
APPENDIX

Appendix A – Municipal Interviews

Manalapan and Matchaponix Creek Watershed
Preliminary Flood Damage and Mitigation Report
Spotswood Borough Information Gathering Meeting
June 17, 2009
Spotswood Borough Hall
2 p.m.

Attendees at the meeting were as follows:

Name	Title	Phone	E-mail
Thomas Barlow	Mayor	732-416-1824	tbarlow@spotswoodboro.com tbarlow200@aol.com
Karl Martin	Police Chief/OEM	732-416-1852	kmartin@spotswoodboro.com
Marge Drozd (by phone)	Councilwoman	732-991-6153	mdrozd@saintpetersuh.com
Ron Fasanello	Business Administrator	732-416-1823	rfasanello@spotswoodboro.com
Bruce Koch	Borough Engineer	732-727-8000 X221	bkoch@cmeusa1.com
Tim Crandall	DPW	732-921-1044	
Greg Westfall	USDA NRCS	732-537-6054	Gregory.westfall@nj.usda.gov

Introduction

Greg noted that the Natural Resources Conservation Service is at the beginning of the planning process here. A report (not a plan) will be produced which will be an inventory and survey of the flooding problem with some preliminary ideas for solutions. A full plan, with fully developed alternative solutions, would require considerable data gathering including engineering surveys, etc.

Problem Identification

Karl Martin spoke of stormwater runoff that has been coming from large developments in Monroe Township along Forge Road. He noted that Spotswood Borough tends to receive a large amount of floodwater from upstream areas. A system of water bodies exists including Thompson Park lake in Jamesburg, cranberry bogs in Helmetta Borough, DeVoe Lake in Spotswood and Duhernal Lake (a water supply reservoir downstream). The gates on the Thompson Park lake when opened prior to a flood event, help to reduce flooding in Spotswood and Spotswood will usually open the control gates on DeVoe Lake. DeVoe Lake used to be 10-12 feet deep but is now approximately 3 feet deep. Chief Martin described a "dance of the dams" that takes place every time a flood event occurs. The extent of damage is quite dependent on where these gates have been opened prior to the flood event so that there is enough void to handle the additional water. Duhernal Lake is a water supply reservoir for Sayreville.

Chief Martin reported that there was the following precipitation during the 2004 and 2005 flood events:

6-7 inches during a 1-2 hour period in 9/2004

8 inches during a 2 hour period in 7/05
7 inches during 2 days in 4/2007

A review of the FEMA Flood Map revealed that the flood plain delineations are accurate except for Doro Avenue where flooding has occurred.

Mayor Barlow indicated that there had been no flooding prior to the 2004 and 2005 floods. He noted that there had been no first floor damages during either of these events. Spotswood Borough has no agricultural land and has been built-out for the last 10-15 years.

Chief Martin noted that East Brunswick Township has stormwater that enters into a 48 inch stormwater main that comes down Summerhill Road and sometimes cannot be handled.

Mayor Barlow noted that, while people are required to carry flood insurance, it didn't cover the losses to finished basements in the Willard Clark Circle (WCC) vicinity during these floods.

According to Councilwoman Margaret Drozd, Cedar Brook Lane (which adjoins WCC) has had periodic flooding events over the past 50 years, deep enough where people can paddle canoes on it. This has been somewhat mitigated by a drainage pond built by a developer on Crescent Avenue and a deepening and widening of a surrounding stream but it still floods. Recent events where it flooded included those cited by Chief Martin, and, in addition, a snow melt event approx. 8 years ago.

Chief Martin provided Greg with copies of the Damage Assessment Reports for these floods. Chief Martin will also e-mail Greg copies of pictures from the 2005 flood that both he and Tim Crandall have.

Tim Crandall mentioned that the detention basin near June Road is filling in and causing increased flooding.

Identification of Potential Solutions

The group discussed the options available for reducing flooding here. The following suggestions were made:

1. Desnagging , deepening of Matchaponix and Cedar Brooks from Jamesburg to Helmetta (Karl Martin and Bruce Koch)
2. Dredging of DeVoe Lake to allow for water storage (Tom Barlow)
3. Diversion of cranberry bogs and Cedar Brook water to detention pond in County Park (Karl Martin)

Karl noted that the "dam dance" must be coordinated with tidal influence (below Duhernal Dam) and northeasters.

Greg asked about the size of Devoe Lake. Bruce responded that it is approximately 40 acres. There was discussion regarding having the County Mosquito Commission to do some of the desnagging along stream corridors.

Permitting and then finding funding to do these activities were seen as obstacles to be overcome.

Helmetta Borough Interview on June 29, 2009.

Attendees were Ron Sender, County Engineer, and Darren Doran, Borough Emergency Management Coordinator.

Darren stated that there had been an unauthorized dam removed from the cranberry bog upstream of Washington Street. Flood damages have been in basements and a couple of structure's first floors. There is no known engineering survey of structures first floor elevations and low openings to basements. A Remington and Vernick Report was made on October 12, 2004. It was noted that Sewell Peckham (alternate to Flood Control Commission) has photos. Darren stated that the municipality is a Tier A Stormwater Management municipality.

Proposed solutions for reducing flood damage included county purchase of additional cranberry bogs to handle stormflow. It was recommended that, when the tides are high, the water be held in Jamesburg, Helmetta and Spotswood.

South River Borough Interview on July 13, 2009.

Attendees were Andrew J. Salerno, Borough Administrator; and John Trzeciak, Council President with Charles Benn, OEM Coordinator (by phone).

Mr Salerno loaned a copy of the South River, Raritan River Basin, Hurricane & Storm Damage Reduction and Ecosystem Restoration Draft Feasibility Report and Environmental Impact Statement to Greg Westfall. Greg would later met with Charlie Benn on July 29th. Mr. Benn noted that the majority of flooding has been nuisance flooding in yards and basements. He identified the major event as being a December 1992 flood (500 yr event) which required evacuation of 200 people on Ferry Street. Daley's Pond has been preserved for stormwater detention. Charlie identified 32 family structures and 88 others in the flood zone. There are a total of 1080 - 1-4 family homes and 1064 other structures. Mr. Benn identified the Corps project and the on-going Middlesex County All Hazard Plan as the two current actions.

Monroe Township Interview on July 17, 2009.

Attendee was Ernest Feist, Township Engineer.

He noted that the July 17, 2005 flood was due to overland flows not due to the brooks. He noted that flood locations included Rossmoor (2004 and 2005), Old Forge Road and a couple homes first floors. A study was done on the Old Forge Road problem and the recommendation was for improvement projects for retention and efficient removal. Also, Forest Park Terrace had a levee constructed in the 1970s and a pump station in 2008. He noted that the Township has been doing considerable land use planning/zoning as follows:

- Non contiguous cluster
- Significant open space preservation

- Open space tax
- High density residential zoned property

East Brunswick Township Interview on July 28, 2009.

Attendees were Greg Potkulski, Engineer; and John Kosik, OEM Coordinator. It was noted that a study of the upstream gates took place in 1998. It was noted that there was no flooding here prior to 2004 and that the July 2005 flood hit the Bosko Drive residential area near Frost Woods Park.

Old Bridge Township Interview on July 29, 2009.

Attendees were James Cleary, Twp. Engineer; Mike Serdinsky, Zoning Officer; Al Koehl, Asst. Dir. Public Works; Ed Lauer, Dominic Cicio, Pinder Sumal, Assist. Twp. Engineer.

Areas identified as having flooding issues are at Old Matawan Road (businesses at Riverside Plaza), River Street, West Avenue, Central and Riverdale.

The Township participates in the Community Rating System. Key flood events occurred in 1992 (Northeaster' storm) and 1962 Hurricane.

Dominic suggested that there is a need to coordinate all the upstream basin releases with the gates being closed at high tide. He noted that Karl Martin, Spotswood Borough, has details on the procedures.

Jamesburg Borough Interview on August 5, 2009.

