The Economic and Social Benefits of an Integrated Approach: Marrying LiDAR Data and the National Hydrographic Dataset

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Elizabeth W. Zeiler, M.C.R.P., works with the Geospatial Technology Group at the New Mexico State Environment Department. She combines her academic perspective and more than 20 years of experience working with geographic information systems at the federal, state and local levels and has focused her expertise on natural resource issues with an emphasis on planning and surface water. Elizabeth currently shares stewardship of the USGS National Hydrologic Dataset with Ralph Campbell from the New Mexico Office of the State Engineer. She has a BS in geography from Humboldt State University, and a master's degree in community and regional planning from the University of New Mexico.

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Carol Giffin works for the U.S. Geological Survey, National Geospatial Program, as the Acting Coordinator for the Natural Resources Conservation Community of Use and as the National Map Liaison for Colorado and New Mexico. Carol also served as the USGS National Mapping Division Liaison to the Bureau of Land Management. Her career in Mapping, Charting and Geodesy includes serving in lead management, supervisory and technical roles at the Department of Homeland Security and the Defense Mapping Agency.

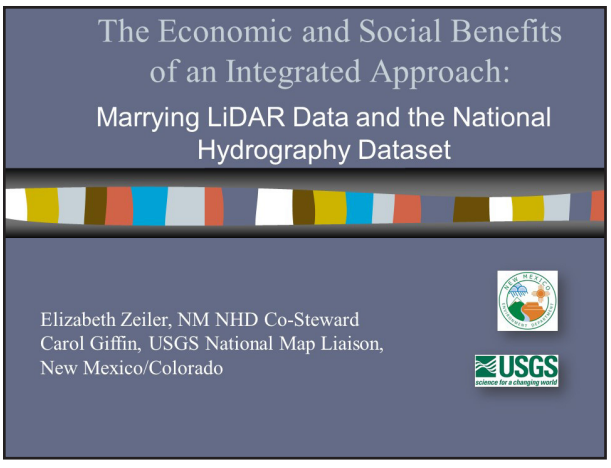

Figure 1. Introduction.

Figure 2. Chaco Canyon Core Complex.

