

③ ECONOMIC IMPACT OF THE FAIRBANKS FLOOD OF
AUGUST, 1967: A SUPPLEMENT TO THE ECONOMIC
BASE STUDY OF THE FAIRBANKS NORTH STAR
BOROUGH, ALASKA

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Purposes

This supplement to the previous Institute study, Economic Base of the Fairbanks North Star Borough, Alaska, is designed to fulfill requirements in the contract for the economic base study. The purposes of the supplement are to:

- (1) review the growth trends which were apparent at the close of the study, but prior to the flood of August, 1967,
- (2) indicate how these trends appear to have been affected by the particular natural disaster,
- (3) summarize the longer-term forecast of certain economic conditions expected for 1975 and 1985, as these were apparent in the original study,
- (4) review in a preliminary manner the extent of flood damages and probable effects upon the economic structure of the community, and
- (5) estimate the short run "response to disaster" by the government and private sectors in terms of interruption in observed economic trends.

Pre-Flood Forecasting of Economic Growth

For the decade preceding the 1967 flood, Interior Alaska and the Fairbanks area exhibited growth and subsequent decline, with a leveling off of business conditions over the last four to five years. Considering the regular population growth and high migration factors of the area, the year 1966 and first six months of 1967 experienced a very slow growth rate,

essentially economic stagnation. Although much of the pertinent social and economic information concerning the borough was not reported on a regular and recurring basis, certain indicators clearly substantiated this evaluation of economic performance. They are:

- (1) The population of the Fairbanks area increased by 35,000 from 1940 to 1960, and this comprises a major growth trend. (See Figure 7 of the Base report.) However, there is evidence indicating that the trend in population growth was not maintained from 1960 to 1967.
- (2) The city itself has increased in population principally through annexation.
- (3) From 1962-1966, the labor force in the region has grown much more than employment opportunities, which have appeared in progressively small numbers.

Analysis of Alternative Growth Trends

How Long Will the Observed Trends Continue? The number of adults situated in the Fairbanks North Star Borough is potentially volatile, and it is very difficult to predict how many will remain over periods in excess of five years. For the most part, the urban population level eventually is dependent upon prevailing employment conditions which result in migration patterns that control the rate of expansion in the labor force.

What is Expected by 1975 and 1985? Over the period 1975-1985, the following conditions, partially shown in Figures 5-7 of the Economic Base

Report, probably will prevail:

- (1) Employment will continue to expand at a maximum of 500 to 600 additional jobs annually. A slower growth rate of 400 or less is quite likely.
- (2) The borough's population will increase more rapidly than recently observed, i.e., by more than 1,000 persons annually until approximately 1970, after which out-migration of entire families will limit increases in the total population.
- (3) The number of school-age persons will continue to expand, and out-migration of young adults will occur at an unprecedented pace, along with the departure of older (especially retired) persons.
- (4) By 1975, the demand for public education will have nearly doubled and costs will have risen by at least 8 per cent annually. More effective use of school facilities will be demanded, i.e., larger student/faculty ratios, higher rates of room utilization, very possibly including two daily eight-hour shifts in certain facilities, such as high school.
- (5) Unless conditions improve materially, economic stagnation is forecasted for 1975, together with associated unemployment, poverty and social problems. If the forces identified in several chapters of the base study continue uninterrupted until 1985, a deterioration of the economic base will have occurred.

Conclusion

An expansion of the economic base is critically necessary at this

time, and positive steps should be taken to stimulate employment and income growth. The specific areas in which growth might occur were examined in sections of the economic base report.

Survey of Flood Damages

The flood of August 1967 was a major natural disaster. It vitally affected the community's ability to grow and expand without outside financial assistance. By most measures of comparison, the extent of damages was extraordinary, and the magnitude of loss was large. A concensus of knowledgeable persons suggests that the following conditions prevailed during the flood:

- (1) Upstream storage facilities, such as dams and reservoirs, were inadequate.¹
- (2) The flood detection system was faulty, inoperable or both. The civil disaster warning system failed to communicate the nature of the emergency at this critical stage because of human errors and/or faulty planning.
- (3) As a result, most of the Fairbanks businesses and households were caught "unaware" until the flood had already become a major disaster.

