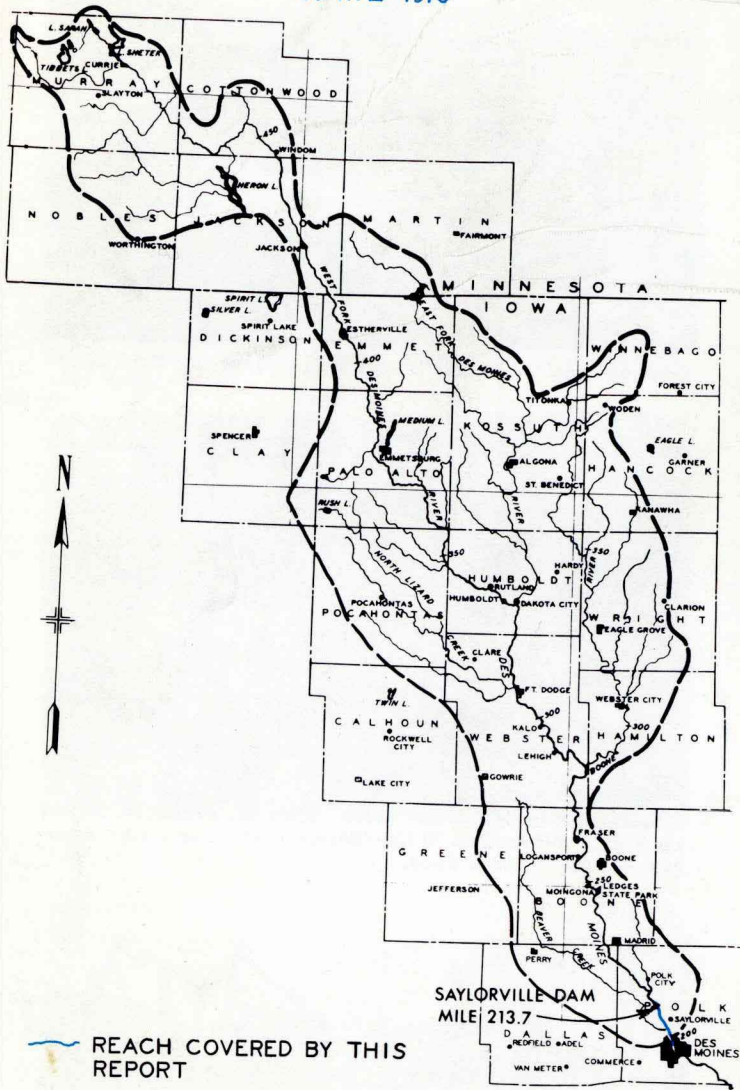


DES MOINES RIVER FLOODING DES MOINES, IOWA

APRIL 1970



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SCALE IN MILES

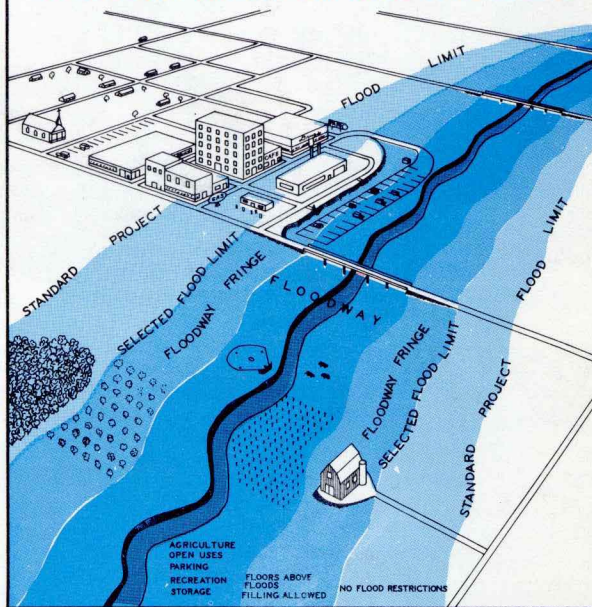
HOW TO AVOID DAMAGE

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FLOOD PLAIN REGULATIONS

TO ENCOURAGE WISE USE AND AVOID FLOOD DAMAGE



Looking west from Second Avenue at the swimming pool and playground near Franklin Avenue—June 24, 1954 flood.

