

LINCOLN/LANCASTER COUNTY PLANNING STAFF REPORT

for September 28, 2005 PLANNING COMMISSION MEETING

This is a combined staff report for related items. This report contains a single background and analysis section for all items.

PROJECT #: Change of Zone #05070
Miscellaneous #05023

PROPOSAL: This is a text change to the zoning and subdivision ordinances to make clarifications and address discrepancies regarding the use of best available flood information within the Existing Urban Area and New Growth Areas.

CONCLUSION: These revisions will provide a mechanism to consistently apply the best technical flood hazard information available throughout the City's jurisdiction, and thus to better protect homes and businesses in the future from flood hazards.

<u>RECOMMENDATION:</u>	Approval
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GENERAL INFORMATION:

LEGAL DESCRIPTION: Revisions to 26.24, "Flood Regulations for Existing Urban Area," 26.25, "Flood Regulations for New Growth Areas," 27.52, "Flood Regulations for Existing Urban Area," and 27.53, "Flood Regulations for New Growth Areas."

HISTORY:

May 2004. Text changes to the zoning and subdivision ordinances were adopted to distinguish between the Existing Urban Area and New Growth Areas for the purposes of flood standards, to adopt stricter standards for New Growth Areas, and to achieve consistency regarding information submitted for permits to develop within the floodplain and floodprone areas.

COMPREHENSIVE PLAN SPECIFICATIONS:

Page F80 - Improve the accuracy of floodplain mapping and make it a priority to which specific resources are dedicated. Continue to develop a comprehensive, watershed approach to floodplain mapping.

Page F80 - Reinforce accountability and disclosure laws regarding real estate transactions, enhance education efforts to notify prospective buyers, and improve methods for assessing and taxing floodplain properties, especially land held in conservation easements.

ANALYSIS:

1. These are proposed text revisions for the Zoning and Subdivision Ordinances to make clarifications and address discrepancies regarding the use of best available flood information within the Existing Urban Area and New Growth Areas.
2. These text revisions do not impact measures required for development within the floodplain. The revisions correct an inconsistency inadvertently created by the text changes adopted in 2004 which recognized updated floodplain information in new growth areas, but not within the existing urban area.
3. While a great deal of the City's floodplain map updates are associated with master plans for new growth areas, the City has also updated or is in the process of updating floodplain mapping for the existing urban area.
4. The revisions also make it clear that in all areas revised floodway boundaries may be part of the updated flood information.
5. These revisions will provide a mechanism to consistently apply the best technical flood hazard information available throughout the City's jurisdiction, and thus to better protect homes and businesses in the future from flood hazards.

Prepared by:

Ray Hill
Development Review Manager
September 14, 2005

APPLICANT: Karl Fredrickson, Director
Public Works & Utilities Dept.
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Lincoln, NE 68508

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CITY OF LINCOLN
NEBRASKA

MAYOR COLEEN J. SENG
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Public Works and Utilities Department
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September 1, 2005

Marvin Krout, Director
Lincoln-Lancaster Co. Planning Dept.
555 South 10th Street
Lincoln, NE 68508

Dear Marvin:

RE: Text Revisions for Use of Best Available Flood Information

Attached please find proposed text revisions for the Zoning and Subdivision Ordinances to make clarifications and address discrepancies regarding the use of best available flood information within the Existing Urban Area and New Growth Areas. Parallel text changes are proposed to 26.24, "Flood Regulations for Existing Urban Area," 26.25, "Flood Regulations for New Growth Areas," 27.52, "Flood Regulations for Existing Urban Area," and 27.53, "Flood Regulations for New Growth Areas."

This text change does not impact measures required for development within the floodplain. It simply corrects an inconsistency inadvertently created by the text changes adopted in 2004 which recognized updated floodplain information in new growth areas, but not within the existing urban area. While a great deal of the City's floodplain map updates are associated with master plans for new growth areas, we have also updated or are in the process of updating floodplain mapping for the existing urban area. The revisions also clarify that revised floodway boundaries may be part of the updated flood information.

These revisions will provide a mechanism to consistently apply the best technical flood hazard information available throughout the City's jurisdiction, and thus to better protect homes and businesses in the future from flood hazards.

Should you have any questions, please contact Nicole Fleck-Tooze at 441-6173 or ntooze@lincoln.ne.gov.

Sincerely,

Karl Fredrickson
Director of Public Works & Utilities

cc: Nicole Fleck-Tooze, Ben Higgins, John Callen - PW/U
Lana Tolbert - B&S Dept.
Brian Dunnigan - NDNR
Glenn Johnson - LPSNRD

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ORDINANCE NO. _____

1 AN ORDINANCE amending Chapter 27.52 of the Lincoln Municipal Code relating
2 to Flood Regulations for the Existing Urban Area by amending Section 27.52.010 to add a reference
3 to floodprone area; by amending Section 27.52.020 to add a definition for “floodprone area” and a
4 definition for “Watershed Master Plan”; by amending Section 27.52.030 to prohibit development
5 within the floodway, floodplain or floodprone areas as provided in the general standards and to
6 provide that the floodway shall be the area as designated by the Federal Emergency Management
7 Agency or by hydrologic and hydraulic studies approved by the City where this information is the
8 best available information; by amending Section 27.52.040 to include floodprone areas; by amending
9 Section 27.52.050 to include floodprone areas; and by repealing Sections 27.52.010, 27.52.020,
10 27.52.030, 27.52.040 and 27.52.050 of the Lincoln Municipal Code as hitherto existing.

11 BE IT ORDAINED by the City Council of the City of Lincoln, Nebraska:

12 Section 1. That Section 27.52.010 of the Lincoln Municipal Code be amended to read
13 as follows:

14 **27.52.010 Scope of Regulations.**

15 The regulations set forth in this chapter, or set forth elsewhere in this title when referred to
16 in this chapter, are known as the Flood Regulations for Existing Urban Area. The regulations shall
17 apply to all lands within the Existing Urban Area in the floodplain or floodprone area within the
18 zoning jurisdiction of the City of Lincoln that are subject to a one percent or greater chance of flood-
19 ing in any given year. The September 21, 2001 official Flood Insurance Rate Map (FIRM) and Flood
20 Insurance Study (FIS) for Lancaster County, Nebraska and Incorporated Areas and any revisions
21 thereto are hereby adopted by reference and declared to be a part of this Chapter. A copy of the
22 FIRM and FIS are on file in the Department of Building and Safety.

1 The degree of flood protection required by this Chapter is considered reasonable for
2 regulatory purposes and is based on engineering and scientific methods of study. Larger floods may
3 occur on rare occasions or the flood height may be increased by man-made or natural causes, such
4 as ice jams and bridge openings restricted by debris. Compliance with these regulations does not
5 imply that lands outside a floodplain or floodprone areas or uses within such areas will be free from
6 flooding or flood damage. This Chapter shall not create liability on the part of the City of Lincoln
7 or any officer or employee thereof for any flood damages that may result from reliance on this
8 Chapter or any administrative decision lawfully made thereunder.

9 Section 2. That Section 27.52.020 of the Lincoln Municipal Code be amended to read
10 as follows:

11 **27.52.020 Definitions.**

12 For the purpose of this chapter, certain terms and words are hereby defined:

13 **100-Year Flood** shall mean the flood having a one percent chance of being equaled or
14 exceeded in any given year.

15 **Base Flood** shall mean the flood having a one percent chance of being equaled or exceeded
16 in any given year.

17 **Basement** shall mean any enclosed area having its floor below grade level on all sides.

18 **Development** shall mean any man-made change to improved or unimproved real estate,
19 including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving,
20 excavation or drilling operations, or storage of equipment or materials.

21 **Existing manufactured home park or subdivision** shall mean a manufactured home park
22 or subdivision for which the construction of facilities for servicing the lots on which the
23 manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the
24 construction of streets, and either final site grading or the pouring of concrete pads) is completed
25 before the effective date of this ordinance.

26 **Existing Urban Area** shall mean those areas inside the corporate limits of the City of
27 Lincoln, as well as those areas outside the corporate limits having a zoning designation other than
28 AG Agriculture and AGR Agricultural Residential, on the effective date of this ordinance.

29 **Expansion to an existing manufactured home park or subdivision** shall mean the
30 preparation of additional sites by the construction of facilities for servicing the lots on which the

1 manufactured homes are to be affixed (including the installation of utilities, the construction of
2 streets, and either final site grading or the pouring of concrete pads).

3 **FEMA** shall mean the Federal Emergency Management Agency.

4 **Flood Insurance Rate Map (FIRM)** shall mean the September 21, 2001 Flood Insurance
5 Rate Map and any revisions thereto, on which FEMA has delineated both the areas of special flood
6 hazards and the risk premium zones applicable to the community.

7 **Flood Insurance Study (FIS)** shall mean the Flood Insurance Study for Lancaster County,
8 Nebraska and Incorporated Areas published by FEMA in conjunction with the FIRM and containing
9 background data such as base flood discharges and water surface elevations used to prepare the
10 FIRM.

