MARKET GATEKEEPERS: THEIR IMPACT ON PROPERTY VALUES FOLLOWING FLOODING IN LIBERTY COUNTY, TEXAS

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Introduction

In December and January 1991/92, sixteen subdivisions along the Trinity River in Liberty County, Texas were flooded. This was the fourth flood in three years and affected more than 270 residences. While many of the houses were elevated above the flood level, the disruption caused by flooding was both widespread and long-lasting. When the County was visited in January, approximately three weeks after initial flooding, some of the subdivisions were accessible only by boat, and the extent of damage had not been fully assessed.

The Trinity Valley is an area of frequent flooding (see Table 1), and these particular subdivisions have been flooded four times during the last three years. The flooding is linked, in part, to operation of Lake Livingston Dam that stores water for the City of Houston. The data in Table 2 detail characteristics regarding capacity and operation of Lake Livingston Dam. Flooding is particularly severe when large water releases are required to preserve the integrity of the dam. Typically, management of such facilities is predicated on one of two strategies: release of water in anticipation of extreme precipitation levels or release of water during and following such precipitation events. Since the former is dependent on the certainty of occurrence of needed precipitation, the latter management option has been used. Thus, flooding of low-lying areas is expected to recur.

Given the frequency, magnitude, and duration of flooding (see Table 3), Liberty County provides a useful case study for analyzing the extent to which market gatekeepers (eg., realtors, insurance agents, and mortgage lenders) influence property values and sales. Thus, during our visit to the County, we toured several of the flooded subdivisions (two by car, one by boat) and spoke to realtors, appraisers, and residents, as well as the Emergency Management official. We subsequently developed and distributed a questionnaire to real estate companies, insurance brokers, and banks. This report presents our findings in two sections, the first dealing with the results of our visit and the second focusing on questionnaire results.

Results from the Site Visit

While in Liberty, in addition to touring several of the affected subdivisions, we spoke to the head of Emergency Services, local residents, realtors and appraisers. Field reconnaissance showed that those houses elevated on stilts suffered little or no

damage to structures or contents while houses remaining at ground level or those raised only minimally suffered to a great extent. Nonetheless, disruption to the community and to the regional economy was considerable, as many residents were relocated in shelters, motels, and with friends for the duration of the flood. Certainly this continual disruption is expected to play a major role in devaluing properties.

There was a wide range of property types found in the floodplain, with expensive houses interspersed with very poor quality structures. In addition, some housing consists of second homes (weekend retreats) built to take advantage of the riverfront or the lakefront locations that dot the floodplain. As a result, disruption, though significant for some, is not an issue for other owners of what is locally termed the "river bottom."

Attitudes of local residents toward the flooding and its impact on property values varied. However, all residents we talked to expected to experience more flooding in the future. One resident, who fully expected to see a decrease in property values, suggested that it was possible to blame two floods on someone else, but by the time a third one came, he had to begin looking at why he, or anyone else, would live in such an area.

Because of the timing of our visit (around a weekend), it was difficult to contact many gatekeepers. However, we were able to develop at least anecdotal evidence of attitudes toward flooding. It is clear from the evidence collected that average house values both within and between subdivisions varied considerably from a few inhabited predominantly by higher income groups and others predominantly by lower income groups. Changes have occurred over time as well. For example, one subdivision (Old Snake River) was originally developed as weekend homes. However, once Lake Livingston was built, those who could afford property on the "big" lake moved there, and the housing in Old Snake River Subdivision filtered down in value. Thus, some of the changes are clearly not related to the flood problem, although flooding may have influenced decisions to move.

According to our sources, realtors are generally reluctant to list houses in the flooded subdivisions. These properties were thought to be too much trouble for the effort involved. Our sources also reported that houses in the subdivisions are estimated at 50% lower in value than comparable non-flooded property. In addition, some realtors have the perception that residents believe their houses to be worth 50-70% more than they actually are. However, the agents stated that these are people who "like that kind of living."

