Code Amendment Proposal Form

For public amendments proposed to the 2021 editions of the International Codes

Instructions: Upload this form and all accompanying documentation. If you are submitting your proposal on a separate sheet, make sure it includes all information requested below.

All proposals must be received by **July 23, 2021.**

CONTACT INFORMATION

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Organization: Building Dept Liaison Committee of Structural Engineers Association of Colorado

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Signature:

AMENDMENT PROPOSAL

Please use a separate form for each proposal.

1) Code(s) associated with this proposal. Please use acronym: IEBC

If you submitted a separate coordination change to another code, please indicate which code: _____

Acronym	Code Name	Acronym	Code Name
DBC-AP	Denver Building Code–Administrative Provisions	**IFC**	International Fire Code
DBC-*xxxx*	Denver Building Code–*xxxx (code)* amendments (e.g., DBC-IBC, DBC-IEBC)	**IFGC**	International Fuel Gas Code
		IRC	International Residential Code
IBC	International Building Code	**IMC**	International Mechanical Code
IEBC	International Existing Building Code	**IPC**	International Plumbing Code
IECC	International Energy Conservation Code	**DGC**	Denver Green Code

2) Please check here if a separate graphic file is provided: ☐
Graphics may also be embedded within your proposal below.

3) Use this template to submit your proposal or attach a separate file, but please include all items requested below in your proposal. The only formatting needed is **BOLDING**, ~~STRIKEOUT~~ AND UNDERLINING. Please do not provide additional formatting such as tabs, columns, etc., as this will be done by CPD.

Code Sections/Tables/Figures Proposed for Revision:

502.4 Existing structural elements carry gravity load [Prescriptive Compliance Method, Additions]
503.3 Existing structural elements carry gravity load [Prescriptive Compliance Method, Alterations]
706.2 Addition or replacement of roofing or replacement of equipment [Work Area Compliance Method, Alterations - Level 1]
805.2 Existing structural elements carrying gravity loads [Work Area Compliance Method, Alterations - Level 2]
1103.1 Additional gravity loads [Work Area Compliance Method, Additions]

Proposal:

Revise as follows:

502.4 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an *addition* and its related *alterations* cause an increase in the ~~design dead, live or snow load, including snow drift effects,~~ *load effects* due to design gravity loads of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose vertical load-carrying capacity is decreased as part of the *addition* and its related *alterations* shall be considered to be an altered element subject to the requirements of Section 5.3.3. Any existing element that will form part of the lateral load path for any part of the *addition* shall be considered to be an existing lateral load-carrying structural element subject to the requirements of Section 502.5.

Revise as follows:

503.3 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an *alteration* causes an increase in ~~design dead, live or snow load, including snow drift effects,~~ *load effects* due to design gravity loads of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the *alteration* shall be shown to have the capacity to resist the applicable ~~design dead, live or snow load, including snow drift effects,~~ *load effects* due to design gravity loads required by the *International Building Code* for new structures.

Revise as follows:

706.2 Addition or replacement of roofing or replacement of equipment. Any existing gravity load-carrying structural element for which an *alteration* causes an increase in ~~design dead, live or snow load, including snow drift effects,~~ *load effects* due to design gravity loads of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *International Building Code* for new structures.

Revise as follows:

805.2 Existing structural elements carry gravity loads. Any existing gravity load-carrying structural element for which an *alteration* causes an increase in ~~design dead, live or snow load, including snow drift effects,~~ *load effects* due to design gravity loads of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the *alteration* shall be shown to have the capacity to resist the applicable ~~design dead, live or snow load, including snow drift effects,~~ *load effects* due to design gravity loads required by the *International Building Code* for new structures.

Revise as follows:

1103.1 Additional gravity loads. Any existing gravity load-carrying structural element for which an *addition* and its related *alterations* cause an increase in ~~design dead, live or snow load, including snow drift effects,~~ *load effects* due to design gravity loads of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *International Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the *addition* and its related *alterations* shall be considered to be an altered element subject to the requirements of Section 805.2. Any existing element that will form part of the lateral load path for any part of the *addition* shall be considered to be an existing lateral load-carrying structural element subject to the requirements of Section 1103.3.

Supporting Information:

Purpose: To resolve certain unintended consequences and oversights in prior revisions made between the 2015 and 2018 code cycles in the name of consolidating and harmonizing the various "5 percent rule" provisions across the IEBC. These changes have resulted in an increased burden on owners and their consultants working on existing buildings, have opened the door to certain outcomes that could actually decrease structural safety, and provide better outcomes only in certain limited situations that are not applicable in Colorado.

