

21 August 1978

MEMO FOR: RECORD

SUBJECT: Skagit Levee and Channel Improvement, Project Meeting to Discuss Project Hydraulics

1. The subject meeting was held on 14 August 1978 in the Planning Branch Conference Room. The following were in attendance at the meeting.

George Ristau	Hydrology & Hydraulics Branch
Les Soule	" " "
Ron Bush	Environmental Resources Section
Don Thompson	Economic & Social Evaluation Section
Forest Brooks	Regional Planning Section
Rich Worthington	" " "

2. The purpose of the meeting was to review the hydraulics work that has been accomplished to date and decide on what additional work will be required. Les Soule reviewed the hydraulic cases which have been considered and the information which has been developed. The cases are outlined below, and the basic information presented at the meeting concerning flows, levee alignments, and levee breaks is summarized on the attached maps (inclosures 1-10). The basic assumption made in the analysis was that levee failure would occur when the water surface was 2 feet below the top of the levee.

Cases Run

- a. Existing conditions - 94,000 c.f.s. at Mt. Vernon - river stays in bank.
- b. Existing conditions - 120,000 c.f.s. at Mt. Vernon - some failure - Fir Island, left bank near diversion of north and south branches.
- c. Existing conditions - 130,000 c.f.s. at Mt. Vernon - additional failure on the left bank into downtown Mt. Vernon.
- d. Complete 50-year levees - no failures - high water surfaces throughout river system.

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e. Existing conditions - 50 year at Mt. Vernon - 160,500 c.f.s. - overflow to the Samish and additional breaks right bank near railroad bridge and West Mt. Vernon and left bank into big bend.

f. Existing conditions - 100 year at Mt. Vernon - 185,000 c.f.s. - breaks through Avon bend.

g. Existing conditions - 500-year at Mt. Vernon - 234,500 c.f.s. - extensive breaks at same general locations.

h. Alinement 1 (Ring dikes at Burlington, Mt. Vernon, and West Mt. Vernon) - 50 year at Mt. Vernon - 181,500 c.f.s. - break at Avon.

i. Alinement 1 - 100 year at Mt. Vernon - 191,000 c.f.s.

j. Alinement 2 (Ring dikes at Mt. Vernon and West Mt. Vernon and Burlington to Sedro Woolley levee) - 100 year at Mt. Vernon - 215,500 c.f.s.

3. Economics expressed a need for more detailed location of levee breaks and the lineal extent of these breaks. They also requested that zero damage points be provided. Hydraulics will develop this information. Additional discussion centered on what other cases should be considered at this time. It was concluded that we should consider closing off Avon with high levees while keeping the Samish open. However, the case of closing off both the Samish and Avon was eliminated because of the extreme increase in downstream flows and the associated impacts. The subject of widening was also discussed, and it was decided that widening in two locations on the North Fork and one in Mt. Vernon should be examined. Mr. Soule said that the channel excavation along Freshwater Slough would be ineffectual and did not warrant further study. Finally it was concluded that sedimentation at the mouth of the North Fork should be examined to determine if there is any relationship between sedimentation and flooding. Hydrology and Hydraulics will coordinate with Tidal Hydraulics regarding this item.

10 Incl
As

WORTHINGTON

cc's on next page:

NPS-PL-RP

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cc's w/incl:

