

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122
MEETING SUMMARY
20 April 2009**

A. CALL TO ORDER

The meeting was called to order at 7:00 PM.

B. ATTENDANCE

BOARD MEMBERS

Bill Williamson, Chairman
Randy Stauffer, Vice Chairman
Bob White
Tom Gillespie
Dave Dieckgraeff

STAFF

Christina Stauffer
Administrative Assistant

BOROUGH STAFF

Dan Mahalak, KPB Capital Projects Division

Property Owners and Stakeholders Present

Dan Seavey
Paul Foreman
Todd Petersen
John Shank
Wade Roberts
Susie White
Cindi Betting, CIRI
Robin Ward, CIRI
Matt Gray, RBCA

C. GOAL STATEMENT

Chairman Bill Williamson explained that the purpose of this work session was to gain public input and to give information back regarding the flooding history and long range plans for Box Canyon Creek.

Vice Chairman Randy Stauffer suggested that the board members introduce themselves so that the public present has a better idea of who they are. Randy also introduced Dan Mahalak and explained the presentation Dan was going to give.

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

D. PUBLIC COMMENT

Bill Williamson opened up the meeting for public comment.

Dan Seavey stated that he lives at the head of Box Canyon Creek. He has lived there for 45 years, since before there was a Kenai Peninsula Borough, before there was a National Park. Dan said he had lived in the same place for 22 years before the flood of 1986 which he figured was a 100 year event. He stated that after the water from the 1986 flood settled that he and his son-in-law had gone to the entrance of the canyon and had seen that the high water mark was at least 20 feet or more up the canyon walls. They assumed that there must have been a natural dam that burst. After the flood, Frank Dieckgraeff came out with borough consent and built the first earthen dike up Box Canyon. The dike has had to be patched and repaired here and there at various times. In 1995 there was another flood event. The damage this caused, as far as Dan was concerned, was because of the dike. Before this time the river had always gone and cut a channel towards the Box Creek bridge, just to the west. This is where it went for years and years. Dan went on to say that he has a notion that hydrologists make this more complicated than it needs to be. The river wants to go where the river wants to go which is down to the bridge. In 2006 we had another flood with ice out in the woods. He stated that he had gone up the canyon 20 minutes before the dike let go and saw that it had filled in with water backed up and starting to come over the top. The water comes out of the canyon and this the dike and burst through rather than allowing it to come out and spread out a little and go where it wants to go. Dan said that instead of spending a lot of money so the Army Corps of Engineers can play with tractors, the stream should be allowed to go where it wants. Dan also mentioned that he was disturbed about the new permitting system which hardly allowed building an outhouse without having the government come in and see if it was done right. The more we expect from the government the more government we are going to have.

Bob White said that he had seen some aerial photos from the Forest Service taken in 1961 and they show Box Canyon Creek running down where Old Exit Glacier Road is now. The water ran into the backside of what is now Paul Foreman's house. When they built the road there they removed the big timber so that it became an open course for water.

Paul Foreman spoke, saying that he had heard rumors about a masterplan. Does the board have anything on this?

Dan Mahalak replied that a watershed masterplan had been proposed to the board several meetings back but not much had been done on it yet. A masterplan would take into account the fact that anything that is done upstream affects people

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

downstream. It would address the watershed from top to bottom. It may involve fewer structural cures and more regulation on development. Long term solutions in a masterplan would involve high capital cost and a lot of effort, lots of heavy lifting.

Bill Williamson said that we have to have some kind of plan to work from. We have to get our data and get good maps. The data we are working with right now is from 1986 and that information is very far out of date. Every flood event means the map is going to change. There are no easy answers and it is really difficult to fight mother nature. Back when it worked best to just let the stream go where it wanted there were very few houses. Now the area is much more developed and there will continue to be development.

