Flood Study Review
• Overview
• Base Map Changes
• Flood Study Methodologies
• Review of Data/Changes from Existing Maps
• Appeal/Comment Process
• Map Adoption Process

Tools and Outreach Strategies
• Online/Interactive MapViewer
• Outreach-Public Meetings
What is Map Modernization?

Through Map Modernization…

…FEMA will provide digital flood insurance rate maps and studies…

…for communities nationwide…

…that are more accurate, easier to use, and more readily available.
Why Modernize?

- Outdated maps (10+ years old)
- Physical changes in floodplains – man-made and natural
- Digital format enables overlays/analysis
- Easier to update maps
- Maps are foundation for flood risk reduction and insurance (5.6 million policies, 1.2 trillion coverage)
What’s new
Flood Insurance Study

• New maps are county-wide
• Follows a USGS Quad layout – countywide coverage with no city “cut-outs”
• Contains 100- & 500-year floodplains (AE/X zones)
• 10, 50, 100, 500 year flood elevations published
• Re-delineation of flooding sources where better topography was available
• Vertical Datum change (NGVD 1929 to NAVD 1988)
**What’s new**

**Vertical Datum Change**

- **NGVD 29**
  - Based on a mean sea level from 21 tidal stations in the US & 5 stations in Canada

- **NAVD 88**
  - Based on the density of the Earth instead of varying values of sea heights
  - More accurate

- **Conversion for Snohomish County Varies**
  - NGVD + (vertical adjustment’) = NAVD
  - Conversion factor for County for FIS ranges from 3.6 to 3.9 feet
Digital Flood Insurance Rate Maps

Vertical Datum and FIRMs (e.g. uses 3.7’ conversion)

NGVD 29

BFE = 2 ft

NAVD 88

BFE = 5.7 ft
Digital Flood Insurance Rate Maps

Digital Format

- Special Flood Hazard Areas
- Land Ownership
- Transportation
- Surface Waters
- Boundaries
- Geodetic Control
- Elevation
- Aerial Imagery
A p p l y l o c a l p a r c e l a n d t o p o l a y . . .

D i g i t a l F l o o d I n s u r a n c e R a t e M a p s

B i r c h B a y
<table>
<thead>
<tr>
<th>Old FIRM</th>
<th>New FIRM</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A</td>
<td>Approximate Floodplain (SFHA)</td>
</tr>
<tr>
<td>A1-A30</td>
<td>AE</td>
<td>Detail River Floodplain (SFHA)</td>
</tr>
<tr>
<td>A99</td>
<td>A99</td>
<td>Protected by Levee</td>
</tr>
<tr>
<td>AH</td>
<td>AH</td>
<td>Shallow Floodplain with BFE</td>
</tr>
<tr>
<td>AO</td>
<td>AO</td>
<td>Shallow FP without BFE</td>
</tr>
<tr>
<td>B</td>
<td>X (shaded)</td>
<td>500 Year Floodplain</td>
</tr>
<tr>
<td>C</td>
<td>X (un-shaded)</td>
<td>Outside 500 Year Floodplain</td>
</tr>
<tr>
<td>D</td>
<td>D</td>
<td>Undetermined Floodplain</td>
</tr>
<tr>
<td>V</td>
<td>V</td>
<td>Approx Coastal Floodplain</td>
</tr>
<tr>
<td>V1-30</td>
<td>VE</td>
<td>Detailed Coastal Floodplain</td>
</tr>
</tbody>
</table>
Digital Flood Insurance Rate Maps

FIRM Labels

• AE Zone
• X Zone (shaded)
• Floodway
Digital Flood Insurance Rate Maps

Some new labels on dFIRMs look like this:

- X (Un-shaded)
- X (Shaded) (500-year)
- Floodway
- A & AE Zones
- SFHA (100-year)
Snohomish County Flood Study Details

Cooperating Technical Partnership: Snohomish County

FEMA Contractor: Michael Baker Jr., Inc.
Snohomish County Adoption Process
Timeline of events

- Preliminary maps issued ................. September 28, 2010
- Flood Study Review Meeting .......... October 19, 2010
- Public Meeting – Arlington .......... November 3, 2010
- Public Meeting – Monroe ............ November 9, 2010
- 90 day appeal period begins ........ e.g. December 1, 2010
  after 2nd public notice in local newspaper
- 90-day appeal period ends .......... e.g. March 1, 2011
  FEMA reviews submitted technical appeals and modifies or maintains maps as appropriate
  to communities and publishes the BFEs in the Federal Register
  Communities have 6 months to adopt the study before the data becomes “effective”. Failure to adopt results in suspension from NFIP
- Effective date ................................................. Est. December 2011
• **LOMA** - for property owners who believe a property was incorrectly included in a SFHA. An elevation certificate supports a LOMA, but by itself, does not remove the insurance requirement.

• **LOMR** – removes land that has been graded or filled (physical changes) since the date of the map. A LOMR can waive flood insurance requirements.

• **(LOMA) Hotline - 1-877-FEMA-MAP**
Future Steps after Appeal period ends

- FEMA addresses submitted comments
- Local jurisdictions adopt an ordinance that is compliant with your map and FEMA standards
- Local jurisdictions develop and implement outreach strategies, if desired.
- Upon receipt of LFD, local jurisdictions begin enforcing the maps
Letter of Final Determination (LFD)

• Starts with the Letter of Final Determination (LFD) stating that the Appeals have been resolved, if applicable
• Officially notifies community of final base flood elevations
• Indicates effective date of FIRMs as 6 months from the date of the letter
• Ordinance meeting FEMA regulations **MUST** become effective by end of 6 months or community will be suspended
Questions & Comments

FEMA Flood Study Engineer:  Ted Perkins  (425) 487-4684
Snohomish County SWM:  Chris Nelson  (425) 388-3464 x4696
WA DOE: NFIP Coordinator  Chuck Steele  (425) 649-7139
Flood Study Coordinator  Jerry Franklin  (360) 407-7470
NFIP Insurance Specialist:  Jeff Woodward  (425) 487-4664
Floodplain Management Spec.:  John Graves  (425) 487-4737
Risk Analyst/GIS Specialist:  Kelly Durst  (425) 487-4636
Flood Insurance Information:  www.floodsmart.gov
FAQs for Preliminary FIS usage:  www.fema.gov/plan/prevent/floodplain/fis_data.shtm#4