

By Rebecca Quinn, CFM

Definitions and Terminology

As I work on state and local floodplain management regulations and buildings codes, I come across some terms that are defined and some that aren't. Look at the typical local floodplain management regulations and you're likely to discover more than a third, sometimes nearly half, of the content is definitions. Plus, many of us use words that aren't defined. Sometimes we use undefined terms in ways that mean the same thing as the defined terms or are "close enough" to the definition. When it comes to enforcing carefully written regulations, and defending legal challenges, it's important that we also are careful to use the defined terms.

Despite all those definitions in local regulations (and building codes), there are some terms we use to convey concepts that are important and help us interpret and apply regulations, even when not defined formally. Let's take a look at some terms and usage that I've come across recently.

Compliant, Non-Compliant, Non-Conforming, and Conforming

Compliant is used when a building conforms to ... is compliant with ... the current requirements. In the floodplain management world, a compliant building meets all the requirements based on flood zone, including requirements for lowest floor elevation, foundation type and stability, enclosures below the lowest floor, flood damage-resistant materials, and utility and service equipment. Going forward, any work on a compliant building must preserve all aspects of the building that comply with the rules, regardless of the type of work or the cost of that work. For example, if a building originally had an elevated heat pump, a replacement unit must also be elevated, even when not part of substantial improvement.

Non-compliant refers to a building constructed in violation of regulations or building codes: it does not comply with the requirements. The NFIP expects communities to resolve violations.

Non-conforming and legal non-conforming are used to refer to buildings that do not conform to current requirements, but that conformed to ... were compliant with ... the requirements in effect when the buildings were permitted. For floodplain managers, one example of a non-conformance is a building that has its lowest floor elevated to the base flood elevation in effect when it was permitted, but now does not conform to a currently higher BFE shown on a revised Flood Insurance Rate Map. Similarly, if the boundary between Zone A and Zone V moved inland, or a floodway delineation was changed or added, buildings built to the previous zone and location requirements are now non-conforming. Non-conforming buildings are legal and allowed to remain until and unless there is a triggering event. Two things to keep in mind:

1. Some codes and regulations explicitly state that a non-conforming building shall not be permitted to become more non-conforming. Even if not explicit, the concept is generally applied. Here's a flood example considering the building described above that is non-conforming because the BFE increased: a proposed addition that is determined to not be substantial improvement (i.e., less than 50%) must not be permitted to be lower than the height of the existing building and any enclosure under that non-substantial addition must comply, otherwise the existing building would be in violation of the code under which it was permitted in the first place.
2. When work proposed for a non-conforming building is determined to be substantial improvement or repair of substantial damage, the determination triggers the requirement to come into compliance with the current floodplain management requirements based on the current flood zone and BFE.

That brings us to **Conforming**. From what I can tell after talking to several seasoned floodplain managers and code officials, the concept is widely understood even if the term isn't used much in local regulations.

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Merriam-Webster defines it as “in agreement on every point” and “a state free of conflicts, inconsistencies, or differences.” To continue my theme and build on the term non-conforming, a conforming building is one that just happens to conform to current requirements even though the requirements in effect when it was permitted were different (or it was built before regulations were adopted). A flood-related example: a building constructed years ago, before a community joined the NFIP, just happens to be elevated higher than today’s BFE and the foundation type just happens to conform to today’s requirements for the zone where it’s sited. This building is conforming (at least with respect to flood).

The Real Question. All of the above brings me to what prompted this examination of terms. Recently I was asked a question about an older building elevated on columns that conforms to current requirements in terms of lowest floor elevation. The area under the building is open (no area enclosed by walls). The question is whether the owner can enclose the area for a bedroom and bath – the local official has determined the cost of the work does not constitute substantial improvement.

The Answer. I conclude the answer is no. Regardless of the cost, work must not be permitted to that would result in a conforming building becoming non-conforming (or less complying). I also note that under the building code, enclosing the area underneath an open building would be classified an addition because the I-Codes define addition as “an extension or increase in floor area, number of floors, or height of a building or structure.”

International Existing Building Code and Conforming/Non-Conforming

The International Existing Building Code is the basis for existing building codes in many states and communities. The concept that work must not make a non-conforming building more non-conforming is embedded through the IEBC, although a different phrase is used: work shall not make a building “less complying” than it was before work is undertaken. Permits must not be issued if proposed work would make a conforming or compliant building “less complying.”