11 **Floodplain** shall mean those lands which are subject to a one percent or greater chance of
12 flooding in any given year, as shown on the Flood Insurance Rate Map issued by FEMA for
13 Lancaster County, Nebraska and incorporated areas, as amended. Copies of the said maps shall be
14 on file in the Department of Building and Safety.

15 **Floodprone area shall mean those lands subject to a one percent or greater chance of**
16 **flooding in any given year, as determined by hydrologic and hydraulic studies completed by the City**
17 **or other government agency, or other acceptable source as approved by the City where this is the best**
18 **available information.**

19 **Floodproofing** shall mean any combination of structural and nonstructural additions,
20 changes, or adjustments to structures which reduce or eliminate flood damage to real estate or
21 improved real property, water and sanitary facilities, structures and their contents.

22 **Floodway** shall mean the channel of a river or other watercourses and the adjacent land areas
23 that must be reserved in order to discharge the base flood without cumulatively increasing the water
24 surface elevation more than one foot.

25 **Historic structure** shall mean any structure that is: (a) listed individually in the National
26 Register of Historic Places (a listing maintained by the Department of the Interior) or preliminarily
27 determined by the Secretary of the Interior as meeting the requirements for individual listing on the
28 National Register; (b) certified or preliminarily determined by the City of Lincoln, a Certified Local
29 Government (CLG), in consultation with the Nebraska State Historic Preservation Officer (SHPO),
30 as contributing to the historical significance of a locally or nationally designated historic district; (c)

1 individually designated as a Landmark by the City of Lincoln, a CLG, under the provisions of
2 Chapter 27.57 of the Lincoln Municipal Code.

3 **Letter of Map Change (LOMC)** shall mean a determination document issued by FEMA
4 that officially revises the FIRM based on updated information, whether improved data or topography
5 changes created by fill placement. Includes Letter of Map Amendment (LOMA), Letter of Map
6 Revision (LOMR), and Letter of Map Revision based on Fill (LOMR-f).

7 **Lowest floor** shall mean the lowest floor of the lowest enclosed area (including basement).
8 An unfinished or flood-resistant enclosure, usable solely for parking of vehicles or building access,
9 in an area other than a basement area is not considered a building's lowest floor; provided that such
10 enclosure is not built so as to render the structure in violation of the applicable non-elevation design
11 requirements of this ordinance.

12 **Manufactured home** shall mean, for purposes of this chapter, a structure, transportable in
13 one or more sections, which is built on a permanent chassis and is designed for use with or without
14 a permanent foundation when attached to the required utilities. The term "manufactured home" shall
15 not include a "recreational vehicle."

16 **Manufactured home park or subdivision** shall mean a parcel (or contiguous parcels) of
17 land divided into two or more manufactured home lots for rent or sale.

18 **NAVD** shall mean the North American Vertical Datum of 1988.

19 **New construction** shall mean structures for which the start of construction commenced on
20 or after the effective date of this ordinance and shall include any subsequent improvements to such
21 structures.

22 **New manufactured home park or subdivision** shall mean a manufactured home park or
23 subdivision for which the construction of facilities for servicing the lots on which the manufactured
24 homes are to be affixed (including at a minimum, the installation of utilities, the construction of
25 streets, and either final site grading or the pouring of concrete pads) is completed on or after the
26 effective date of this ordinance.

27 **Non-substantial improvement** shall mean any improvement that does not meet the
28 definition of substantial improvement, as defined in this section.

29 **Qualified engineer** shall mean a registered professional engineer who, by reason of training
30 and experience, is considered knowledgeable in hydrology and hydraulics and their application to

1 the flood insurance study and has demonstrated competence to the satisfaction of the Director of
2 Building and Safety.

3 **Recreational vehicle** shall mean a vehicle which is:

- 4 (1) built on a single chassis;
- 5 (2) 400 square feet or less when measured at the largest horizontal projections;
- 6 (3) designed to be self-propelled or permanently towable by a light duty truck;

7 and

8 (4) designed primarily not for use as a permanent dwelling but as temporary living
9 quarters for recreational, camping, travel, or seasonal use.

10 **Riverine** shall mean relating to, formed by, or resembling a river (including tributaries,
11 streams, brooks, etc.).

12 **Special Flood Hazard Area** shall mean the land in the floodplain subject to a one percent
13 or greater chance of flooding in any given year.

14 **Start of construction** shall mean either the first placement of permanent construction of a
15 structure on a site, such as the pouring of slabs or footings, the installation of piles, the construction
16 of columns, or any work beyond the stage of excavation, or the placement of a manufactured home
17 on a foundation. Permanent construction does not include land preparation, such as clearing,
18 grading, and filling; nor does it include the installation of streets and/or walkways; nor does it
19 include excavation for a basement, footings, piers or foundations or the erection of temporary forms;
20 nor does it include the installation on the property of accessory buildings, such as garages or sheds
21 not occupied as dwelling units or not as part of the main structure. For a substantial improvement,
22 the actual start of construction shall mean the first alteration of any wall, ceiling, floor, or other
23 structural part of a building, whether or not that alteration affects the external dimension of the
24 building.

25 **Structure** shall mean, for floodplain management purposes, a walled and roofed building,
26 including a gas or liquid storage tank, that is principally above ground, as well as a manufactured
27 home.

28 **Substantial damage** shall mean damage of any origin sustained by a structure whereby the
29 cost of restoring the structure to its before damaged condition would equal to or exceed fifty percent
30 of the market value of the structure before the damage occurred.

1 **Substantial improvement** shall mean any reconstruction, rehabilitation, addition, or other
2 improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of
3 the structure before the start of construction of the improvement. Substantial improvement shall
4 include structures which have incurred substantial damage, regardless of the actual repair work
5 performed. The term shall not, however, include either (i) any project for improvement of a structure
6 to correct existing violations of state or local health, sanitary, or safety code specifications which
7 have been identified by the local code enforcement official and which are the minimum necessary
8 to assure safe living conditions, or (ii) any alteration of a historic structure, provided that the
9 alteration will not preclude the structure's continued designation of a historic structure.

10 **Variance** shall mean a grant of relief from the terms of a floodplain management regulation,
11 this shall be done by Special Permit in accordance with Section 27.52.060 of this chapter.

12 **Violation** shall mean the failure of a structure or other development to be fully compliant
13 with the floodplain management regulations as set forth in this chapter. A structure or other
14 development without the elevation certificate, other certifications, or other evidence of compliance
15 as required is presumed to be in violation until such time as that documentation is provided.

16 **Watershed Master Plan** shall mean a plan generated by the City or by the City in
17 cooperation with other agencies, which includes hydrologic and hydraulic modeling for the 100-year
18 event, including 100-year floodplain elevation and limits.

19 Section 3. That Section 27.52.030 of the Lincoln Municipal Code be amended to read
20 as follows:

21 **27.52.030 Standards.**

22 The following shall be the standards to be followed in connection with the Flood Regulations
23 for the Existing Urban Area:

24 (a) General Standards:

25 (1) No development or substantial improvement shall be permitted within the
26 floodway as designated by the Federal Emergency Management Agency (FEMA) or as determined
27 by hydrologic and hydraulic studies completed by the City or other government agency, or other
28 acceptable source as approved by the City, unless the applicant has demonstrated that the proposed
29 development or substantial improvement is in conformance with the provisions of Section
30 27.52.030(h) below.

1 († 2) Until In those areas where a floodway has not been designated, no
2 development or substantial improvement may be permitted within the floodplain or floodprone area
3 unless the applicant has demonstrated that the proposed development or substantial improvement,
4 when combined with all other existing and reasonably anticipated developments or substantial
5 improvements, will not increase the water surface elevation of the 100-year flood more than one foot
6 at any location.

7 An exception to the above shall be permitted provided the applicant has acquired by
8 land rights purchase, flowage easement, or other legal arrangement the right to increase the flood
9 levels on all affected lands greater than one foot (1.0'), and provided that before any permit is issued
10 the applicant submits a ~~Federal Emergency Management Agency (FEMA)~~ approved Conditional
11 Letter of Map Revision to the Director of Building and Safety. When such encroachment is
12 completed, a FEMA approved Letter of Map Revision must also be provided by the applicant.

13 (2 3) Roadway bridges, and other drainage facilities, may have their superstructure
14 submerged or partially submerged below the base flood level, provided that the facility has been
15 designed to resist the hydrostatic and hydrodynamic loads as well as the effects of the buoyancy as
16 certified by a registered professional engineer.

17 (3 4) Within the floodplain or floodprone area, all new construction and substantial
18 improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure
19 resulting from hydrodynamic and hydrostatic loads including the effects of buoyancy; constructed
20 with materials and utility equipment resistant to flood damage; and constructed by methods and prac-
21 tices that minimize flood damage. Electrical, heating, ventilation, plumbing, and air-conditioning
22 equipment and other service facilities shall be elevated at least one foot above the base flood
23 elevation or designed so as to prevent water from entering or accumulating within the components
24 during conditions of flooding. A registered professional engineer or architect shall certify that these
25 provisions are satisfied.

