Risk MAP Briefing

Amanda Siok, FEMA Region 10

FEMA

AGENDA

- Risk MAP Process Overview
- Risk MAP Products
- Risk Assessments
- Using Products/Results

Overview: Risk MAP Program

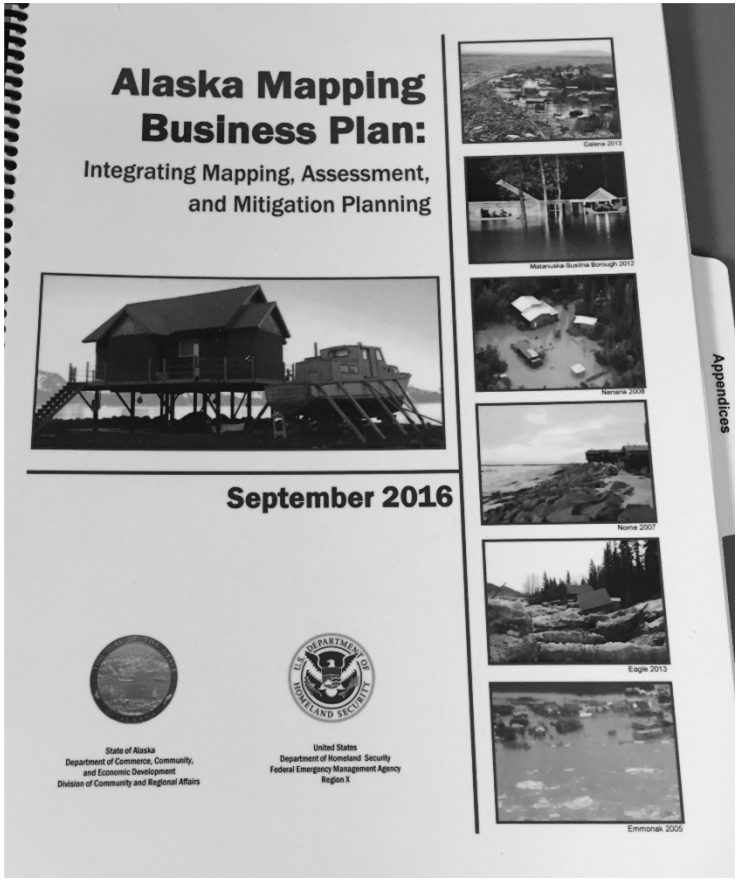
- Goals: quality data, public awareness, action that reduces risk
- Implemented nationally in 2009
- Collaborative approach
- Watershed-oriented
- Focus on up-front coordination
- Multi-hazard risk assessment

Project Area Selection

- AK State Risk MAP Coordinator

Department of Commerce, Community and Economic Development- Community and Regional Affairs

  - Average Annual Loss Data
  - Mitigation Plans
  - Interest in New Community Plans
  - Disaster Declarations
  - Population
  - NFIP (status, topographic coverage, coastal miles, etc.)
  - Climatological Studies
  - Planned Future Development
  - Input from other agencies (State and Federal)



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

Risk MAP Process

Discovery:

Identification of community needs and collection of available data.

Flood Insurance Rate Map Update & Risk Assessment Products

Conduct Hazus and vulnerability assessments. Document results in Risk Report.