Attendee was Tony LaMantia. Four areas in Jamesburg Borough which are areas of concern. They are Wigwam Pond Creek where the dam was removed in 2005 resulting in significant downstream erosion. Manalapan Brook causes flooding on Willow, Pergola, and Church Streets. An eroding stream causing problems on Michael and William Streets. Costco Detention Basin has caused problems on Gatzmer Avenue.

Appendix B – Community Rating System of the National Flood Insurance Program

National Flood Insurance Program Community Rating System

SUMMARY

<http://training.fema.gov/EMIWeb/CRS/>

Background: Since 1968 the National Flood Insurance Program (NFIP) has provided federally backed flood insurance to encourage communities to enact and enforce floodplain regulations. The program has been very successful in helping flood victims get back on their feet. There are over 2.2 million policies in force. Since 1978, 350,000 insurance losses have been paid out for a total of \$2.5 billion.

In order to be covered by a flood insurance policy, a property must be in a community that participates in the NFIP. To qualify, a community adopts and enforces a floodplain management ordinance to regulate proposed development in flood hazard areas. The objective of the ordinance is to ensure that such development will not aggravate existing flooding conditions and that new buildings will be protected from future flood damage. To date nearly 18,000 communities in the United States participate.

The NFIP has been successful in requiring new buildings to be protected from damage by the 100-year flood. However, the program had few incentives for communities to do more than enforce the minimum regulatory standards. Flood insurance rates had been the same in all participating communities, even though some do much more than regulate construction of new buildings to the national standards. Until now the program did little to recognize or encourage community activities to reduce flood damages to existing buildings, to manage development in areas not mapped by the NFIP, to protect new buildings beyond the minimum NFIP protection level, to help insurance agents obtain flood data, or to help people obtain flood insurance. Because these activities can have a great impact on the insurance premium base, flood damages flood insurance claims, and federal disaster assistance payments, the Federal Insurance Administration (FIA) has implemented the Community Rating System (CRS).

The Concept: Experience since the turn of the century (1900) has shown that fire insurance public protection class given to a community has been a very strong incentive to local officials to maintain or improve their fire protection programs. Local governing boards ensure that their fire alarm communications, water supply and distribution, and overall fire department facilities, including staffing, equipment, training and other items meet or exceed the insurance industry's minimum criteria in order to maintain favorable fire insurance rate classes for their communities. In March 1987, the Federal Insurance Administrator established a Community Rating Task Force with members from FIA, insurance companies, and state and local floodplain managers. The Task Force established three goals for the CRS:

"To encourage, by the use of flood insurance premium adjustments community and state activities beyond those required by the National Flood Insurance Program to:

- Reduce flood losses,
- Facilitate accurate insurance rating, and
- Promote the awareness of flood insurance."

The Task Force worked with the Association of State Floodplain Managers (ASFPM) and ISO/Commercial Risk Services, Inc. (ISO) to develop a rating Schedule and administrative procedures. ISO is a non-profit corporation subscribed to by more than 1300 insurance companies. Among other services, ISO develops and provides advisory fire insurance classification of community fire protection programs. The CRS is the product of three years of development, field testing, critiques and reviews with communities, public interest organizations and ASFPM's technical advisors. The work has been reviewed by 400 professional floodplain managers, 50 public interest organizations, and 41 communities. However, the CRS will always be subject to change and improvement as more experience is gained in administering it and as more is learned about effective floodplain management techniques.

Community Classification: Flood insurance premium credits are available in communities based on their CRS classification. There are ten classes with Class 1 having the greatest premium credit and Class 10 having no premium credit. A community's CRS class is based on the number of credit points calculated for the activities that are undertaken to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance. A community is automatically in Class 10 unless it applies for CRS classification and it shows that the activities that it is implementing warrant a better class. The amount of premium credit for each class is published annually by FIA. The CRS rewards those communities that are doing more than the minimum NFIP requirements to their residents prevent or reduce flood losses. The system should also provide an incentive for communities to initiate new flood protection activities.

COMMUNITY CLASSIFICATION POINTS

There are 10 community classes in the Community Rating System. Class 1 communities have the largest premium credit; residents of Class 10 communities receive no premium credit. Communities that do not apply for CRS classification are Class 10 communities.

The insurance premium credit is based on whether a property is in or out of the Special Flood Hazard Area (SFHA), i.e., the A and V Zones as shown on the community's Flood Insurance Rate Map (FIRM). The premium credit for properties in the SFHA increases according to the community's CRS class. The credit for properties outside the SFHA is lower for Class 1–8 communities because premiums in these areas are already relatively low and can be lowered further through the Preferred Risk Policy. Also, most activities undertaken to qualify for those classes are implemented only in the floodplain. Because areas designated as A99 and AR Zones already receive an insurance premium reduction, these zones get the same premium reduction as non-SFHA areas. A community's classification is based on the community total points (cT) as calculated on activity worksheet AW-720. The qualifying community total points, CRS classes, and flood insurance premium credits are shown below:

Credit Points (cT)	CRS Class	Premium Discount
4,500+	1	45%
4,000–4,499	2	40%
3,500–3,999	3	35%
3,000–3,499	4	30%
2,500–2,999	5	25%
2,000–2,499	6	20%
1,500–1,999	7	15%
1,000–1,499	8	10%
500–999	9	5%
0–499	10	0%

3
35%
3,000–3,499
4
30%
2,500–2,999
5
25%
2,000–2,499
6
20%
1,500–1,999
7
15%
1,000–1,499
8
10%
500–999
9
5%
0–499
10
0

SFHA (Zones A, AE, A1–A30, V, V1–V30, AO, and AH): Credit varies depending on class.

SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1–A30, AR/AH, and AR/AO): 10% credit for Classes 1–6; 5% credit for Classes 7–9.

Non-SFHA (Zones B, C, X, D): 10% credit for Classes 1–6; 5% credit for Classes 7–9.

Preferred Risk Policies are not eligible for CRS premium discounts. The Preferred Risk Policy does not receive premium rate credits under the CRS because it already has a lower premium than other policies. Preferred Risk Policies are available only in B, C, and X Zones for properties that are shown to have a minimal risk of flood damage. Premium reductions are subject to change.

Operation: Community application for CRS classification is voluntary. Any community in full compliance with the rules and regulations of the NFIP may apply for a CRS classification. The applicant community submits documentation that it is implementing one or more of the activities recognized in the CRS Schedule. The Schedule identifies 18 creditable activities, organized under four categories in Sections 300-600: Public Information, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness. They are listed on the last page of this Summary. The Schedule assigns credit points based on how well an activity affects the three goals of the CRS. Communities are welcome to propose alternative approaches in their applications. Some of the activities may be implemented by the state or a regional district rather than at the local level. For example, some states have disclosure laws that may meet the credit criteria of Activity 340 – Flood Hazard Disclosure. In such cases, any community in those states or districts could receive credit points if the community applies for a CRS classification and if the state or district program is, in fact, being implemented in the community.

The Regional Office of the Federal Emergency Management Agency (FEMA) and the State NFIP Coordinator review and comment on the application. FIA verifies the information and the community's implementation of the activities. FIA sets the credit to be granted and notifies the community, the state, the insurance companies, and other appropriate parties. The community's activities and performance are reviewed periodically. If it is not properly or fully implementing the credited activities, its credit points and possibly, its CRS classification, will be revised. A community may add or drop creditable activities each year. Credit criteria for each activity may also change as more experience is gained in implementing, observing and measuring the activities.

Costs and Benefits: No fee is charged for a community to apply for classification or to participate in the CRS. Because there may be a cost to implement the creditable activities, some communities may be concerned whether the cost of initiating a new activity will be offset by the flood insurance premium credits. It is important to note that reduction in flood insurance rates is only one of the rewards communities receive from undertaking the activities credited under the Community Rating System. Others include increased public safety, reduction of damages to property and public infrastructure, avoidance of economic disruption and losses, reduction of human suffering, and protection of the environment. Communities should prepare and implement those activities that best deal with the local flood problem, not just those items that are listed in the Schedule. In considering whether to undertake a new activity, communities will want to consider all of the benefits the activity will provide (in addition to insurance premium credits) in order to determine whether it is cost effective.

