An aerial photograph of a wide river valley in Montana. The river is brown and turbulent, flowing through a landscape of green trees and brown, eroded hills. A large, semi-transparent white box with a red border is centered over the river, containing the title and date. The background shows a vast expanse of water and land, with hills in the distance under a clear sky.

Floodplain Mapping



Overview

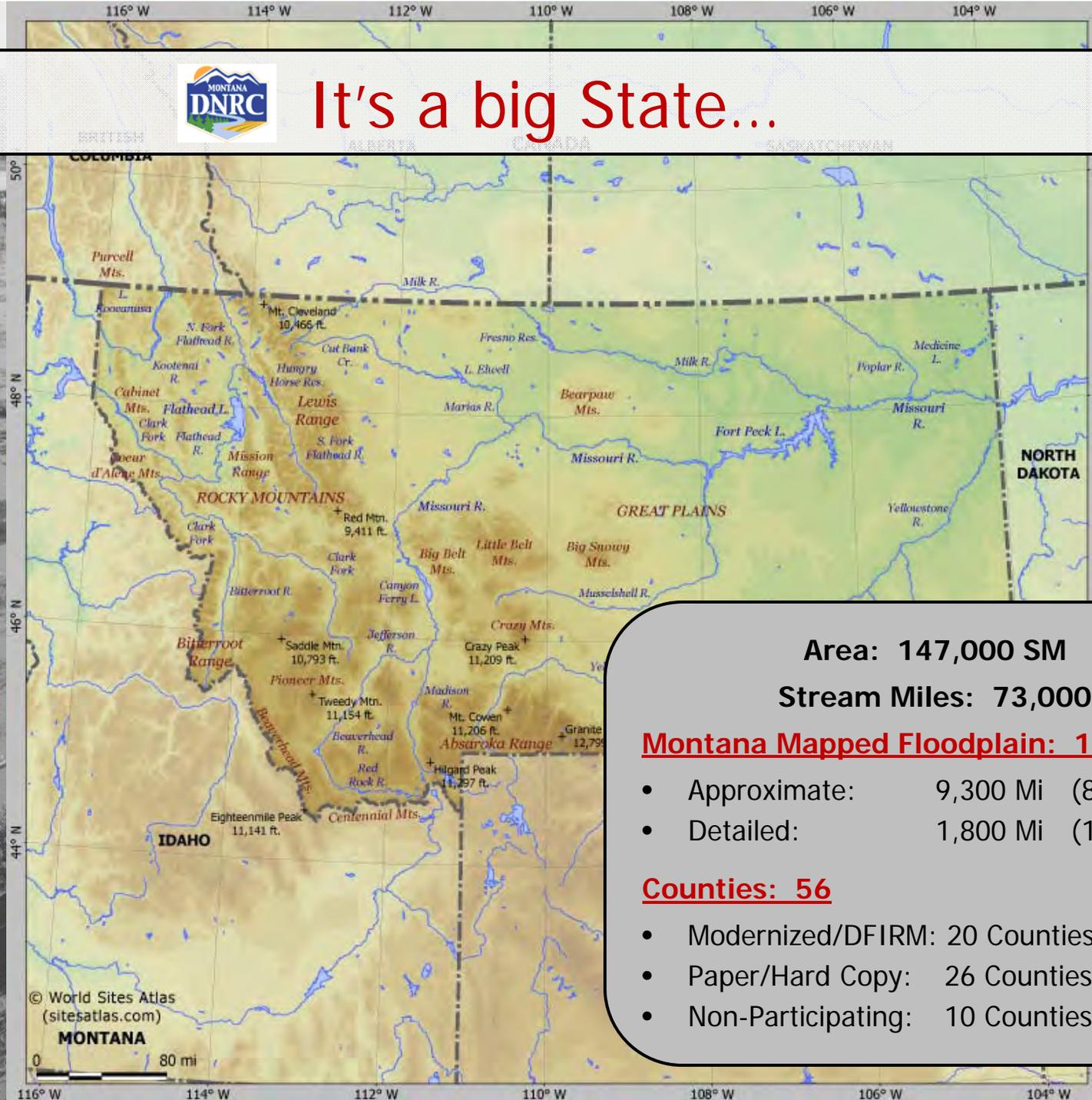
November 5, 2015

Musselshell River, Montana

Image by Chris Boyer, Kestrel Aerial Services, Inc.



It's a big State...