Caution about using Pre-FIRM and Post-FIRM

The terms “pre-FIRM” and “post-FIRM” are insurance terms that are tied to whether buildings are constructed or substantially improved before or after December 31, 1974, or before or after a community’s initial FIRM, whichever is later. Historically, the terms were used by the NFIP to determine flood insurance rates.

It is common—but misleading—to use these terms for floodplain management and compliance. Because FEMA periodically revises FIRMs, which sometimes changes flood zones and BFEs, reliance on the terms for compliance can lead to incorrect interpretations of the Substantial Improvement and Substantial Damage requirements. Work on any building that exists, regardless of when it was built, must be examined to determine whether the work constitutes SI/SD.

Manufactured Home, Mobile Home, Modular Home, and Manufactured Building

Manufactured home is used to refer to units built after June 15, 1976. This distinguishes them from mobile homes, which differ in terms of construction and design. Manufactured homes are constructed with integral chassis in climate-controlled factories according to the “HUD Code,” which refers to federal regulations adopted in 1976, the Manufactured Home Construction and Safety Standards (MHCSS). Manufactured homes have a “HUD label” or data plate attached to the exterior of the home. HUD, the U.S. Department of Housing and Urban Development, also promulgates minimum installation standards at 24 CFR Part 3285. *Flood note:* The HUD installation standards include requirements for flood hazard areas.

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Mobile home should be used to refer to units built before June 15, 1976. Mobile homes and manufactured homes were distinguished from each other in 1974 when Congress passed the National Mobile Home Construction and Safety Act. *Flood note:* While there is a technical difference depending on when the home (the “box”) was built, there is no difference when it comes to installation in flood hazard areas. Even pre-1976 mobile home units must comply with local floodplain management installation requirements.

Modular home or building refers to structures that are built in factories and then transported to home sites. The main difference between a manufactured home and a modular home is the manufactured home has a permanent integral chassis and is built to the HUD Code, while a modular home or building does not have a chassis and is built to applicable state and local building codes in effect where the home site is located. Most modular homes and buildings are fabricated in two or more parts and transported on flatbed trucks, then joined together on a code-compliant, site-built foundation at the home site. When fully assembled, many modular homes are indistinguishable from site-built homes.

Flood note: Foundations for modular homes and buildings in flood hazard areas are development and structures, and therefore must comply with the same requirements for foundations (and elevation) of site-built homes.

Manufactured or prefabricated buildings ... well, these terms pose a conundrum. A search of HUD’s regulations (24 CFR) didn’t yield any use of the terms, much less a definition. The International Codes do not define the terms. The first several hits from a web search all seem to send me back to manufactured home. The sense is the same, the components are manufactured in a factory and shipped to the site. I’ve asked a number of state building code folks and the consensus is the foundation construction and attachment of a manufactured or prefabricated building to the foundation are subject to building code requirements. The Florida Building Commission, following state law, specifically provides for community review of plans relating to “erection, assembly or construction at the site” (i.e., the foundation) and for inspection.

Flood note: Foundations for manufactured buildings in flood hazard areas are development and structures, and therefore must comply with the same requirements for foundations (and elevation) of site-built homes.

Using the Right Terms Matters

It’s not uncommon to hear people use the term “trailer” or “trailer home” when what they should say is “manufactured home.” Personally, I think “trailer” should be removed from use. Not only is it wrong, it can be offensive.

“Mobile home” is another term that should be disappearing from our vocabulary. Sure, there are plenty of pre-1976 units still occupied, so maybe the term is needed (but really, who actually uses it to refer only to those 45-year-old units?). This term can have pejorative connotations.

History Note: The Housing Act of 1980 amended previous housing acts to change the term “mobile home” to “manufactured home.” At that time, federal agencies were directed to make this change in regulations and literature. In 1986, the NFIP regulations were amended to make the change. Some FEMA publications continue to use “mobile home,” notably the NFIP Study Guide and Desk Reference (FEMA 480) published in 2005, although mostly in content for flood insurance

Submit your own items or suggestions for future topics to column editor Rebecca Quinn, CFM, at rcquinn@earthlink.net. Comments welcomed! Explore back issues of the [Floodplain Manager’s Notebook](#).