When asked about relocation as a possible adjustment to frequent flooding, a realtor responded quite negatively. He suggested that residents would benefit considerably because FEMA would have to purchase alternative property well above the current value of their homes. Consequently flooded residents would be trading low value dwellings for upmarket property because housing in non-flood areas is not available at the same price.

Questionnaire Results

A total of thirty-nine questionnaires was distributed, with seventeen going to real estate firms, seventeen to insurance companies and five to banks. All companies and banks listed in the Liberty County telephone book were included. Response results vary significantly, with four out of five banks responding and seven out of seventeen (41%) insurance brokers responding. Unfortunately only two usable questionnaires were received from realtors, so they are not included in the analysis. In fact, information gleaned from these two questionnaires was no different than the information we obtained during our visit to Liberty County.

Mortgage Lenders. All of the banks grant mortgages on floodprone properties, though these properties account for less than 10% of mortgages granted. In addition, all take a property's location relative to the River into account in their lending decisions. Nonetheless, the banks do not limit the size of loans, based on location in the floodplain.

All of the mortgage lenders who responded believe that floodplain properties are lower in value than houses outside the floodplain. Three out of four attributed this difference solely to the flood hazard. On the other hand, these bankers do not believe that the depreciating effect of flooding extends beyond the immediate hazard area, such that nonfloodplain properties are affected by the local disamenity.

It appears, then, that mortgage lenders recognize value differences between floodprone and nonfloodprone properties. While this does not mean they will not invest in floodprone properties through mortgage loans, it does suggest that the level of investment will be low. That 75% of the bankers attribute the differences solely to flooding suggests that the flood risk depreciates values, irrespective of other contributing factors.

Insurance Agents. Of the seven insurance companies responding to our questionnaire, six reported that they sell flood insurance. These agents estimate that they sell between 10 and 30 flood insurance policies per year, with one noting that he had sold only three policies up until the 1991/92 floods. At that time he sold more than 40.

All agents report an increase in the number of people asking about flood insurance in the past three years, and all say this comes from people living in flooded areas. However, one suggested that 10% of the increase came from outside the flooded areas.

The agents were asked to estimate the costs of policies as well as the amounts of coverage that are common. The results are presented in Table 4. There is wide variation in both costs and coverage; however an average policy costs approximately $260 per year. The wide range in coverage on structures (from a high of $185,000 to a

low of $7,000) and on contents (with a high of $75,000 and a low of $2,000) speaks to the variety of housing types and values in the floodprone subdivisions.

The agents differ somewhat on the number of policy holders making flood insurance claims. One reported only three claims out of ten policies in 1991, while others spoke of 80%. It appears, however, that virtually 100% of all flood insurance policy holders have made claims since 1988. The agents also provided somewhat different estimates of the number of floodprone properties that are insured. Two out of six reported that 25-50% of the houses in flooded subdivisions are insured, while three estimate an adoption rate of 10-25%. One agent suggested that less than 10% have purchased it.

Perhaps even more illustrative of these agents' views of floodprone lands are their comments about flood insurance. While certainly not scientifically nor statistically sound, the comments suggest a similar attitude as that of realtors to the people who live in the subdivisions along the Trinity River. As an example, one insurance agent wrote: "People move into the river bottoms so they can apply for aid after the next flood." A similar statement is "Most people in flood areas do not purchase flood insurance because they know they will get some assistance from the government." This, however, is contrary to Federal regulations which require that post-flood disaster assistance be withheld for homeowners in the 100-year floodplain without flood insurance. Finally, several insurance agents suggested that residents seek flood insurance just "...before the River rises."

Summary and Conclusions

The results of our research, both on-site and from questionnaires, indicate that all three groups of "gatekeepers" view the floodprone subdivisions as lower-valued properties. While mortgage lenders did not exhibit a reluctance to handle these properties, realtors certainly did. The fact that some real estate agents admitted avoiding handling these properties speaks to the value agents put on them. Further, insurance agents seem to be cynical about floodplain residents' motives for insuring their houses against flooding.

