Compilation of Suggested Revision Options for Urban Level of Flood Protection Criteria Refinement

July 10, 2013

DWR has established the Urban Level of Flood Protection (ULOP) Criteria Refinement Work Group to advise DWR in completing the ULOP Criteria. The ULOP Criteria Refinement Work Group had its first meeting on June 4, 2013. During the meeting, the work group identified several topics for further discussion in a small, focused subgroup setting. Three subgroup discussions occurred subsequently to discuss the following issues:

- Subgroup 1 on June 20, 2013: Geographic scope, shallow flooding, local drainage, and urban/developed area
- Subgroup 2 on June 26, 2013: Permit scope, adequate progress, and process for developing substantial evidence
- Subgroup 3 on June 25, 2013: Potential exemption of infill and small/minor projects

Due to the interrelated nature of these issues, discussions and suggestions from each subgroup were summarized in subsequent subgroup meetings for further discussion and improvement, if warranted.

Based on the input from these subgroups, the DWR Team developed a summary of suggestions for the whole work group to consider which may potentially result in additional subgroup discussions as necessary.

The DWR Team developed additional suggestions for discussion purposes which are labeled explicitly to differentiate from subgroup suggestions.

Important Notes on these Suggestions

- These suggestions were grouped by topic, consistent with the subgroup discussions. It is recognized that these topics are interrelated.
- With these suggestions and collaborative efforts, DWR Team sought possible convergence of collective thoughts; these suggestions have not been approved by DWR executives and/or administration.
- Some revision options may affect other parts of the criteria; the DWR Team has not completed the comprehensive review of the document for this purpose. Thus, there may be additional adjustments/revisions needed for consistency than what are indicated herein.
- The DWR Team made all efforts in capturing the major implications of criteria refinement in the revision option discussion. These are for discussion purposes without implying their completeness.

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Topic: Geographic Scope

The discussion focuses on the definition of the Sacramento-San Joaquin Valley and the use of the map shown in Figure 3-1 in the April 2012 Public Draft Criteria.

Discussion Highlights:

- The Sacramento-San Joaquin Valley as defined by the legislation is difficult to delineate on a map without significant effort and would only yield limited benefits in criteria implementability.
- It was agreed that Figure 3-1 in the April 2012 Public Draft Criteria does not delineate the Sacramento-San Joaquin Valley defined by the legislation.
- The map (see right) outlines a referenced boundary, within which cities and counties may need to consider additional location criteria (as currently defined) to determine if a ULOP finding is needed. However, the boundary does not define the Sacramento-San Joaquin Valley.
- The subgroup agreed that the map delineates Sacramento and San Joaquin Hydrologic Regions, as defined and used in the California Water Plan.
- The reference in the criteria about voluntary applications outside of the Sacramento-San Joaquin Valley is a beneficial statement to keep.

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: No further legislation amendments are needed for this topic with the recognition of the following two items: (1) Figure 3-1 in the April 2012 Public Draft was mislabeled as the Sacramento-San Joaquin Valley, and (2) the Sacramento-San Joaquin Valley will not be delineated in the criteria.

Suggestion 2: Keep the statement about potential voluntary use by cities and counties outside of the Sacramento-San Joaquin Valley.

Suggestion 3: Two options for the map to be labeled "Sacramento and San Joaquin Hydrologic Regions"

a. **Remove the map and associated text**. Cities and counties will determine whether the pending land use decision is subject to a ULOP finding based on its location in association with the Sacramento-San Joaquin Valley.
b. **Use the properly labeled map and associated texts for easy visual reference**. Cities and counties recognize that this map is not a binding requirement but a useful reference to provide visual cues on where to give attention.

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Topic: Shallow Flooding

The discussion focuses on the definition of shallow flooding, which Senate Bill (SB) 1278 (2012) provides authority for exemption.