Ch, ERS

Ch, E&SES

Ch, H&H Br

Ch, Des Br

Ch, Plng Br

Cook, Des Br

Bush/Mettling, ERS

Thompson, E&SES

Ch, Hydraulics Sec

Ch, Hydrology Sec

Soule, H&H Sec

Ristau, H&H Sec

McKinley, RP Sec

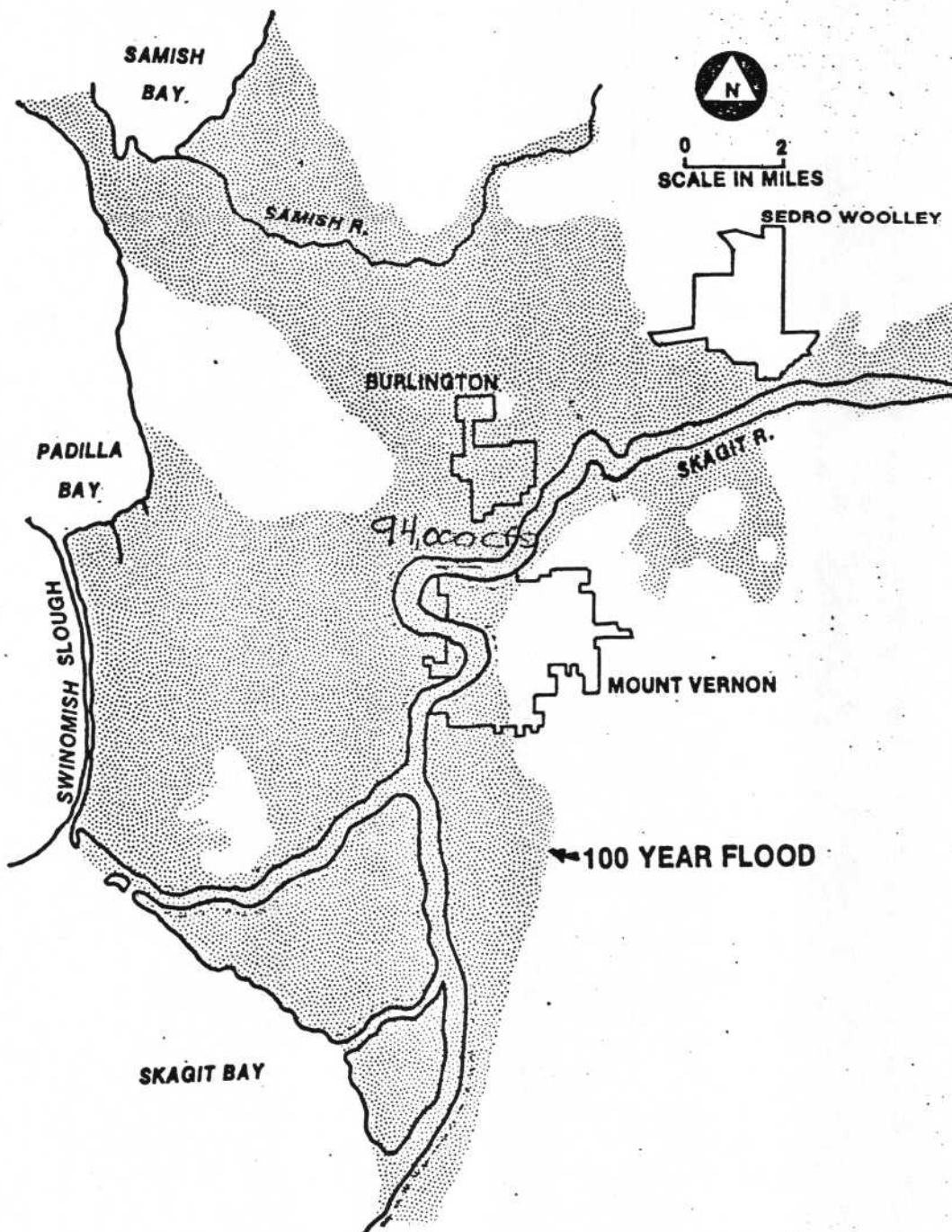
~~Br~~ ^{file} Br, Worthington, Amador, RP Sec

RP Sec File

Jump, Des Br

Frey, Real Estate Br.

94,000 cfs - Existing Conditions - (1)

