

King County Flood Hazard Management Plan Update Citizens Committee Report

September 2012

Introduction

The King County Flood Control District adopted the King County Flood Hazard Management Plan as their comprehensive planning document to provide policy guidance and identify capital improvement needs and priorities. The federal Disaster Mitigation Act and the Community Rating System under the National Flood Insurance Program both require updating the plan every five years. Motion FCD11-03 established a Citizens Committee to serve as a sounding board at key milestones in the plan update process.

The Citizens Committee was convened in December 2011 and has met seven times to review new information on the public safety and economic importance of flood risk reduction for the county and state, including commercial, agricultural, environmental, and residential data; current flood and channel migration studies and mapping; damage and changed conditions due to flood events; risk assessment; the 10-year capital improvement plan; and issue papers on specific topics identified in Motion FCD11-03. This report summarizes the feedback received from the Citizens committee.

Levee Certification, Accreditation and Flood Risk Reduction “Levels of Service”

Statement of Issue:

In response to a request from the mayors of the four Green River valley cities in March 2011, the Board of Supervisors for the Flood Control District adopted a motion stating its intent to assume levee maintenance and operations responsibilities for FEMA accreditation efforts under specific conditions. The 2006 King County Flood Hazard Management Plan does not include policy language regarding levee certification and accreditation. The suitability of the 100-year standard for levee certification and accreditation has been questioned resulting in a debate at the national level on whether a higher standard should be used. In addition, certified and accredited levees often result in a misperceived safety standard for people and property located behind those levees.

Summary of Committee feedback:

One Committee member stated strongly that the insurance industry is ignoring FEMA’s mapping that shows areas behind certified and accredited levees are not at risk by mapping those areas out of the floodplain. The private commercial insurance industry uses a two-tiered system using the 100-year and 500-year flood elevations and then making sure the levee is constructed to US Army Corps of Engineers standards before they would recognize a levee for insurance purposes. Considering a levee as “accredited” by FEMA is not adequate; the private commercial insurance industry does not recognize any of the levees in King County, regardless of their FEMA status. The Committee suggested looking at the recent revisions to the National Flood Insurance Program which includes requirements for agreement among affected parties on what the standard should be as well as public outreach to people behind accredited levees. According to the Boeing

Company representative, the company did not previously consider flood events that might exceed the 100-year flood because they were confident Howard Hanson could provide that level of protection. Now they have to rethink that assumption if the discharge from the Dam could exceed 100-year flows. It is hard for Boeing to make a decision about certification and accreditation because the question is presented as an “either/or” scenario (accreditation or not accreditation) rather than debating a specific levee design standard based on the risk. According to one Committee member, there is a fair bit of consensus in the professional engineering community, reflected in the American Society of Civil Engineers’ Policy Statement 529, that certification is something professional engineers don’t have a lot of confidence in. The King County Flood Control District should only take on the operation and maintenance of structures they have some confidence will meet a specific risk-reduction standard. As for “performance-based standards,” they can offer some benefits in savings in engineering and construction, but there needs to be the recognition that the savings come with a tolerance for some impacts and damages. In the context of flood engineering, there are regional scale problems that require consensus among all the stakeholders, which is different from an individual property owner or business taking on the risk for their own building, as in earthquake performance-based engineering.

Levee vegetation and eligibility for US Army Corps of Engineers (Corps) levee repair funding

Statement of Issue:

Local governments in the Puget Sound region continue to be caught between conflicting federal mandates that require degradation of riparian areas identified as critical habitat for federally listed species in order to retain eligibility for federal PL 84-99 funding for critical public safety projects. To qualify for one federal program that provides funding for levee repairs resulting from flood events, King County must risk violating both the Endangered Species and Clean Water Acts because the federal PL 84-99 Program standards require significant removal of vegetation on levees. This vegetation provides needed riparian habitat for Endangered Species Act-listed species as well as shade to meet Clean Water Act water temperature standards.