Discussion Highlights

- As part of the principles used in developing ULOP Criteria, DWR would like to use existing regulations and guidelines to the extent practical.
- FEMA has defined shallow flooding in its 2003 Guidelines and Specifications for Flood Hazard Mapping Partners.[1]

> *Shallow Flooding— Unconfined flows over broad, relatively low relief areas, such as alluvial plains; intermittent flows in arid regions that have not developed a system of well-defined channels; overbank flows that remain unconfined, such as on delta formations; overland flow in urban areas; and flows collecting in depressions to form ponding areas. For National Flood Insurance Program purposes, shallow flooding conditions are defined as flooding that is limited to 3.0 feet or less in depth where no defined channel exists.*

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: No further legislation amendments are needed for this topic if a definition consistent with FEMA's is adopted.

Suggestion 2: Adapt FEMA definition with revision to fit ULOP context.

> *Shallow Flooding – Means flooding that is limited to 3.0 feet or less in depth where no defined channel exists, comprised of unconfined flows over broad, relatively low relief areas, such as alluvial plains; intermittent flows in arid regions that have not developed a system of well-defined channels; overbank flows that remain unconfined, such as on delta formations; overland flow in urban areas; and flows collecting in depressions to form ponding areas*

[1] http://www.fema.gov/library/viewRecord.do?id=2206

Suggestion 3: A qualifier was suggested to call out the shallow flooding conditions applied to conditions where sources of flooding are not local drainage (defined separately), which is also exempted from ULOP requirements in SB 1278 (2012).

> *Shallow Flooding – Means flooding that is limited to 3.0 feet or less outside local drainage areas.*

a. While there is no primary-secondary relationship between these two categories exempted in SB 1278, the qualifier will reflect the conditions where often, flood depths from local drainage, if any, are not included in floodplain delineation and thus, available to cities and counties for decision needs.

Suggestion 4: Consider placing the definition in LOC-2 (Is the property, project, or subdivision located within a flood hazard zone?).

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Topic: Local Drainage

The discussion focuses on the definition of local drainage, which SB 1278 (2012) provides authority for exempting flooding from local drainage.

Discussion Highlights

- As part of the principles used in developing the ULOP Criteria, DWR would like to use existing regulations and guidelines to the extent practical. However, there is no readily available definition.
- The discussion suggests that there may be at least two types of considerations in defining local drainage for possible exemptions:
    - A drainage area that is too small to affect overall risk considerations on public safety, and that not subject to flooding from other sources – in this case, the size of the drainage area is under consideration.
    - Local drainage (flow and volume) resulting from localized precipitation and accumulation – in this case, the sources of flooding are under consideration.
- The discussion did not result in one agreed upon definition, but options for consideration.

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: A local drainage means a watershed less than 10 square miles.

a. A watershed definition is easy for cities and counties to implement.
b. The threshold requires engineering judgment and negotiation because there is no ready reference.

Suggestion 2: Local drainage means water from sources other than the mainstem of or primary tributaries to the Sacramento and San Joaquin rivers.

a. The definition is generally understandable but less precise for consistent application.
b. Subgroups expressed this being less favorable than Suggestion 1.

Suggestion 3: [Offered after subgroup discussions] Local drainage means flooding from non-riverine sources consistent with FEMA regulations and guidelines.

a. The definition may need additional references. However, it was stated that this is the exception that SB 1278 intends to address.

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Suggestion 4: [Offered after subgroup discussions] Define exceptions on localized flooding instead of local drainage to leverage the available FEMA definition.

> *Localized flooding refers to smaller scale flooding that can occur anywhere in a community. This can include flooding in B, C, and X Zones as depicted on the Flood Insurance Rate Map. The term is also used to refer to shallow flooding that occurs in low-lying areas after a heavy rain, flooding in small watersheds, ponding, and localized stormwater and drainage problems anywhere in the community. In this guide, "local flooding" and "localized flooding" are used interchangeably. (from Reducing Damage from Localized flooding, A Guide for Communities, FEMA Publication #511, June 2005, page viii)*

a. There is a benefit to use a definition consistent with FEMA's since ULOP requirements do not apply in areas that are not within Moderate or Special Flood Hazard Zones as designated by FEMA. At the same time, it is not anticipated that FEMA considers localized flooding as defined above.
b. This approach is compatible with and can potentially integrate other suggestions above.
c. Suggested definition:

   In the context of Urban Level of Flood Protection Criteria, the exemption of local drainage means the exemption of localized flooding that is a smaller scale flooding that can occur anywhere in a community, including shallow flooding that occurs in low-lying areas after a heavy rain, flooding in small watersheds that are less than 10 acres in size, ponding, and localized stormwater and drainage problems anywhere in a community.

