




▶ **6:00 : Doors Open**  
 ▶ **6:10 : Presentation**  
 ▶ **6:40–8:00 : Open House**





**RiskMAP**  
Increasing Resilience Together



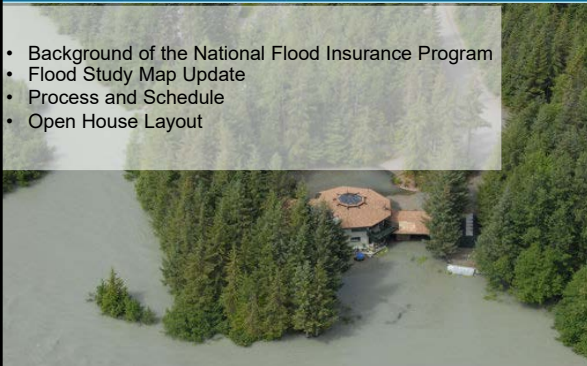
**Update of the City and Borough of Juneau  
 FEMA Flood Insurance Rate Map  
 Open House**

April 4, 2018

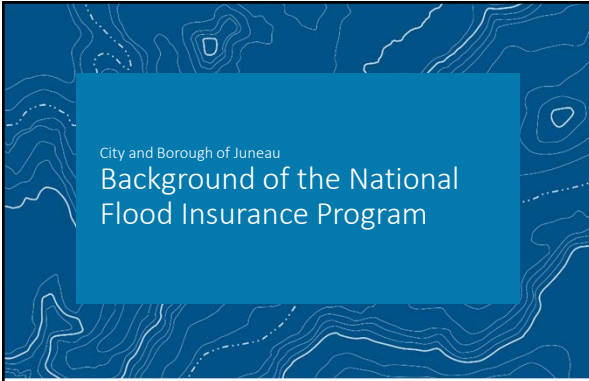




Agenda

- Background of the National Flood Insurance Program
- Flood Study Map Update
- Process and Schedule
- Open House Layout



City and Borough of Juneau  
 Background of the National  
 Flood Insurance Program







**Purpose of the National Flood Insurance Program (NFIP)**

The NFIP is a Federal program **enabling property owners in participating communities to purchase insurance as a protection against flood losses** in exchange for **State and community floodplain management regulations that reduce future flood damages.**

...If a **community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains**, the Federal Government will make flood insurance available within the community as a financial protection against flood losses.

Program started in 1968.







**Purpose of the National Flood Insurance Program (NFIP)**

Reduction in Annual Flood Premium\*

Floor Elevation Above BFE	Reduction in Annual Flood Premium
1 foot	25%
2 feet	50%
3 feet	62%
4 feet	67%

\*Example V-Zone building with an open foundation, \$250,000 building coverage, \$100,000 contents coverage. Reductions compared to lowest flood at BFE. Note: This does not include recent rate increases. (FEMA Home Builder's Guide to Coastal Construction)






## Basis for Floodplain Mapping

### **1% Annual Chance Flood (“100-year”) Standard**

1,125,000 Miles of River are mapped for the NFIP – on average 11,250 miles of river are seeing the 1% flood or greater every year.

42,500 Miles of Coastline are mapped – on average 425 miles of coastline are seeing the 1% flood or greater every year.

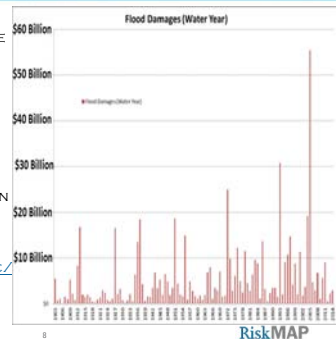



## Purpose of the National Flood Insurance Program

### Reduce economic loss caused by flood events



- BETWEEN 1980 AND 2013, THE UNITED STATES SUFFERED MORE THAN \$260 BILLION IN FLOOD-RELATED DAMAGES.
- FLOODING ACCOUNTS FOR APPROXIMATELY 85% OF ALL DISASTER DECLARATIONS.
- ON AVERAGE, MORE PEOPLE DIE ANNUALLY FROM FLOODING THAN ANY OTHER NATURAL HAZARD.