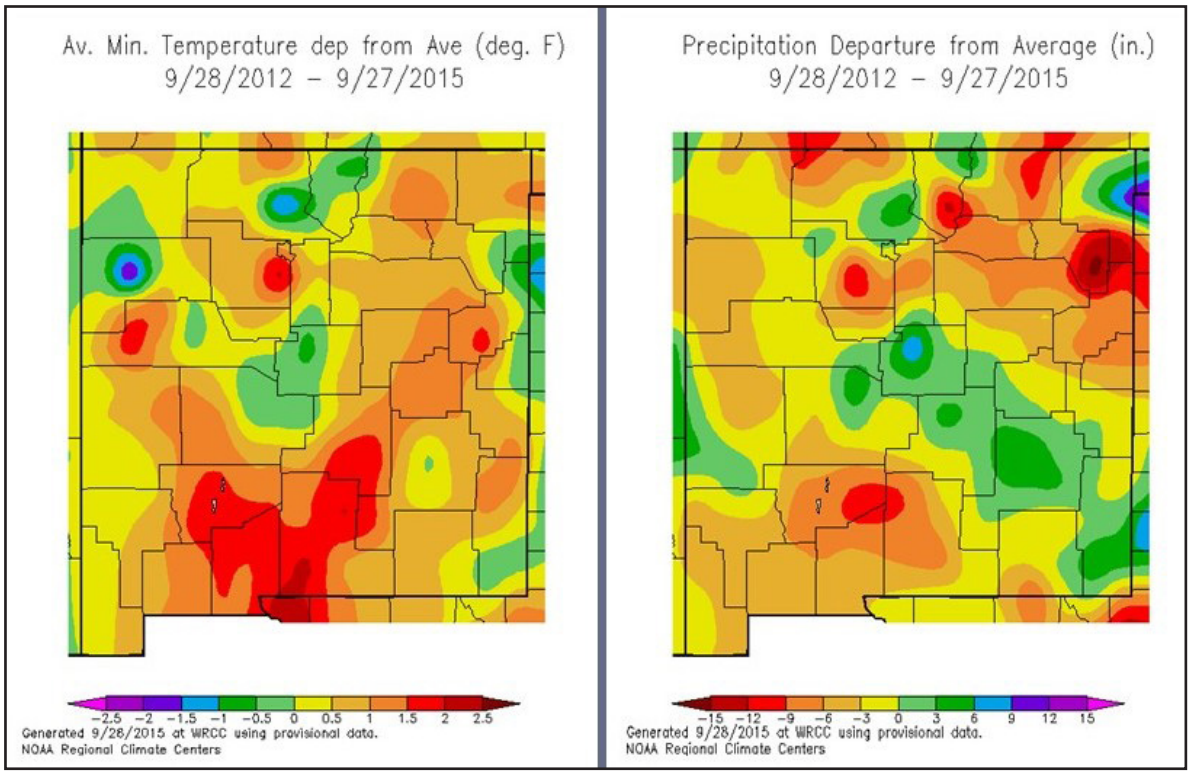

Figure 3. Recent climate in New Mexico. Maps showing status of temperature and precipitation departures 09/28/2012 to 09/27/2015.

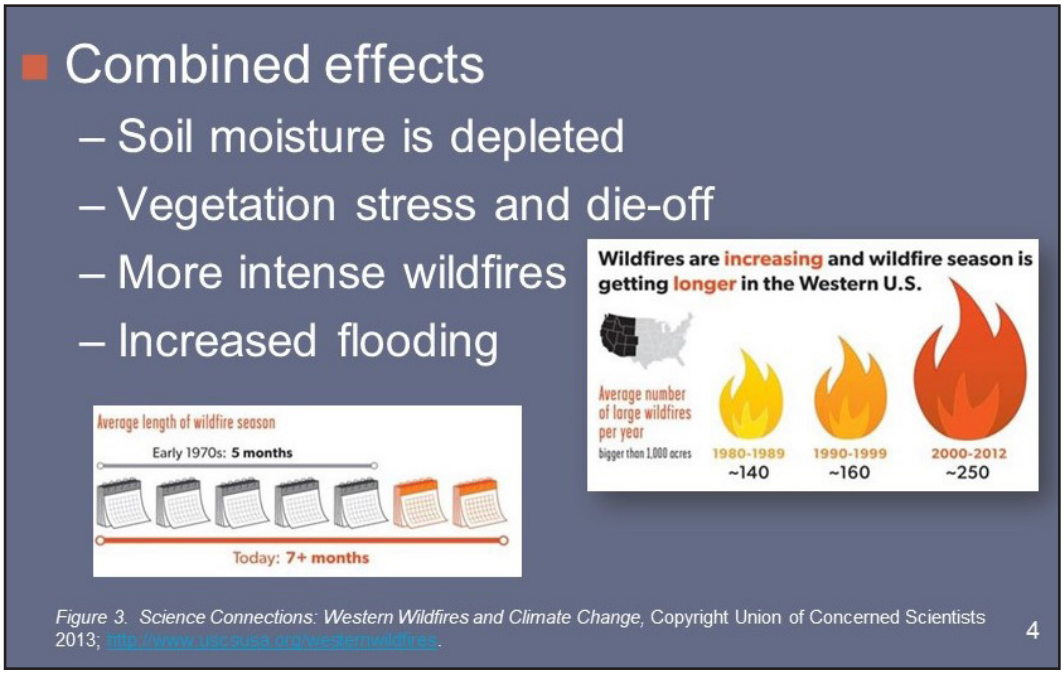

Figure 4. Increased temperatures and reduced rainfall.

