

## CHAPTER THREE

# FLOOD HAZARD MANAGEMENT POLICIES

This chapter contains flood hazard management policies, which along with the goals and objectives provide a framework for the river management strategies, programmatic and capital improvement recommendations in this Plan. The *1991 Puyallup River Basin Comprehensive Flood Control Management Plan*, the comprehensive flood plan for Pierce County, does not contain policies. Therefore, all policies contained within the *Pierce County Rivers Flood Hazard Management Plan* are new. They were developed and analyzed in consultation with the Flood Plan Advisory Committee. All policies strive to be consistent with Pierce County's flood hazard regulations and other local, state, and federal regulations. Some policies are developed from related policies contained within the Comprehensive Plan for Pierce County, Washington (Comprehensive Plan) (see Chapter 1).

Other policies will revise policies in the Utilities Element of the Comprehensive Plan. The policies contained within this Flood Plan encourage cooperative and consistent floodplain management among towns, cities, counties, and special districts as advocated by Chapter 86.12 RCW. Actions taken by one jurisdiction can have adverse effects upon neighboring jurisdictions. Filling of the floodplain in one area frequently transfers the flood hazard risk to other areas and other jurisdictions and their citizens. Consistent approaches to flood hazard management across jurisdictions can reduce such adverse effects.

The policies that follow are written to reflect the level of discretion local governments have in making floodplain management decisions. Use of the term 'shall' or 'will' implies that the policy is to be interpreted as mandatory or nondiscretionary. The use of 'should' or 'may' in a policy indicates guidance and a greater level of discretion in making decisions based on the policy.

Policies in this chapter are divided into five categories within the following subsections: 3.1 General; 3.2 Project; 3.3 Floodplain Land Use; 3.4 Flood Warning and Emergency Response; and, 3.5 Funding.

### 3.1 GENERAL POLICIES

1. Geographic Scope – Pierce County will coordinate and provide regional flood hazard management services on major rivers, including the Puyallup, White, Carbon and Nisqually Rivers, and tributaries with historical peak flows over 5000 cubic feet per second (Greenwater and Mashel rivers, South Prairie Creek).
2. Flood and Channel Migration Risks – The natural processes of flooding and channel migration become risks when human development is located within flood hazard areas. Flood and channel migration risks, and the consequences that would result, are generally prioritized in the following order: (1) threats to public safety; (2) impacts to the local and regional economy; (3) damage to public infrastructure; and, (4) damage to private structures.
3. River and Flood Hazard Management Approach – Pierce County will implement projects and programs for river and flood hazard management that result in multiple benefits, including the following non-prioritized objectives:
  - a. Meet site and reach-specific flood and channel migration risk reduction needs;

- b. Achieve quantifiable benefits that exceed total costs of projects and programs, including long-term maintenance costs;
  - c. Avoid creation of new flood and channel migration risks;
  - d. Balance natural processes of river migration and flooding with protection of productive agricultural lands;
  - e. Protect and improve aquatic and riparian habitat and ensure consistency with the Endangered Species Act and salmon recovery programs; and
  - f. Leverage flood hazard management revenues through partnerships with other agencies and stakeholders.
4. Inter-County River Improvement Agreement – Pierce County should collaborate with King County to renew the Inter-County River Improvement Agreement to address flood hazard management activities for the lower White and lower Puyallup River systems.
5. Inter-Governmental Coordination and Cooperation – Pierce County’s flood and channel migration hazard management activities will be planned and implemented in close cooperation with cities, counties, tribes, state and federal agencies (e.g., resource agencies, public agencies with infrastructure), and salmon recovery lead entities.
6. Climate Change – Project design and program management should reflect best available science regarding the anticipated changes in precipitation patterns and associated changes in flood flows and sediment transport as a result of climate change.

## 3.2 PROJECT POLICIES

Projects can be structural, non-structural, or a combination of the two. The following project policies guide the project cycle, from initial concept through design and construction, to post-project monitoring and adaptive management. Structural projects consist primarily of maintaining, repairing, relocating, retrofitting, and new construction or setback of revetments, levees, and associated structures. Non-structural projects include property acquisition, elevation of flood-prone homes, sediment, and large wood management, and the removal of existing structures that no longer serve a flood management purpose. Although regulations are non-structural, they are addressed in sub-section 3.3 Floodplain Land Use Policies.