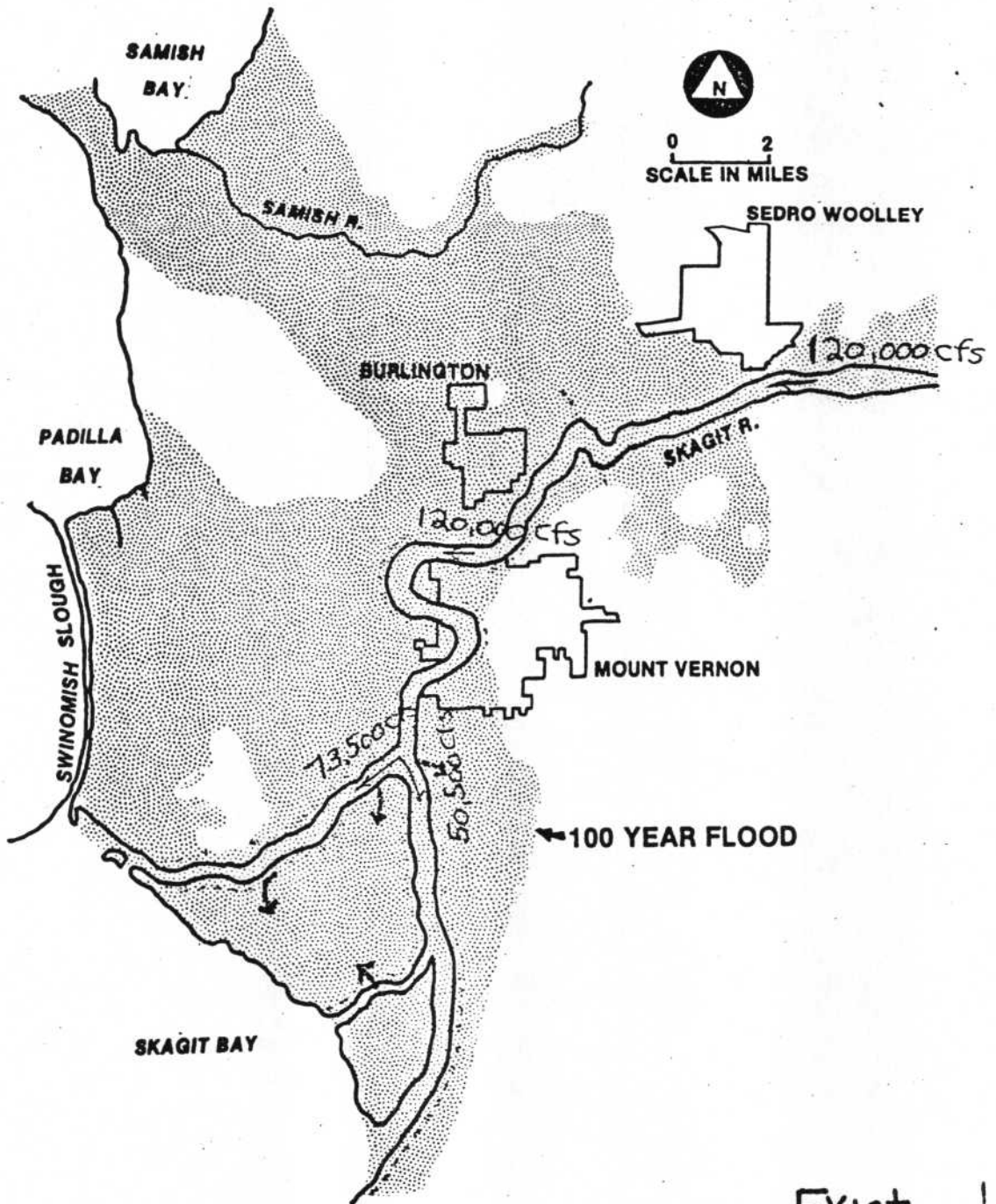


94,000
existing conditions

---- Existing Levee

No levee breaks

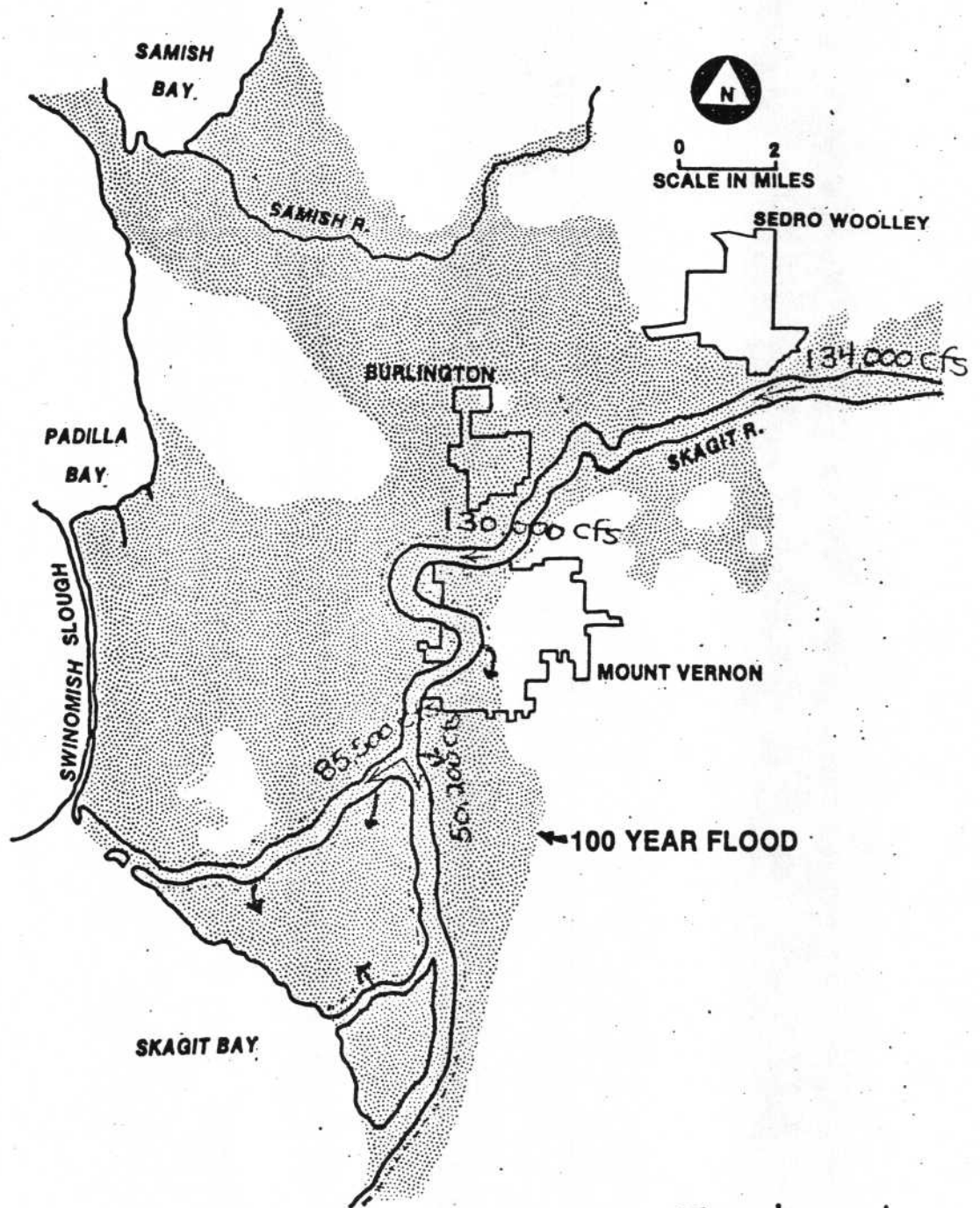
120,000 Cfs - Existing Conditions - (2)



--- Existing Levee
← Levee Break

120,000 existing

130,000 cfs - Existing Conditions - (3)