PAST FLOOD SCENES



Looking west at Center Street dam — June 24, 1954 flood.



Looking north at the Second Avenue bridge — June 24, 1954 flood.



Looking southeast on Maine Street from University Avenue — June 26, 1947 flood.



Looking south on Sixth Avenue from New York Avenue — June 26, 1947 flood.



Looking northeast at the D.M. & C.I. R.R. bridge downstream of Second Avenue — June 24, 1954 flood.



Looking south on Sixth Avenue from New York Avenue — June 24, 1954 flood.

INTRODUCTION

This brochure is a summary of the Flood Plain Information Report for the Des Moines River at Des Moines, Iowa. The report was prepared to enable State and local governments to evaluate the flood hazard and to distribute flood information for the protection of existing and possible future public and private developments in the flood plain.

Historically, man has tried to reduce flood damages by constructing levees and floodwalls, flood control reservoirs, channel improvements, and other flood control works. Despite the expenditure of billions of tax dollars for costly flood control works, flood damages have been steadily increasing across the nation due to the continued development of flood-prone areas without recognizing the flood hazards.

Increases in flood damages and flood hazards to life and property have led to flood plain management as a means to protect existing and future developments from flood damage. Implementation of a flood plain management program requires two basic tools: (1) a logical and comprehensive land-use plan which recognizes the flood hazards and which is geared to the land needs and economy of the local community, and, (2) the legal tools to carry out the intent of the plan. Cooperative action by local, State and Federal Governments and private interests is essential.

The information contained in the Flood Plain Information Report evaluates the flood situation in the study reach and provides the basis for local flood plain management programs. For flood plain management to receive the necessary public support, it is important that residents of the community know the past history of flooding, the purposes and benefits of flood plain management, and the ways that regulations can be coordinated with the overall plan of development for the area.

PAST FLOODS

The highest known flood on the Des Moines River in the city of Des Moines occurred on June 24, 1954. The maximum gage height recorded at the U.S.G.S. Second Avenue gage was 30.16 feet. The maximum discharge was 60,200 cubic feet per second.

Other large floods on the Des Moines River occurred in April 1965, May 1903, June 1947, April

1960, May 1944, July 1902, March 1951, and April 1962 in the order of flow magnitude.

Photographs in this brochure show typical flood scenes at and near Des Moines during the June floods of 1954 and 1947 and the flood of April 1965. Physical damages, hazards to life, health, and property, and the inconveniences imposed by the floods are shown by the photographs.

The June 24, 1954 flood is an example of an infrequent flood which has occurred in the upper Des Moines River Basin. However, floods of greater magnitude should be considered for land use planning in the flood plain since studies of Des Moines River floods indicate that larger floods will occur in the future.

FUTURE FLOODS

An Intermediate Regional Flood was determined from an analysis of flood records in the upper Des Moines River Basin and in similar basins in the same geographic location as Des Moines. The modified stage for this flood would be 3.6 feet lower than the June 24, 1954 flood at the County Road W bridge (Fisher) — Mile 211.40.

A Standard Project Flood represents the reasonable upper limit of expected flooding. This flood, based on floods which have occurred on the upper Des Moines River Basin and on similar streams, would be significantly greater than experienced floods. The stage for a flood of this magnitude would be 6.1 feet higher than the June 24, 1954 flood at Mile 211.40.

Photographs in the brochure indicate the elevations of the Intermediate Regional and Standard Project Floods in relation to the June 24, 1954 high water at several locations in and near the city of Des Moines.

REDUCTION OF FUTURE FLOOD DAMAGE

The overall plans of the local community for industrial, commercial, and residential areas, for streets and utilities, and for parks, schools, and recreational areas, can be coordinated with the need for flood plain areas to carry flood water. The development plan must first recognize the flood hazard and establish the required floodway limits

