

DISTRICT ENGINEER'S REMARKS

MT. VERNON PUBLIC MEETING

19 JUNE 1979

1. INTRODUCTION (COLONEL POTEAT)

A. WELCOME

Good evening, ladies and gentlemen. I'm Colonel John Poteat, Seattle District Engineer, Army Corps of Engineers. Welcome to our Public Meeting on the Skagit River Levee Improvement Project. We will be concentrating tonight on our flood damage reduction study for the Skagit River delta and ^{Tentative} our recommendation.

I'm not a stranger to your flood problems. I became acquainted with them in my previous position in the Chief of Engineer's Office in Washington, D. C., as Assistant Director of Civil Works for the Pacific area. During the past three years, I have had numerous discussions ^{on your flooding problems} with your Senators, Congressmen, their ^{Staff;} ^{your} ~~the~~ County Commissioners and other local officials ^{as District} ~~on your flood~~ ^{inquiries} ~~ing problems~~, I have given this study a very high priority in ^{my} ~~our~~ office, since the Skagit is one of the most serious potential flood problems in the Seattle District. This ^{is} ~~will be~~ my last public meeting as District Engineer. I am leaving Seattle to return to Washington D. C. where I will be the Executive Officer to the ^AAssistant Secretary of the Army for Civil Works. So, I am sure I will be involved with this project in the future ^{as I} ~~even after I leave Seattle.~~ ^{have been in the past.}

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This is your meeting and we want to hear your views. But first I have a few introductions and announcements and a presentation on our studies.

B. INTRODUCTIONS

First, I would like to introduce the members of my staff who are with me here tonight. These are:

Vern Cook, the Skagit Project Manager

Walt Farrar, the Chief of our Regional Planning Section

Forest Brooks, the Skagit Study Manager

Mary Thomas, our Public Affairs Officer

Ginger McNamara, the Court Reporter who is recording the meeting here tonight

Walter Robinson, Del Stephens, Mike Malnerich, Wayne Rowe, Dick Woodward, and Jim Towre (whom you met at the door, and who will be helping with the meeting tonight)

We have two members of Division Office in Portland here tonight. These are: ^{MowREADER} Jack Mowreader from the Planning side of their office and ^{Ross} David ~~Ross~~ from the engineering side.

Also, we have some of our Technical experts in attendance so we can better answer whatever questions you may have. These are: ^{NORTHROP} Karen Northrop--our Environmental Coordinator ^{SABO} Ernie ~~Seloo~~ Chief of our Exploration Section in the Foundation and Materials Branch

Dick Regan- Chief of our Hydraulic Section

Bob Frey- from our Real Estate Division

^{Scudder} Larry ~~Scudder~~- who works in our Civil Design Section.

We also have several of your locally elected public officials here tonight. These are:(from attendance cards)

C. ANNOUNCEMENTS

When you come into the room, our people were at the door to encourage you to fill out an Attendance Card. (HOLD UP) If you have not filled out a card, please raise your hand and we will get one to you now, to complete and turn in. We need this information for our meeting record. (PAUSE) Also at the registration table there were copies of tonight's Agenda (HOLD UP) and a Public Brochure. (HOLD UP) If you need a Brochure, please hold up your hand and we will get you one. (PAUSE) The brochure was mailed last week to all persons or agencies known to have interest in the project. In the brochure you will find information on **our tentatively recommended plan and the alternative flood damage reduction measures.** If you have any comments or questions on the material you can speak tonight or use the ~~back~~ ^(HOLD UP) colored page in the brochure for your written comments. It can be cut out of the brochure, folded so our address is on the outside, stapled and mailed to us. We will pay the postage.

If some of you have specific concerns that we do not answer in this meeting tonight and you wish to discuss them with us, my staff and I will remain afterwards as long as necessary to answer your questions. If this is not convenient for you or if you have leave early, or have friends who couldn't come tonight, Mr. Brooks will remain in the area tomorrow to discuss our studies. He will be at the Skagit County Engineer's Office on the Second floor of this building from 8 to 11 a.m. and Noon to 2 p.m.

Could I please have the lights turned down now? Thank you.

