MEMORANDUM

TO: APC Ordinance Committee
FROM: Sallie Fahey
SUBJECT: **Amendment to Adopted Floodplain Amendment Permitting Elevation of Substantially Damaged Residences**
DATE: March 31, 2010

On March 18, we received a disappointing communication (attached) from DNR requiring changes to the UZO amendment adopted by APC on November 18, 2009 and subsequently by all 6 legislative bodies in December. On October 14, 2009, Larry sent the final draft of that ordinance to DNR for review; the following day DNR emailed back that it looked fine (emails attached). We relied on that review to move forward with the adoption process. The purpose of having DNR review the final draft before beginning the adoption process was specifically to avoid having to do what they are now requiring.

After receiving the email on March 18, Jay, Larry and I met to discuss the DNR required changes. We also included DNR by phone in that discussion. On March 30, I sent the revisions – some of which we agree with and some we don't with reasons included – to DNR asking for a thorough and final review, subject to receipt of the adopted and signed ordinances.

The amendment included in your packet is the ordinance as passed in November with all requested and actual changes highlighted in yellow. Each one has an explanation of why we made or didn't make the change. I also "reset" the 3-year clock, so that residents will now have until July 1, 2013 instead of January 1, 2013.

The proposed timetable for adoption is below. I also provided it to DNR and asked for their review to be complete prior to our April 19 filing deadline.

4/7	APC Ordinance Committee
4/19	official filing deadline for APC public hearing
5/19	APC public hearing
6/7	Tippecanoe County, Lafayette, West Lafayette, Dayton and Clarks Hill public hearings
6/14	Battle Ground public hearing

Sallie Fahey

From: Larry Aukerman
Sent: Thursday, March 18, 2010 8:17 AM
To: Sallie Fahey
Subject: Flood Plain Ordinance

Categories: Ordinance Committee

From: Kannapel, Laura [mailto:lkannapel@dnr.IN.gov]
Sent: Thursday, March 18, 2010 8:11 AM
To: Larry Aukerman
Subject:

Larry,

Here are the needed changes to the ordinances for your communities before we can give state approval. Please be advise that all of the ordinances need to be changed.

1. If it is the intent of the County not to allow reconstruction of NON-Residential structures, then please change all references to "structure", "building", "building, structure" to **residence or residences** (whichever is applicable).

2. Paragraph 2-26-17 (g) please insert **County** after "Tippecanoe". There is a Tippecanoe, Indiana. This possibly could cause a legal problem if not specific.

3. Section 5-1-11 (e) replace the word "FIRM" in the last sentence and replace it with **Profile.**

4. 5-1-11 (f) (2)(A) (vi) the word "related" needs to be changed to **relocated.**

5. 5-1-11 (f) (2)(B) please add **NGVD** after NAVD 88.

6. 5-1-11 (G) (1): second paragraph beginning with "A registered professional engineer....." and ending with Flood Plain Administrator as set forth in this section" needs to be struck out completely. This applies to non-residential structures only. Residences can not be flood proofed.
Leave the last part beginning with "Should solid perimeter walls.....

Once the changes are made, please forward signed and certified copies back to me for approval.

If you have any questions or concerns, please do not hesitate to contact me.

Thank you

Laura Kannapel, CFM
Water Planner, Floodplain Management Section
Indiana Department of Natural Resources
Division of Water
402 West Washington Street, Room W264
Indianapolis, Indiana 46204

Sallie Fahey

From: Larry Aukerman
Sent: Thursday, October 15, 2009 1:49 PM
To: Sallie Fahey; Jay Seeger - Lawyer
Subject: FW: final flood plain ordinance

-----Original Message-----
From: Kannapel, Laura [mailto:lkannapel@dnr.IN.gov]
Sent: Thursday, October 15, 2009 1:06 PM
To: Larry Aukerman
Subject: RE: final flood plain ordinance

Larry,

Everything looks fine to me. Once it gets put together and adopted, please forward a copy to me for final review and approval.