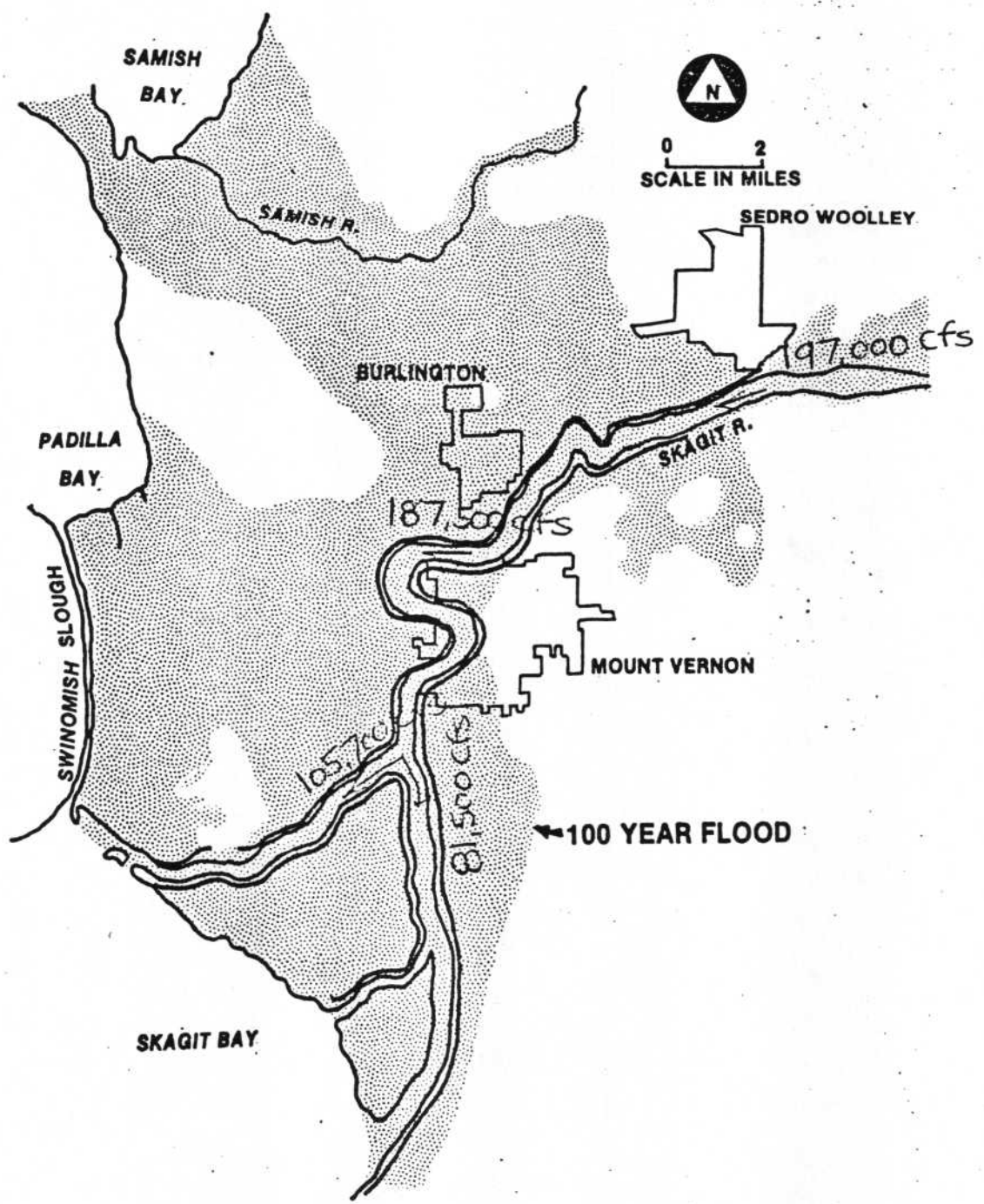
--- Existing Levee
← Levee Break

130,000 existing

P 002378

#1

50 Year - Complete Level - No Failure (4)



50 yr levee
mouth to Sedro Woolley

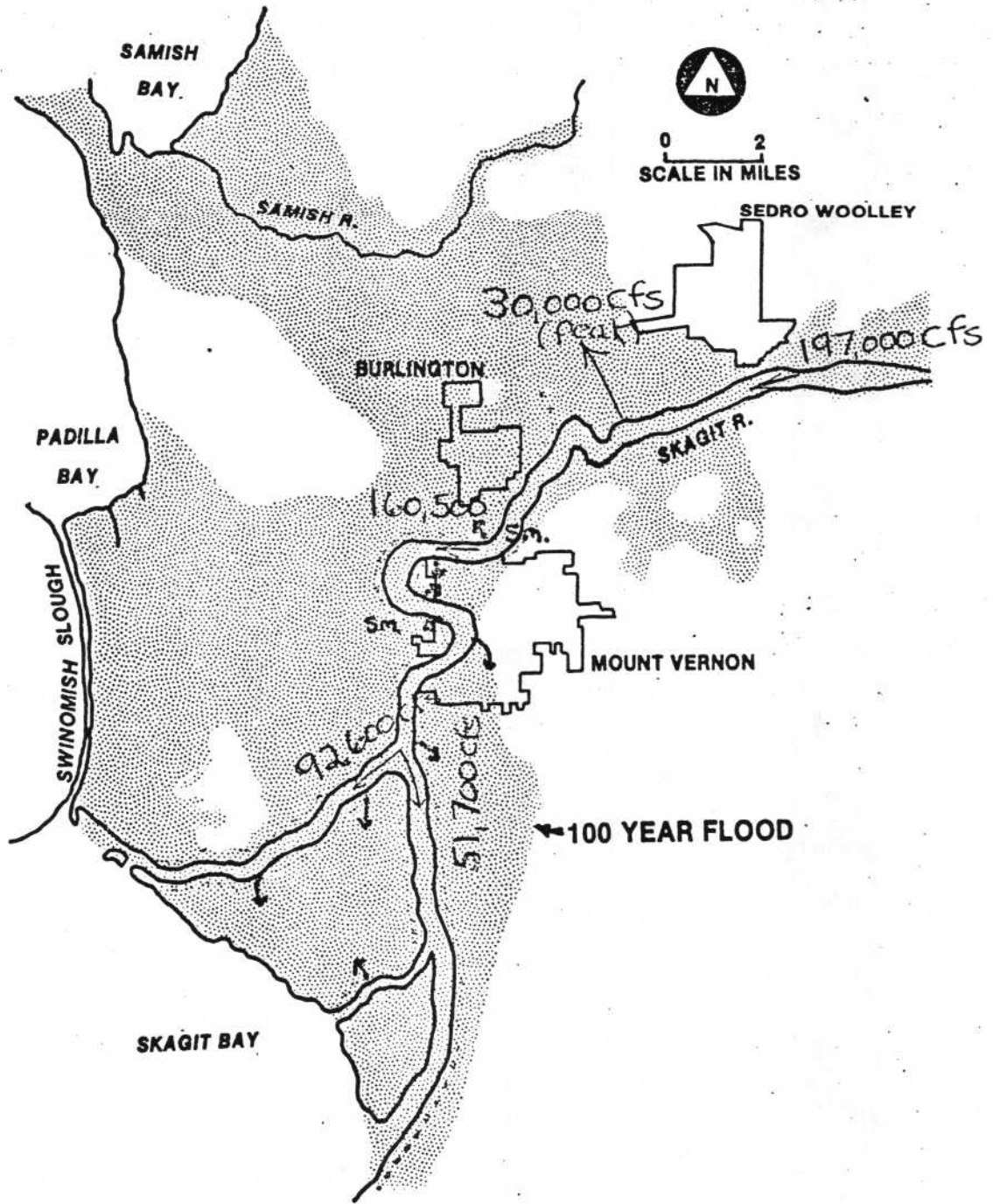