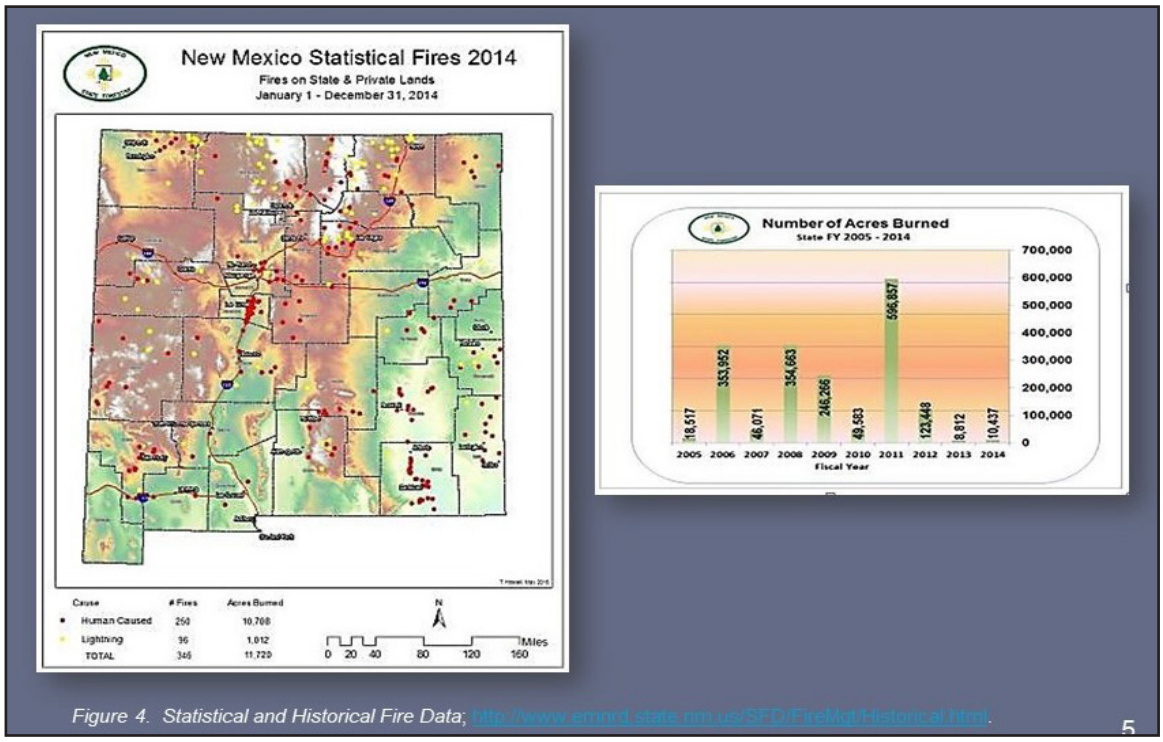

Figure 5. Wildfire in New Mexico.

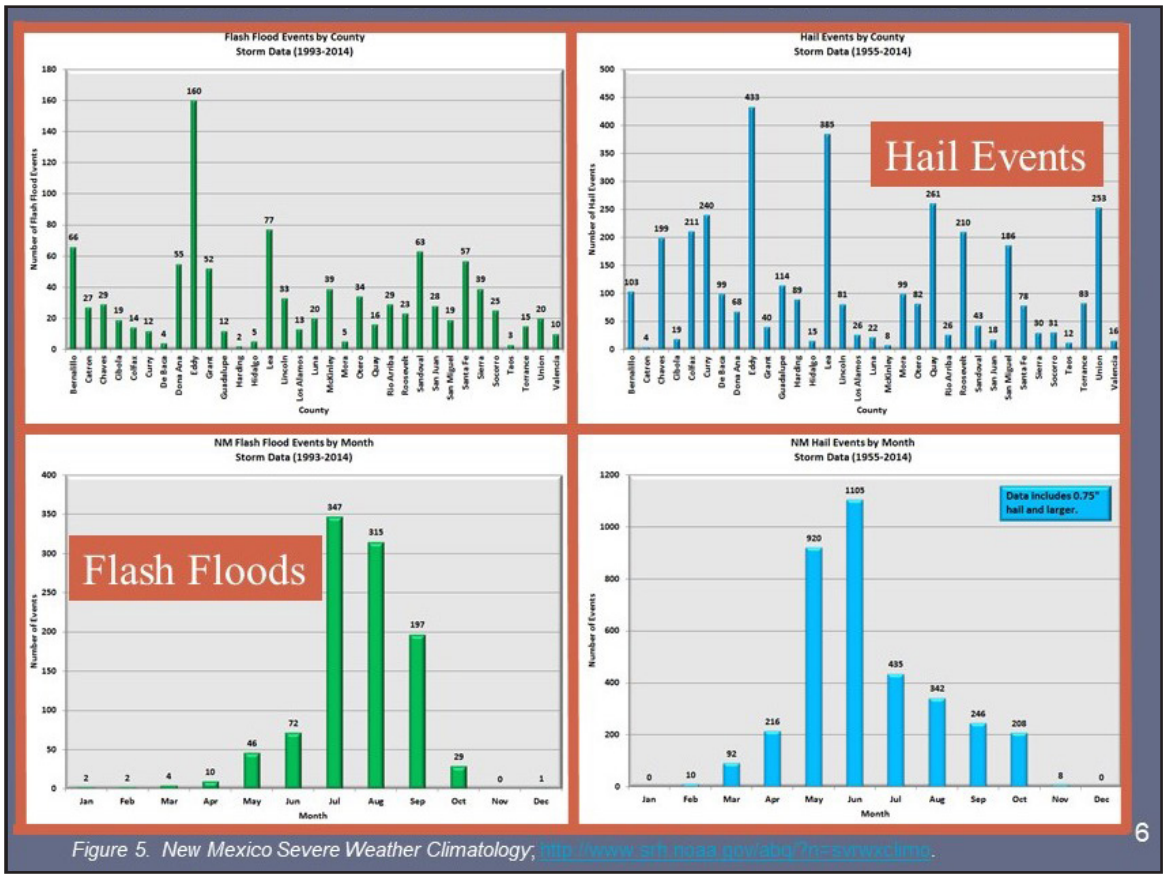

Figure 6. Extreme weather in New Mexico.

