La Plata County DFIRM Conversion Project  
La Plata County, Colorado

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Phase 1 of this on-going project is being conducted under the Cooperating Technical Partners (CTP) agreement between the State of Colorado, Colorado Water Conservation Board and the Federal Emergency Management Agency (FEMA) as part of the nationwide Map Modernization program. The purpose of the project is to convert the effective Flood Insurance Rate Maps (FIRMs) for La Plata County, the City of Durango, and the Town of Bayfield to a digital format for the general use of all FEMA stakeholders. This project includes the following tasks:

(a) preparing a **Scope of Work**, and preliminary and final DFIRM (Digital FIRM) panel layouts;  
(b) preparing a FEMA standard **digital base map** based primarily on existing Geographic Information System data provided by La Plata County and the City of Durango, with additional data obtained from alternate sources and digitization of all stream centerlines from recent aerial photography;  
(c) **redelineating** 45 miles of detailed floodplains on updated topography provided by La Plata County on numerous streams throughout the county;  
(d) reviewing 52 miles of floodplains for accuracy and completeness of information, including floodplain redelineation using recently developed aerial photography;  
(e) performing a **vertical datum shift** where necessary on all Base Flood Elevations (BFEs) and flood profiles from the NGVD 1929 vertical datum to the NAVD 1988 vertical datum;  
(f) combining all existing and revised digital data into a FEMA **DFIRM format database** and preparing sample DFIRM panels for review by the FEMA NSP and the affected communities;  
(g) applying all pertinent **DFIRM standard graphics** to the final DFIRMs;  
(h) preparing the Flood Insurance Study (**FIS**) for the countywide study including floodway data tables and flood profiles;  
(i) assisting the CWCB, FEMA’s NSP and the community during the **post-preliminary processing** and outreach and coordination phases of the project;  
(j) preparing final negatives of the DFIRM panels for delivery to the U.S. Government Printing Office;  
and  
(k) preparation of reports, information and documentation required for the Technical Support Data Notebook (**TSDN**).

All work completed for this project is being conducted in accordance with the requirements identified in FEMA’s Map Modernization Guidelines and Specifications for Flood Hazard Mapping Partners [FEMA, April 2003].

**Phase 1 Status: Draft Preliminary**
Phase 2 of this project was completed in conjunction with the La Plata County DFIRM Conversion Project under a contract with the La Plata County Engineering Department. Phase 2 of this project defined the 100-year floodplain and 1-foot rise floodway for Vallecito Creek, Grimes Creek and Middle Creek over a 5.2-mile reach between the Vallecito Campground and Vallecito Reservoir. This project included the following tasks:

(a) field reconnaissance efforts to characterize channel and overbank conditions and roughness coefficients, and to visually evaluate bridges and other hydraulic structures;
(b) development of 2-foot contour topography for the stream corridor through aerial photogrammetric methods;
(c) surveying of all hydraulic structures along the study reach;
(d) hydrologic evaluation to review the La Plata County FIS and define the 1-percent annual change discharge profile for the study reach;
(e) development of a complex HEC-RAS hydraulic model that included more than one dozen looped or split flow reaches through the use of HEC-GeoRAS in conjunction with a DEM-based TIN;
(f) mapping of the 1-percent annual chance of occurrence floodplain, the 1-foot rise floodway, and the preparation of the digital floodplain work maps using HEC-GeoRAS and ACE’s automated floodplain mapping methods;
(g) development of the graphical flood profiles, tables, and text for incorporation into the La Plata County Flood Insurance Study (FIS);
(h) preparation of flood hazard data in DFIRM format for inclusion in the La Plata County DFIRM;
(i) the preparation of all survey, terrain, hydrologic, and hydraulic information in a Data Capture Standard (DCS) format for submission to FEMA’s Mapping Information Platform (MIP); and
(j) the preparation of reports, information and documentation.