These matters have been discussed and well documented in the local newspapers, in a subsequent report by James Shoemaker, coordinator for

¹ See Committee on Public Works, The Disasterous Fairbanks, Alaska Flood . . ., (Washington: 1967).

the post-flood recovery program, and in releases by U. S. Army Corps of Engineers.² The nature and extent of the damages to the Fairbanks community were much greater than commonly believed. The region's economic development potential was seriously affected because:

- (1) Destruction and damage befell the community's stock of wealth in terms of capital assets, i.e., loss of public roads and bridges, schools, business real estate and equipment, as well as housing and vehicles.
- (2) Loss of personal property, business inventory, clothing and food supplies ensued to a great degree and extent.
- (3) Loss of jobs and income, i.e., reduced business earnings and foregone wages and salaries, were sustained by persons residing in the borough.

Of these factors, the first two were extremely significant, and the third was of minor consequence. The flood inundated the ground floor of more than 90 per cent of the local business establishments, thereby causing severe damage to the business wealth of the community. Flood waters also damaged practically all of the city's public utilities and its residential subdivisions. In comparison to other natural disasters, such as the 1964 Alaskan earthquake, a higher proportion of the people in the immediate region were financially injured, and the extent of the monetary losses has been greater for the "average" resident of the area.

²James Shoemaker, The Economic Impact of the August 1967 Flood on the City of Fairbanks, Alaska. (Fairbanks: October, 1967).

In analyzing the extent of flood damages further, the commercial sector, households and public operations are discussed separately below.

Business and Industry

The commercial sector of the North Star Borough economy, shown in the input-output structure of its economic base, was severely affected by the recent flood. In this respect, most businesses suffered 50 percent or greater losses of inventory and extensive damages to real estate. As a consequence, a nearly complete restocking of products was necessary and new business debt was incurred for repair and reconstruction of commercial and industrial facilities. In certain instances, apparently marginal businesses "closed" operations by not reopening after the flood. On the other hand, some more successful enterprises were able to rebuild with improved retailing design and layout or with expanded facilities.

All in all, the influence of the disaster on the commercial sector of the borough has resulted in a mixed development picture. Favorable developments have occurred with regard to (a) clearing and demolition of older structures in the downtown business district; (b) the opportunity for many businesses to modernize their real estate and purchase more current inventories; and (c) opportunities for enterprises to refinance under "special" terms (long maturity and subsidized rates), when a similar extension of credit under normal conditions would have been impractical or unlikely.

Offsetting these conditions are two very real issues:

(a) additional business indebtedness was created to replace real losses which have been incurred and (b) the business risks in Fairbanks suggest that "costs-of-doing business" in this locality are really higher than

TABLE 1

INITIAL* ESTIMATES OF PROPERTY DAMAGE AND LOSS IN THE
FAIRBANKS AREA DUE TO THE AUGUST 1967 FLOOD

Category of Flood Damage	Estimated Value (In Millions of Dollars)	Percent of Total
Private Sector:		
Personal Property	134.0	71.6
Real Estate	<u>30.0</u>	<u>16.1</u>
	164.0	87.7
Public Sector:		
Municipal Government Assets	7.8	4.2
Federal at		
Fort Wainwright	15.0	8.0
Eielson Air Force Base	<u>.2</u>	<u>.1</u>
	<u>23.0</u>	<u>12.3</u>
Total	<u>187.0</u>	<u>100.0</u>

*Surveys a year hence may indicate damage and loss which were not apparent initially.

SOURCE: U. S. Army Corps of Engineers estimates.

previously believed. Table 1 summarizes the estimated damages to the business and commercial sector of the Fairbanks economy.