Thank you

Laura Kannapel, CFM
Water Planner, Floodplain Management Section Indiana Department of Natural Resources Division of Water
402 West Washington Street, Room W264
Indianapolis, Indiana 46204
General - 317-232-4160
Direct - 317-234-1059
Toll Free - 1-877-928-3755
Fax - 317-233-4579

-----Original Message-----
From: Larry Aukerman [mailto:laukerman@tippecanoe.in.gov]
Sent: Wednesday, October 14, 2009 8:49 AM
To: Kannapel, Laura
Cc: Sallie Fahey; Jay Seeger - Lawyer
Subject: FW: final flood plain ordinance

Ms Kannapel:

Attached is the proposed addition to our flood plain ordinance.

Can you please check over?

Larry Aukerman

765-423-9259

ORDINANCE NO._____

AN ORDINANCE AMENDING CHAPTER _____ OF ORDINANCE NO._____ BEING THE UNIFIED ZONING ORDINANCE OF TIPPECANOE COUNTY.

Be it ordained by the (County Commissioners of Tippecanoe County, Indiana; the Common Council of the City of Lafayette, Indiana; the Common Council of the City of West Lafayette, Indiana; the Town Council of the Town of Battle Ground, Indiana; the Town Council of the Town of Dayton, Indiana; and the Town Council of Clarks Hill, Indiana), that Ordinance No._____, being the Unified Zoning Ordinance of Tippecanoe County is hereby amended as follows:

Section 1: Change **UZO Section 1-10-2 Words and Terms Defined**, by adding the following two definitions and by amending the definition of "REPETITIVE LOSS" to read as follows:

NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929 as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) as adopted in 1993 is a vertical control datum used as a reference for establishing varying elevations within the floodplain.

REPETITIVE LOSS. Flood related damages sustained by a ***structure*** (no change because this section applies to all situations, not just elevating residences) on at least two (2) separate occasions during a 10-year period ending on the date of the event for which the second claim is made for which the cost of repairs at the time of each such flood event, on average, equals or exceeds twenty-five (25%) of the ***market value*** of the ***structure*** (no change because this section applies to all situations, not just elevating residences) immediately before the damage occurred.

Section 2: Add the following **Section 2-26-17** (g) to Chapter 2:

2-26-17 (g) The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on available information derived from engineering and scientific methods of study. Larger floods can and will occur on rare occasions. Therefore, this ordinance does not create any liability on the part of Tippecanoe County (addition per DNR), Lafayette, West Lafayette, Battle Ground, Clarks Hill, Dayton, the Indiana Department of Natural Resources, or the State of Indiana, for any flood damage that results from reliance on this ordinance or any administrative decision made lawfully hereunder.

Section 3: Add the following **Section 5-1-11** to Chapter 5:

5-1-11 IMPROVEMENTS WITHIN AN FP ZONE:

(a) Lands to Which This Section Applies: This section shall apply to all FP ***zones*** within unincorporated Tippecanoe County, the Cities of Lafayette and West Lafayette, and the Towns of Battle Ground, Clarks Hill, and Dayton, Indiana.

(b) Compliance: No ***structure*** (no change because this section applies to all situations, not just elevating residences) shall hereafter be located, extended, converted, or structurally altered within an FP ***zone*** without full compliance with the terms of this ordinance and all other applicable regulations. No land or stream within an FP ***zone*** shall hereafter be altered without full compliance with the terms of this ordinance and all other applicable regulations.

(c) Establishment of Floodplain Development Permit: A Floodplain Development Permit shall be required in conformance with the provisions of this section prior to the commencement of any ***development*** activities in any FP ***zone***.

(d) Abrogation and Greater Restrictions: This section is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this section and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(e) Discrepancies between Map and Actual Ground Elevations:

(1) In cases where there is a discrepancy between the mapped FP ***zone***, the ***FIRM***, and the actual ground elevations, the elevation provided in the ***Flood Insurance Study*** (DNR suggested Profile, UZO defines FIS as including both FIRM maps and Profile) shall govern.