Run 4

— High Levee

P 002379

#1

50 Year - Existing Conditions - (5)

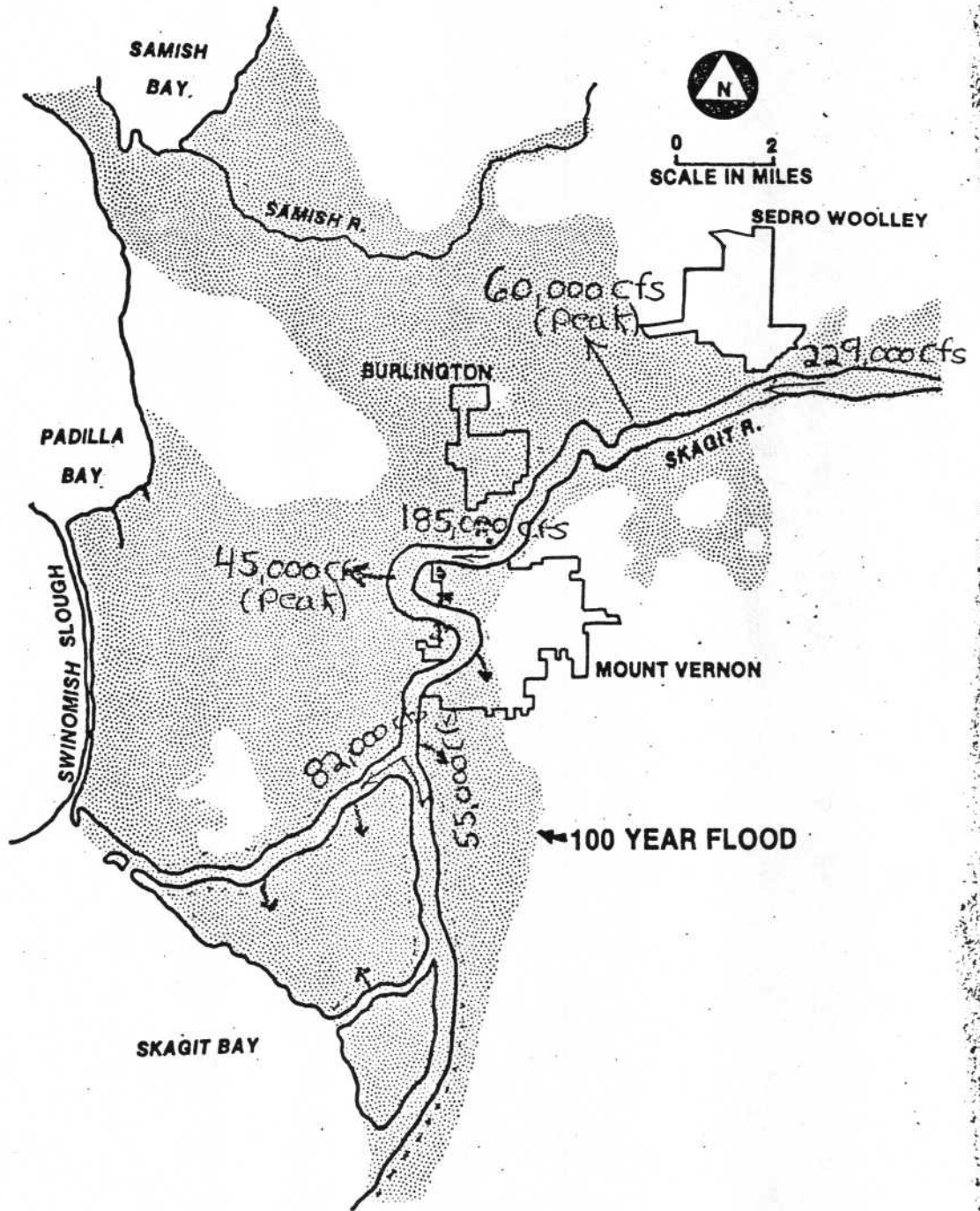


50 year
existing

Rem 5

--- Existing Levee
← Levee Break

100 Year - Existing Conditions - (6)



