SKAGIT - PUBLIC WORKSHOP
20 DECEMBER 1978

NAME	ADDRESS	REPRESENTING
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Dona Barbara Austin	1381 Austin Rd Mt Vernon	Farmers
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Pete Walker	1265 McLean Rd	SK Co Dike #12
EB Olmsted	217 Belmont Terr	Fuck City
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Steve [illegible]	2511 E Fir Mt. V.	Dept of Ecology
John Crittenden	1816 S. 13th	[illegible] Architect
Wesley McCoy	1725 [illegible]	Skagit [illegible]
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Jack Larson	1304 Fir Island Rd Mt Vernon	D. Dist 21
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J. C. Dillinger	14414 Ovenell Rd	
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Chris Soler	1778 Hickox Rd.	
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20 DECEMBER 1978

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Alfred Tellesbo	1509 Fir Island Rd Mt Vernon W	Dike No 2
Chet Reil	1930 Lafayette Rd Sedro Woolley	Me
George R. Mayfield	1309 Glenwood Dr Mt. Vernon	Self Cascade Pattern
Carl Hanson	2517 Riverbend Rd Mount Vernon	Dike #17
Matthew M. Paul	1601 Riverbend Rd Mt Vernon	Dike #17
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20 DECEMBER 1978

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PUBLIC MEETING
SKAGIT RIVER LEVEE AND CHANNEL IMPROVEMENTS
HELD AT MOUNT VERNON, WASHINGTON
20 December 1978

Brooks: Those standing, there are seats up in front here for you. Tonight the way we are organizing the workshop is that first we will make a presentation to you trying to explain the results of what we have been working on since the public meeting last March, and then we'll just open it up to questions and answers and try to answer the questions you may have on what we have developed so far. When we get to that point there's a microphone in back which you can use so everyone can hear your questions. We'll just go in order and try to answer everyone's questions tonight. OK, if we can have some lights and the projecter. I am Forrest Brooks from the Corps of Engineers in Seattle. I am the study manager on this project. To my right is Mr. Vernon Cook, and he is the project manager. We both work in the Seattle office of the Corps of Engineers.

The project that we are here to talk about tonight is the Skagit Levee and Channel Improvements project. Obviously, we are in the Skagit-Samish River Basin and the basin itself has a history of flooding, it has a history of numerous levees being constructed and also flood control dams being built on the main stem and also tributary rivers. What we are really here to discuss though, is not the entire basin but really the delta area that's downstream of Sedro Woolley where most of the flood damage has occurred. There's approximately 68,000 acres in that flood plain and we're concentrating on that area. Now the project we're working on now is authorized by Congress in 1966 following a Corps of Engineers report. The slide here shows the general extent of the project. It involved the grazing and strengthening the levees roughly from the Burlington Northern railroad bridge downstream to the mouths of the river and three locations of channel widening. Two of them on the North Fork and one on Freshwater Slough on the South Fork. Now this was the first phase of the Corps of Engineers project. By this I mean it was the white area on this slide here. In general before the Corps constructs a major project we go through in essence in three stages. The first stage is called general investigation studies or feasibility reports. This was what was done in the mid-60's when Congress authorized the project. In 1977, Congress then funded further work by the Corps of Engineers which was the second phase, which is called advanced engineering and design studies and that's what is shown in blue on the slide. That is where we are now. Obviously, the next step would be to go to construction on the project, which we recommend. Now in the advanced engineering and design studies, the primary purpose of them is in the phase I, which we call phase I portion, is to reformulate or to reaffirm the project

that was authorized in the original feasibility or report of the general investigation study. This is what we have been doing in looking at the project that was authorized and seeing if it is still the project that should be built or if some modifications should be made to it. The second part of advanced engineering and design studies is what we call phase 2 and that is when you have decided the general concept of what we think should be done then you get in and work out the design details with that plan using the phase 2 studies. On the Skagit we are doing a combined phase I/phase 2 effort. The phase 2 effort in the general design memorandum, which is our project report, defines the area downstream from Mt. Vernon so that as we are working out the formulation of the entire project, we are also working on more detailed design, more effort on the downstream portion. Now as I said, the area that we are primarily concerned with is the flood plain downstream of Sedro Woolley. These two charts show quite a bit of the area that's involved. Back at the public meeting we explained that there are various ways that you can either prevent or control flooding or reduce flood damages. These involve moving everyone out of flood plain and diverting floods away from population centers, in building flood storage areas, in building levees, or imposing some sort of zoning, flood plain regulations. Obviously, another option that is available, even though it wouldn't constitute a plan as such, is that can just let things be as they are now. At the public meeting last March, we identified six alternatives. I will go through them quickly now just review as to what they were and the approximate cost of those alternatives.

Alternative 1 was the plan of doing nothing and just continuing the existing condition. The existing flooding would continue in the future much as it has in the past. Genreally speaking, in a hundred year flood, practically the entire flood plain would be under water from hillside to hillside.

Alternative 2 is the project as it was recommended in the mid-60's. This would involve improving the levee system downstream from Sedro Woolley to handle safely with freeboard and other allowances a channel capacity of 120,000 c.f.s. This is approximately equal to about a 10-year flood, a 10-year event. Now in our preliminary discussions with local interests with Skagit County as a sponsor, they indicated that they would be very much in favor of trying to see if we could have additional or more flood protection than the strictly authorized project would provide. That's where we've developed the other four alternatives.

Alternative 3 involves the lower levees of the rural areas, plus higher levees in the towns of Mt. Vernon, Burlington, and Sedro Woolley if possible.

Alternative 4 which we developed would include the low rural levees, the urban levees for the towns and upstream storage with the best

flood control site being located on the Sauk; however, there are other sites in the upper basin. Subsequent to the public meeting, as you all know, the Congress passed and the President signed the Wild and Scenic Rivers legislation which designated the Sauk River scenic and the Skagit River recreational and these actions would mean that a dam, if a dam were to be constructed, that it would be in conflict with the Wild and Scenic Rivers Act, so that some legislative change would probably be required to prevent that.

The fifth alternative that we had in the public meeting, involved the urban levees, the rural levees, plus the Avon bypass project, which was itself authorized by Congress in 1936 and would have included a diversion of approximately 60,000 c.f.s. from near Avon to Padilla Bay. This would increase the level of protection to the areas downstream of the bypass channel.

The sixth alternative is the one which was in the mid-60's, termed the flood control plan, the base it would involve upstream storage, the Avon bypass project, which would include levee system _____ and the levee channel improvements project. Herein the part of the alternative which includes the upstream storage dam has been now would be in conflict with the Wild and Scenic Rivers Act. At the public meeting, there was general concensus that some people, I would say people generally favored that we should continue and do more detailed studies of Alternative 3 to see how much protection we could get out of the levee system and not preclude some time in the future additional upstream storage. So that we went back to the office, and we split up Alternative 3 into 5 separate alternatives in which we in essence we trade off different levels and protection for different areas in of urban. And here where we are talking about urban, we are talking about a 100-year protection, where we say rural, we are talking basically 50-year protection.

Alternative 3A would involve providing urban protection for Burlington, West Mt. Vernon and Mt. Vernon itself with rural protection for the other lands that are downstream of Mt. Vernon. The overflow into the Samish would still continue, it would generally begin at approximately the same time that it does under existing conditions, which is at a flow of about 140,000 c.f.s. in the river which is approximately a 16-17 year flood.

Alternative 3B is the same as 3A, except that the west side of the Avon bend is raised so that now there is a continuous 100-year levee from Burlington downstream on the right bank, the west side of the river down to West Mt. Vernon. Here we would have an additional land provided urban protection, whereas in Alternative A there would be 6,600 acres of urban protection and 3,500 of rural. In Alternative B there would be about 12,000 urban and about 30,000 of rural. The price tag of Alternative A is approximately $46 million and Alternative B about $45 million.

Alternative 3C is the same as Alternative 3A except that the levee system at Burlington is extended to Sedro Woolley. This provides urban protection to Mt. Vernon and West Mt. Vernon, and to the land from Burlington to Sedro Woolley that is northwest of SR 20. The land that also gets flooded by the Samish River, would still be flooded by the Samish River, as it is under existing conditions, but it would no longer receive the 100-year Skagit overflow adding to the Samish problems. The price tag on this alternative is about $48 million. This would provide about 17,000 acres of land 100-year protection and about 35,000 acres of land rural protection.