Activities Credited Under the Community Rating System

(Sections 100 and 200 cover other topics in the CRS Schedule)

300 Public Information Activities

310 Elevation Certificate: Maintain FEMA's Elevation Certificate and make copies available to inquirers.

320 Map Determinations: Respond to inquiries for Flood Insurance Rate Map zone and flood data.

330 Outreach Projects: Advise residents about the flood hazard, flood insurance, and flood protection measures.

340 Hazard Disclosure: Advise potential purchasers of flood-prone Property about the hazard.

350 Flood Protection Library: Maintain and publicize a library of references on flood insurance and flood protection.

360 Flood Protection Assistance: Provide direct advice to property Owners desiring to protect themselves from flooding.

400 Mapping and Regulatory Activities

410 Additional Flood Data: Develop new flood elevations, floodway delineations, wave heights, or other regulatory flood hazard data.

420 Open Space Preservation: Credit is provided according to the amount of vacant floodplain that is kept free of buildings and filling.

430 Higher Regulatory Standards: Regulation that require new development to be protected to a level greater than the NFIP rules.

440 Flood Data Maintenance: Make the community's floodplain maps more current, useful, or accurate.

Appendix C – Flood Damage Prevention Ordinances

3. be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection. Such certification shall be provided to the official as set forth in Section 4.3-3(2).

5.2-3. Mobile Homes.

1. Mobile homes shall be anchored in accordance with Section 5.1-1(2).
2. All manufactured homes to be placed or substantially improved within an area of special flood hazard shall be elevated on a permanent foundation such that the top of the lowest floor is at or above the base flood elevation.

5.3. FLOODWAYS.

Located within areas of special flood hazard established in Section 3.2 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

1. Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless a technical evaluation demonstrates that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
2. If Section 5.3(1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provision of Section 5.0 PROVISIONS FOR FLOOD HAZARD REDUCTION.
3. Prohibit the placement of any mobile homes, except in any existing mobile home park or existing mobile home subdivision where Section 5.3(1) is satisfied.

4. Base flood elevation data shall be provided for subdivision proposals and other proposed development which contain at least 50 lots or 5 acres (whichever is less).

5.1-5. Enclosure Openings. [Added 4-15-87 by Ord. No. 87-829]

For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria: A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

5.2. SPECIFIC STANDARDS.

In all areas of special flood hazards where base flood elevation data have been provided as set forth in Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD or in Section 4.3-2, Use of Other Base Flood Data, the following standards are required:

5.2-1. Residential Construction.

New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above base flood elevation.

5.2-2. Nonresidential Construction.

New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation; or, this new construction and substantial improvement together with attendant utility and sanitary facilities, shall:

1. be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
2. have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

2. All Manufactured homes shall be anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the top or frame ties or ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.

5.1-2. Construction Materials and Methods.

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

5.1-3. Utilities. [Amended 4-15-87 by Ord. No. 87-829]

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
2. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and
3. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
4. Electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

5.1-4. Subdivision Proposals.

1. All subdivision proposals shall be consistent with the need to minimize flood damage;
2. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;
3. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and

- 2. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this section.
- 3. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- 4. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- 5. Variances shall only be issued upon:
 - a. a showing of good and sufficient cause;
 - b. a determination that failure to grant the variance would result in exceptional hardship to the applicant; and
 - c. a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in Section 4.4-1(4), or conflict with existing local laws or ordinances.
- 6. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

& 228-234. Provisions for Flood Hazard Reduction.

5.1. GENERAL STANDARDS.

In all areas of special flood hazards the following standars are required:

5.1-1. Anchoring. [Amended 4-15-87 by Ord. No. 87-829]

- 1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

- c. the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - d. the importance of the services provided by the proposed facility to the community;
 - e. the necessity to the facility of a waterfront location, where applicable;
 - f. the availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - g. the compatibility of the proposed use with existing and anticipated development;
 - h. the relationship of the proposed use to the comprehensive plan and flood plain management program of that area;
 - i. the safety of access to the property in times of flood for ordinary and emergency vehicles;
 - j. the expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
 - k. the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.
5. Upon consideration of the factors of Section 4.4-1(4) and the purposes of this ordinance, the Planning Board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.
6. The Township Engineer shall maintain the records of all appeal actions, including technical information, and report any variances to the Federal Insurance Administration upon request.

4.4-2. Conditions for Variances.

- 1. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items A-K in Section 4.4-1(4) have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.

3. Maintain for public inspection all records pertaining to the provisions of this ordinance.

4.3-4. Alteration of Watercourses.

1. Cause notification to adjacent communities and require application to be made to the New Jersey Department of Environmental Protection prior to any alteration or relocation of a watercourse, and have submitted evidence of such notification to the Federal Insurance Administration.

2. Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

4.3-5. Interpretation of FIRM Boundaries.

Make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 4.4.

4.4. VARIANCE PROCEDURE.

4.4-1. Appeal Board.

1. The Planning Board as established by the Township of East Brunswick shall hear and decide appeals and request for variances from the requirement of this ordinance.

2. The Planning Board shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the Township Engineer in the enforcement or administration of this ordinance.

3. Those aggrieved by the decision of the Planning Board, or any taxpayer, may appeal such decision to the Superior Court of New Jersey, as provided in the statute.

4. In passing upon such applications, the Planning Board shall consider all technical evaluations, all relevant factors, standards specified in other sections of this ordinance, and:

a. the danger that materials may be swept onto other lands to the injury of others;

b. the danger to life and property due to flooding or erosion damage;

4.2. DESIGNATION OF THE TOWNSHIP ENGINEER.

The Township Engineer is hereby appointed to administer and implement this ordinance by granting or denying development permit applications in accordance with its provisions.

4.3. DUTIES AND RESPONSIBILITIES OF THE TOWNSHIP ENGINEER.

Duties of the Township Engineer shall include, but not be limited to:

4.3-1. Permit Review.

1. Review all development permits to determine that the permit requirements of this ordinance have been satisfied.
2. Review all development permits to determine that all necessary permits have been obtained from those Federal, State or local governmental agencies from which prior approval is required.
3. Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 5.3(1) are met.

4.3-2. Use of Other Base Flood Data. [Amended 4-15-87 by Ord. No. 87-829]

When base flood elevation data has not been provided in accordance with Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the (local administrator) shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other source, in order to administer sections 5.2-1, SPECIFIC STANDARDS, Residential Construction, and 5.2-2, SPECIFIC STANDARDS, Nonresidential Construction.

4.3-3. Information to be Obtained and Maintained.

1. Obtain and record the actual elevation (in relation to mean sea level) of the lowest habitable floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.
2. For all new substantially improved floodproofed structures:
 - a. verify, by means of a survey sealed by a land surveyor paid for by the application, and record the actual elevation (in relation to mean sea level); and
 - b. maintain the floodproofing certifications required in Section 4.1(3).

2. Liberally construed in favor of the governing body; and,
3. Deemed neither to limit nor repeal any other powers granted under State statutes.

3.6. WARNINGS AND DISCLAIMER OF LIABILITY.

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the area of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of the Township of East Brunswick, any officer or employee thereof or the Federal Insurance Administration, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

& 228-233. Administration.

4.1. ESTABLISHMENT OF DEVELOPMENT PERMIT.

A Development Permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 3.2. Application for a Development Permit shall be made on forms furnished by the Township Engineer and may include, but not be limited to; plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing.

Specifically, the following information is required:

1. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;
2. Elevation in relation to mean sea level to which any structure has been floodproofed;
3. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in Section 5.2-2; and,
4. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

§ 228-232. General Provisions.