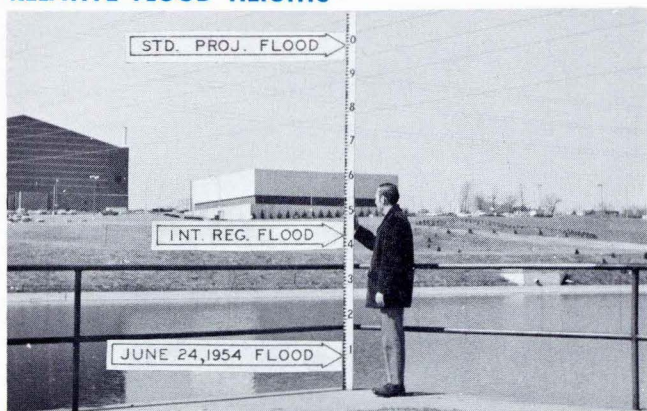
based on technical data provided in the report and on the desired flood magnitude. When the required floodway limits are determined, the specific development for areas in the floodway and on the floodway fringe may be selected. Examples of development which may be planned for the floodway include those of low damage potential with no obstruction to flood flows such as parking lots, drive-in theaters, golf courses and parks. These facilities can be coordinated with more valuable developments on adjacent high ground. In the floodway fringe, these more valuable developments may be protected by floodproofing measures such as waterproofing walls and floors, filling to raise floor levels above flood elevations, installing removable waterproof bulkheads at entrances and low level openings, installing check valves in sewer lines, and placing electrical facilities above expected flood elevations.

State and local governments, as representatives of the local community, have the responsibility to implement flood plain management programs through the use of legal tools. The available legal tools include zoning, subdivision regulations, and building codes which may be modified to include flood plain regulations. The actual flood plain regulations written into the local codes and ordinances must be definitive enough to provide general public understanding of the problem and the choices of action which the regulations provide. Regulations also must be specific so that criteria, such as minimum first floor elevations, type of construction or encroachment limits, are known for the specific area in question. There are, basically, two main objectives of regulation. First, is to assure and guarantee the retention of an adequate floodway for the river, and, secondly, to encourage sound land use consistent with the flood hazard and community land use needs. Community interest and action are, therefore, required to reduce the future direct costs of flood fighting, flood damage cleanup, and the need for expenditure of tax dollars for expensive flood control works.

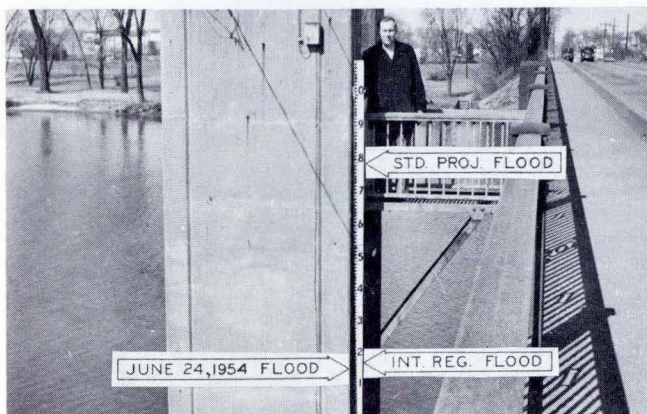
This brochure has been prepared by the Corps of Engineers from the data in the report, "Flood Plain Information — Des Moines River, Des Moines, Iowa."

The Rock Island District of the Corps of Engineers will provide, upon request, limited technical assistance in interpreting the information contained herein.