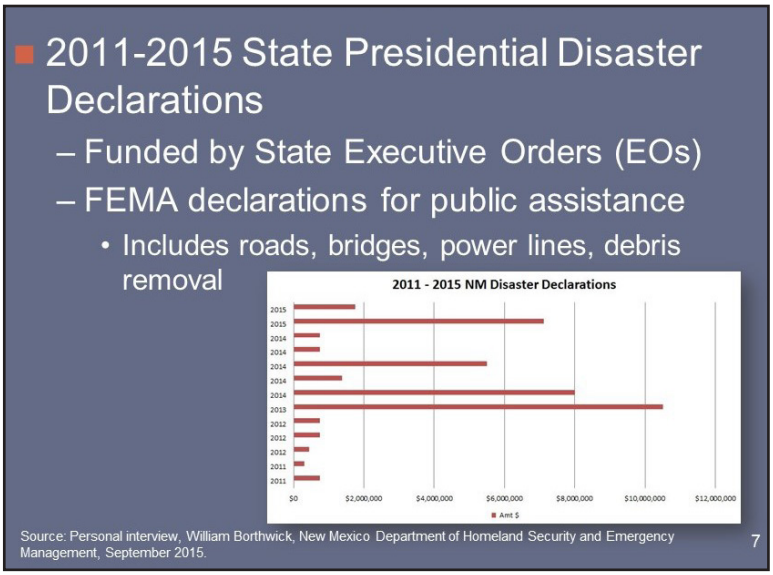

Figure 7. Disaster costs New Mexico.

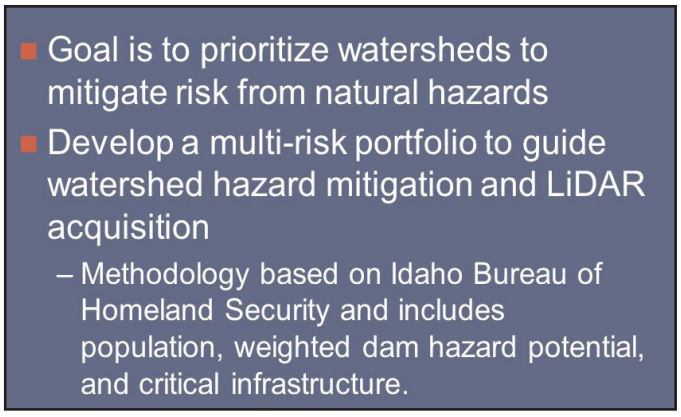

Figure 8. FEMA's Cooperating Technical Partners Program.

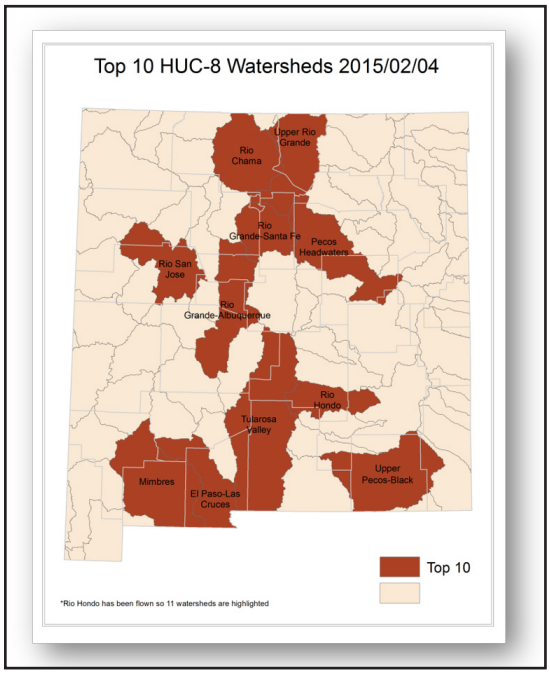

Figure 9. Top Ten HUC-8 Watersheds Identified in 2015.