GRAPHS FROM [HTTP://WWW.NWS.NOAA.GOV/HIC/](http://www.nws.noaa.gov/hic/) WITH ADJUSTMENT FOR KATRINA



## Fairbanks North Star Borough

- Large Flood on Chena River in August 8-20, 1967
- Previous Peak Flow observed was 36,500 cubic feet per second (cfs)
- Flow on August 15<sup>th</sup> was 74,400 cfs
- Caused \$180 Million in Damages to Homes and Businesses
- 6 lives lost
- 12,000 people evacuated during the event.

## Fairbanks North Star Borough


- Fairbanks North Star Borough was the 2<sup>nd</sup> community in the nation to join the NFIP in 1969

## Flood Definition

From FloodSmart.com:

A flood is a general and temporary condition where two or more acres of normally dry land or two or more properties are inundated by water or mudflow.



## Mandatory Purchase Requirement


**Two federal statutes mandate purchase of flood insurance**

- The Flood Disaster Protection Act of 1973
- The National Flood Insurance Reform Act of 1994

**Applies to properties in the 1% Chance Floodplain**

- Insurance is a prerequisite to receive a loan from Federally regulated and insured lenders.
- The requirement is triggered when a loan is:
  - Made
  - Increased
  - Renewed
  - Extended
- The insurance must be in effect for the life of the loan.

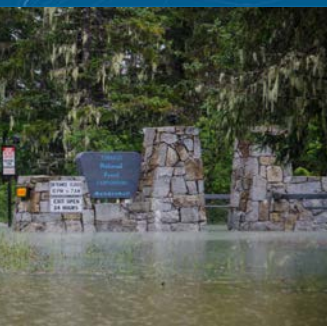
Monetary penalties on lenders for non-compliance, requires escrow accounts for other insurance purposes, and requires that lenders review flood maps and map changes.



## How the National Flood Insurance Program (NFIP) Works

Three disciplines of the NFIP:

- Mapping -
- Flood Studies
- Regulations
- Insurance



## City and Borough of Juneau Review of the Flood Study Map Update

FEMA 14 RiskMAP Honoring Resilience Together

## Juneau Areas of Concern



- **Auke Bay (Pt. Lena to Mendenhall Peninsula)**
  - 15 miles of shoreline
- **Douglas Harbor (to Juneau-Douglas Bridge)**
  - 4 miles of shoreline
- **Tee Harbor**
  - 3 miles of shoreline
  - Approximate V in effective mapping
  - No updates as part of this study

## Topographic Data Sources

- **2009 NHC Study**
  - LiDAR – City and Borough of Juneau provided all available LiDAR data sets that bound the Gastineau Channel study area
  - SRTM – Areas beyond the LiDAR coverage were supplemented with topography data from the Shuttle Radar Topography Mission
- **2016 Coastal Redelineation**
  - Light Detection and Ranging (LiDAR) data for Auke Bay and Douglas Harbor was provided to STARR by the CBJ GIS Division
  - CBJ contracted Watershed Sciences, Inc. to collect LiDAR and digital imagery in the spring of 2013
  - Data acquired in May-June 2013

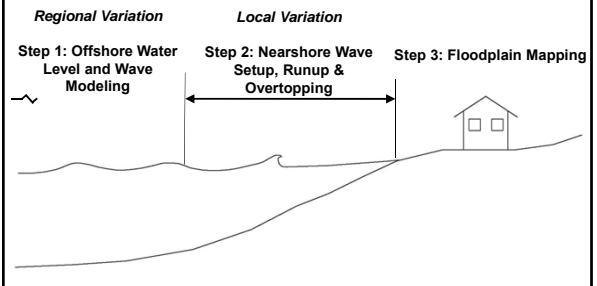
## Coastal Analysis Modeling Comparison

Guidelines for Coastal Flood Hazard Mapping and Analysis for Pacific Coast of the United States  
January 2005