26 (4 5) The location, grade, and floodproofing of all new and replacement water and
27 sanitary sewer systems which are to be extended into or through any portion of the floodplain or
28 floodprone area to serve the proposed development shall first be approved by the city prior to the
29 extension of such utilities into the floodplain.

1 (5 6) New or replacement water supply systems and sanitary sewage systems shall
2 be designed to minimize or eliminate infiltration of flood waters into said systems and discharges
3 from said systems into flood waters. Individual disposal systems shall be designed in accordance
4 with the standards set forth in Chapter 24.38 of the Lincoln Municipal Code in order to minimize
5 impairment to them or contamination from them during flooding.

6 (6 7) On-site waste disposal systems shall be located to avoid impairment to the
7 system or contamination from such systems during flooding.

8 (7 8) The storage or processing of materials that are in time of flooding buoyant,
9 flammable, explosive, or could be injurious to human, animal, or plant life is prohibited.

10 (8 9) Storage of other material or equipment may be allowed if not subject to major
11 damage by floods and firmly anchored to prevent flotation or if readily removable from the area
12 within the time available after the issuance of flood warning by appropriate authorities.

13 (9 10) Filling, grading, and excavation may be allowed in the floodplain or
14 floodprone area under the following conditions:

15 (i) Fill shall be protected against erosion and sediment by such measures as
16 rip-rap, vegetative cover, bulkheading, or sedimentation basins as approved by the Director of
17 Building and Safety.

18 (ii) Any fill to be deposited in the floodplain or floodprone area must be
19 shown by the applicant not to be a detriment to the general public as well as the surrounding land
20 owners.

21 (iii) Fill materials shall be of a selected type, preferably clean dirt, gravel, or
22 rock no greater than two inches in diameter. The use of decomposing materials, such as wood and
23 other degradables, shall be prohibited. Fill shall be placed in six inch compacted layers. Fill selec-
24 tion and placement shall recognize the effects of saturation from flood waters on slope stability,
25 uniform and differential settlement, and scour potentials.

26 (iv) Prior to placement of any fill or embankment materials, the land upon
27 which fill is to be placed shall be cleared of debris, snags, stumps, brush, down timber, logs, and
28 other objects. All materials and debris from this clearing shall be removed from the proposed fill
29 and disposed of at approved locations outside the floodplain or floodprone area.

1 (v) Fill slopes for granular materials shall be no steeper than one vertical
2 on two horizontal unless substantiating data justifying steeper slopes are submitted to the Director
3 of Building and Safety and approved.

4 (vi) Excavation in the floodplain or floodprone area shall be done so that
5 the land surface is maintained in such a manner that surface waters do not collect and pond unless
6 specifically approved by the Director of Building and Safety.

7 (b) Residential Construction. All new construction and substantial improvements of
8 residential structures within the floodplain or floodprone area shall have the lowest floor, including
9 basement, elevated at least one foot above the base flood level. Garages and storage buildings used
10 exclusively for the storage of motor vehicles, and storage of other items readily removable in the
11 event of a flood warning may have their lowest floor below flood elevation, provided the building
12 structure is capable of withstanding hydrostatic and hydrodynamic forces caused by the 100-year
13 flood and, further, provided that no utilities are installed in the building except elevated or
14 floodproofed electrical fixtures. If the building is converted to another use, it must be brought into
15 full compliance with the requirements of this title governing such uses.

16 (c) Nonresidential Construction. All new construction and substantial improvements of
17 commercial, industrial, and other nonresidential structures within the floodplain or floodprone area
18 shall either have the lowest floor, including basement, elevated at least one foot above the base flood
19 level or, together with attendant utility and sanitary facilities, be floodproofed so that below the base
20 flood level plus one foot the structure is watertight in accordance with the performance standards set
21 forth in the city's building code. A registered professional engineer or architect shall develop or re-
22 view structural design, specifications, and plans for the construction, and shall certify that the design
23 and methods of construction meet the watertight performance standards. The certification shall be
24 provided to the city as set forth in Section 27.52.040 of this chapter.

25 (d) For all new construction and substantial improvements, fully enclosed areas below
26 the lowest floor that are usable solely for parking of vehicles, building access or storage in an area
27 other than a basement and which are subject to flooding shall be designed to automatically equalize
28 hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs
29 for meeting this requirement must either be certified by a registered professional engineer or architect
30 or must meet or exceed the following minimum criteria:

1 (1) A minimum of two openings having a total net area of not less than one square
2 inch for every square foot of enclosed area subject to flooding shall be provided;

3 (2) The bottom of all openings shall be no higher than one foot above grade; and

4 (3) Openings may be equipped with screens, louvers, or other coverings or
5 devices; provided, that they permit the automatic entry and exit of floodwaters.

6 (e) Manufactured Home Parks and Subdivisions. All manufactured homes shall be
7 located in a manufactured home park or a manufactured home subdivision in accordance with
8 Sections 27.63.120 and 27.63.125 of this title. No manufactured home shall be located in a
9 manufactured home park or subdivision within the floodplain or floodprone area unless the
10 following conditions are met:

11 (1) New manufactured home parks and subdivisions; expansions; substantial
12 damage. Manufactured homes placed (i) on individual lots within or outside of new manufactured
13 home parks or subdivisions, (ii) on individual lots within an expanded area of an existing
14 manufactured home park or subdivision, or (iii) in an existing manufactured home park or
15 subdivision in which a manufactured home has incurred substantial damage as the result of a flood,
16 shall be elevated on a permanent foundation such that their lowest floor is at least one foot above the
17 base flood elevation and be securely anchored to an adequately anchored foundation system in accor-
18 dance with the standards to resist floatation, collapse, and lateral movement set forth in subsection
19 (f) below;

20 (2) Existing manufactured home parks and subdivisions. Manufactured homes
21 to be placed or substantially improved on individual lots in existing manufactured home parks or
22 subdivisions, shall either (i) be elevated on a permanent foundation such that their lowest floor is at
23 least one foot above the base flood elevation or (ii) be supported by reinforced piers or other
24 foundation elements of at least equivalent strength that are no less than three feet in height above
25 grade and be securely anchored to an adequately anchored foundation system in accordance with the
26 standards to resist floatation, collapse, and lateral movement set forth in subsection (f) below.

27 If the option provided by (ii) above is exercised, the current owner and
28 occupant, and any future buyer, renter, or occupier shall jointly acknowledge in writing that the
29 option of piers as an alternative to placement of the manufactured home one foot above the base
30 flood elevation has been exercised and, therefore, may be subject to flooding. Such acknowledgment

1 shall be filed with the Director of Building and Safety prior to the issuance of hook-up permits to
2 the subject home.

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

4 (4) Where manufactured homes are elevated on pilings, lots shall be large enough
5 to permit steps, piling foundations shall be placed in stable soil no more than ten feet apart, and
6 reinforcement shall be provided for pilings more than six feet above the ground level; and

7 (5) The grade of land for manufactured home parks or subdivisions which are
8 situated within the floodplain or floodprone area shall be raised at least one foot above the base flood
9 elevation.

10 (f) **Manufactured Homes Located Outside of a Manufactured Home Park or Subdivision.**
11 Manufactured homes located outside of a manufactured home park or subdivision shall be elevated
12 at least one foot above the base flood elevation or anchored to the elevated foundation to resist flota-
13 tion, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use
14 of over-the-top and frame ties to ground anchors;

15 (1) If over-the-top ties are used, such ties shall be provided at each of the four cor-
16 ners of the manufactured home, with two additional ties per side at intermediate locations except that
17 manufactured homes less than fifty feet in length may provide only one additional tie per side;

18 (2) Frame ties shall be provided at each corner of the manufactured home with
19 five additional ties per side at intermediate points except that manufactured homes less than fifty feet
20 in length may provide only four additional ties per side;

21 (3) All components of the anchoring system shall be capable of carrying a force
22 of 4,800 pounds; and

23 (4) Any additions to the manufactured home shall be similarly anchored.

24 (g) **Recreational Vehicles:**

25 (1) Shall be on the site for fewer than 180 consecutive days;

26 (2) Shall be fully licensed and ready for highway use (on its wheels or jacking
27 system, is attached to the site only by quick disconnect type utilities and security devices, and has
28 no permanently attached additions); or

29 (3) Meet the requirements for manufactured homes.

30 (h) **Floodways.**

1 (1) Encroachments into the floodway are prohibited, including fill, new
2 construction, substantial improvements, and other development within the floodway unless
3 certification by a qualified engineer is provided, demonstrating that the proposed encroachment will
4 not result in any increase in flood levels during occurrence of the base flood discharge.

5 An exception to the above shall be permitted provided the applicant has
6 acquired by land rights purchase, flowage easement, or other legal arrangement the right to increase
7 the flood levels on all affected lands, and provided that before any permit is issued the applicant
8 submits a Federal Emergency Management Agency (FEMA) approved Conditional Letter of Map
9 Revision to the Director of Building and Safety. When such encroachment is completed, a FEMA
10 approved Letter of Map Revision must also be provided by the applicant.

11 (2) If the above provision is satisfied, all new construction and substantial
12 improvements shall comply with all other applicable provisions contained in Section 27.52.030.