D. PURPOSE OF MEETING

Why are we here this evening? As most of you are aware, **for the past 2½ years the Corp of Engineers has conducted advanced**

engineering and design studies of the Skagit Levee and Channel Improvement Project, which was authorized by Congress in 1966. It involved levee raising and strengthening, and channel improvement in the Skagit River downstream of the Burlington Northern bridge at Mt. Vernon. Our present study ^{has} ~~is to~~ reviewed that project as authorized and determined that it did not address the complete flooding problem in the Skagit River Delta.

^{As part of our preliminary studies,}
We developed six alternatives that combined different flood damage reduction measures ^{including the 1966 project,} ~~such as~~ upstream storage, urban levees, and ~~The~~

Avon Bypass. At the public meeting in March 1978, the general consensus was that we should concentrate our detailed studies on improving the entire levee system including lower ^{levees} ~~for~~ rural agricultural land and higher levees for the urban areas.

We then ^{pursued} ~~persuade~~ our detailed studies and developed five different combinations of rural and urban protection which we ^{designated three} ~~designed 3A thru 3E~~. These were discussed at the public workshop in December 1978. The primary concern expressed at that workshop centered on the increased flooding which areas ^{riverward} ~~westward~~ of the improved levee system would receive. Following the workshop, the Skagit County Commissioners asked the Corps to undertake additional ^o ~~studies~~ studies of these areas to determine whether any flood damage reduction measures could be implemented. We have completed these studies and have modified alternative 3E, as shown on page 3 of the public brochure, to include some of the structural and non-structural measures which you asked for at the workshop. These ^{measures} will not only reduce ^{induced} flood damages, but also provide ^{general} flood damage reduction^s.

The meeting tonight ^{will} center ~~at~~ on the decision of which alternatives ~~it~~ should ^{be} recommended. I have tentatively decided that, considering engineering, economics, environmental and social ~~aspects~~ ^{factors}, alternative 3E should be recommended.

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We have come here tonight to gain your views on this. Our decision is tentative and we look to you to provide input on our decision. →

It is our job to serve you and to give you a project which best meets your needs, the needs of our State, and interests of the Federal Government. We are interested in every opinion and view, whether you are an elected official, a private individual taxpayer, a resident with a personal interest, or a representative from a concerned group. We are interested in you and we do hope that you will participate tonight.

E. AGENDA

In order to help us proceed, let me explain the pattern of tonight's meeting. First, Forest Brooks, the Skagit Study Manager, will review the process by which the Corp of Engineers builds water resource projects and how this project fits into the model. He will review ^{the} ~~our~~ preliminary ^{alternatives} studies, the ^{detailed alternatives} public meeting and our ~~detailed studies~~. ^{tentatively recommended plan.} He will then explain our rational in tentatively selecting alternative 3 E. At that point, we will listen to those of you who wish to make a formal comment. Finally, we will open up the meeting for general discussion. Then you can ask questions on what we presented tonight or on comments made by other people.

Ok, I will now introduce the Study Manager for the Skagit Levee Improvement Project, Forest Brooks, who will take over the meeting and proceed from here.

2. DISCUSSION OF STUDIES (STUDY MANAGER, FOREST BROOKS)

- A. HOW DOES THE CORPS BUILD PROJECTS?
- B. REVIEW OF PRELIMINARY ALTERNATIVES
- C. REVIEW OF DETAILED ALTERNATIVES
- D. DISCUSSION OF ALTERNATIVE 3E
- E. LOCAL COST SHARING REQUIREMENTS
- F. WHAT WILL HAPPEN NEXT?

3. FORMAL COMMENTS (COLONEL POTEAT)

Thank you, Forest. This is basically your meeting. We are here to provide information, to record your formal comments and to answer questions. For those of you who indicated on the attendance cards that you would like to say something, we have a couple of microphones. Please use the one nearest to your seat. When you speak, would you please come up to the microphone and give your name and organization you represent, if any, so that our recorder can keep a record of this meeting.