Area: 147,000 SM

Stream Miles: 73,000

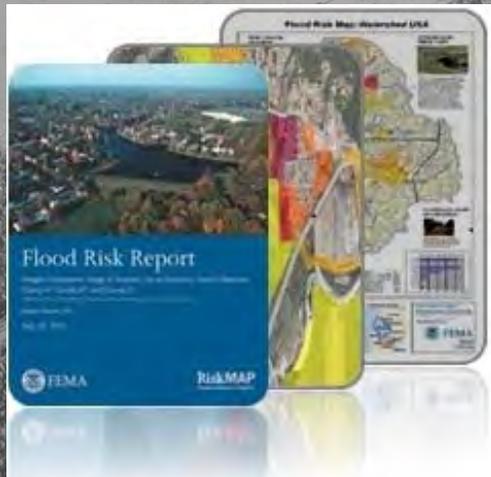
Montana Mapped Floodplain: 11,100 Mi.

- Approximate: 9,300 Mi (84%)
- Detailed: 1,800 Mi (16%)

Counties: 56

- Modernized/DFIRM: 20 Counties
- Paper/Hard Copy: 26 Counties
- Non-Participating: 10 Counties

FEMA National Mapping Initiatives



2003 – 2008: Goal of digitizing FIRMs and updating FIS products

- Metrics - Achieved for 92% population and 62% land area (Nationwide)

2009 – Current: Risk Mapping Assessment and Planning (Risk MAP)

- New Metrics for Mitigation, NVUE...

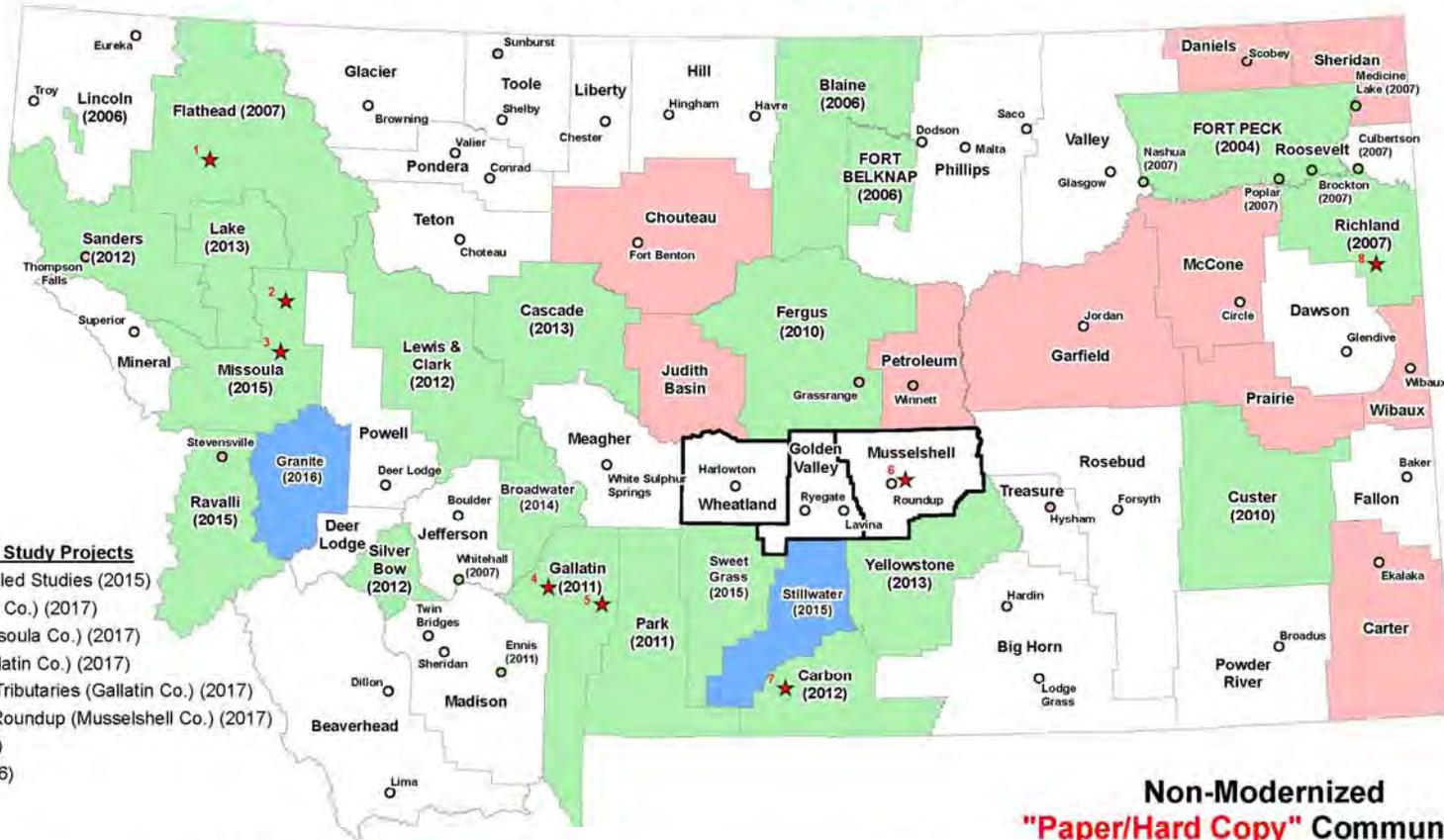
Added Mitigation focus and Non-Regulatory products:

- Changes Since Last FIRM (CSLF)
- Depth Grids
- Flood Risk Report & Database

Modernization Snapshot

Montana Status of Floodplain Mapping Inventory

Updated July 28, 2015



Current Risk Map/PMR Study Projects

1. Flathead Co. - 7 Detailed Studies (2015)
2. Swan River (Missoula Co.) (2017)
3. Clearwater River (Missoula Co.) (2017)
4. W. Gallatin River (Gallatin Co.) (2017)
5. Bozeman Creek and Tributaries (Gallatin Co.) (2017)
6. Musselshell River at Roundup (Musselshell Co.) (2017)
7. Carbon County (2016)
8. Richland County (2016)

Modernized "DFIRM" Communities

Completed ("Year" Effective)	In Progress (Scheduled "Year" Effective)
<ul style="list-style-type: none"> 18 - Countywide 2 - Reservations 1 - Partial Countywide (Lincoln Co./Libby) 7 - City/Town ONLY 	<ul style="list-style-type: none"> 2 Countywide 8 New Enhanced RiskMap or PMR Study Projects (see list at Left)

Non-Modernized "Paper/Hard Copy" Communities

NFIP Participating Community	
○ 25 Counties	□ Digitized Mapping Available (Non-Regulatory)
○ 37 Municipalities	
Non-Participating or Suspended Community	
○ 10 Counties	
○ 8 Municipalities	



TOOL BOX: FEMA's NFHL – GeoPlatform Map Viewer (National Flood Hazard Layer)

HOME ▾ FEMA's National Flood Hazard Layer (Official) MODIFY MAP  [Sign In](#)

[Details](#) | [Basemap](#) | [Share](#) [Print](#) | [Measure](#) 

   **Legend**

NFHL (click to expand)

NFHL Availability

-  NFHL Available

Map Viewer for Modernized Communities ONLY

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Esri, DeLorme, FAO, NGA, NOAA, IFL, USGS, EPA 