Summary of Committee feedback:

The Committee members generally agreed that simply walking away from the PL 84-99 Program was not the answer nor was it wise to follow the nation-wide US Army Corps of Engineers standards. Concern was raised that by disengaging with the Corps would send a message to floodplain residents and businesses that the levee systems are not safe. The Committee felt it made sense to try and either develop a new regional variance for a modified levee vegetation standard or work through the System-Wide Improvement Framework process. However several Committee members felt very strongly that King County should not participate in the PL 84-99 program. There was general support for finding opportunities for levee setbacks to allow more room for the rivers. One creative suggestion was to route water through the adjacent floodplain, such as along streets, during extremely high flows. A Committee member who was a member of the national engineering team reviewing the performance of the New Orleans levee system stated there is no scientific evidence that vegetation on levees compromises the levees integrity – quite the opposite. It was recommended that an independent group, such as the American Society of

Civil Engineers, could help to mediate the issue with the Corps because that Society is seen as a neutral party of experts.

Capital project funding for coastal flood and erosion risks

Statement of Issue:

The geographic scope of the 2006 King County Flood Hazard Management Plan includes the unincorporated and incorporated areas of King County, with a ‘focus’ on the major river floodplains and their significant tributaries. The 2006 Plan includes a recommendation to cost-share hazard mapping studies with FEMA for marine shorelines. The state authorization for flood districts does allow for improvements that include “the extension, enlargement, construction, or acquisition of dikes and levees, drain and drainage systems, dams and reservoirs, or other flood control or storm water control improvements; widening, straightening, or relocating of stream or water courses; and the acquisition, extension, enlargement, or construction of any works necessary for the protection of stream and water courses, channels, harbors, life, and property” (RCW 86.15.100). Should the Flood Control District’s capital program include funding for coastal flood and erosion risk reduction projects?

Summary of Committee feedback:

The Committee’s feedback was to continue to focus capital funding on river and stream flooding and to not divert funding for future coastal projects that are not already adopted by the Board. There was concern that using capital funding on coastal projects is not consistent with the 2006 Flood Hazard Management Plan, and there was little support to update the Plan to supporting coastal flood risk reduction projects since there appeared to be agreement that the main flood risk in King County comes from river flooding.

Urban Flooding and Small Streams

Statement of Issue:

The geographic scope of the 2006 King County Flood Hazard Management Plan includes the unincorporated and incorporated areas of King County, but the plans calls for a ‘focus’ on the major river floodplains and their significant tributaries. How should flood district funds be allocated for urban flooding and small streams that are not the ‘focus’ of the 2006 FHMP?

Summary of Committee feedback:

In general, the Committee appeared to think the Board made the right decision initially in allocating 10% of the funding for an opportunity fund that the cities could use for any program or project that is consistent with RCW 86.15. There was no support for increasing that percentage. Some Committee members liked the idea of allocating that 10% through a competitive process based on risk rather than just an automatic allocation to the cities. There was also some support for allocating the opportunity fund to cities that agree to adopt strong floodplain management land use policies and regulations that exceed the minimum National Flood Insurance Program requirements, but this was not the opinion of all Committee members.

Equity and Social Justice: Outreach to Vulnerable and Underserved Populations

Statement of Issue:

The King County Equity and Social Justice Initiative (ESJI) directs all King County government services be done in a fair and just manner – ensuring that those without traditional access to resources are being served – and to view the development of all policy, procedures and communication through this lens. King County also has an Executive Order, establishing criteria for a Written Language Translation process that requires a reasonable effort be made to provide all print materials in the languages spoken by the target audience. Lastly, the King County Flood Control District has directed the River and Floodplain Management Program to ensure that we are reaching vulnerable populations in our public outreach and education efforts. How should the King County Flood Hazard Management Plan be used to ensure that the River and Floodplain Management program is providing these services equitably throughout King County?

Summary of Committee feedback:

The Committee asked for some clarification on terminology used when discussing vulnerable and underserved populations. There was interest in how to track the effectiveness of the outreach efforts. In addition to web site hits, a suggestion was made for a more qualitative assessment using focus groups. The Committee was most interested in the idea of equity. County staff clarified that reasonable efforts need to be made to make services available, and in some cases it may not be reasonable to provide services to every single person. Several excellent suggestions were offered, including partnering with the local Housing Authorities, working with tech-savvy teens, identifying community leaders, and educating primary caregivers for the young and disabled on flood response. Another recommendation was to include information in outreach materials about the benefits and opportunities created by flooding. Finally, a paper by Louise Comfort was brought to the attention of the Committee which points out information in and of itself doesn't result in action. What results in action depends on who says it, which reinforces the suggestion to identify community leaders.

