1/27/2015

RMS Suggested Edits to Met-Hydro Flood Standards
Draft from 12-22-14

MHF-1 Flood Event Data Sources

Purpose and Disclosure

RMS: Technical

Problem: The standards should stick to specifying the minimum set of sub-perils (3) that must be included in the model, and avoid language that makes the review of "Other types of flooding" optional.

Explanation: It seems like the Purpose and Disclosure 3 of MHF-1 are allowing for optionally having flooding types other than the surge/pluvial/fluvial included in the review. If a modeler includes a flood sub-peril in the model that goes beyond the 3 specified, it will have incurred extra audit/submission work these extra sub-perils verses a modeler who has not. It's a barrier that would unintentionally discourage submitting the combined flood model.

Suggested Edits:

Purpose: As a minimum, the flood model ~~modeling organizations~~ shall ~~model~~ include coastal flooding associated with storm surge, fluvial flooding, and pluvial flooding. ~~and d~~Data sources associated with each type of flooding will be utilized. If other flood sub-perils are included, they should be identified, but will not be subject to review under these standards. ~~However, if the modeling organization models other types of flooding and adequate data is available to project loss costs and probable maximum loss levels, relevant data sources shall be incorporated based on their latest publication dates.~~

Disclosure 3.
State whether the ~~modeling organization~~ model~~s~~ includes ~~other types of~~ flooding ~~(which can be characterized as~~ other than coastal flooding associated with storm surge, fluvial flooding, and pluvial flooding.~~)~~ State whether the other flooding types are independent of the minimum required sub-perils of coastal flooding associated with storm surge, fluvial flooding, and pluvial flooding. ~~and whether adequate data sources are available in order to project flood loss costs and flood probable maximum loss levels in a scientifically feasible manner. Identify all other types of flooding modeled and the data sources utilized for each. Provide justification for any modifications to such data sources.~~

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MHF-2 Flood Parameters and Characteristics

RMS: Technical

Standards

Problem: The introduction of items B and C into this standard group are substantially the same as standard A, and should be removed to eliminate ambiguity.

Explanation: This language seems to require more from flood models in terms of identifying and using parameters and characteristics that are 'currently available in scientific literature' than the similar standard for the hurricane model. Standard B and C seem to require an additional hurdle to be 'scientifically defensible' that is not materially different than Standard A. Therefore to remove ambiguity these should be deleted.

Suggested Language:

A. The flood model shall be developed with consideration given to flood parameters and characteristics that are scientifically appropriate for modeling ~~various types of flooding being modeled (i.e.,~~ coastal flooding associated with storm surge, fluvial flooding, and pluvial flooding~~)~~. The modeling organization shall justify the use of all flood parameters and characteristics based on information currently available in scientific literature.

~~***B. Parameters used to model flooding associated with storm surge, fluvial flooding, and pluvial flooding shall be scientifically defensible.***~~

~~***C. Flood characteristics produced by the model will be scientifically defensible.***~~

MHF-2 Flood Parameters and Characteristics

RMS: Editorial

Purpose

Problem: Remove implication of required parameters in the purpose statement.
Explanation: To avoid having 'shadow' standards buried in the purpose statement, we suggest removing examples that may or may not be part of all flood models.

Suggested Language:

Purpose: This standard requires that the modeling organization use only scientifically sound information for determining coastal flooding associated with storm surge, fluvial flooding and pluvial flooding parameters and characteristics. The stochastic flood event data sources shall be scientifically defensible. Any differences in the treatment of flood parameters between historical and stochastic floods shall be justified.

A flood parameter is an input to the flood model. Flood parameters are needed by the model to define or determine items such as precipitation ~~the windfield and rain~~ associated with a flood event, or items ~~as well as~~ to define the nature of the fluvial and pluvial areas (e.g., catchments, river networks).~~, topography, urban development, soil type and saturation, etc.).~~

Flood characteristics are outputs of the flood model. An example of a flood characteristic is the modeled depth of flood water at a particular location.~~a modeled flood footprint of coastal flooding associated with storm surge.~~

Characteristics associated with flood parameters shall be scientifically determined and recognized in the flood model.

MHF-2 Flood Parameters and Characteristics

RMS: Technical

Disclosure and Standard and Audit

Problem: For coastal surge modeling in disclosure 6, the meteorological requirements should reference a FCHLPM certified hurricane model rather than attempting to request incomplete information about conversion of winds.

Explanation: To avoid duplication of effort, if a coastal surge model is based on hurricane wind fields (and it might not be..), it would seem prudent to have that wind field model reviewed under the same standards as the hurricane models. RMS recommends changing disclosure 6 to state that this sub-component must meet the FCHLPM hurricane standards, and also creating a new standard that requires the use of a wind field that meets the FCHLPM hurricane standards.

Suggested Edits:

Disclosure 6.

~~For coastal flooding associated with storm surge, state whether the flood model simulates surface winds directly. If the storm surge component relies on conversion of winds between some other reference level or layer and the surface, describe the process used including the treatment of the inherent uncertainties in the conversion factor.~~

For the model of coastal flooding associated with storm surge that relies on a hurricane wind model, state whether the wind field model is part of a hurricane model certified by the FCHLPM.

Standard (New)

D. If a model of coastal flooding associated with storm surge relies on a wind field model determine characteristics of flood events, the wind field model must be part of a model certified under the FCHLPM hurricane standards.

Audit Item 3.

For coastal flooding associated with storm surge, the professional team will confirm that the wind field from a model certified under the FCHLPM hurricane standards is appropriately used as input into the surge model component. ~~the treatment of the inherent uncertainty in the factor used to convert from a reference windfield to a geographic distribution of surface winds and the impact of the resulting winds upon the storm surge will be reviewed and compared with currently accepted scientific literature. Treatment of conversion factor uncertainty at a fixed time and location will be reviewed.~~