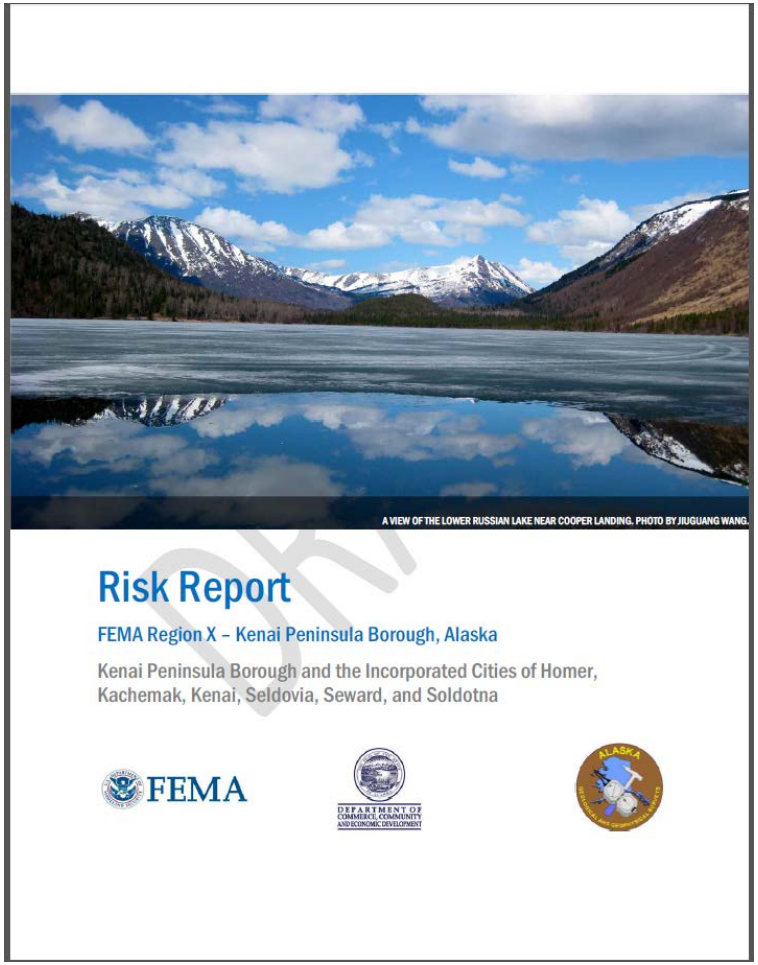
Resilience Workshop

Share results of risk assessments and draft Risk Report with community. Identify strategies for risk reduction.

