

§ 650.107

(p) *Risk analysis* shall mean an economic comparison of design alternatives using expected total costs (construction costs plus risk costs) to determine the alternative with the least total expected cost to the public. It shall include probable flood-related costs during the service life of the facility for highway operation, maintenance, and repair, for highway-aggravated flood damage to other property, and for additional or interrupted highway travel.

(q) *Significant encroachment* shall mean a highway encroachment and any direct support of likely base flood-plain development that would involve one or more of the following construction-or flood-related impacts:

(1) A significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route.

(2) A significant risk, or

(3) A significant adverse impact on natural and beneficial flood-plain values.

(r) *Support base flood-plain development* shall mean to encourage, allow, serve, or otherwise facilitate additional base flood-plain development. Direct support results from an encroachment, while indirect support results from an action out of the base flood plain.

§ 650.107 Applicability.

(a) The provisions of this regulation shall apply to all encroachments and to all actions which affect base flood plains, except for repairs made with emergency funds (23 CFR part 668) during or immediately following a disaster.

(b) The provisions of this regulation shall not apply to or alter approvals or authorizations which were given by FHWA pursuant to regulations or directives in effect before the effective date of this regulation.

§ 650.109 Public involvement.

Procedures which have been established to meet the public involvement requirements of 23 CFR part 771 shall be used to provide opportunity for early public review and comment on al-

23 CFR Ch. I (4-1-03 Edition)

ternatives which contain encroachments.

[53 FR 11065, Apr. 5, 1988]

§ 650.111 Location hydraulic studies.

(a) National Flood Insurance Program (NFIP) maps or information developed by the highway agency, if NFIP maps are not available, shall be used to determine whether a highway location alternative will include an encroachment.

(b) Location studies shall include evaluation and discussion of the practicability of alternatives to any longitudinal encroachments.

(c) Location studies shall include discussion of the following items, commensurate with the significance of the risk or environmental impact, for all alternatives containing encroachments and for those actions which would support base flood-plain development:

(1) The risks associated with implementation of the action,

(2) The impacts on natural and beneficial flood-plain values,

(3) The support of probable incompatible flood-plain development,

(4) The measures to minimize flood-plain impacts associated with the action, and

(5) The measures to restore and preserve the natural and beneficial flood-plain values impacted by the action.

(d) Location studies shall include evaluation and discussion of the practicability of alternatives to any significant encroachments or any support of incompatible flood-plain development.

(e) The studies required by § 650.111 (c) and (d) shall be summarized in environmental review documents prepared pursuant to 23 CFR part 771.

(f) Local, State, and Federal water resources and flood-plain management agencies should be consulted to determine if the proposed highway action is consistent with existing watershed and flood-plain management programs and to obtain current information on development and proposed actions in the affected watersheds.

§ 650.113 Only practicable alternative finding.

(a) A proposed action which includes a significant encroachment shall not be approved unless the FHWA finds that