13 (3) The placement of any manufactured home parks and manufactured home sub-
14 divisions and the construction of new structures for human habitation within the floodway is
15 prohibited.

16 (i) AO Zones. Designated AO zones within the floodplain have special flood hazards
17 associated with base flood depths of one to three feet where a clearly defined channel does not exist
18 and where the path of flooding is unpredictable and indeterminate; therefore, the following
19 provisions apply within AO zones:

20 (1) All new construction and substantial improvements of residential structures
21 shall have the lowest floor (including basement) elevated above the highest adjacent grade at least
22 as high as one foot above the depth number specified in feet on the FIRM (at least two feet if no
23 depth number is specified).

24 (2) All new construction and substantial improvements of non-residential
25 structures shall:

26 (i) Have the lowest floor elevated above the highest adjacent grade at least
27 as high as one foot above the depth number specified in feet on the community's FIRM (at least two
28 feet if no depth number is specified), or

29 (ii) Together with attendant utility and sanitary facilities be completely
30 floodproofed to or above that level so that any space below that level is watertight with walls

1 substantially impermeable to the passage of water and with structural components having the
2 capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Such
3 certification shall be provided to the official as set forth in Section 27.52.040(d).

4 (3) Adequate drainage paths around structures on slopes shall be required in order
5 to guide floodwaters around and away from proposed structures.

6 Section 4. That Section 27.52.040 of the Lincoln Municipal Code be amended to read
7 as follows:

8 **27.52.040 Administration.**

9 A development permit shall be required in conformance with the provisions of this chapter.
10 All new construction of residential and nonresidential structures or other development, including the
11 placement of manufactured homes, within the floodplain or floodprone area shall hereafter be in full
12 compliance with the terms of this chapter and other applicable regulations. All existing residential
13 and nonresidential structures that are not in compliance with the terms of this chapter shall be
14 required to conform to these terms before substantial improvements can be made. It shall be the duty
15 of the Director of Building and Safety to enforce this chapter. His duties shall include, but not be
16 limited to:

17 (a) Review all development permits to assure that the permit requirements for this
18 chapter have been satisfied;

19 (b) Review proposed development to assure that all necessary permits have been obtained
20 from those agencies from which prior approval is required by federal, state or local law, including
21 Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334;

22 (c) Notify affected adjacent communities and the Nebraska Department of Natural
23 Resources in riverine situations prior to any alteration or relocation of a watercourse, and submit
24 copies of such notifications to FEMA, and assure that the flood-carrying capacity within the altered
25 or relocated portion of any watercourse is maintained;

26 (d) Require a registered professional engineer or registered professional land surveyor
27 to verify the actual elevation in NAVD 1988 of the lowest floor, including basement, of all new or
28 substantially improved structures and to which the new or substantially improved structures have
29 been floodproofed. The certification of the lowest floor shall be submitted to the Director of Building
30 and Safety at the point of construction when the lowest floor elevation may be established and prior

1 to the erection of the walls of any buildings. Such information shall be recorded and maintained by
2 the Director of Building and Safety;

3 (e) Where floodproofing is utilized for a particular structure, obtain certification from
4 a registered professional engineer or architect that the floodproofing methods are adequate in
5 accordance with appropriate provisions of the city's building code;

6 (f) Where interpretation is needed as to the exact location of boundaries of the floodplain
7 or floodprone area; for example, where there appears to be a conflict between a mapped boundary
8 and actual field conditions, obtain the necessary interpretation from appropriate city engineering staff
9 of the Department of Public Works and Utilities;

10 (g) In Zone A (no base flood elevations determined), require that proposed developments
11 (including proposals for manufactured home parks and subdivisions) greater than either five acres
12 or fifty lots include within such proposals detailed base flood elevation data based on an engineering
13 study performed by a qualified engineer in accordance with FEMA approved methods for generating
14 detailed base flood elevations. This provision shall not apply where the use of the property is not
15 being changed and where there are no physical changes on the site which have the potential to
16 increase the flood hazard.

17 (h) When base flood elevation data have not been provided on the FEMA Flood
18 Insurance Rate Map, through the provisions in Section 27.52.040(g) above, or in other studies
19 already completed or accepted by the City, obtain, review, and reasonably utilize any base flood
20 elevation and floodway data available from a federal, state, or other source, as criteria for requiring
21 that new construction, substantial improvements, or other developments in the floodplain or
22 floodprone area meet the standards of this chapter.

23 Section 5. That Section 27.52.050 of the Lincoln Municipal Code be amended to read
24 as follows:

25 **27.52.050 Permit Procedures.**

26 Application for a development permit shall be made to the Director of Building and Safety
27 on forms furnished by him and may include, but not be limited to, the plans drawn to scale showing
28 the nature, location, dimensions, and elevations of the area in question, existing or proposed
29 structures, fill, storage of materials, drainage facilities, and the location of the foregoing.
30 Specifically, the following information is required:

1 (a) Base flood elevation in NAVD 1988 datum. When utilizing National Geodetic
2 Vertical Datum of 1929 (NGVD 1929) base flood elevations from FEMA floodplain maps, 0.50 feet
3 shall be added to NGVD 1929 to obtain NAVD 1988, unless a more accurate conversion factor using
4 an established conversion program is demonstrated to the satisfaction of the Director of Building and
5 Safety.

6 (b) Elevation of the lowest floor, including basement, of all structures. All elevations
7 shall be submitted in NAVD 1988.

8 (c) Elevation to which any nonresidential structure has been floodproofed. All elevations
9 shall be submitted in NAVD 1988.

10 (d) Documentation and certification from a registered professional engineer or architect
11 that the nonresidential floodproofed structure meets the floodproofing specifications set forth in the
12 city's building code.

13 (e) Documentation and certification from a registered professional engineer that if the
14 development is in the floodway, that the development will cause no rise in the 100-year flood
15 elevation.

16 (f) Description of the extent to which any watercourse will be altered or relocated as a
17 result of proposed development.

18 (g) Limits of floodway and floodplain or floodprone area.

19 (h) If the permit is for fill or the development of multiple structures, the following
20 additional information is required to be shown on a grading and drainage plan:

21 (1) A grading plan showing existing and proposed grades, location of channel and
22 hydraulic cross-sections and profiles, with elevations in NAVD 1988 datum.

23 (2) Hydrologic and hydraulic summary report.

24 (3) The type and extent of the proposed use or development of the land which is
25 located within the floodplain or floodprone area, along with such information as is necessary to
26 determine the effect flood waters will have on such development and use and the effect such
27 development and use may have upon the flood waters. All such information shall show the location
28 of the proposed use, areas of habitation and employment, including the location, size, and floor
29 elevation of any structures, the location and elevation of all parking areas, and the use, location, and
30 elevations of all open land areas.

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(4) The amount of fill material brought into the floodplain or floodprone area from outside the floodplain or floodprone area.

Section 6. That Sections 27.52.010, 27.52.020, 27.52.030, 27.52.040, and 27.52.050 of the Lincoln Municipal Code as hitherto existing be and the same are hereby repealed.

Section 7. That this ordinance shall take effect and be in force from and after its passage and publication according to law.

Introduced by:

Approved as to Form & Legality:

City Attorney

Approved this ___ day of _____, 2005:

Mayor

ORDINANCE NO. _____

1 AN ORDINANCE amending Chapter 27.53 of the Lincoln Municipal Code relating
 2 to Flood Regulations for New Growth Areas by amending Section 27.53.030 to provide development
 3 standards on property located in the floodway, floodplain or floodprone area; and repealing Section
 4 27.53.030 of the Lincoln Municipal Code as hitherto existing.

5 BE IT ORDAINED by the City Council of the City of Lincoln, Nebraska:

6 Section 1. That Section 27.53.030 of the Lincoln Municipal Code be amended to read
 7 as follows:

8 **27.53.030 Standards.**

9 The following shall be the standards to be followed in connection with the Flood Regulations
 10 for New Growth Areas:

11 (a) General Standards:

12 (1) No development, substantial improvement or lateral addition may be
 13 permitted within the floodway as designated by the Federal Emergency Management Agency
 14 (FEMA) or as determined by hydrologic and hydraulic studies completed by the City or other
 15 government agency, or other acceptable source as approved by the City, unless the applicant has
 16 demonstrated that the proposed development or substantial improvement shall:

17 (i) Be accomplished in conformance with the Flood Design Criteria.

18 (ii) ~~Cause no increase in the water surface elevation of the 100-year flood~~ Be
 19 accomplished in conformance with Section 27.53.030(h) below.

20 (2) No development, substantial improvement or lateral addition may be
 21 permitted within the floodplain or floodprone area outside the floodway or where no floodway has
 22 been designated except as provided in Section 10.2 of the Flood Design Criteria unless the applicant
 23 has demonstrated that the proposed development or substantial improvement shall:

24 (i) Be accomplished in conformance with the Flood Design Criteria.

25 (ii) Cause no greater than five hundredths of a foot (0.05') of rise in the 100-
 26 year flood elevation.