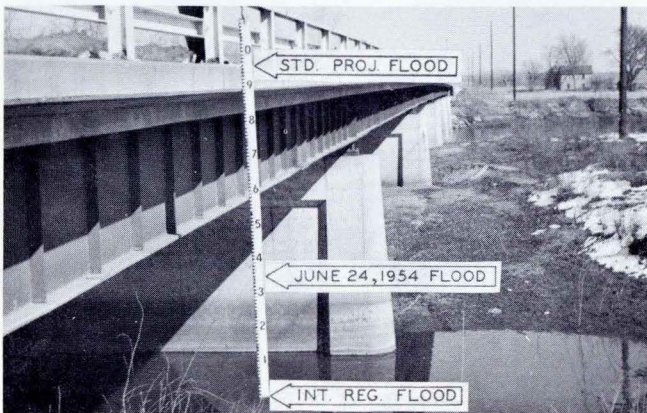
RELATIVE FLOOD HEIGHTS



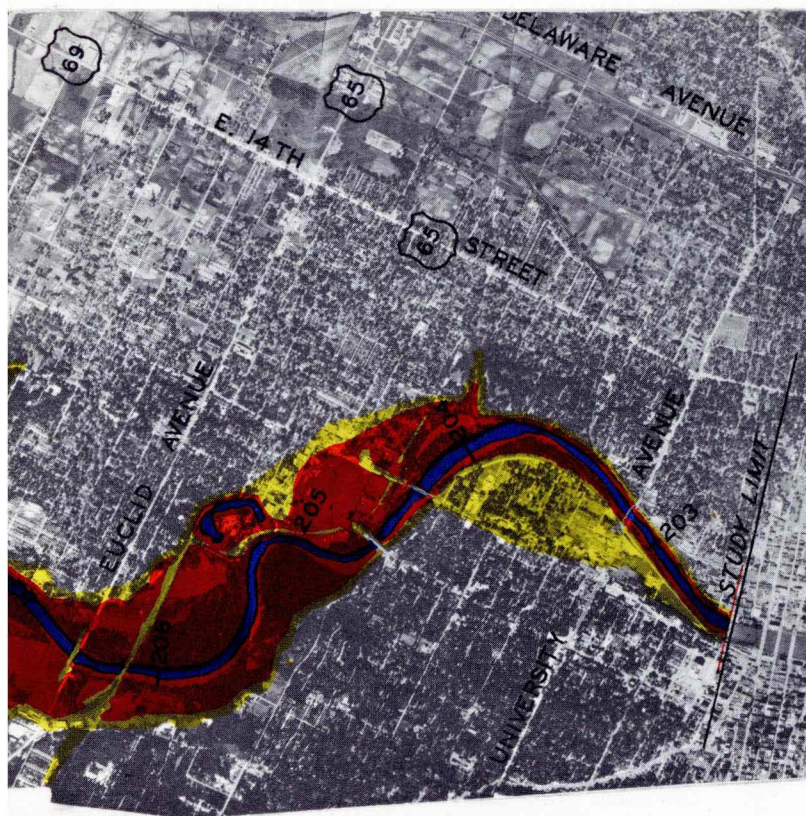
North walk on the left end of Center Street dam.



Stream gage on the upstream side of the Second Avenue bridge.

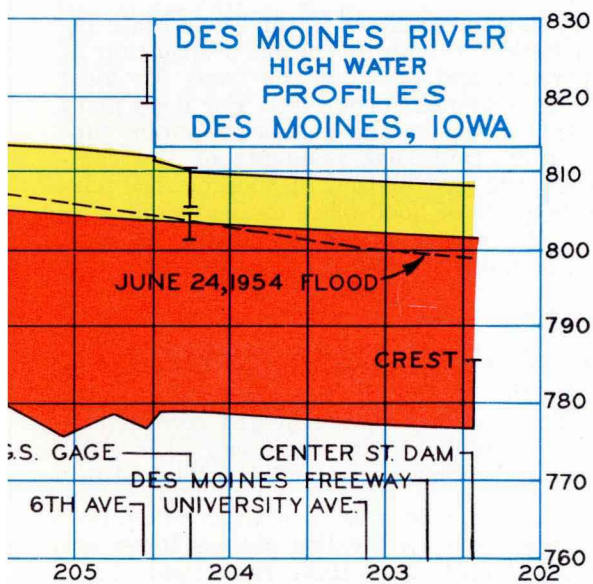
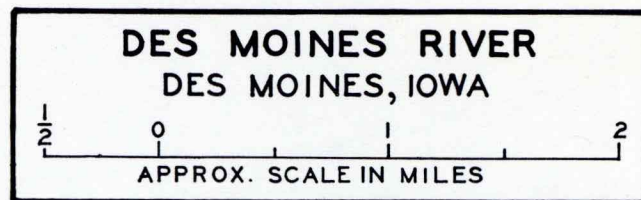


Downstream side of Fisher bridge, mile 211.40.