Alternative 3D in essence combines the additions that were in both 3B and 3C. This provides protection on the right bank from Sedro Woolley to West Mt. Vernon and protection on the left bank for Mt. Vernon itself. The price tag of Alternative 3D is about $85 million and the reason for the big jump between the other alternatives and this alternative is because of the hydrologics of the situation. When the water is blocked off completely from going down the Samish, and confined between levees at Burlington and Mt. Vernon, the water rises such that the railroad bridge and the old Highway 99 bridge both have to be completely rebuilt and raised. This is where the big increment of cost comes between 3D and the other four alternatives. Here again, 3D would provide about 22,000 acres urban protection and about 30,000 acres rural protection with the partial protection to the land in the Samish flood plain.

The fifth alternative is Alternative 3E, and in this alternative we tried to counteract some of the bad things that were happening with some of the other alternatives. In this alternative we have provided urban protection to Burlington around the Avon bend to West Mt. Vernon, we have provided urban protection to Mt. Vernon itself. We have extended the levee system to Sedro Woolley and we have installed a weir which would in essence provide 50-year protection to the land between Burlington and Sedro Woolley. It would, in the 100-year flood case, the flooding in the Samish would be no worse than under the existing conditions. So in essence, the agricultural land in the Samish and the agricultural land in the lower Skagit delta would be provided approximately 50-year protection with the land that the town's provided 100-year protection. Now one of the, I forgot to mention, that one of the things that happens when you close off either the Avon bend, if you close off the Avon bend, then that will tend to push more water onto the Samish which would be Alternative 3B. The water down the Samish that would overflow in the 100-year flood will be several feet deeper than under existing conditions. By use of the weir, we have restricted that fact so that the Samish is not hurt at all by the urban protection and for the lower levels of flooding it has helped. Under existing conditions, the overflow to the Samish Valley should stop short of about a 16-17 year flood which is about 140,000 c.f.s. Two months ago we were up here for the flood

control council meeting where they asked us questions. Someone came up with a question of "Well, what is the design of the levee and what is taken into account?" Here is a schematic that in essence shows what we consider is far as determining how high the levee has to be. If you take and determine how high your water surface for the 100 year flood is, by means of hydrology and hydrolic computations using computer models, you then to the bare water surface you add an allowance for sedimentation which will occur the economic life of the project which in the case of this project the economic life is being figured at 100 years. OK, that gives you a design water surface.

OK, then for essence of safety in the levee design on top of the design water surface, at some locations where necessary we will have additional allowances for wind wave, for super elevation, and several other factors. OK, now in addition to that, there's a general thing called preboard which is added to a levee, to the height of the levee, above and beyond those things which you can design into it. This is true to allow for any variances that may occur in essence, is a factor of safety in design. In generally speaking of a project, that there would be 2 feet for freeboard required for below the forks and 3 foot of freeboard required for above forks. Now the typical when we are talking about a levee improvement is many different types I think we have run into maybe 60 or 80 particular cases of cross sections that we could show, however, I've tried to generalize these to give you an idea of what may be happening, at least in general. Here we have an existing levee that isn't high enough and we have to raise it and provide additional wide in the top and raise side of the levee. Now here in this case we got its probably on river bend, and there's an erosion problem so that we have to add riprap which is large rocks, to prevent the levee from eroding away. Now sometimes in this project there will be bench as this shows, sometimes the riprap will go the top of the levee and sometimes the riprap will be on the levee slope and not on the river bank if the bench is wide enough. This is all a factor of design. Here is one case where the riprap is necessary all the way to the top of the levee because there is no bench or anything to provide protection on the riverside. Quite a few of the levees in the valley will also require a gravel berm on the right side of it. This is a 12 foot wide berm that is in essence lengthens the drainage path for the water so that the levee itself will not fail to underseepage. I might take an aside here that a project itself is designing a levee system so that it will not the levee system should not fail. We are not designing it to absolutely prevent all seepage under the levee, we are designing it so that what seepage occurs will not cause a catastrophic failure.

In some locations, as this picture shows, we will have to use a flood wall where the site dictates that it is very narrow, we have a road immediately adjacent to the river or maybe we have too many buildings or too many houses that would involve extensive relocations and there isn't space to put regular levee section through. So we would be

building a flood wall. This occurs primarily on this project on through the town of Mt. Vernon. OK now I'll just leave explain little bit about viable alternatives We've gone through some general things about levee design and basically from our viewpoint is that we're we feel that the best compromise that is achieved of the 5 levee alternatives is probably Alternative 3E. However, the county's local sponsor has not definitely made their decision as to which one they want to support and we are here tonight to gather people's comments and questions and try to answer them. So just so that we can understand what where things are in the project, I'll walk through Alternative 3E for you, pictures and point out several of the items that will be associated with it. And many of the things that are said here will apply to any of the alternatives, particularly on the downstream portion of the project.

The levee itself would start in Sedro Woolley, at high ground and it would come very soon to be adjacent to the railroad, it would follow the railroad along until it got to a point of about 2,250 feet from the end of the existing levee in which case it would leave the railroad and would go across the open land to the existing levee. In this location this is where the weir would be built that would permit the overflow to the Samish at more than a 50 year flood, but would prevent the existing flooding that would begin at a 20 year or less flood. Here we can see the area of where the weir the upstream of the existing levee and the area of where the weir would be located. The exact alignment of the weir and the exact location is still open to adjustment. This is on upstream of Mt. Vernon where in on the phase 1 portion of the project where we are trying to work conceptually how we're doing in trying to put accumulate what cost it would be and the exact location of things can be adjusted in the phase 2 effort which would be following along next year. From here due to the overflow that goes down Samish, a overflow levee will be required would be required along the north side of Burlington, and this would take off of the existing levee, go along the west side of Gages Slough, to Sterling Hill. From Sterling Hill it would go across the fields and along the roads, here's a view of Gages Slough and the levee would be located on the west side by the slough here on the west side of the slough. It would go across the fields from over to Sterling Hill and then from Sterling Hill along the county road here, over to Burlington Hill, it would tie into Burlington Hill on the east side and then it would pick up on the west side adjacent to the freeway interchange, it would go over to the freeway interchange, along the freeway to approximately where the high school is, then it would cross the freeway, and go south until it tied into Bayview Ridge. This is a shot of along freeway, near the school. OK, it, the overflow levee would tie into Bayview Ridge. Now the reason why the overflow levee would be required under this plan and a similar overflow levee would also be required under any plan with the Samish open, which would be 3A, and 3A and 3B both hopefully the Samish open along with 3E. So A, B, and E would all require a overflow dike.

This dike would not be as high as the river dikes but it is required to stop the water that escapes to the Samish which piles up behind Interstate 5 and the railroad and comes flowing back into Burlington. Ok, now if we continue on down the river, the levee system will be improved on the right bank, here's the shot of the Burlington sewage treatment plant, riprap would be provided as necessary and this is one location where riprap would be provided on the spend here. The levee improvement will continue on both sides of the river here of the Burlington Northern bridge downstream, continue down the river around the big bend, to show here the town of Avon which is on the bottom here, the Anacortes water treatment plant which is on the inside of the bend, past the town of Mt. Vernon. In this area there will be flood walls constructed, both on the east and the west side of the river. And we'll go through the project and come back and talk a little more about what could be done during through the town of Mt. Vernon. The downstream end of the urban levee system, this would be common to all 5 alternatives, would be approximately in this area. The urban levee on the right bank or the west bank will end about where the road meets the levee here, and the one on the other bank will be a few hundred yards upstream from here. Now from here downstream to the forks, the 50 year projection levees would have 3 feet of freeboard on them and then below the forks, they would have 2 foot of freeboard.

