

DEVELOPMENT OF FLOOD STANDARDS:

GENERAL FLOOD STANDARDS DISCUSSION

Florida Commission on Hurricane Loss Projection
Methodology

Date: 11/14/2014

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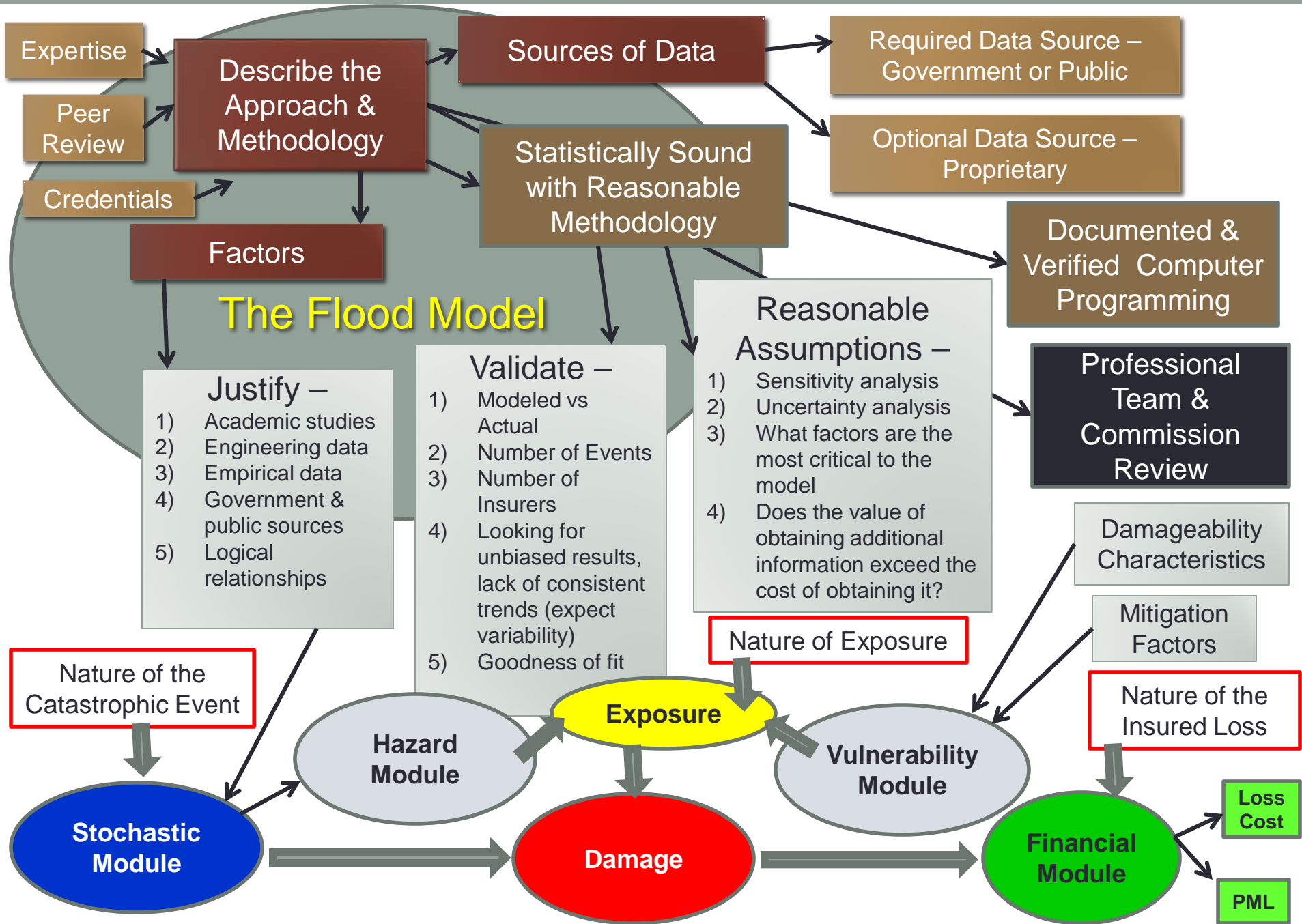
Chair, Flood Standards Development Committee