Randy Stauffer stated that when the service area was first formed, for the first couple of years the board spent very little money because we felt that we could not do anything significant with the small amount we had. So for a while we just accumulated money. Then we had the flood in 2006 and realized that we had accumulated enough money to do some small projects to repair stream damage caused by the flood. We completed a few projects, some effective, some not and realized that we were just putting band aids on a very large problem. For instance we did one project on Clear Creek at Salmon Creek and in less than a year it was impossible to tell that we had even been there. There are hundreds of thousands of cubic yards of gravel that need to be removed. Now with global warming there will be even more glacial melt and gravel will be moving down even more quickly. Dan suggested coming up with a masterplan to look at bigger projects for longer term solutions. This kind of mitigation involves way more money than this board has and way more money than the taxpayers can afford so the board has decided to use what money we have to provide matching funds for federal grants.

Tom Gillespie commented that the easternmost extent of the natural drainage on Box Canyon is now heading directly toward Wilma Avenue where it comes off Old Exit Glacier Road. The stream is starting to creep toward the east of the alluvial plan. Eventually it will end up going back down Old Exit Glacier Road. Everything downstream might need to be addressed because there will be large areas impacted.

Dan Seavey mentioned that if someone goes over and cleans out where the rock outcropping is and goes west, cleans it out regularly, it would help.

Tom Gillespie said that every time they go out there it takes two to three days and all they can do is push up a little gravel berm.

Discussion was held regarding effectiveness of previous mitigation efforts.

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

Bob White stated that he has spent a lot of time up Box Canyon over the years. He said that from the rock outcrop downstream about 1500 yards, the whole thing has built up 5 to 6 feet which could be 60 to 70 thousand cubic yards. The water has pushed gravel around the corner so there is another raised area. The little dike that was built after the 2006 flood is too small. There is only 10 cubic yards of gravel holding the river back from going down the trail and down Old Exit Glacier Road. Something needs to be done ever if it's stopgap. The Behlke report produced at action plan that was never followed. If no one takes action everyone is going to get wet. Bob stated that he had worked with Behlke back in 1990 when the report was done and it resulted in some engineered drawings of a levee. Bob said that he was not sure that the levee was proposed for the right location. He also said that someone had once proposed blasting off the point of rock on the west side of the channel but there is another rock point just down from that and that is where the levee should go. That location would allow for a shorter levee and would still give the stream some room to wander. We would still need to move gravel out every year.

Dave Dieckgraeff commented that years ago Rob Robson of the KPB Capital Projects Department had looked at things up there. We used to go in every year or so and kept it pretty cleaned out. Then they stopped letting us in there. It needs to be cleaned out and rechanneled.

Bill Williamson asked if there was any more public comment. There being none he introduced Dan Mahalak and asked him to make his presentation.

E. PRESENTATION/DAN MAHALAK

Dan Mahalak explained that he was a hydrologist working for the SBCFSA and the borough. He said he had been asked for the facts and that was what he would be presenting. Dan presented a Digital Elevation Map (DEM) of the Box Canyon Creek alluvial fan. He pointed out all the clearly visible old channels that showed clearly that the creek had migrated back and forth across the alluvial fan over time. Dan also stated that to date, there really has not been much mitigation done on this alluvial fan. The levee work that has been done has encouraged people to move in beneath it and now, with so much more development to protect it might not be possible to stand back and do nothing.

Dan used the computer to virtually fly up the canyon. He stated that the single worst problem with Box Canyon is that there is a very steep gradient and no confined channel at the outlet. The walls are over-steepened. Much of the channel is talus and this gets liquefied in a flood event and forms a debris flow. The problem is that these debris flows can carry boulders, trees, cars, whatever. If a substantial debris flow

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

comes up against an earthen levee it will either eventually erode it away or it will build up behind it until it fails and creates a surge release type flood.

Discussion was held regarding the increase in development below Box Creek Canyon and the frequency of maintenance required for flood mitigation. Possible courses of action were discussed, build levees or move people out?

Bob White pointed out that gravel moves even without a flood. You can stand beside the creek and watch cantaloupe size rocks moving down. The bed load in the Resurrection River in front of Windsong Lodge is now several feet higher.

Dan Mahalak continued his presentation by showing a model of how streams on alluvial fans avulse across the fan over time.

Discussion was held regarding the build up of sediment and the problems this causes.

