

f43.2A



L. Scott Tucker, Executive Director

October 20, 1975

Executive Committee:

- Jerry Grant
Adams County
 - John J. Nicholl
Arapahoe County
 - Wally Toevs
Boulder County
 - James J. Richey
City of Lakewood
 - Charles S. Robinson
Engineer
- Members:
- Hal Anderson
Jefferson County
 - Gilbert A. Bean
City of Westminster
 - David A. Curtis
Douglas County
 - Vaughn Gardnier
City of Littleton
 - Kenneth M. MacIntosh
City of Denver
 - William H. McNichols
City of Denver
 - Arien E. Patton
Engineer
 - Cathy Reynolds
City of Denver
 - M. L. "Sam" Sandos
City of Denver
 - Penfield W. Tate, II
City of Boulder

181 E. 56TH AVENUE • DENVER, COLORADO 80216
TELEPHONE 534-0105

Mr. Leonard Rice
President,
LEONARD RICE CONSULTING
WATER ENGINEERS, INC.
2785 North Speer Boulevard
Denver, Colorado 80211

Dear Lee:

This letter is in regard to the Niver Creek flood damage survey which you had been conducting for us. After reviewing Les Botham's report and discussing that report with you and Les, I have come to the conclusion that we should terminate the data collection effort at this time.

I will be reviewing Les's report as well as the additional information I have previously obtained, in order to determine the best forum for the dissemination of the damage information. I may be calling on you or Les at a later date to assist in the preparation of a report, article, or press release, once I have determined the best way to disseminate this information.

Sincerely,

Bill DeGroot
Administrator, Flood Plain
Management Program

WGD/bac



Leonard Rice Consulting Water Engineers, Inc.

(303) 455-9589 / 2785 North Speer Boulevard / Denver, Colorado 80211

43.2A.
Leonard Rice
Harold F. Bishop
Marianne McGalliard

OFFICES IN
Denver, Colorado
Albuquerque, N.M.

September 17, 1975

Mr. Bill DeGroot
Urban Drainage & Flood Control District
181 East 56th Avenue
Denver, Colorado 80216

Dear Bill:

This letter summarizes our investigation of flood damages in Thornton, Federal Heights and Adams County resulting from intense rainfall events on July 14 and 16, 1975. Some information was also collected documenting flooding on June 8, 1975. In addition to the information you provided, we have interviewed the following representatives of the entities involved to collect available public data.

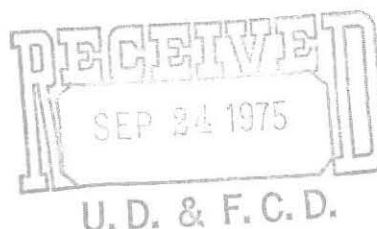
Thornton - Mr. Tom Haynes, Director of Community Affairs
Mr. Don Fields, Street Superintendent

Federal Heights - Mr. A. A. Gonzales, Fire Chief
Mr. Bob Manka, City Engineer

Adams County - Mr. Bill Wilson, Director of Public Works
Mr. Larry Thomas, Deputy Director of
Public Works

State Highway Department - Mr. Bill Shephard,
Maintenance Department

We have learned that the extent of public damage is reasonably well documented. Estimates have been compiled by Federal Heights and Adams County. It is felt that an estimate for Thornton could be made by or with the aid of personnel from that city. Private flood damage records have not been recorded by any of the public entities, and must be obtained from the affected parties.



Hydrology
Water Rights
Environmental Analysis
Urban Drainage

It will be difficult to pair flood damages with the date of the flood event for each entity. In Thornton and Adams County, for example, damages were initiated by flooding on June 8, 1975 and worsened by the flooding of July 14 and 16. Only Federal Heights has damages pairable with a particular flood event, as most of their problem resulted from one event.

Some of the flood damage data which may be available is outside of the Niver Creek basin, and some of the information available within the Niver Creek basin concerns local flooding not directly associated with flow in Niver Creek or its tributaries. The following is a summary of the flood damage data we believe is available.