1. Prioritizing Flood Hazard Risks – Pierce County should prioritize actions to address flood and channel migration risks using the following criteria in order of importance:
  - a. The consequences that will result if no action is taken. Consequences should be prioritized as identified in General Policy #2 and in terms of probability of occurrence and severity;
  - b. Legal responsibility and authority, as determined by a contractual relationship, between Pierce County and another agency or person(s) to maintain a flood risk reduction facility;
  - c. Urgency, as measured by how quickly an action needs to be taken in order to prevent a risk from growing worse; and
  - d. Readiness of the project in terms of funding, partnerships, resolved property issues, or permitting.
2. Property Acquisition – Property acquisition for flood risk reduction projects should be on a willing-seller basis. However, as risks are identified and prioritized there will be circumstances when a compelling public interest makes condemnation necessary.

3. Easements<sup>49</sup> – New or additional easements necessary to construct, maintain, repair, or retrofit a flood protection facility should be sufficient to meet applicable Pierce County design and construction standards and federal and state technical guidelines.
4. Management of Pierce County Properties – Pierce County will manage its public lands and easements within flood hazard areas in accordance with the policies in this Plan. Public access to publicly-owned flood risk reduction facilities should be allowed on a case-by-case basis provided that such access does not interfere with the performance of any infrastructure and after evaluating issues such as public value, cost, and public safety.
5. Flood and Channel Migration Risk Reduction Goals – Flood risk reduction facilities designed to contain floodwaters (e.g., levees), or reduce channel migration (e.g., revetments) should be designed to be consistent with the adopted river reach management strategy. Four flood protection levels for levees include:
  - a. 200-year design, plus three feet of freeboard;
  - b. 100-year design, plus three feet of freeboard;
  - c. Maintenance of existing (2009) conveyance capacity; and
  - d. Maintenance of existing levee prisms.

Two erosion protection levels for revetments include:

- c. Channel migration prevention design, and
- d. Channel migration resistance design.

Deviations from the level of protection shall be approved by the manager of the Surface Water Management Division.

6. Facility Design and Maintenance Objectives – Pierce County should construct new flood risk reduction facilities and maintain, repair or replace existing facilities in such a way as to achieve each of the following:
  - a. Minimize maintenance costs over the life cycle of the facility;
  - b. Ensure that flood or channel migration risks are not transferred to other sites; and
  - c. Protect and improve aquatic and riparian habitat.
7. River Management Facility Setbacks – Pierce County will identify opportunities to set back existing river management facilities farther from the river edge and associated buffers to increase flood conveyance and storage, reconnect previously disconnected floodplain, improve aquatic habitat, and allow natural riverine processes to occur.
8. Pierce County Sponsored Projects – Pierce County sponsored projects located in flood hazard areas shall be consistent with policies in the Pierce County Rivers Flood Hazard Management Plan and meet or exceed the standards adopted in the Pierce County Code to implement those policies.
9. Adaptive Management – Flood hazard management projects shall be monitored to assess the degree to which they function relative to their stated purpose, performance goals and objectives. Adaptive management principles shall be used to manage projects over time, identify needed changes, and inform the design and implementation of future projects.

<sup>49</sup> **Easement** – The legal right to use a specified piece of land for a particular purpose.

10. Large Woody Material – Naturally occurring accumulations of large woody material may be repositioned, relocated, or removed for flood hazard management purposes if one or more of the flood and channel migration risks in General Policy #2 above is present, all reasonable flood and channel migration risk reduction alternatives have been considered, and there is an imminent threat. Repositioning, relocation, or removal of large woody material should be done in a manner that does not create new flood or channel migration risks, and be accomplished using techniques that result in the least disturbance to the river channel and aquatic habitat while preserving the function of the large woody material.
11. Comprehensive Sediment Management – Comprehensive sediment management in Pierce County shall be informed by technical sediment transport studies and consider the highly variable nature of sediment transport to achieve a balance between flood risk reduction and ecological health.
12. Gravel Removal – Pierce County may remove gravel from rivers for flood hazard or channel migration protection purposes when:
- a. It can be demonstrated that gravel accumulation poses a flood risk as defined in General Policy #2;
  - b. Hydraulic and sediment transport studies conclude gravel removal has a benefit of flood or channel migration risk reduction;
  - c. It is in a demonstrated area of gravel accumulation;
  - d. It is part of a comprehensive flood hazard management reach-scale strategy;
  - e. Biologic studies determine that gravel removal does not, with mitigation, result in a net loss of ecological function; and
  - f. All proper approvals have been secured.
13. Levee Certification – Pierce County should seek accreditation and certification of new 100- and 200-year levees, or re-certification of existing levees, through FEMA and the Army Corps of Engineers.