Technical Memorandum

To: Board of County Commissioners
From: Kirk Holmes, Public Works Director
Date: February 11, 2011
Subject: County Wide Flood Control Zone District

Introduction

While Kittitas County has a long and significant history of damaging floods, this technical memorandum will focus on the floods of December 1995, February 1996, January 2009, and January 2011. Kittitas County sustained extensive damage to public and private property around the county. The final tally ran into the millions of dollars. It has become obvious that flood control and hazard mitigation in flood prone areas should be examined. In June 1996, the Board of County Commissioners, by Resolution No. 96-213, adopted the Kittitas County Comprehensive Flood Hazard Management Plan (CFHMP). A feasibility report that studied alternatives to achieving the goals and objectives through a cost effective, ongoing and fundable program was included. No action on the feasibility report was taken at that time.

Due to the severity of the noted flood events and subsequent recovery costs, Kittitas County staff has recognized the need to establish an entity that will take responsibility and have the authority and funding to deal with floods. The current County government structure is unable to fund controls and pay for damages through its normal operating budget.

The current County government structure also does not have a single point of contact for flood related issues. Functions related to flood control and hazard mitigation are distributed between County departments. Considerable planning on flood plains and flood prone areas and ultimately a flood management portion of the Comprehensive Plan have been completed by the Public Works Department, though given the age of the planning document, updates are in order. The emergency response during a flood event is handled through Emergency Management in the Sheriff's Office. Much of the actual repair and construction work is accomplished by the Public Works Department.

RCW 86.15, Countywide Flood Control Zone District, is the foundation on which this discussion is based. Further development of a FCZD will require significant processes and multi-departmental coordination including the Prosecutors, Auditors, Assessors, and the County Treasurer Offices.
1. **Executive Summary**

Kittitas County has spent millions of dollars of taxpayer money to recover from flood disasters. Outside of the Road Fund, the County does not have a fund to pay for flood recovery. The money is taken from the General Fund, significantly affecting the normal operating budget of the County. To best meet the needs of the citizens and businesses of Kittitas County and to insulate the general governmental duties of the County from the disastrous effects of flood damages, a countywide Flood Control Zone District should be established.

A FCZD will improve the way the County is able to prepare, react and recover from flood events. The FCZD will be managed by a qualified coordinator and funded by a small assessment on all properties within the district. The fund, carefully managed by the County Engineer, will leverage grant dollars, create partnerships, provide better protection for property owners and insulate the County’s General Fund from flood disasters. The FCZD programmatic and capital improvement work plan will function as outlined:

- Implement a comprehensive approach to preparing and educating citizens for flood events, coordinating emergency response and regional flood warning center operations during flood events, and ensuring consistency across basins for post-flood recovery actions.
- Generate technical information used to characterize, quantify, and delineate flood risks, as well as to develop and implement strategies and actions to reduce those risks. Flood hazard technical information types include hydrologic and hydraulic studies, floodplain and channel migration zone maps, geologic studies, geographic information system (GIS) land use data, dam operations studies, risk assessments and flood hazard management corridor working maps.
- Manage repetitive loss area mitigation coordination, public outreach, flood hazard management planning and grant preparation.
- Implement flood hazard management programs and capital improvement projects for the District. Teams of staff will be organized by river basin and will be responsible for identifying, implementing and tracking flood risk reduction programs and project actions within a given basin. Staff will also coordinate five basin technical committees with partner jurisdictions and maintain relationships with communities and other agencies. A District Coordinator will ensure that District governance, reporting, legislative process and cross-basin consistency is achieved.
- Coordinate facility and property maintenance for the District which includes approximately 30 flood protection facilities covering 110 linear miles and approximately 55 acres of land acquired for flood mitigation purposes.
- Provide supervisory, budgeting and administrative services for the District.
- The vast majority of the proposed Flood Control Zone District work program and budget will be dedicated to the implementation of major maintenance and capital projects, consistent with the Kittitas County Flood Hazard Management Plan. Significant updates are required to the current KCFHMP. This work includes managing and implementing...
major facility maintenance, repair and new flood protection facility design permitting and construction projects; floodplain functional improvement; home buyouts and acquisitions; and residential elevations.

