

# Single Family Design Guidelines Update/ Neighborhood Preservation Ordinance Update

## ISSUE PAPER A

### Definition: Mass, Bulk & Scale

The purpose of this issue paper is to:

- clarify current definitions of mass, bulk and scale
- clarify issues with existing mass, bulk and scale definitions
- reference how other jurisdictions define mass, bulk and scale
- Provide options for mass, bulk and scale definition changes

## Background

Mass, bulk and scale are important terms in reviewing architectural plans to determine appropriate compatibility within a neighborhood.

The existing Single Family Design Guidelines (SFDG) contain the following definitions for “Mass” and “Bulk”; there is no definition of “Scale.”

**Massing.** The appearance of heaviness or weight or lack thereof.

**Bulk.** The dimensional volume of a building.

One of the six required Neighborhood Preservation Ordinance (NPO) findings for a project approval includes:

5. The development will be compatible with the neighborhood, and its **size, bulk, and scale** will be appropriate to the neighborhood. (Bold format added.)

In addition, both the SFDG and Architectural Board of Review Design Guidelines (ABRDG) reference mass and scale or proportion.

The **ABRDG** state that generally:

“... structures and additions should present harmonious character... and structure elements should be consistent with the best elements that distinguish the particular neighborhood in which they are proposed. These elements include, but are not limited to: **mass, scale**, rooflines, colors, textures, and materials.” (Bold format added.)

The **SFDG** include the following guideline for both Hillside and Infill areas to design a structure to fit within the existing neighborhood:

“Building height should be **in proportion** to the style and size of the house and to the lot area.”

“Be compatible with neighboring houses in terms of **proportion**, size, **mass** and height.” (Bold format added.)

Issues that the ABR considers related to mass, bulk and scale include the following:

- **Compatibility:** How compatible is the structure's **mass, bulk and scale** with neighborhood structures' **mass, bulk and scale**?
- **Floor to Area Ratios:** Is a building's **scale** appropriate for its lot size?
- **Garage door design and placement:** Does the garage design minimize an appearance of **bulk**? Is the **scale** of the garage appropriate in comparison to the portion of the house visible from the street?
- **Second Story Setbacks:** How does the second story **mass** affect the streetscape or impact neighboring backyards? How **bulky** does a structure appear from the front or the back of a house because of how the **massing** of a building is composed?
- **Canyon Effect:** How close is the **mass** of a second story structure to the **mass** of an adjacent property's second story **mass**?
- **Wall Size:** How does a large expanse of wall contribute to a structure's appearance of **bulk**? How can a structure's **mass** be articulated to minimize large expanses of walls? Do building plate heights create wall, window and door details that are of a **human scale**?
- **Roof Size:** How does a large expanse of roof contribute to a structure's appearance of **bulk**? How can a structure's **massing** be changed to avoid large expanses of roof?

This issue paper does not address these issues, rather it simply explores providing an appropriate definition for mass, bulk and scale so that the issues can be more easily discussed. The draft Compatibility Guidelines to be reviewed later in the summer are expected to address these issues, using drawings and photographs to illustrate the guideline text.

## Issues

### Confusion as to Term Definitions

The Architectural Board of Review often must make difficult decisions in determining when a project's proposed mass, bulk and scale will be compatible with a neighborhood. Part of the difficulty in determining neighborhood mass, bulk and scale compatibility is in determining the extent of a "neighborhood" which a project must be compatible with; this issue is described further in Issue Paper B. The other difficulty in making NPO Finding #5 stems from the existing definitions of "Mass" and "Bulk", which are very generally defined, and the lack of a related definition of "Scale." A definition for "Size" and "Shape" or "Form," currently unavailable, may also be helpful. In many instances, there appears to be confusion or disagreement on the part of applicants and ABR members as to a common practical definition of "mass, bulk, and scale," leading to hampered communications.

### City of Santa Barbara "Mass" Definition Inconsistent with Most Definitions

The City of Santa Barbara's definition of mass is in conflict with the strict definition of "mass" as defined in the science of physics and with all other jurisdictions' definitions of the term that staff has found. In physics, weight is a relative term, whereas mass is simply a quantity of matter, no matter where or how the quantity of matter appears. Most jurisdictions define

“mass” as “three-dimensional volume of a building.” The City of Santa Barbara’s definition of mass as “the appearance of weight” may contribute to some confusion regarding the definition and application of the terms mass, bulk and scale.

### City of Santa Barbara “Bulk” Definition Inconsistent with Most Jurisdictions’ Definitions

The City of Santa Barbara’s definition of “bulk” as “the three dimensional volume” of a building is actually the definition most jurisdictions use for “mass.” Most dictionary definitions of bulk use the terms “large” or “largest portion” of something, which the City’s definition does not include.

### **Options**

Staff has gathered sets of “mass, bulk and scale” definitions which may provide more guidance for determining whether a project is consistent with NPO Finding #5. The collection of definition sets is in the appendix. When crafting definition options, staff considered each of the jurisdiction’s definitions included in appendices, dictionary definitions and definitions provided by Bill Mahan in “A Comparative Analysis of Three Story Buildings for Downtown Santa Barbara with Respect to Size, Mass, Bulk and Scale.”