*This process takes approximately 4-7 years

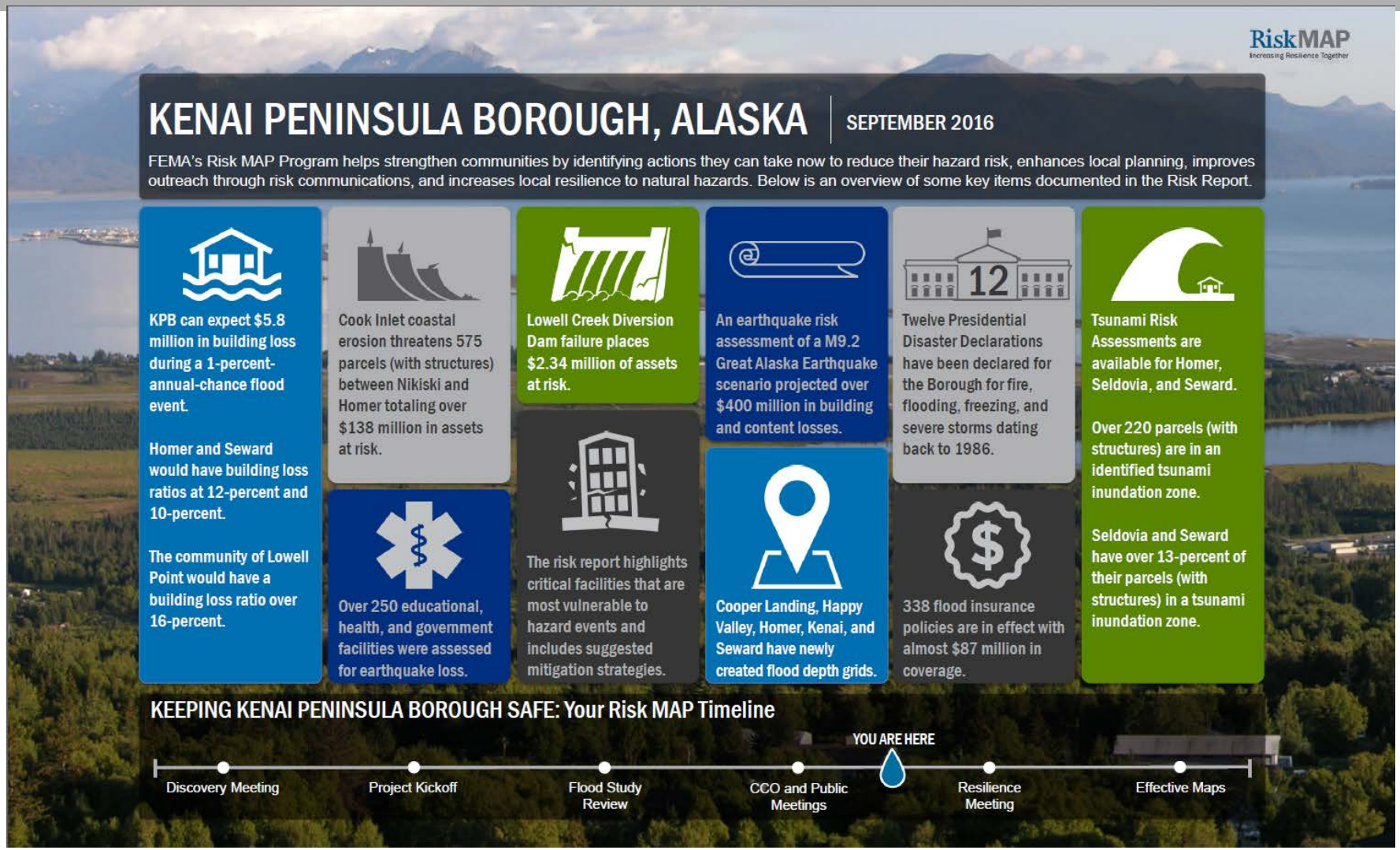
Risk MAP Products

Risk Report



Risk Database

Outreach Materials

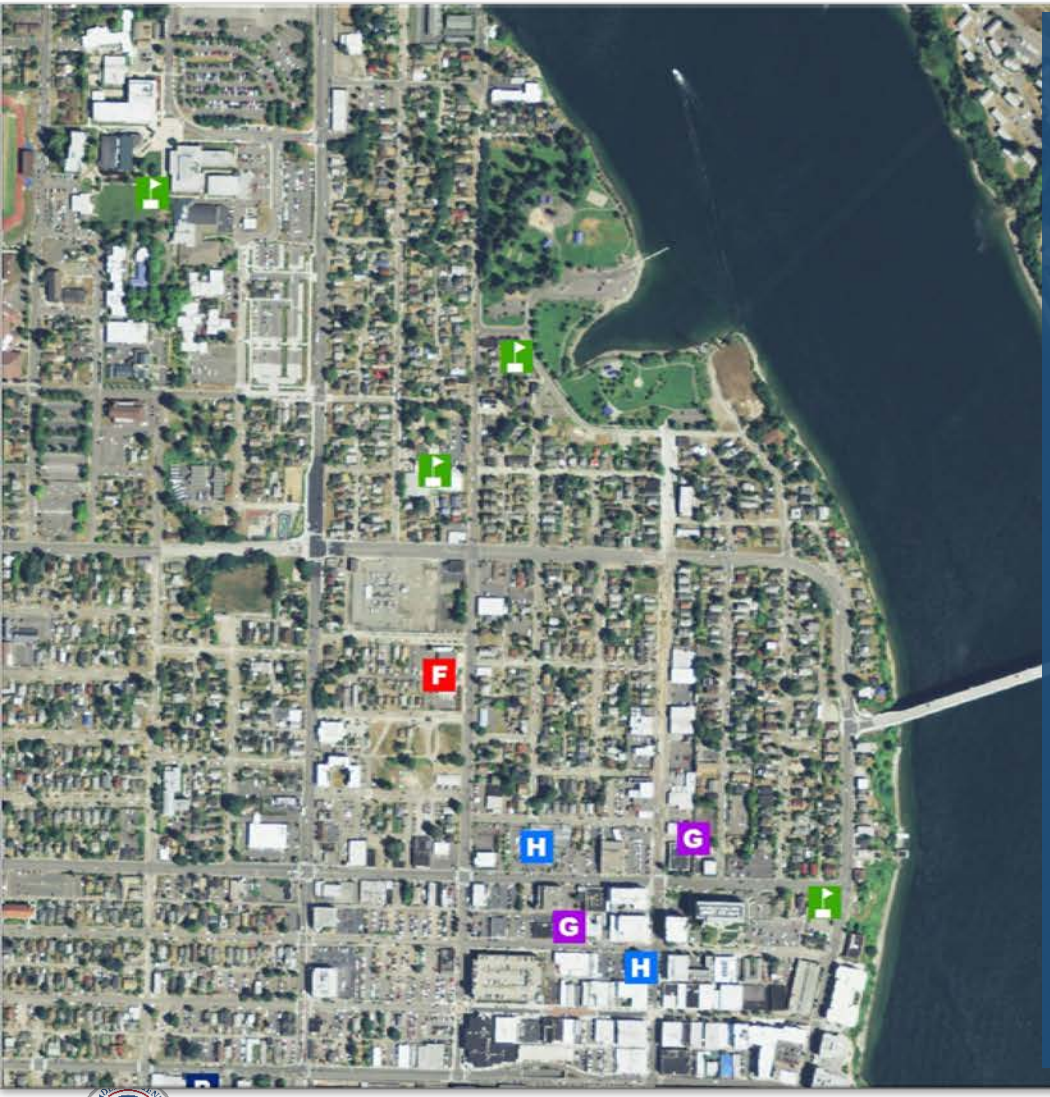


How Risk MAP can inform your decision making.....