The FCZD will create a single point of coordination for all flood related activities. The Board must consider which department currently working with flood issues should be the point of contact.

2. **Kittitas County Flood Control Zone District – Proposed 7-Year Work Program**

The Kittitas County Flood Control Zone District (KCFCZD) work program would be comprised of two major categories:

- **Programmatic Work Program**
  - Flood Preparedness, Regional Flood Warning Center and Post Flood Recovery
  - Flood Hazard Assessments, Mapping and Technical Studies
  - Planning, Grants, Mitigation and Public Outreach
  - KCFCZD Implementation
  - Resource Management, Annual Maintenance and Facility Monitoring
  - Program Management and Supervision: Finance, Budget and General Administration

- **Capital Improvement Program**
  - Capital Improvement Projects
  - Acquisitions and Elevations

**Flood Preparedness, Regional Flood Warning Center and Post Flood Recovery Program**

**Program Summary:** Implement a comprehensive approach to preparing and educating citizens for flood events, coordinating emergency response and regional flood warning center operations during flood events, and ensuring consistency across basins for post-flood recovery actions. Specific programmatic elements include:

**Flood Preparedness**

- Coordinate flood hazard education program, communication tools (brochures, web content, customer service bulletins, etc) to increase awareness of flood risks and prepare citizens for flood events.
- Track and disseminate flood hazard technical information to local, state and federal agencies and other Kittitas County departments (Public Health, CDS, etc).
- Coordinate annual flood awareness month and associated public information program strategy (meetings, websites, other) designed to increase the public’s awareness of locally available resources and information.
• Agency preparedness meetings to ensure all emergency response agencies and cities are informed about Kittitas County’s flood warning center and Emergency Operations Center (EOC) operations.

Regional Flood Warning Center (EOC)
• Staff the Regional Flood Warning Center to monitor and perform emergency first responder flood patrols during flood events.
• Coordinate with the following agencies in support of the Regional Flood Warning Center operations:
  o Local governments
  o United States Army Corps of Engineers on levee systems performance
  o National Weather Service on weather forecasts and flood predictions
  o Kittitas County Emergency Operations Center for coordinated emergency response activities
  o USGS on river gauging contract and gage updates
  o BOR on release activities and the three dam systems in the county.
  o Kittitas County Department of Public Works on road closures and emergency flood damage and repair response activities
• Coordinate flood emergency response activities with the EOC

Post-Flood Recovery Operations Program
• Complete preliminary damage assessments and develop and track project worksheet completion, expenditures and general documentation.
• Coordinate with FEMA, Washington State EMD and the Army Corps of Engineers on flood damage repairs and federal funding opportunities; determine eligibility.
• Identify projects and complete grant applications for post-disaster Hazard Mitigation Grant Program opportunities.

Flood Hazard Studies, Mapping and Technical Services Program

Program summary: Generate technical information used to characterize, quantify, and delineate flood risks, as well as to develop and implement strategies and actions to reduce those risks. Flood hazard technical information types include hydrologic and hydraulic studies, floodplain and channel migration zone maps, geologic studies, geographic information system (GIS) land use data, dam operations studies, risk assessments and flood hazard management corridor working maps. Specific programmatic elements include:

• Conduct independently or with consultant contracts, as needed, the following technical study and mapping projects:
  o Floodplain delineation and mapping
  o Channel migration zone delineation and mapping
  o Channel monitoring
  o Gravel removal studies and analysis
- Risk assessments
- Hydraulic modeling
- Coordinate with FEMA and other local, state and federal agencies on mapping studies and products.
- Maintain accessible flood study and flood hazard data in a floodplain mapping library using GIS.
- Participate with FEMA to leverage federal funding and revise and update flood studies.