Overview -- Commission's Responsibilities & Timeline

- Adopt standards
- Personal lines residential flood
- Deadline July 1, 2017
- **Commission's Current Plans and Time Table:**
- Create "Discussion Flood Standards" by November 2015 – **1 year** from today.
- Revise such Discussion Flood Standards by July 2017 at which time Flood Standards are required to be adopted by the Commission – **2 years 8 months** from today.
- Tentatively, the modeling organizations would make submissions in 2018 (November 2018?)– **4 years** from today.
- Insurers would use flood models found acceptable by the Commission starting October 1, 2019 – **4 years 11 months** from today.

Discussion & Thoughts

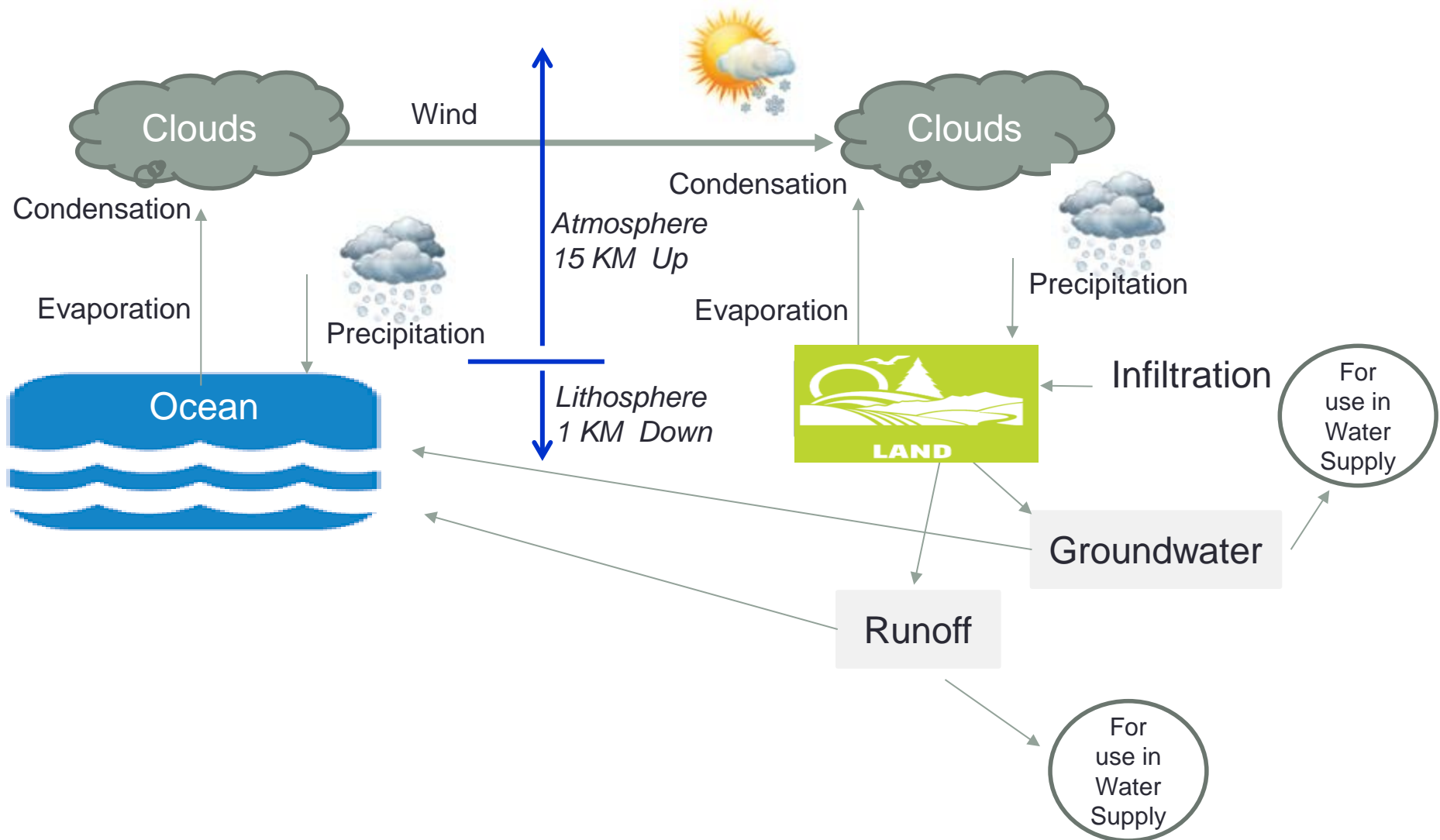
- Hurricane Models and Flood Models will be found acceptable separately.
 - Hurricane Model Only
 - Flood Model Only
 - Hurricane and Flood Model
- Failing one standard would cause the respective model (hurricane model or flood model) to be unacceptable.
 - Failing a flood standard would not cause a hurricane model to be unacceptable.
 - Failing a hurricane standard would not cause a flood model to be unacceptable.
- Hurricane and flood modeling are separate and independent.
- The flood peril includes all types of “flooding” including coastal (storm surge), flood plain, and non-flood plain flooding. Flood is defined in the law.