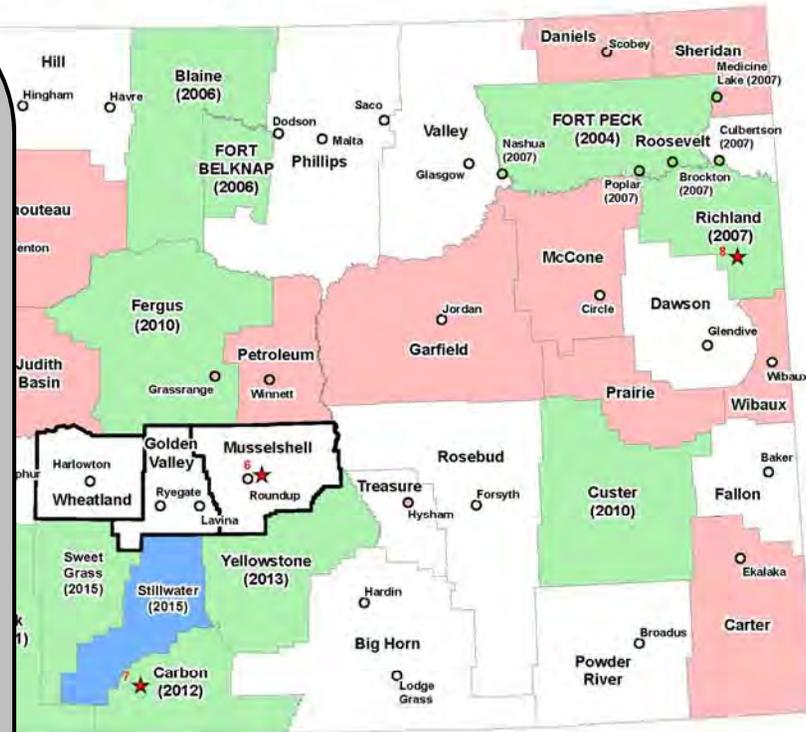
Modernization Snapshot

Montana Status of Floodplain Mapping Inventory

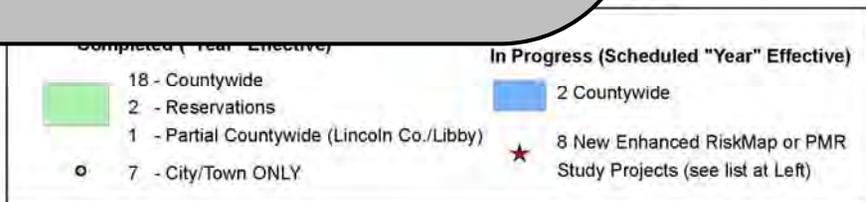
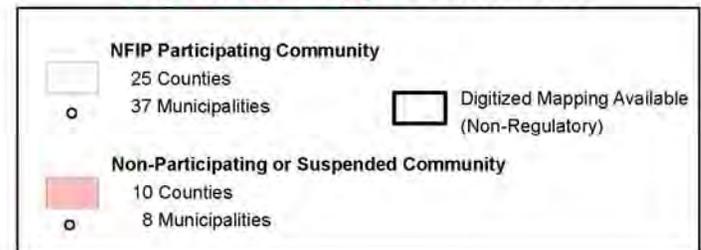
Updated July 28, 2015

Modernized Communities: (in Green)

- Fort Peck Reservation
- Fort Belknap Reservation
- Richland County (In-Progress, 2018 Completion)
- Blaine County
- Fergus County
- Custer County
- Nashua, Brockton, Culbertson



Non-Modernized "Paper/Hard Copy" Communities



Cur
1. F
2. S
3. C
4. W
5. B
6. M
7. C
8. R



Modernized Communities in NE Montana

Community Name	Effective FIS/FIRM Dates
Blaine County & Fort Belknap Reservation (includes Cities of Chinook & Harlem)	9/20/2006
Richland County (includes Town of Fairview & City of Sidney)	6/4/2007
Custer County (includes City of Miles City)	7/22/2010
Fergus County (includes Towns of Denton, Grass Range, Moore, and Cities of Winifred and Lewistown)	7/22/2010
Town of Nashua (Valley County)	6/4/2007
City of Brockton (Roosevelt County)	6/4/2007
City of Culbertson (Roosevelt County)	6/4/2007

Paper/Non-Modernized Communities in NE Montana

Community Name	Effective FIS/FIRM Dates
Philips County	5/19/1987
Town of Dodson	6/17/1986
City of Malta	5/19/1987
Valley County	2/21/1978 FHBM (Converted 1/1/1987)
City of Glasgow	1/9/1974 FHBM (Converted to NSFHA)
Roosevelt County	12/4/1979 (Converted 11/1/1996)
Dawson County	4/11/1978 (Converted 5/1/1999)
City of Glendive	7/2/1980



FEMA Natl. Flood Hazard Layer (NFHL)

FEMA

Follow FEMA: Visit: FEMA.gov

FEMA GeoPlatform

Providing geospatial data and analytics in support of disaster response and recovery

Winter Storms

Hurricanes

Earthquakes

Floods

Google "FEMA NFHL"

** ONLY Includes Modernized FEMA Communities **

FEMA's NFHL – GeoPlatform Map Viewer

HOME ▾ FEMA's National Flood Hazard Layer (Official) Modify Map Sign In

Details | Basemap | Measure | **Address Search**

Features:
Address Search
Base Map Choices
Panel Index
LOMCs
Direct Download

View Seamless Mapping!

Legend

- Coastal Barrier Resources System Area
- Levees
 - Unaccredited Levee
 - Accredited Levee
- General Structures
 - Flood Structure
 - Bridge
 - Dam, Weir, Jetty
 - Other Structure
- Flood Hazard Boundaries
 - Limit Lines
 - SFHA / Flood Zone Boundary
 - Other Boundaries
- Flood Hazard Zones
 - 1% Annual Chance Flood Hazard
 - Regulatory Floodway
 - Special Floodway
 - Area of Undetermined Flood Hazard
 - 0.2% Annual Chance Flood Hazard

Map Labels:
Hillside Cemetery
LOMA 95-08-031A eff. 2/24/1995
Culbertson 13-08-1091A eff. 12/3/2013
PANEL 3000670025C eff. 6/4/2007
PANEL 30083C0100C eff. 6/4/2007
PANEL 3001872100A eff. 9/30/2004
PANEL 3000670019C eff. 6/4/2007
Culbertson



FEMA

Map Service Center (MSC)

For Non-Modernized Communities
Go to MSC to find FEMA Map Products

All Products are FREE:
FIRM/DFIRM Maps
GIS Shapefiles
FIS Reports
LOMCs

msc.fema.gov/portal

What's on the Horizon for FFY 2015?