--- Existing Levee

← Levee Break

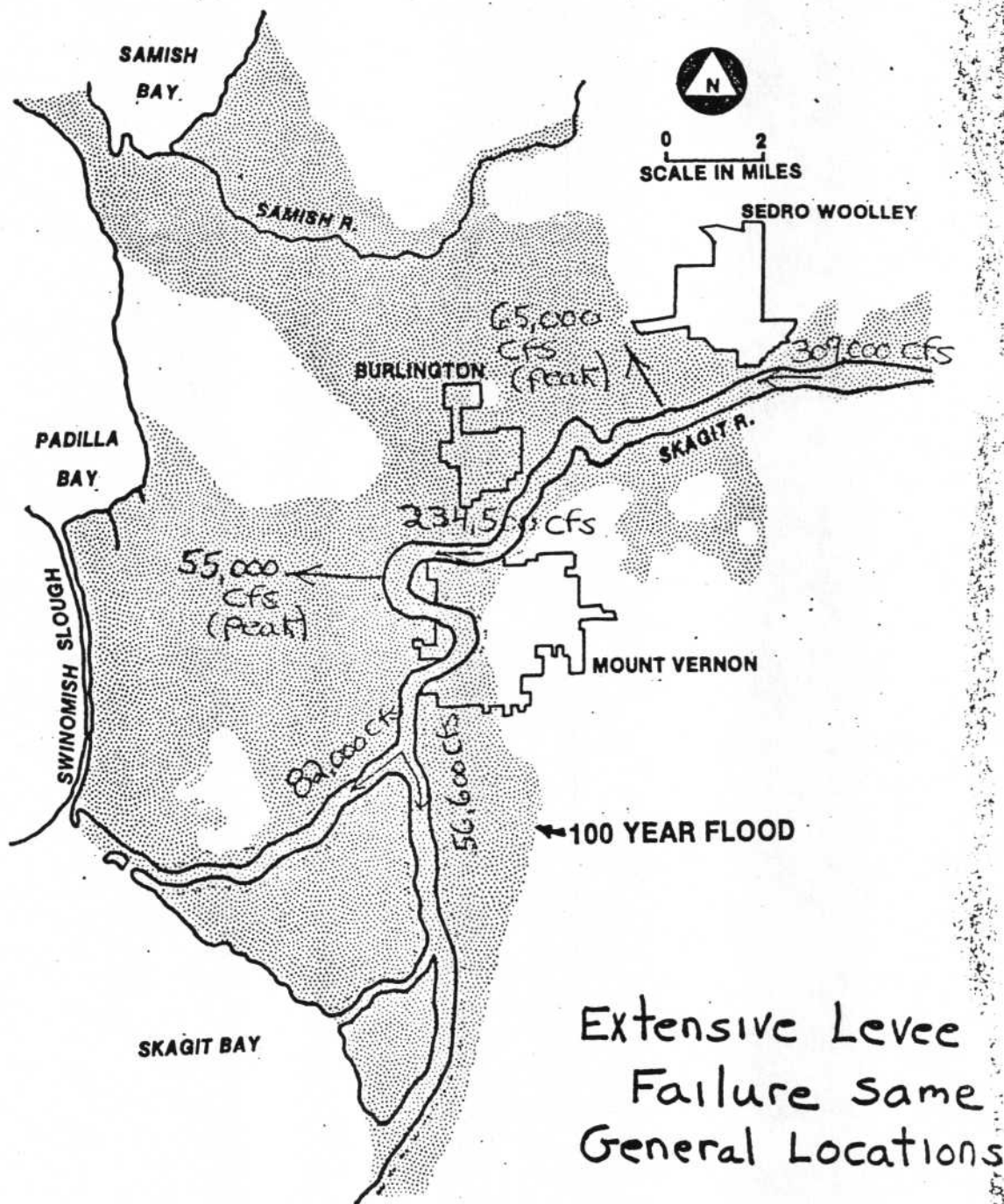
100 yr
existing

Rem 6

P 002381

1

500 Year - Existing Conditions - (7)



Extensive Levee Failure same General Locations

--- Existing Levee