Relocation of Residential and Commercial Tenants

Statement of Issue:

When land is acquired for flood risk reduction purposes, tenants are displaced. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 provides relocation assistance for tenants to relocate to comparable or better housing or buildings when displaced by federal projects. Two significant differences between residential and commercial relocations are (1) the possibility of higher costs to relocate and re-establish businesses compared to homes, and (2) the possibility of a larger impact on local government revenue by the relocation of a commercial tenant that is generating sales tax and B&O tax. Should the Flood Plan include policy guidance to minimize disruptions to economic activity and mitigate possible impacts on economic development and local tax revenue?

Summary of Committee feedback:

The Committee asked for clarification on the relocation issue to understand that there are federal, state, and local regulations to provide assistance, but no guidance on working with cities to maintain the existing tax base that would be impacted if properties and businesses are purchased

in their jurisdictions. One Committee member asked if there has been any assessment on the impact on the tax base for properties that have already been purchased. It was pointed out that taxes removed from one property ends up getting paid by others, so in general, there is no net loss of property taxes, but who pays and the jurisdictions benefiting from the tax revenue might change. The Committee supported providing relocation assistance to commercial tenants that relocate outside the floodplain. However the Committee did not provide any specific guidance on whether the Flood Plan should address the loss of tax base if commercial floodplain property is acquired and businesses are closed or relocated outside the jurisdiction where they were previously located.

Capital project prioritization, sequencing approach, and eligibility criteria

Statement of Issue:

The current capital project prioritization process evaluates the consequence, urgency, and severity of flooding and channel migration risks, and sequences project implementation based on factors such as readiness, partnerships, external funding opportunity, and legal responsibility. With the benefit of the experience applying these criteria over five budget cycles and multiple mid-year revisions, the criteria and scoring system should be assessed with the following questions in mind:

1. Do the prioritization scoring criteria adequately define eligible and ineligible projects?
2. Do the criteria help decision-makers focus on long-term solutions and ‘getting ahead of the next flood’ rather than ‘reacting to the last flood’?
3. Do the prioritization criteria clearly identify when flood damage repairs are necessary to protect public safety and prevent a small problem from becoming larger and more expensive to fix?

Summary of Committee feedback:

In general, the Committee felt the criteria used to select projects was working, but several people expressed more emphasis being placed on considering the ecological value of natural resources, such as the value of protecting a wetland for flood storage. Committee members expressed concern about “mission creep” or “scope creep” that could jeopardize the ability for the Flood Control District to complete the high priority flood risk reduction projects if money gets diverted for other purposes, or for flood risk reduction projects that are lower priority based on risk. There appeared to be support for using some of the District funding to support the work of the WRIAs because of the nexus between salmon recovery and flood risk reduction, although not all Committee members agreed. Several Committee members supported funding actions outside floodplains, such as purchasing development rights in the upper watersheds, as a viable tool for reducing flooding. A suggestion was made to consider using performance-based measures for selecting projects similar to what is used in earthquake planning. Concern was raised that a lot of new projects are being added when the projects identified in the 2006 Flood Plan had not all been completed. The Committee did not seem to support using compliance with FEMA’s Biological Opinion, prepared to set standards for implementing the National Flood Insurance Program in the Puget Sound region, as criteria for jurisdictions to receive funding for flood risk reduction projects. The Committee wanted to maintain focus on rivers and streams; if the criteria could help maintain this focus, there was support.

Design Guidelines and Bioengineering Approaches to Levees and Revetments

Statement of Issue:

Bioengineering approaches have been applied on King County levee and revetment projects over the past 20 years. Flood risk reduction, ecological objectives, and long-term maintenance, recreational safety and repair costs are taken into account when determining the best approach to levee and revetment repair projects. Concern has been raised that incorporating large wood as a structural element of a flood risk reduction project creates recreational safety concerns.

