402 Impact Adjustment for Areas

Many CRS activities are not implemented the same way throughout the floodplain. Therefore, their credit points need to be adjusted to reflect how much of the floodplain they do cover. In CRS credit calculations, this is called the "impact adjustment" (see Section 222).

Some activities are adjusted based on the number of buildings that are affected and some are adjusted based on the size of the area affected. This section reviews how the activity and element credits are adjusted to reflect their impact on the area affected. Section 301 covers impact adjustments based on the number of buildings affected.

Most elements in the activities listed in Table 403-1 (see below) do not affect all of the buildings that could benefit from them. For example, freeboard is often enforced only in areas for which base flood elevations have been determined. A community's credit for freeboard and other elements is adjusted based on how much of the SFHA is affected. In order to measure the impact of these activities, the community must determine the area affected by each element and the area of the SFHA.

Some activities and elements do not have the impact adjustment step as part of calculating the total credit points. These activities and elements are assumed to be effective throughout the community. In some cases, credit is provided ONLY if they are implemented everywhere within the community. For example, in Activity 450 (Stormwater Management) there is no credit for ESC (erosion and sediment control regulations), or WQ (water quality) unless those measures are enforced throughout the entire community.

402.a. Impact Adjustment Ratio

Impact adjustments are calculated by multiplying the points for an element by a ratio that represents how much of the flood problem within the community is being addressed by the element. Impact adjustment ratios are variables with a lower case "r" preceding the acronym for the element.

The value of an impact adjustment ratio is determined by dividing the number of buildings or the total area affected by an element (the numerator) by the appropriate denominator. The number of buildings is designated by a lower case "b," and the area affected is designated by a lower case "a."

The denominator for the elements in each activity is specified in the Impact Adjustment section for the element. In most cases, it is the area of the community's Special Flood Hazard Area or "aSFHA."

NOTE: *The community's aSFHA should be reviewed and updated each year for the Program Data Table that is included in the annual recertification (see Section 213.a).*

Example 402.a-1.

In Activity 420 (Open Space Preservation), the credit for preserving open space is adjusted based on its impact, i.e., how much of the SFHA is preserved as open space. This is calculated by multiplying the credit by the impact adjustment. The acronym for open space preservation is "OSP." The impact adjustment ratio for OSP is rOSP.

rOSP is the total area of the parcels that qualify for OSP credit (aOSP) divided by the area of the community's SFHA (aSFHA). The formula is

$$rOSP = \frac{aOSP}{aSFHA}$$

For example, in a community with several parks and other properties that qualify as preserved open space:

The total area of the qualifying parcels is 154 acres. aOSP = 154

The total area of the SFHA is 598 acres. aSFHA = 598

$$rOSP = \frac{154}{598} = 0.26$$

The community receives 26% of the maximum possible credit for OSP because 26% of its SFHA is preserved as open space.

In some elements in Activities 410, 420, and 430, it is possible to receive an impact adjustment ratio of up to 1.5. An example would be a community that enforces a higher regulatory standard throughout its "regulatory floodplain" (see Section 120 (Glossary)) that includes the SFHA and flood-prone areas outside the SFHA. Another example is the case in which a community enforces the freeboard requirement throughout the SFHA and on parcels that are partially within the SFHA. These communities may have numerators that are larger than the area of the SFHA, so their impact adjustment ratios would be greater than 1.0.

402.b. Optional Minimum Value

Some elements and activities have an optional minimum value that can be used in place of a calculated impact adjustment ratio. In most cases the value is 0.1 or 10% of the maximum possible. Using this minimum value is optional. It is normally used if

- The community does not want to develop the data needed to determine the numerator or denominator in the impact adjustment ratio, or
- The calculated impact adjustment ratio is less than 0.1. In this case, the community will receive more credit by using the optional minimum.

The activities that use areas for their impact adjustments and the optional minimum value that can be used are listed in Table 403-1, below.

402.c. Regulating Areas Preserved as Open Space

If a community applies for credit for Activity 420 (Open Space Preservation), it means that certain areas are preserved from development. Higher regulatory standards have no impact in those open space areas. Therefore, the impact adjustment ratios for the elements in Activity 430 (Higher Regulatory Standards) cannot be 1.0 if the community regulates only the SFHA and receives credit for open space preservation in Activity 420.

In other words, a community that applies for credit in both Activities 420 and 430 cannot have the maximum impact adjustment ratio for either activity. The numerator in the impact adjustment ratio formula for Activity 430 elements must account for this by excluding the area of preserved open space (aOSP).

Example 402.c-1.

The community in Example 402.a-1 has a freeboard requirement (FRB) for development throughout its SFHA. It can only receive FRB credit for the areas where development may occur, i.e., areas that are not counted toward preserved open space (OSP).

$$rFRB = \frac{aFRB}{aSFHA} = \frac{aSFHA - aOSP}{aSFHA} = \frac{598 - 154}{598} = \frac{444}{598} = 0.74$$

The community receives 74% of the maximum possible credit for freeboard because there will be no new buildings in the areas preserved as open space. The freeboard regulation has no impact in the 26% of the SFHA that is preserved as open space, which is reflected in the impact adjustment.

403 Impact Adjustment Map

An "impact adjustment map" is needed to document and calculate the numerators and denominators in the community's impact adjustment ratios for certain CRS activities. All appropriate areas for numerators and denominators for impact adjustment ratios must be included with the impact adjustment map. The denominator is usually aSFHA (Table 403-1), and the numerator is the area where each element is effective. For the 600 series of warning and response activities, impact adjustment maps delineate the areas affected by the elements, but the impact adjustments are based on the number of buildings in those areas.