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The regulatory floodplain is defined through Flood Insurance Rate Maps and Flood Insurance Studies published by the Federal Emergency Management Agency. Although dams are an important feature in floodplains, dams are not consistently depicted or consistently analyzed in the development of these studies. How or if they were analyzed, and what type of floodplain was designated upstream and downstream of a dam can play a significant role in the types of dam modifications that are permissible or even possible. Engineers can overlook or ignore these floodplain management implications and be met with unsuspected and undesired regulatory requirements during the critical project permitting phase, or worse, be faced with an expensive lawsuit after the dam is modified.

This presentation provides an overview of the ways in which dams can be represented within Flood Insurance Studies and how modifications to dams can adversely impact FEMA regulated floodplains. Common dam modifications are examined with respect to their impact on the National Flood Insurance Program. Recent examples of dam rehabilitation projects that created potential conflicts with floodplain regulations will be presented. Relevance of these issues in the context of risk informed decision making will also be discussed. The goal of the presentation is to provide designers, regulators and dam owners with the information they need to develop successful dam modification designs that compliment FEMA floodplain regulations and avoid complications.