Also to expedite the meeting, I will ask those of you who have formal written comments to submit tonight, to turn them in and summarize the significant ideas in your comments for the people in attendance. We will take the speakers who wish to make formal comments in the following order: first, elected officials, Federal, state and local; next, representatives of Federal, state and local agencies; third, persons representing organized groups; and then, individuals. Following the formal comments, we will open the floor to general questions and discussions of issues raised tonight. The first card I have here is _____ . Would you please go to the nearest mike and make your comments. (WHEN YOU GET TO THE END OF THE CARDS, ASK IF THERE IS ANYONE ELSE WHO WANTS TO MAKE A FORMAL COMMENT. WHEN ALL THOSE PEOPLE HAVE SPOKEN, OPEN THE MEETING UP TO DISCUSSIONS AND QUESTIONS.)

4. OPEN DISCUSSION (COLONEL POTEAT)

QUESTIONS AND ANSWERS?

(TENTATIVE CLOSING - ANOTHER MAY BE USED DEPENDING ON THE MEETING)

After hearing all the comments and questions tonight, I have reached the opinion that I should recommend that alternative 3E be implemented, unless some overriding consideration is developed by the EIS review ^{or public brochure comments} in the next couple of weeks.

In addition to the formation and views received tonight, we would like to have any further written comments from you by the 30th of June so they can be considered with the record of tonight's meeting. As I explained earlier, the last sheet inside the back cover of the brochure provides space for comments. Simply cut off this page, put your comments on it, fold it, and mail it back to us. (PAUSE)

If you would like to talk to either myself or my staff after the meeting, we will remain for as long as there are persons who wish to speak to us. Also, the Study Manager, Forest Brooks, will be in town tomorrow to talk to anyone who wishes. He will be at the Skagit County Engineer's Office on the second floor in this building from 8 to 11 a.m. and from Noon to 2 p.m.

Now, if anyone has any additional statements they wish to make or questions pertaining to other matters, I will be glad to extend the meeting to hear anyone who wishes to speak. (PAUSE) If not, thank you for your attendance and participation, and good night.

STUDY MANAGER'S REMARKS

MT. VERNON PUBLIC MEETING

19 June 1979

A. HOW DOES THE CORPS BUILD PROJECTS?

Thank you, Colonel. I am pleased that we have such a good turnout here tonight. I will now take about 20 minutes to review how the Corps of Engineers goes about building water resource projects, and discuss the tentatively selected alternative as well as the other alternatives which were considered.

The usual Corps process, by which it plans, designs, and builds major resource projects, can generally be broken down into three basic phases: general investigation studies, advanced engineering and design studies, and actual construction.

In the first phase - the general investigation studies - people ask their congressional representatives for help in resolving water resource problems. Congress then directs the Corps of Engineers to study the problems and make recommendations as to the Federal interest in measures which could alleviate these problems. For the Skagit Project, Congress authorized such a study in 1960. This study was completed in 1965 and the Corps recommended that the project be constructed. In the Flood Control Act of 1966, Congress authorized the Corps to proceed with the project. However, Congress did not fund the second phase of the project until Fiscal Year 1977.

The second phase of a Corps of Engineers' project involves advance engineering and design studies. During this phase, the Corps reviews the authorized project to determine whether there are changes in the needs of the area, and the desires of the people and the local officials since the first phase of the studies. Then, either the formulation of the authorized project is affirmed or it is reformulated to meet new or greater needs. On the Skagit Project, Congress first funded this phase in Fiscal Year 1977. Presently we are scheduled to submit a report in July 1979 that tentatively reformulates the project to alternative 3E. This recommendation will require additional congressional authority before construction can begin.

P005093

The third phase of a Corps of Engineers project is the actual construction. This can take one to several years depending on the scope of the project, Construction for this project, will begin first on downstream portion probably Fir Island. Timing is dependent upon congressional authorization and funding. Hopefully, it can be underway by 1981 and would continue for 3 years. At that time, the completed project would be turned over to the Skagit County to operate and maintain.

