Date

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. PAUL		
2.		
3.		
4.		
5.		

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

WE DREDGED A HELL OF A LOT OF MATERIAL OUT OF THE SHOOT RIVER - I WONDER WHY WE STOPPED -

JOY

Want me to find out?

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg. PC
	Phone No.

5041-102

OPTIONAL FORM 41 (Rev. 7-76)
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FPMR (41 CFR) 101-11.206

• U.S. GPO 1990 — 262-080

ROUTING AND TRANSMITTAL SLIP

Date: 31 May 91

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Urbach Parker		
2. Foster Gillmugh		
3. Soule		
4. Lencioni Noel: I give		
5. McNeely this because if		

Action		File		Note and Return	be
Approval		For Clearance		Per Conversation	
As Requested		For Correction		Prepare Reply	
Circulate		For Your Information		See Me	
Comment		Investigate		Signature	
Coordination		Justify			SK

REMARKS

Please read the attached MFR. Study
I'd like your impressions on this PC

Do you think I've stumbled on to something or not?

If this is B.S., I'll drop it quick.
If there is something here, perhaps I (or someone else) can pursue it. I've got some idens on add'l research

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FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Paul Cooke	3622
	Phone No. FF See

5041-102

OPTIONAL FORM 41 (Rev. 7-76)
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DRAFT

CENPS-EN-PL-PF 31 May 1991

MEMORANDUM FOR RECORD

SUBJECT: Corps River Channel Work and Flooding

1. Background. Since the two November 1990 floods in Washington I have attended several meetings where "old timer" residents of the floodplains of the Skagit, Nooksack, Snohomish, Snoqualmie, Cedar, and other rivers in Washington blame much of their flooding problems on a lack of dredging and channel maintenance work. The residents claim that they remember how the rivers used to be dredged and cleared on a regular basis (often by the Corps) and this reduced the flooding problem. Newspapers reported many of these stories and for a while after the floods this was a very hot topic. I don't believe this concern will disappear.

2. Recently I attended a meeting where the mayor of Renton said that he remembered the Corps dredging the Cedar River many years ago. Being reasonably certain that the Corps never had an authorized navigation or flood control project on the Cedar, I was confused about his statement. I checked the Seattle District annual reports from f.y. 1920 through 1966 to see what our official records had to say about Cedar River dredging and I found that under our late 1800's authority to keep navigation channels open (known as Puget Sound and Its Tributary Waters - or PSTW), we had indeed dredged the Cedar in FY 1952 (3,032 c.y. near the mouth) and in FY 1961 (2,017 c.y.). The annual reports prior to FY 1941

did not specify where dredging took place, so it is possible that the Corps dredged the Cedar much earlier too.

Assuming that these official records are accurate, the Corps has dredged about 5,000 c.y. of material from the Cedar River channel since FY 1941. This may be a very small amount of dredging over a 50-year period, but for other rivers in western Washington, the PSTW story is quite different. Perhaps this dredging (and also debris removal) did reduce flood stages, just as the "old timers" claim.

2. Dredging and Debris Removal Records from FY 1920 to FY 1966 under PSTW. Enclosure 1 is dredging and debris removal (snagging) information summarized from NPS annual reports which are available to review in PF Section. Prior to FY 1941, dredging and snagging locations were not specified. In the post FY 1940 period I have taken the liberty of not recording some dredging amounts that were relatively small, and I have not described where the debris removal occurred. From enclosure 1 you will note that the overwhelming majority of dredging occurred on the Skagit River system. Bob Parker has suggested that dredging upstream of Mt. Vernon may have been done primarily for flood control, not navigation.

Also note that from FY 1920 to 1937 the dredging work was relatively small and constant. The low was 2,500 c.y. in 1921 and the high was 36,087 c.y. in 1936. From 1938 to 1956 dredging was more intensive, sometimes exceeding 100,000 c.y. (1939, 1949, 1950,

and 1951). From 1957 to 1961 the dredging was much more limited, and in f.y. 1962 dredging ceased and was never resumed. Of course debris removal has continued over the years and has become a permanent fixture at the District.

3. Dredging, Debris Removal, and other Channel Modifications under Other Authorities. PSTW is certainly not the only authority the Corps has used to modify rivers in the name of navigation and flood control. Specifically authorized navigation projects may have changed the nature of flooding on the Snohomish River and the Skagit River. Of course specifically authorized flood control projects on the Stillaguamish and Puyallup Rivers did change the nature of flooding along those rivers. Snagging and clearing under authority of Sec. 2 has been used in the past to modify channels on the Nooksack River, Pilchuck River, Okanogan River, Cedar River, and Jackman Creek (in Skagit system). Various emergency authorities (Sec. 14 bank protection and PL 84-99 flood repair) have been and still are used throughout Washington and these have had some impact on flooding and flood damages.

4. Summary. My quick review of official Seattle District records indicates that the District used to perform a lot more channel work on Washington rivers than it currently does. This is especially true within the Skagit and Snohomish Rivers. I don't know if this almost continuous channel work significantly improved conveyance and reduced flooding problems, but it's certainly possible that some flood plain residents did benefit from this work and perhaps began

to rely upon it.

5. Recommendation. I believe that someone from the District should continue to research past Corps channel work with a view to determining what impact Corps work had on flooding, and perhaps even more important, to research the question of what is happening now, now that this channel work is not being done. Are the locals right? Is flooding getting worse because river channels are not being maintained? A good river system to study in detail would be the Skagit River because we used to continuously dredge and clear that river, and in FY 92 we will have a basin-wide GI study on the Skagit.

