

Taking on the Floodplain Project (2002-2003) Final Project Report

Summary

A sizable area of the Eastside of Lansing is designated as a 100-year floodplain by the federal government, a designation that discourages redevelopment and renovation in the area. This year, working with the three organized neighborhood groups in the floodplain, we 'took on the floodplain'. Our objectives were to:

- Gather information on the Eastside flood plain, including history of flooding in this area, topographical information, local, state and federal floodplain policies, local emergency response plans, development feasibility studies, and engineering-related flood mitigation efforts since the most recent 1975 flood.
- Educate residents about the institutions that regulate the floodplain
- Strengthen/help organize neighborhood organizations in the floodplain
- Generate institutional interest in the floodplain

The first phase of this project involved extensive information gathering. We met with the Township Supervisor, City of Lansing engineers, representatives from the Drain Commissioner's Office, Emergency Planning experts, and MSU Water Resources professors to gather pertinent data to share with residents of the three neighborhoods falling within the flood plain. Two large public meetings were held in collaboration with FAIR Neighbors, as well as many smaller planning meetings with housing ambassadors from the area. The Narrative below summarizes the information we shared with neighbors.

It was a learning opportunity for all of us as we pored over topographical maps and examined very old newspaper articles and photos dating back to 1904. The photos were sobering, depicting, as they did, large portions of our neighborhood inundated by the Red Cedar. We noted that current experts talk about 'when', not 'if', the river will flood again. Both City of Lansing and Lansing Township officials express concern about the physical and social environment in the floodplain, and appear ready to take action.

The folks who have not weighed in (in substantial numbers) are the residents, hence our request for funds (approved by MSHDA in June 03) to conduct a survey of the roughly 400 households in the floodplain. The survey will give us information on the condition of houses and other structures, owners' plans (if any) regarding renovation or relocation, and their concerns about the neighborhood. Following this, we will work with our new partners-both in the neighborhood as well as City, County, and Township officials, to host a Floodplain Summit. The Summit will be designed to bring all shareholders together to begin to develop an action plan for stabilizing and improving the area.

Performance Target	Delivered
A brief report will be prepared, detailing our findings re: the process whereby floodplain designations are given/withdrawn.	In conducting extensive research on the Urbandale Flood Plain, we looked at flood history, mitigation efforts, feasibility studies, emergency response plans, policies, & topography.
Four potential leaders living in the floodplain will be identified.	Four leaders have been identified, and are currently involved in our floodplain task force.
Two meetings will be held in the floodplain to focus on housing issues & barriers to development.	30 neighbors attended two meetings focusing on housing issues and flood plain challenges.

Narrative

The portion of the Eastside that falls within the 100-year floodplain, often referred to as Urbandale, is roughly bound by S. Fairview Ave on the west, Michigan Ave on the north, US-127 on the east and I-496 on the south. The Red Cedar River runs along the south side of the neighborhood's south border, which is I-496. Three neighborhood organizations, F.A.I.R., Frog Holler and Square One, cover the area and represent over 750 homes, 400 of which are in the flood plain. As you travel south through these neighborhoods, the quality of the housing stock deteriorates, the elevation drops and the land gets wetter. Portions of Urbandale can lie as much as 7 feet below the elevation of the riverbed just south of I-496. In recent years, these neighborhoods have been protected from flooding by the construction of US-127 and I-496.

On the eastern side of these neighborhoods, the land use changes from residential to a mix of commercial, industrial and residential. The City of Lansing ends and Lansing Township begins east of Mifflin Street. Lansing Township, which rings much of the City of Lansing, provides its own police and fires services to its homes and businesses. With this mix of residential, commercial and industrial lots and limits on the kinds of improvements that residents can make, many of the problematic properties in the neighborhood are found within the boundaries of the 100-year floodplain.

How are Floodplains Designated?