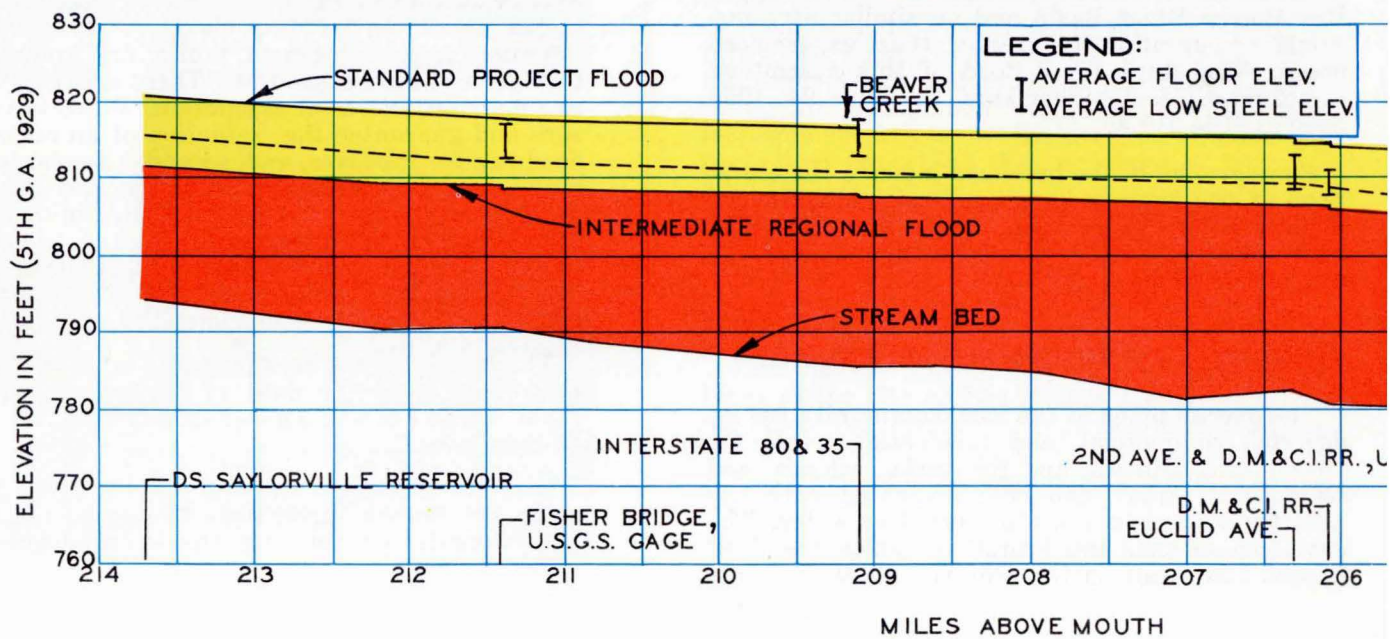
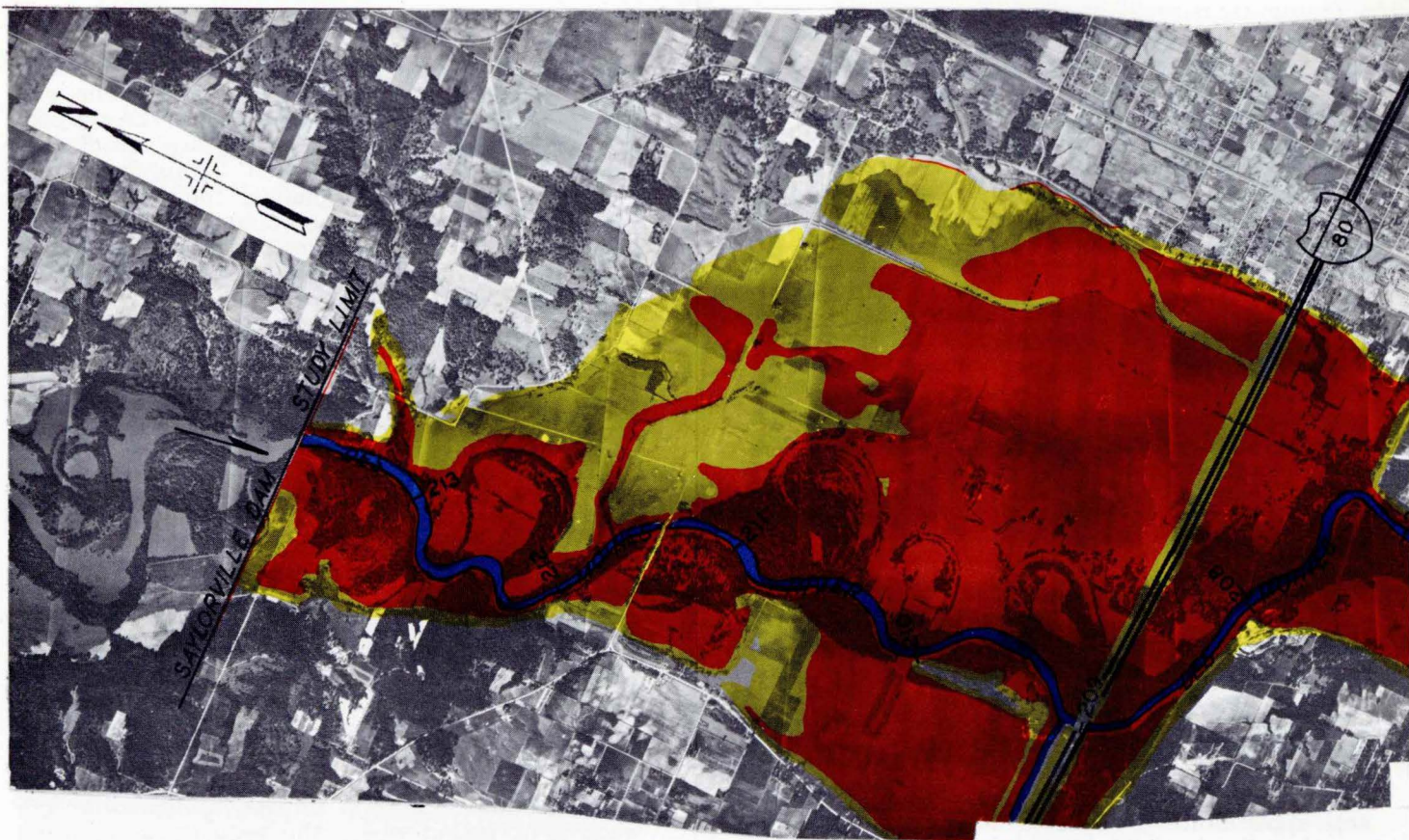