1 (iii) Cause no greater than five hundredths of a foot (0.05') of rise in areas
2 with a watershed master plan for the 2-, 10-, and 100-year flood elevations, as demonstrated using
3 the hydraulic model from the watershed master plan.

4 (iv) Notwithstanding certain exceptions in the Flood Design Criteria allowing
5 for greater than five hundredths of a foot (0.05') of rise in the flood elevation, the development shall
6 not cause greater than one foot (1.0') of rise in the FEMA-mapped flood fringe where no floodway
7 has been designated.

8 An exception to the above shall be permitted provided the applicant has
9 acquired by land rights purchase, flowage easement, or other legal arrangement the right to increase
10 the flood levels greater than one foot (1.0') on all affected lands, and provided that before any permit
11 is issued the applicant submits a ~~Federal Emergency Management Agency (FEMA)~~ approved
12 Conditional Letter of Map Revision to the Director of Building and Safety. When such
13 encroachment is completed, a FEMA approved Letter of Map Revision must also be provided by the
14 applicant.

15 (3) No development, substantial improvement or lateral addition may be
16 permitted within the floodplain or floodprone area except as provided in Section 10.2 of the Flood
17 Design Criteria unless the applicant has demonstrated that the proposed development or substantial
18 improvement shall:

19 (i) Be accomplished in conformance with the Flood Design Criteria.

20 (ii) Compensate for any flood storage lost by providing a hydrologically
21 equivalent volume of storage adjacent to the area of the encroachment.

22 (iii) Compensate for flood storage lost below the existing 10 year water
23 surface elevation by providing storage below the proposed 10 year water surface elevation, and
24 compensate for flood storage lost above the existing 10 year water surface elevation with flood
25 storage above the proposed 10 year water surface elevation.

26 (iv) Cause no increase in peak flow rates in areas with a watershed master
27 plan for the 2-, 10-, and 100-year flood events, as demonstrated using the hydrologic model from the
28 watershed master plan.

29 (4) Along stream channels within the floodplain or floodprone area which have
30 a defined bed and bank or which have drainage areas exceeding 150 acres, development shall

1 preserve a Minimum Flood Corridor. Minimum corridor preservation and mitigation for allowed
2 encroachments shall be in conformance with Section 10.3 of the Flood Design Criteria.

3 (5) Roadway bridges, and other drainage facilities, may have their superstructure
4 submerged or partially submerged below the base flood level, provided that the facility has been
5 designed to resist the hydrostatic and hydrodynamic loads as well as the effects of the buoyancy as
6 certified by a registered professional engineer.

7 (6) Within the floodplain or floodprone area, all new construction, substantial
8 improvements, and any lateral addition shall be anchored to prevent flotation, collapse, or lateral
9 movement of the structure resulting from hydrodynamic and hydrostatic loads including the effects
10 of buoyancy; constructed with materials and utility equipment resistant to flood damage; and
11 constructed by methods and practices that minimize flood damage. Electrical, heating, ventilation,
12 plumbing, and air-conditioning equipment and other service facilities for all new construction,
13 substantial improvements, and any lateral addition, shall be elevated at least one foot above the base
14 flood elevation or designed so as to prevent water from entering or accumulating within the compo-
15 nents during conditions of flooding. A registered professional engineer or architect shall certify that
16 these provisions are satisfied.

17 (7) The location, grade, and floodproofing of all new and replacement water and
18 sanitary sewer systems which are to be extended into or through any portion of the floodplain or
19 floodprone area to serve the proposed development shall first be approved by the city prior to the
20 extension of such utilities into the floodplain or floodprone area.

21 (8) New or replacement water supply systems and sanitary sewage systems shall
22 be designed to minimize or eliminate infiltration of flood waters into the systems and discharges
23 from the systems into flood waters. Individual disposal systems shall be designed in accordance with
24 the standards set forth in Chapter 24.38 of the Lincoln Municipal Code in order to minimize
25 impairment to them or contamination from them during flooding.

26 (9) On-site waste disposal systems shall be located to avoid impairment to the
27 system or contamination from such systems during flooding.

28 (10) The storage or processing of materials that are in time of flooding buoyant,
29 flammable, explosive, or could be injurious to human, animal, or plant life is prohibited.

1 (11) Storage of other material or equipment may be allowed if not subject to major
2 damage by floods and firmly anchored to prevent flotation or if readily removable from the area
3 within the time available after the issuance of flood warning by appropriate authorities.

4 (12) Filling, grading, and excavation may be allowed in the designated floodplain
5 or floodprone area under the following conditions:

6 (i) Fill shall be protected against erosion and sediment by such measures as
7 rip-rap, vegetative cover, bulkheading, or sedimentation basins as approved by the Director of
8 Building and Safety.

9 (ii) Any fill to be deposited in the floodplain or floodprone area must be
10 shown by the applicant not to be a detriment to the general public as well as the surrounding land
11 owners.

12 (iii) Fill materials shall be of a selected type, preferably clean dirt, gravel, or
13 rock no greater than two inches in diameter. The use of decomposing materials, such as wood and
14 other degradables, shall be prohibited. Fill shall be placed in six inch compacted layers. Fill selec-
15 tion and placement shall recognize the effects of saturation from flood waters on slope stability,
16 uniform and differential settlement, and scour potentials.

17 (iv) Prior to placement of any fill or embankment materials, the area upon
18 which fill is to be placed shall be cleared of debris, snags, stumps, brush, down timber, logs, and
19 other objects. All materials and debris from this clearing shall be removed from the proposed fill
20 and disposed of at approved locations outside the floodplain or floodprone area.

21 (v) Fill slopes for granular materials shall be no steeper than one vertical
22 on two horizontal unless substantiating data justifying steeper slopes are submitted to the Director
23 of Building and Safety and approved.

24 (vi) Excavation in the floodplain or floodprone area shall be done so that
25 the land surface is maintained in such a manner that surface waters do not collect and pond unless
26 specifically approved by the Director of Building and Safety.

27 (b) Residential Construction. All new construction and substantial improvements of
28 residential structures within the designated floodplain or floodprone area shall have the lowest floor,
29 including basement, elevated at least one foot above the base flood level. Garages and storage
30 buildings used exclusively for the storage of motor vehicles, and storage of other items readily re-
31 movable in the event of a flood warning may have their lowest floor below flood elevation, provided
32 the building structure is capable of withstanding hydrostatic and hydrodynamic forces caused by the
33 100-year flood and, further, provided that no utilities are installed in the building except elevated or
34 floodproofed electrical fixtures. If the building is converted to another use, it must be brought into
35 full compliance with the requirements of this title governing such uses.

36 (c) Nonresidential Construction. All new construction, substantial improvements, and
37 any lateral addition to commercial, industrial, and other nonresidential structures within the
38 floodplain or floodprone area shall either have the lowest floor, including basement, elevated at least
39 one foot above the base flood level or, together with attendant utility and sanitary facilities, be
40 floodproofed so that below the base flood level plus one foot the structure is watertight in ac-
41 cordance with the performance standards set forth in the city's building code. A registered
42 professional engineer or architect shall develop or review structural design, specifications, and plans

1 for the construction, and shall certify that the design and methods of construction meet the watertight
2 performance standards. The certification shall be provided to the city as set forth in Section
3 27.53.040 of this chapter.

4 (d) For all new construction and substantial improvements, fully enclosed areas below
5 the lowest floor that are usable solely for parking of vehicles, building access or storage in an area
6 other than a basement and which are subject to flooding shall be designed to automatically equalize
7 hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs
8 for meeting this requirement must either be certified by a registered professional engineer or architect
9 or must meet or exceed the following minimum criteria:

10 (1) A minimum of two openings having a total net area of not less than one square
11 inch for every square foot of enclosed area subject to flooding shall be provided;

12 (2) The bottom of all openings shall be no higher than one foot above grade; and

13 (3) Openings may be equipped with screens, louvers, or other coverings or
14 devices; provided, that they permit the automatic entry and exit of floodwaters.

15 (e) **Manufactured Home Parks and Subdivisions.** All manufactured homes shall be
16 located in a manufactured home park or a manufactured home subdivision in accordance with
17 Sections 27.63.120 and 27.63.125 of this title. No manufactured home shall be located in a
18 manufactured home park or subdivision within the floodplain or floodprone area unless the following
19 conditions are met:

20 (1) New manufactured home parks and subdivisions; expansions; substantial
21 damage. Manufactured homes placed (i) on individual lots within or outside of new manufactured
22 home parks or subdivisions, (ii) on individual lots within an expanded area of an existing
23 manufactured home park or subdivision, or (iii) in an existing manufactured home park or
24 subdivision in which a manufactured home has incurred substantial damage as the result of a flood,
25 shall be elevated on a permanent foundation such that their lowest floor is at least one foot above the
26 base flood elevation and be securely anchored to an adequately anchored foundation system in accor-
27 dance with the standards to resist floatation, collapse, and lateral movement set forth in subsection
28 (f) below;

29 (2) Existing manufactured home parks and subdivisions. Manufactured homes
30 to be placed or substantially improved on individual lots in existing manufactured home parks or
31 subdivisions, shall either (i) be elevated on a permanent foundation such that their lowest floor is at
32 least one foot above the base flood elevation or (ii) be supported by reinforced piers or other
33 foundation elements of at least equivalent strength that are no less than three feet in height above
34 grade and be securely anchored to an adequately anchored foundation system in accordance with the
35 standards to resist floatation, collapse, and lateral movement set forth in subsection (f) below.