**Flood Hazard Planning and Grants, Repetitive Loss Mitigation and Public Outreach**

**Program Summary:** Manage repetitive loss area mitigation coordination, public outreach, flood hazard management planning and grant preparation. Specific programmatic elements include:

**Repetitive Loss Area Mitigation Planning Program**
- Track repetitive loss area and repetitive loss property information.
- Provide ongoing program database updates, including tracking property owner communications, interest and staff recommendations for mitigation options.
- Manage and administer a County Home Buyout and Acquisition Program.

**Public Outreach and Communications Program**
- Provide increased citizen preparedness for floods.
- Provide community outreach support for capital projects.
- Support media relations activities.
- Coordinate citizen involvement and prepare and facilitate public meetings.
- Coordinate updates to webpage and other outreach and educational materials.
- Coordinate outreach to landowners with facility easements regarding maintenance work.

**Community Rating System Coordination**
- Manage the National Flood Insurance Programs (NFIP) Community Rating System (CRS) program to maintain and improve CRS rating.
- Coordinate and manage updates to the planning and regulatory processes for future updates to flood plans, Kittitas County’s Multi-Jurisdictional Hazard Mitigation Plan and the Kittitas County Comprehensive Plan, Shoreline Master Plan and Critical Areas Ordinance. Includes coordination with other jurisdictions.

**Grants Program**
- Administer biennial Washington State Department of Ecology FCAAP process and track successful grants to ensure timely reporting.
- Coordinate and assist with preparation of applications for all state and federal flood hazard mitigation grant processes.
- Provide grant application technical assistance to cities and other stakeholders, as needed.
Kittitas County Flood Control Zone District Implementation

Program Summary: Implement flood hazard management programs and capital improvement projects for the District. Teams of staff will be organized by river basin and will be responsible for identifying, implementing and tracking flood risk reduction programs and project actions within a given basin. Staff will also coordinate five basin technical committees with partner jurisdictions and maintain relationships with communities and other agencies. A District Coordinator will ensure that District governance, reporting, legislative process and cross-basin consistency is achieved. Specific programmatic elements include:

Basin Team and Basin Technical Committee Program
- Identify and prioritize projects for implementation and refine as needed based on work program priorities.
- Provide project management, design, construction and monitoring on major maintenance and repair projects, new facility design and construction, home buyouts and acquisitions, and home elevations. Includes technical oversight and quality control of plans and documents for capital improvement projects within the basins.
- Staff and coordinate regular Basin Technical Committee meetings.
- Implement work program to guide private property owners and community outreach necessary to complete capital improvement projects.
- Develop ongoing relationships with cities, agencies and stakeholders within the basin, and ensure consistency across basins under the countywide flood control zone district framework.
- Support or lead staff on acquisition coordination.
- Promote river stewardship activities.
- Coordinate and support logjam investigation, response and action.
- Respond to, investigate and provide technical assistance for enforcement on complaints and general inquiries. Conduct citizen and/or landowner contact, communication and outreach.
- Work with the local, state and federal agencies on project design proposals.
- Coordinate with the Public Works Department on construction projects and scheduling.
- Provide quarterly project reporting to County management.
- Address and seek resolution of basin-specific floodplain management issues.

KCFCZD Management Advisory Coordination
- Staff and coordinate the KCFCZD meetings and provide support to the Board of Supervisors (BoCC).
- Track basin technical committee meetings, issues and cross-basin policy issues.
- Serve as internal representative to analyze and prepare recommendations for policy issues pertaining to the KCFCZD.
- Coordinate public processes across KCFCZD to ensure consistent outreach across basins.
- Report all KCFCZD activities, accomplishments, revenues and expenditures through an annual report and other reports.
- Respond to Board of Supervisor (BoCC) requests.

