Flood Zones

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Licensed Professional Surveyor
Certified Floodplain Manager
Get ready to think outside of the box....

Get ready to think about flood zones and flood insurance in a whole new light.....

Think about everything you think you know about Flood Zones & Elevation Certificates...

Now forget it all for the next few hours!!
You are about to go from... SURVEYOR to SUPERHERO !!!
SURVEYORS / FLOOD ZONES

What YOU will need to know:

• LOMA, eLOMA, LOMR-F
• Flood Insurance Studies (FIS)
• Flood Maps / FIRMettes
• Community Acknowledgement Forms
• Elevation Certificates
• Compliance vs Non-compliance
• New Construction in Flood Zones
• Additions to Existing Construction
• Biggert Water’s Act 2012 (BW-12)
• Flood Insurance Affordability Act 2014
FLOOD MAPS...USA
FLOOD MAPS ............ VERMONT
FLOOD MAPS... BURLINGTON AREA
FEMA teaches from above...

Teaching from the bottom...
Flooding or Flood Zones
Flooding
The Power of Water
What is a Flood Zone?

100 year or 1%

Zone AE, A1-A30, A AO, AH, V, VE
Base Flood Zone

• 100 year flood zone
• 1% flood zone
• Special flood zone hazard area
Most Common Types of Flood Zones

- Zone AE, A1-A30 (Studied Area)
- Zone A, AO, AH (Non-Studied Area)
- Zone V (BFE Unknown) or VE (BFE Known)
- Zone X shaded or Zone B (100 yr to 500 yr)
- Zone X un-shaded or Zone C (greater than 500 yr)
Floodway:

- Area of moving water
- High hazard area
- Needed to carry flood waters
- “Highway for the water”
New Maps / Flood Zones / Floodways
Let me tell you a FLOODWAY story...
### History....FLOOD MAPS

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>National Flood Insurance Act</td>
</tr>
<tr>
<td>1969</td>
<td>Fairbanks, AK (1st FIRM)</td>
</tr>
<tr>
<td>1973</td>
<td>Flood Disaster Protection Act</td>
</tr>
<tr>
<td>1986</td>
<td>FEMA Community Probation Procedures</td>
</tr>
<tr>
<td>1994</td>
<td>National Flood Insurance Reform Act</td>
</tr>
<tr>
<td>2004</td>
<td>Flood Insurance Reform Act</td>
</tr>
<tr>
<td>2005</td>
<td>Katrina</td>
</tr>
<tr>
<td>2006</td>
<td>Beginning of New Flood Maps</td>
</tr>
<tr>
<td>2012</td>
<td>Biggert Waters Act (2014 Affordability Act)</td>
</tr>
</tbody>
</table>
Elevation Certificate

• No longer the Animal it used to be…

• When are they needed???
LOMA

????????

LETTER OF MAP AMENDMENT
<table>
<thead>
<tr>
<th>LOMA Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Electronic LOMA / eLOMA</td>
</tr>
<tr>
<td>2. On-Line LOMC</td>
</tr>
<tr>
<td>3. “Out as Shown” LOMA</td>
</tr>
<tr>
<td>4. LOMR-F</td>
</tr>
<tr>
<td>5. CLOMA &amp; CLOMR-F</td>
</tr>
</tbody>
</table>
eLOMA vs. On-Line LOMC

- Single or Multiple Structures (w/ BFE)
- Single or Multiple Parcels (w/ BFE)
- Zone A - Stillwater (w/ BFE)
- Zone A with BFE known
- Out As Shown
- Floodway

- Condominium Unit (multi-owners)
- Zone A - BFE Unknown
- Fill LOMR-F
People are losing their homes due to the high cost of flood premiums!
FIRM Are Not "Set In Stone"

Processes Available To Correct Or Change A Federal Insurance Rate Map (FIRM):

Letter of Map Amendment (LOMA)

Letter of Map Revision based on fill (LOMR-F)

Physical Map Revision
Shooting the Structure

Checking the LAG
Would this house qualify for a LOMA application?
Establishing the BFE AE, A1-A30 Zone

FLOOD INSURANCE STUDY (FIS)

Not the FIRM
THE FLOOD INSURANCE STUDY (FIS)
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EXHIBITS

Exhibit 1 - Flood Profiles

<table>
<thead>
<tr>
<th>River</th>
<th>Panels</th>
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</thead>
<tbody>
<tr>
<td>Arnold Brook</td>
<td>01P–02P</td>
</tr>
<tr>
<td>Castleton River</td>
<td>03P–11P</td>
</tr>
<tr>
<td>Clarendon River</td>
<td>12P–15P</td>
</tr>
<tr>
<td>Clark Hill Brook</td>
<td>16P–20P</td>
</tr>
<tr>
<td>Cold River</td>
<td>21P–25P</td>
</tr>
<tr>
<td>Creed Brook</td>
<td>26P–27P</td>
</tr>
<tr>
<td>Curtis Brook</td>
<td>28P–31P</td>
</tr>
<tr>
<td>East Creek</td>
<td>32P–38P</td>
</tr>
<tr>
<td>Flower Brook</td>
<td>39P–42P</td>
</tr>
<tr>
<td>Freeman Brook</td>
<td>43P</td>
</tr>
<tr>
<td>Guernsey Brook</td>
<td>44P</td>
</tr>
<tr>
<td>Homer Stone Brook</td>
<td>45P–46P</td>
</tr>
<tr>
<td>Indian River</td>
<td>47P</td>
</tr>
<tr>
<td>Mettawee River</td>
<td>48P–50P</td>
</tr>
<tr>
<td>Mill Brook No. 1</td>
<td>51P–52P</td>
</tr>
<tr>
<td>Mill Brook No. 2</td>
<td>53P–54P</td>
</tr>
<tr>
<td>Mill River</td>
<td>55P–67P</td>
</tr>
<tr>
<td>Moon Brook</td>
<td>68P–74P</td>
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</table>
Establishing the BFE

TABLE 4 – SUMMARY OF STILLWATER ELEVATIONS

<table>
<thead>
<tr>
<th>FLOODING SOURCE AND LOCATION</th>
<th>10-PERCENT</th>
<th>2-PERCENT</th>
<th>1-PERCENT</th>
<th>0.2-PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAKE LUCIDIAN</td>
<td>498.0</td>
<td>498.2</td>
<td>498.6</td>
<td>499.1</td>
</tr>
<tr>
<td>Entire shoreline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAKE ST. CATHERINE</td>
<td>485.3</td>
<td>485.8</td>
<td>486.0</td>
<td>486.5</td>
</tr>
<tr>
<td>Entire shoreline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LITTLE LAKE</td>
<td>485.3</td>
<td>485.8</td>
<td>486.0</td>
<td>486.5</td>
</tr>
<tr>
<td>Entire shoreline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables in the FIS report. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.
Establishing the BFE
The Flood Insurance Study Profile Sheet
The Flood Insurance Study Profile Sheet
Structure is located 390 feet upstream from cross section "O" with BFE = 813.3
Establishing a Base Flood Elevation

THE FLOOD INSURANCE STUDY (FIS)

• Only on the Studied Areas (AE, A1-A30, V Zones)

• 3 important places in the FIS
  ✓ The Stillwater Chart
  ✓ Floodway Data Chart
  ✓ Profile Sheets
Establishing a Base Flood Elevation
Establishing a Base Flood Elevation
Establishing the BFE Zone A

Where do we go?

Non-Studied Area?
Bridge Design
Look at the age of the culvert or bridge
How important is it to do a little more work in the process of determining a Base Flood Zone (BFE) Elevation in a Zone A?