OK, this is a shot almost down to forks, we are looking at the right bank of the westside of the river here, this is a current access to the river. Here's a view of the forks with Fir Island in the foreground. At the forks we would continue improving the levess down both the north fork and the south fork. Here's a view from Conway looking downstream. We would be improving the levee that's looks like a green line in the picture. We would go past Fisher's Slough here at, I might make a comment that the cost estimate shown in the study graph do include the costs of raising up Fisher's Sough. Subsequent to those being created we will look into it, we feel it is much more cost effective to put a drainage structure on Fisher's Slough then it will reduce the total project cost by several million at least. Then the project itself ends down at the game farm, this is a view looking upstream from the mouth of the south fork. On the north fork, the levees would be improved going down both banks down to the north fork bridge here, then they would continue on the left bank on down past Philbo's house and on into the existing levee. On the right bank the Dodge Valley road would be raised to prevent flooding into Dodge Valley. This is Philbo's house here, Dodge Valley is to the top of the picture, and it would be tied around the end of the existing levee on the Fir Island to provide for the overflow beyond the mouth of the north fork. Now in going through, I said we would digress a little and go back to Mt. Vernon. Going to Mt. Vernon there are certain problems with putting the flood wall through or putting the levee through town. One of the problems is the roadside park which the Lions have constructed on the river bank

just below the weir. They've put over $100,000 into that park recently and to build a typical embankment section levee through that portion would pretty well reduce the use of the park tremendously and probably the great investment that the City has made and the service that was made in the area. Here are some views of Lions Park and right now it's along side the road next to the railroad and the freeway and it is an overall view and it has several items in it, it's got the dump station for the trailers, its got a comfort station for travelers, people using it, it's got the children's play area in the south end, it's got several large and several small picnic shelters so that people can enjoy the river and enjoy the park. Now if we were to build a levee through here, you would pretty well destroy the park in its present state. So we've been looking at possible alternatives that might be able to be used, we looked around to see what some other Corps districts were doing in the country, and one of them, Pittsburgh, Mississippi, has several years ago constructed a flood wall in Monroe, Louisiana. And another view of Lions Park.

This is the picture of the floodwall in Monroe, Louisiana. And in essence, it is a folding flood wall. When it is down acts like a sidewall. OK, now here's, OK this is in essence the design of it is that it is a wall that tilts up and that you have double supports that are pinned when you have it up. Once you get it up, you seal the gaps between the upright concrete wall sections and it serves as a wall system. Here's a picture of it during construction in Louisiana, you can see the supports holding up the walls approximately 6 or 8 inches thick. The wall here is about 6-1/2 feet high. Here you can see some details of the hinges and supports that hold it up. The supports themselves would be on the land side of the levee, in other words, we are looking towards the river in this view. You can also see some of the bolts in between the concrete sections that hold the _____ seals on the outside so that it doesn't leak. Here's a view on the river side of the levee. You can see the trough that the wall tilts up in and sits in. Here's an underneath view showing one of the hinges. And here's a view looking from the parking lot towards the wall. And you can see you can give it various treatments so that it becomes relatively conspicuous.

OK, now that's one of the possibilities that we have been considering and talking with both the county and the city for the Lions Park area, is that type of flood wall that would in essence act like a side wall and would enable the majority of the use of the park to continue as it has in the past. Obviously, some part of the park has to be taken for the wall but this would minimize the impact on it.

If we continue south from Lions Park we go along past the Trail of Sails and toward the old Carnation plant. This area here we would simply be raising the levee in place providing an embankment section till we got down near the Carnation plant at which time the flood

wall would be again be constructed. Through this portion we would not be building any kind of holding flood wall we would just build a straight flood wall and it would have a architectural treatment to lessen the impact of just a bare concrete wall staring at you. On the wall to my right here there are some conceptual drawings of what could be done. You could do a vertical texturing, you could make horizontal texturing or wood texturing. Details like that aren't going to be worked out at this time, that would be something that would be taken care of in the phase 2 part of the studies of the upstream area to be continued next year.

South of the bridge from Mt. Vernon a flood wall would be built on the river side of these buildings. Approximately where the cars park there. Past all the buildings, openings would be left which could be filled with salt blocks during the flood so that the businesses would still continue to have access to delivery doors or to their business doors. OK, south of the buildings, this is the first place where the wall of buildings end, the wall itself will be located along the divider to the right of this picture Where the cars are parked up to the parking meters. This is an area where it might be possible to use a holding flood wall, it may not. We're still evaluating the possibility of using the folding flood wall in the parking lot area, at least for some portions of it. Here we continue south around the buildings themselves solid walls would be built and then openings with stop logs would have to be put in for road and pedestrian access. These openings would be _____ six feet, pedestrian access would be six feet wide, single line road would be 12 feet wide, with the double lane road 18 feet wide. Some of the at least conceptual ideas of how this might be worked out along the wall to my right here and you may want to glance at them later on after the workshops tonight. The wall itself will continue along to the south here to where the city has erected a median barrier and on down the median barrier to the Moose Hall where it would jog to the left, go along the street adjacent to the buildings here and it would go past the Stokley warehouse building and then go between the Stokley warehouse and their plant building on a diaginal there. The wall itself would then be located on the outside of the Stokley plant, trying to maintain for them as much access back of their plant as possible. The wall would continue down and it would tie back into the existing levee just around the beer distributer's warehouse and the sewage treatment plant here. The urban levee itself would continue on a ways here and then it would drop to a rural levee with a three foot of freeboard on it.

On the other side of the river in Mt. Vernon, West Mt. Vernon, we would be planning to raise the existing levee in place, however, so that we would not have to wipe out a row of houses and other relocations we would be providing a wall on the river side of the existing dike which acts like a road in West Mt. Vernon here. In this picture taken looking north, in West Mt. Vernon, and the wall

itself would be located on your right in this picture, on the right side of the road. It would still maintain sufficient clearance so that a one lane road could be maintained as under existing conditions. This is a view on the other side of the highway looking south and a similar type of wall would be built on the left side of this picture, which is the river side down into the park area at which time a embankment levee would be picked up, through the park and south of there it would shift to the existing levee being raised in place with road on it.

Now we might mention just a little bit of Skagit County has asked that we look into the possibility of what kind of recreation might be able to be added to the project, and in essence, we looked at the problem and we feel that we can under Federal law and under our criteria that we have to follow, that we can provide some additional recreational improvements, primarily access health and safety at several recreation sites. One of which was called Youngs Faller which is on the west side of the river at the top of the picture here in West Mt. Vernon. And basically these are items which would be cost shared on a different basis than the rest of the project. Mr. Vernon will get into in a few minutes the local responsibilities in general, but the recreational responsibilities, recreational items of cost are shared on a 50/50 basis between the local sponsor and the COE. And these primarily would be improving access parking, sanitation, those types of things in the area.

On my right is one area that Whitwash Road which is just upstream from the Burlington Northern bridge that you can see the types of things like a exisitng drawing in the wall and there's a concept of the type of things that we are talking about with the future development there. This is the oldest recreational development, it is something that is in addition to the basic flood control project, if the county wants it, it is something that can be done, and if the county doesnt want it, it is something that doesn't have to be done.

This is the Whitwash Road site, we're looking to the west here and the access, the existing levee comes in on and ties into the railroad bridge at this point which is a few hundred yards upstream of the railroad bridge. You can see the road over to the river side and the existing parking area. And as part of the project we could provide some improvements to this area. This is another view looking up the river at the same site. The three areas where we've identified that we could provide recreational improvements on this site which we call Whitwash Road, the site of West Mt. Vernon which we call Youngs For and the site at the bridge across the south fork in Conway. Just a note about the environmental problems, that questions that have been raised and the concerns which we are trying to work out the details on, so that they are not being we could resolve them. Obviously, the Skagit Basin is well indowed by God, its really a beautiful place, this is a shot of Mt. Baker, a couple of shots of the North Cascades

which we took about a month ago on a plane flight. But the major concern in the area when you get down to it environmentally is the fishery. Is that you don't want to do something that will in essence provide significant harm to the fishery in the Basin and another concern that has been expressed by environmental agencies is the bald eagle which is up river. The bald eagle themselves so far are up river from our project, however, at least the majority of them, however, if the fishery is impacted severely then the bald eagle will be impacted because of the bald eagle living off the salmon. Other people have expressed concern that they want to maintain their current recreational pursuits on the river and they don't want a riprap flood control channel from Sedro Woolley all the way to the Bay. Here again, you have to have a certain amount of riprapping for erosion protection, however, you can temper this and try to do the best job and still maintain the fish and wildlife habitat in the environment so that everyone can enjoy it.