### **Mass**

**Mass Option #1:** Retain existing definition of “massing.”

The appearance of heaviness or weight or lack thereof.

**Mass Option #2:** Change the definition of mass to be more consistent with a physical science definition of the term, dictionary definitions, other jurisdictions’ definitions, and William Mahan’s definition of the term in “A Comparative Analysis of Three Story Buildings for Downtown Santa Barbara with Respect to Size, Mass, Bulk and Scale”:

A building’s three-dimensional volume in consideration of the building’s height, width and depth combined.

#### **Example Use:**

The mass of this structure appears large in comparison to other homes. Although the square footage of the home is comparable to the homes in the neighborhood, the plate heights of this structure are much higher than the other homes, creating a larger mass than the other structures in the neighborhood.

**Mass Option #3:** Utilize Mass Option #2 definition, and also provide a new definition of “Massing.”

**Massing:** The composition and shape of a structure’s mass.

Example Uses:

Revise the plans to include less massing in the front of the structure to create a street façade appearance in scale with neighboring homes’ facades.

Revise plans to include less massing in the rear of the structure to maintain open space and privacy for neighboring backyards.

**Mass Option #4:** Change the definition of mass to a definition crafted by Single Family Design Guidelines Update Steering Committee members.

## **Bulk**

Following are three dictionary definitions of bulk from [www.dictionary.com](http://www.dictionary.com):

- Size, mass, or volume, especially when very large.
- The property resulting from being or relating to the greater in number of two parts; the main part; "the majority of his customers prefer it"; "the bulk of the work is finished" [syn: majority] [ant: minority]
- In bulk, in a mass; loose; not enclosed in separate packages or divided into separate parts; in such shape that any desired quantity may be taken or sold.

At the ABR, it appears that conversations regarding the “bulk of a structure” are often in regards to “breaking up the massing of the bulk of a structure”; in other words, breaking up the massing of the largest appearing shapes of a structure.

**Bulk Option #1:** Retain existing definition of bulk.

The dimensional volume of a building.

**Bulk Option #2:** Change the definition of bulk to be more consistent with dictionary definitions, other jurisdictions’ definitions and the most common use of the term. Staff crafted the following definition for consideration.

A subjective term for the part or parts of a building's mass which constitute(s) the largest appearing general shape or shapes of a building.

**Bulk Option #3:** Change the definition of bulk to match the definition described by William Mahan in “A Comparative Analysis of Three Story Buildings for Downtown Santa Barbara with Respect to Size, Mass, Bulk and Scale.”

The qualitative characteristics of a building, i.e. the design of its architectural composition, shape and scale.

**Bulk Option #4:** Change the definition of bulk to a definition crafted by Single Family Design Guidelines Update Steering Committee members.

## Scale

**Scale Option #1:** Continue to require compatible neighborhood scale in NPO Finding #5 and suggest scale be compatible with the project's neighborhood as part of the ABRDGs, but provide no definition of scale.

**Scale Option #2:** Add a definition that relates scale to other buildings in a neighborhood. Following is a definition crafted by staff for consideration:

The proportion of a structure's mass and bulk in relationship to other structures in the structure's neighborhood.

Note that a scale compatible with other homes in a neighborhood will vary by neighborhood. For example, some homes in a certain section of the East San Roque area are of a much larger scale than homes on East Mesa lots. A home proposed in East San Roque and deemed in scale with the neighborhood might be deemed out of scale with homes in the East Mesa if the same project were proposed there.

**Scale Option #3:** Add a definition that relates scale to "human scale," as William Mahan suggests, and also borrows from scale "detail" ideas expressed in the West Palm Beach Design Guidelines. The following is a definition crafted by staff for consideration.

A building and its details, including: garage doors, pedestrian entries, windows, plate heights and balconies as they are in proportion to the height of an average person.

**Scale Option #4:** Add a definition that relates scale to both other buildings in a neighborhood and "human scale." The following is a definition crafted by staff for consideration.

A building and its details, including: garage doors, pedestrian entries, windows, plate heights and balconies, as they relate to human scale proportions; also, a building's mass and bulk and the building's details proportionately compared with other buildings in a neighborhood.

**Scale Option #5:** Change the definition of scale to a definition crafted by Single Family Design Guidelines Update Steering Committee members.

## Recommendations

Staff recommends the following as definitions that could be easily understood by the public as well as ABR members:

- Mass Option #3
- Bulk Option #2
- Scale #4

Staff also recommends inclusion of a definition of “form” in the Single Family Design Guidelines.

**Form:** The exterior shape of a structure’s mass.

Together, staff’s recommendations would create the following definition set:

**Mass:** A building’s three-dimensional volume in consideration of the building’s height, width and depth combined.

**Massing:** The composition and shape of a structure’s mass.

**Bulk:** A subjective term for the part or parts of a building's mass which constitute(s) the largest appearing general shape or shapes of a building.

**Scale:** A building and its details, including: garage doors, pedestrian entries, windows, plate heights and balconies, as they relate to human scale proportions. Also, a building’s mass and bulk and the building’s details proportionately compared with other buildings in a neighborhood.