Reasons: Review of documentation from the 2015-2018 code revision cycle indicates that the changes adopted in this cycle were made in a good-faith effort to harmonize the various chapters of the IEBC on the topic of the "5 percent rule," and the resulting language borrowed features from each provision. There is no indication in the records that the proposed intent was to substantially deviate from the prior application of the "5 percent rule," but was rather to provide more clarity and consistency. However, the revisions have had several undesirable effects:

1. As currently phrased, the "5 percent rule" now applies not only to overall combined gravity loads, but also to any one component of the load, including "dead, live or snow load, including snow drift effects." This change has the effect of imposing a much stricter limit on what additions can be undertaken without demonstrating compliance with the requirements for new structures, particularly for structures that carry significant live and/or snow loads. The 5% limit applied to dead load only for wood or steel structures can be very small, requiring new structural evaluations where considering the longstanding criteria of 5% of total load would not.
2. The specific gravity loads enumerated in the definition, "dead, live or snow load, including snow drift effects," are not comprehensive. While less common, other forms of gravity load such as sliding snow, ice, rain, earth, and fluids may also be relevant. As written, the definition requires no evaluation for increases of any amount to these loads. This proposal is to revert to the more general language of the 2015 IEBC (and prior editions), which leaves it to the engineer to determine what gravity loads are applicable.

Additionally, an unresolved oversight in both the original and revised language of the "5 percent rule" is that it refers only to the magnitude of the applied loads. This has several drawbacks:

1. Changes to the distribution or locations of the applied loads are not addressed, which may have impacts on internal member forces (e.g., a RTU moved closer to the center of a roof beam, increasing flexure; or closer to the end, increasing shear)
2. For some inelastic structures, changes to the character (but not the magnitude) of loads may have significant strength implications but show up only on the capacity side (e.g., wood structures supporting sustained vs. transient loading, and epoxy anchors in sustained tension.)

Therefore, "gravity load effects" is deemed to best capture the original intent and most desirable application of the "5 percent rule." Load effects are defined in the IBC as, "forces and deformation produced in structural members by the applied loads." While deformations have not traditionally been considered in the "5 percent rule," we must acknowledge that internal member forces cannot develop without said deformations, so their presence is implicit. Furthermore, it is the tendency of wood structures and epoxy anchorages to creep and accumulate additional inelastic deformations under constant sustained loading that motivates us to attribute them a lower strength for such loads. Therefore, "load effects" desirably captures and incorporates these behaviors into a definition that remains tied to loading, and that does not unnecessarily undermine the simplicity of the rule by forcing practitioners to calculate stresses or assess changes in demand-to-capacity ratios.

The "5 percent rule" has long been applied by engineers to the combined design loads acting on a structure. This is consistent with similar past and present "5 percent rule" provisions that apply to member stresses or demand-to-capacity ratios (e.g., IEBC 2021 506.5.1). Changes to individual portions of the design loading are not as relevant or as descriptive as changes to the whole, and it is 5 percent changes to the whole that have long been held in the Colorado region to constitute a significant change worthy of more detailed evaluation.

It should be noted that the Structural Engineers Association of California has included discussion and example problems in their publication, Gravity Design for Rooftop Solar Photovoltaic Arrays (SEAOC PV3-2019) opining that the application of the IEBC 2018 and later version of the "5 percent rule" results in better outcomes for certain older wood-framed structures in California. This is reportedly due to latent deficiencies in old wood structures that have likely never seen more live load than they did during construction or reroofing, and that are now being considered for installation of rooftop solar with real long-term loads displacing hypothetical live loads. However, this issue seems to be isolated to coastal low-snow regions in which these older and potentially vulnerable structures have persisted without being tested by other environmental loads. Such structures are judged to be uncommon in regions affected by significant seasonal snowfall, such as the Front Range of Colorado. Therefore, while work is ongoing within the SEAC Existing Structures Committee and NCSEA to appropriately amend these provisions at the national level while accounting for the needs and concerns of coastal practitioners, those discussions need not delay the revision of this provision in Colorado to correct past oversights and effect a more rational and appropriate implementation of the "5 percent rule."

Substantiation: Excerpts from 2015-2018 Code Change Proposal and SEAOC PV3-2019 copied below.

EB18-16

IEBC: [BS] 403.3, [BS] 707.2, [BS] 807.4.

Proponent : David Bonowitz, representing National Council of Structural Engineers Associations (dbonowitz@att.net)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.