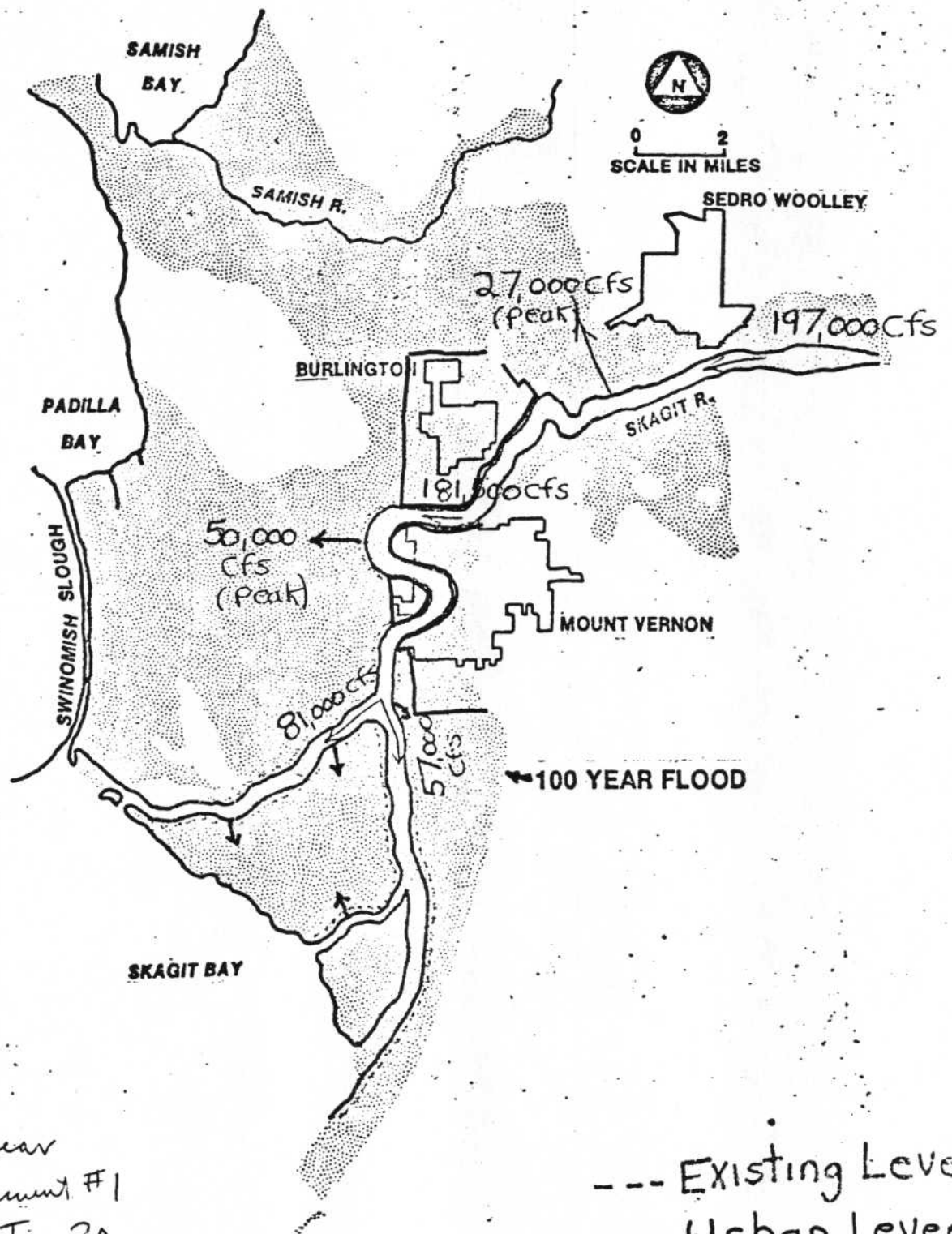
500 yr existing Run 10

P 002382

#1

50 Year - Alignment 1

(8)



50 year
alignment #1
alternative 3A
run 8

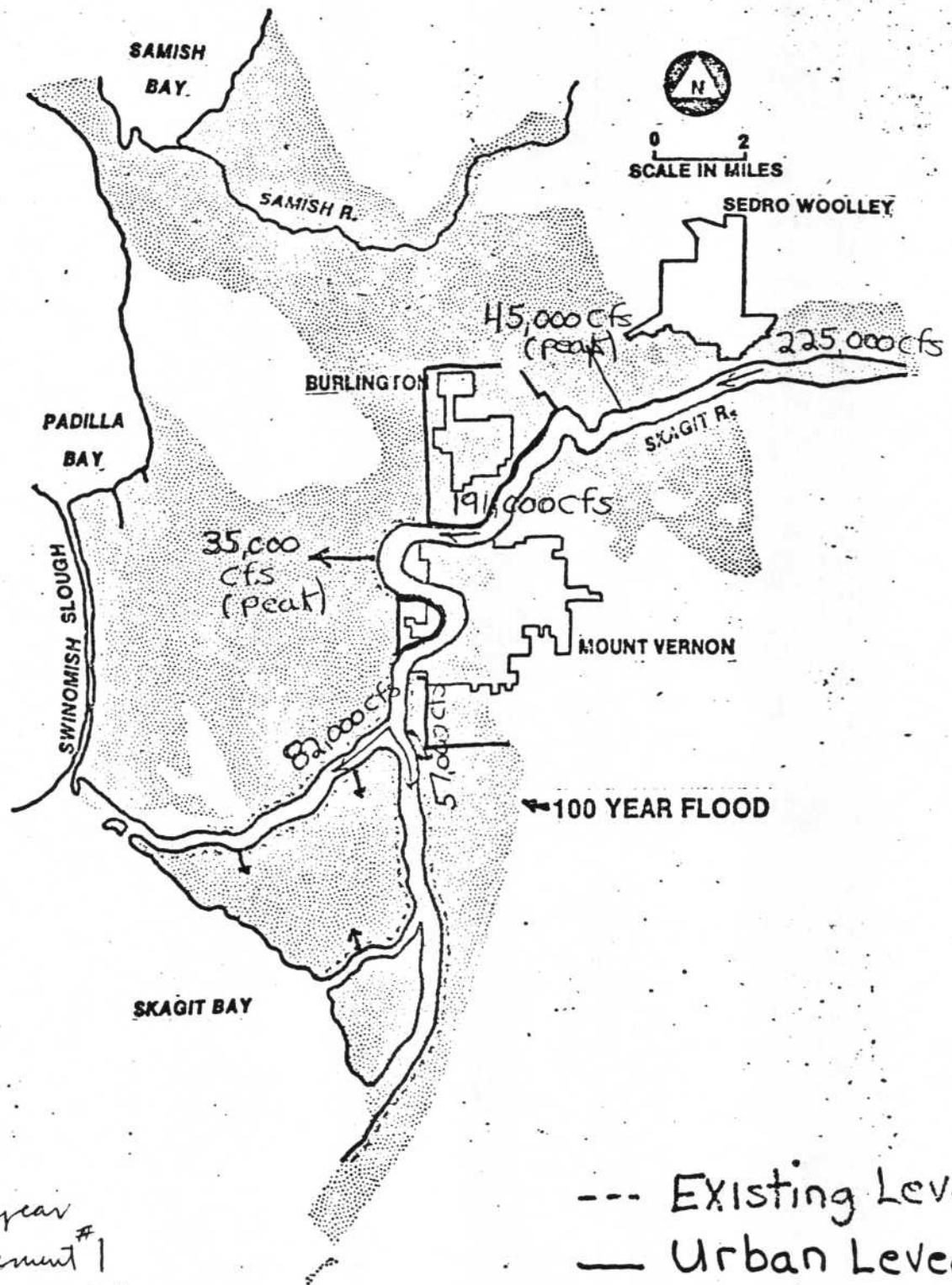
- Existing Levee
- Urban Levee
- ← Levee Breaks