Summary of Committee feedback:

One Committee member summarized her concerns as: need to use rock at the toe; the County does not monitor well for safety resulting in the need to alter the County's Guidelines for Bank Stabilization document; not sure rip-rap is more expensive than wood; bioengineering is experimental resulting in three designs for Cedar Rapids project; wood does not increase flow resistance; wood rots and has limited lifespan; and recommends using the Stream Habitat Restoration Guidelines document published by Washington Department of Fish and Wildlife in April 2012. Another Committee member, who lived on the Cedar River for over ten years, said he saw the wood in projects break loose during flood events. He agreed that bioengineering is experimental and needs more time to see what works and what does not work. The majority of Committee members weighing in were supportive of updating the County's Guidelines for Bank Stabilization document to address both the most current science on this use of large wood as well as the impact on recreational safety.

Gravel removal and sediment management for flood risk reduction purposes

Statement of Issue:

Sediment accumulation in river channels can increase flood hazard and flood risk in King County. The 2006 King County Flood Hazard Management Plan (Flood Plan) established a comprehensive sediment management program, which can include gravel removal (dredging), to reduce the flood risk. For purposes of implementing the sediment management program, the term "sediment removal" is recommended to be changed to "dredging," which is a more defined term in state law. Other than this one revision, it is proposed that the existing King County sediment management program be continued as it is in the 2006 Flood Plan.

Summary of Committee feedback:

Committee members had strong reaction against the proposal to change the term "sediment removal" to "dredging" because dredging is a very politically-charged word. There appeared to be general support for sediment monitoring, but a suggestion was made to include monitoring smaller streams as well since sediment build-up in the stream is also impacting property owners. There was debate about whether sediment removal should be considered a short-term solution or long-term solution. Committee members seem to understand that sediment build-up is a natural process, but some argued if routine sediment removal is conducted, the action should be

considered a long-term solution. Others argued the frequent need for sediment removal makes it a short-term solution because the action needs to be repeated. Committee members discussed the costs associated with gravel removal and how that compared with other flood risk reduction actions, such as building higher levees, setting back levees, or home buy-outs. In general, Committee members believe gravel removal is a tool that has been underutilized and King County should re-evaluate when it might be the appropriate solution. One Committee member felt transfer of development rights should also be considered to address the impacts from sediments build-up and resultant flooding. King County should notify cities that might be impacted by gravel accumulation in rivers. However Committee members felt a better solution would be to restrict development in areas that are, or could be, impacted by sediment accumulation.

South Fork Skykomish River and Snoqualmie River Risk Assessment and Action Plans

Statement of Issue:

Has King County adequately identified the flooding and erosion hazards on the South Fork Skykomish and Snoqualmie Rivers and developed a reasonable strategy and set of actions to address those hazards?

Summary of Committee feedback:

A Committee member pointed out that if buildings and other infrastructure are protected in some fashion, such as elevating the buildings, flooding can be a good thing from a biological standpoint as flooding provides natural functions and values that are a benefit to the ecosystem. It is worse on the environment to try and keep all the water in the channel during a flood event than to allow it to inundate the floodplain in a more natural manner. There is also a tremendous cost to trying to keep all the water in the channels, so there are costs in expenditures for building and maintaining levees as well as the ecological cost related to the loss of floodplain functions and values. A Committee member asked if gravel removal is going to be part of the strategy for addressing flooding in this river basin. A recommendation was made to look at acquisitions more broadly by considering the benefit of land for flood storage in addition to, or even as an alternative to acquiring property only because a structure is at risk. The Committee appreciated that the County is looking at a wide range of tools – elevations, buyouts, gravel removal, levees – to address the risk from flooding. A suggestion was offered to use the streams more effectively for both transporting water as well as storing water for release during the dry season. A request was made to look at the opportunities for recreational use county-wide, not just on some river systems. Finally, a Committee member asked if the County ever considered relocating some roads, such as Jones Road (on the Cedar River).

Sammamish River, Issaquah Creek and Cedar River Risk Assessment and Action Plans

Statement of Issue:

Has King County adequately identified the flooding and erosion hazards on the Sammamish River, Issaquah Creek, and Cedar River and developed a reasonable strategy and set of actions to address those hazards?

Summary of Committee feedback:

Committee members asked for clarification about city and county coordination and were told the cities generally implement the projects within their jurisdiction while the Flood District helps with funding. Questions were asked about whether dredging would be an option to consider for the Cedar River given the concerns from state agencies over the impacts to habitat. A Committee member wanted verification that the County was actually going to do work on the Lake Sammamish weir and whether maintaining weirs are covered under the Flood Plan. Will the Plan include the Pacific Fish Management Council recommendation to have 80 trees per mile of river in Western Washington, as well as clarify that hydraulic project approvals have to be issued by Washington Department of Fish and Wildlife before the County can do work?