(2) If the elevation of the site in question is below the ***regulatory flood*** elevation, that site shall be included in the FP ***zone*** and regulated accordingly.

(3) If the natural grade elevation of the site in question is above the ***regulatory flood*** elevation, that site shall be considered outside the FP ***zone*** and the regulations of this section shall not apply.

(f) Administration:

(1) Designation of Administrator: The ***APC Executive Director*** shall administer and implement the provisions of this section and is herein referred to as the Floodplain Administrator.

(2) Permit Procedures: Application for a Floodplain Development Permit shall be made to the Floodplain Administrator on forms furnished by him or her prior to any ***development*** activities, and may include, but not be limited to, the following: plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed ***residences*** and other structures (DNR change + APC

revision), earthen fill, drainage facilities, and the location of the foregoing. Specifically the following information is required:

(A) Application stage:

(i) A description of the proposed ***development***;

(ii) Location of the proposed ***development*** sufficient to accurately locate property and ***structures*** (no change because this section applies to all situations, not just elevating residences) in relation to existing ***roads*** and ***watercourses***;

(iii) A legal description of the property;

(iv) A ***site plan*** showing the location of all existing and proposed ***development*** and all existing and proposed land grades;

(v) ***Lowest floor elevation*** of all proposed ***structures*** (no change because this section applies to all situations, not just elevating residences). Elevation should be in ***NAVD 88*** or ***NGVD***; and

(vi) Description of the extent to which any ***watercourse*** will be altered or relocated (typo caught by DNR) as a result of proposed ***development***.

(B) Construction stage: Upon placement of the lowest floor, it shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the ***NAVD 88*** (no change because we want all elevations in the same datum as the digital FIRM maps) elevation of the ***lowest floor elevation*** as built, and an ***elevation certificate***. Said certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by the same. Any work undertaken prior to submission of the certification and the ***elevation certificate*** shall be at the permit holder's risk. The Floodplain Administrator shall review the ***lowest floor elevation*** survey data submitted. The permit holder shall correct deficiencies detected by such review before any further work is allowed to proceed. The failure to submit such certification and the ***elevation certificate*** or the failure to make all corrections required by the Flood Plain Administrator shall be cause for the issuance of a stop work order.

(3) Duties and Responsibilities of the Floodplain Administrator: The Floodplain Administrator and/or designated staff is hereby authorized and directed to enforce the provisions of this section. The Floodplain Administrator and/or designated staff are further authorized to render interpretations of this ordinance, which are consistent with its spirit and purpose. The duties and responsibilities of the Floodplain Administrator shall include, but are not limited to:

(A) Review all Floodplain Development Permits to assure that the requirements of this ordinance have been satisfied.

(B) With the ***Administrative Officer***, inspect and inventory damaged ***structures*** (no change because this section applies to all situations, not just elevating residences) in FP ***zones*** and complete determinations with respect to ***substantially damaged structures*** (no change because this section applies to all situations, not just elevating residences).

(C) Ensure that all necessary construction authorizations have been granted by the Indiana Department of Natural Resources, and maintain a record of such authorizations.

(D) Ensure that all necessary federal and state permits have been received prior to issuance of the Floodplain Development Permit, and maintain a record of all such authorizations.

(E) Maintain for public inspection and furnish upon request Floodplain Development Permit documents, damaged ***structure*** (no change because this section applies to all situations, not just elevating residences) inventories, substantial damage determinations, regulatory flood data, SFHA maps, Letters of Map Amendment (LOMA), Letters of Map Revision (LOMR), copies of DNR permits and floodplain analysis and regulatory assessments (letters of recommendation), federal permit documents, and "as-built" elevation data for all ***residences*** (DNR change) elevated pursuant to this section.

(F) Utilize all Letters of Map Revision (LOMR) or Physical Map Revisions (PMR) issued by FEMA for the currently effective SFHA maps of the community.

(G) Verify the actual lowest floor elevation (including basement) of all elevated ***residences***.

(H) Review certified plans and specifications for compliance.