36 If the option provided by (ii) above is exercised, the current owner and
37 occupant, and any future buyer, renter, or occupier shall jointly acknowledge in writing that the
38 option of piers as an alternative to placement of the manufactured home one foot above the base
39 flood elevation has been exercised and, therefore, may be subject to flooding. Such acknowledgment
40 shall be filed with the Director of Building and Safety prior to the issuance of hook-up permits to
41 the subject home.

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

43 (4) Where manufactured homes are elevated on pilings, lots shall be large enough
44 to permit steps, piling foundations shall be placed in stable soil no more than ten feet apart, and
45 reinforcement shall be provided for pilings more than six feet above the ground level; and

1 (5) The grade of land for manufactured home parks or subdivisions which are
2 situated within the floodplain or floodprone area shall be raised at least one foot above the base flood
3 elevation.

4 (f) **Manufactured Homes Located Outside of a Manufactured Home Park or Subdivision.**
5 Manufactured homes located outside of a manufactured home park or subdivision shall be elevated
6 at least one foot above the base flood elevation or anchored to the elevated foundation to resist flota-
7 tion, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use
8 of over-the-top and frame ties to ground anchors;

9 (1) If over-the-top ties are used, such ties shall be provided at each of the four cor-
10 ners of the manufactured home, with two additional ties per side at intermediate locations except that
11 manufactured homes less than fifty feet in length may provide only one additional tie per side;

12 (2) Frame ties shall be provided at each corner of the manufactured home with
13 five additional ties per side at intermediate points except that manufactured homes less than fifty feet
14 in length may provide only four additional ties per side;

15 (3) All components of the anchoring system shall be capable of carrying a force
16 of 4,800 pounds; and

17 (4) Any additions to the manufactured home shall be similarly anchored.

18 (g) **Recreational Vehicles:**

19 (1) Shall be on the site for fewer than 180 consecutive days;

20 (2) Shall be fully licensed and ready for highway use (on its wheels or jacking
21 system, is attached to the site only by quick disconnect type utilities and security devices, and has
22 no permanently attached additions); or

23 (3) Meet the requirements for manufactured homes.

24 (h) **Floodways.**

25 (1) Encroachments into the floodway are prohibited, including fill, new
26 construction, substantial improvements, and other development within the floodway unless
27 certification by a qualified engineer is provided, demonstrating that the proposed encroachment will
28 not result in any increase in flood levels during occurrence of the base flood discharge.

29 An exception to the above shall be permitted provided the applicant has
30 acquired by land rights purchase, flowage easement, or other legal arrangement the right to increase
31 the flood levels on all affected lands, and provided that before any permit is issued the applicant
32 submits a Federal Emergency Management Agency (FEMA) approved Conditional Letter of Map
33 Revision to the Director of Building and Safety. When such encroachment is completed, a FEMA
34 approved Letter of Map Revision must also be provided by the applicant.

35 (2) If the above provision is satisfied, all new construction and substantial
36 improvements shall comply with all other applicable provisions contained in Section 27.53.030.

37 (3) The placement of any manufactured home parks and manufactured home sub-
38 divisions and the construction of new structures for human habitation within the floodway is
39 prohibited.

40 (i) **AO Zones.** Designated AO zones within the floodplain have special flood hazards
41 associated with base flood depths of one to three feet where a clearly defined channel does not exist
42 and where the path of flooding is unpredictable and indeterminate; therefore, the following
43 provisions apply within AO zones:

44 (1) All new construction and substantial improvements of residential structures
45 shall have the lowest floor (including basement) elevated above the highest adjacent grade at least

1 as high as one foot above the depth number specified in feet on the FIRM (at least two feet if no
2 depth number is specified).

3 (2) All new construction, any lateral addition, and substantial improvements of
4 non-residential structures shall:

5 (i) Have the lowest floor elevated above the highest adjacent grade at least
6 as high as one foot above the depth number specified in feet on the community's FIRM (at least two
7 feet if no depth number is specified), or

8 (ii) Together with attendant utility and sanitary facilities be completely
9 floodproofed to or above that level so that any space below that level is watertight with walls
10 substantially impermeable to the passage of water and with structural components having the
11 capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Such
12 certification shall be provided to the official as set forth in Section 27.53.040(d).

13 (3) Adequate drainage paths around structures on slopes shall be required in order
14 to guide floodwaters around and away from proposed structures.

15 Section 2. That Section 27.53.030 of the Lincoln Municipal Code as hitherto existing
16 be and the same is hereby repealed.

17 Section 3. That this ordinance shall take effect and be in force from and after its
18 passage and publication according to law.

Introduced by:

Approved as to Form & Legality:

City Attorney

Approved this ___ day of _____, 2005:

Mayor

ORDINANCE NO. _____

1 AN ORDINANCE amending Chapter 26.24 of the Lincoln Municipal Code relating
2 to Flood Regulations for the Existing Urban Area by amending Section 26.24.010 to add a definition
3 for “floodprone area”; by amending Section 26.24.020 to provide platting and subdivision
4 restrictions on land located in the floodway, floodplain or floodprone areas; by amending Section
5 26.24.030 to require additional information to be shown on the preliminary plat if the subdivision
6 is located in the floodprone area; and repealing Sections 26.24.010, 26.24.020, and 26.24.030 of the
7 Lincoln Municipal Code as hitherto existing.

8 BE IT ORDAINED by the City Council of the City of Lincoln, Nebraska:

9 Section 1. That Section 26.24.010 of the Lincoln Municipal Code be amended to
10 read as follows:

11 **26.24.010 Definitions.**

12 For the purpose of this chapter, certain terms and words are hereby defined:

13 **100-Year Flood** shall mean the flood having a one percent chance of being equaled or
14 exceeded in any given year.

15 **Base Flood** shall mean the flood having a one percent chance of being equaled or exceeded
16 in any given year.

17 **Basement** shall mean any enclosed area having its floor below grade level on all sides.

18 **Development** shall mean any man-made change to improved or unimproved real estate,
19 including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving,
20 excavation or drilling operations, or storage of equipment or materials.

21 **Existing Urban Area** shall mean those areas inside the corporate limits of the City of
22 Lincoln. as well as those areas outside the corporate limits having a zoning designation other than
23 AG Agriculture and AGR Agricultural Residential, on the effective date of this ordinance.

24 **FEMA** shall mean the Federal Emergency Management Agency.

1 **Flood Insurance Rate Map (FIRM)** shall mean the September 21, 2001 Flood Insurance
2 Rate Map and any revisions thereto, on which FEMA has delineated both the areas of special flood
3 hazards and the risk premium zones applicable to the community.

4 **Flood Insurance Study** shall mean the Flood Insurance Study for Lancaster County,
5 Nebraska and Incorporated Areas published by FEMA in conjunction with the FIRM and containing
6 background data such as base flood discharges and water surface elevations used to prepare the
7 FIRM.

8 **Floodplain** shall mean those lands which are subject to a one percent or greater chance of
9 flooding in any given year as shown on the Flood Insurance Rate Map issued by FEMA for
10 Lancaster County, Nebraska and incorporated areas, as amended. Copies of the said maps shall be
11 on file in the Department of Building and Safety.

12 **Floodprone area** shall mean those lands subject to a one percent or greater chance of
13 **flooding in any given year, as determined by hydrologic and hydraulic studies completed by the City**
14 **or other government agency, or other acceptable source as approved by the City where this is the**
15 **best available information.**

16 **Floodproofing** shall mean any combination of structural and nonstructural additions,
17 changes, or adjustments to structures which reduce or eliminate flood damage to real estate or
18 improved real property, water and sanitary facilities, structures and their contents.

19 **Floodway** shall mean the channel of a river or other watercourses and the adjacent land areas
20 that must be reserved in order to discharge the base flood without cumulatively increasing the water
21 surface elevation more than one foot.

22 **Letter of Map Change (LOMC)** shall mean a determination document issued by FEMA
23 that officially revises the FIRM based on updated information, whether improved data or topography
24 changes created by fill placement. Includes Letter of Map Amendment (LOMA), Letter of Map
25 Revision (LOMR), and Letter of Map Revision based on Fill (LOMR-f).

26 **Lowest floor** shall mean the lowest floor of the lowest enclosed area (including basement).
27 An unfinished or flood-resistant enclosure, usable solely for parking of vehicles or building access,
28 in an area other than a basement area is not considered a building's lowest floor; provided that such
29 enclosure is not built so as to render the structure in violation of the applicable non-elevation design
30 requirements of this ordinance.

1 **NAVD** shall mean the North American Vertical Datum of 1988.

2 **Non-substantial improvement** shall mean any improvement that does not meet the
3 definition of substantial improvement, as defined in this section.