FFY2015 CTP Grant Awards for MT Mapping Program :

- Program Management: \$197,137; 2.5 FTEs.
- Community Engagement & Risk Communication (CERC): \$31,167
- Project – Swan River Detailed Study in Missoula County: \$127,535
- Project – Musselshell River Studies; \$743,335

Total Awards: \$1.1 M

STATE OF MONTANA



Floodplain Mapping Program Business Plan

FFY 2015

By the Montana Department of Natural Resources and Conservation

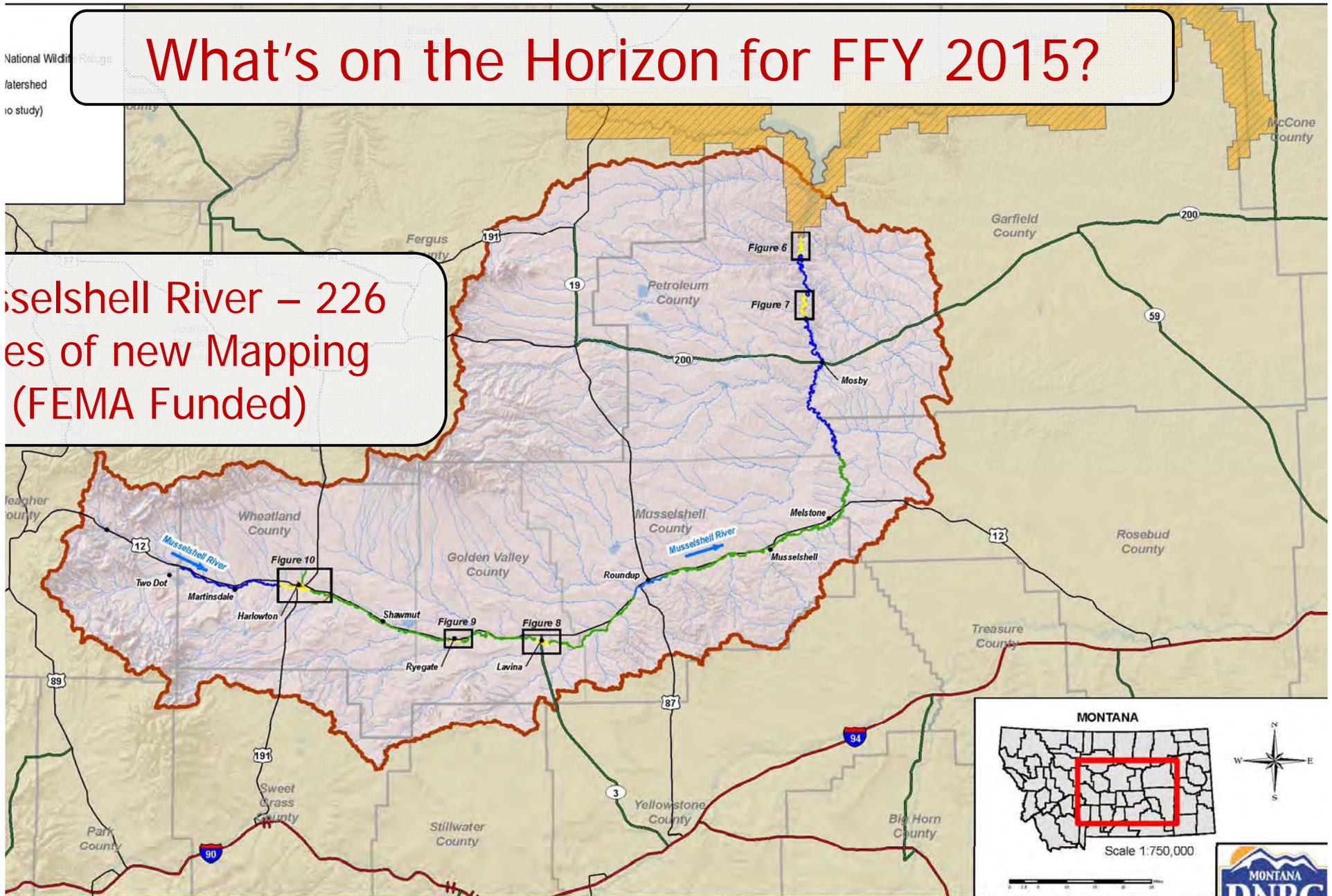


Prepared for FEMA Region VIII

July 2015

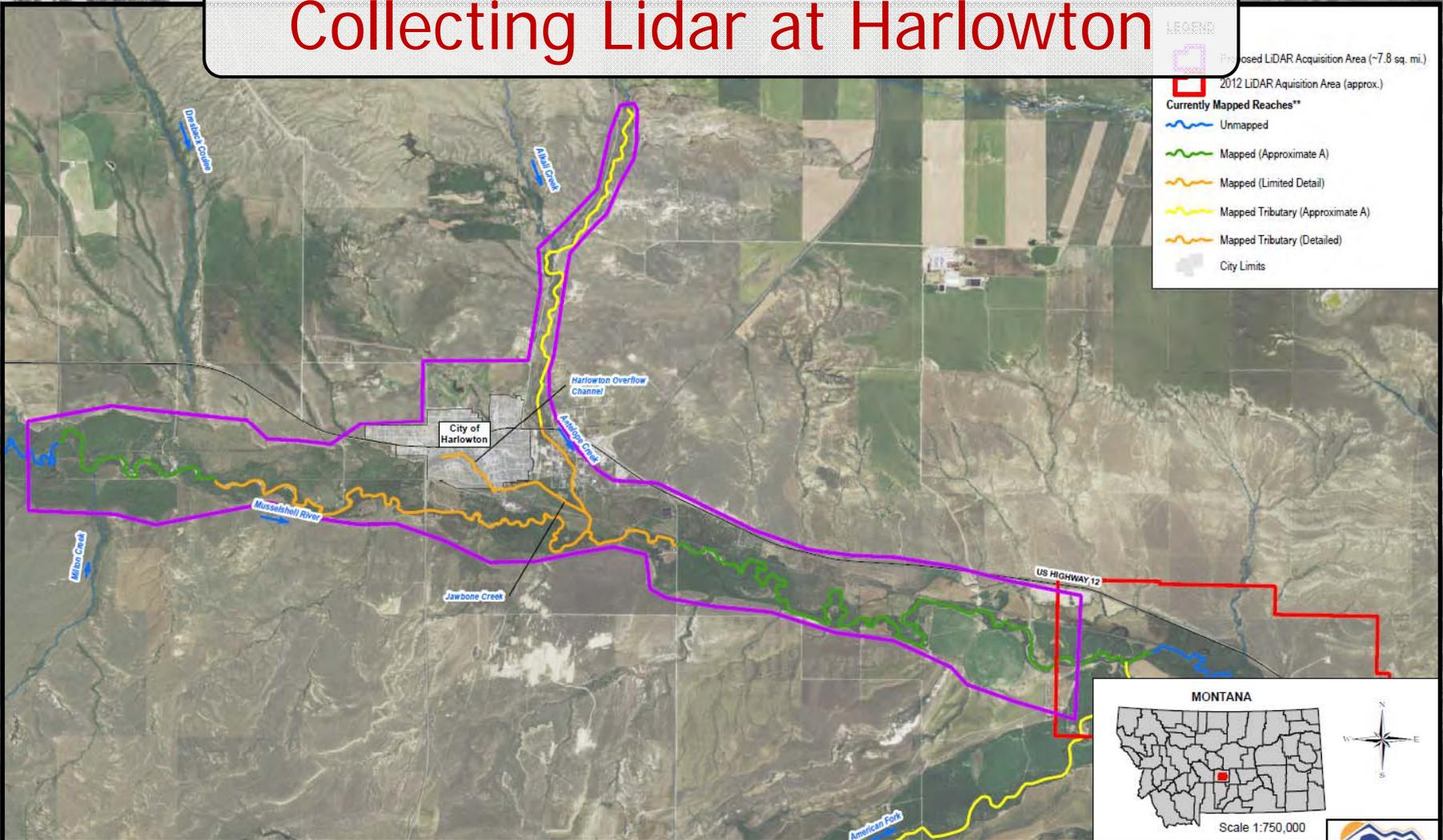
What's on the Horizon for FFY 2015?

Musselshell River – 226 miles of new Mapping (FEMA Funded)



What's on the Horizon for FFY 2015?

Collecting Lidar at Harlowton



United States Interagency Elevation Inventory HIDE LAYERS HELP

IDENTIFY BASEMAP SHARE