Households

Residents of Fairbanks were exposed to a series of flood-related surveys, some conducted by local news agencies and others under the auspices of the state. The most intensive survey indicated extensively damaged dwellings throughout the area.³ These reports are partially

³ Questionnaire shown as Appendix A.

summarized in Table 2. The sampling method in collecting the information was not sufficiently thorough, but the survey was workably representative of real estate damages. Estimates for losses of personal property were probably not valid, but were reported, in part, to the Small Business Administration.

After a discussion of the flood damage problems with knowledgeable executives of the area's financial institutions, it is the author's opinion that the following conditions prevail and are serious new problems for the Fairbanks area at this time:

- (1) Many of the damaged residences have declined in their "marketability." In particular, the houses in residential areas such as Hamilton Acres and Island Homes are of substantially lower market value in 1968 than they were a year prior to the flood. This situation is especially serious when one considers the relatively high amount of total mortgage in relation to present market value. For example, instances were reported where the total amount of first and S.B.A. second mortgages actually exceeded the expected resale value of the repaired properties. Therefore, one could expect that these residences might not be salable immediately, even without downpayment or by assumption-of-mortgage. In other words, the actual net value of certain properties is practically nothing.
- (2) New construction and much of the repair and modernization activities since the flood have occurred at geographically dispersed areas which are situated well beyond the flooded area.

TABLE 2

PRIVATE SECTOR FLOOD DAMAGE AND LOSS ESTIMATES
IN FAIRBANKS AND SURROUNDING AREAS
FALL, 1967

Flood Loss: by Property Type and Ownership	Estimated Value (In Millions of Dollars)	Percent of Total
Residential losses	23.4	34.8
Commercial/industrial losses	5.0	7.5
Tax exempt, trailers, land damage and site damage	<u>.8</u>	<u>1.2</u>
Household goods and personal effects	29.2	43.5
Commercial/industrial, personal property, automobiles, airplanes and trailers	20.7	31.0
	<u>17.2</u>	<u>25.5</u>
	37.9	56.5
Total Real and Personal Property Losses	<u>67.1</u>	<u>100.0</u>

SOURCE: State Compilations from Flood Damage Field Check List, August, 1967; and Flood Damage Questionnaire.

Much of the new residential building is taking place outside of the flooded residential areas, and a shifting population favors outlying higher-ground areas. Providing this intra-regional movement continues, certain housing areas which were extensively flood damaged may come to suffer from long-term low-occupancy rates or will become predominately rental properties.

- (3) The practice of granting special second mortgages has led to new problems. Once this type of financing is contracted, salability of these residences occasionally is affected adversely. For example, one respondent indicated that a post-flood second mortgage was taken to repair a damaged residence and that he had pledged another house and securities as collateral. In order to sell either house (or market the securities), a special release would have to be secured. The financial practice of assigning unrelated collateral to new mortgages has restricted the subsequent ability of Fairbanks residents to liquidate their asset holdings.
- (4) Newly created mortgages have placed many Fairbanks residents in a position of financial tightness in terms of their fixed debt load relative to anticipated monthly income. In other words, the total monthly payments for mortgage and utilities of a significant number of families have risen to a point of near insolvency.

Knowledgeable persons also admit that financial relief available to homeowners has amounted in some cases to legal and contractual discrimination. For example, it is readily apparent that homeowners who

had borrowed on F.H.A. and G.I. loans (and who had a large debt outstanding) fared much "better" than persons who had purchased residences by private transaction (e.g., escrow) or by "conventional" mortgage. In other words, the availability and amount of emergency protection, whether forbearance or new secondary financing, was very much improved in the case of federally-supported mortgage financing. Obviously, this situation works to the detriment of private financing and favors federal involvement in local mortgage markets. Many homeowners were placed in a no-choice position with regard to new financing, i.e., a no-bargaining position because of the immediate need for housing.