And another concern expressed was the possibility of encountering and finding archelogical or historical sites along _____alignment with the amount of excavation or ground movement that may be required in some locations.

In essence, we have been discussing looking over the Skagit River delta both for itself and the Samish and we have been trying to develop the best plan that's available given our laws and criteria, given the needs of the local people and also the designs of the local sponsor, which is Skagit county. I think we are here tonight to hear your questions, try to answer your questions, clear up any misconceptions that may be here, also to hear your comments and to hear your concerns and I think we'll continue now with Vern will pick up a little bit and talk about what is it the local sponsor has to provide on a project of this type.

Cook: Thank you for giving Forrest a break on his voice here, I'll try to use mine. Tonight we have some other folks that will help, excuse me, I'll just do my trick here, how's that, better, better, love it, OK. The lights will be up in a moment, they take a few minutes to come on _____. Forrest voice will get a break and I said I would take over and use my voice for a little bit.

We have some folks here who will be able to assist us in answering any questions you might have. My name is Vernon Cook, as Forrest introduced earlier, in case some of you came in a little bit later. Forrest Brooks was the gentleman you just heard speaking. We have someone from a real estate office, Bob Frye, standing in the rear. You might hold up your hand, Bob. We will get into some real estate questions, we might lay on some guidelines we have to follow, and the county is represented, I believe,_____. Samply is sitting in the front here. Don Nelson is sitting in the rear for the county. We have Karen Mettling here, who's our

environmental coordinator here who's been working with the agencies. She'll be able to help us on that. Somewhere here we have Ernie Sabo, back there who's been up here on the flood fighting for many years, and who's also in our F&M, Mr. Newbill who is sitting beside him, is in our Foundations and Materials, who might be able to respond some how the levees are, how they may be treated. I think I see Howard Miller over there,_____. Howard, he's sitting right over there. Let's see, who else, I guess that's, there may be some others here that might be able to help us with some questions. A couple of things I may add at this point that might eliminate a couple of your questions, frequently are asked about what is a 100 year flood, what's the tenure, its kind of a tough one to respond to. The one I like to use is the District Engineers use many times, maybe you've heard that, its, you take a dice, it has a one, a two, three, four, five and six and then you throw them fast, you know they can be a little random, especially in Vegas and Reno. But generally the prinicipal of the dice is the same thing that relates to a flood event. If you throw a dice on the floor with everything else being equal, you have one chance in six of it coming up as a six. OK, let's take a 100 year flood event, you've heard that term kicked around alot. This year or two weeks from now, you have 1 chance in 100 of having a 100 year flood, next month you have 1 chance in 100 of having a 100 year flood. Now each time one of those floods come through or one of the storms come through, you got that chance. So when you say 100 year flood, 1 chance, 1% chance this year of your having a 100 event. Next year you've got the same chance. Everytime you flip that dice, you've got the same chance. 10 year, 20 year, 50 year floods, same principle applies. If you have 100 year flood this year, that doesn't mean you are going to go 99 years to the next one. You could have a 500 year flood next year. You could have a 10 year flood next year. You could go 400 years without getting a 100 year flood. But you've got that chance everytime it comes along. Now it is important to remember that. In 1975 you had a 10 year event through here, next year you could have a 50 year event. Its a roll of the dice every year. Try to keep that in mind, some people get a little confused. Well, 100 year, that's a long way to go, I won't be here, but it could occur each year. Its the same principle of hydrology.

OK. Local cooperation. Most projects in the United States that are approved by Congress, funded by Congress, by taxpayers dollars are under the local co-op principle. Primarily, that is, there's a need that's authorized but providing the local interest, providing the local cost sharing. Generally, those are what we call the standard abcs.

Number 1. The local interests must provide all lands, rights-of-ways, and easements necessary to build this project.

B. The locals must, let's see, yeah it's up there, I couldn't read it, all alterations, relocations, all relocations, and then hold the United States free from all lawsuits forever more and they must operate and maintain the project forever. Those are the big three.

Now, how you operate it makes a difference in how its designed. Generally, a project is designed taking three things into consideration. What's the conditions out there? How is it going to be constructed by some contractor, and how is it going to be maintained forever more? Now if the maintainace is not going to be good, you can design it to be a little better so it can withstand poor maintenance. Or if it is not going to be constructed the way you designed it, you have to design to care of that. Generally, we like to believe we can control the construction, the local sponsor in this case, Skagit county, will sign a legal binding agreement agreeing to maintain it as proscribed. So with those factors in mind, we proceed with the design.

Local sponsorship. Recently, and not yet on this project, we believe that it _____ but the President's water policy on cost sharing, generally on new flood control projects, is that the state, in this case the state of Washington, would pay 5% of the total cost of the project. Let's say a $50,000,000 project. That would be 5% from the state, 2-1/2 million, 20% from the local interests, OK 10 million, right off the top, no questions asked, that's minimum requirements for new flood control projects. So if this is a $50,000,000 project, 2-1/2 million from the state and up to 20 or more per cent from Skagit county, or whoever the local sponsor is. That's new guideline. Skagit project was authorized prior to this time and its not necessarily so that the state would have to pay anything, and it is not necessarily so that the Skagit county would have to pay up to 20%. Now for meeting the abcs, the land rights rights-of ways, and relocation, it came up to 20%, but that's normal. But it isn't forced from the word go. OK.

What's coming up right next? The next few months. We're having a meeting tonight, we're going to have input. When we leave here, along with other things we're gathering from other folks, we'll consider those comments, we'll complete a draft general design memo saying here's what it looks like, that's needed to do the job and as we understand what you think is needed, you folks as well as the county and your representatives. We'll take that back to the office, put it in a report form. That will be submitted out to the agencies, all the state agencies, federal agencies, and the public generally can have a copy of the draft environmental impact statement and the draft general design memo. Have about 45 days to review it, back comes the input, back into the office. Those comments are all considered. Changes are made as required. Then you'll see the shining faces come back up through here. There will be a meeting by the District Engineer, there will be some higher authority reviews in

the interim, but I'm skipping those steps. District Engineer will stand here and say "This is what we believe we will be sending forth as a recommendation." Taking testimony, comments from whoever. Those comments will also go forth with the report up to the higher authority, in this case it is our Portland office, not the Washington D.C., for them to act on. Approve it or not approve it. That will all occur in the next six months, those steps I just talked about. So at this stage, all the basic data has been collected, we have all the hydrology, substantially 99%, most of the surveys, most of the foundation materials, much of the environmental information has been obtained. We have all the facts and now putting them in a report, getting it organized so it can be sent forward.

OK. Do you have anything?

Person: mumble, mumble

Cook: OK. Good question. On local costs. What goes into making up local costs? The lands, normally what's under the levee, if it's a levee in this case is what we're talking about, all the real estate that is necessary to support the levee itself. If you are going to be moving a road out because you have to expand the levee it would be any new costs without shoving the road out, if there's a building there, utility pole, whatever, type of utility that would be part of it, utilities. What else, the, oh, engineering support. Obviously, the county has to supply engineering support to do the roads, to talk to the utility, to talk to the COE, legal support, real estate searches, appraisal costs, anything that needs to provide those real estate easements and rights-of-way to the Corps to build. When the project is constructed by Corps or contractor with your money, its transferred back to Skagit county, the Corps is finished with the project, it is now a county project, all we do it check now and then and make sure they are maintaining it like they promised.

Person: Who pays for the damage to the flooding of the areas _____?

Cook: I didn't hear the man. What was your name, sir?

Person: Art _____.

Cook: Art Gaboard?

Person: Right.

Cook: OK.

Gaboard: Who pays for the damage to these thousands of acres you say that are going to be flooded and the farms that are going be _____by this. It's never had water before.

Cook: Would you be more specific? Do you know, are you talking about Nookachamps?

Gaboard: Nookachamps. All the Purlite area. All way back down pretty near to Maltby.