3.1. LANDS TO WHICH THIS ORDINANCE APPLIES.

This ordinance shall apply to all areas of special flood hazards within the jurisdiction of East Brunswick Township, Middlesex County, New Jersey.

3.2. BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD.

The area of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for the Township of East Brunswick, New Jersey", dated July, 1981, with accompanying Flood Insurance Rate Maps and Flood Boundary-Floodway Maps is hereby adopted by reference and declared to be a part of this ordinance. The Flood Insurance Study is on file in offices of Planning and Engineering. [Amended 4-24-89 by Ord. No. 89-12]

3.3. PENALTIES FOR NONCOMPLIANCE.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. Violation of the provisions of this ordinance by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this ordinance or fails to comply with any of its requirements shall upon conviction thereof be fined not more than \$500.00 or imprisoned for not more than 90 days, or both, for each violation, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the Township of East Brunswick from taking such other lawful action as is necessary to prevent or remedy any violation.

3.4. ABOGATION AND GREATER RESTRICTIONS.

This ordinance is not intended to repeal, abrogate, or impair any existing easement, covenants, or deed restrictions. However, where this ordinance and other ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

3.5. INTERPRETATION.

In the interpretation and application of this ordinance, all provisions shall be:

1. Considered as minimum requirements;

"Start of construction" for other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. 97-348) includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site such as the pouring of a slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

"Structure" means a walled and roofed building, a mobile home, or a gas or liquid storage tank, that is principally above ground.

"Substantial improvement" means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

1. before the improvement or repair is started, or
2. if the structure has been damaged and is being restored, before the damage occurred.

For the purposes of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term does not, however, include either:

1. any project for improvement of a structure to comply with existing State or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, or
2. any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

"Variance" means a grant of relief from the requirements of this ordinance which permits construction in a manner that would otherwise be prohibited by this ordinance.

Areas of Coastal High Hazard "elevated building" also includes a building otherwise meeting the definition of "elevated building" even though the lower area is enclosed by means of breakaway walls.

"Flood" or "flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from:

1. The overflow of inland or tidal waters and/or
2. The unusual and rapid accumulation or runoff of surface waters from any source.

"Flood Insurance Rate Map" (FIRM) means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

"Flood Insurance Study" means the official report provided in which the Federal Insurance Administration has provided flood profiles, as well as the Flood Boundary-Floodway Map and the water surface elevation of the base flood.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than 0.2 foot.

"Lowest Floor" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, useable solely for the parking of vehicles, building access or storage in an area other than a basement is not considered a building's lowest floor provided that such enclosure is not built so to render the structure in violation of other applicable non-elevation design requirements.

"Manufactured home" means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For flood plain management purposes the term "manufactured home" also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than 180 consecutive days. For insurance purposes the term "manufactured home" does not include park trailers, travel trailers and other similar vehicles.

"Manufactured home park or manufactured home subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

"New construction" means structures for which the "start of construction" commenced on or after the effective date of this ordinance.

& 228-231. Definitions. [Amended 4-25-87 by Ord. No. 87-829]

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

"Appeal" means a request for a review of the Township Engineer or Director of Planning and Community Development interpretation of any provision of this ordinance or a request for a variance.

"Area of shallow flooding" means a designated AO Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and, velocity flow may be evident.

"Areas of special flood hazard" means the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year.

"Base flood" means the flood having a one percent chance of being equalled or exceeded in any given year.

"Basement" means any area of the building having its floor subgrade (below grade level) on all sides.

"Breakaway wall" means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or supporting foundation system.

"Development" means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations located within the area of special flood hazard.

"Elevated building" means a non-basement building (i) built in the case of a building in a Area of Special Flood Hazard to have the top of the elevated floor or in the case of a building in a Coastal High Hazard Area to have the bottom of the lowest horizontal structural member of the elevated floor elevated above the ground level by means of piling, columns (posts and piers), or shear walls parallel to the flow of the water and (ii) adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In an Area of Special Flood Hazard "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters. In

1. To protect human life and health;
2. To minimize expenditure of public money for costly flood control projects;
3. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. To minimize prolonged business interruption;
5. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;
6. To help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas;
7. To insure that potential buyers are notified that property is in an areas of special flood hazard; and
8. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

1.4. METHODS OF REDUCING FLOOD LOSSES.

In order to accomplish its purposes, this ordinance includes methods and provisions for:

1. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
2. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
4. Controlling filling, grading, dredging, and other development which may increase flood damage; and
5. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

to promote the public health, safety and general welfare of its citizenry. Therefore, the Township Council of East Brunswick, New Jersey does ordain as follows:

1.2. FINDINGS OF FACT.

1. The flood hazard areas of East Brunswick are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
2. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss.

1.3. STATEMENT OF PURPOSE.

It is the purpose of this ordinance to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

(Cont'd on page 23002)

D. Upon completion of the necessary remedial work, a revised sound level report as indicated in Subsection A shall be submitted. Once the sound levels have been reduced to the acceptable standards set forth in Subsection A, development approval may be issued.

This section shall not prohibit the designation or approval of any green belt or open space in any area in which the sound level exceeds 65 dBA Leq regardless of whether such green belt or open space is open to public use, provided that no recreational improvement or facility is constructed thereon.

E. As a condition of approval, the Planning Board or Zoning Board of Adjustment shall require the submission of future certified reports prior to the issuance of certificates of occupancy to verify that the condition in Section 5b has been met. These reports shall contain, at a minimum, twenty-four (24) hours of sound testing in the bedrooms to determine that the Leq is below the levels established in Section 5b, except that the permissible interior night levels shall be reduced an additional ten (10) decibels.

F. Upon issuance of a certificate of occupancy and the transfer of the property by deed, the property owner of record shall become responsible for the maintenance of all sound attenuation devices on that property.

The developer shall attach to all contracts of sale a map which designates all areas within the development where noise levels exceed 65 dBA Leq. The lot subject to sale shall be clearly delineated. Such map shall be approved by the Township Engineer.

G. For the purposes of this section, all measurements and designations of sound levels shall be expressed as a percentile of Leq sound pressure levels unless the Township specifically approves an alternate.

All measurements to determine if sound is within the levels set forth herein shall be carried out utilizing a sound level meter which meets the specifications established by ANSI.

ARTICLE XXVII

Flood Damage Prevention Ordinance Statutory Authorization,
Findings of Fact Purpose and Objectives
[Amended 12-14-81 by Ord. No. 81-422]

& 228-230. Flood Damage Prevention Ordinance.

1.1. STATUTORY AUTHORIZATION.

The Legislature of the State of New Jersey has delegated the responsibility to local governmental units to adopt regulations designed

Helmetta Borough
FLOOD DAMAGE PREVENTION

Chapter 36

FLOOD DAMAGE PREVENTION

ARTICLE I
General Provisions

- § 36-1. Statutory authorization.
- § 36-2. Findings of fact.
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Scope and Interpretation; Penalties

- § 36-6. Scope.
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§ 36-15. Board of Appeals.

§ 36-16. Conditions for variances.

ARTICLE IV
Provisions for Flood Hazard Reduction

§ 36-17. General standards.

§ 36-18. Specific standards.

§ 36-19. Floodways.

[HISTORY: Adopted by the Mayor and Council of the Borough of Helmetta 10-10-84.¹ Amendments noted where applicable.]

GENERAL REFERENCES

Moving of buildings — See Ch. 27.
Uniform construction codes — See Ch. 29A.
Housing standards — See Ch. 39.
Land use procedures — See Ch. 40.

Be it ordained by the Mayor and Council of the Borough of Helmetta in the County of Middlesex and State of New Jersey:

ARTICLE I
General Provisions

§ 36-1. Statutory authorization. [Amended 10-19-88]

The Legislature of the State of New Jersey has in N.J.S.A. 40:48-1 et seq. delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry. Therefore, the Mayor and Council of the Borough of Helmetta of New Jersey does ordain as follows.

