Flood-proofing/Buyout Study

Prepared for
Prior Lake-Spring Lake Watershed District

by
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1.0 Floodproofing/Buyout Study

This report summarizes the findings of the Prior Lake Floodproofing/Buyout Feasibility Study. The purpose of this study is to evaluate the economic viability of floodproofing or buying out certain low elevation homes, located on Prior Lake and Pike Lake, and also to identify possible funding sources for floodproofing/buyout. No decisions have been made by the Prior Lake-Spring Lake Watershed District as of the date of this report as to the viability and desirability of floodproofing or buyouts. Decisions have also not been made as to whether or not these practices are a good use of local government resources. These decisions will be discussed as part of broader flood and outlet channel strategies currently being assessed by the District. Homes assessed in this study were those in the District's database with a low entry elevation at or below 905 MS.

The report is separated into two sections—Section 1: Floodproofing/Buyout Options and Section 2: Floodproofing Funding Options.

1.1 Floodproofing/Buyout Options

Several options were considered for floodproofing or buying-out the ten homes evaluated. These options included:

1. Construct a dike around the home and install a wall waterproofing system, foundation drain and pump station. This option is only viable for homes with low floors that are at least 3 feet above the normal lake level. The foundation elevation for nearly all of these homes is near or, in some cases, below the normal level of the lake. Dewatering is not possible in these situations, as pumps would run continuously.

2. Fill the home's basement or lower level and turn it into a crawlspace. The homeowners would likely need to be compensated for their loss of space. These compensation costs are assumed to be at least as expensive as elevating the homes and possibly more expensive. In some cases, the home did not have a lower level, so this would not be an option for those homes.

3. Have the District purchase the land, demolish the homes, and resell the land for residential development. This option is not possible with the state and federal funding sources identified to date. It is our understanding that if the District buys the land with state or federal funds, it must be maintained in public ownership. However, if the District were to use its own funds

or funding sources other than state or federal funds, this option may be viable. In that case, the land could be resold to an adjacent property owner to make one larger parcel. If the lot is large enough it could be resold as a single conforming lot once it was filled to ensure that the new home would be constructed above the 100-year flood elevation. In either case, substantial up-front cash would be necessary. As no such cash source is available at this time, this option was not analyzed in detail for this report.

4. Have the District purchase the land, demolish the homes, and maintain the land in public ownership.

5. Elevate the homes so the lowest floor is one foot above the 100-year flood level of the lake.

This study primarily evaluates options 4 and 5 in more detail for each of the 10 homes. Options 1, 2, and 3 are unfeasible due to the reasons stated above, except for one home on Pike Lake. For that home option 1 was analyzed.

Cost Estimates

For Option 4, the buyout option, the Scott County property tax database provided an approximate value of the land and homes. The database was also used to verify the year the homes were built and their finished square footage. For the cost estimate, a minimum value of $60 per finished square foot was used for the value of the home, except in special circumstances. The value for the land was based on $3,000 per lineal foot of lakeshore owned for the homes on Prior Lake. The length of lakeshore owned was estimated based on site visits and input from homeowners. The home demolition and removal costs were estimated through the input of Veit Companies, Rogers, MN, who have substantial home and building demolition experience. The value for land on Pike Lake was estimated based on the acreage of the lot. See Table 1 for a summary of buyout costs for each property.

Option 1 was assumed to be viable if the low floor elevation of the home is at least 3 feet above the normal level of the lake in question. Prior Lake's normal level is 902.50 and Pike Lake's normal level is 819.0. Based on this criteria only one of the 10 homes reviewed (the home on Pike Lake) qualifies for constructing a dike, wall waterproofing system, foundation and yard drain system, and pump station. A cost estimate for that home was prepared for this option.

For Option 5 (elevating the homes), the study began with contacting each homeowner, further explaining the study and obtaining permission to come onto their property. The visits occurred

between July 9 and September 11, 2002. Of the 11 homes on the list PLSLWD provided to Barr, two were not studied due to the unresponsiveness of the owners. One other home was added to the study at the direction of Paul Nelson. Each home's exterior footprint and any outbuildings on the property were measured. Exterior pictures were taken for future reference and cost estimating. Graphic representations of each house can be found in Appendix A. Photographs of each house can be found in Appendix C.

Several sources were used to help develop the cost estimate for elevating the homes. Paul Doepke (of Doepke Building Movers, Lakeville, MN) estimated the cost to physically raise each of the homes. RS Means Site Work and Landscape Cost Data was used for pricing concrete work and retaining walls. Other estimates were based on local unit cost data from recent construction projects.

The following assumptions were made when preparing the cost estimate:

- Existing structures are sound, without structural flaws, acceptable to current building code, and able to withstand disturbance incurred from procedures in raising the structure to one foot above 100-year flood elevation and lowering it back into place after a new foundation is constructed.