Cook: OK. There are, let's talk about the areas in two different categories. OK. There's the areas that are on the landward side of the levee, protected by the levee of course, this is the one you're talking about, they have suffered some interior drainage, perhaps _____ protected generally from the overflow from the Skagit. There are areas, Nookachamps is one of those, and some areas between the levees that are not at Nookachamps, but just happen to, you know, not have levees that right between them and the river, that may experience some higher, now whether it is 1 inch or whether 1 foot or whether its 2 foot, there is a good legal background to that in the past, not necessarily a policy of Skagit county, or not necessarily bound by this project, but generally those are considered consequentual damages for flood control project, and they are not compensated for. That's the general policy. OK. There are always going to be a channel, I think, levee always, going to be areas that are simply going to have more water on them than they did before, simply because the water is going from point a to point b, and if you restrict the area where the water has to go through and you raise it between levees, there's got to be higher water between the levees. Where the levees end up where there's one levee on one side and one on the other, it must be higher. Now whether its that high, that high or that high, it depends on what level of flow you are talking about. Those areas cannot be compensated for. The county may, or the government may, part of the legislation, compensate for that. But as a general rule, in all the costs you see, it is not considered. Consequentual damages.

Yes, ma'am.

Person: Can you tell me how high _____ freeboard you are planning on raising the dike?

Cook: Excuse me.

Person: Could you tell me how high including the freeboard, you are planning on raising the dike?

Cook: It will vary dramatically. Do you have a _____ figure? I would have to say 3 to 12 feet. Just varys dramatically all the way down the river. You know, there's no, you have pick a specific area we could attempt _____.

Person: Mt Vernon and to Sedro Woolley.

Cook: Mt. Vernon and Sedro Woolley.

Brooks I think that's too big an area. A specific site is what Vern is asking for.

Cook: If the existing levee for example, is _____. OK. Right here at Mt. Vernon. How high is the forward wall? That would be your question? Would you like that?

Person: Yes, how high are you raising it above where it is.

Cook: In Mt. Vernon.

Person: In Mt. Vernon

Cook: Say on either side of the bridge, down _____. OK.

Brooks: OK. Through the parking lot area there, its about, the wall itself will be, the parking lot is not level itself, but the wall varies from about 6 to 8 feet high.

Person: Where is that in location to the river gage? Do you know? Where they measure the river?

Cook: River gage is up on the old 99 bridge, I think, between Burlington and Mt. Vernon? That's where the gage is now.

Person: I don't know. I asked for a Mt. Vernon reading. I don't know where the gage is.

Cook: What we gave you just then, will probably answer your question. If you go out and stand on the river bank on top of the existing levee, about 6 to 8 feet higher. Through Mt. Vernon. In the parking lot that's sticking out over the river. OK, that spot.

Person: Could you tell me then how many c.f.s. the river will hold when these dikes are raised at that point?

Cook: Passing Mt. Vernon, that area.

Person: Passing Mt. Vernon.

Cook: Perhaps letting me translating a 100 year protection that _____.

Brooks: It would be the 100 year flood. It would be, let's see, it would be 215 minus the 60 ..... About 160, I think.

Cook: That's minus the spillage through the Samish....

Brooks: I'm trying to subtract out Samish without having the numbers in front of me.

Person: You're saying it would hold how many?

Cook: About 160 c.f.s.

Brooks: 160 - 170 that range. I think we've got 60,000 going out the Samish.

Person: OK. Well, now the 1975 flood it was 35.6 where the river gage is, 1951 it was 36.5. Now you are raising the river, if I understand at Mt. Vernon, 6 to 8 feet more, and the flow at Mt. Vernon, 1951 was 144 c.f.s, and in 1975 it was 130.

Cook: The c.f.s. is correct on 75 and 51.

Brooks: Now one thing if you are thinking about the height of the dike you have to remember that in previous floods that you have had at times had no freeboard and none of the design allowances. So that if you take a look at the wall and say it is 8 feet high in the parking lot, for example, 3 foot of that is freeboard, there could be 2 feet of sedimentation, so 5 feet which is design allowance, so in essence you may have 3 foot of water over the parking lot itself. I don't know whether those are accurate figures, but it gives you an idea that the top, that there is in essence a factor of safety in the design of a levee system itself under our criteria that we use to design.

Cook: You recall that slide that had the 3 foot freeboard? In 1975 if you were out running around on fairly high water, many places at the levee were right up at the top of the levee, or within a foot or two. And with sandbagging and flood fighting efforts, many of you folks and others, it was marginal. And especially on the dam, touch and go just about lost it on 130 c.f.s. Hopefully, after this project that we are talking about, and your question relating to it, if that project were in, no one would be flood fighting. There would be one or two people out looking it over with no concern.

Person: mumble, mumble.

Cook: Not much more than you would without. Sir.

Person: _____ _____ behind my shop _____ you put a wall there _____ ___ What I would like to know is, on the other side of the trailer park _____ already high enough_____.

Cook: Oh, you're saying why not run the levee right along the river.

Person: _____.

Cook: Those folks that have constructed over the years along the river bank, have enjoyed some flooding in the past and will probably continue to do so. Now, one of the options that is open, is to extend the levee right along here, which severely restricts an already restricted channel. And would cause one or two rise up through this area and would add materially to the cost of the levees up through up through this reach.

Person: mumble, mumble

Cook: That's correct A 100 year event.

Person: mumble, mumble

Cook: That was a question or statement?

Person: mumble, mumble.

Cook: Yeah, on the existing levee alignment.

Person: Right.

Cook: That's where the levee is, I believe it is a landward of your place. Right? Yes. The plan to follow in most cases on the Skagit Valley the existing levee alignment.

Person: mumble mumble.

Brooks: I think that we might add one thing here that doesn't directly address what you said, but one of the items we did look at is we did look at it hydrolically in the area. What would happen if we shaved the river bank back that you talked about at the park area and upstream, so that the minimum section would be at the bridge. And by doing all that, the effect on the 100 year water surplus was only a couple 10ths, which wouldn't justify the excavation required to provide that. The reason we choose that, is once you start getting into building new bridges, that gets into substantial costs, so that we looked at what the maximum you could get out of widening the river without fooling with the bridge. But it didn't provide much in the reduction of the water surface.

Brooks: Yeah, that's where we ran the hydrolic computations on shaving the river bank back down through the Mt. Vernon fork. Both upstream and downstream of the bridge. And the hydrolic effect of doing it was relatively negligable. The only real effect, is that if you were take the whole bed down and took less of Mt. Vernon out and widened it you might get a lot more good. But that didn't seem to us a prudent thing to get into.

Person: mumble, mumble.

Brooks: Probably if the dike were to move to the river bank, if it was an embankment section dike, which it would probably would be, then the trailer park would be gone completely. Because it would be under the dike itself.

Person: mumble, mumble.

Brooks: Well, I just, at least the trail is on the river side, probably would be gone _____ the riverside road.

Person: Do you have _____?

Brooks: His fair was on the backside, on the landward side. What I'm saying is the riprap on the side, the sideslope has to be modified to 2 and 1 sideslope probably and at Lions Park I know that shaves some of the park off and I think it probably does the same thing in that area shaves some of the top of the bank back, some of the useable area. If you put a levee on there that has to be maybe 4 feet higher than, 4 or 5 feet higher than the existing levee _____ thats in Mt. Vernon, that gets the bulk of that area substantially and you're going to take up quite a bit of the property if you were to build the levee out there. Irregardless of whether it's cost effective to do it that way.

Brooks: I think that another comment that could be made, particularly if we are talking about anything that is dealing with the urban levee itself, is that we are in a, as I said the whole project were in a phase 1 mold, to formulate the project in general, that the exact design details of which house you go around or exactly which building you go around won't be completely resolved at this time. That is the part of the phase 2 design, which is what we are trying to resolve over the downstream portion to figure out exactly what we would be proposing in regards to each and every structure or building that may be affected. Upstream, we are trying to work out as many details as we can, but not everything in exact detail.

Person: _____ _____I would like _____.

Brooks: Which area? Are you talking about Nookasham, sir?

Person: Nookasham. _____ All the time you've been referring to _____and your maps show that these dotted lines and all those dotted lines_____. Now I'm not against levees and I'm not against the program. I'm the first one to admit that. Nookaham area has historically been without dikes and we're not up here to argue, to

tell you that we want to have a dike. What we are here tonight to tell you is, that every building in that whole drainage has been located where it is at because we have historic water roads. Our a model is a certain level the a doesn't flood. We have high ground for our cattle, so that they don't drown. We have our houses built up to a certain level so that the floor stays dry.