Suggestion 5: Consider placing the definition in LOC-2 (Is the property, project, or subdivision located within a flood hazard zone?).

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Topic: Urban Area/Developed Area

The discussion focuses on the definition of urban and urbanizing areas; in particular, the reference and use of the "developed areas" definition from Code of Federal Regulations (CFR) Title 44.

Discussion Highlights

- The current definition provides sufficient guidance for cities and counties in implementing the ULOP Criteria. Additional modifications are not warranted.

Revision Suggestions with Major Implications for Criteria Refinements:

Suggestion 1: No further legislation amendments are needed for this topic if the current definition is used.

Suggestion 2: Correction in criteria texts for technical accuracy in referring to planning documents.

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Topic: Infill and Small/Minor Project Exemption

The discussion focuses on adding conditions for infill into the ULOP Criteria. Exemptions for small/minor projects were deferred to another discussion.

Discussion Highlights

- Adding infill exemptions may help alleviate potential concerns related to leap frog development. Infill developments could have other social benefits and potentially contribute to climate change adaptation.
- Infill developments are difficult to define; cities and counties appear to have different interpretations of and requirements related to infill. Therefore, the subgroup considered in lieu of specifying actions that are subject to exemptions, specifying necessary conditions to allow any infill development may be more doable.
- Current legislation allows cities and counties to impose conditions to meet ULOP requirements. Regardless, specifying infill conditions in the ULOP Criteria text could be helpful.
- When focusing on "withstanding a 200-year flood", the criteria should allow considerations of wet-floodproofing where adequate.
- The group discussed, with mixed reactions, if imposed conditions for exemption are functionally equivalent to an infill exemption.

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: Consider conditions for approving an infill development instead of exemption of all infill developments due to the challenges in defining infill developments.

Suggestion 2: Specify conditions allowed in defined urban core areas.

- The following was proposed by the subgroup:

  Within urban core areas in a Moderate Flood Hazard Area only, cities and counties may impose conditions for elevating above the 200-year (urban) based flood elevation, dry floodproofing for residential structures, or wet flood proofing non-residential structures.*

  **As determined by the city or county in their General Plan amendments.*

- To make the above imposed conditions more explicit, the following was later proposed:

  Cities and counties may make a finding related to an urban level of flood protection for a development within a Moderate Flood Hazard Zone in FEMA's FIRM <u>and</u> within a urban core area, as defined in their General Plan, if all residential buildings are elevated above the 200-year base flood elevation (i.e., dry floodproofed) and all non-residential buildings are wet floodproofed according to FEMA requirements.

a. There may be still a need for legislation amendments to allow use of urban core areas, a term that is not universally used by cities and counties.
b. Cities and counties need to define urban core areas in the General Plan update triggered by the ULOP legislation if the term has not been defined.
c. Some concerns over the resulting development under the specified conditions and their potential consequence in economic development and resulting damages in flooding.

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Topic: Permit Scope

The discussion focuses on the scope of permits (discretionary and ministerial) subject to the ULOP requirements.

Discussion Highlights

- The group did not discuss ministerial permits because the ULOP requirements only apply to those resulting in construction of a new residence.
- The group agreed that as current legislation defines, the scope of discretionary permits that are subject to ULOP requirements is too broad; some discretionary permitted actions are not likely to significantly increase flood risk.
- The challenge of specifying the scope of discretionary permits in an implementable fashion is that discretionary permits for different cities and counties cover varying activities. Some are likely to increase flood risk. Consistent implementation is an important consideration in criteria development.
- DWR has considered the need for a legislative amendment to provide authority for exempting or further clarifying the scope of discretionary permits covered by the finding requirement. However, the group explored options that could potentially alleviate the need for legislative actions.

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: Limit the scope of discretionary permits that are subject to ULOP requirements to be consistent with that of ministerial permits. The following can be added to the ULOP Criteria.