Since August 1967, secondary mortgage markets have become more costly. Fairbanks area mortgage loans may now be considered "high risk" and thus may contribute to increasing costs of borrowing to residents. Taking the post-flood situation altogether, many Fairbanks households have been placed under increasing personal financial burdens due to the disaster. Increased out-migration of households is one possible result which could be expected for several years. This type of migration was observed through mid-year 1968. Within the area, households have been shifting out of the less desirable flood damaged residential areas, some to more favorably situated neighborhoods and often outside the city limits. During the fall of 1967, construction starts in Fairbanks increased slightly, but on most occasions repair and modernization work was actually delayed. (See Table 3.) In the past ten months, construction costs have increased, as has an associated inflation in housing costs. As a result,

TABLE 3
 COMPARATIVE NUMBER OF BUILDING PERMITS ACCORDING TO TYPE ISSUED BY THE CITY OF FAIRBANKS
 SEPTEMBER, OCTOBER AND NOVEMBER, 1966 and 1967

Month	Type of Permit Issued						Total 1966 1967
	Building 1966 1967	Plumbing 1966 1967	Electrical 1966 1967	Miscellaneous 1966 1967			
September	41 104	35 15	31 41	52 39			159 199
October	16 80	8 12	37 56	13 17			74 165
November	13 49	9 12	9 27	2 1			33 89
Total (3 months)	70 233	52 39	77 124	67 57			266 453
Percent increase 1966-1967	-- +233	-- -25	-- +61	-- -15			-- +70

SOURCE: City of Fairbanks.

one would expect favorably situated and undamaged dwellings to enjoy price advantages for the next several years.

Public Sector

Damage to the public sector was difficult to appraise, except for the immediate requirements for repairing schools, main roads and major buildings. Much of the loss of the community's public wealth, such as damage to water and sewer lines and to the municipal utilities systems (e.g., telephones), will take several years to fully identify. The telephone system has not operated as designed through mid-1968. The transportation system was operable within days after flood waters receded, but some roads still are in need of repair; the school system opened on schedule with certain shortages in facilities. In general, the community has received reduced governmental services.

It is readily apparent from Table 1 that the vast proportion of damages was concentrated in the business and industrial sector, and the majority of government property loss was at Fort Wainwright.

Response to Disaster and Outlook

Government Purchasing and Contracting

Following the flood, government contracts for clearing debris and repairing public facilities were instituted. This increase in local construction contracts remained fairly small in comparison to highway construction of previous years and the current University building program.⁴

⁴A summary of this contracting activity is found in G. M. Jones, "Impact of Fort Wainwright and Eielson A.F.B. on Fairbanks, Alaska," (College: unpublished M.B.A. thesis, University of Alaska, 1968).

TABLE 4

PROPOSED PROJECT AND ESTIMATED COST OF
CHENA RIVER, ALASKA, UPSTREAM STORAGE SYSTEM
AS OF 1968

<u>New Facilities Construction</u>	<u>Costs</u> (\$000)	<u>Percent</u>
(a) Main Chena Dam	87,200	77.
(b) Little Chena Dam	10,500	10.
(c) Tanana - Chena River Levee	<u>15,300</u>	<u>13.</u>
	113,000	100.
<u>Annual Operating Costs</u>		
(a) Main Chena Dam	311	77.
(b) Little Chena Dam	30	7.
(c) Tanana - Chena River Levee Operation and Maintenance	<u>64</u> 405	<u>16.</u> 100.

SOURCE: U. S. Army Corps of Engineers

Given the prevailing conditions of federal expenditures for the remainder of 1968, little is expected in the way of new government contracts for the Fairbanks area. Consequently, employment opportunities and personal income patterns have already returned to pre-flood levels.

Proposed Chena River Reservoir

The overall flood control plan for the Fairbanks area has been studied previously.⁵ A Chena Dam project, the cost summary for which is shown as Table 4, appears entirely feasible and is likely to be funded.

⁵See bibliography.

When finally approved, the project would require several years to design and construct. The proposed dam does not include hydroelectric generating facilities, and its use to support the city water system does not appear feasible. All in all, the project represents potential construction employment and flood protection, but its secondary benefits would be relatively small.