Phase 3 of this project also defined the 100-year floodplain for the Los Pinos River over a 14-mile reach between Vallecito Reservoir and the Southern Ute Indian Reservation, south of Bayfield. A 2-mile reach of 1-foot floodway was also defined adjacent to Bayfield. Hydrology for this study was based on the Los Pinos River hydrology developed by the USACE. This project included the following tasks:
(k) **field reconnaissance** efforts to identify potential surveying requirements, characterize channel and overbank conditions and roughness coefficients, and to visually evaluate bridges and other hydraulic structures;

(l) **surveying** of all hydraulic structures along the study reach;

(m) **hydrologic evaluation** to review the Los Pinos River Study and define the 1-percent annual change discharge profile for the study reach;

(n) development of a **HEC-RAS hydraulic model** through the use of HEC-GeoRAS in conjunction with a DEM-based TIN;

(o) **mapping** of the 1-percent annual chance of occurrence floodplain, 2 miles of 1-foot rise floodway, and the preparation of the digital floodplain work maps using HEC-GeoRAS and ACE’s automated floodplain mapping methods;

(p) development of the graphical flood profiles, tables, and text for incorporation into the La Plata County Flood Insurance Study (FIS);

(q) preparation of flood hazard data in **DFIRM** format for inclusion in the La Plata County **DFIRM**;

(r) the preparation of all survey, terrain, hydrologic, and hydraulic information in a Data Capture Standard (DCS) format for submission to FEMA’s Mapping Information Platform (MIP); and

(s) the preparation of reports, information and all required documentation for the hydraulic analyses.

All work completed for this project was conducted in accordance with the requirements identified in the Map Modernization Guidelines and Specifications for Flood Hazard Mapping Partners [FEMA, April 2003].

**Both studies were submitted to RMC8 for review and were approved upon the initial review with only minor comments.**

**Phase 2 and 3 Status:**
**Completed on July 30, 2007 and Uploaded to the MIP**
This project was completed as Phase 4 of the La Plata County DFIRM Conversion Project under the statewide DFIRM contract with CWCB. The project defined the 100-year floodplain and 1-foot rise floodway for Junction Creek over a 2.7-mile reach between the City of Durango and the San Juan national Forest boundaries. This project included the following tasks:

(a) **field reconnaissance efforts** to characterize channel and overbank conditions and roughness coefficients, and to visually evaluate bridges and other hydraulic structures;
(b) **surveying** of all hydraulic structures along the study reach;
(c) **hydrologic evaluation** to review the La Plata County FIS and define the 1-percent annual change discharge profile for the study reach;
(d) development of a complex HEC-RAS **hydraulic model** that included split flow reaches through the use of HEC-GeoRAS in conjunction with a DEM-based TIN;
(e) **mapping** of the 1-percent annual chance of occurrence floodplain, the 1-foot rise floodway, and the preparation of the digital floodplain work maps using HEC-GeoRAS and ACE’s **automated floodplain mapping** methods;
(f) development of the graphical flood profiles, tables, and text for incorporation into the La Plata County Flood Insurance Study (FIS);
(g) preparation of flood hazard data in DFIRM format for inclusion in the La Plata County DFIRM;
(h) the preparation of all survey, terrain, hydrologic, and hydraulic information in a Data Capture Standard (DCS) format for submission to FEMA’s Mapping Information Platform (MIP); and
(i) the preparation of reports, information and documentation.

All work completed for this project was conducted in accordance with the requirements identified in the Map Modernization Guidelines and Specifications for Flood Hazard Mapping Partners [FEMA, April 2003].

This study was submitted to RMC8 for review and was approved upon the initial review with only minor comments.

**Phase 4 Status:** Completed on April 10, 2008 and Uploaded to the MIP

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**Phase 4 Project Highlights:**
- Field reconnaissance and surveying
- Hydrologic and hydraulic modeling
- Floodplain mapping
- DFIRM and FIS production
- MIP data entry
- Documentation

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**Junction Creek Floodplain and Floodway**