Increase Community Resiliency

Develop GIS data to capture community assets	Capture or Develop Hazard Data	Estimate Losses	Develop Problem Statements

Tables and Maps of Community Assets
Maps & Data of Prevalent Hazards
Mitigation Plan Input



Potential Community Assets

- Cultural Resources
- Agriculture and Food
- Banking and Finance
- Chemical
- Commercial Facilities
- Communications
- Critical Manufacturing
- Dams
- Emergency Services
- Energy
- Government Facilities
- Healthcare
- Information Technology
- Nuclear Reactors, Materials and Waste
- Postal and Shipping
- Transportation Systems
- Water

Formatting Data for Hazus- Earthquake

- Region 10 will only run GBS, UDF (Hazus Level II)
  - Requires significant data collection/input

Cost	Contents	Occupancy	Building Type	Year Built	# of Stories	Found-ation	Design Level

- Cost: Replacement or building inventory cost (Source: Assessor)
- Content Cost: can be calculated based on occupancy class (Single family, nursing home, retail trade, etc.)
- Building Type: Wood, Steel Moment, Steel Braced, Concrete, etc.
- Foundation Type: Slab, pile,
- Design Level: Based on building code dates (Pre-code, moderate code) or Seismic Zone and building age.

Develop GIS data to capture community assets | Capture or Develop Hazard Data | Estimate Losses | Develop Problem Statements

Scenario & Event Selection- Seismic

- Based on community preference and available data
- Subject Matter Experts: University of AK Fairbanks & USGS

Home | Map Archive

Archive of ShakeMaps for Earthquake Scenarios

Archives: 2016 | 2015 | 2014 | 2013 | pre-2013 | Major Earthquakes | **Earthquake Scenarios**

Earthquake

The maps in this archive display estimated intensities and ground motions for "Earthq
in the future. The primary purpose is for emergency response exercises and planning
about scenario earthquakes.

Scenario ID	Scenario Name
1938_Kodiak_se	1938 Kodiak Scenario
1964test_se	1964test Scenario
Anchorage_CastleMnt_se	Anchorage Castlemnt Scenario
Anchorage_Intraplate_se	Anchorage Intraplate Scenario
002_se	Border Ranges Fault
Denali_Fault_se	Denali Fault Scenario
Narrow_Cape_se	Narrow Cape Scenario
NE_Brooks_Range_se	Ne Brooks Range Scenario
Noatak_se	Noatak Scenario
PWS_M8.5_se	Pws M8.5 Scenario
Salcha_Fault_se	Salcha Fault Scenario
001_se	Salcha Seismic Zone
Tintina_Fault_se	Tintina Fault Scenario

USGS science for a changing world

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EARTHQUAKES | HAZARDS | DATA & PRODUCTS | LEARN | MONITORING

ShakeMap
- Archive
- Atlas
- RSS
- Scientific Background
- Product Formats
- Related Links
- Comments
- ShakeMap Manual
- ShakeCast
- Disclaimer

ShakeMap Archive

Networks: All | S. California | N. California | Pacific NW | Nevada | Utah | **Alaska** | Hawaii | New Madrid | Globa
Years: **All** | 2014 | 2012 | 2009 | 2005 | 1964
Type: Regular | **Scenarios**

ShakeMap Scenarios in Alaska

12 Matching ShakeMaps Found

Search:

Mag	Location	Date	Event ID
5.7	53.9 miles N of Kotzebue 67.6716, -162.553, 24km	Jun 12 2014 12:00:00 UTC	noatak_se
7.2	Anchorage Intraplate Earthquake 61.1697, -149.959, 30km	Mar 25 2014 21:10:00 UTC	anchorage_intraplate_se
7.5	Castle Mnt Earthquake 61.4726, -150.312, 10km	Mar 25 2014 21:00:00 UTC	anchorage_castlemnt_se
8.5	PWS_M8.5_Earthquake 59.7074, -146.111, 10km	Mar 25 2014 20:30:00 UTC	pws_m8.5_se

FEMA

ShakeMap Data (USGS.Gov)

Instrumental Intensity

JPG (115 kB)
PS (667 kB)

Peak Ground Acceleration

JPG (104 kB)
PS (785 kB)