(I) Stop Work Orders:

(i) Upon notice from the Floodplain Administrator, work on any ***building***, ***structure*** (no change because this section applies to all situations, not just elevating residences) or premises that is being done contrary to the provisions of this section shall immediately cease.

(ii) Such notice shall be in writing and shall be given to the owner of the property, or to his or her agent, or to the person doing the work, and shall state the conditions under which work may be resumed.

(J) Revocation of Permits

(i) The Floodplain Administrator may revoke a Floodplain Development Permit, issued by the Floodplain Administrator under the provisions of the ordinance, in cases where there has been any false statement or misrepresentation as to any material fact in the application or plans on which the Floodplain Development Permit was based.

(ii) The Floodplain Administrator may revoke a Floodplain Development Permit upon determination by the Floodplain Administrator that the construction, erection, alteration, repair, moving, demolition, installation, or replacement of the ***structure*** (no change because this section applies to all situations, not just elevating residences) for which the Floodplain Development Permit was issued is in violation of, or not in conformity with, the provisions of this ordinance.

(g) Elevation of Existing ***Residences*** (DNR change)

(1) Elevation Standards: Until July 1, 2013 (APC change to reset the 3-year clock), in all FP ***zones*** any existing ***residence*** (excluding ***mobile homes***) that has been ***substantially damaged*** or suffered ***repetitive loss*** may be elevated such that the ***lowest floor elevation*** is at or above the ***flood protection grade***.

A registered professional engineer or architect shall certify that the elevation of the ***residence*** has been designed so that the means of elevation of the ***residence*** are capable of resisting the effects of the ***regulatory flood*** and meet all of the criteria required by this section. In addition, the certification shall also certify that all attendant utility facilities below the ***flood protection grade*** are watertight and capable of resisting the effects of the ***regulatory flood*** and meet all of the criteria required by this section. The elevation and utility protection designs (DNR change with APC revisions) shall take into account flood velocities, duration, rate of rise, hydrostatic pressures, and impacts from debris or ice. Such certification shall be provided to the Flood Plain Administrator as set forth in this section. Should solid perimeter walls be used to elevate a ***residence***, such enclosed area shall be designed to preclude living space, and the design shall meet the following minimum criteria:

(A) provide for a minimum of two openings having a total net area of not less than one square inch for every one square foot of enclosed area;

(B) provide that all openings shall be located entirely below the ***flood protection grade***;

(C) provide that the bottom of all openings shall be either:

(i) no more than one foot above the exterior grade immediately beneath each opening, or

(ii) no more than one foot above foundation's interior grade in structures where the interior grade is higher than the exterior grade;

(D) provide that openings may be equipped with screens, louvers, valves, or other coverings or devices provided that such coverings or devices permit the automatic flow of floodwaters in both directions;

(E) provide that the interior portion of such enclosed area shall not be partitioned or finished into separate rooms;

(F) provide that the interior grade of such enclosed area shall be at an elevation at or higher than the exterior grade; and

(G) provide that an adequate drainage system must be installed to remove floodwaters from the interior area within a reasonable period of time after a flood event.

(2) Additional Standards: All designs must also include the following additional minimum criteria:

(A) The means of elevation shall be anchored to prevent flotation, collapse or lateral movement of the ***residence***;

(B) The means of elevation shall be constructed with materials and utility equipment resistant to flood damage below the ***flood protection grade***;

(C) The means of elevation shall be constructed by methods and practices that minimize flood damage;

(D) Electrical, heating, ventilation, plumbing, air conditioning equipment, utility meters, and other service facilities shall be located at or above the ***flood protection grade*** or designed so as to prevent water from entering or accumulating within the components below the ***flood protection grade***. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other waterproofed service facilities may be located below the ***flood protection grade***;

(E) Replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(F) Replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system; and

(G) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

(H) Where the ***lowest floor elevation*** is 6 or more feet above the highest adjacent grade, a deed restriction irrevocable by the owner and enforceable by the ***APC*** prohibiting the conversion of the area below the ***lowest floor elevation*** to a use contrary to the originally approved design shall be recorded as a condition of issuance of the final ***certificate of compliance***.