- No hazardous material, including asbestos, exists on the site.

- For homes with finished lower levels, one bathroom in each home will need to be reconstructed.

A summary of costs for elevating the homes under Option 3 can be found in Table 2. A detailed cost estimate for each home can be found in Appendix B. A cost estimate for the home on Pike Lake that qualified for Option 1 is also included in Appendix B.

While visiting the home at 14294 Watersedge Trail N.E., it was observed that two homes, located at 14364 Rutgers and 14369 Rutgers, appeared to have basements at lower elevations than the slab-on-grade home at 14294 Watersedge Trail N.E. Both of these homes were pumping water from their lower levels out to the street. Although these two homes were not included in this study, it is important to note that they may also be good candidates for floodproofing, should the PLSLWD obtain funds for floodproofing.

2.0 Floodproofing Funding Opportunities

2.1 MN DNR's Flood Damage Reduction Grant Program

The Flood Damage Reduction (FDR) Grant Program provides cost-share grants to local units of government for flood damage reduction studies/measures. The grants cover a maximum of 50 percent of total eligible project costs up to $150,000. Grant requests for more than $150,000 must be approved by the Legislature, through the bonding process.

The Prior Lake-Spring Lake Watershed District (PLSLWD) has received the maximum amount of FDR grant monies that they can receive without going to the Legislature. The PLSLWD's draft preferred alternative for flood damage reduction is (1) buyouts and floodproofing (if feasible and provided state or federal funding assistance is available), (2) enhanced rules for new development to control stormwater runoff volumes, (3) upstream storage easements/ facilities to reduce, slow down or store stormwater runoff volumes, (4) optimize the operations of the Prior Lake outlet box, and (5) outlet channel improvements. This alternative is currently being assessed as part of an Engineer's Report expected to be complete by the end of 2002. The preliminary project cost estimate is over $4 million. If the PLSLWD wishes to obtain any more FDR grant money from the MN DNR, the proposed project will have to go through the Legislative bonding process. According to sources at the MN DNR, they are supportive of the proposed PLSLWD project, and the MN DNR's order of priority for the project is buyout of flood-prone property, floodproofing, and outlet improvement.

The Legislature goes through the bonding cycle at least every two years in even-numbered years. However, for the last five years or so, there has been a bonding bill from the Legislature every year. This is likely to continue, especially since the Legislature's 2002 bonding bill was cut in half by the Governor.

Assuming there is a bonding bill in the 2003 legislative session, here are guidelines for the PLSLWD to follow:

- Submit FDR grant application (same application as for the smaller/administrative grants) *for the entire project* to the DNR's area hydrologist, Pat Lynch, no later than March 2003 (sooner is better). The legislative session will start in January and the conference committees will likely begin acting on bonding bills sometime in May.

- Since this is a political process, the PLSLWD managers and staff should be talking to their local legislators (senators and representatives) far in advance to garner support for the project. In addition to the FDR grant application, proposed projects can be brought to the Legislature directly by legislators.

- Also far in advance, the PLSLWD managers and staff should find out which legislators are on the bonding committee, talk to them about the proposed project, and try to earn their support of the project.

2.2 The Federal Emergency Management Agency's (FEMA) Mitigation Grant Programs

FEMA has two programs that would cover floodproofing and buyout of flood prone properties: the Flood Mitigation Assistance (FMA) Program and the Hazards Mitigation Grant Program (HMGP).

FMA Program

The FMA Program helps states and communities identify and implement measures to reduce or eliminate the long-term risk of flood damage to homes and other structures that are insurable under the National Flood Insurance Program (NFIP). Funded projects may include (1) elevation, relocation, or demolition of insured structures; (2) acquisition of insured structures and property; (3) dry floodproofing of insured structures; (4) minor, localized structural projects that are not fundable by state or other federal programs (e.g., erosion control and drainage improvements); and (5) beach nourishment activities (not applicable to PLSLWD).

The FMA Program provides Planning, Project, and Technical Assistance Grants. States and communities may receive FMA Planning grants to prepare Flood Mitigation Plans. In order to receive a FMA Project Grant, communities must be participants in the NFIP and have an approved All Hazards Mitigation Plan, which covers all hazards (e.g. nuclear attack, tornadoes, etc.), not just flooding. The amount of funding available is usually $20 million (nationwide), which means about $400,000 per state. FEMA may contribute up to 75 percent of the total eligible project costs; at least 25 percent must be provided by a non-federal source. Ten percent of the Project Grant is made available to the state (i.e., the MN DNR) as a Technical Assistance Grant to help the state administer the program. Typically, a Project Grant is about $150,000. For PLSLWD, this would only be enough to pay for some floodproofing measures and would likely not be enough to cover the costs of any buyouts.