Peak Ground Velocity

JPG (105 kB)
PS (788 kB)

Spectral Response

0.3 sec Period

JPG (105 kB)
PS (785 kB)

1.0 sec Period

JPG (106 kB)
PS (788 kB)

3.0 sec Period

JPG (106 kB)
PS (789 kB)

Raw Grids

Text X, Y, Z Values (364 kB)
XML (1 Mb)

GIS Files

HAZUS Zip File (1 Mb)
Shape Files (3 Mb)

Station Lists

Text (1 kB)
XML (4 kB)

Metadata

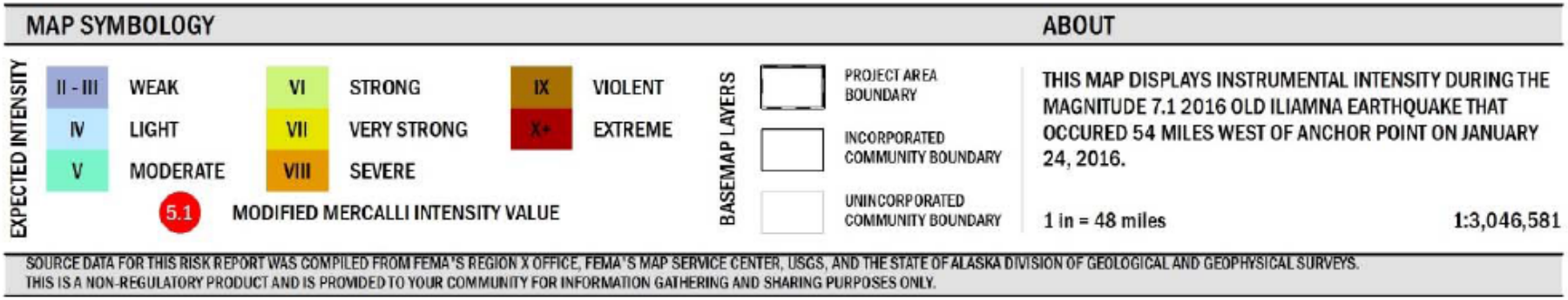
HTML (43 kB)
Text (31 kB)
XML (27 kB)

Supplemental Information

XML (2 kB)