John Shank asked why it was so difficult to get the gravel out of there. He stated that if material can not be removed then there really is no solution to fix it.

Further discussion was held regarding problems with regulations and costs of sediment removal in various watersheds in the service area.

Bob White pointed out on the map where the current channel is and described the history of sediment build up. He said that the stream tends to want to kick eastward and run down the Seavey trail. The Behlke report shows a levee. Bob pointed out on the map where he thought the levee should go. The proposed levee would cut into CIRI land some but would protect everything downstream. Otherwise, Bob said, the flooding will keep taking out the road at a cost of \$450,000 a pop.

Dan Mahalak went on to say that Box Canyon Creek has not had much mitigation work done on it so it is really kind of virgin. People bring up the points about what kind of maintenance needs to happen, who pays for it, who does the work. The old timers who have been doing this forever, the pioneers, are getting old and their equipment is getting old. Now the government wants to get involved but they require that we accept their rules. If levees are going to do their work there needs to be a commitment to maintaining freeboard. In the 2006 flood, 200,000 cubic yards of material accumulated behind Japp Creek levee that now needs to be removed. One choice, if you decide to put in a levee, is to leave enough room behind it for the stream to wander. This will reduce the need for maintenance.

Cindi Bettin asked, if you had all the money in the world, what would the solution be?

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

Dan Mahalak replied that it would depend on how long the fix was planned to last. Seward's current infrastructure is aging. This is why FEMA is not accrediting levees. But people feel protected and keep developing beneath them.

Randy Stauffer pointed out the developed area below Box Canyon on the map. He noted that you can see that there are old channels across many properties, including CIRI land. The levee that is up there now is a very poor one. As Mr. Seavey said, should we go in there and clean it all out and move everything west? Suppose we could go and get some stimulus money, what could be done up there to make the land usable?

Dan Mahalak commented that the US Forest Service plans projects looking forward 200 years. Dan went on to describe the options of a small levee, a large levee or a substantial levee with a sediment basin as described in the US Army Corps of Engineers 205 Report. You need to look at the geology, the slope and the catchment requirements which depend on how much sediment comes down. The US Army Corps of Engineers estimated 80,000 cubic yards per year. If there is a substantial flood event there will be even more.

Robin Ward asked how long this type of fix would last.

Bill Williamson said that it would last as long as people are willing to maintain it.

Discussion was held regarding the current controversy with the state regarding gravel in navigable streams.

Bob White pointed out on the map where the current levee was and where an eventual levee might go. He indicated the location of the main flow and how the old access road has become the stream course.

Dan Mahalak demonstrated with his model what the slope of the land is.

Dave Dieckgraeff said that the gravel coming out of Box Canyon is larger, not like the stuff at Metco.

Bill Williamson added that Exit Glacier Road has become a huge dam and that not enough drainage is allowed for.

Discussion was held regarding how the area had been surveyed before the road was built and how far a dike might need to go to control stream flow.

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

Tom Gillespie stated that some areas that had been low in the 40's and 50's were now built up to such a degree that it would require moving a huge amount of gravel to create a channel.

Bill Williamson said that the permitting people no longer allowed just moving gravel from one place to another. He also pointed out that the SBCFSA can not afford to do repairs after every event and that this kind of work is a waste of money.

Randy Stauffer suggested that it might also be necessary to provide better drainage under the new Exit Glacier Road so the water can get past the dam to the river.

Bob White agreed with Randy that the area down at the bottom, up against the new road and even out into the Resurrection River was becoming a dead zone. Water pools up down by the road and the bed load from Box Canyon Creek at its confluence with the Resurrection River is building up.

Christina Stauffer spoke briefly to other possible options for reducing Box Canyon Creek flood risk. She described grant opportunities with the federal government for individual property owners to elevate their houses. She suggested that some people built personal levees to reduce flood damage but that this option required permitting to prove that the levee would not cause damage to anyone upstream or downstream. Christina explained buyout options that were currently being explored in other subdivisions and spoke at length about the benefits of buying flood insurance now before the new FEMA FIRM maps for the Seward area were published. She also pointed out that there were hand outs available for anyone who was interested that gave suggestions for floodproofing a home.