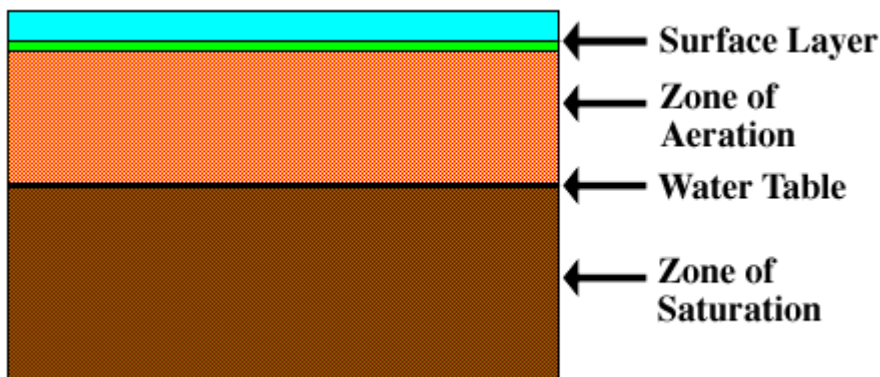
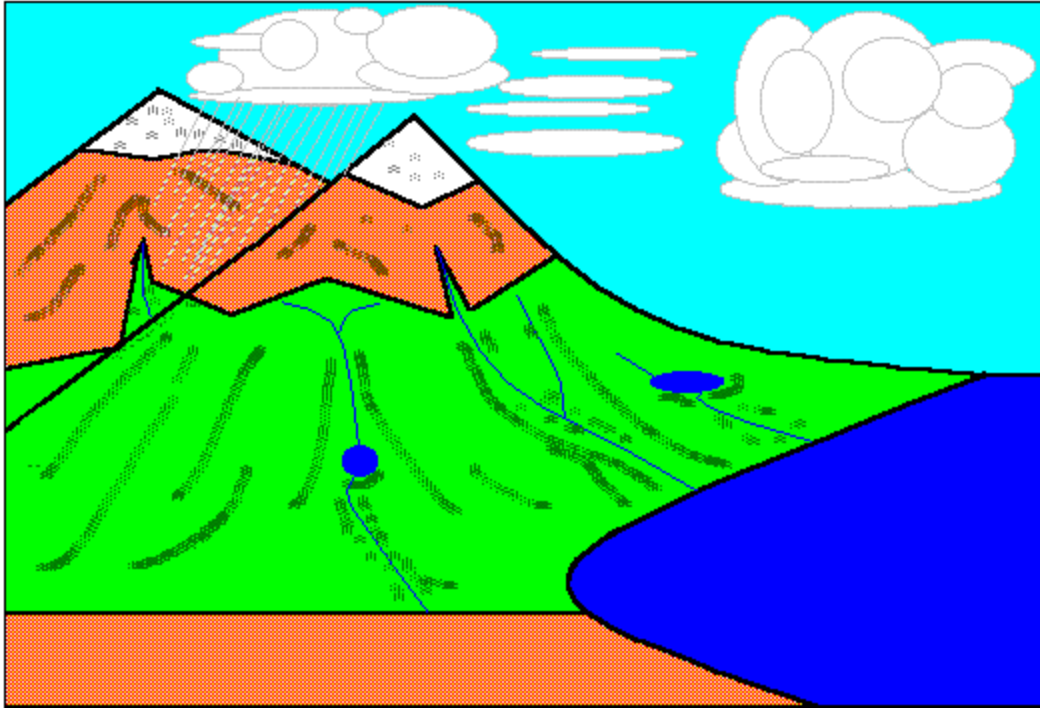
The Nature of the Flood Peril Event:

