EXECUTIVE SUMMARY

INTRODUCTION

The impacts of flooding in King County are far ranging and pose significant threats to public safety and regional economic viability. Flooding impacts private properties, businesses, commercial activities, transportation corridors, and can directly or indirectly result in the loss of life. For over 40 years, King County has undertaken significant mitigation and response actions to reduce the likelihood of flood-related losses to citizens, property and infrastructure, and worked to prevent the creation of new flood risks. At the same time, funding constraints have compromised King County's ability to maintain, repair, and retrofit hundreds of aging levees, revetments, and flood protection facilities that citizens and businesses depend upon for public safety.

King County faces a potential regional flood crisis, while at the same time, it is nationally recognized for its multi-objective approach to floodplain management. The County's commitment to flood hazard management has reduced new flood damage and loss as well as improved protection of rivers and floodplains that support regionally significant resources such as trails, open space, salmon habitat and farmlands. In 2005, the Federal Emergency Management Agency (FEMA) awarded King County the highest rating of any county in the nation through its Community Rating System. This rating recognizes the County's progressive regulations and comprehensive approach to river and floodplain management and results in a 35% reduction in flood insurance premiums for residents of unincorporated King County.

While King County has been recognized as a national leader in river and floodplain management, a lack of effective levee maintenance and repair funds has left King County vulnerable to significant flooding risks. King County has the challenge of maintaining nearly 500 aging flood protection facilities, which, because of significant budgetary limitations, have not been adequately repaired or maintained over time. Future floods will likely exceed the capacity and protective abilities of these flood protection facilities, threatening property, lives, major transportation corridors, communities and the regional economy. Faced with the possibility of a regional flooding catastrophe, corrective action needs to be taken now to minimize public safety risks associated with flooding. The *2006 King County Flood Hazard Management Plan* provides a 10-year strategy to help the region prepare for, respond to, and minimize the impacts of future flood disasters.

THE 2006 KING COUNTY FLOOD HAZARD MANAGEMENT PLAN

The *2006 King County Flood Hazard Management Plan* advocates for efficient and environmentally beneficial flood risk reduction projects and solutions that strive to accommodate, rather than oppose, natural riverine processes. Specific project and program recommendations are presented in a 10-year Action Plan that defines the projects needed to help protect public safety and reduce flood risks, in conjunction with maximizing other public benefits. King County's current multi-objective approach to river and floodplain management balances the high financial and ecological costs associated with traditional flood control measures with innovative and cost effective river and floodplain management strategies.

The *2006 King County Flood Hazard Management Plan* is an update to the *1993 King County Flood Hazard Reduction Plan* and builds upon the county's nearly fifty years of flood hazard management experience. King County's River and Floodplain Management Program has made some progress on the implementation of flood risk reduction projects since adoption of the 1993 Plan. While over $34 million has been spent to complete over 200 projects and technical studies, with a 2-to-1 leverage rate of federal and state funds to local dedicated funds, the remaining capital needs to protect public safety remain very significant. Representative project types from the body of completed work include: levee and revetment

repairs; levee setbacks; acquisition of repetitive loss properties and other at-risk homes; completion of technical mapping and analyses to better understand the location of areas at risk from flooding; and reconnection of rivers and streams with their floodplains to increase floodplain capacity and improve natural conveyance processes. Even with those efforts, the level of projects funded and completed in the past twelve years is not inadequate to protect against future regional flood disasters.

The geographic scope of the *2006 King County Flood Hazard Management Plan* is countywide, with a focus on major rivers in King County: the South Fork Skykomish, Snoqualmie, Sammamish, Cedar, Green and White Rivers. Large tributaries are also addressed, including, but not limited to: the Tolt, Raging, Miller and Greenwater Rivers. Portions of this Plan also apply to streams, lakes and marine shoreline environments. The Plan is consistent with current regulatory requirements and funding considerations, and reflects a multi-year city, agency and public participation process. Flood hazard policies outlined in the Plan are similar to the adopted policies in the *1993 King County Flood Hazard Reduction Plan.* These policies are consistent with current King County code, and will not result in any new flood hazard regulations.

2006 PLAN PRIORITIES

The *2006 King County Flood Hazard Management Plan* puts forward an ambitious 10-Year Action Plan designed to complete priority construction, repair and maintenance actions for flood protection facilities and related projects throughout King County. The Action Plan also proposes many proactive flood risk reduction projects and programs. Implementation of the 10-Year Action Plan will produce the following outcomes:

- Improve public safety and reduce property damages;
- Reduce the risk of levee and revetment failures by completing high priority capital improvement projects for flood protection facilities;
- Continue the targeted acquisition of repetitive loss properties and other at-risk floodplain properties to minimize the need for flood protection facilities in locations where river and floodplain confinement is infeasible or no longer a public priority;
- Further expand the regional Flood Warning Center operations and public education and outreach;
- Support ongoing updates to existing FEMA floodplain maps and other technical studies in support of effective implementation of floodplain regulations;
- Expand partnership and collaboration opportunities with other floodplain stakeholders, including but not limited to cities, private property owners, tribes, and watershed forums;
- Provide for ongoing risk assessments in support of an adaptive management approach to hazard identification, solutions development, and Plan implementation.