The FMA Program encourages the states to prioritize the use of FMA funds toward reducing the number of repetitive loss structures insured by the NFIP through buyouts, floodproofing, or raising them out of the floodplain.

HMGP

The HMGP provides grants to states and local governments (not individual homeowners or businesses) to implement long-term hazard mitigation measures *after a major disaster declaration.* HMGP funding is only available in states following a presidential disaster declaration. The applicant (usually a city) needs to show repetitive losses to structures and the project must be located in an area covered by a presidential disaster declaration. FEMA tends to lean towards funding removal of homes/structures from the floodplain, but will fund floodproofing if it permanently removes the structure from the floodplain and can be shown to be more cost-effective than removal. FEMA has a priority scale whereby structures that have four or more repetitive losses are the highest priority and structures that have just one repetitive loss are the lowest priority. As in the FMA Program, prior to receiving any money for floodproofing or buyout, FEMA requires the applicant to prepare an All Hazards Mitigation Plan.

The MN Recovery Task Force (which includes MN Department of Emergency Management [DEM], MN DNR, and others) reviews HMGP grant applications. Through HMGP, FEMA pays 75 percent of the project costs, and the MN DNR will pay 50 percent of the remaining 25 percent (i.e., 12.5 percent). The HMGP can only pay money that's left from the particular disaster declaration. There may still be money left in the 2001 disaster declaration, but not very much.

The PLSLWD needs to determine if they qualify for this program. The first step is to find out if PLSLWD (i.e., Scott County) was included in a presidential disaster declaration area. The DEM, which administers the HMGP program in Minnesota, or their website, should be able to provide the PLSLWD with this information. The PLSLWD should also determine if there have been repetitive losses to the structures included in this study. This can be found out by looking for claims on Prior Lake or Pike Lake from homeowner's flood insurance policies (the MN DNR may be able to assist the PLSLWD in finding this information).

2.3 U.S. Army Corps of Engineers (COE) Small Flood Control Projects and Aquatic Ecosystem Restoration Program

The COE has two programs that might be applicable to the PLSLWD's proposed project: their Small Flood Control Projects and Aquatic Ecosystem Restoration Program.

Small Flood Control Projects

Through Section 205 of the Water Resources Development Act, the COE plans, designs and constructs flood control projects for which the federal cost does not exceed $7 million. To be eligible, potential projects must be assessed and found to have a "federal interest," meaning the project is economically justifiable and environmentally acceptable. If this assessment determines there is a federal interest, then a feasibility study is completed. The initial assessment, and up to $100,000 of the feasibility study, are conducted at full federal expense. The remaining costs of the feasibility study above $100,000 are cost shared 50 percent federal/50 percent non-federal sponsor. The project design and construction costs are generally cost shared 65 percent federal/35 percent non-federal sponsor. The COE and the MN DNR work closely to coordinate efforts and leverage resources.

The proposed projects need to address a significant amount of "public" damage, not just damages to private homes and businesses. For example, public damage could include damage to public roads, bridges, infrastructure, water/wastewater treatment plants, and quasi-public facilities such as hospitals. The PLSLWD proposed project (especially the floodproofing and buyout portions) does not appear to address a significant amount of public damage.

For projects that the MN DNR believes are good candidates for receiving Small Flood Control Projects (Section 205) money, the MN DNR will pick up the 50 percent non-federal share of the feasibility study costs. At this point, the MN DNR does not believe the proposed PLSLWD project is a good candidate.

Aquatic Ecosystem Restoration Program

Through Section 206 of the Water Resources Development Act, the COE completes restoration projects in aquatic ecosystems (e.g., rivers, lakes, wetlands) that restore, improve or protect aquatic habitat for plants, fish and wildlife (Section 206 projects). Before a project is constructed, a detailed investigation must show that there is a "federal interest" in the project (i.e., it is technically feasible, environmentally acceptable, and provides cost-effective environmental benefits). If the investigation determines there is a federal interest, the COE conducts (and pays for) a feasibility study. The maximum amount of federal spending per project cannot exceed $5 million, which includes planning, engineering and construction costs. Section 206 Projects are cost shared 65 percent federal/35 percent non-federal sponsor. Non-federal sponsors must be public agencies.

This is a relatively new COE program. Two Section 206 Projects are located in Minnesota: (1) conversion of Hay Creek, a tributary to the Roseau River in northwestern Minnesota, from a ditch into a natural channel; and (2) creation of a large floodwater storage area upstream of Rabbit Creek in the Bois de Sioux watershed in western Minnesota.

The proposed PLSLWD project calls for "green" approaches for the outlet channel (bioengineering, aquatic habitat creation and greenway acquisition) that may be eligible for the Section 206 Projects funding. Also, some aspects of the PLSLWD's upstream Land Management Program may be eligible for this funding, and if any of the project's components contain a "naturalizing" of a channel, they could also be eligible.