- Flood – consideration of meteorology & hydrology
 - Height of water
 - Force of water
 - Weight of water
 - Duration of standing water before receding
 - Rapid accumulation of water
 - Etc.
- Types of Flooding
 - Coastal flooding associated with storm surge
 - Flood plain flooding
 - Non-flood plain flooding
 - Other:
 - Man-made (dam or levy breaks or intentional release of water)
 - Nature (earthquake/tsunami)

Hydrologic Cycle: Water is Always Moving

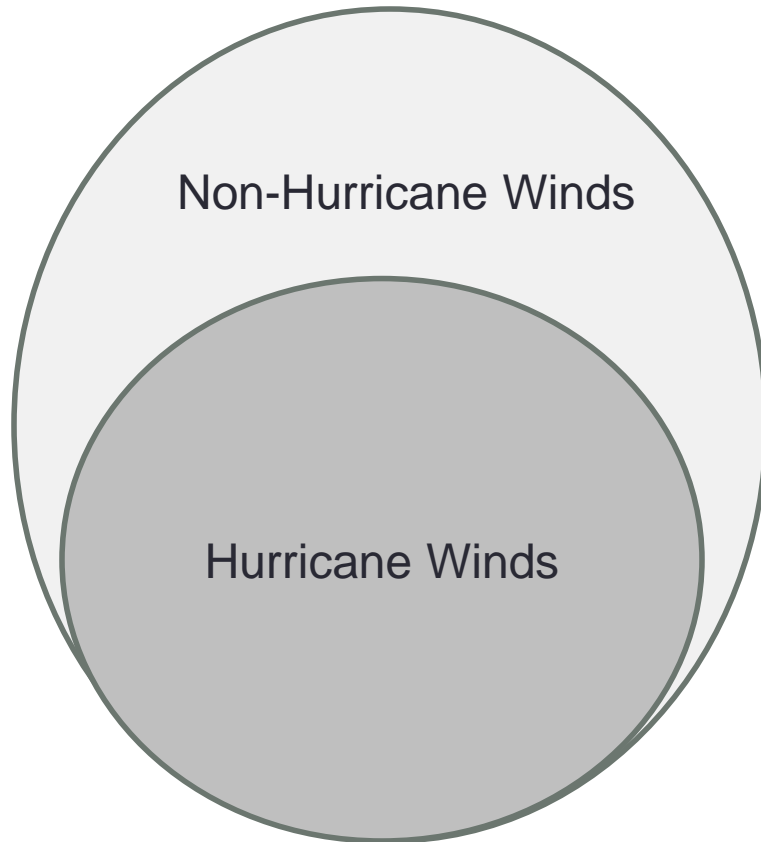


Groundwater



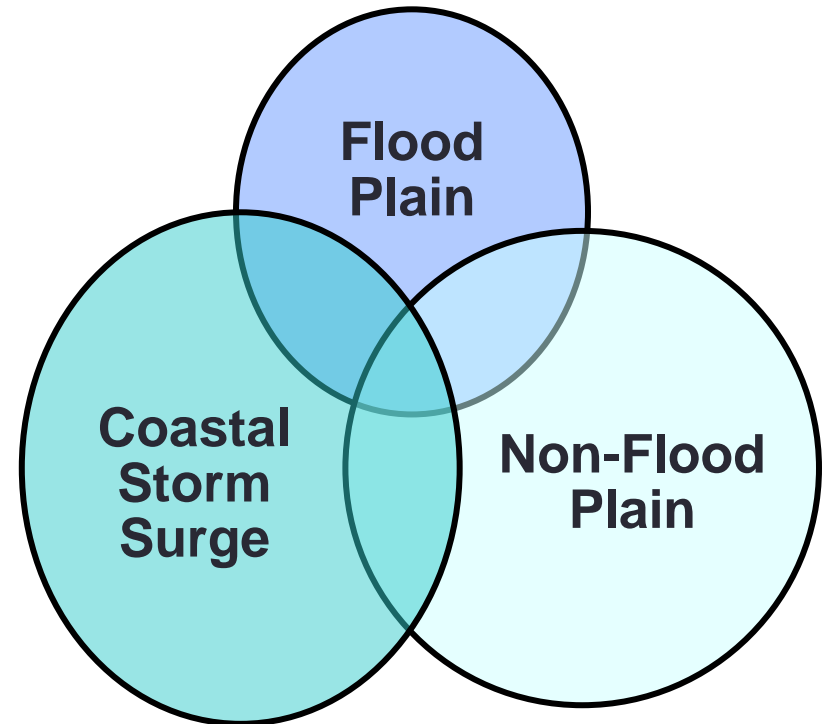
- **Groundwater** is all the water that has penetrated the earth's surface and is found in one of two soil layers.
- The one nearest the surface is the "**zone of aeration**," where gaps between soil are filled with both air and water.
- Below this layer is the "**zone of saturation**," where the gaps are filled with water.
- The "**water table**" is the boundary between these two layers. As the amount of groundwater increases or decreases, the water table rises or falls accordingly.
- When the entire area below the ground is saturated, flooding occurs because all subsequent precipitation is forced to remain on the surface.