It is clear that houses in the subdivisions along the Trinity River are, for the most part, of lower value than nonfloodprone houses. Whether the market gatekeepers we studied had a role in the development of this difference, or whether they are merely reflecting the difference, is not entirely clear. However, there is a distinction, both economically and socially, between floodprone and nonfloodprone properties in Liberty County, and both public and private actions have served to perpetuate that distinction.

This research addresses private actions, as seen in the actions and attitudes of real estate agents, insurance agents, and mortgage lenders. What needs to be evaluated now is the role of public actions, particularly the decision to elevate 200+ houses

rather than relocate the residents. While this certainly minimizes property damage from flooding, it does nothing to minimize disruption caused by three weeks of high water. This is the direction of the next phase of our research on Liberty County.

Table 1

MAJOR FLOOD EVENTS AT LIBERTY, TEXAS

	GAUGE HEIGHT (ft)	DISCHARGE (cfs)
MAY 1942	29.38	114,000
MAY 1990	30.03	107,000
JAN 1992	29.72	N/A
APR 1945	28.8	104,000
MAY 1957	29.26	88,100
MAY 1944	27.81	64,000
MAY 1958	28.35	58,000
MAY 1953	28.02	53,200
JAN 1961	28.28	52,400
JUN 1965	28.32	46,700
MAY 1922	28.6	N/A
FEB 1920	28.4	N/A
MAY 1914	28.3	N/A
JUN 1929	28.3	N/A
JUN 1908	28.1	N/A

NOTE: Data collected from various sources but based on USGS statistics. Return periods not calculated because of incomplete data. Figures based on annual maximum series.

Table 2

LAKE LIVINGSTON DAM

EARTHFILL DAM	14,400 (ft)
TOP	145 (ft)
DESIGN FLOOD	135 (ft)
MEAN ANNUAL DISCHARGE	20,000 (cfs)
DRAINAGE BASIN AREA	16,600 $(miles)^2$

STORAGE AND DISCHARGE MAY 23rd 1990:

LIBERTY	107,000 (cfs)
DAM	103,600 (cfs)
DAM STORAGE	1.84M (acre feet)
DAM STORAGE (max)	2.14M (acre feet)
DAM (MAR 30th)	1.98M (acre feet)

Table 3

SEASONALITY OF FLOODING IN LIBERTY, TEXAS

JAN - MAR	21%
APR - JUN	66%
JUL - SEP	5%
OCT - DEC	8%

DURATION OF FLOODING IN LIBERTY, TEXAS (1990)

JAN 27th	19,300 (cfs)
JAN 30th	22,300 (cfs)
FEB 2nd	17,300 (cfs)
MAR 17th	20,800 (cfs)
APR 2nd	45,900 (cfs)
APR 23rd	18,700 (cfs)
APR 28th	20,100 (cfs)
MAY 15th	44,300 (cfs)
MAY 23rd	107,000 cfs)
JUN 8th	41,700 (cfs)
JUN 25th	18,800 (cfs)

NOTE: In calendar year 1990, discharge exceeded bankfull for 100 days and serious flooding levels for 23 days.

DURATION OF FLOODING IN LIBERTY, TEXAS (1991-92)

DEC 27th	28.25 (ft)
JAN 1st	29.70 (ft)
JAN 3rd	29.72 (ft)
JAN 5th	29.72 (ft)
JAN 12th (?)	N/A

NOTE: Incomplete data on when flood finally subsided. There were fluctuations in discharge during January 1992.

Table 4

Insurance Costs and Coverage Levels

Policy Costs			Structure Coverage			Contents Coverage		
Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
275	375	125	50,000	125,000	10,000	10,000	75,000	2,000
250	400	115	60,000	90,000	7,000	30,000	30,000	4,500
250	350	110	40,000	185,000	7,000	25,000	60,000	4,000
350	600	150	20,000	80,000	11,000	10,000	35,000	4,500
300	600	75	15,000	140,000	7,000	5,000	45,000	3,000
150	--	--	50,000	175,000	30,000	12,000	50,000	2,000