New Opportunities

The demolition of many older structures, particularly in the city, coupled with the modernization of many commercial enterprises, has led to marked overall improvements in the downtown business district. Very probably, wholesale and retail trade and logistics are being carried on in 1968 more efficiently than prior to the flood. A community's response to disaster is often associated with new construction and development of industry. Major changes in the economic base tend to occur more rapidly at these times, and an expansion of business often follows a natural disaster, as was the case in Anchorage after the 1964 earthquake.

Outlook

For the most part, the business conditions and trends which prevailed in Fairbanks prior to the flood remain substantially unchanged in 1968. The public and private wealth of the area were extensively damaged, then partially repaired or replaced, and new debt was created to finance this recovery. For the coming three years, no major sources of growth are readily apparent. Even using optimistic forecasts for improvements in the federal budget and national money markets, the favorable effects would not have a major impact upon Interior Alaska for some time.

APPENDIX A

SURVEY FORMAT OF PERSONAL PROPERTY DAMAGE DUE TO
FLOOD OF AUGUST 1967 AT FAIRBANKS, ALASKA

Team No. _____
Inspector _____

REPORTING AREA

LEGAL DESCRIPTION _____

ASSESSED VALUE: Land _____ Improvements _____ Total: _____

Property Address _____

Owner;s Name _____
(Last name first)

Occupant's Name _____
(Last name first)

BUILDING CLASSIFICATION
Residential
1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____
Mobile
9. _____
Commercial/Industrial Tax Exempt

BUILDING AREA AND OCCUPANCY

Area _____ (sq. ft. first flr.) No. of Units _____ No. of Occupants _____

CLASSIFICATION/DAMAGE

Building:
1. Unsuitable for rehab. _____
2. Structural damage repairable _____
3. Water damage _____
4. Undamaged _____
Land:
Damage 1. Yes _____ 2.No. _____
Site Improvements:
Damage 1. Yes _____ 2.No _____
Amount _____
Struct. Damage Only
Lump Sum to Restore \$ _____

BUILDING STATUS

Basement:
Type 1. Half _____
2. Three Fourths _____
3. Full _____
Finish 1. Unfinished _____
2. Partial _____
3. Finished _____
Flooded 1. Yes _____
2. No _____

WATER LEVEL: (related to height above finished first floor)

- 1. One inch above _____
- 2. 12 inches above _____
- 3. 3-12 feet above _____
- 4. To and including ceiling _____
- 5. Over second floor _____

HEATING UNIT STATUS:

- 1. Non-submerged _____
- 2. Submerged over burner _____
- 3. Submerged over controls _____

SURVEY OF PERSONAL PROPERTY DAMAGE DUE TO THE
FLOOD OF AUGUST 1967 AT FAIRBANKS, ALASKA

(Continued)

HEATING UNIT DESCRIPTION:

Type 1. Hot Air _____
2. Hot Water _____
3. Steam _____
4. Space _____

Fuel 1. Oil _____
2. Coal _____
3. Electric _____
4. Gas _____

UTILITIES DESCRIPTION:

Type:

Provided by:

Electricity	1. Yes _____	2. No _____	1. Individ. _____	2. Public _____
Water	1. Yes _____	2. No _____	1. Individ. _____	2. Public _____
Sewer	1. Yes _____	2. No _____	1. Individ. _____	2. Public _____

Status:

1. Oper. _____ 2. Inoper. _____
1. Oper. _____ 2. Inoper. _____
1. Oper. _____ 2. Inoper. _____

TIME TO REPAIR:

1. Habitable Now _____
2. By Oct. 1 _____
3. By Nov. 1 _____
4. After Winter _____

MORTGAGE STATUS:

Mortgage Bank Name _____

Mortgage Balance _____

NUMBER OF VACANT RENTAL UNITS _____

DAMAGE LOSS IN DOLLARS \$ _____

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