Wind

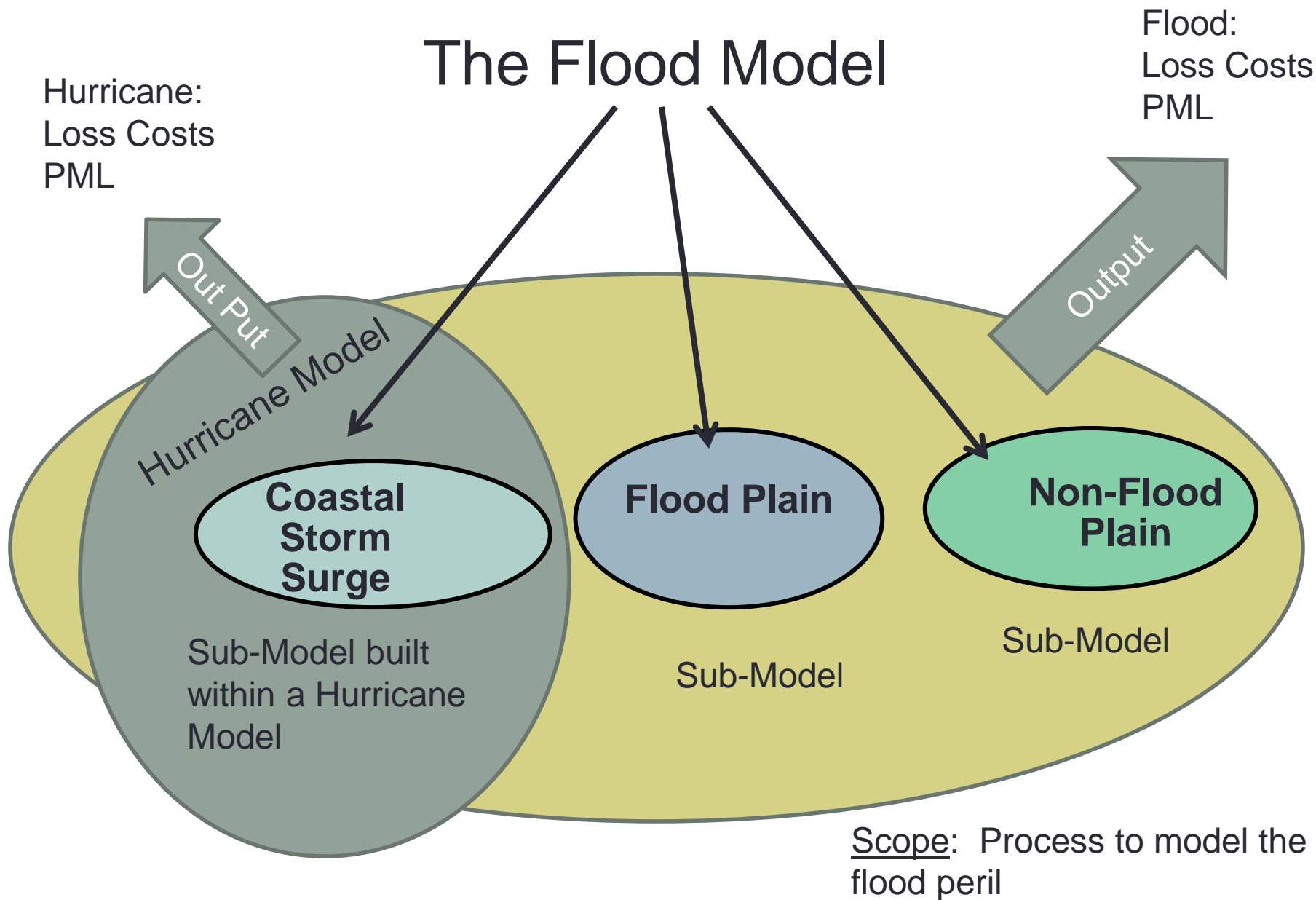


Only model hurricane losses.
See Standards G-1A & A-4C. Since flood losses may inadvertently be included in wind losses, the model will not be perfect. But, the modeler is required not to explicitly model flood losses.

Flood



Only model flood losses. No double counting for interactions of flood damage. No modeling of wind losses. See proposed Standards GF1-A , AF-2D, & AF-4C. Since wind losses may inadvertently be included in flood loss data, the model will not be perfect. But, the modeler is required not to explicitly model wind losses.



The Nature of the Exposure:

- Location, height, and elevation
- First floor height
- Construction characteristics
- Building/structure age
- Occupancy type
- Mitigation features
- Residential structure characteristics
- Appurtenant structures
- Basement
- Contents
- Special property
- Time to repair
- Etc.

The Nature of the Insured loss:

- Definition of flood event
- Definition of flood peril
- Definition of flood coverage
- Deductibles
- Limits
- Coverages
- Exclusions
- Endorsements
- Etc.

The Catastrophe Flood Model Review & Evaluation



General Standards	Purpose, Disclosures, Audit, Forms
Meteorological/Hydrological Standards	Purpose, Disclosures, Audit, Forms
Vulnerability Standards	Purpose, Disclosures, Audit, Forms
Actuarial Standards	Purpose, Disclosures, Audit, Forms
Statistical Standards	Purpose, Disclosures, Audit, Forms
Computer Standards	Purpose, Disclosures, Audit, Forms