P 002383

#1

100 year - Alignment 1

(7)



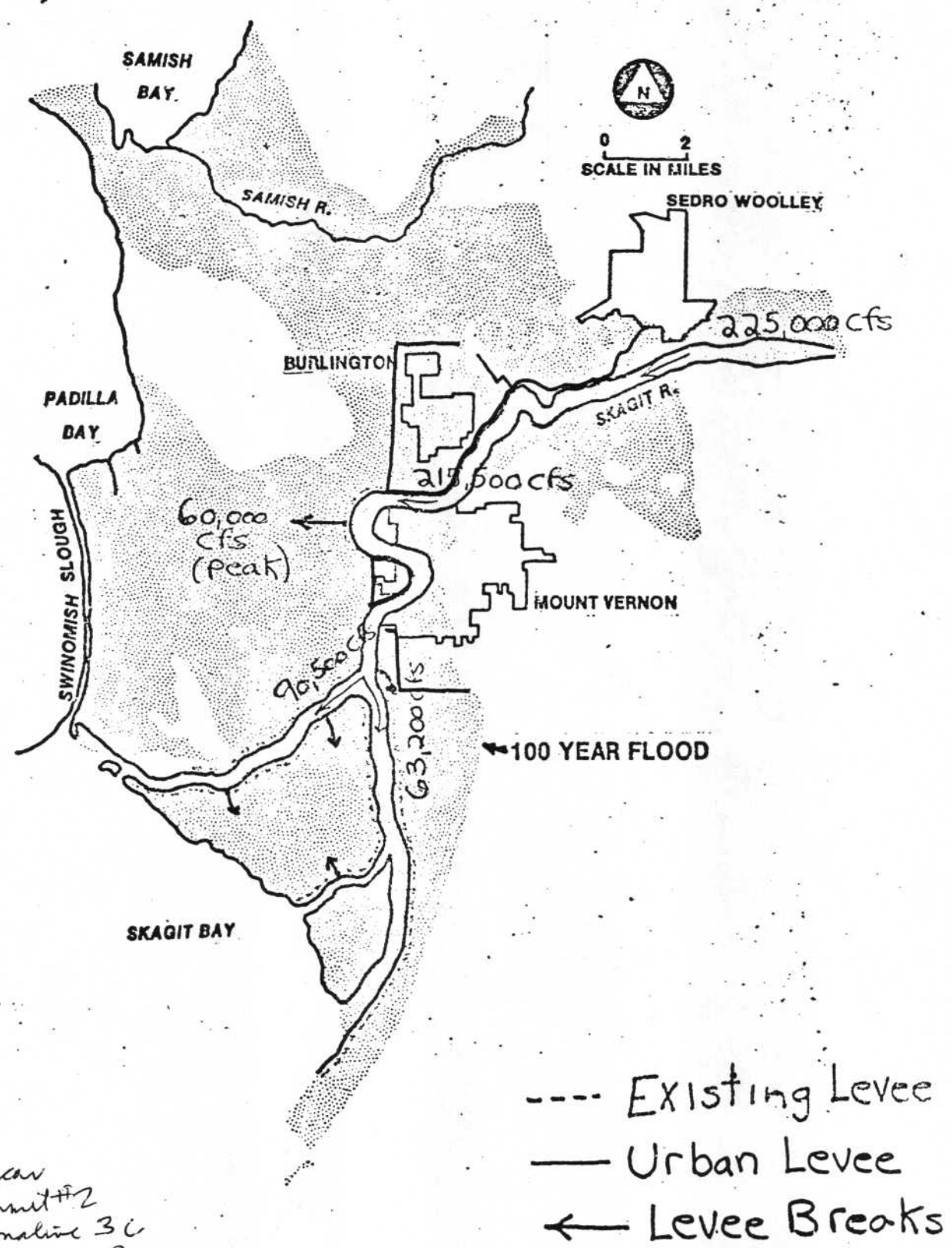
100 year alignment #1 Alternative 3A run 27

P 002384

--- Existing Levee
— Urban Levee
← Levee Breaks

#1

100 year - Alignment 2 (10)



100 year
alignment #2
alternative 3C
run #9