B. REVIEW OF PRELIMINARY ALTERNATIVES

In our preliminary studies we developed six alternative flood damage reduction measures which were discussed at our March 1978 Public Meeting (PAUSE)

The first alternative was to continue existing conditions. This is our "do nothing" alternative. Under this alternative, no new dams, levees, channel modifications, or diversion structures would be built for flood damage reduction purposes. Development on the flood plain would be restricted through existing zoning. The existing levee system and the upstream flood control storage would be maintained. Under this alternative, the river would remain partially controlled by the existing structural flood prevention measures; however, existing average annual damages of about \$7.2 million, would continue. (PAUSE)

The second alternative was the 1966 project which involved raising and strengthening the existing levee system from the mouth of the North and South Forks upstream to the Burlington Northern Railroad bridge, and improving the hydraulic capacity of the North Fork and Freshwater Sloughs so that the safe channel capacity downstream from the Burlington Northern Railroad bridge would be 120,000 cubic feet per second (about a 9 year flood).

Alternative three included the improvements described by alternative two, and, in addition, higher urban levees to protect Burlington and Mt. Vernon.

Alternative four would include the improvements described by alternative three, and, in addition, upstream flood control storage of 134,000 acre feet would be provided by a dam on the Sauk River.

Alternative five would include the improvements described by alternative two, and, in addition, the Avon Bypass and the urban levee system. The existing levee system would be extended to Sedro Woolley, and the Bypass channel would have a capacity of 60,000 cubic feet per second.

Alternative six would include the improvements described by alternative two, and, in addition, the Avon Bypass and upstream storage of 134,000 acre feet on the Sauk River. The existing levee system would be extended to Sedro Woolley, and the Bypass channel would have a capacity of 60,000 cubic feet per second. Since approximately 100-year flood protection would be provided to the entire flood plain downstream from Sedro Woolley, most of the restrictions in regards to flood plain regulations would no longer be required.

Of the preliminary alternatives, alternative three received public and local government support as the first priority for flood damage reduction in the Skagit River Delta and was selected for detailed study.

Alternative four was eliminated because of potential adverse environmental impacts on the Sauk River, incompatibility with the scenic designation of the Sauk River which is part of the National Wild and Scenic River System, and high costs.

Alternative five was eliminated due to potential impacts to Padilla Bay and local concern over the large amount of productive farmland required and the high local costs.

Alternative six was eliminated due to potential adverse environmental impacts on the Sauk River and to Padilla Bay, incompatibility with the National Wild and Scenic River System, and high costs.

As part of our studies we also considered channel dredging and non-structural measures. Non-structural measures studied included relocation of structures, floodproofing and raising buildings. Because of the extent of development on the flood plain (valued at about \$800,000), these measures were neither economically feasible nor politically or socially acceptable. Investigations of channel dredging determined that the desired levels of flood protection could not be provided by dredging alone, and that a combination of dredging and levee improvement to provide such levels would be significantly more costly than levee improvement alone. Dredging could also cause severe environmental impacts.

C. REVIEW OF DETAILED ALTERNATIVES

For detailed studies, Alternative ¹~~one~~, the without condition, was carried throughout plan formulation, as was Alternative ²~~two~~, the 1966 authorized project, to serve as the basis for evaluating alternatives. Five combinations

of urban and rural levee protection were developed and designated 3A, 3B, 3C, 3D, and 3E.

Alternative 3A would provide urban levees (100-year or more protection) for east Mount Vernon, west Mount Vernon, and Burlington; rural levees (50-year or less protection) for Avon-Fredonia and the area downstream of Mount Vernon. It would provide protection from a 100-year or greater flood for 6,600 acres and protection from a 50 year flood for 35,600 acres. The total cost would be \$54,740,000 of which \$12,470,000 would be local. Average annual induced damages would be \$102,000 and net benefits \$956,000. The benefit-to-cost ratio would be 1.2 to 1.

Alternative 3B would be similar to 3A except the Avon-Fredonia area would be provided 100-year or more protection. 11,700 acres would be protected from the 100-year or greater flood and 30,500 acres from the 50 year flood. Total cost would be \$40,760,000 of which \$7,530,000 would be local. Average annual induced damages would be \$64,000 and net benefits \$2,089,000. The benefit-to-cost ratio would be 1.6 to 1.

Alternative 3C would be similar to 3A except the Cook Road area (Samish overflow) would be provided 100-year or more protection. 17,600 acres would be protected from the 100-year or greater flood and 35,000 acres from the 50 year flood. The total cost would be \$93,860,000 of which \$12,980,000 would be local. Average annual induced damages would be \$117,000 and net benefits a negative \$1,430,000. The benefit-to-cost ratio would be 0.8 to 1.