"A discretionary permit or other discretionary entitlement, or a ministerial permit that would result in the construction of a new residence" means any local agency act (legislative, quasi-judicial or ministerial) that would result in the construction of a new residence"

a. Some participants felt that this would not require further legislative amendments; however, DWR staff expressed that this is not consistent with current DWR interpretation, and thus, may still require legislative amendments.

Suggestion 2: Remove all or part of the Definitions section on page 3-5 of the April 2012 Public Draft Criteria, and allow cities and counties to determine if a specific discretionary permit is subject to ULOP requirements.

a. Additional improvements may be helpful to address the need for consistent implementation.

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Topic: Adequate Progress

The discussion focuses on the requirements for adequate progress specified in California Government Code Section 65007(a).

Discussion Highlights

- The discussion focused on three items:
  - The 2025 deadline for areas protected by the SPFC may not be feasible; however, it is premature to propose a new one.
  - Cities and counties may not have control over the yearly revenue, especially when federal funding is involved.
  - The legislation may include allowance of necessary protection that is under planning but not in construction because cities and counties may not be able to have critical features under construction by 2016.
- The group agreed that these concerns require alleviation through legislation amendments.
- Additional items that may not require legislation amendments were also discussed; most were about reporting requirements.

Revision Suggestions on Legislative Changes:

Suggestion 1: Two options are suggested for alleviating the 2025 deadline for the area protected by the SPFC.

- Defer the legislative action and propose a new deadline after the ongoing regional planning is completed.
- Insert additional language to authorize CVFPB to made additional determinations after 2025.

Suggestion 2: Engage the legislative process to address the uncertainties of revenue (especially, federal funding) on a year-by-year basis by modifying the current California Government Code Section 65007(a)(2)(A), which states:

> *Revenues that are sufficient to fund each year of the project schedule developed in paragraph (1) have been identified and, in any given year and consistent with that schedule, at least 90 percent of the revenues scheduled to be received by that year have been appropriated and are currently being expended.*

a. No specific suggestion was proposed and subject to discussion in the legislative process.
b. The criteria would be developed consistent with the resulting amendments.

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Suggestion 3: Engage legislative actions to add critical features of the flood protection system that are undergoing the planning process as part of the evidence for adequate progress by amending California Government Code Section 65007(a)(3) as follows:

> *Critical features of the flood protection system are under* **planning or** *construction, and each critical feature is progressing as indicated by the actual expenditure of the construction budget funds.* [Proposed amendments in bold]

a. The criteria would be developed consistent with the resulting amendments.

Suggestion 4: Modify certain DWR-imposed conditions for the annual progress report prepared under the California Government Code Section 65007(a)(5) as currently stated in the April 2012 Public Draft Criteria:

- Remove the requirements for public comment.
- Clarify that the suggested report is a suggestion, not a requirement.
- Further clarify that the legislation did not specify a deadline for such an annual report, and it should be subject to the discretion of each individual city or county. [This is not inconsistent with the current language, but is a suggestion for improvement.]

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Topic: Procedure to Develop Substantial Evidence

The discussion focuses on the reporting and peer review requirements starting on page 3-33 of the April 2012 Public Draft Criteria.

Discussion Highlights

- In compiling substantial evidence to support a ULOP finding, the April 2012 Public Draft Criteria includes a requirement for an independent peer review when levees or floodwalls are used to provide a 200-year level of flood protection to an area of more than 5 acres.
    - DWR believes an independent peer review is warranted when complex technical issues related to levees and floodwalls are considered.
    - It is not a new practice and the specification is consistent with ULDC discussion and existing USACE practices.
- The group discussion focused on four major items:
    - Whether the requirement is outside of the legislation requirement and should not be included in the criteria by DWR.
    - While it may be reasonable or common practice to have an independent review for a large development, what is the reasonable threshold of development size if such a requirement is included?
    - Whether the currently specified procedure has a potential duplication between peer review requirements and public review requirements.
    - Whether the engineer who provides the initial report could have a rebuttal opportunity after the independent review. If not, the process is potentially unfair.
- The discussion did not result in one agreed upon suggestion, but options for consideration.

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: Remove any requirements related to independent peer review.

Suggestion 2: Modify the conditions for when an independent peer review is required. Several options were discussed:

- Only require for large areas of new development or for larger build-out projects
    a. A definition for build-out projects or use of a more commonly used term may be needed.