Green River Risk Assessment and Action Plans

Statement of Issue:

Has King County adequately identified the flooding and erosion hazards on the Green River and developed a reasonable strategy and set of actions to address those hazards?

Summary of Committee feedback:

The Committee sought clarification on the release rates for the Howard Hanson Dam and the required design standard for the levees. They asked what the probability was that these levees will meet the conditions contained in the Motion that has been adopted related to the District taking on the role of Operations and Maintenance. Further clarification was asked about how risk-based maintenance compared to the Operations and Maintenance standards required for accreditation. One Committee member asked if King County and the City of Kent were on the same page on this issue or at odds. It was pointed out that the agreement for Howard Hanson dam was to put wood and gravel in the river downstream of the dam for a period of 50 years, and asked this be reflected in the minutes. Will the Plan recommend seeking accreditation for all the levees on the Green River? A Committee member stated that between the FEMA mapping and the Biological Opinion for the National Flood Insurance Program, a lot of the industries on the Green River have contingency plans to move to other locations, which is not a better environmental decision. Finally, clarification was asked about plans for river mile 41 to 44 at Flaming Geyser Park of which there is nothing proposed in that location.

White River Risk Assessment and Action Plans

Statement of Issue:

Has King County adequately identified the flooding and erosion hazards on the White River and developed a reasonable strategy and set of actions to address those hazards?

Summary of Committee feedback:

The Committee comments focused on several topics: how to manage flood waters, gravel removal, floodplain development regulations, and management of open space. One Committee member offered an approach to managing flood waters where the 10-year or 20-year floods would be allowed to inundate the floodplain rather than trying to keep those low flows in the river channel. This approach also recommended the placement of “friction devices” in the floodplain to help with the erosional forces of overbank flooding. Staff pointed out that the US Army Corps of Engineers is exploring the placement of log jams within the River channels of the

White River, which would serve the same purpose for reducing flood velocities. A lot of the Committee discussion focused on gravel removal with questions regarding whether King County would consider gravel removal on the White River. The Committee was reminded of the presentation at the previous meeting that outlined King County's Sediment Management Program that would inform decisions related to when the County might consider gravel removal. A Committee member pointed out that times have changed and gravel removal cannot be conducted like it had been in the past without consideration of the impact on listed species and their habitat. The County should provide additional education to those who believe the County can return to the old practices of gravel removal. It was suggested that buyout of homes from willing sellers was preferable to large public works projects. Questions were asked about subdividing property and were told that floodplain regulations require at least 5,000 square feet of land outside the floodplain for all new lots created. A question was asked about the management of Lake Tapps and whether that lake can play a larger role in providing flood storage. Finally, how is floodplain property that is purchased managed? One Committee member believes King County manages the open space primarily for habitat with little opportunity for the general public to actively use the land.

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Appendices:

- A. King County Flood Hazard Management Plan Citizens Committee
- B. Issue Paper: Levee Certification, Accreditation and Flood Risk Reduction “Levels of Service”
- C. Issue Paper: Levee vegetation and eligibility for US Army Corps of Engineers (Corps) levee repair funding
- D. Issue Paper: Capital project funding for coastal flood and erosion risks
- E. Issue Paper: Urban Flooding and Small Streams
- F. Issue Paper: Equity and Social Justice: Outreach to Vulnerable and Underserved Populations
- G. Issue Paper: Relocation of Residential and Commercial Tenants
- H. Issue Paper: Capital project prioritization, sequencing approach, and eligibility criteria
- I. Issue Paper: Design Guidelines and Bioengineering Approaches to Levees and Revetments
- J. Issue Paper: Gravel removal and sediment management for flood risk reduction purposes
- K. South Fork Skykomish River and Snoqualmie River Basin Fact Sheet and Map
- L. Sammamish River, Issaquah Creek and Cedar River Basin Fact Sheet and Map
- M. Green River Basin Fact Sheet and Map
- N. White River Basin Fact Sheet and Map

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