¹ Editor's Note: Former Ch. 36, Flood Damage Control, was superseded 10-10-84 by this ordinance.

§ 36-2. Findings of fact.

- A. The flood hazard areas of the Borough of Helmetta are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief and impairment of the tax base, all of which adversely affects the public health, safety and general welfare.
- B. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities and, when inadequately anchored, damage uses in other areas. Uses that are inadequately flood-proofed, elevated or otherwise protected from flood damage also contribute to the flood loss.

§ 36-3. Purpose.

It is the purpose of this chapter to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- A. To protect human life and health.
- B. To minimize expenditure of public money for costly flood control projects.
- C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.
- D. To minimize prolonged business interruptions.
- E. To minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard.
- F. To help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas.
- G. To ensure that potential buyers are notified that property is in an area of special flood hazard.

- H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

§ 36-4. Methods of reducing flood losses.

In order to accomplish its purposes, this chapter includes methods and provisions for:

- A. Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities.
- B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
- C. Controlling the alteration of natural floodplains, stream channels and natural protective barriers which help accommodate or channel floodwaters.
- D. Controlling filling, grading, dredging and other development which may increase flood damage.
- E. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

§ 36-5. Definitions. [Amended 10-19-88]

Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application.

APPEAL — A request for a review of the Construction Code Official's interpretation of any provision of this chapter or a request for a variance.

AREA OF SHALLOW FLOODING — A designated AO or VO Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one (1) to three (3) feet; a clearly

defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident.

AREA OF SPECIAL FLOOD HAZARD — The land in the floodplain within a community subject to a one-percent or greater chance of flooding in any given year.

BASE FLOOD — The flood having a one-percent chance of being equaled or exceeded in any given year.

BASEMENT — Any area of the building having its floor subgrade (below ground level) on all sides.

BREAKAWAY WALL — A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or supporting foundation system.

COASTAL HIGH-HAZARD AREA — The area subject to high-velocity waters, including but not limited to hurricane wave wash or tsunamis. The area is designated on a FIRM as Zone V1 - 30.

DEVELOPMENT — Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations located within the area of special flood hazard.

ELEVATED BUILDING — A nonbasement building built, in the case of a building, in an area of special flood hazard to have the top of the elevated floor or, in the case of a building in a coastal high-hazard area, to have the bottom of the lowest horizontal structural member of the elevated floor elevated above the ground level by means of piling, columns (posts and piers) or shear walls parallel to the flow of the water and adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In an area of special flood hazard, "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to

facilitate the unimpeded movement of floodwaters. In areas of coastal high-hazard, "elevated building" also includes a building otherwise meeting the definition of "elevated building," even though the lower area is enclosed by means of breakaway walls.

FLOOD or FLOODING — A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters and/or the unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD INSURANCE RATE MAP (FIRM) — The official map on which the Federal Insurance Administration has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY — The official report provided in which the Federal Insurance Administration has provided flood profiles, as well as the Flood Boundary and Floodway Map and the water surface elevation of the base flood.

FLOODWAY — The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than two-tenths (0.2) foot.

LOWEST FLOOR — The lowest floor of the lowest enclosed area, including basement. An unfinished or flood-resistant enclosure, usable solely for the parking of vehicles, building access or storage in an area other than a basement is not considered a building's "lowest floor," provided that such enclosure is not built so as to render the structure in violation of other applicable nonelevation design requirements.

MANUFACTURED HOME — A structure, transportable in one (1) or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes, the term "manufactured home" also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than one hundred

eighty (180) consecutive days. For insurance purposes, the term "manufactured home" does not include park trailers, travel trailers and other similar vehicles.

MANUFACTURED HOME PARK or MANUFACTURED HOME SUBDIVISION — A parcel or contiguous parcels of land divided into two (2) or more manufactured home lots for rent or sale.

NEW CONSTRUCTION — Structures for which the start of construction commenced on or after the effective date of this chapter.

SAND DUNES — Naturally occurring accumulations of sand in ridges or mounds landward of the beach.

START OF CONSTRUCTION [For other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. 97-348)] — Includes substantial improvement and means the date the building permit was issued, provided that the actual "start of construction," repair, reconstruction, placement or other improvement was within one hundred eighty (180) days of the permit date. The "actual start" means either the first placement of permanent construction of a structure on a site such as the pouring of a slab or footings, the installation of piles, the construction of columns or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling, nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

STRUCTURE — A walled and roofed building, a manufactured home or a gas or liquid storage tank that is principally above ground.

SUBSTANTIAL IMPROVEMENT — Any repair, reconstruction or improvement of a structure, the cost of which

equals or exceeds fifty percent (50%) of the market value of the structure either before the improvement or repair is started or, if the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions or any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

VARIANCE — A grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter.

ARTICLE II

Scope and Interpretation; Penalties

§ 36-6. Scope.

This chapter shall apply to all areas of special flood hazard within the jurisdiction of the Borough of Helmetta.

§ 36-7. Basis for establishing areas of special flood hazard.

The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled the "Flood Insurance Study for the Borough of Helmetta," dated April 16, 1984, or the most current Federal Emergency Management Act Federal Insurance Study with accompanying Flood Insurance Rate Maps and Flood Boundary - Floodway Maps is hereby adopted by reference and declared to be a part of this chapter. The Flood Insurance Study is on file at Borough Hall, 60 Main Street, Helmetta, New Jersey.

§ 36-8. Violations and penalties; other remedies.

No structure or land shall hereafter be constructed, located, extended, converted or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter by failure to comply with any of its requirements, including violations of conditions and safeguards established in connection with conditions, shall constitute a misdemeanor. Any person who violates this chapter or fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than two hundred dollars (\$200.) or imprisoned for not more than ten (10) days, or both, for each violation, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the Borough of Helmetta from taking such other lawful action as is necessary to prevent or remedy any violation.

§ 36-9. Abrogation and greater restrictions.

This chapter is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, where this chapter and other ordinances, easements covenants or deed restrictions conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

§ 36-10. Interpretation.

In the interpretation and application of this chapter, all provisions shall be:

- A. Considered as minimum requirements.
- B. Liberally construed in favor of the governing body.
- C. Deemed neither to limit nor repeal any other powers granted under state statutes.

§ 36-11. Warning and disclaimer of liability.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific

and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the Borough of Helmetta any officer or employee thereof or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder.

ARTICLE III Administration

§ 36-12. Development permit required; application. [Amended 10-19-88]

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in § 36-7. Application for a development permit shall be made on forms furnished by the Construction Official and may include, but not be limited to plans, in duplicate, drawn to scale, showing the nature, location, dimensions and elevations of the area in question, existing or proposed structures, fill, storage of materials, drainage facilities and the location of the foregoing. Specifically, the following information is required:

- A. The elevation, in relation to mean sea level, of the lowest floor, including basement, of all structures.
- B. The elevation, in relation to mean sea level, to which any structure has been floodproofed.
- C. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in § 36-18B.
- D. A description of the extent to which any watercourse will be altered or relocated as a result of the proposed development.

§ 36-13. Construction Code Official designated.

The Construction Code Official is hereby appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions.

**§ 36-14. Duties and responsibilities of Construction Code Official.
[Amended 10-19-88]**

The duties of the Construction Code Official shall include, but not be limited to:

A. Permit review.

- (1) To review all development permits to determine that the permit requirements of this chapter have been satisfied.
- (2) To review all development permits to determine that all necessary permits have been obtained from those federal, state or local governmental agencies from which prior approval is required.
- (3) To review all development permits in the coastal high-hazard area of the area of special flood hazard to determine if the proposed development alters sand dunes so as to increase potential flood damage.
- (4) To review all development permits to determine if the proposed development is located in the floodway and assure that the encroachment provisions of § 36-19A are met.
- (5) To review plans for walls to be used to enclose space below the base flood level in accordance with the provisions herein.