4 **Qualified engineer** shall mean a registered professional engineer who, by reason of training
5 and experience, is considered knowledgeable in hydrology and hydraulics and their application to
6 the flood insurance study and has demonstrated competence to the satisfaction of the Director of
7 Public Works and Utilities.

8 **Special Flood Hazard Area** shall mean the land in the floodplain subject to a one percent
9 or greater chance of flooding in any given year.

10 **Start of construction** shall mean either the first placement of permanent construction of a
11 structure on a site, such as the pouring of slabs or footings, the installation of piles, the construction
12 of columns, or any work beyond the stage of excavation, or the placement of a manufactured home
13 on a foundation. Permanent construction does not include land preparation, such as clearing,
14 grading, and filling; nor does it include the installation of streets and/or walkways; nor does it
15 include excavation for a basement, footings, piers or foundations or the erection of temporary forms;
16 nor does it include the installation on the property of accessory buildings, such as garages or sheds
17 not occupied as dwelling units or not as part of the main structure. For a substantial improvement,
18 the actual start of construction shall mean the first alteration of any wall, ceiling, floor, or other
19 structural part of a building, whether or not that alteration affects the external dimension of the
20 building.

21 **Substantial improvement** shall mean any reconstruction, rehabilitation, addition, or other
22 improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of
23 the structure before the start of construction of the improvement. Substantial improvement shall
24 include structures which have incurred substantial damage, regardless of the actual repair work
25 performed. The term shall not, however, include either (i) any project for improvement of a
26 structure to correct existing violations of state or local health, sanitary, or safety code specifications
27 which have been identified by the local code enforcement official and which are the minimum
28 necessary to assure safe living conditions, or (ii) any alteration of a historic structure, provided that
29 the alteration will not preclude the structure's continued designation of a historic structure.

1 **Variance** shall mean a grant of relief from the terms of a floodplain management regulation,
2 this shall be done by Special Permit in accordance with Section 27.52.060 of the Zoning Code.

3 **Violation** shall mean the failure of a structure or other development to be fully compliant
4 with the floodplain management regulations as set forth in this chapter. A structure or other
5 development without the elevation certificate, other certifications, or other evidence of compliance
6 as required is presumed to be in violation until such time as that documentation is provided.

7 Section 2. That Section 26.24.020 of the Lincoln Municipal Code be amended to
8 read as follows:

9 **26.24.020 Development of Land Within Floodplain.**

10 There shall be no platting or subdivision of land allowed by the city within a floodplain or
11 floodprone area unless the following conditions are met:

12 (a) That the development of any land in the floodway as designated by the Federal
13 Emergency Management Agency (FEMA) or as determined by hydrologic and hydraulic studies
14 completed by the City or other government agency, or other acceptable source as approved by the
15 City, shall cause no increase in the water surface elevation of the 100-year flood, in conformance
16 with the provisions of Section 27.52.030(h).

17 (b) That the development of any land in the floodplain or floodprone area where no
18 floodway has been designated shall cause no increase in the water surface elevation of the 100-year
19 flood more than one foot at any location.

20 (c) That the development of any land located within the floodplain or floodprone area
21 will be accomplished so as to protect building sites for residential development by raising of the
22 ground elevation to at least one foot above the 100-year flood, in accordance with Chapter 27.52,
23 “Flood Regulations for Existing Urban Area,” of the Zoning Ordinance. The raising of the ground
24 elevation shall be accomplished in such a manner that the general flow and storage of water is not
25 unduly restricted or limited and will not cause flood hazards to other lands and developments, either
26 within the proposed subdivision or otherwise, and that said protection shall be accomplished without
27 creating the need for significant public expenditures for flood control.

28 (d) That the development of any land located within the floodplain or floodprone area
29 will be accomplished so as to protect building sites for non-residential development by raising of
30 the ground elevation to an elevation at least one foot above the 100-year flood or by floodproofing

1 the structure to an elevation at least one foot above the 100-year flood, in accordance with Chapter
2 27.52, "Flood Regulations for Existing Urban Area," of the Zoning Ordinance.

3 (c e) That any proposed use which is located within a floodplain or floodprone area and
4 is subject to flooding shall be limited to such uses as open space, streets, and parking areas on that
5 portion of the land within the floodplain or floodprone area where significant damage to life and
6 property from flooding is most likely to occur. Any use approved to be located on land which is a
7 floodplain or floodprone area shall be approved only after the following factors have been
8 considered and any adverse impacts are mitigated to the satisfaction of the City:

9 (1) The danger to life and property by water which may be backed up or diverted
10 by such obstruction or land use;

11 (2) The danger that the obstruction or land use will be swept downstream to the
12 injury of others;

13 (3) The availability of alternate locations;

14 (4) The ability to construct or alter the obstruction in such a manner as to lessen
15 any danger;

16 (5) The permanence of the obstruction or land use;

17 (6) The anticipated development in the foreseeable future of the land in which
18 the proposed subdivision is to be located which may be affected by the obstruction or land use;

19 (7) The degree to which safe access can be provided through areas that are
20 projected to be flooded during a 100-year flood event.

21 (8) Any additional conditions adopted by the city to ensure proper use of land
22 within the floodplains.

23 (d f) That any land within a floodplain or floodprone area from which fill is taken shall
24 be hydrologically designed and maintained to reduce the likelihood of becoming refilled by silt. The
25 subdivider must make arrangements satisfactory to the city binding his successors and assigns, to
26 regrade or remove such silt as is necessary to return any area to its approved design after flooding
27 has occurred. Any land from which fill is taken within a floodplain or floodprone area shall be at
28 a grade that will continue to permit adequate drainage into the stream or watercourse. If a water area
29 is to be maintained within the floodplain or floodprone area, consideration shall be given to the

1 effect the water area may have upon the flooding of both the land within the floodplain or
2 floodprone area and other lands outside of the floodplain or floodprone area.

3 (e g) The location, grade, and flood-proofing of all proposed utilities which are to be
4 extended into or through any portion of the floodplain or floodprone area to serve the proposed
5 development shall first be approved by the city, prior to the extension of such utilities into the
6 floodplain or floodprone area.

7 If the city, at the time of platting, agrees to create special assessment districts for the
8 construction of utilities to serve the subdivision, the subdivider shall remain responsible to pay the
9 entire cost of the necessary construction and necessary flood-proofing of such public utilities when
10 said utilities traverse any land subject to being inundated by flood water in order to serve the land
11 within the proposed subdivision. The subdivider shall also enter into an agreement with the City to
12 prohibit future connections to water mains and wastewater collectors to serve any land still subject
13 to being inundated by flood water.

14 The subdivider shall obtain the approval of the Director of Public Works and Utilities for any
15 modifications in the location or design of the borrow area within the floodplain.

16 Section 3. That Section 26.24.030 of the Lincoln Municipal Code be amended to
17 read as follows:

18 **26.24.030 Information on a Preliminary Plat.**

19 The following additional information shall be included with the preliminary if any part of
20 the subdivision is within the floodplain or floodprone area:

21 (a) All hydrological and grade information in NAVD 1988, including base flood
22 elevation data within Zone A (no base flood elevations determined), which is necessary to determine
23 the frequency and extent that the subdivision is subject to inundation by flood water, except that this
24 shall not apply where the use of the property is not being changed and there are no physical changes
25 on the site which have the potential to increase the flood hazard. When utilizing NGVD based flood
26 elevations from FEMA floodplain maps, 0.50 feet shall be added to NGVD 1929 to obtain NAVD
27 1988, unless a more accurate conversion factor using an established conversion program is
28 demonstrated to the satisfaction of the Director of Public Works and Utilities.

29 (b) All grading and drainage information in conformance with Section 26.15.020(b) of
30 this title.

1 (c) In Zone A (no base flood elevations determined), for subdivisions greater than either
2 five acres or fifty lots, detailed base flood elevation data based on an engineering study performed
3 by a qualified engineer in accordance with FEMA approved methods for generating detailed base
4 flood elevations. This provision shall not apply where the use of the property is not being changed
5 and there are no physical changes on the site which have the potential to increase the flood hazard.

6 (d) The type and extent of the proposed use or development of the land which is located
7 within the floodplain or floodprone area, along with such information as is necessary to determine
8 the effect flood waters will have on such development and use and the effect such development and
9 use may have upon the flood waters. All such information shall show the location of the proposed
10 use, areas of habitation and employment, including the location, size, and floor elevation of any
11 structures, the location and elevation of all parking areas, and the use, location, and elevations of
12 all open land areas.

13 (e) The proposed centerline grade of streets or private roadways located within the
14 floodplain or floodprone area that are necessary to serve the proposed development. The proposed
15 centerline grade shall not be more than one foot below the 50-year flood elevation.

16 (f) The limits of the 100-year floodplain or floodprone area and floodway.

17 (g) The amount of fill material to be brought into the floodplain or floodprone area from
18 outside the floodplain or floodprone area.

19 (h) Information, documentation and certification by a professional engineer or
20 hydrologist demonstrating any grading within the floodway will not result in any increase in the
21 flood level during the occurrence of the base flood discharge.