Alternative 3D would be similar to 3C except the Avon-Fredonia area would be provided 100-year or more protection. 22,100 acres would be protected from 100-year or greater floods and 30,500 acres from the 50-year flood. Total cost would be \$80,320,000 of which \$8,990,000 would be local. The average annual induced damages would be \$120,000 and the net benefits a negative \$375,000. The benefit-to-cost ratio would be 0.9 to 1.

Alternative 3E would be similar to 3B except that an overflow to the Samish Valley would be provided at Gages Slough east of Burlington with erosion control sills and levees added to protect the Sedro Woolley-Sterling area and the Clear Lake area. Other flood plain improvements would receive flood damage reduction through raising, flood proofing, moving, or flowage easement. 14,200 acres would be protected from 100-year or greater floods and 39,000 acres from the 50 year flood. Total cost would be \$55,000,000 of which \$10,000,000 would be local. The average annual induced damages would be only \$ _____ and the net benefits \$2,288,000. The

benefit-to-cost ratio would be 1.5 to 1.

In evaluating these alternatives engineering environmental economic, and social factors were considered. However, generally economic and social considerations governed.

Alternative 1, the without condition, was eliminated because it would not provide any flood damage reduction to existing developments in the flood plain. Little support was expressed for this alternative by any agency or group.

Alternative 2, the originally authorized project, was eliminated because it did not geographically include the full flood control problem of the Skagit River delta downstream from Sedro Woolley.

Alternatives 3C, and 3D, were eliminated because the total project costs exceeded the tangible economic benefits that could be realized (benefit-to-cost ratio less than 1).

Alternative 3A was eliminated because it had the highest construction cost, the lowest amount of total benefits and net benefits, would provide the lowest amount of flood protection and would have the highest amount of induced damages of the remaining alternatives.

Of the remaining two alternatives, 3B has lower total benefits, lower net benefits and a higher benefit-to-cost ratio than 3E. Alternative 3B would reduce flood damages significantly for about 42,000 acres of the Skagit River flood plain downstream of Sedro Woolley but would increase flood damages somewhat for about 32,000 acres. Alternative 3E has the greatest total and net benefits and includes additional structural and non-structural measures to eliminate almost all the induced flooding damages. The environmental effects of alternatives 3A through 3E are approximately the same with alternative 3A protecting the least urban land having the least environmental impacts and alternative 3D protecting the most urban land having the greatest environmental impacts. From a social viewpoint, alternative 3E would provide flood damage reduction of various levels to the largest number of people. Thus after considering these factors and others which are shown in the public brochure, alternative 3E was tentatively selected as the recommended plan. As part of this project we would be raising existing levees generally one to seven feet above the existing levee.

Following its selection, The design of 3E was refined to insure that a catastrophic failure of the levee in a heavily populated area would not occur. The levee system includes controlled overflows areas of reduced freeboard so that, in floods greater than the project design, protected areas would be flooded gradually by backwater preventing a sudden blowout which could cause a wall of water to rush through Burlington or Mount Vernon. As a part of the design refinement, it was determined that by raising the left bank levee at Mount Vernon only 0.4 feet over the 100-year levee height, standard project flood protection could be provided to downtown Mount Vernon without significantly impacting any other area. This additional protection was deemed appropriate.

Thus the tentatively selected plan includes: standard project flood protection for 2,200 acres in Mount Vernon; 100 year or greater protection for 12,000 acres in west Mount Vernon, Avon-Freedonia, Burlington, Sterling-Sedro Woolley, and Clear Lake; and 50 year protection for 39,000 acres of rural agricultural land.

The improved levee system will follow a basic levee design. The top of levee height is determined by determining the design water surface (which would be 50 years for rural levees, 100 years or standard project flood for urban levees). This design water surface includes an allowance for sedimentation over the economic life of the project (100 years). To the design water surface an allowance for wave action superelevation and bridge losses is made as appropriate and then a factor of safety called freeboard is added to determine the top of the levee. For urban areas freeboard is 3 feet and for rural areas it is 2 feet.