- Only require when a specified acreage of land is protected to an urban level of flood protection by flood management facilities that include a levee or floodwall. Suggested acreage thresholds include:
    a. Keep the 5 acre threshold as is currently in the April 2012 Public Draft Criteria.
    b. [Offered after subgroup discussions] Use a 20 acre threshold which is consistent with the definition of a developed area.

- [Offered after subgroup discussions] The format and requirements for peer review may be relaxed if the cost for peer review exceeds the percent range of total project cost, as specified in Engineering Circular (EC) 1165-2-209 (USACE, January 2010).

Type II Review Cost Guideline	
Total Project Cost	**Range**
$0 to < $15 million	0.90 to 1.50%
$15 million to $45 million	0.50 to 1.20%
> $45 million	0.10 to 0.85%

Suggestion 3: Modify some specific requirements related to peer review:

- Remove public review requirements because it is duplicative if a peer review is required.

- Require the following process only if levee or floodwall provides an urban level of flood protection for more than 5 acres:
    - Initial draft report prepared by a civil engineer
    - Peer review report by an independent expert panel
    - Updated draft report by the civil engineer based on the peer review report
    - Final report by the civil engineer based on any public, public agency, or additional independent expert panel comments.

        a) After the civil engineer finalizes the report based on input from the independent expert panel, remove the requirement for a letter from the independent expert panel because it does not provide another opportunity for the civil engineer to respond and may show preferential treatment.

- [Offered after subgroup discussions] Require the following process:
    - Report prepared by a civil engineer for all situations that rely on flood management facilities
    - Peer review report by an independent expert panel only if a finding is being made for an area greater than xx acres (threshold to be determined)

        a) Still have a threshold and the challenge for properly determining the threshold.
        b) No additional reports are required (e.g., no updated civil engineer reports based on the peer review input).

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Other Technical Topic: Parcel Map Language

The suggested edits are to provide technically correct characterization when parcel maps are referenced in the criteria.

Discussion Highlights

- This is a technical correction based on the expert input in subgroup discussion.
- There are two types of tentative maps depending on lot size (see table below). Both of these tentative maps are subject to ULOP requirements. There are situations when only a parcel map is needed (no tentative maps). To be consistent with land use terminology and practices and to avoid confusion, any reference to parcel maps in the ULOP Criteria should be consistent with the legislation and include the modifier "for which a tentative map was not required."

Lot Size	**Map required**
5 or more lots	"Tentative subdivision map" is required by state law; once approved becomes a "final map"
4 or fewer lots	"Tentative parcel map" is usually required by local ordinance; once approved becomes a "parcel map"
Exceptions	
Any number of lots	If one of five exceptions specified in California Government Code Section 66426 is met, only a "parcel map" is needed.

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: This is a technical issue. Any reference to parcel maps in the ULOP Criteria should be referred to as "parcel map for which a tentative map was not required."

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Other Technical Topic: Elevation Requirements

The discussion focuses on the elevation requirements on page 3-43 of the April 2012 Public Draft Criteria, focusing on the freeboard requirement.

Discussion Highlights

- The current law does not specify freeboard requirements above the 200-year (urban) base flood elevation.
- It is reasonable to require freeboard because significant flood damage occurs to buildings before the flood elevation reaches the elevation of the finished floor, engineers cannot know the exact elevation of the 200-year water surface, and changes in hydrology (e.g., climate change) may increase future flood elevations during the building's useful life.
- As part of the principles used in developing ULOP Criteria, DWR would like to use existing regulations and guidelines to the extent practical. The April 2012 Public Draft Criteria requires the same amount of freeboard required by the California Building Code, except along streams regulated by the Board where the freeboard is consistent with Title 23 of the California Code of Regulations.

Revision Suggestions with Major Implications for Criteria Refinement:

Suggestion 1: The subgroup provided several options for freeboard requirements above the 200-year (urban) based flood elevation:

- No freeboard required.

- Require 1 foot of freeboard consistent with the California Building Code, except along streams regulated by the Board, require 2 feet of freeboard consistent with Title 23 of the California Code of Regulations.

- No freeboard required but include consideration of wave height.

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