Federal Heights

Public flood damage in Federal Heights resulted from intense rainfall on July 16, 1975. Tributaries "L" and "M", identified in "Water and Drainage of Niver Creek", June, 1973, were the worst affected. Minor difficulty was also experienced on June 8 and July 14. On July 16, several sanitary sewers were washed out, including a 24-inch one on tributary "L". Considerable water flowed eastward along 92nd Avenue and over the north curb and into the Holiday Hills Village mobile home park near Pecos Street. This caused the loss of a block and a half of sidewalks on 92nd and considerable private damage in the mobile park. Before the evening was over, 51 mobile units were evacuated to the Town Hall because of concern about safety of gas and electric service connections. Bob Manka, City Engineer, in a report to the Town Council estimated damage to city facilities at \$60,000. The actual figures can be obtained from minutes of the meeting. He also took some slides which can be borrowed. Some of the damages will be paid by Thornton because of an agreement for sanitary system maintenance between the two cities.

Private damages occurred mostly at the Holiday Hills Village and Kimberly Hills mobile home parks. Water which overflowed 92nd Avenue washed out 175 feet of retaining wall and fence. Considerable sediment and debris was deposited and some erosion took place there and at other locations within the park. Some resodding has already taken place. It is not believed that flood waters entered mobile home units. Several, however, received damage to their skirting and had to be releveled, and several porches were moved. The recreation facility at Holiday Hills Village received flood water from Tributary "L" which

damaged carpets. Mobile units from several of the most critical areas within the park have relocated since the flood. Several fences were damaged by the flood or during the flood fighting effort. Private damage estimates will have to be made through interviews with affected parties. Damages which were or will be absorbed by the mobile subdivision owners might be obtained from them. Individual mobile home owners who have relocated out of the park may have to be located through their change of address. The willingness of the private parties to cooperate in a study of their damages has not been determined.

The Public Service Company was involved at Holiday Hills Village on the 16th of July and subsequently with service connection checks the following day. They may be able to document their extra costs due to the flooding.

Thornton

The recent flooding problems for the City of Thornton were mostly outside of the Niver Creek basin. The damages originated from runoff generated on June 8 and centered between Washington and Ogden Streets and Eppinger and 91st Avenue. Road surfaces were damaged and repaving will be required. Public damages were estimated by Tom Haynes at \$30,000. The situation was aggravated by the additional flooding on July 14 and 16.

On July 16, Tributary "L" overtopped 92nd Avenue between Pecos Street and Huron to a depth approaching two feet. It was feared that the roadway would be lost, but the embankment was only partially eroded. The damage was not estimated and excavated asphalt from other road resurfacing is being dumped at the site.

Private damage includes a retaining wall failure on Clarkson Street south of Eppinger on June 8. It is reported that flood waters entered a few garages and even the first floor of a residence. Several residential streets were closed during the flood. A list of affected private parties cannot be put together from records at the city and no estimate of private damage is available.

At 84th Avenue, water overtopped the street and overflowed the Northland Shopping Center parking lot on July 16. No damage is visible. It also overflowed the parking lots of

Arby's, Red Barn and Bonanza Steak House. It is not known whether water entered these establishments or if any damage was done.

State Highway Department

On July 16 water flowing east along 84th Avenue near I-25 caused trouble for the Highway Department. It passed through the Capri Motor Lodge area and along the highway ditch adjacent to the southbound I-25 offramp to 84th Avenue. Some difficulty was experienced on the offramp. The water traveled north to Tributary "L", combining there to deposit gravel and debris on the southbound lanes of I-25. It is believed that some lanes were closed for a time and conflicting reports exist about whether both directions of I-25 were closed on that date.

Adams County

A flood on June 8 damaged the concrete lined portion of the Niver Creek channel near Exploradore Calle. The flood of July 14 further damaged the channel and a park nearby. The July 14 flood overtopped several road crossings and traveled for a distance through a park on the south side of the channel between Exploradore Calle and York Street. Total damage is estimated by the County Road Supervisor at \$43,500 for the two floods. The flood of July 16 did not add significantly to the damages.