TOPOGRAPHIC 1 BATHYMETRIC 0 CLEAR

2010 U.S. Army Corps of Engineers (USACE) Columbia River Lidar (ID, MT, OR, WA)



MONTANA

ZOOM TO COUNTY/ISLAND

RELATED LINKS

DOWNLOAD MORE INFO FAQ CONTACT

DATA TYPE

DATA INVENTORY CURRENT AS OF MARCH 2015

- Topographic Lidar
- Topobathy Shoreline Lidar
- IfSAR Data
- Bathymetric Lidar

Elevation(Lidar) Data Resource:

<http://www.csc.noaa.gov/inventory/#>

IDENTIFY

BASEMAP

SHARE

TOPOGRAPHIC 1

BATHYMETRIC 0

CLEAR

2012 Missouri River, Fort Peck to Confluence with Yellowstone River (Lidar/Topo)

MONTANA

ZOOM TO COUNTY/ISLAND



RELATED LINKS

DOWNLOAD MORE INFO FAQ CONTACT

DATA TYPE

DATA INVENTORY CURRENT AS OF MARCH 2015

- Topographic Lidar
- Topobathy Shoreline Lidar
- IfSAR Data
- Bathymetric Lidar
- NOAA Hydrographic Surveys
- USACE Dredge Surveys

