The buildings assessed will have a follow up periodic assessment every 15 years thereafter.

Timeline Example (based on a 15-year initial periodic assessment starting in 2024 for a population less than 5,000):



\*-If the community has older buildings, the starting timeframe will need to be adjusted accordingly.

<sup>1</sup> Based on Google search, 76% of approximately 19,500 incorporated places in the US have fewer than 5,000 people.