Generally we will be raising the existing levees one to seven feet.

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The typical earth levee embankment will be constructed of silty, sandy gravel or silty, gravelly sand placed on ground which has been cleared, grubbed, and stripped as required. The standard levee top will be 12 feet wide; side slopes are typically 1 vertical on 2 horizontal. Maximum use will be made of embankment materials from existing levees ~~along the project reach~~. The side slopes would receive topsoil and seeding with the top of the levee having gravel and seeding.

is necessary in many reaches of the project to control water seepage under the levee and prevent loss of levee integrity. This gradual berm will also serve as an access road for floodfighting and levee maintenance purposes. In many locations where the existing county road is located adjacent to the existing levee, the road will be moved and placed on top of the berm. In these cases the berm will be the width required for the road—probably 24 feet.

To provide a high level of erosion where levees will be subject to high-water velocities, wind waves, and debris attack, rock riprap will be placed along approximately 8.3 miles of the total 50-mile project length. In cases where a sufficiently wide bench is available between the levee and the river, a buried toe levee design will be utilized as shown in the slide on the left.

In cases where encroachment into the river is unavoidable, a weighted toe levee design will be utilized as shown in ~~figure 1-6~~ ^{the slide on the right.}

R ← On the left bank of the river through Mount Vernon, where right-of-way through the urban area is limited, a floodwall will be constructed instead of a levee. This will occur along approximately 1.4 miles of the total project. For bank protection in this reach, rock riprap with a weighted levee toe will be placed in the river. The basic levee design is shown in the slide on the left.

Because of the esthetic impacts this wall would have in the Lions Club Road-side Park and in the downtown waterfront parking area a folding floodwall would be used as shown in the slide on the right. The design would be similar to one the Corps of Engineers has built in Monroe, Louisiana which is shown in these pictures being erected during a flood exercise last year.

^{Alternative 3E}
The weir which was located near Sterling has been removed from ~~the project~~ and two erosion control sills installed. These sills were designed to prevent the 100 year flood overflow to the Samish from being any worse with the project that would be experienced without any project. The picture on the screen is taken looking north from the upstream end of the existing levee to Sterling Hills. The new levee will start in Sedro Woolley come along the southeast side of the Burlington Northern to District line Road which is just out of the picture to the right and then cross the railroad and highway and follow along the District Line Road to high ground adjacent to Sterling Hill. At this point a buried sheet pile wall with a buried riprap blanket for erosion protection will be installed from the end of this levee to Sterling Hill.

A cross section through this sill is shown on the right screen. Prior to construction topsoil will be stripped from the area and excavation for the riprap made after riprap placement. The material that is removed from the excavation will be replaced over the riprap and reshaped with flat side slopes to form a bern. The topsoil will then be replaced over the excavated material so that normal farming operations can resume.

On the left side of the photo, the existing levee system will be raised and a new levee constructed along the south side ^{of} Gages Slough almost to Sterling Hill where it would turn west to tie into Burlington Hill. A sill similar to the one on the east side of the hill will be placed from the hill to this levee.

The modified 3E alternative includes structural and non-structural measures to not only substantially reduce any flood damages caused by the project but where possible to provide flood damage reduction up to the 100 year flood for improvements in the flood plain riverward of the improved system. The non-structural measures include; raising or floodproofing buildings, relocating or removing buildings and purchase of flowage easements. The measures to be used will vary depending upon the ^{specific} area _{and structure} under consideration.

At west Mount Vernon the levee alinement was moved from Ball Street one block east of Front Street. The property between Front Street and the river will probably be purchased and the buildings removed because they are presently located in the Skagit River floodway.

On the other side of the river, raising flowage easements or floodproofing would be probably provided for the Moose Hall and the Stokley Van Camp warehouse.

For the community of Clear Lake a levee would be added west of Highway 9 to provide 100 year protection to Clear Lake and the East Fork Nookachamps Creek.

At Sterling the levee along District Line Road was added this will provide 100 year protection to the houses and the developments such as the Hospital and Convalescent Center that are adjacent to and northwest of Highway 20.