- B. Use of other base flood and floodway data.** When base flood elevation data has not been provided in accordance with § 36-7, Basis for establishing areas of special flood hazard, the Construction Code Official shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source in order to administer § 36-18A, Specific standards, Residential construction and § 36-18B, Specific standards, Nonresidential construction.

- C. Information to be obtained and maintained.
- (1) To obtain and record the actual elevation, in relation to mean sea level, of the lowest floor, including basement, of all new or substantially improved structures and whether or not the structure contains a basement.
 - (2) For all new substantially improved floodproofed structures:
 - (a) To verify and record the actual elevation, in relation to mean sea level; and
 - (b) To maintain the floodproofing certifications required in § 36-12C.
 - (3) In coastal high-hazard areas, certification shall be obtained from a registered professional engineer or architect that the provisions of this chapter are met.
 - (4) To maintain for public inspection all records pertaining to the provisions of this chapter.
- D. Alteration of watercourse.
- (1) To notify adjacent communities and the New Jersey Department of Environmental Protection, Bureau of Floodplain Management prior to any alteration or relocation of a watercourse, and to submit evidence of such notification to the Federal Insurance Administration.
 - (2) To require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished.
- E. Interpretation of FIRM boundaries. To make interpretation where needed, as to the exact location of the boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and

actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in §§ 36-15 and 36-16.

§ 36-15. Board of Appeals.

- A. The Mayor and Council shall hear and decide appeals and requests for variances from the requirements of this chapter.
- B. The Mayor and Council shall hear and decide appeals when it is alleged that there is an error in any requirement, decision or determination made by the Construction Code Official in the enforcement or administration of this chapter.
- C. Those aggrieved by the decision of the Mayor and Council, or any taxpayer, may appeal such decision to the New Jersey Superior Court, as provided in New Jersey Statutes and New Jersey Rules of Court.
- D. In passing upon such applications, the Mayor and Council shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter and:
 - (1) The danger that materials may be swept onto other lands to the injury of others.
 - (2) The danger to life and property due to flooding or erosion damage.
 - (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.
 - (4) The importance of the services provided by the proposed facility to the community.
 - (5) The necessity to the facility of a waterfront location, where applicable.
 - (6) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage.

- (7) The compatibility of the proposed use with existing and anticipated development.
 - (8) The relationship of the proposed use to the Comprehensive Plan and floodplain management program of that area.
 - (9) The safety of access to the property in times of flood for ordinary and emergency vehicles.
 - (10) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site.
 - (11) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities, such as sewer, gas, electrical and water systems and streets and bridges.
- E. Upon consideration of the factors of § 36-15D and the purposes of this chapter, the Mayor and Council may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter.
- F. The Construction Code Official shall maintain the records of all appeal actions, including technical information, and report any variances to the Federal Insurance Administration upon request.

§ 36-16. Conditions for variances.

- A. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half ($\frac{1}{2}$) acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, provided that Subsections D(1) through D(11) of § 36-15 have been fully considered. As the lot size increases beyond the one-half ($\frac{1}{2}$) acre, the technical justification required for issuing the variance increases.
- B. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of

Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this section.

- C. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- D. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- E. Variances shall only be issued upon:
 - (1) A showing of good and sufficient cause.
 - (2) A determination that failure to grant the variance would result in exceptional hardship to the applicant.
 - (3) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in § 36-15D or conflict with existing local laws or ordinances.
- F. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

ARTICLE IV
Provisions for Flood Hazard Reduction
[Amended 10-19-88]

§ 36-17. General standards.

In all areas of special flood hazard, the following standards are required:

A. Anchoring.

- (1) All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.
- (2) All manufactured homes shall be anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.

B. Construction materials and methods.

- (1) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- (2) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

C. Utilities.

- (1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
- (2) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters.
- (3) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (4) Electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

D. Subdivision proposals.

- (1) All subdivision proposals shall be consistent with the need to minimize flood damage.
- (2) All subdivision proposals shall have public utilities and facilities, such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
- (3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.
- (4) Base flood elevation data shall be provided for subdivision proposals and other proposed developments which contain at least fifty (50) lots or five (5) acres, whichever is less.

E. Enclosure openings. For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

- (1) A minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding shall be provided.
- (2) The bottom of all openings shall be no higher than one (1) foot above grade.
- (3) Openings may be equipped with screens, louvers or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.

§ 36-18. Specific standards.

In all areas of special flood hazard where base flood elevation data have been provided as set forth in § 36-7, Basis for establishing the areas of special flood hazard, or in § 36-14B, Use of other base flood and floodway data, the following standards are required:

- A. Residential construction. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above base flood elevation.
- B. Nonresidential construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation or:
- (1) Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
 - (2) Have structural components capable of resisting hydrostatic and hydrodynamic loads with effects of buoyancy; and
 - (3) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection. Such certification shall be provided to the official as set forth in § 36-14C(2).
- C. Manufactured homes.
- (1) Manufactured homes shall be anchored in accordance with § 36-17A(2).
 - (2) All manufactured homes to be placed or substantially improved within an area of special flood hazard shall be elevated on a permanent foundation such that the top of the lowest floor is at or above the base flood elevation.

§ 36-19. Floodways.

Located within areas of special flood hazard, established in § 36-7, are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential, the following provisions apply:

- A. Prohibited are encroachments, including fill, new construction, substantial improvements and other development unless a technical evaluation demonstrates that encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- B. If § 36-19A is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this Article.
- C. In all areas of special flood hazard in which base flood elevation data has been provided and no floodway has been designated, the cumulative effect of any proposed development, when combined with all existing and anticipated development, shall not increase the water surface elevation of the base flood more than two-tenths (0.2) of a foot at any point.

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CHAPTER XVIII

FLOOD DAMAGE PREVENTION

18-1 Statutory Authorization, Findings of Facts, Purpose of Objectives.

18-1.1 Statutory Authorization. The Legislature of the State of New Jersey has, in NJSA 40:48-1, et seq. and NJSA 40:55D-1, et seq. delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of it's citizenry. Therefore, the Borough council of the Borough of Jamesburg, Middlesex County, State of New Jersey does ordain as follows:

18-1.2 Findings of Fact.

a. The flood hazard areas of the borough are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

b. These flood losses are caused by ;the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss.

18-1.3 Statement of Purpose. It is the purpose of this ordinance to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- a. To protect human life and health
- b. To minimize expenditure of public money for costly flood control projects
- c. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public
- d. To minimize prolonged business interruptions
- e. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard
- f. To help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas

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g. To insure that potential buyers are notified that property is in an area of special flood hazard

h. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

18-1.4 Methods of Reducing Flood Losses. In order to accomplish its purpose, this ordinance includes methods and provisions for:

a. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities.

b. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.

c. Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel flood waters.

d. Controlling, filling, grading, dredging, and other development which may increase flood damage.

e. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

18.2 Definitions

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

a. "Appeal" means a request for a review of the borough engineer's interpretations of any provision of this ordinance or a request for a variance.

b. "Area of shallow flooding" means a designated AO Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident.

c. "Area of special flood hazard" means the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year.

d. "Base Flood" means the flood having a one percent chance of being equalled or exceeded in any given year.