**Resource Management, Annual Maintenance and Facility Assessment Program**

**Program Summary:** Coordinate facility and property maintenance for the District which includes approximately 30 flood protection facilities covering 110 linear miles and approximately 55 acres of land acquired for flood mitigation purposes. Specific programmatic elements include:

**Annual Maintenance Program:**
- Manage work authorizations and coordinate with the Public Works Department or contractor on completion of maintenance activities:
  - Facility mowing
  - Access gate maintenance
  - Access road maintenance
  - Noxious and non-native plant removal
  - Irrigation and watering
  - Interpretive sign installation and maintenance
- Coordinate design of facility and acquisition of property re-vegetation projects.
- Coordinate design and implementation of volunteer planting and other land stewardship projects.
- Provide land and resource management including management of lands for appropriate levels of public access.
- Inspect access and remove hazardous trees if necessary.
- Collect and remove garbage.

**Flood Protection Facility Assessment and Monitoring Program**
- Develop methods for facility inventory and assessment program.
- Conduct annual facility assessments in the spring and fall.
- Conduct or assist with post-flood damage assessments.
- Produce annual report on facility conditions.

**Facility Maintenance and Repair Program**
- Conduct or assist with facility assessments consistent with the facility assessment and monitoring program.
- Support or lead staff on all maintenance tasks owned by Kittitas County.

**Sediment Management, Large Wood Evaluation, In-channel Management Program**
- Coordinate sediment management program/project actions to reduce flood risks.
- Coordinate large wood evaluations program/project actions to reduce flood risks.
- Monitor other in-channel hazards and coordinate associated flood risk reductions actions.
Program Management and Supervision: Finance, Budget and General Administration

Program Summary: Provide supervisory, budgeting and administrative services for the District. Specific programmatic elements include:

Management and Supervision Tasks
- Manage the technical and business operations of District work program and staff, as necessary.
- Develop annual operating and capital budgets, work programs and staff allocations.
- Provide supervision, technical assistance and quality control/assurance to staff.
- Carry out responsibilities for hiring, management performance, developing training expectations and recommending effective discipline and termination.
- Ensure programs and projects are completed to carry out the goals and objectives of the District.
- Work collaboratively with other government and regulatory agencies, departments within the County and the public to address environmental policies and issues related to floodplain management principles, goals and objectives.

Finance and Budget Operations
- Develop annual capital and operating budget.
- Track and report annual capital and operating budget, revenue and expenditures.
- Provide grant and cost-share reporting, billing and documentation.
- Provide contract and procurement management, support and strategy.
- Support capital project managers and engineers with detailed project expenditures, revenues, scheduling, contract management and other finance needs in support of capital improvement program implementation.

General Administration
- Records maintenance.
- Copying, filing, correspondence and scheduling.
- Meeting preparation, coordination and support.
- Photo-documentation management.
- General program administrative support.

3. Capital Improvement Program Implementation

Program Summary: The vast majority of the proposed Flood Control Zone District work program and budget will be dedicated to the implementation of major maintenance and capital projects, consistent with the Kittitas County Flood Hazard Management Plan. Significant updates are required to the current KCFHMP. This work includes managing and implementing major facility maintenance, repair and new flood protection facility design permitting and
construction projects; floodplain functional improvement; home buyouts and acquisitions; and residential elevations.

Construction of flood protection infrastructure has allowed considerable residential, commercial and industrial economic development in flood hazard areas. The flood protection infrastructure has reduced the frequency of flooding, severity of erosion and contained flood flows within levees. This has allowed for significant economic growth by promoting development of historical flood plans, as exemplified by the industrial and commercial development lining the lower Reecer Creek drainage. However, these areas will always face the potential risk that the flood protection infrastructure could be overwhelmed, resulting in serious flood damage, significant impacts to the regional economy or personal injury and death. While the costs of flood protection infrastructure construction and maintenance are borne by the public, the value to the economy is a regional benefit.

The Capital Improvement Program will complete high priority and regionally significant flood hazard management capital improvement projects to significantly protect public safety and reduce flood risks to the regional economy, transportation corridors and public and private infrastructure and property. These capital improvement projects include retrofits and repairs to levees and revetments; levee setbacks to improve slope stability and increase flood conveyance and capacity; and targeted acquisition of repetitive loss properties and other at-risk developments.