By Ray Carroll, MAI, SRA, CFM

Estimating Costs for Actual Cash Value

This month we'll talk about construction costs used to develop actual cash value (ACV) appraisals that estimate the NFIP "market value." My objective is to assist local officials who evaluate ACV appraisals so they will have reasonable expectations and know when reported costs are reliable.

ACV Defined

FEMA P-758, the Substantial Improvement/Substantial Damage Desk Reference, identifies ACV as a method to estimate market value. Section 4.5.3 describes ACV as "The cost to replace a building on the same parcel with a new building of like-kind and quality, minus depreciation due to age, use, and neglect." Although the Desk Reference isn't clear, we're only talking about direct costs. Things like architect fees, impact fees, permit fees, financing costs, carrying costs, and developer profit are not included.

A key concept of ACV is that the starting point is the cost to build a new building just like the existing building. Appraisers call that cost the "reproduction cost" (sometimes called the "replication cost"). In other words, "what would be the direct cost to build a new building that is a replica of the existing building?" The operative qualifier is "like-kind and quality." This reproduction cost is the appraiser's starting point, before adjusting for depreciation.

It's important to understand that reproduction cost is **not** the same as "replacement cost" used by real estate professionals. For them, replacement cost is the cost to build a new substitute building using modern materials, design, and layout, and in full compliance with current building codes and standards (including floodplain requirements).

Ways to Estimate Reproduction Cost

There are several ways an appraiser might estimate the reproduction construction cost, including:

- Using a published cost service
- Builder cost estimates, employing a contractor to give a cost estimate
- Collecting and analyzing a variety of construction cost contracts
- Extracting costs from sales of speculative new construction

Published cost services: There are many cost estimating systems out there used by contractors, code officials, appraisers, insurance agents, and adjusters, underwriters, and others. Each system is tailored to the needs of a specific industry. Appraisers typically use square foot cost estimating services published by CoreLogic, Marshall & Swift (now a subsidiary of CoreLogic), Craftsman Book Company, and RS Means (Gordian).

Every reputable cost system offers users information about how costs are compiled, how frequently costs are updated, and how closely the system reflects local costs. This is important information that appraisers should include in their reports so that floodplain administrators can draw conclusions about the reliability of the cost system output.

ACV appraisals are prepared for a mix of residential and commercial building types, mostly residential. The kinds of buildings can range in age from 10 to 100 years old, so the cost system should be able to replicate architectural styles, construction types, and construction materials no longer in use. Construction costs change with time, and costs are affected by economic trends, local economics, and site conditions. That means the cost system must account for the characteristics of the building, the characteristics of the construction site, and the economy of the community. The system must have a historical database able to support cost

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estimates applicable to effective dates many years in the past. This argues for a sophisticated system capable of detailed inputs and outputs.

Special construction features, like in-ground piling foundations, may be beyond the cost system capabilities and thus require documentation, discussion, and appraiser treatment.

The most challenging aspect of using a cost system is deciding the quality setting. Every cost system designed for appraisers uses descriptive terms to define quality levels, but descriptive terms are meaningless unless correlated with example buildings. For instance, Marshall & Swift's Residential Cost Handbook publishes reference images for each building type, depicting examples for six quality levels.

Builder cost estimates: Usually, there isn't enough time and it's too expensive for an appraiser to hire a contractor or professional cost estimator to develop an in-kind replacement cost estimate for a specific building. The exceptions to this are one-off buildings (typically non-residential).

When this method is used, it is crucial that the contractor or cost estimator understand that the cost estimate needed is what it would cost to build a replica of the existing building or structure. That will be a new concept for most contractors, and it is a weakness of this method.

Analysis of construction contracts: In the normal course of business, appraisers are asked to estimate the value of proposed new construction. This is usually in connection with a whole-property market value estimate for mortgage loan underwriting. Typically, the appraiser's lender-client sends construction plans, specifications, and builder cost contracts, which the appraiser analyzes before making his own cost estimate. Doing these types of analyses give appraisers a way to track construction costs, which can be used to help calibrate a published cost system.

Occasionally an appraiser can obtain well documented cost information directly from contractors or architects, but only if the appraiser has a valid reason to know. When such information is used in an ACV appraisal to estimate the NFIP "market value," the appraiser must be careful that the new construction example is, in most respects, like the building under analysis.