For the remainder of the areas riverward ~~of~~ the improved levee system improvements would be raised, floodproofed, relocated, removed, or a flowage easement obtained. Houses would be raised where feasible to be above the 100 year with project water surface. Trailers would probably be relocated outside the flood plain. Other buildings such as barns and sheds would be modified as appropriate based on their condition and use. **Livestock mounds could be raised**

or modified to compensate for the effect of the project. Generally, we would try to retain the same degree of flood risk which the farmer assumes today without a project.

The limited recreation features which were proposed have been dropped from the present plan, due to problems regarding the Federal interest in the type of development proposed and the local desires.

Special habitat restoration features have been incorporated into the project plan to minimize adverse environmental impacts associated with loss of habitat due to project construction. To accelerate the reestablishment of vegetation following project construction, all levee tops and berms will be seeded with native grass species. Stripped material stockpiled during levee construction will be placed on all riprap and quarry spall slopes above ordinary high water and grass seeded. Buried levee toes will be backfilled with excavated material and grass seeded.

In certain reaches of the project where immediate restoration of shrub habitat has been identified as critical to the project area fish and wildlife, revegetation with shrubs, in addition to grass seeding, is proposed. This would occur at 5 locations with a total length of about 7,500 feet. The riprap blanket will be thickened and the rock sizes increased in reaches for shrub plantings in order that the vegetation, when established, will not vibrate riprap and weaken levee protection. The program of revegetation will consist of placing topsoil over the riprap and into the voids and grass seeding, followed by the planting of a 4-foot zone of shrub species above ordinary high water.

Restoration planting is also planned for the 400-foot reach of Fisher Slough that will be realigned. Planting will occur on approximately 0.2 acre of the right bank and will consist of native species existing there at the time of realignment.

Fish and wildlife mitigation is proposed to reduce impacts resulting from the project-related losses shore zone habitat and overstory vegetation. It will be located on the Skagit Wildlife Recreation Area, which is currently owned and operated by the Washington State Department of Game.

Mitigation for the loss of shallow rearing habitat for juvenile anadromous fish will be provided by reopening a slough on No Name Island on the Skagit WRA between Steamboat and Freshwater Sloughs. This involves the placement of two culverts, one at each end of the 2,500-foot slough to permit freshwater in from the Skagit River. Planting of trees on the Wildlife recreation area is planned to mitigate for the loss of approximately 10 acres of overstory vegetation which will be permanently lost along the river due to levee right-of-way and

maintenance requirements. One site involves improving the existing levee on Freshwater Slough to approximately 10 year protection, sufficient to maintain the planting of a zone of overstory vegetation along the inside of the levee. A second zone of vegetation will be planted on Milltown Island along the river's edge. Other sites may be identified in continued coordination with the resource agencies.

G. LOCAL COST SHARING REQUIREMENTS

Now I'd like to say a few words about the local cost sharing requirements. Federal participation is contingent upon the local governmental agency which is serving as the local sponsor, Skagit County, providing the items of local cooperation. These generally include: all land, easements, and rights of way necessary for the construction of the project; providing alterations and relocations of buildings, transportation facilities, and utilities; holding the United States free from damages due to the construction work; and maintaining and operating the project after completion. There are also several other requirements on this project: to prevent encroachment on improved channels and to at least annually notify the public of the limited flood protection provided by the project. These are currently estimated at \$10 million

H. WHAT WILL HAPPEN NEXT?

We are currently in the third year of the advance engineering and design phase of the Skagit Levee and Channel Improvement project. We have completed our studies and tentatively selected the plan which we feel is the best when engineering, economics, environmental and social effects are considered. After this meeting we are scheduled to submit to our higher office in Portland Oregon a project report - what we call a General Design Memorandum - and a Final Environmental Impact Statement during July. For your comments to be considered we must receive them by 30 June 1979. Your input is essential so that our evaluation will be complete. Colonel Poteat and all the staff will stay tonight as long as you wish to discuss our studies. If you wish to discuss the study in the future, you may write me at the address on the public brochure, or telephone me at the number noted there. Also, if any of you can't stay after the meeting tonight, or have to leave early, and still wish to discuss certain features of our study of the project, I will be at the Skagit County Engineer's Office tomorrow from 8 to 11 a.m. and from Noone to 2 p.m.