A floodplain is established using statistical analysis of records of river flow, storm tides, and rainfall; information obtained through consultation with the community; floodplain topographic surveys; and hydrologic and hydraulic analysis. In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the federal government as the base flood for purposes of flood plain management measures. Small areas within the flood boundaries may lie above the flood elevations and not be subject to flooding. There are (with increasing degrees of severity) four categories of floodplains: 500-year, 100-year, 50-year, and 10-year. These are defined as the floodplains associated with a flood that has a 1-percent annual chance of being equaled or exceeded in any given year. Therefore, the 100-year floodplain is not a flood event that happens once in a hundred years, rather a flood event that has a one percent chance of occurring every year. Areas between the 100-year and 500-year flood

boundaries are termed “moderate flood hazard areas” and do not have the limitations to development that properties within the 100-year flood boundaries.

There are three major classifications for floodplains. These categories- starting with the one that runs the most risk of flooding are V, A, and X. The Urbandale neighborhoods fall within portions of A and X. V zones apply to beachfront properties and have increased risk because of wave velocity and are not found here in Urbandale. The A zones are the most volatile of Special Flood Hazard Areas and designated areas are subject to rising waters and are often usually near a lake, river, stream or other body of water. These “A” zones, of which Urbandale is a part, are subject to inundation by a 100-year flood. Flood insurance, which can add up to a larger payment than homeowner insurance, is mandatory for residents living in an “A” zone. Portions of Urbandale also fall into the “X” category and are at either moderate or minimal risk of flooding. Flood insurance is not mandatory for homeowners in an “X” zone but can be purchased for as little as \$100.00/year. Flood insurance is offered by the federal government and provided by local insurance agencies. The cost of the insurance is regulated by the government and does not change with individual providers. Neighbors living in the floodplain often purchase their flood insurance from the providers of their homeowner insurance.

Residents are eligible to purchase floodplain insurance because both the Township and City participate in the National Flood Insurance Program. In return for agreeing to regulate construction in the portions of the community that lie within a floodplain, the City ensures that the residents already living within the floodplain boundaries are eligible for flood insurance.

When a resident or developer wishes to build in the floodplain, they must apply to the Michigan Department of Environmental Quality (MDEQ) for approval. (MDEQ receives its authority from the Environmental Protection Agency). The MDEQ mandates that no residential construction can occur in the “floodway” and that nonresidential construction can only occur if that construction does not increase the level or velocity of the flood.

The floodway is the portion of the floodplain that is closest to the river and is the first to flood. The Federal Emergency Management Agency (FEMA) mandates that absolutely no development can occur in these areas because of the risk of contributing to the rise of base flood elevations in other communities within a floodplain.

Working with the Institute for Water Research at Michigan State University, ANC gathered topographic, hydraulic and floodplain zoning information for the Urbandale neighborhoods. Using ArcView Geographic Information Systems, the data was displayed at each monthly meeting of the neighborhoods and could be easily referred to when discussing the latest information collected about the floodplain.

History of Flooding on Lansing’s Eastside

Our research has shown that the Urbandale neighborhoods have had four substantial flood events in the last 100 years, with the earliest recorded flood in 1904 and the most recent event occurring in 1975. A number of compounding factors, including pump failures and plugged sewers, contributed to the dramatic flooding seen by neighbors during the most recent flood in 1975. In the twenty-eight years since the 1975 flood

event, there have been institutional and environmental changes in the floodplain. During the 1975 flood, the failure of pumps moving water from storm drains to the Red Cedar River resulted in water traveling back through the storm sewers and up into the neighborhood. Lansing's Combined Sewer Overflow (CSO) Control Project has changed how water flows into and out of the neighborhood and we invited representatives from the City of Lansing to share with us how these changes have affected the floodplain. We initially speculated that the changes in the CSO could effect the designation as a floodplain.