- STANDARD PROJECT FLOOD
- INTERMEDIATE REGIONAL FLOOD
- CHANNEL

AERIAL MOSAIC OF JUNE 1954 FLOOD

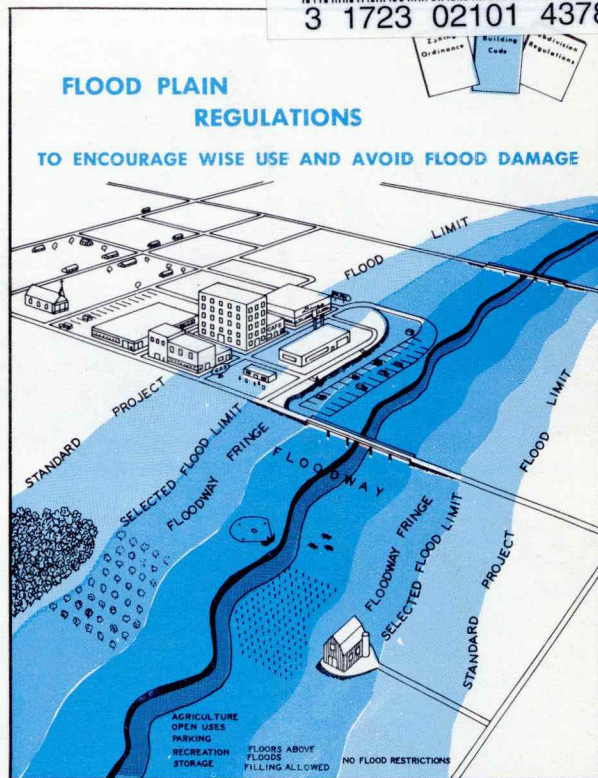


Looking northeast at the D.M. & C.I. R.R. and Beaver road bridges over Beaver Creek — April 10, 1965 flood.





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Looking west from Second Avenue at the swimming pool and playground near Franklin Avenue—June 24, 1954 flood.