Paul Cooke

Study Manager

CC: Urabeck
Cooke
Foster
Soule
Lenciani
McNeely
Parker
Gilbrough

Enclosure 1

PSTW DREDGING AND SNAGGING INFORMATION

Report Year (fiscal year: July 1 to June 30)	Summary of Information from Annual Corps Reports
1920	14,461 c.y. dredged + snagging Snag boat's name was "Swinomish." Until 1929 all work was done by boat.
1921	2,500 c.y. dredged + snagging
1922	3,788 c.y. dredged + snagging
1923	7,074 c.y. dredged + snagging
1924	13,992 c.y. dredged + snagging
1925	13,911 c.y. dredged + snagging
1926	4,571 c.y. dredged + snagging
1927	18,956 c.y. dredged + snagging
1928	39,338 c.y. dredged + snagging
1929	14,409 c.y. dredged + snagging Snag boat modified and renamed "W.T. Preston." All work done by this boat unless otherwise specified.
1930	5,977 c.y. dredged + snagging
1931	27,195 c.y. dredged + snagging
1932	18,276 c.y. dredged + snagging Report says minor repairs made to dikes.
1933	12,777 c.y. dredged + snagging
1934	27,108 c.y. dredged + snagging
1935	24,012 c.y. dredged + snagging
1936	36,087 c.y. dredged + snagging
1937	21,364 c.y. dredged + snagging Report says some "closing of subsidiary sloughs."

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1938	55,710 c.y. dredged + snagging
1939	110,339 c.y. dredged + snagging
1940	10,689 c.y. dredged + snagging
1941	45,132 c.y. dredged on Skagit River. 15,707 c.y. dredged on Stillagumish River. Snagging also done.
1942	Annual report either not done because of WWII, or report is missing.
1943	Annual report either not done because of WWII, or report is missing.
1944	27,145 c.y. dredged on Skagit River. Snagging also done.
1945	75,580 c.y. dredged on Skagit River. 1,329 c.y. dredged on Swinomish Slough. 359 c.y. dredged on Lake Washington Ship Canal. Snagging also done.
1946	51,417 c.y. dredged on Skagit River. 3,236 c.y. dredged on Stillaguamish River. 13,614 c.y. dredged on Blaine Harbor, Waterway #3. Snagging also done.
1947	74,717 c.y. dredged on Skagit River. 7,606 c.y. dredged on Stillaguamish River. Snagging also done.
1948	61,027 c.y. dredged on Skagit River (N. Fork). 7,480 c.y. dredged on Skagit River (S. Fork). 447 c.y. dredged on Swinomish Slough. Additional dredging of 3,780 c.y. on Skagit River near Hamilton and Sedro Woolley with a government dragline and Bagley scraper. Snagging also done.
1949	68,482 c.y. dredged on Skagit River, N. Fork, upstream of forks In addition, the dredge "Swinomish" dredged 77,900 c.y. on Skagit River, upstream of Mt. Vernon. Snagging also done.

1950	49,904 c.y. dredged on Skagit River, N. Fork, and upstream. 127,514 c.y. on Skagit River above Mt. Vernon. Snagging also done.
1951	38,788 c.y. dredged on Skagit River, N. Fork, and above forks. In addition the Swinomish dredged 38,325 c.y. above Mt. Vernon on the Skagit. By contract 27,705 c.y. was dredged from Snohomish River. By contract, 79,603 c.y. was dredged on S. Fork of Skagit. Snagging also done.
1952	9,036 c.y. dredged at Blaine Harbor. 3,032 c.y. dredged at mouth of Cedar River. 36,220 c.y. dredged at Skagit River, N. Fork, above forks. Snagging also done.
1953	44,112 c.y. dredged on Skagit River and N. Fork. 1,215 c.y. dredged on Everett Harbor and Snohomish River. Snagging also done.
1954	27,718 c.y. dredged on Skagit River and N. Fork. Snagging also done.
1955	3,256 c.y. dredged on Everett Harbor and Snohomish River. 1,414 c.y. dredged on Lake Washington. 33,270 c.y. dredged on Skagit River and N. Fork. In addition the Swinomish dredged 54,002 c.y. on upper Skagit River. Snagging also done.
1956	939 c.y. dredged on Everett Harbor and Snohomish River. 3,119 c.y. dredged on Lake Washington. 1,122 c.y. dredged on Lake Washington Ship Canal. 35,965 c.y. dredged on Skagit River and N. Fork. Snagging also done.
1957	3,313 c.y. dredged on Skagit River and N. Fork. Snagging also done.

1958	963 c.y. dredged at Everett Harbor and Snohomish River. 17,760 c.y. dredged at Skagit River and N. Fork. Snagging also done.
1959	2,617 c.y. dredged at Lake Washington Ship Canal. 13,298 c.y. dredged at Skagit River and N. Fork. Snagging also done.
1960	900 c.y. dredged from Skagit River and N. Fork. Snagging also done.
1961	2,017 c.y. dredged from Cedar River. Snagging also done.
1962	No dredging, only snagging (especially in Lake Washington).
1963	No dredging, only snagging (especially in Lake Washington and Lake Washington Ship Canal).
1964	No dredging, only snagging (especially in Lake Washington and Lake Washington Ship Canal).
1965	No dredging, only snagging (especially in Lake Washington).
1966	No dredging, only snagging (especially in Lake Washington).