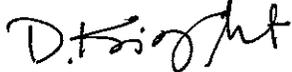


**SULTAN PLANNING BOARD
AGENDA ITEM COVER SHEET**

ITEM NO: Staff Report

DATE: February 12, 2009

SUBJECT: Culmback Dam and Repetitive Flood Loss Tour

CONTACT PERSON: Deborah Knight, City Administrator 

ISSUE:

The city hosted a tour of Culmback Dam and repetitive flood loss properties on Tuesday, January 27, 2009. Several planning board members and the Mayor participated in the tour and follow-up meeting at City Hall with the stakeholders.

The meeting minutes briefly summarize the tour and offer the council additional background for future discussions.

SUMMARY:

The City organized a tour of the Culmback Dam. The tour was a part of the city's efforts to encourage the Snohomish County PUD (PUD) and FEMA to work together to include the flood storage at Spada Lake in the current FEMA flood restudy of the Sultan and Skykomish Rivers. The draft flood restudy does not include flood storage in the hydrology model.

Flood storage at Spada Lake has reduced high flood flows on the Sultan River. However, FEMA can not include flood storage in the restudy because flood storage is considered "incidental" to the dam's water and power operations.

FEMA requires specific written operating agreements with dam managers such as PUD to include storage capacity in flood restudy hydrology models.

Although tour group never reached the dam on January 27, 2009 due to road conditions, there was an interesting presentation by PUD on the dam's operations. Following the presentation there was a discussion of what's needed by FEMA to incorporate storage capacity into the dam's operating license with the Federal Energy Regulatory Commission (FERC) and ultimately into FEMA's flood mapping system.

FISCAL IMPACT:

None at this time.

RECOMMENDED ACTION:

Review the meeting minutes. This will be a discussion item at the Council Retreat on February 28, 2009.

ATTACHMENTS:

A – Culmback Dam Tour January 27, 2009 Meeting Minutes

Meeting Summary
Tour of Culmback Dam (Jackson Hydro Project, Sultan)
January 27, 2009

Participants

- Deborah Knight, City of Sultan, City Administrator
- Connie Dunn, City of Sultan, Public Works Director
- Frank Linth, City of Sultan Planning Board, Chair
- Robin Shaw, City of Sultan Planning Board
- Jerry Knox, City of Sultan Planning Board
- Sally Hintz, Northwest Washington Director, Senator Maria Cantwell's Office
- Ted Perkins, Army Corps of Engineers/FEMA Region X
- Karen Wood-McGuinness, FEMA Region X, Floodplain Management Specialist
- David Ratte, FEMA Region X, Regional Engineer
- Bruce Meaker, Snohomish County PUD, Sr. Manager of Regulatory Affairs
- Keith Binkley, Snohomish County PUD
- John Velemis, consultant, Regional Management Center – 10
- Debi Heiden, consultant
- Tilak Gamage, consultant
- Rick Kammerer, Snohomish County Department of Emergency Management, Emergency Program Manager
- Chris Nelson, Snohomish County Public Works, Surface Water Management, Project Manager, Upper Skykomish River Flood Insurance Re-Study
- Mary Hurner, Snohomish County Public Works, Surface Water Management, Sr. Planner, Floodplain Management
- John Engel, Snohomish County Public Works, Surface Water Management, Habitat & River CIP Supervisor
- Adam Lemieux, Staffer from Congressmen Rick Larsen's Office

Summary

Participants met at the Sultan Park and Ride at 10:00 a.m. and traveled together in vans toward Culmback Dam. Snow and ice prevented the vans from reaching the dam, so the groups headed for the powerhouse. Road conditions required the group to stop short of the powerhouse. At a nearby lookout, participants received an overview of the Jackson Project layout from Bruce Meaker.

The group reconvened for lunch and discussion in the Council Chambers at Sultan City Hall. Bruce gave a PowerPoint presentation covering the history of the Jackson Hydroelectric Project, which was built in two stages over a 50 year period. Bruce stated that the objective of the project is to meet contractual agreements with the City of Everett to provide 80% of the water supply and 5% of the energy for Snohomish County.

In a discussion of project management throughout the years and during flood events, Bruce stated that the PUD has some flexibility in managing the level of Spada Lake (and thus its relative storage capacity) because of a set of rule curves with have specific operating criteria. This flexibility provides a great deal of flood protection to the City of Sultan, reducing the magnitude of most Sultan River flood events and thus limiting the combined effects when the Skykomish River also experiences flood events.