2015 International Existing Building Code

Revise as follows:

[BS] 403.3 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an *alteration*causes an increase in design ~~gravity~~ dead, live, and/or snow load, including snow drift effects, of more than 5 percent shall be ~~strengthened, supplemented,~~ replaced or ~~otherwise~~ altered as needed to carry the ~~increased~~ gravity ~~load~~ loads required by the *International Building Code*for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the *alteration*shall be shown to have the capacity to resist the applicable design ~~gravity~~ dead, live, and/or snow loads, including snow drift effects, required by the *International Building Code*for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m2) or less over an existing single layer of roof covering.

Delete and substitute as follows:

[BS] 707.2 Addition or replacement of roofing or replacement of equipment. ~~Where addition or replacement of roofing or replacement of equipment results in additional dead loads, structural components supporting such reroofing or equipment shall comply with the gravity load requirements of the *International Building Code*.~~

~~**Exceptions:**~~

1. ~~Structural elements where the additional dead load from the roofing or equipment does not increase the force in the element by more than 5 percent.~~
2. ~~Buildings constructed in accordance with the *International Residential Code* or the conventional lightframe construction methods of the *International Building Code* and where the dead load from the roofing or equipment is not increased by more than 5 percent.~~
3. ~~Addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m^2) or less over an existing, single layer of roof covering.~~

Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live, and/or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *International Building Code* for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m2) or less over an existing single layer of roof covering.

[BS] 807.4 Existing structural elements carrying gravity loads. ~~*Alterations* shall not reduce the capacity of existing gravity load-carrying structural elements unless it is demonstrated that the elements have the capacity to carry the applicable design gravity loads required by the *International Building Code*. Existing structural elements supporting any additional gravity loads as a result of the *alterations*, including the effects of snow drift, shall comply with the *International Building Code*.~~

~~**Exceptions:**~~

1. ~~Structural elements whose stress is not increased by more than 5 percent.~~
2. ~~Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the *existing building* and its *alteration* comply with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.~~

Any existing gravity load- carrying structural element for which an alteration causes an increase in design gravity dead,

live, and/or snow load, including snow drift effects, of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design gravity dead, live, and/or snow loads, including snow drift effects, required by the *International Building Code* for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the *International Building Code* or the provisions of the *International Residential Code*.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m2) or less over an existing single layer of roof covering.

Reason: The basic intent of these three sections is the same: Gravity load increases of 5% or more, as well as capacity reductions, require redesign. However, the three sections differ in their wording, in their explicit inclusion of snow drift effects, and in their exceptions. This proposal reconciles the Prescriptive and Work Area methods and adds consistency to the WAM's Level 1 and Level 2 provisions. In general, the structure, logic, and completeness of Section 403.3 is preferred. However, the exceptions of 707.2 and 807.4, as well as the explicit consideration of snow drift effects in 807.4 are retained and added to 403.3 for consistency. Thus, the changes include:

- Replacing the 5% exception in 707.2 and 807.4 with the structure of the 5% rule from 403.3.
- Adding the light frame exception from 807.4 to 403.3 and modifying the corresponding exception in 707.2 to match.
- Adding the reroof exception from 707.2 to both 807.4 and 403.3.
- Rewording, with editorial revisions, for clarity and consistency.

Thus, 403.3 and 807.4 become identical. Section 707.2 is nearly identical, but it does not require the second sentence because any decrease in member capacity would not be allowed as a Level 1 alteration.

Since Level 2 Alts must comply with both Chapter 8 and Chapter 7, there will be some duplication between 707.2 and 807.4 (for example, 807.4 does not really need the reroof exception since it is already in 707.2), but no more than there is already, and with this change, the matching language ensures no conflict.

Cost Impact: Will increase the cost of construction
The proposed change could increase OR DECREASE the cost of construction. By reconciling the two methods, a common-sense snow provision has been added to the Prescriptive method, but two exceptions have been added as well.

evaluate the roof framing without the presence of a PV system, because the building has presumably resisted roof live loads successfully prior to installation of the PV panels and because failure to install the panels or removal of the panels will result in the building returning to the originally anticipated design condition. Consequently, the question of whether an existing building can meet current roof live load requirements is typically irrelevant to PV panel projects.

Recommendation: Roof framing members in existing buildings need not be checked for the load case where PV panels are not added or present on a roof.