Now this project which you have initiated in this maximum phase, now there are phases in this which do not involve us in a real negative way. But when you talk to a maximum of limited what we can get, it goes beyond every historical level that has ever been mentioned in that area. Now are you going to ask us from what I gathered here, we were to get no compensation, we are to haul in a higher dirt mound I've already spent a good fortune on having dirt rose up so I can feed my cows. My neighbors they have 8 barns of cattle that they have to take care of too. Now it seems to me that a project of this significance has to treat everyone somewhat in relationship to a benefit or at least no negative benefit to the degree that we are being treated. We're being ignored. And gentlemen, when you take Federal employment projects or private funded projects, whatever you want, you got take a chance and look at the people that are being hurt by the project and give them some condsideration, at least compensation of some sort. You've got a historic level out here that is being rammed into interference. We've been able to take what the river has given us ever since man has settled the valley. But the dikes have never held on a recent flood.

Person: And so the projects that you suppose we will construct will then reduce your lost water that nature would not use. We are much in favor of a channel improvement project, a flood prevention project such as been talked here, the retention of the _____contract with Puget Power on the upper river which is tremendous, it is a step in the right direction. I don't think its enough, but neither do you gentlemen as far as that goes, but at least its a step. But we are going to have to fight this thing from a _____ standpoint and get a channel out here and get that dredge running. When I was a little kid, I growed up on the Nookasham area, I've spent my whole life here. And they used to run dredges, they used to run tugs on the river. Now you can't hardly get your boat on the river. Unless it is flooding. But we need a channel, we need a channel to get that water out there without the unnecessary high load. You don't seem to be too concerned about the $100,000, or let's put it this way, you are real concerned about the $100,000 Lions Park. You don't want to destroy that. No, I don't want to either. But they need consideration _____. I don't think that's right. I really feel that this whole drainage has been completely overlooked in this study, and we just really don't feel that there's any reasonable _____ to us to have to raise our levels of our barns and our houses in our own good time. No compensation provided. It isn't right. We're going to fight it. We are going to fight it right down to the last drop of water. Thank you.

Applause.

Cook: I guess that wasn't a question. Anybody else have a question. Sir.

Person: All the people that stood up in this room tonight, you can look us in the face and tell us sir, that you are going to take our tax dollars and you are going to flood our farms with it. Now that just doesn't make any sense to me. I mean that isn't why I pay taxes to have my government go out of its way to hurt us. And just, no compensation at all. You can look me in the face and go home and sleep tonight.

Cook: I can look you in the face because that's the law. If the law is unpalatable or if the way the law is written or the law is passed that we have to operate under seems unfair, I'm not saying they are unfair or fair or just, then laws that were passed that appear to be unfair can be changed to become more fair. OK. But my statement was the way the laws are now, that the COE works under, must work under, is that that area, Nookasham, and not just Nookashams, but other areas in the right bank near the Burlington side that are between the levees and the river, may have some induced waters, higher, yeah, oh no not that much.

People talking.

Cook: No, no, it all depends on the plan. If you would like to get in how much is how much water, or what's specific plan, I would be glad to do that, but generally if we want to confine ourselves like the 3E, then we got some charts and got some stuff on 3E. The 100 year event, now this is the 100 year event, down through here with the project that you show on 3E would have about 2 feet at the river line. Center line of the river about 2 feet at the maximum greaterthat it would have been without the project. OK if you translate that 2 feet back up into the Nookacham it will be less than 2 feet. I can't tell you whether it is 1 foot 11 inches, its just not that accurate. Somewhere between 1 and 2 feet, the water will be higher at Nookasham at the 100 year event. That's about the best most accurate we can do. For 3E.

Brooks: Maybe to provide a point of reference for people, most people remember the 1975 flood. Now if we were to do nothing the 100 year flood of which we are talking, would probably be 3 feet higher than the 75 flood, if we do nothing.

Person: I think it would be a good idea to do nothing.

Cook: That's one alternative.

Brooks: Just to provide you a reference to .....

Cook: Was that responsive to your question? If you did close entirely off the Samish, for example rather than have an overflow, then the water would be higher than that, simply because some of the water is going down the Samish. If you took out the levee from Burlington to Sedro Woolley, for example, and let the water go as it has normally gone for eons then it would have substanially less impact on the Nookasham.

Person: This man has talked nothing but Mt. Vernon. Isn't there any other town in Skagit county besides Mt. Vernon?

Cook: Mt. Vernon, Burlington, Sedro Woolley, and the delta.

Person: _____ Mt. Vernon is going to spend millions here to protect Mt. Vernon. What's the matter with Connelley and Burlington?

Cook: Connelley is having some protection. All the lower belt area is covered by this. The reason we talked at more length about Mt. Vernon, is regarding the flood wall.

Person: It cost a damn sight more.

Cook: The flood walls are more expensive, than some levees, that is correct. Incidently, there is substantially more damage that would be incurred in Mt. Vernon than the same adjacent area.

Person: I would like to read this statement. I wrote it today so I could get it right. I'm going to sit down if you don't mind. My name is George Gines, from Mt. Vernon. I've lived in Mt. Vernon since 1930. For approximately 40 years I've been a commissioner of dike district 20 that takes in the lower Nookasham Valley. Mrs. Alice Debreys is a commissioner of the dike district also. And she will a little later on will outline the position of our dike district 20. I also am the chairman of the flood control committee of the Pacific Northwest Waterways Association. This group is dedicated to the comprehensive planning, and development for the water related resources in the Pacific Northwest. Washington, Oregon, Idaho and western Montana and Alaska. Pacific Northwest Waterways is a citizen organizigation incorporated as a non-profit association in 1934. For 20 years I have worked with this group both in this state and Washington D.C. to get their help in promoting more flood control for the Skagit River. We are now one of ten programs emergency with this _____ work on the Skagit. The PNWA in cooperation with local people have indorsed approval of the Federal administration and Congress with funds to continue planning, advanced engineering and design, and construction of the lower Skagit levees. We are now in the position necessary funds are available for USCOE, _____. And the next step is to go to Congress to get the funds for the actual construction. My own personal feelings are at this time for the money that I feel will be available from Federal levee, that we

should go back to Alternative 2, for all levees, with the extension of the levees from Burlington to Sedro Woolley. We would be looking at approximate cost of $20,000,000 in Federal funds, and $1,000,000 in local funds. When this project is completed then go for revised and bypass and give us 100 year protection.

Applause.

Person: As the dam on the Sauk _____ due to the designation of the Sauk as a scenic river, I believe we could prevail upon Congress to allocate the funds needed for the bypass. I personally believe at this time that we would have trouble getting full Federal funding in any amount of excess of $20,000,000. I am of the opinion we would be better to have half an apple than none. That's all.

Cook: I'll clear up one thing. Remember when I was talking about the local cooperation. The a item, number 1 item, was that the local sponsor, in this case, the county, has the obligation to obtain all rights-of-way, easements, for the project. So when I respond to this gentleman saying about the Federal taxpayer which is you and I and his money being used to flood him out, no compensation back. What I was aluding to was as far as the Federal representative here, the Corps, we would not require the local sponsor to compensate for mitigating damages or consequentual damages, OK. We will not require them to do so. It does not preclude him from doing so. All that it is, is we would, if there is something in an interior drainage mold where a levy was blocking, you build a new levee and you block an existing drainage pattern. You've got two ways to handle that - one, you pump it over to the river, OK, second; if that's too costly or you look at that cost, another way is just to acquire an easement or right-to-flood, that means property. Pay your money. That leaves you the less costly alternative. OK. That's the interior drainage. We will require the county to acquire an easement or a flowage easement for that man's land, landward of that levee before we proceed with construction. That's the was the law reads. The law reads that we would not require the county to acquire flowage easements for the consequental damage area. That doesn't preclude them from doing that. It just wouldn't require them to do that. That's a fine point, do I make my point clear? The taxpayer pays for everything. Don't ever forget it.

Person: How about relocation?

Cook: Excuse me.

Person: You want me to stand or what?

Cook: Well, I don't think they heard your questions.

Person: How about relocation of homes and stuff? Like along the river bend and like you have a drawing there that shows a possible relocation of a dike too. What's that going to involve? Would it involve to move places that say don't have enough land to move?