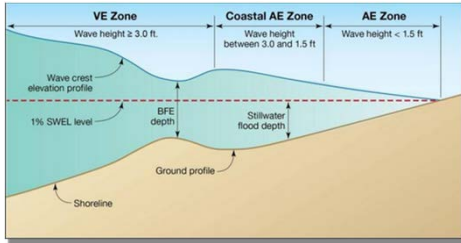


	Old Approach	New Approach
Methodology	USACE Shore Protection Manual	FEMA Pacific Coast Guidelines
Wind data	Synthetic wind data	Measured wind data
Water Level Model	Water Level Gauge Data	Updated Historic Tide Gauge Data
Wave Model	Engineering Judgement	2-Dimensional
Study Resolution	Calculations generalized over broad regions	Calculations using enhanced grid resolution
Topography	USGS Contour Maps	2009 LiDAR data

## Modeling Process



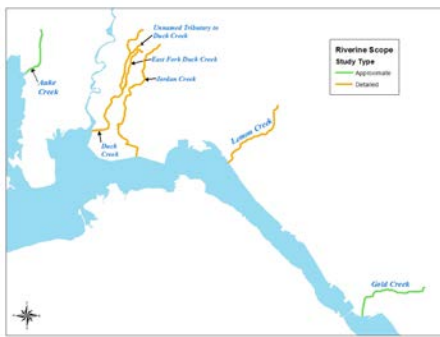
### Step 3: Floodplain Mapping



### FEMA Coastal Outreach Website

[WWW.FEMA.GOV/COASTAL-FLOOD-RISKS](http://WWW.FEMA.GOV/COASTAL-FLOOD-RISKS)

### Riverine Studies



### Riverine Scope of Work

Approximate Study (Zone A)

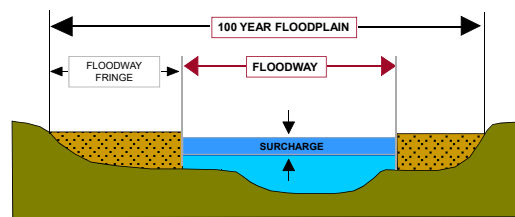
Stream	Miles
Auke Creek & Lake	1.3
Gold Creek	2.0

### Riverine Scope of Work

Detailed Study (Zone AE)

Stream	Miles
Duck Creek	3.4
Unnamed Tributary to Duck Creek	0.3
East Fork Duck Creek	1.3
Lemon Creek	1.6
Jordan Creek	3.1

### Riverine Floodplain and Floodway Definitions


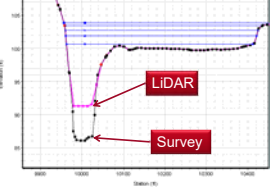


FLOODWAY + FLOODWAY FRINGE = 100 YEAR FLOODPLAIN  
SURCHARGE NOT TO EXCEED 1.0 FEET



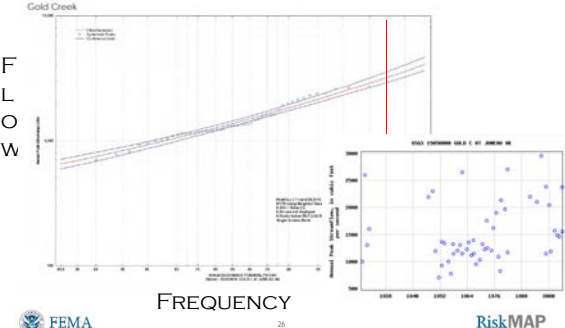
## Survey Collection

- Collected in May – June, 2015
- 15 bridges
- 41 culverts
- 15 cross sections
- 9.7 miles of stream

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## Hydrologic Methods



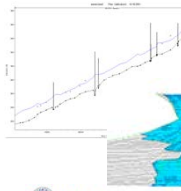

F L O W

F R E Q U E N C Y

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## Hydraulic Methods

Method	Description
Detailed (Zone AE)	<ul style="list-style-type: none"> <li>• Steady State HEC-RAS model</li> <li>• Roughness is examined closely</li> <li>• Floodway Analysis</li> </ul>