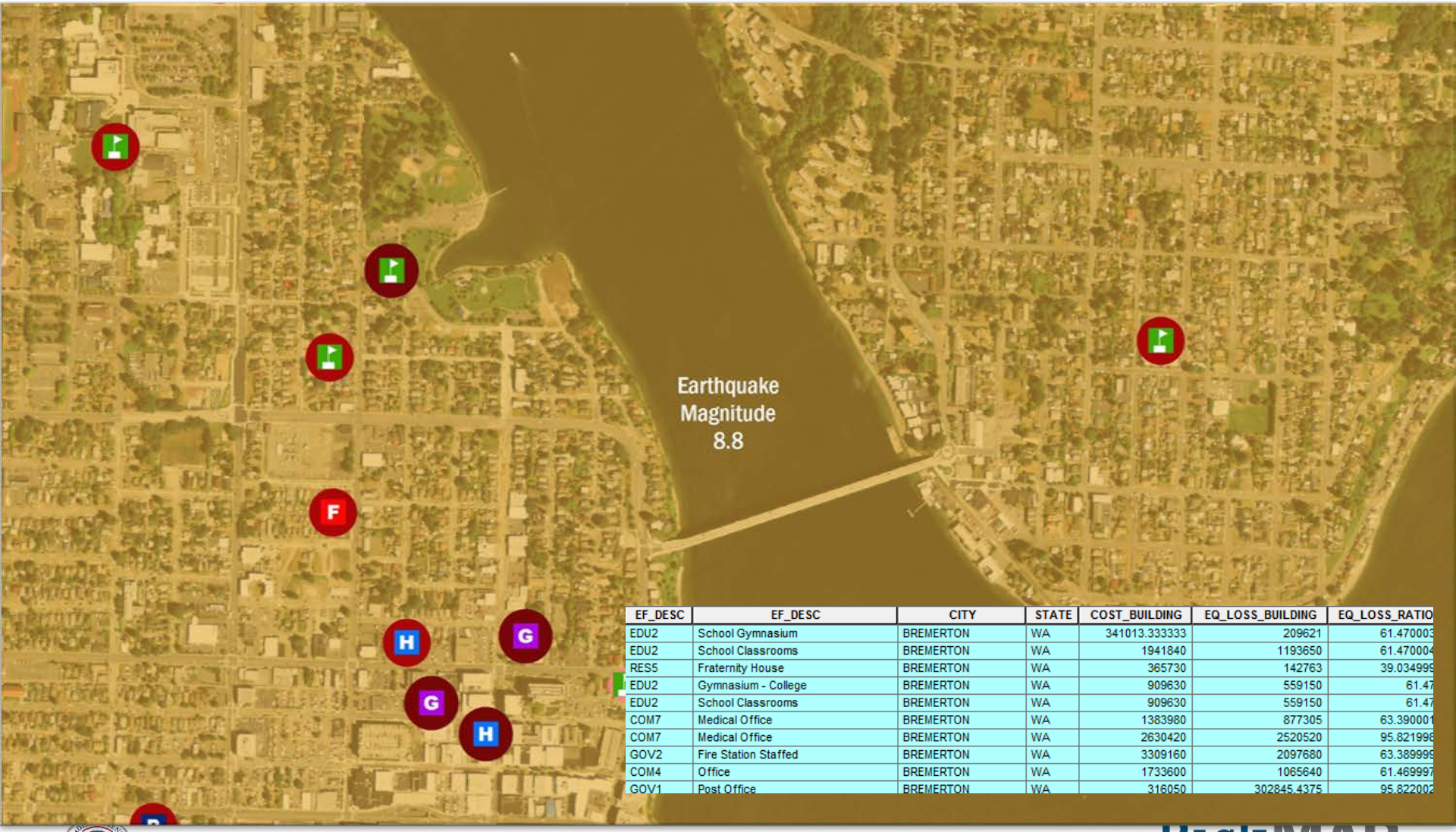
For Planning Purposes Only

- In-Text Disclaimer: Used for response, land use, and emergency planning purposes



- ShakeMap Disclaimer:

  "This is a non-regulatory product and is provided to your community for information gathering and sharing purposes only."



EF_DESC	EF_DESC	CITY	STATE	COST_BUILDING	EQ_LOSS_BUILDING	EQ_LOSS_RATIO
EDU2	School Gymnasium	BREMERTON	WA	341013.333333	209621	61.470003
EDU2	School Classrooms	BREMERTON	WA	1941840	1193650	61.470004
RES5	Fraternity House	BREMERTON	WA	365730	142763	39.034995
EDU2	Gymnasium - College	BREMERTON	WA	909630	559150	61.47
EDU2	School Classrooms	BREMERTON	WA	909630	559150	61.47
COM7	Medical Office	BREMERTON	WA	1383980	877305	63.390001
COM7	Medical Office	BREMERTON	WA	2630420	2520520	95.821998
GOV2	Fire Station Staffed	BREMERTON	WA	3309160	2097680	63.389995
COM4	Office	BREMERTON	WA	1733600	1065640	61.469997
GOV1	Post Office	BREMERTON	WA	316050	302845.4375	95.822002

Review and analyze the results of the hazard loss estimations

- Identify areas with highest vulnerabilities on a map

Develop list of problem statements based on findings

- i.e. 80% of structures were built before modern building codes, increasing the risk of significant damage during an earthquake..

Assist with the development of risk-reduction strategies

- Develop priority list for essential facility earthquake retrofit
- Develop an outreach strategy or mitigation program for homeowners or businesses to retrofit older buildings
- Revisit Zoning Designations per risk assessment results
- Adjust Hazard Mitigation Planning priorities for future resilience