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e. "Basement" means any area of the building having its floor subgrade (below ground level) on all sides.

f. "breakaway Wall" means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or supporting foundation system.

g. "Development" means the division of a parcel of land into two or more parcels, the construction, reconstruction, conversion, enlargement of any building or other structure or of any mining, excavation or landfill and any use or change in the use of any building or other structure or land or extension of use of land for which permission may be required.

h. "Elevated building" means a non-basement building (a) built in the case of a building in an area of special flood hazard to have the top of the elevated floor or in the case of a building in a coastal high hazard area to have the bottom of the lowest horizontal structural member of the elevated floor elevated above the ground level by means of piling, columns (posts and piers), or shear walls parallel to the flow of the water and (b) adequately anchored so as not to impair the structural integrity of the building during a flood or up to the magnitude of the base flood. In an area of special flood hazard "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters. In areas of Coastal High Hazard "elevated building" also includes a building otherwise meeting the definition of "elevated building" even though the lower is enclosed by means of breakaway walls.

i. "Existing mobile home park or mobile home subdivision" means a parcel (or contiguous parcels) of land divided into two or more mobile home lots for rent or sale for which the construction of facilities for servicing the lot on which the mobile home is to be affixed (including at a minimum, the installation of utilities, either final site grading or the pouring of concrete pads, and the construction of streets) is completed before the effective date of this ordinance.

j. "Expansion to an existing mobile home park or mobile home subdivision" means the preparation of additional sites by the construction of facilities for servicing the lots on which the mobile homes are to be affixed (including the installation of utilities, either final site grading or pouring of concrete or the construction of streets).

k. "Flood" or "flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from:

1. The overflow of inland or tidal waters and/or

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2. The unusual and rapid accumulation or runoff of surface waters from any source.

1. "Flood Insurance Rate Map" (FIRM) means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

m. "Flood Insurance Study" means the official report provided in which the Federal Insurance Administration has provided flood profiles, as well as the Flood Boundary-Floodway Map and the water surface elevation of the base flood.

n. "Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than 0.2 foot (two-tenths of a foot).

o. "Lowest Floor" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for the parking of vehicles, building access or storage in an area other than a basement is not considered a building's floor provided that such enclosure is not built so to render the structure in violation of other applicable non-elevation design requirements.

p. "Manufactured Home" means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For flood plain management purposes the term "manufactured home" also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than 180 consecutive days. For insurance purposes the term "manufactured homes" does not include park trailers, travel trailers and other similar vehicles.

q. "Manufactured Home Part or Manufactured Home Subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

r. "New Construction" means structures for which the "start of construction" commenced on or after the effective date of this ordinance.

s. "Start of Construction" means the first placement of permanent construction of a structure (other than a mobile home) on a site, such as the pouring of slabs or footings or any work beyond the stage of excavation. Permanent construction does not include land preparation, such as clearing, grading, and filling, nor does it include the installation of streets and/or walkways; nor does it include the excavation of a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory

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buildings, such as garages or sheds not occupied as dwelling units or not as a part of the main structure. For a structure (other than a mobile home) without a basement or poured footings, the "start of construction" means the affixing of the mobile home to its permanent site. For mobile homes within mobile home parks or mobile home subdivisions, "start of construction" is the date on which the construction of facilities for servicing the site on which the mobile home is to be affixed (including, at a minimum, the construction of streets, either final site grading or the pouring of concrete pads, and the installation of utilities) is completed.

t. "Structure" means a walled and roofed building, a mobile home, or gas or liquid storage tank, that is principally above ground.

u. "Substantial Improvement" means any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure either:

1. Before the improvement or repair is started
2. If the structure has been damaged and is being restored, before the damage occurred.

For the purpose of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term does not, however, include either:

3. Any project for improvement of a structure to comply with existing State or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions

4. Any alteration of a structure on the National Register of Historic Places or State Inventory of Historic Places.

v. "Variance" means a grant of relief by the planning board from the requirements of this ordinance which permits construction in a manner that would otherwise be prohibited by this ordinance because enforcement would result in unnecessary and unreasonable hardship.

18-3 General Provisions

18-3.1 Lands to Which This Ordinance Applies. This ordinance shall apply to all areas of special flood hazards within the jurisdiction of the Borough of Jamesburg, Middlesex County, New Jersey.

18-3.2 Basis for Establishing the Areas of Special Flood Hazard. The areas of special flood hazard identified by either the Federal Insurance

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Administration in a scientific and engineering report or the most current Federal Emergency Management Agency Flood Insurance Study and any revisions thereto, with accompanying Flood Insurance Rate Maps and Flood Boundary-Floodway Maps is hereby adopted by reference and declared to be a part of this ordinance. The Flood Insurance Study is on file in the Office of the Borough Engineer.

18-3.3 Penalties for Non-compliance. No structure or land shall hereafter be constructed, located extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. Violation of the provisions of this ordinance by failure to comply with any of its requirements (including violation of conditions and safeguards established in connection with conditions) shall constitute a disorderly persons offense. Any person who violates this ordinance or fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than \$1,000.00 or imprisoned for not more than six months, or both, for each violation and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the borough from taking such other lawful action as is necessary to prevent or remedy any violation.

18-3.4 Abrogation and Greater Restrictions. This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. However, where this ordinance and other ordinances, easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions, shall prevail.

18-3.5 Interpretation. In the interpretation and application of this ordinance all provisions shall be:

- a. Considered as minimum requirements
- b. Liberally construed in favor of the governing body
- c. Deemed neither to limit or repeal any other powers granted under state statutes.

18-3.6 Warning and Disclaimer of Liability. The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based upon scientific and engineering considerations. Large floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the area of special flood hazards or uses permitted within such areas will be free from flooding or flood damage. This ordinance shall not create liability on the part of the borough, any officer or employee thereof or the Federal Insurance Administration, for any flood damage that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

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18-4 Administration

18-4.1 Establishment of Development Permit. A development permit shall be obtained before construction or development begins within the area of special flood hazard established in Section 18-3.2. Application for a development permit shall be made on forms furnished by the borough engineer and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, full storage of materials, drainage facilities and the location of the foregoing.

Specifically, the following information is required:

a. Elevation in relation to mean sea level, of the lowest flood (including basement: of all structures

b. Elevation in relation to mean sea level to which any structure has been floodproofed;

c. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in Section 10-5.2(2)

d. Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development

18-4.2 Designation of the Borough Engineer. The borough engineer is hereby appointed to administer and implement this ordinance by granting or denying development permit applications in accordance with its provisions.

18-4.3 Duties and Responsibilities of the Borough Engineer. Duties of the engineer shall include, but not be limited to:

a. Review all development permits to determine that the permit requirements of this ordinance have been satisfied

b. Review all development permits to determine that all necessary permits have been obtained from those Federal, State or local governmental agencies from which prior approval is required

c. Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 18-5.3 (1) are met.

d. When base flood elevation and floodway data has not been provided in accordance with Section 18-3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the borough engineer shall obtain, review, and reasonably utilize any base flood elevation and floodway data available

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from a Federal, State or other source, in order to administer Section 18-5.2a SPECIFIC STANDARDS, Residential Construction, and 18-5.2b SPECIFIC STANDARDS, Non-Residential construction.

e. Information to be obtained and maintained:

1. Obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.

2. For all new or substantially improved floodproofed structures:

(a) Verify and record the actual elevation (in relation to mean sea level)

(b) Maintain the floodproofing certifications required in Section 18-4.1(c)

3. Maintain for public inspection all records pertaining to the provisions of this ordinance.

f. Alteration of Watercourses

1. Notify adjacent communities and the New Jersey Department of Environmental Protection prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Insurance Administration.

2. Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

g. Interpretation of FIRM Boundaries: Make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 18-4.4.

18-4.4 Appeals and Variances from the Provisions of this Ordinance.

a. Appeal Board

1. The planning board of the borough shall hear and decide appeals and requests for variances from the requirements of this ordinance.

2. The planning board shall hear and decide appeals when it is alleged there is an error in any requirements, decisions, determination

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made by the borough engineer in the enforcement of or administration of this ordinance.

3. Those aggrieved by the decision of the planning board, or any taxpayer, may appeal such decision to the Superior Court of New Jersey.

4. In passing upon such application, the planning board, shall consider all technical evaluations, all relevant factors, standards specified in other sections of this ordinance:

(a) the danger that materials may be swept onto other lands to the injury of others

(b) the danger to life and property due to flooding or erosion damage.