CBJ Floodplain Management

Montana Creek Road Floods August 20, 2011

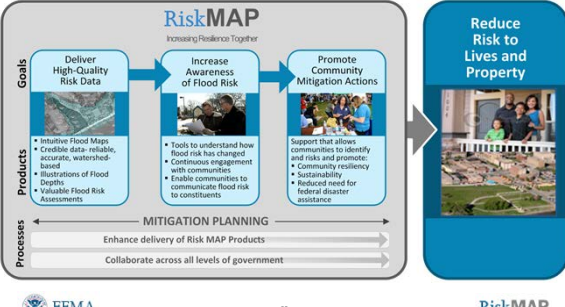
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## The Flood Mapping Process and Schedule

City and Borough of Juneau

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## RiskMAP, the NFIP and Hazard Mitigation Planning



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## Alaska's Mapping Priorities

FEMA asks Cooperating Technical Partner States to identify priorities for future mapping studies in the State Mapping Business Plan, which is updated each year.

Some of the criteria determining Alaska's priorities include:

- Local Hazard Mitigation Plan
- Participation in the NFIP Community Rating System
- Number of Disaster Declarations
- In-House GIS Capabilities
- Planned Future Development




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## Alaska Risk MAP Website

<https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement/RiskMAP.aspx>

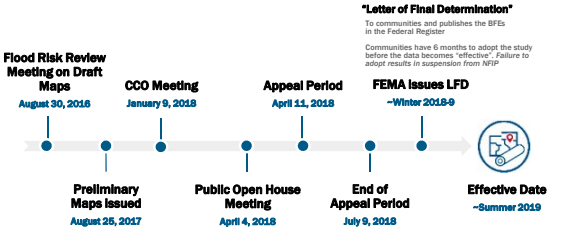
Information on all the Risk MAP activities in Alaska:

- Community Risk MAP Studies
- Documents on the Risk MAP Program
- Links to other Risk MAP-related webpages
- Information on increasing community resilience




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## Timeline



**Flood Risk Review Meeting on Draft Maps**  
August 30, 2016

**Preliminary Maps Issued**  
August 26, 2017

**CCO Meeting**  
January 9, 2018

**Public Open House Meeting**  
April 4, 2018



**Appeal Period**  
April 13, 2018

**End of Appeal Period**  
July 9, 2018

**FEMA issues LFD**  
~Winter 2018-9


**Effective Date**  
~Summer 2019



**"Letter of Final Determination"**  
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


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## Input & Comments

- Private landowners submit to their community officials
- Community bundles all the comments and forwards them to FEMA Region 10 Service Center
- Forms will be available at the Open House




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## Letters of Map Change (LOMC)





**Letter Of Map Amendment (LOMA)** – for property owners who believe a property was incorrectly included in a floodplain, primarily through showing that the lowest elevation of the structure is above the 1% flood elevation.

**Letter Of Map Revision (LOMR)** – for communities to submit better technical information to change a floodplain or to reflect physical changes made to the floodplain.

**(LOMA) Hotline – 1-877-FEMA-MAP**



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## City and Borough of Juneau Open House Layout


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## Information Tables

<p><b>Property ID &amp; Digital Mapping</b></p> <p>Receive a printed map of your property and understand the flood zone</p>	<p><b>Flood Study / Engineering</b></p> <p>Understand the methodology and technical specifications of the maps</p>	<p><b>Flood Insurance</b></p> <p>Learn about your insurance policy options and rates</p>
<p><b>State Table</b></p> <p>Gain insights into state floodplain mapping priorities</p>	<p><b>Community Table</b></p> <p>Ask about city/borough floodplain regulations and hazard plans</p>	<p><b>Floodplain Regulations</b></p> <p>Gather information on specific building requirements / restrictions</p>


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