Large Public Neighborhood Meeting with the City of Lansing

On September 5th, 2002, two engineers from the City and the Supervisor of the City's Operations and Maintenance Office shared with 20 neighbors the changes made to the sewer systems to protect residents from some of the pump failures and plugged drains that contributed to the flooding in 1975. Neighbors learned that during extreme events, gate valves at the new Harton Street Storm Water Pump Station protect neighbors from flood waters traveling back up the drains into these neighborhoods. While these improvements will prevent the river from backing up through the storm system into the floodplain neighborhoods, the potential for flooding still exists. When the Grand River exceeds its banks, the neighborhoods west of US-127 will be protected from flooding until the floodwaters rise to an elevation of approximately 829 ft. At this elevation, the river will flow into the neighborhood at the points where Kalamazoo St and Michigan Ave cross underneath the highway.

Lansing Township and the Floodplain Feasibility Study

The meeting with the City of Lansing showed how the CSO project and changes to Harton Street Pump Station have protected floodplain residents from *some* of the flooding that occurred during the 1975 flood. To gather information about the portions of the floodplain that lie within Lansing Township and to introduce our group of neighbors to the Township government, community members and ANC staff attended a Lansing Township Planning Committee meeting in the fall of 2002. During this meeting, the township shared with the neighborhood a Floodplain Feasibility Study they had commissioned in 1998. The study answered many questions neighbors had about the institutions responsible for assisting them in the event that a flood occurs and also listed possible measures that could be implemented to protect neighbors from flooding.

Completed in October 1998, this study found that although major changes have taken place in the area since the 1975 flood, they "*...did not significantly increase the storm drainage capacity in the Urbandale area.*" Although the pump station changes have increased reliability of the system, the floodwater protections will be exceeded if floods exceed the 10-year floodplain boundary elevation of 829.5 ft. After looking at these changes, the authors of this study concluded that Urbandale suffers the greatest risk of flooding not because of inadequate pumps or pipes, but rather because of the very low elevations of the area--- an observation shared by the City engineers during their presentation on September 5th, 2002.

The Township Feasibility Study also addressed the possibility of creating levees at Kalamazoo Street and Michigan Avenue. Although creation of the levees meets the criteria for remapping under the FEMA guidelines, it would require that Kalamazoo St.

be raised above the levels of the 100-year floodplain (a 12.6 ft raise). The Study concluded that this construction would not be feasible, given that the portions of Kalamazoo St. needing to be raised are in the floodway of the Red Cedar River. Hence, construction would violate the Federal, State and local regulations about building in floodways.

At this point, residents abandoned the notion of challenging the floodplain designation. The reports, pictures and articles they had been studying had convinced them that the designation was appropriate. From then on, the group focused on protecting residents from a flood event. While some still felt that exempting homes at the edge of the 100-year floodplain from restrictions might still be possible, the majority felt that the most pressing concern was to ensure that residents in the heart of the floodplain will be well-served by the governmental organizations responsible for preventing flooding and providing relief if efforts at prevention fail.

Connecting with the Ingham Co. Emergency Planning Committee

Don Sherman, housing activist and member of the F.A.I.R. neighborhood and Travis Stein, LISC AmeriCorps member at ANC attended a meeting with the Local Emergency Planning Committee to gather information about the complex group of institutions that regulate floodplains and emergency responses when these areas flood.

The two reported back to neighbors the following information: The Ingham County Sheriff's Office appoints an Emergency Services Coordinator (ESC) to administer the County's emergency plan, the Emergency Operations Plan (EOP). This office warns communities of danger although it is the responsibility of the political subdivision (in our case the Township and the City) to make the initial response to a flood. The responsibility for warning residents of a flood and implementing emergency management services for the area is divided between the City and the County. The Ingham County Sheriff's Office is responsible for notifying the township (as well as E. Lansing, Meridian Twp and Delphi Twp) about flooding and has developed emergency plans for these areas.