MAINTAINED BY



1:2,311,162.22 Identify Lat/Long: 48.07,-105.06

Yellowstone River Corridor Study Completed

Opportunity to update & improve Floodplain Mapping

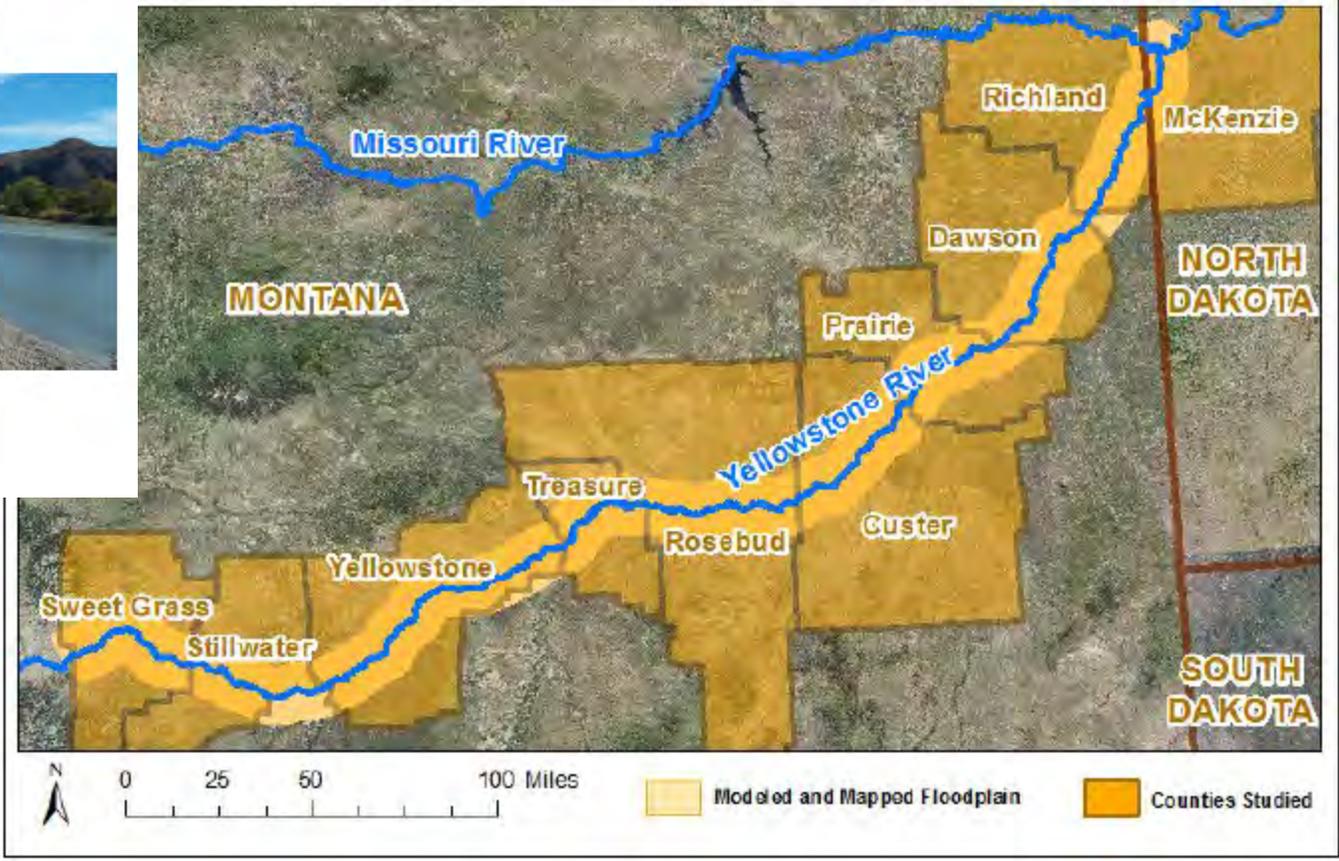


US Army Corps of Engineers
Omaha District

YELLOWSTONE RIVER CORRIDOR STUDY
HYDRAULIC ANALYSIS
MODELING AND MAPPING REPORT



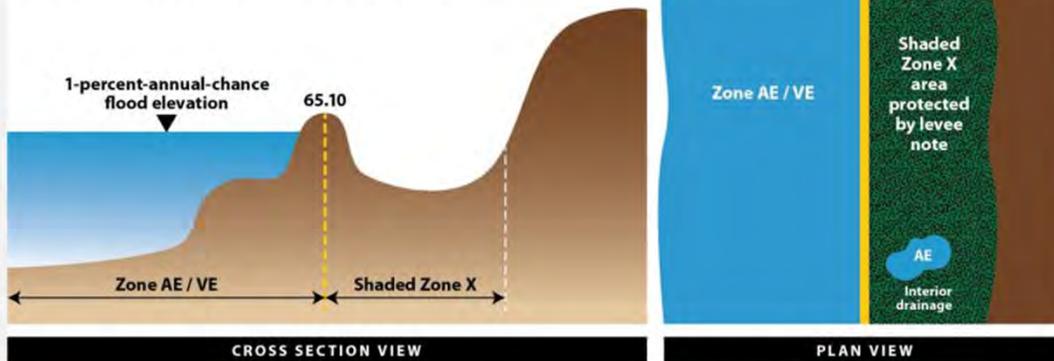
DRAFT
February 2014



Levee Mapping Issues

Accredited (Certified) Levee System

- **Criteria:** Entire Levee System or Flood Control Structure meets (or exceeds) 44 CFR 65.10 Criteria
- **Mapping Approach:** Mapping as Fully Accredited; Natural Valley Floodplain Analysis to Map Shaded Zone X and Levee Protection Note



Analysis and Mapping Procedures for Non-Accredited Levee Systems

New Approach
July 2013

USACE Programs:

- Do not necessarily satisfy FEMA certification

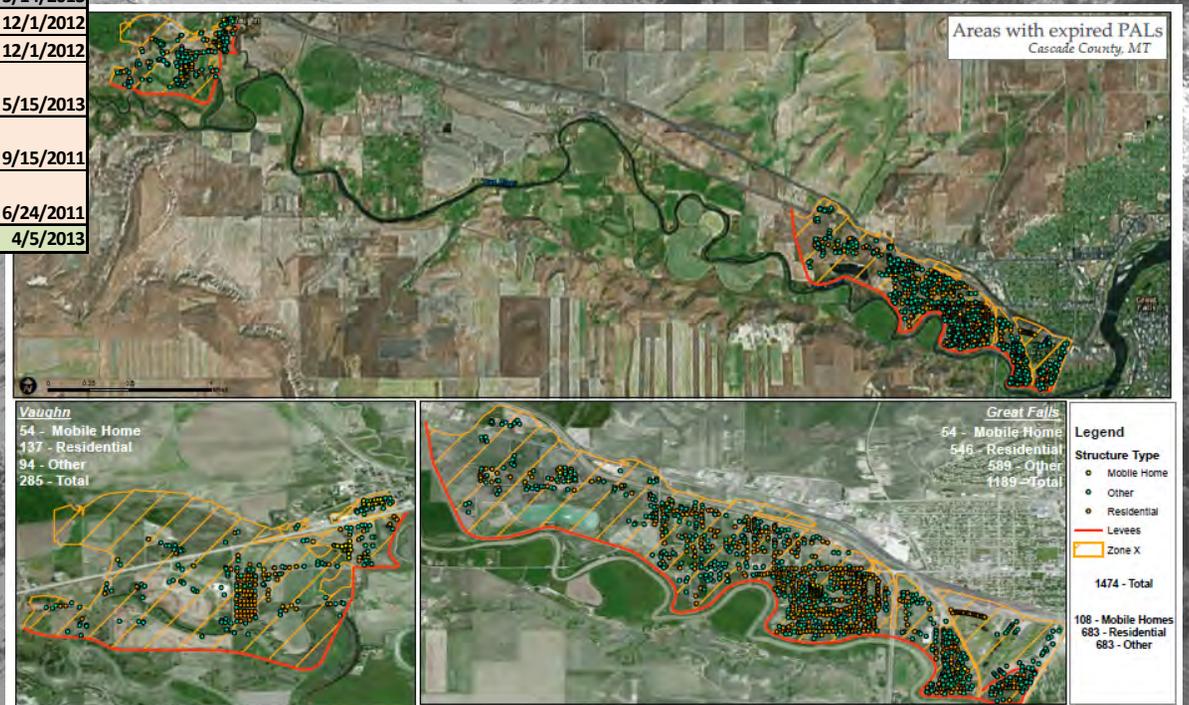
Levee Mapping Issues

PAL (Provisionally Accredited Levee)

Levee Owner	Flooding Source	24 month 65.10 compliance submittal due date
Boulder County	Boulder Creek	9/23/2011
Boulder County	Boulder Creek	9/24/2011
Boulder County	Bear Canyon Creek	9/25/2011
West Great Falls Flood Control & Drainage District	Sun River	5/13/2013
Vaughn Levee District	Sun River	5/14/2013
City of Mapleton	Maple River	12/1/2012
City of Mapleton	Maple River	12/1/2012
City of Fargo	Red River of the North	5/15/2013
City of Velva	Mouse River	9/15/2011
City of Pembina	Pembina River/Red River	6/24/2011
Town of Greybull	Big Horn River	4/5/2013

Prioritizing Expired PALs:

- Number of Impacted Structures
- Documentation of Levee System
- Recent flood events and system performance
- Expiration date of PAL



Thank You



Aerial Images by Chris Boyer, Kestrel Aerial Services, Inc.