Cost extraction: When a community has an active market in the sale of speculative new construction (almost always residential), building costs can be extracted from sale prices by deducting the contribution values of furniture packages, land, developer profit, swimming pools and pool enclosures, other site improvements, and landscaping. The residual cost obtained in this way is indicative of the direct cost to construct the building. Dividing the residual cost by the building living area square footage yields the cost per square foot to construct new buildings of similar quality in compliance with current codes and standards.

Speculative sales data is often available through a local multiple listing service (MLS). By analyzing exterior and interior MLS images, quality can be discerned, and costs calibrated to quality-descriptive terminology. With enough information like this, cost patterns emerge.

Making an on-going cost study like this is challenging, but the results are invaluable, especially when one is appraising at quality levels beyond a published cost system's capabilities. Sometimes, this is the only method available to appraisers working in high-quality coastal communities.

Evaluating ACV Reproduction (Replication) Costs

Estimating the like-kind reproduction cost is the first step in estimating ACV. The next step is subtraction of depreciation due to age, use (wear and tear), and neglect. I covered this in the May 2021 Insider, Floodplain Manager's Notebook, Market Value Supplement.

Here are some things a floodplain administrator should consider when evaluating the reliability of an ACV reproduction cost estimate:

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1. The reproduction cost should be developed using a reputable published cost service.
2. The appraisal report should name the cost system used, identify the cost system version, and include a discussion of how the cost system works.
3. The appraisal report should include a detailed cost system report (always more than one page), which shows the system settings and the building characteristics inputs.
4. When a reproduction cost estimate is retrospective, the cost system dataset must cover the applicable time period. This is crucial when estimating a reproduction cost before damage occurred, which communities need to make substantial damage determinations.
5. The cost system inputs should match the characteristics of the building under study.
6. With few exceptions, the cost system results should not require unusual user adjustment. Any unusual adjustments should be described by the appraiser.
7. Indirect costs, like architect fees, should be excluded or deducted.
8. In most cases, the per square foot reproduction cost of the building under study is expected to be lower than the cost of a new, code-compliant building of the same type and quality.

My Favorite Cost System

In 45 years of appraisal practice, I've used at least four Marshall/CoreLogic cost system products. My favorite is CoreLogic Commercial Express. Despite the name, it's also a powerful tool for developing residential costs. Commercial Express was designed for the insurance and appraisal industries. For insurable value cost estimates, it is necessary to estimate the cost of the existing building, just like what is required for an NFIP actual cash value estimate. CoreLogic Commercial Express features include:

- An address function that ties cost estimates to the local zip code.
- A cost database that spans many years, enough to handle effective dates "prior to start of work" or "prior to damage."
- A wide choice of building design inputs, including the number of stories, the choice of eight quality levels, an exterior wall perimeter input, building design/occupancy types, exterior wall height, ISO construction type, substructure areas, inclusion/exclusion of architect fees, site-related cost modifiers, and when needed, special user-adjustments.
- The ability to handle mixed-use buildings or buildings of more than one construction type by allowing creation of multiple building sections, each specified to the design/occupancy or construction type.
- Detailed input fields to specify building mechanical components, heating/cooling systems, exterior wall openings and finishes, roof construction and finish materials, floor finishes, ceiling finishes, interior wall construction/finishes, and the length of partition walls.
- Optional output report styles, including a detailed multi-page format.

There is a learning curve associated with a system like this, but Commercial Express is logical, relatively easy to use, and the call-in tech support is very good. This is a subscription-based system designed to support a single user or multiple users in a networked environment.

Not every appraiser or floodplain administrator needs a tool like CoreLogic Commercial Express. But whatever cost system is used, it must be appropriate to the building under evaluation, calibrated to local costs, and properly applied.

Survey on Community Resilience, Adaptation, and Sustainability Planning

The National Institute of Standards and Technology (NIST) Community Resilience Program is investigating the experiences and expectations of **local staff and officials** with respect to **resilience, adaptation, and sustainability planning** in their communities.



ASFPM members are invited to participate in the following survey, which will take around 20 minutes to complete. Your responses will be confidential and only reported in aggregate. [Take the survey.](#)