A partial list of private parties affected by the flooding could be put together from County records. This could be used as a starting point in a study of private flood damages within the County. Local flooding was experienced on Nueva Vista near Coronado Junior High School north of Niver Creek. Outside of the Niver Creek basin, local flooding was experienced at Sherrelwood Circle. No estimate of private damages is available.

The County estimates that recent Niver Creek channel improvements, although damaged in the flooding, prevented two siphons and one water line from being washed out. This saved an estimated \$250,000 to \$300,000. The May, 1973 flood caused \$200,000 in damages with a flow that was considerably less.

Summary

Public flood damages at Federal Heights can be identified with flood event because they were experienced primarily on July 16. The damages amounted to \$60,000 and are being summarized by Bob Manka, City Engineer. Some photographic documentation exists. Flood damage for Thornton and Adams County will be difficult to pair with date of the flood event. Public flood damages at Thornton are not well documented. They were initiated June 8, and were extended July 14 and 16. An estimate of \$30,000 damages for June 8 has been made by Tom Haynes; no breakdown was provided. In Adams County, the public flood damages for the June 8 and July 14 floods on Niver Creek are well documented. A breakdown of the \$43,000 estimated repair is attached.

Private flood damages are nowhere documented. In Federal Heights the place to begin is with Jim Debeck, the owner of the Holiday Hills Village mobile home park. He should be able to provide damage estimates for the park facilities and a list of names of mobile home owners who were involved in the flooding. In Thornton, the owner of Mr. Taco on Washington Street should be contacted. He owns the retaining wall which was damaged on June 8. The owners of Arby's, Red Barn and Bonanza Steak House should be contacted also. It would be possible also to ring doorbells in the residential area where the flooding appears worst. In Adams County, a partial list of private parties troubled with flooding could be assembled from the records of the Communications Center and the Service Referral Agency.

Generally it will be difficult to pair flood damage data with estimated flow in Niver Creek. Much of the available information involves local flooding not directly associated with flow in the creeks. In all cases, it will be difficult to pair damage data with depth of flooding. Little depth data exists now and the reports which are available are subjective. A study of flooding depth would have to rely on the recollections of private parties interviewed. In most cases, depth is highly variable and specific depths would have to be considered with specific damages. It may be possible to correlate flood damages with amount of rainfall or recurrence interval of rainfall. This would involve a study of available rainfall data for the area.

We believe that some valuable flood damage data could be collected with further study of the flooding of June 8 and July 14 and 16 in Federal Heights, Thornton and Adams County. More information would probably have been available if the time between flood event and damage study were shortened. Establishment of a coordinated flood damage data collection system is recommended whether or not this study is continued. We will be happy to discuss these problems further with you.

Very truly yours,

LEONARD RICE CONSULTING WATER ENGINEERS, INC.

A handwritten signature in cursive script that reads "Leslie H. Botham".

Leslie H. Botham

LHB/d

Adams County

NIVER CANNAL

7-16-75

To - REMOVE - Repair and Replace

① REMOVE CONCRETE, & CLEAN DITCH	\$ 1890.-
② REMOVE AND REPLACE FENCE	\$ 1050.-
③ REMOVE AND REPLACE IRRIGATION SYSTEM	\$ 275.-
④ REMOVE AND REPLACE RIP RAP	\$ 8040.-
⑤ REPLACE SLOPE PAVING, & STRU BACK FILL	\$ 17,302.-
⑥ STRAIGHTEN PILING	\$ 725.-
⑦ DAVE T, WORK COST (GRADING - ZERDING - ETC)	\$ 6,500.-
⑧ CLEAN BRIDGE NORTH WASHINGTON	\$ 1,150.-
⑨ SIDEWALK & CURB-GUTTER	\$ 930.-
⑩ SUPERVISION, ENG, INS AND ETC 15% OF TOTAL	\$ 5,679.-
COST =	\$ 43,541.-

Repair Estimate for Niver Creek
Flood Damages through July 14 1975
by County Road Supervisor.