FEMA and Snohomish County are completing a flood reinsurance study of the Upper Skykomish River. The information from that study will inform FEMA's update of the Flood Insurance Rate Map (FIRM) for this area.

Bruce emphasized that the PUD's operation plan for Culmback Dam prioritized managing the dam for the water supply and electricity needs under contractual agreements and that flood management benefits for the project are incidental to and a complement of project operations.

A discussion of various flood events since 1990, and the impact of managing the reservoir, ensued.

FEMA representatives were interested in knowing how the dam is operated when floods are predicted. Bruce explained that because the Spada Lake inflows can be very intense, the PUD positions the lake level to have 35 feet of freeboard prior to entering the fall spawning season when there are fish protection flow constraints on the project. Flood events on the Sultan River can be 10x greater than the PUD's capacity to withdraw water through the power tunnel. With 163 inches of annual average rainfall, the Sultan Basin is one of the most intense rainfall basins in the continental US. Daily events of 13 inches have been recorded. The result can be dramatic elevation changes in a short time period. For example, in November 2006, Spada Lake rose 50 feet over a 6 day period. However, the PUD's management of Spada Lake has shown that most of the storm events on the Sultan River have been effectively captured and therefore the actual flow effects on the City of Sultan are due primarily from the backwater of the Skykomish which has no flood control structures.

Deborah Knight, city administrator, stated that Sultan is trying to plan for the growth of the city 20 to 50 years in the future. The city is trying to understand the economic implications if the re-study results showed that the 500-year and 100-year flood areas cover an expanded area that includes the historic downtown area. Deborah stated that Sultan's downtown businesses are struggling, and she doesn't think they would be able to afford to improve or expand their operations under stricter flood hazard development regulations.

She stated that city officials are learning that development in the flood plain is likely to become extremely restrictive in the future. The council and planning board have been discussing this, and they are wondering if there are other areas where their business district might be able to grow more successfully. They are concerned, since attracting commerce while the downtown area is close (and visible) to the Highway 2 corridor has been difficult and they reason that moving their downtown elsewhere might pose increasing challenges.

The city is also concerned about the business and property owners that are here today (in what will be the expanded flood area on an updated map). The city is interested in hearing ideas that FEMA, the PUD and the county might have for helping property owners with this transition.

Representatives from FEMA stated that the map modernization project (which prompted the Upper Skykomish River Flood Insurance Restudy) is necessary because so many flood insurance rate maps are out-of-date throughout the country. Many of these maps date back to the 1960's or 1970's, though those in the Sultan area date back over twenty years. Significant development has occurred since the maps were adopted, which influences the patterns of flooding, and the reinsurance study will identify if map changes need to be made.

The maps are also being digitized countywide. This will allow future revisions to be accomplished more efficiently.

FEMA representatives stated that they have a concern for public safety, and want the revised maps to be accurate. They want the BFE determination (base flood elevation) to be based on the hydrology, not an arbitrary decision. FEMA would like assurances (binding agreements related to flood storage) from the PUD in order to consider the storage provided by Culmback Dam in future map revisions.

Bruce Meaker stated that the PUD must serve the entire county, and as the population continues to grow, water supply and energy commitments will also grow. However, he is willing to commit to achieving certain flood management targets in the fall of the year to provide flood management capacity for the project. (The Project is currently operated in this manner anyway.) He is not willing to release water out of Culmback dam whenever the reservoir is high because that would be a waste of a great deal of energy potential for the Jackson Project.

Bruce Meaker discussed with the FEMA and county representatives a strategy to determine the 100 year flood value for the Sultan River given the operating management that they plan to submit in their next licence application. That value may be lower than what was calculated in a recent study done for the county by Northwest Hydraulic Consultants.

Next Steps

The county will hold two community meetings related to the project during the year:

- 1) to discuss the results of the Upper Skykomish Re-Study
- 2) to present the Preliminary Flood Insurance Rate Maps

Both meetings will be well publicized in advance.

For more information on the Upper Skykomish River Flood Insurance Restudy, please contact Chris Nelson by email at chris.nelson@snoco.org, or by phone at 425-388-3464, extension 4696.