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[illegible]	[illegible]	[illegible]	WA	1383980	877305	63.390001
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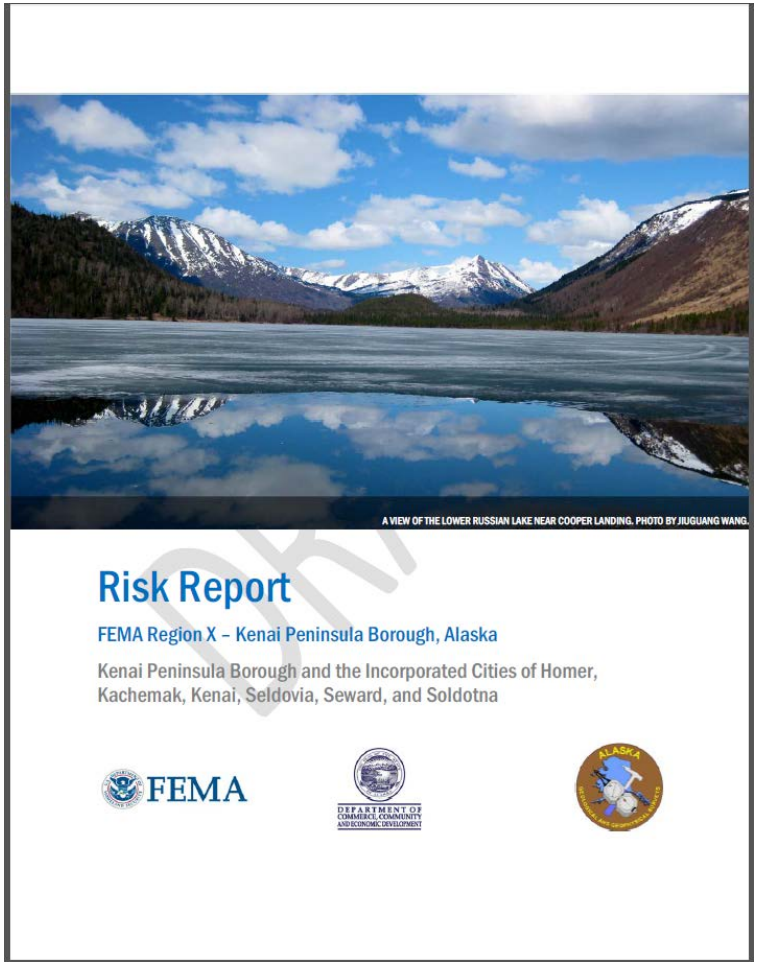
Risk MAP Products