Cook: Bob, do you want to come forward? We have Bob Frye here, maybe he can give you just a short little dissertation which will cover most of your questions on how the local sponsor, in this case, the county, would be having to work on the relocation to obtain the lands-of-way plans, rights-of-way easements, answer several questions.

Frye: Would you repeat the question?

Cook: The question was what about the relocation, what about a house what about, you know and so on.

Frye: OK, well in general, the way the county would be required to acquire land would be in the same manner as the Federal government would. That is, first of all, there would be a determination made of what lands exactly are needed. When that's been determined then an appraisal will be made, what the actual fair market value is. The county, just as the Federal government, will be required to offer the landowner fair market value. In addition, if personal property needs to be moved from this particular area those expenses need to be paid, that's relocation assistance. If the family has to move, then we get into a more serious problem, because the county has to assure that adequate replacement housing is first available and then assist the individual families in moving somewhere else. Of course, wherever they move is certainly their own choice, but the county has to provide its assistance. There may be certain benefits provided for both tenents as well as owners. Some of these benefits could go as high as $4000 per tenent for a short term owner, and as high as $15,000 for an owner occupant. This is in addition to moving expenses and the compensation of the land.

Cook: Does that answer your question?

Person: Pretty much so. Thank you.

Cook: I think another thing if the optional would also be available I think in most cases most of the relocations on this occur because the embankment or road just impinges on a house. So that the option is also available for the homeowner if possible if he wishes to be picked up and moved over as a possibility to stay on the same property.

Cook: We don't necessarily move the people from their property, Bob.

Frye: To be quite honest, that's the most patriotic option. But again the county is required to offer the fair market value and if the owner desires to have his building moved, he could reserve the right to do that building at its salvage value. Which generally is a kind of bargin amount. He then would have to move it himself at his own expense. But all in all, that seems to the most financially benefital way to go.

Cook: OK, Karen just raised one point here, maybe some of the others had questions. There's some color codes here that you may have looked at earlier and may want to look at later. And in the orange it says possible relocation and that means just that. Possible. Its a row and there may be houses affected but it isn't necessarily so. And it isn't meaning that the levee is going to be where the yellow line is. Here it means, in most cases, the levee is being raised and strengthened in place and in so doing it may affect the road or a house or the road may kick into a house once it is built. Any road will yield to a - Gene Samplinger but generally speaking any county road that is relocated or to be reconstructed will be revised to new standard or whatever the standard is that is current at the time. Where there is a road that is 20-foot wide, for example, it will be revised and wider to whatever it is. Now whether it is 32 or 28. It is like you rewire a house it's got meet code. Same thing applies to the county roads or utilities.

Person: I'm Ms. _____ Pearson. We have a farm in the Beaver Marsh plot. Once again I would ask about dredging at the mouth of the river. Our Dutch farmer neighbor tells us about 30 years ago in the Netherlands that he held up dikes and then with a bolt outside the dike, vacuumed up the sand and silt and pumped it behind the dikes to make new farmland or are our engineers so far behind in technology. All farmers along the river know about subirrigation of their crops. No matter how high you build dikes, the dikes seldom break but the river makes washouts behind dikes. We are constantly being told what is good for us and how our river - and now our river is classified by the Federal government largely because of the efforts of recreational groups. We can keep saying the same thing over and over, but no one seems to listen. If you promise preconceived ideas, we will have high dikes and floodwalls that we don't want, recreational easements over our good farmland that we don't want, and no recourse against the Corps of Engineers because of item 4 on page 6 in the brochure. It takes big people to admit mistakes, so please admit your mistakes and let's dredge the mouth of the river, save the dredging and make more land. We don't want recreation; we want farmland.

Person: Thank you. (Audience clapped extensively.)

Cook: It would be whatever it is plus 1 foot. Okay?

Person __: Now we're really trying to see whether we're saving the Nookachamps and drownding the Samish, and Drainage District 410, and the hospital at the expense of the Nookachamps or whether it is nicer to drown the Nookachamps and save that area on the Samish.

Person __: Just let me know . . .

Person __: I think you're beginning to perceive the reasoning behind the creation of some of these alternatives and try to figure out what the tradeoffs are.

Person __: Right, and that's what the meeting is about.

Person __: I was just curious for all the people living in Olympia, when you had the water in 1975 could you do anything? Could you do anything there at all? You couldn't farm. What is the difference if you had another foot. You just would have done more damage to the houses?

Person __: Well, if a 100-year flood were to happen tomorrow, think about it now that the water would be 3-feet deeper than the '75 flood without assuming anything.

Person __: I disagree with you because if it's 3 feet deeper it means its going to go over the top of these little levees and dykes they got now. We're not going to get it. We're going to stay the same.

Person __: For sure, for sure.

Person __: Based on our hydraulic analysis, the water for the 100-year flood if it were to occur tomorrow would be 3-feet deeper than the Nookachamps.

Person __: Evidently your figures and what we have on the Nookachamp are altogether different. I've lived in the same place for 45 years; I've got actual records and stakes and marks on the wall where the water has been, and they don't jive with your figures at all.

Person __: That's not unusual.

Person __: And it is explained partially by the fact that the levee configurations have changed over the years.

Person __: The longer duration flood, the shorter peak, and the lesser _____.

Person __: Let's just add one more thing to the Nookachamp. We're not just talking about Nookachamps, we're talking about the whole town Clear Lake, and _____, we'll be under water. We're not just talking about being farmers; we're talking about a tremendous area that runs clear back up to bedrock and clear back out over into Beaver Lake. It's a massive area. There's a lot of people in it, including schools, stores, and businesses.

Person __: When was there ever a 100-year flood.

Cook __: I'll ask Forest. I think it was about 1896; back before the Baker, before the Ross.

Person __: 7-feet high - you asked what it was in 1898 or 1899.

Cook __: I think the question was have we had our 100-year event. One that was observed by one other than himself.

Person __: In 1921 you had a flood; this is at Sedro Woolley of 210,000, which is about a 70-year flood. In 1909, you had 220, which would probably be 80-year; and in 1856 you had 300,000 and in 1850 you had 400,000. Now those are not measured flows - those are only approximate based on other circumstantial patterns found since then.

Person __: What is a 100-year flood? The question appears likely to be in the minds of many Skagit residents, especially relatively newcomers who are not directly involved in dyking district activities and planning for high-water emergencies. The Forest Service has recently released many recommendations as to including the Skagit River National Wild and Scenic River Systems. A graphic example: it says a 50-year flood would add a discharge of 205,000 cubic feet per second at Sedro Woolley. The flood would flow over into the Samish River Basin and inundate the entire Samish Delta. Water over the dyke above Groten would flow through the town and flood the entire area between Bayview and Pleasant Ridge. The sea dykes would protect the Skagit and Samish Deltas from salt water intrusion and would impound the flood waters. Impounding would occur to a heighth of 8 feet. Levees above _____ of Mount Vernon would probably fail, flooding the lower sections of the city. A cross dyke near Milltown would impound waters to a depth of 13 feet. At that point the levee would fail, and waters would flow south inundating _____ on the Stillaguamish River. That's the effect of only a 50-year flood. A 100-year flood says the same report with a flow of 240,000 cubic feet per second at Sedro Woolley would fill roughly the same area to greater depths. What's this talk of 50- or 100-year flood charts all about? U.S. Engineers have charted the river's flows, and we've said all that.

Cook: That's about right. We don't have any argument about that. Any other statements or questions. Don't be shy.

Person __: I only have one thing. I think all the comments here tonight have led to one conclusion - that we need to work at flood prevention. When we try to work at flood control, we get to arguing amongst ourselves because we don't know who's going to get hurt the worst, and I think it behooves every one of us in Skagit County and Whatcom County and Snohomish County to get back to Washington and get that protection upriver; and that will be positive in all respects, no question about it.

Cook: Remember, he said that. If I said that I'm closing another dam and you know, the Corps is bad on those. You said that, I didn't. Any other questions?

Person __: I don't think there's anybody in the room against flood control prevention, and I think Kenny summed it up pretty well. I think we need to talk to the officials and have them pursue this thing at a state level and in _____.