2006 PLAN COST ESTIMATES

The *2006 King County Flood Hazard Management Plan* contains project proposals and cost estimates for known flood hazard management risk areas. The total cost needed to implement the Plan proposals ranges from $179 million to $335 million. Current dedicated flood hazard management revenue sources, which include the River Improvement Fund, the Inter-County River Improvement Fund and the Green River Flood Control Zone District, will generate approximately $54 million over a 10-year period, approximately $125 million to $281 million less than the total need.

The range of costs associated with Plan implementation reflect high priority projects and programs needed to reduce the impacts of a significant regional flood. The 10-Year Action Plan outlines a minimum level of investment needed to ensure public safety and to reduce flood risks using two funding levels, "status quo" and "enhanced". Additional project needs are identified within Appendix G, Flood Hazard Management Risk Areas, Management Needs and Projects.

The "status quo" recommended project and program actions can be completed in 10 years with the continuation of current funding levels and include priority programs such as flood warning, flood protection facility assessment, routine maintenance, and engineering and ecological tasks in support of the River and Floodplain Management Program's capital improvement program.

The "enhanced" recommended program and project actions will require additional funding, beyond current levels, to complete essential and regionally significant flood hazard management capital improvement projects and services. Both "status quo" and "enhanced" categories of flood risk reductions actions, as described in the 10-Year Action Plan, totaling $179 million, reflect the absolute minimum level of capital need to significantly reduce flood risks to the regional economy, transportation corridors, and public and private property.

Appendix G contains a countywide list of the known flood hazard management risk areas identified during the preparation of the *2006 King County Flood Hazard Management Plan*. In many cases the magnitude of risks described in Appendix G is not well understood and these risks will be further evaluated as part of Plan implementation. In other cases, Appendix G provides preliminary project proposals for significant flood hazard risk areas that are not addressed through either the "status quo" or "enhanced" sets of projects within the 10-Year Action Plan. Initial cost estimates prepared for this subset of projects informed the upper end of the Plan implementation cost estimate range of $335 million.

A REGIONAL FUNDING PROPOSAL

King County's historical and current funding levels, and pay-as-you-go capital improvement project approach, have not supported adequate maintenance of aging facilities over time and will not be sufficient to fund the implementation of the *2006 King County Flood Hazard Management Plan.*

The *2006 King County Flood Hazard Management Plan* proposes to establish and enact a new countywide flood control zone district that would include all watersheds within King County and a new regional funding source. The new countywide flood control zone district should fund the implementation of the Plan at an estimated cost of $179 million to $335 million.

PLAN IMPLEMENTATION

A cornerstone of the implementation strategy for the *2006 King County Flood Hazard Management Plan* will be adaptive management. The proposed countywide flood control zone district would ensure that its operations incorporate adaptive management strategies and full regional partnership. As new technical information associated with King County's flood hazards evolves, Plan proposals and capital actions will be re-evaluated and re-prioritized as necessary. Shifting Plan implementation priorities over time will reflect King County's more developed understanding of the level of risk posed by flooding and channel migration to human safety, property and regional economic considerations as well as the degree to which structural and nonstructural flood risk reduction strategies are working. Adaptive management strategies require high quality, well-organized and accessible technical information. King County will continue to employ state-of-the-art, flood hazard data collection and information management strategies to measure the effectiveness of its flood risk reduction actions over time.

Major river flooding is a regional issue, and as such, flooding solutions outlined in the *2006 King County Flood Hazard Management Plan* require extensive collaboration and strong partnerships among regional stakeholders. The establishment of a countywide flood control zone district will establish effective and responsive leadership for Plan implementation, building upon King County's long history of coordinating and partnering with local jurisdictions, special districts, state and federal agencies, Water Resource Inventory Areas, tribes and other stakeholders to reduce flood risks in proximity to its major rivers, streams and floodplains.

STRUCTURE OF THE PLAN

The contents of the *2006 King County Flood Hazard Management Plan* include:

Chapter 1 establishes this Plan's purpose, goals, objectives, guiding principles, scope, and describes the process through which this Plan was developed and will be updated.

Chapter 2 includes policies that guide the program and project actions proposed in the Plan.

Chapter 3 provides background information on King County's floodplain landscape, an overview of the costs and impacts of flooding, and an overview of past and current efforts to reduce risks from flood and channel migration hazards.

Chapter 4 describes flood risk reduction strategies and tools, both programmatic and at the project level, used to reduce the risks associated with flood and channel migration hazards.

Chapter 5 provides a watershed scale description of current conditions, accomplishments since the previous Plan was adopted, the long-term vision for each watershed, and a summary of the project and program actions proposed for the next 10 years.

Chapter 6 addresses Plan implementation, including adaptive management approaches.

Chapter 7 provides funding information and a Plan funding recommendation.

Appendix A outlines the 10-step planning process required by the National Flood Insurance Program, Community Rating System Activity 511 and a Plan "crosswalk," which identifies where each element of the planning process can be found in the Plan or supporting documents.

Appendix B is a summary of federal, state and King County floodplain management regulations.

Appendix C is the King County Flood Risk Assessment, which was prepared to meet the requirements of the National Flood Insurance Program, Community Rating System Activity 511.

Appendix D contains a list of accomplishments since the adoption of the *1993King County Flood Hazard Reduction Plan*.

Appendix E is a list of King County flood protection facilities and contains information on the eligibility of each flood protection facility for federal flood damage repair assistance.

Appendix F is the 10-Year Action Plan and includes the start list of program and projects actions that will be implemented through the Plan.

Appendix G is a complete list of flood hazard management risk areas, management needs and projects that could be implemented through the Plan.