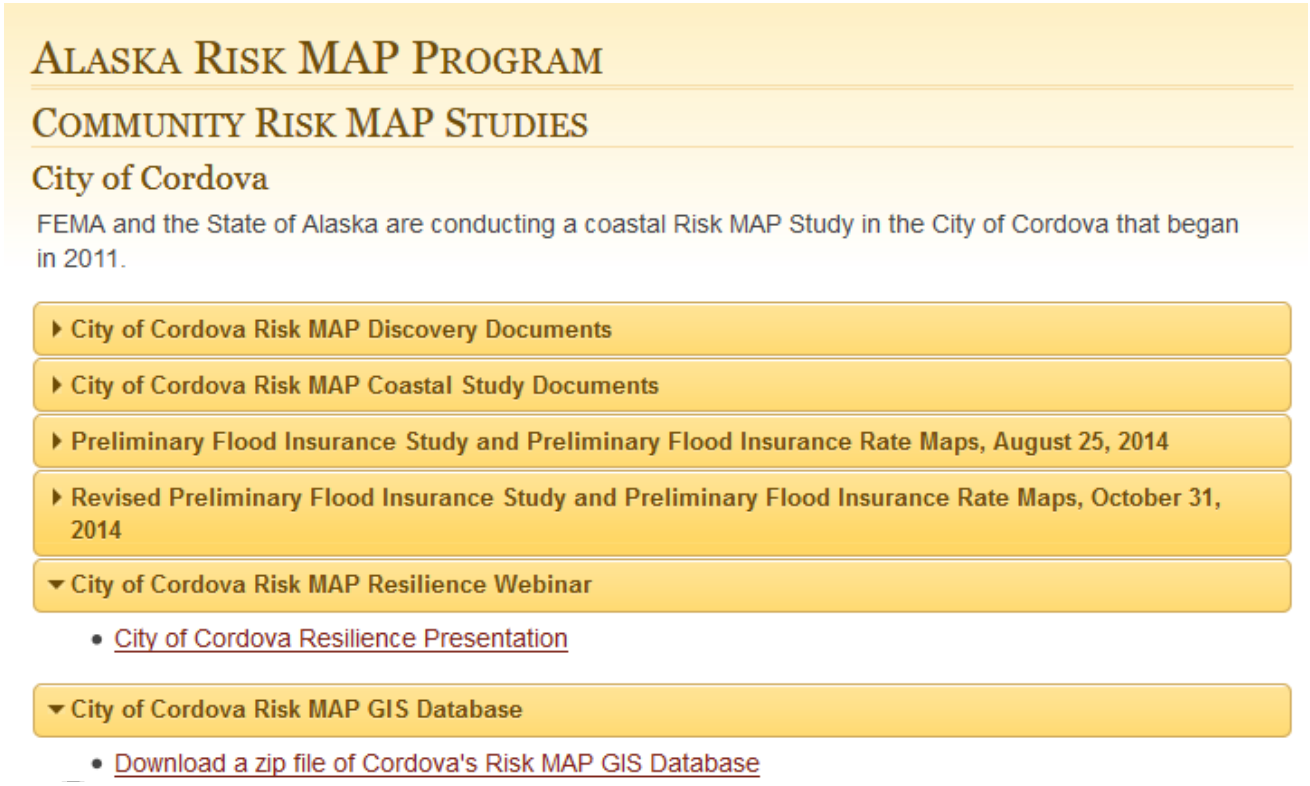
Risk Report



Risk Database

Pre-Resilience Workshop

- State Risk MAP Coordinator Distributes Risk Report to project stakeholders via e-mail and on website for initial feedback
- FEMA hosts webinar with stakeholders to discuss initial risk assessment results and the database.



ALASKA RISK MAP PROGRAM

COMMUNITY RISK MAP STUDIES

City of Cordova

FEMA and the State of Alaska are conducting a coastal Risk MAP Study in the City of Cordova that began in 2011.

- City of Cordova Risk MAP Discovery Documents
- City of Cordova Risk MAP Coastal Study Documents
- Preliminary Flood Insurance Study and Preliminary Flood Insurance Rate Maps, August 25, 2014
- Revised Preliminary Flood Insurance Study and Preliminary Flood Insurance Rate Maps, October 31, 2014
- City of Cordova Risk MAP Resilience Webinar
  - City of Cordova Resilience Presentation
- City of Cordova Risk MAP GIS Database
  - Download a zip file of Cordova's Risk MAP GIS Database

RiskMAP
Increasing Resilience Together

Day-of Resilience Workshop

- Elected Officials Briefing (approx. 1-Hour)

- Resilience Workshop (Approx 3 Hrs)
  - Overview presentation
    - Risk MAP
    - risk assessment results
    - resilience and risk assessment implementation opportunities
    - Mitigation Strategies/Success Stories
    - Funding Opportunities
  - Break-out Sessions to discuss community-specific results
    - If money wasn't an object, how would you reduce risk?
    - How will you prioritize actions given current resource constraints?
    - How can updated Risk Assessment information inform current risk reduction efforts?
  - Community Reports: Present one identified action/strategy

Post-Resilience Workshop

- Integrate risk assessment data into:
  - Hazard Mitigation Plan
  - Emergency Response Plans
  - Land Use Plans
- Mitigate
  - Apply for grants
  - Fund projects
- Outreach
  - Public Awareness
  - Preparedness

Tentatively Planned Resilience Meetings

2017

- Anchorage (March)
- Kenai (May)
- Mat-Su (TBD)

2018 (and beyond)

- Juneau
- Ketchikan
- Sitka
- Valdez

Current/Planned Projects & Seismic Data

Project	Scenario Name	Link
Anchorage	1. Border Ranges Fault Scenario (M7.1) 2. Intraplate Scenario (M7.2) 3. Castle Mountain Scenario (M7.5)	1. http://www.aeic.alaska.edu/~shake/shake/002_se/intensity.html 2. http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/anchorage_intraplate_se/ 3. http://www.aeic.alaska.edu/~shake/shake/Anchorage_CastleMnt_se/intensity.html
Juneau	M6.7 Juneau Scenario	http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/Juneau_se/
Juneau: Tsunami	-In Preparation-	Per UAF Earthquake Center
Kenai	1. Old Iliamna (1/24/2016 Event) 2. 1964 Scenario (M9.2)	1. http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/12496371/ 2. http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/1964_se/
Ketchikan	M7.7 126.9 miles W of Ketchikan? Use the Probability Map, use M7.0	http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/10631567/
Ketchikan: Tsunami	-In Preparation-	Per UAF Earthquake Center
Mat-Su	1. Castle Mountain Scenario 2. Border Ranges Fault Scenario (M7.1) 3. 1964 Scenario(M9.2)	1. http://www.aeic.alaska.edu/~shake/shake/Anchorage_CastleMnt_se/intensity.html 2. http://www.aeic.alaska.edu/~shake/shake/002_se/intensity.html 3. http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/1964_se/
Sitka	1964 Scenario(M9.2)	http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/1964_se/
Sitka: Tsunami	DGGS RI 2013-3	http://www.dggs.alaska.gov/pubs/id/26671
Valdez	1964 Scenario(M9.2)	http://earthquake.usgs.gov/earthquakes/shakemap/ak/shake/1964_se/
Valdez: Tsunami	Port of Valdez	http://dggs.alaska.gov/pubs/id/25055

Denotes Hazus Runs that have been completed.

Questions?