7.1.2. Concentrated Live Loads

Many older buildings were not designed for the 300-pound concentrated load for maintenance workers, and may not have adequate capacity to resist this load by calculation; however, these structures have presumably resisted concentrated loads of similar magnitude over the years during routine maintenance and/or re-roofing. Given that the actual live loads are not being increased in areas where the PV systems are not being installed, and given that there exists no code requirement to evaluate members or portions of members for the 300-pound concentrated load where the panels are not being installed, SEAOC does not believe that the requirement for roof members to resist, by calculation, a 300-pound concentrated live load is particularly relevant to PV panels. Care should be taken, however, not to overload the existing roof framing members during movement of materials and installation of the PV system.

Recommendation: Where PV systems will be added to existing buildings designed prior to the requirement to consider a 300-pound concentrated live load, existing roof framing members need not be checked for the load case involving the 300-pound concentrated load.

7.2. Changes in Gravity Loads

The code requirements involving an increase of gravity load on existing elements are not always straightforward. The following summarizes ambiguity in the 2015 *International Existing Building Code* (IEBC), as well as the clearer requirement of the 2018 IEBC.

Section 403 of the 2015 IEBC, part of the Prescriptive Compliance Method, and formerly Section 3404.3 of the 2012 IBC, limits the increase in gravity load on any existing member to 5 percent without assessing the need to upgrade:

> "*Any existing gravity load-carrying structural element for which an alteration causes an increase in design gravity load of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by the International Building Code for new structures.*"

Section 706.2 of the 2015 IEBC (part of the Work Area Compliance Method) is worded slightly differently:

> "*Where addition or replacement of roofing or replacement of equipment results in additional dead loads, structural components supporting such reroofing or equipment shall comply with the gravity load requirements of the* International Building Code.
>
> *"Exceptions:*
> *1. Structural elements where the additional dead load from the roofing or equipment does not increase the force in the element by more than 5 percent…*"

Section 807.4 of the 2015 IEBC (part of the Work Area Compliance Method) is worded yet a third way:

> "*Existing structural elements supporting any additional gravity loads, including the effects of snow drift, shall comply with the* International Building Code.
>
> *"Exceptions:*
> *1. Structural elements whose stress is not increased by more than 5 percent…*"

These provisions are not clear with respect to whether the 5-percent trigger applies to only the critical / governing load case or to *any* load case. Furthermore, the governing load case may change if live load is eliminated by the PV panels.

Section 503.3 of the 2018 IEBC has a clearer requirement with respect to adding dead load, and requires analysis according to current code for any increase of dead load more than 5 percent, whether or not live load offset may occur:

> "*Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the* International Building Code *for new structures.*"

While not explicitly stated in this requirement, the need for analysis would also be triggered by solar array configurations that concentrate gravity load in a way that increases demand on an element by more than 5 percent. For example, if a new solar array has supports attached to every third sub-purlin, this configuration may increase the load on selected sub-purlins, even when the uniform load remains the same.

7.2.1. Changing Gravity Loads on Existing Wood Roofs

The issue of interpretation of the 5-percent trigger can result in challenges with respect to wood roof members, which are typically governed by the load case involving dead and live loads. If the trigger only applies to the critical load case (in this case, dead plus roof live load), then the reduction in live load where a low-clearance PV system is present is sufficient to allow application of a fairly heavy PV system.

The PV system weight that could be offset by precluding live load depends on the weight of the roof itself, but can be calculated algebraically by adjusting the sum of dead load of the roof (DL_{ROOF}) and the dead load of the PV system (DL_{PV}) for long-term load duration and setting that quantity equal to the duration-adjusted sum of the dead load of the roof and the roof live load (LL_{ROOF}), as follows:

$$(DL_{ROOF} + DL_{PV})/0.9 = (DL_{ROOF} + LL_{ROOF})/1.25 \quad (1)$$

Where 0.9 and 1.25 are load duration factors from NDS Table 2.3.2, this formula can be reduced to:

$$DL_{PV} = 0.72*LL_{ROOF} - 0.28* DL_{ROOF} \quad (2)$$

Thus, for a wood roof that weighs 12 psf and has a roof live load of 20 psf, one can add 11 psf of PV panels, racking, and ballast without increasing the total load combination at all.

In many cases, the governing design load on a roof member is smaller for the case when the PV system is added, than for the case when the PV system is not present.

An important point to consider is that the addition of long-term dead load to older wood-framed roof members has caused a number of structural failures. So while the addition of dead load in the form of PV panels may result in lower total stresses under the dead-plus-live load combination, it can significantly increase the long-term dead load of a wood-framed roof, thus increasing the chance of future failures.