**Form:** The exterior shape of a structure’s mass.

Please note that massing can refer to any part of a structure or form, whereas bulk only refers to parts of the structure that contribute to the parts of the structure that appear largest. Bulk is usually the largest-appearing part of the project’s mass. Massing affects bulk.

Staff also recommends that some of the concepts and methods for graphically communicating size, bulk and scale be drawn from the following sources:

- Report prepared by William Mahan in the updated Single Family Design Guidelines by RRM Design Group. For example, where Mr. Mahan has included photographs and elevation plans of commercial structures for comparison and discussion, the Single Family Design Guidelines could include similar single family home photographs and perspective elevation analysis and explanations in a format easily understandable to the public.
- West Palm Beach presentation materials: page summarizing parts of a home which relate to mass, bulk and scale and the pages on Scale and Human Scale Elements including numerical restrictions on items such as door entry heights.

Other graphics should also be found or created as necessary to illustrate issues related to mass, bulk and scale such as: compatibility, floor to area ratios, garage door design and placement, second story setbacks, “canyon effect,” wall size and roof size.

## **Attachments**

1. Collection of jurisdiction definitions of mass, bulk and scale and a summary of definitions in the report, “A Comparative Analysis of Three-Story Buildings for Downtown Santa Barbara with Respect to Size, Mass, Bulk and Scale.”
2. West Palm Beach Florida Design Guidelines Presentation materials.
3. City of Pacific Grove, “Architectural Review Guidelines for Single Family Residences”
4. “A Comparative Analysis of Three-Story Buildings for Downtown Santa Barbara with Respect to Size, Mass, Bulk and Scale,” by William Mahan, AIA, 2004.

## COLLECTION

### Study by William Mahan, AIA

William Mahan has prepared a report, “A Comparative Analysis of Three Story Buildings for Downtown Santa Barbara with Respect to Size, Mass, Bulk and Scale.” Although the report focuses on commercial development, there may be some useful applications of the concepts established in the report for single-family homes as well. The report concludes with the following statement:

“...buildings of greater *size* and corresponding *mass* and *scale* require elements of greater size. These greater sizes depart proportionately from human scale, and consequently from the charm and character that has epitomized the architecture of Santa Barbara, which we all admire and seek to sustain.”

Many are concerned that some homes are large in comparison with other single-family homes in a neighborhood. Could it also be that part of the concern regarding larger homes stems from large homes' departure from a human scale?

In the report, Mr. Mahan defines size, mass, bulk and scale as follows:

**Size:** The length and height of a building, or its elements, with reference to a definite unit of measure (see **Human Scale**).

**Mass:** The quantitative characteristics of a building, i.e. the measure of its height, length, openness and solidity.

**Bulk:** The qualitative characteristics of a building, i.e. the design of its architectural composition, shape and scale.

**Scale:** The proportions of a building or its elements, with reference to a definite unit of measure (see **Human Scale**).

**Human Scale:** The aspect of architecture in which its elements are in proportion to the **average human** (see **Scale**).

### City of Chino Hills:

**Mass:** The three-dimensional bulk of a structure; its height, width, and depth.

**Scale:** The size and magnitude of a structure as distinguished from its shape, which is the form of a building created by its outline.

The mass and scale of a building should relate to its use as a single-family residence. Each residence should be designed at a human scale so as not to overwhelm or dominate its surroundings.



### **City of Laguna Hills:**

#### **Scale:**

1. The relationship between distances on a map and actual ground distances;
2. The proportioned relationship of the size of parts to one another.

### **City of Palm Beach, Florida:**

**Mass:** The volume of a building in cubic feet; cubic content ratio.

**Bulk:** The shape of a building, including such elements as height, setbacks and lot coverage, which affect the relationship of a structure to its neighbors.

**Scale:** Details such as placement of garage doors, size of entries, and size of windows, which affect the human scale of a building and how the building visually relates to residents and abutting properties.

### **City of Redondo Beach:**

**Mass:** Mass describes three-dimensional forms, the simplest of which are cubes, boxes (or “rectangular solids”), cylinders, pyramids and cones. Buildings are rarely one of these simple forms, but generally are composites of varying types of assets. This composition is generally described as the “massing” of forms in a building.

**Scale:** The general feeling of mass and size of the building as related to that of the other buildings.

### **Union City:**

**Bulk:** Indicates the size, setbacks and location of buildings with respect to each other, and includes the following:

- A. Area of building;
- B. Location of exterior walls at all levels in relation to lot lines, streets or to other buildings;
- C. Gross floor area of buildings in relation to lot area; and
- D. All open spaces allocated to buildings. (Ord. 457-95 § 2 (part), 1995; Ord. 55-64 § 2.1 (part), 1964)

### **Other Nearby Local Jurisdictions**

The Cities of Carpinteria and Goleta and the County of Santa Barbara do not appear to have overall design guideline definitions of mass, bulk or scale. The County of Santa Barbara has a definition of bulk in its Coastal Zoning Ordinance for use in reviewing reconstruction projects as follows:

**Bulk:** Total interior cubic volume as measured from the exterior surface of the structure.