The May 5, 2003 Meeting

At the request of FAIR Neighbors and ANC, representatives from the City of Lansing and the Ingham County Drain Commission shared their emergency response plans with residents at a 2nd large public meeting that took place on May 5th, 2003. In this meeting, neighbors learned how the County, City and Township cooperate to warn and evacuate residents in a flood event. In the event of a flood, the Sheriff's office will be working with the Red Cross and first responders, providing shelter and assistance for people to get out of the path of the floodwaters. The Sheriff's office hopes to use a portion of a \$300,000 federal Project Impact grant to install river gauges to watch and research water levels to better predict when flooding will occur.

The individual responsible for community outreach and education around emergency response in the City of Lansing is Rhonda Oberlin. Rhonda, along with Paul Pratt from the Ingham County Drain Commissioner's Office, shared the emergency response for the floodplain. Rhonda also described their efforts to organize neighborhoods to act as first responders in the event of an emergency. She proposed that her group work with F.A.I.R. neighborhood to develop blocks of "Citizen Core" teams this fall. Residents

responded with interest. In addition to these teams, neighbors have expressed interested in gathering a database of residents with disabilities. This database, if developed, will be held by the Center and shared with City and County emergency responders if ever an evacuation is necessary.

At the May 5th meeting, neighbors suggested that if the river overflows its banks, temporary or permanent barriers be placed at Michigan Avenue and Kalamazoo Street to prevent the river from reaching into the Urandale neighborhoods. Specifically, they requested that sandbag dikes, earthen levees, or inflatable barriers be considered to protect Urandale during threatened flooding. The use of sandbags to stop the flow of water is only reliable to a height of 3 feet. This protection will block 100-year flood levels from moving into Urandale from Michigan Ave but floodwaters may still enter the neighborhoods through the Kalamazoo St. underpass.

Temporary earthen levees need to be built 2 feet higher than expected flood depths and should not be relied on to hold back more than 6 ft of floodwaters. Again, while this strategy may hold merit for Michigan Ave., it appears that it may not work for Kalamazoo St. Further, these measures are expensive and labor intensive.

In summary, none of these temporary measures is thought to be effective in providing 100-year flood protection at the Kalamazoo Street location. Nevertheless, Rhonda and neighbors agreed that Rhonda would hold further discussions about the sandbag option with appropriate authorities.

Established and Emerging Neighborhood Leaders

Throughout this information-gathering period, several residents contributed countless hours to digesting the often confusing and technical research, meeting with various boards and governmental representatives, and then planning and hosting large and small meetings with neighbors to share what they had learned. These include Ruth Leyrer (president of FAIR), Tootie Eitmear (president of Square One), Don Sherman, Missy Austin, John Martinez and Michelle Roberts. These six, along with institutional stakeholders from the City and County, will comprise our Flood Plain Task Force, an advisory group for ANC as we move into the next phase of this project.

Learnings

1. The first learning was that there is little chance or justification for changing the designation of the area currently designated as a 100-year floodplain. Early in the year, our task force determined that our immediate concern should be adequate planning for the protection of the people living in the area in the event of flooding. The group resolved that the neighborhood would be involved in shaping emergency response along with the myriad governmental organizations and first responders charged with this task.
2. The problems of Urandale are many and complex. Any plan for neighborhood improvement that stands a chance of success will require that all stakeholders be involved. This includes residents (far more than have been involved to-date), City of Lansing planning, public service, and emergency planning personnel, and Township officials.

While we have learned much over the past year about flood plain policies, history, engineering efforts to mitigate floods, etc., we still don't have a good read on what the people living in the 400 households that make up the floodplain want. Our survey of these households, scheduled for this fall/winter, will shed light on their concerns, plans for renovation or relocation, and hopes for the area. It will also offer an opportunity to invite their participation in a Summit event this spring, during which all stakeholders can assess the 'state of the floodplain' and begin to develop a comprehensive action plan for improving the health, safety and stability of the area.