(3) Additional Standards for Identified ***Regulatory Floodways***: Areas designated as ***regulatory floodways*** are extremely hazardous areas due to the velocity of floodwaters, which carry debris, potential projectiles, and have erosion potential. If the site is in an identified ***regulatory floodway***, the Floodplain Administrator shall require the applicant to forward the application, along with all pertinent plans and specifications, to the Indiana Department of Natural Resources and apply for a permit for construction in a ***regulatory floodway***. Under the provisions of *I.C. 14-28-1,* a

permit for construction in a ***regulatory floodway*** from the Indiana Department of Natural Resources is required prior to the issuance of a local ***improvement location permit*** (add bold italics) for any excavation, deposit, construction, or obstruction activity located in the ***regulatory floodway***. This includes land preparation activities, such as filling, grading, clearing, paving, etc., undertaken before the actual start of construction of any ***structure*** (no change because this section applies to all situations, not just elevating residences).

No action shall be taken by the Floodplain Administrator until a permit has been issued by the Indiana Department of Natural Resources granting approval for construction in the ***regulatory floodway***. Once a permit for construction in a ***regulatory floodway*** has been issued by the Indiana Department of Natural Resources, the Floodplain Administrator may issue a Floodplain Development Permit, provided the provisions contained in this section have otherwise been met. The Floodplain Development Permit cannot be less restrictive than the permit for construction in a ***regulatory floodway*** issued by the Indiana Department of Natural Resources.

No ***development*** shall be allowed which acting alone or in combination with existing or future ***development***, will increase the ***regulatory flood*** more than 0.14 of one foot.

(4) Additional Standards for Identified ***Floodway Fringe***: If the site is located in an identified ***floodway fringe***, then the Floodplain Administrator may issue a Floodplain Development Permit provided all provisions contained in this section have been met and further provided that the ***lowest floor elevation*** of the elevated ***residence*** shall be at or above the ***flood protection grade***.

(5) Additional Standards for Special Flood Hazard Areas Without Established Base Flood Elevation and/or ***Floodway*** or ***Floodway Fringe***:

(A) Drainage area upstream of the site is greater than one square mile:

If the site is in an identified ***special flood hazard area*** where the limits of the *floodway* and the ***floodway fringe*** have not yet been determined, and the drainage area upstream of the site is greater than one square mile, the Floodplain Administrator shall require the applicant to forward the application, along with all pertinent plans and specifications, to the Indiana Department of Natural Resources for review and comment.

No action shall be taken by the Floodplain Administrator until either a permit for construction in a ***floodway*** or a floodplain analysis/regulatory assessment citing the 100 year flood elevation and the recommended ***flood protection grade*** has been received from the Indiana Department of Natural Resources.

Once the Floodplain Administrator has received the proper permit for construction in a ***floodway*** or floodplain analysis/regulatory assessment approving the proposed ***development***, a Floodplain Development Permit may be issued provided the conditions of the Floodplain Development Permit are not less restrictive than the conditions received from the Indiana Department of Natural Resources and the provisions contained in this section have been met.

(B) Drainage area upstream of the site is less than one square mile:

If the site is in an identified floodplain where the limits of the ***floodway*** and the ***floodway fringe*** have not yet been determined and the drainage area upstream of the site is less than one square mile, the Floodplain Administrator shall require the applicant to provide an engineering analysis showing the limits of the floodplain and 100 year flood elevation for the site.

Upon receipt, the Floodplain Administrator may issue a Floodplain Development Permit, provided the provisions contained in this section have been met.

(C) The total cumulative effect of the proposed ***development***, when combined with all other existing and anticipated development, will not increase the ***regulatory flood*** more than 0.14 of one foot and will not increase flood damages or potential flood damages.

(6) Additional Standards for Flood Prone Areas: All ***development*** in known flood prone areas not identified on FEMA maps, or where no FEMA published map is available, shall meet general standards as required by this section.