(c) the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner

(d) the importance of the services provided by the proposed facility to the community

(e) the necessity to the facility of a waterfront location, where applicable

(f) the availability of alternative locations for the proposed use which are not subject to flooding or erosion damage

(g) the compatibility of the proposed use with existing and anticipated development

(h) the relationship of the proposed use to comprehensive plan and flood plain management program of that area

(i) the safety of access to the property in times of flood for ordinary and emergency vehicles

(j) the expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site.

(k) the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges

5. Upon consideration of the factors of Section 18-4.4-a4 and the purposes of this ordinance, the planning board may attach such

conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.

6. The borough engineer shall maintain the records of all appeal actions, including technical information, and report any variances to the Federal Insurance Administration upon request.

b. Conditions for Variances

1. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, provided items (a) through (k) in Section 18-4.4a4 have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.

2. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this section

3. Variances shall not be issued within any designated floodway, if any, increases in flood levels during the base flood discharge would result

4. Variances shall only be issued upon a determination that variance is the minimum necessary considering the flood hazard to afford relief

5. Variances shall only be issued upon:

(a) a showing of good faith and sufficient cause

(b) a determination that failure to grant the variance would result in exceptional hardship to the applicant

(c) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary, public expense, increase nuisances, cause fraud on or victimization of the public as identified in section 18-4.4a4 or conflict with existing local laws or ordinances.

6. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest flood elevation below the base flood elevation and that the cost of flood insurance will be with the increased risk resulting from the reduced lowest floor elevation

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c. Application for Appeal to planning board

1. A complete application shall consist of

- (a) ten copies of a plot plan
- (b) six copies of all other plans in support of the plot plan
- (c) photographs of the site
- (d) application fee see section 18-4.c4
- (e) application form
- (f) all information as required by this chapter or any other ordinance
- (g) Submission of estimated legal and engineering fees of the borough and planning board or the borough, which shall be placed in an escrow account and completed by an estimate of work hours required by the planning board attorney and engineer times their regular municipal hourly rate.

2. Upon submission of a complete application for such an appeal to the planning board, the applicant shall notify all property owners within 200 feet. A list of all property owners within 200 feet will be prepared by the borough at a cost to the applicant of \$10.00. The applicant will also serve notice to the general public through a newspaper of general circulation in the municipality, to the borough environmental commission and to the municipal clerks and environmental commissions of other municipalities which are within 200 feet of said property.

Such notification shall include the name and address of the applicant, the location of the proposed use, and abbreviated description of the proposed use, and announcement of where and at what time the complete application may be reviewed and at what date the application will be heard by the planning board. This should be accomplished at least 120 days prior to the date the application is heard. It is also the responsibility of the applicant to provide proof of publication and service to the Administrative Office at least 1 day prior to the date of the meeting.

3. The planning board shall act upon any such appeal within 60 days of the submission of a complete application. If such appeal is filed simultaneously with another type of application, (ie. subdivision, site plan, variance) the longer time period for decision shall apply.

4. Application for appeals shall be accompanied by the following review fees:

- (a) Single Lot (residential) - \$50.00
- (b) Single lot (non-residential) - \$100.00
- (c) Subdivision within flood hazard - \$100.00
- (d) Site plan within flood hazard - \$100.00

18-5 Provisions for Flood Hazard Reduction

18-5.1 General Standards. In areas of special flood hazards the following standards are required:

a. Anchoring

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure

2. All mobile homes shall be anchored to resist flotation, collapse, or lateral movement by providing over-the-top and frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.

b. Construction Materials and Methods

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage

2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage

c. Utilities

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system

2. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters

3. On-site waste disposal systems shall be located to avoid impairment of to them or contamination from them during flooding

4. Electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding

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d. Subdivision Proposals

1. All subdivision proposals shall be consistent with the need to minimize flood damage

2. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage

3. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.

4. Base flood elevation data shall be provided for subdivision proposals and other proposed development which contain at least 50 lots or 5 acres (whichever is less)

e. Enclosure Openings. For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalized hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria: a minimum of 2 openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

18-5.2 Standards for Special Flood Hazard Areas with Base Flood Elevation Data. In all areas of special flood hazards where base flood elevation data have been provided as set forth in section 18-3.2, Basis for Establishing the Areas for Special Flood Hazard, or in section 18-4.3d, Use of Other Base flood Data, the following standards are required:

a. Residential Construction: New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above base flood elevation

b. Non-Residential Construction: New construction and substantial improvement of any commercial, industrial or other non-residential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation, or:

1. be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water

2. have structural components capable of registering hydrostatic and hydrodynamic loads and effects of buoyancy

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3. be certified by a registered professional engineer or architect that the designs and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection. Such certification shall be provided to the official as set forth in Section 18-4.3e2.

c. Mobile Homes

1. Mobile homes shall be anchored in accordance with Section 18-5.1a2

2. For new mobile home parks and mobile home subdivisions; for expansions to existing mobile home parks and mobile home subdivisions where the repair, reconstruction or improvement of the streets, utilities and pads equals or exceeds 50 percent of value of the streets, utilities and pads before the repair, reconstruction or improvement has commenced; and for mobile homes not placed in a mobile home park or mobile home subdivision, require that:

(a) Stands or lots are elevated on compacted fill or on pilings so that the lowest floor of the mobile home will be at or above the base flood level;

(b) Adequate surface drainage and access for a hauler are provided;

(c) in the instance of elevation and pilings, that;

(1) lots are large enough to permit steps

(2) piling foundations are placed in stable soil no more than ten feet apart,

(3) reinforcement is provided for pilings more than six feet above the ground level.

3. No mobile home shall be placed in a floodway, except in an existing mobile home subdivision.

4. All manufactured homes to be placed or substantially improved within an area of special flood hazard shall be elevated on a permanent foundation such that the top of the lowest floor is at or above the base flood elevation.

18-5.3 Floodways. Located within areas of special flood hazard established in Section 18-3.2 are areas designated as floodways. Since the floodways is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

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a. Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless a technical evaluation demonstrates that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

b. If section 18-5.3a is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Section 18-5.0 Provisions for Flood Hazard Reduction.

c. Prohibit the placement of any mobile homes, except in an existing mobile home park or existing mobile home subdivision.

d. In all areas of special flood hazard in which base flood elevation data has been provided and no floodway has been designated, the cumulative effect of any proposed development, when combined with all other existing and anticipated development, shall not increase the water surface elevation of the base flood more than two-tenths (0.2) of a foot at any point.

e. All new construction and substantial improvements shall be elevated on piling or columns) is elevated to or above the base flood level, with all space below the lowest floor's supporting member open so as not to impede the flow of water, except for breakaway walls.

f.

1. All new construction and substantial improvements shall be securely anchored on piling or columns

2. The pile or column foundation and structure attached thereto shall be anchored to resist flotation, collapse or lateral movement due to the effects of wind and water loading values each of which shall be a one percent change of being equalled or exceeded in any given year (100 year mean recurrence interval)

3. There shall be no fill used for structural support

g. A registered professional engineer or architect shall develop or review the structural design specifications and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice.

h.

1. Any alteration, repair, reconstruction, or improvement to a structure started after the enactment of this ordinance shall not enclose the space below the lowest floor unless breakaway walls, open wood lattice-work or insect screening are used as provided for in this section.

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2. Breakaway walls, open wood lattice-work or insect screening shall be allowed below the base flood elevation provided that they are intended to collapse under wind and water loads without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Breakaway walls shall not be designed for a safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading of 20 pounds per square foot (either by design or when so required by local or state codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions

(a) breakaway wall collapse shall result from a water load less than that which would occur during the base flood

(b) the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement or other structural damage due to the effects of wind and water load acting simultaneously on all building components (structural and non-structural).

3. If breakaway walls are utilized, such enclosed space shall be used solely for parking of vehicles, building access, or storage and not for human habitation.

4. Prior to construction, plans for any breakaway wall must be submitted to the borough for approval.