Cook: Remember, we've been sending for two years down in Seattle and up here your money to find out about your valley; hydrology, hydraulics, survey work, and we've had civil engineers, geologists, foundation and materials experts working on it. We've got layouts, costs, and we've got a host of information that we are trying to impart to you and more of that is down in our files and if any of you have questions about it, we'd be happy to show you. You write us, you write your congressmen, and one of our primary jobs with the Corps of Engineers is to develop data and present that data in a mode that you hopefully can understand and upon which you can base judgments, the County Commissioners can base judgments, and the Congress can base judgments, but mostly in the gathering of data business, evaluating of the data, and providing alternatives so you folks can help select the one that is best for you. Now there are some things we just can't do because of what Congress _____. Some of the things we cannot do is provide less than 100-year protection for urban centers. We just can't get one of those approved. Less _____ for rural areas but urban centers, they just don't sell very well. When this report goes in, if we're recommending 100-years' protection, the first question that's asked always is why not more, why not 200, 500, or the standard project foot. We have to give a lot of data to support why it's only 100. Why didn't you give them SPF flood. A rationale might be with SPF floods, so-called standard project flood, maybe the local share of costs would be 90 million or something. That's more than even the wildest dreams. That's a reason that's understood by most.

Person __: Are you saying that we have no choice in the City of Mount Vernon? That we have to access the 100-year flood.

Cook: A 100 year or more I said or none. The _____ suggest a 100, more than a 100, or none right now.

Person __: If the Corps or a private engineer, not working for the Government, would you say that the answer was the dam on the Sauk?

Cook: That's one of the things that would give you full protection in this valley. Storage _____. It just happens the Sauk was the larger contributor. That's one of the things that gives the most relief for flood control downstream of that. We bypass a dozen other jobs, maybe some channel does some job, but upstream storage wise, the Sauk is the biggest contributor. We responded to some newspaper articles that came out and said essentially the same thing.

Person __: Those outside of _____ are the ones that decided we should not have that better choice.

Cook: Well, there was in the House of Representatives, it is my understanding, when it came out of the House Representatives and the House and Senate conferees, it was not in the bill.

Person __: It was in the bill when it went into the committee and when it came out of the House of Representatives, it wasn't. That's my understanding.

Person __: Mr. Cook, I was just wondering if you were with the Corps of Engineers the time you took us down to Auburn. The U.S. Flood Control meeting in Auburn _____, and the Corps took us out to show us the project on the Green River. They riprapped the banks with boulders or small rocks from the river. I just wondered how long that project lasted. Can you tell us anything about it, or do you know anything about it?

Cook: I belonged to the Corps of Engineers since 1955, and I've worked an awful lot putting rocks on the Green River down there; but I don't know the one that you're alluding to.

Person __: Well, your Engineers took us out there and showed us the project, and I just wondered how long those round rocks stayed up on the banks. On the river here, we use quarry rock.

Cook: It is my understanding there is no Federal project on the Green River. We have a dam upstream which holds the water back and measures down 10,000 or so _____ down through there. The County has local dyking districts and drainage districts and have built a lot of local levees, and the County has added lots of improvements through the years. The Corps and the Corps in cooperation with the Federal Disaster Agency has put lots of taxpayers' dollars in there to repair during the high flows and floods, but I'm not aware of a Corps project as such. Now most of them when we go down and look at them, they're in decent repair and they're doing the job down there.

Person __: I was just wondering about that. Anyway, when I was looking at your design of the cross section of your dykes that you propose, and you didn't say as much but you infer that it's infallible.

Cook: No, nothing is infallible.

Person __: Well, it is our impression when you do design a dyke, it's going to stay there.

Cook: We build them good, and we build them strong.

Person __: I've been around dykes maybe as long as you have, but how high do you think you can go with a dyke without it flying out.

Cook: That's an iffy question, isn't it? It all depends a lot on the foundation and what you're building it on. In our design, we drill holes, examine the soils, the levees are built to _____, whether its one on one-half, one on two, one on three, with the back _____, we think we've accounted for those conditions underneath there with that head. We've been in the dam business a lot and the levee business and we think this is what it takes.

Person __: When the water goes down through the _____ River and flows out, your guys would know. We hope you do know.

Cook: I think this comment that the dyke isn't going to hold is true is that we're not designing the dyke as a _____ seepage cutoff.

Brooks __: Are you talking about underseepage. Those are sands and gravels with water flowing under there, and it will flow under there no matter whether there's a dyke there or not. Now when the water gets higher in between the levees, there's going to be some water go under there; but the levees are designed to permit the water to go through without the levees failing - okay. That's the key word here.

Person __: Well that's good if you can do that; but as far as us having blackouts are concerned, they've talked about this since 1936. I think in the early sixties they came out with a statement that _____ is not feasible _____. A couple of years later they come back and reinstate it again. That's some of Mr Cook's information that he doesn't know about.

Cook: I'm not aware that these different projects were less than feasible.

Person __: I've been on this thing for around 30 years, and I'm stating facts. That's just what came out of these various flood-control meetings.

Cook: Well, you've got me because I worked on the _____ bypass in 1964 and it was feasible. It has been feasible since 1964.

Person __: Then why did they come out with a statement that it wasn't feasible and it's dropped?

Brooks: The man is right. I did leave out some of the history of the thing of how we went back and forth in between. In 1952, the Corps did a study, and the Corps recommended that it be eliminated from the roster of possible projects. That went to Congress and the way I have been informed of what happened, Congress passed it and Eisenhower vetoed the whole bill; and it never came back up again. The next time it was looked at basically in the mid 60's, it was determined to be economically justified at that time; and so it did go through periods of being gotten rid of. It had its high points and low points for the last 40 years.

Cook: We've got some projects that were looked at in 19 whatever, and each year we update the benefits or costs so much; and the trend generally is the benefits don't go up as high as the costs have been going up, so pretty soon if you start off with a 1.3 and if you don't look at it in detail like how many more new houses we have here now, pretty soon you end up with a project that looks that it's below unity. About that time, 5 or 10 years or whatever it happens to be, the Corps says gee, that looks like a bummer, maybe nobody's interested out there; we'll try to deactivate it. There's an annual deactivation review in the Corps of Engineers. All projects pass through that, and we have a book about that thick came through; full projects that have been authorized or some various stages of study, that are looked at again to make sure they shouldn't be dropped from the books.

Person __: There is one more question that has been brought to mind; do you suppose _____, what do you mean by that?

Cook: Levee. You know, you have a choice out there. If you don't build a high levee, if you left the existing levee there, it will flood in about some, let's say 20 or 25 years. It will flood out through the _____. So when we use the words the Avon cutoff, all that meant was you have a 100-year protection around the Avon Bend. It would prevent floods from going _____ until in excess of 100 years.

Person __: _____ a dyke from below Mount Vernon _____.

Cook: Yes, the cutoff dyke below Mount Vernon over to, that's on 3D,. . .

Person __: Oh, alright, if the dyke goes anywhere there, it doesn't cut off the _____ anyway, _____ like it did in 1909, it went right to La Conner.

Cook: The difference between 3D and the other four alternatives there is that you have to remember that 3D has 60,000 more c.f.s. going past that point so that a main dyke around Mount Vernon is necessary under 3D where it's not necessary to protect Mount Vernon under any of the other four alternatives.

Person __: I can't see that that would be a big help to put _____ around those _____ because the water _____.

Cook: In referring to what you were talking about deauthorization of projects, the Avon Bypass was considered by us for the authorization in 1977 and because of this other study going on and not knowing what the final answer would be, Skagit County asked us not to be authorized at this time until this study was completed and the best plan for the basin was presented. If it meant to preserve the option of including the Avon Bypass in it, that were to be the best choice. Now under our rules, 8 years from 1977 which would be 1985, we will automatically be doing it again and saying should we be authorizing in the middle of 1985, or sooner if it seems appropriate.

Brooks: Bud _____ a little while ago. I didn't know if you had anything to say Bud? Did anyone else have any remarks? One question that wasn't asked _____ everything has gone up, you know from 16 million dollars to 58 million. The primary difference here is the previous project, the 16 million dollar project was providing essentially 10-, 11-, or 12-year protection for the urban centers as well as the agricultural areas. What we're talking about in all cases here is 100 years or more for urban and about 50 years for the rural areas. That's the big jump. More protection costs more money. Also inflation has something to do with it. Well, that's all. We'll be around here for any detailed questions from individuals who want to stay here. Otherwise, thank you very much for coming.