F. DISCUSSION/PUBLIC COMMENTS

Randy Stauffer reminded everyone that KPB Ordinance 2009-09 had a sunset clause which would expire in one year. It was intended to be a stop gap measure while the Floodplain Task Force works toward a more long term plan. The borough is looking at new regulations that will be permanently put in place after that to deal with the problem of platting and building in harm's way. This regulation will also protect public roads and infrastructure.

Bill Williamson stated that the whole area has lacked cohesive planning. Initially floodplain development was left wide open but now there is so much development that we have to get a handle on it. The idea of Ordinance 2009-09 was not to tell people what to do on their own property but to keep them from doing anything that would damage their neighbors.

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

Matt Gray said that he had not heard a precise estimate. He would like to get a better handle on how much these options are going to cost.

Dan Mahalak read off the estimated cost of the three levee options as calculated by the Army Corps of Engineers and explained that these figures were in 1992 dollars.

Bill Williamson explained that the work session was to allow the SBCFSA, the property owners and CIRI to be on the same page. This is not going to be solved by one landowner or by the SBCFSA alone. It will take everyone working together.

Cindi Bettin asked, if a sediment basin was planned, where would it go.

Dan Mahalak stated that the sediment basin would most likely go on federal property. The sediment basin option was the preferred option as the material from the basin could be used to build the levee.

Discussion was held regarding levee construction that would be more long term than just earthen. Methods of hardening such as rip rap and non-permeable membrane to keep the inside of the levee dry were discussed.

Randy Stauffer expressed concern that, as FEMA was not accrediting any levees at this time that a levee project might not be eligible for funding. FEMA is trying to reduce their liability by making sure that anyone living below the levee understands that the structure only reduces flood risk, it does not guarantee safety. Even if funding can be found, someone will have to take responsibility for maintenance.

Discussion was held regarding the possibility that a levee built by the Army Corps of Engineers might be accredited out of the box.

Robin Ward asked if the SBCFSA though the Army Corps of Engineers might build this.

Dan Mahalak replied that the Corps did not have money to do much of anything at the moment.

Paul Foreman asked, if everyone was on board for a levee project and we had a green light, how long would it take to do the project.

Dan Mahalak explained that there was a limited season for this kind of work as it was not possible to work in the stream with snow on the ground or when the water is high. If we were told that we could have the money this year, we could start in spring of next year.

**SEWARD / BEAR CREEK FLOOD SERVICE AREA
BOX CANYON WORK SESSION
SEAVIEW PLAZA BUILDING, SUITE 122**

Bill Williamson added that a buy by all the property owners would be needed. He asked if there had been any discussion at CIRI about reducing flood risk on their Box Canyon property.

Cindi Bettin answered that at this point CIRI was just gathering information and keeping all options on their radar.

Further discussion was held regarding the history of flood mitigation in Box Canyon.

Dan Mahalak commented that he was going to have an opportunity to work with the University of Alaska using their stream modeling flume in Anchorage. There is a possibility of getting university input and student participation.

Bill Williamson repeated that putting together a watershed masterplan will help us to see 30 to 50 years down the road and to plan better floodplain options. He said that the SBCFSA will be gathering a lot more data to tell us how much sediment build-up there is in all our streams and to keep mapping data current. That is the most important thing, to generate engineering and grant funding.

Randy Stauffer thanked everyone for coming and said that he hoped they had found the work session interesting and informative. Collectively we might come up with solutions.

Dan Mahalak reminded everyone that the SBCFSA has data on individual properties and is more than happy to share.

Dave Dieckgraeff also thanked everyone for coming and stated that he hoped it helped them understand what we are up against.

Bill Williamson closed the work session at 8:40 PM.

**NEXT MEETING WILL BE MONDAY, May 4, 2009 AT THE SEAVIEW
PLAZA BUILDING, SUITE 122 AT 7:00 PM.**

Christina Stauffer
Secretary

Minutes Approved: 4 May 2009
Date of Approval