Professional Team

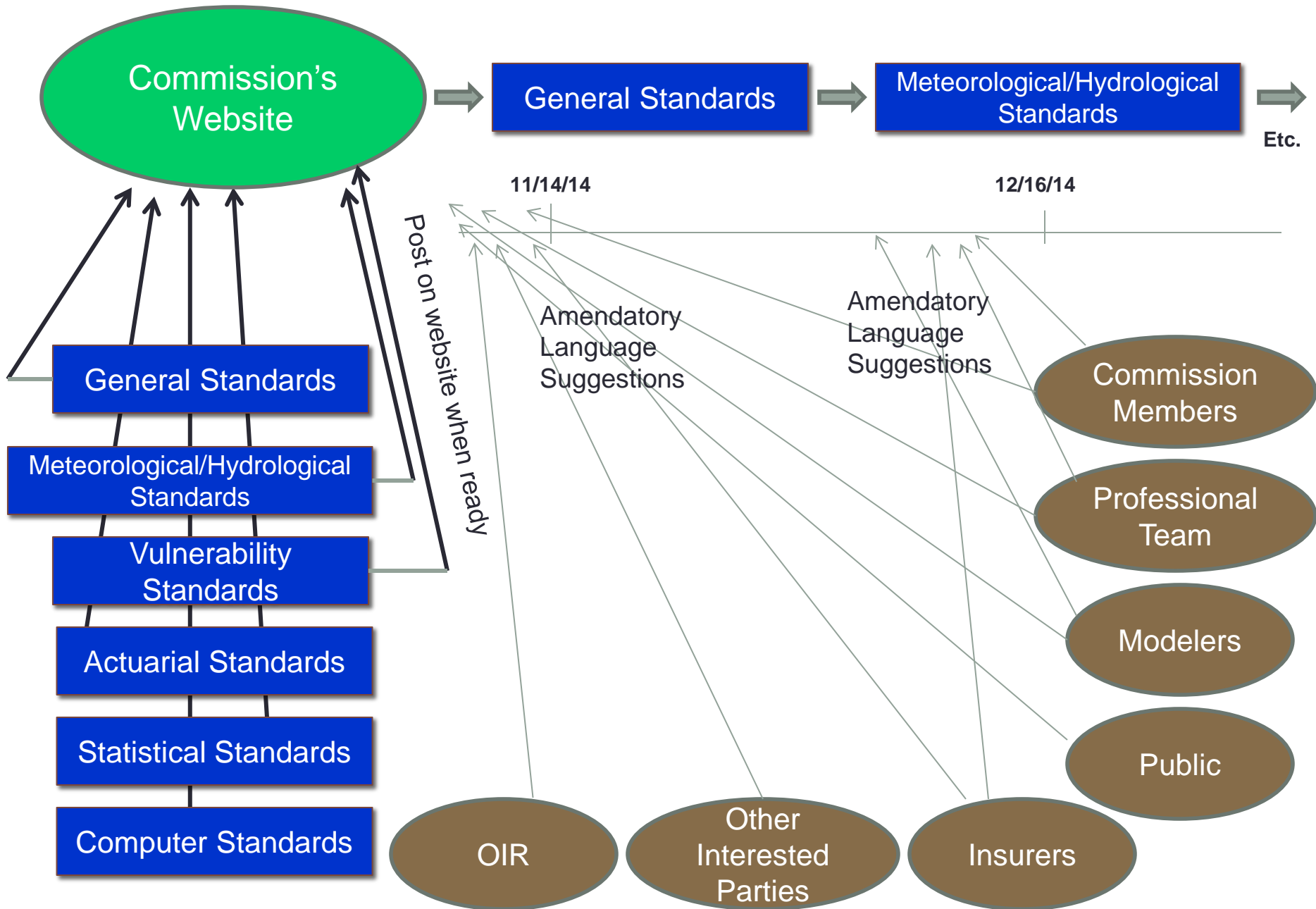
Commission



On Site Reviews

Closed Meetings

Public Meetings



General Flood Standards (GF)

- **GF-1** Scope of the Computer Flood Model and Its Implementation
- **GF- 2** Qualifications of Modeling Organization Personnel and Consultants Engaged in Development of a Flood Model
- **GF- 3** Insured Exposure Location
- **GF- 4** Independence of Flood Model Components
- **GF- 5** Editorial Compliance