22 An exception to the above shall be permitted provided the applicant has acquired by
23 land rights purchase, flowage easement, or other legal arrangement the right to increase the flood
24 levels on all affected lands, and provided that before any permit is issued the applicant submits a
25 Federal Emergency Management Agency (FEMA) approved Conditional Letter of Map Revision
26 to the Director of Building and Safety. When such encroachment is completed, a FEMA approved
27 Letter of Map Revision must also be provided by the applicant.

28 Section 4. That Sections 26.24.010, 26.24.020, and 26.24.030 of the Lincoln
29 Municipal Code as hitherto existing be and the same are hereby repealed.

1 Section 5. That this ordinance shall take effect and be in force from and after its
2 passage and publication according to law.

Introduced by:

Approved as to Form & Legality:

City Attorney

Approved this ____ day of _____, 2005: _____ Mayor
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ORDINANCE NO. _____

1 AN ORDINANCE amending Chapter 26.25 of the Lincoln Municipal Code relating
2 to Flood Regulations for New Growth Areas by amending Section 26.25.020 to provide platting and
3 subdivision restrictions on land located in the floodway, floodplain or floodprone areas and repealing
4 Section 26.25.020 of the Lincoln Municipal Code as hitherto existing.

5 BE IT ORDAINED by the City Council of the City of Lincoln, Nebraska:

6 Section 1. That Section 26.25.020 of the Lincoln Municipal Code be amended to read
7 as follows:

8 **26.25.020 Flood Regulations for Development in New Growth Areas.**

9 There shall be no platting or subdivision of land allowed by the city within a floodplain or
10 floodprone area unless the following conditions are met:

11 (a) The development of any land located within the floodway as designated by the
12 Federal Emergency Management Agency (FEMA) or as determined by hydrologic and hydraulic
13 studies completed by the City or other government agency, or other acceptable source as approved
14 by the City where this is the best available information, shall:

15 (1) Be accomplished in conformance with the Flood Design Criteria.

16 (2) ~~Cause no increase in the water surface elevation of the 100-year flood~~ Be
17 accomplished in conformance with Section 27.53.030(h).

18 (b) The development of any land located within the floodplain or floodprone area outside
19 the floodway or where a floodway has not been designated, except as provided in Section 10.2 of the
20 Flood Design Criteria, shall:

21 (1) Be accomplished in conformance with the Flood Design Criteria.

22 (2) Cause no greater than five hundredths of a foot (0.05') of rise in the 100-year
23 flood elevation.

1 (3) Cause no greater than five hundredths of a foot (0.05') of rise in areas with a
2 watershed master plan for the 2-, 10-, and 100-year flood elevations, as demonstrated using the
3 hydraulic model from the watershed master plan.

4 (4) Notwithstanding certain exceptions in the Flood Design Criteria allowing for
5 greater than five hundredths of a foot (0.05') of rise in the flood elevation, the development shall not
6 cause greater than one foot (1.0') of rise in the FEMA-mapped flood fringe where no floodway has
7 been designated.

8 An exception to the above shall be permitted provided the applicant has
9 acquired by land rights purchase, flowage easement, or other legal arrangement the right to increase
10 the flood levels greater than one foot (1.0') on all affected lands, and provided that before any permit
11 is issued the applicant submits a Federal Emergency Management Agency (FEMA) approved
12 Conditional Letter of Map Revision to the Director of Building and Safety. When such encroachment
13 is completed, a FEMA approved Letter of Map Revision must also be provided by the applicant.

14 (c) The development of any land located within the floodplain or floodprone area except
15 as provided in Section 10.2 of the Flood Design Criteria, shall:

16 (1) Be accomplished in conformance with the Flood Design Criteria.

17 (2) Compensate for any flood storage lost by providing a hydrologically equiva-
18 lent volume of storage adjacent to the area of the encroachment.

19 (3) Compensate for flood storage lost below the existing 10 year water surface
20 elevation by providing storage below the proposed 10 year water surface elevation, and compensate
21 for flood storage lost above the existing 10 year water surface elevation with flood storage above the
22 proposed 10-year water surface elevation.

23 (4) Cause no increase in peak flow rates in areas with a watershed master plan
24 for the 2-, 10-, and 100-year flood events, as demonstrated using the hydrologic model from the
25 watershed master plan.

26 (5) Dedicate easements over areas of compensatory storage in conformance with
27 Section 26.23.120.

28 (d) Along stream channels within a floodplain or floodprone area which have a defined
29 bed and bank or which have drainage areas exceeding 150 acres, development shall preserve a
30 Minimum Flood Corridor. Minimum corridor preservation and mitigation for allowed encroach-

1 ments into the corridor shall be in conformance with Section 10.3 of the Flood Design Criteria.
2 Easements shall be dedicated over minimum flood corridors in conformance with Section 26.23.120,
3 "Easements," of the development standards for this title.

4 (e) The development of any land located within a floodplain or floodprone area will be
5 accomplished so as to protect building sites for residential development by raising of the ground
6 elevation to at least one foot above the 100-year flood. The raising of the ground elevation shall be
7 accomplished in such a manner that the general flow and storage of water is not unduly restricted
8 or limited and will not cause flood hazards to other lands and developments, either within the
9 proposed subdivision or otherwise, and that said protection shall be accomplished without creating
10 the need for significant public expenditures for flood control.

11 Prior to receiving building permits for residential development in the floodplain, the
12 developer must submit an approved LOMC from FEMA to remove the building sites from the
13 FEMA-mapped floodplain. Where building sites are outside the floodplain or floodprone area based
14 upon a filed survey of the natural elevation, the developer must submit individual lot surveys
15 documenting the elevation and filed surveys on individual lots with the register of deeds.

16 (f) The development of any land located within a floodplain or floodprone area will be
17 accomplished so as to protect building sites for non-residential development by raising of the ground
18 elevation to an elevation at least one foot above the 100-year flood or by floodproofing the structure
19 to an elevation at least one foot above the 100-year flood, in accordance with Chapter 27.53, "Flood
20 Regulations for New Growth Areas," of the Zoning Code.

21 (g) Any proposed use which is located within a floodplain or floodprone area and is
22 subject to flooding shall be limited to such uses as open space, streets, and parking areas on that
23 portion of the land within the floodplain or floodprone area where significant damage to life and
24 property from flooding is most likely to occur. Any use approved to be located on land which is
25 included within a floodplain or floodprone area shall be approved only after the following factors
26 have been considered and any adverse impacts are mitigated to the satisfaction of the City.

27 (1) The danger to life and property by water which may be backed up or diverted
28 by such obstruction or land use;

29 (2) The danger that the obstruction or land use will be swept downstream to the
30 injury of others;

- 1 (3) The availability of alternate locations;
- 2 (4) The ability to construct or alter the obstruction in such a manner as to lessen
3 any danger;
- 4 (5) The permanence of the obstruction or land use;
- 5 (6) The anticipated development in the foreseeable future of the area in which the
6 proposed subdivision is to be located which may be affected by the obstruction or land use;
- 7 (7) The degree to which safe access can be provided through areas that are
8 projected to be flooded during a 100-year flood event.
- 9 (8) Any additional conditions adopted by the city to ensure proper use of the areas
10 within a floodplain or floodprone area.

11 (h) Any area within a floodplain or floodprone area from which fill is taken shall be
12 hydrologically designed and maintained to reduce the likelihood of becoming refilled by silt. The
13 subdivider must make arrangements satisfactory to the city binding his successors and assigns, to
14 regrade or remove such silt as is necessary to return any area to its approved design after flooding
15 has occurred. Any area from which fill is taken within a floodplain or floodprone area shall be at
16 a grade that will continue to permit adequate drainage into the stream or watercourse. If a water area
17 is to be maintained within the floodplain or floodprone area, consideration shall be given to the effect
18 the water area may have upon the flooding of both the land within the floodplain or floodprone area
19 and other lands outside of the floodplain or floodprone area.

20 (i) The location, grade, and flood-proofing of all proposed utilities which are to be
21 extended into or through any portion of the flood plain to serve the proposed development shall first
22 be approved by the city, prior to the extension of such utilities into the floodplain or floodprone area.

23 If the city, at the time of platting, agrees to create special assessment districts for the
24 construction of utilities to serve the subdivision, the subdivider shall remain responsible to pay the
25 entire cost of the necessary construction and necessary flood-proofing of such public utilities when
26 said utilities traverse any land subject to being inundated by flood water in order to serve the land
27 within the proposed subdivision. The subdivider shall also enter into an agreement with the City to
28 prohibit future connections to water mains and wastewater collectors to serve any land still subject
29 to being inundated by flood water.

1 The subdivider shall obtain the approval of the Director of Public Works and Utilities for any
2 modifications in the location or design of the borrow area within the floodplain or floodprone area.

3 Section 2. That Sections 26.25.020 of the Lincoln Municipal Code as hitherto
4 existing be and the same is hereby repealed.

5 Section 3. That this ordinance shall take effect and be in force from and after its
6 passage and publication according to law.

Introduced by:

Approved as to Form & Legality:

City Attorney

Approved this ___ day of _____, 2005:

Mayor