The Capital Improvement Program will provide project design, construction and management on the following project implementation elements:

- Scope and Concept
  - Identify problems, alternatives, recommended solutions and project goals.
- Feasibility
  - Identify and conduct studies, analysis, cost estimates, resources needed and landowner issues.
- Acquisition
  - Obtain necessary property rights to perform the work.
- Design and Permitting
  - Address all elements of the project (e.g. geomorphic, constructability).
  - Complete all federal, state and local permitting requirements.
  - Survey
    - Conduct pre- and post-construction as-built surveys.
  - AutoCAD
    - Develop design plan sets.
  - Hydraulic Modeling
    - Conduct pre- and post-project modeling.
    - Complete and review Letters of Map Revision (LOMR) for constructed projects, when or if warranted.
  - Ecological
• Conduct pre- and post-construction monitoring.
• Complete pre-project feasibility studies and analysis.
• Provide project design support.
• Complete biological assessments and evaluations.
  • Individual
  • Programmatic
• Complete Section 7 consultation.
• Review Letter of Map Revisions (LOMR) per the Reasonable and Prudent Alternatives (RPA) as set forth in the National Marine Fisheries Service’s Biological Opinion.
• Coordinate or support permitting and permit agency outreach.

  o SEPA
    • Complete individual project SEPA.
    • Complete programmatic SEPA.
  o Geologist and Geotechnical Engineering Support
    • Provide sediment management monitoring, analysis and modeling.
    • Conduct pre- and post-construction monitoring.
    • Conduct pre-project feasibility studies and analysis.
    • Provide project design support.
  o Engineering (may include Project Management as well)
    • Lead design engineer for projects.
    • Manage construction of projects.
    • Obtain resources for projects; make task assignments.
    • Track and report project scope, schedule and budget.
    • Develop plan sets for construction and bid packages.
    • Provide overall project QA/QC oversight.
  o Project Management
    • Obtain resources for projects; make task assignments.
    • Track and report project scope, schedule, and budget.
    • Provide overall project QA/QC oversight.

• Monitoring and Adaptive Management
  o Pre-project baseline information.
  o Construction monitoring.
  o Conduct pre- and post-construction monitoring.
  o Provide monitoring reports to local, state and federal agencies as required.
• Develop an annual Sub-regional Opportunity Fund

4. Assessments

Title 86 of the Revised Code of Washington (RCW) outlines the methods to assess properties through special districts. The procedures and requirements are quite specific but different in each case.
Assessment Areas

Determining who benefits from the flood control districts is the hardest question that will be addressed. The flood district alternatives in the RCW’s allow quite a bit of flexibility as long as benefit can be shown. Much like a Road Improvement District (RID) the flood control district must have defined boundaries. The following is a brief discussion on the possible districting or establishment of boundaries.

A countywide district is the simplest form of assessment areas and spreads the costs between the greatest numbers of beneficiaries. It can be said that every property within the County has an impact on flood control. As development occurs, property is covered with more impermeable surfaces which change runoff rates and quantities. It is, of course, more difficult to sell this concept when people feel they are immune to flood problems.

The county could also be divided up into basins and sub-basins that are formed by drainages. The advantage to dividing the County into basins is the ability to get projects and project costs closer to the affected properties. However, it limits the ability to spread costs as much as a countywide district and the BOCC could approve one or several basin districts without approving the others.

Finally, the BOCC could assign other geographical or non-geographical districts under the Flood Control Zone District if it can be shown that there is a correlation between the assessment and the benefit received.

It should be noted that Federal lands cannot be assessed by a Flood Control Zone District. A FCZD does allow state lands to be assessed and some open space exemption apply.

5. Recommendations

The following recommendations are made to meet the set objectives: a cost effective, ongoing, and fundable program which clearly identifies the responsibility and liability for flood control and hazard mitigation work in Kittitas County:

   a) Proceed with the Resolution of Intent to Form a Countywide Flood Control Zone District within 10 months. This would establish an ongoing floodplain management program outside of general County government.

   b) Create a 15 member Citizens Advisory Committee per RCW 86.15, to work with and provide recommendations to the Board of County Commissioners on the development of a Flood Control Zone District Ordinance.