Conversely, if the trigger is intended to cover an increase of five percent in *any* of the load cases involving gravity load, the maximum weight of an added PV system would be limited to 5 percent of the total dead load of the roof assembly (as required in the 2018 IEBC), unless the capacity of the existing structure is evaluated. Since most wood-framed roofs weigh on the order of 10 to 15 psf, the maximum PV system that could be added without assessing the need to upgrade is limited to 0.5 psf to 0.75 psf for these roofs. This is an extremely low threshold, and one that may preclude addition of PV systems to many older wood-framed structures due to the lower allowable stresses mandated by current code, as discussed below.

Recommendation: For wood-framed roofs, existing gravity load-carrying structural elements for which the addition of PV panels results in an increase of more than 5 percent in design dead, live, or snow load (including drift effects) shall be evaluated and altered as needed to carry the increased gravity load(s) required by the building code for new construction.

In addition to any increase in design uniform load, the evaluation shall include the effects of concentration of gravity loads in fewer members due to the PV panels. Such consideration of load concentration is permitted to account for the extent to which structural sheathing can allow parallel repetitive framing members to share load. (This topic is addressed in documents by others such as the *California Solar Permitting Guidebook*).

Exception: The 5-percent trigger noted above may be based on the governing combination of design dead, live, and/or snow load for the condition without PV panels compared to that with PV panels if the following two conditions are satisfied in the area of the roof being evaluated:

1) Either the roof slope is at least ½ inch per foot, or the roof slope is at least ¼ inch per foot and the affected roof area is evaluated to demonstrate adequate drainage such that ponding is not a concern.

2) The existing roof framing was designed according to the 1994 *Uniform Building Code* or a more recent code, or if the roof framing is constructed with Southern Pine, and it was designed according to the 2015 IBC or a more recent code.

If the above exception is invoked for designs under the 2018 IEBC, this shall be identified to the AHJ as an exception to code prescriptive requirements and shall be justified according to the alternative procedures in IEBC Section 104.11, to be approved at the discretion of the AHJ.

7.2.2. Changing Gravity Loads to Concrete- and Steel-framed Roofs

Unlike wood, design of concrete- and steel-framed roofs does not include time-dependent effects in determination of capacity. Furthermore, in general, methods for determining design strengths of older concrete and steel structures have not changed significantly from past practice, and do not have recognized issues with failures caused by adding even small amounts of dead load to roofing members. Although a strict reading of the 2018 IEBC would require an analysis to current code, SEAOC feels that existing steel and concrete structures do not have the same concerns as older wood structures, and therefore use of live load offset to justify addition of PV systems appears reasonable. This live load offset may not be particularly relevant, however, if snow loads are larger than live loads.

Recommendation: For steel- and concrete-framed roofs, use of a live load offset to justify addition of PV systems appears reasonable. For these materials, the 5-percent trigger in Sections 403.3, 707.2, and 807.4 of the 2015 IEBC is permitted to be interpreted to apply only to the critical/governing load case(s).

For 2018 IEBC designs that rely on this recommendation, this shall be identified to the AHJ as an exception to code prescriptive requirements and shall be justified according to the alternative procedures in IEBC Section 104.11, to be approved at the discretion of the AHJ.

Bibliography:
2015 International Building Code (2015 IBC)
2018 International Building Code (2018 IBC)
2021 International Building Code (2021 IBC)
Gravity Design for Rooftop Solar Photovoltaic Arrays (SEAOC PV3-2019)
EB18-16, ICC Committee Action Hearings, April 2016

Referenced Standards:

None

Impact:

Proposal will reduce the cost of construction by allowing more projects to qualify for the "5 percent rule" exception, consistent with longstanding engineering practice in Colorado.

Note: Discuss the impact of this proposal in this section AND indicate the impact of this amendment proposal for each of the following:

- The effect of the proposal on the cost of construction: ☐ Increase ☒ Reduce ☐ No Effect
- The effect of the proposal on the cost of design: ☐ Increase ☒ Reduce ☐ No Effect
- Is the proposal more or less restrictive than the I-codes: ☐ More ☒ Less ☐ Same

Departmental Impact: (To be filled out by CPD staff)

Note: CITY STAFF ONLY. Discuss the impact of this proposal in this section AND indicate the impact of this amendment proposal for each of the following:

- The effect of the proposal on the cost of review: ☐ Increase ☐ Reduce ☐ No Effect
- The effect of the proposal on the cost of enforcement/inspection: ☐ Increase ☐ Reduce ☐ No Effect