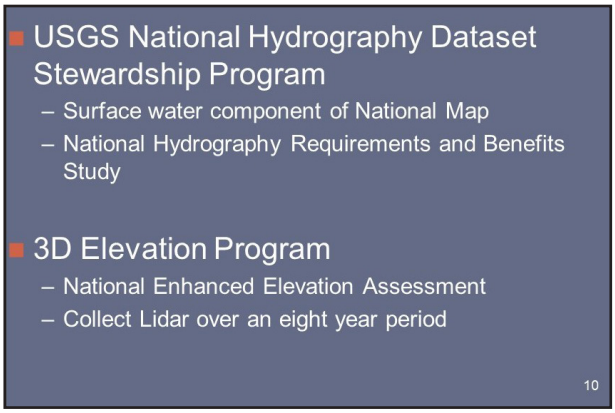

Figure 10. Components of the USGS Hydrography Dataset Stewardship Program.

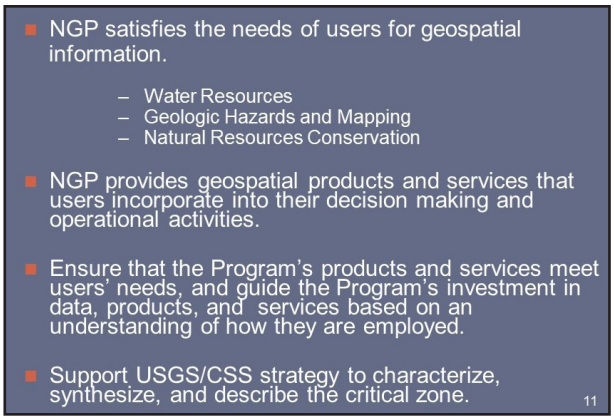

Figure 11. USGS National Geospatial Program Strategic Plan - Meeting user needs.

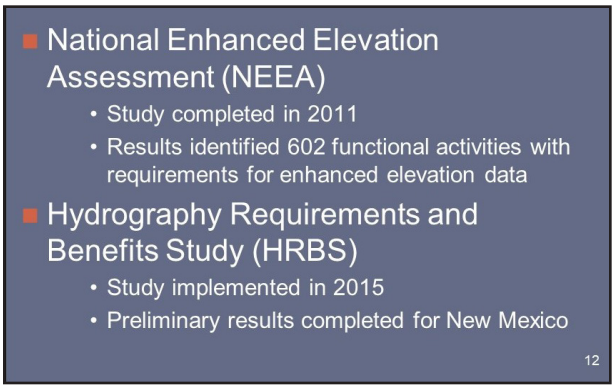

Figure 12. Defining mission critical activities.

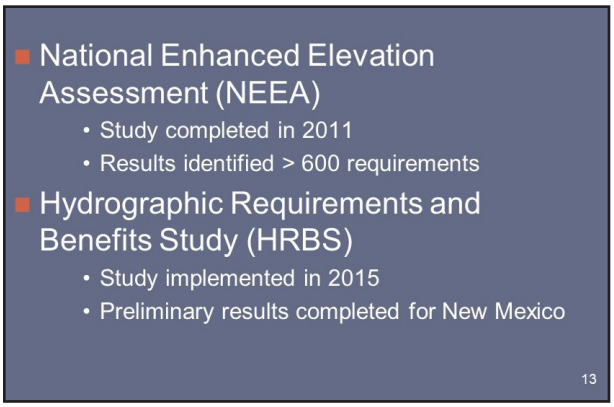

Figure 13. Defining mission critical activities (cont.).

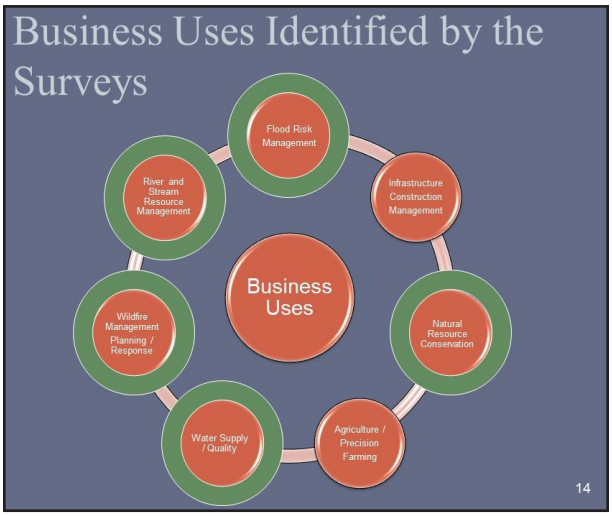

Figure 14. Business uses identified by surveys.

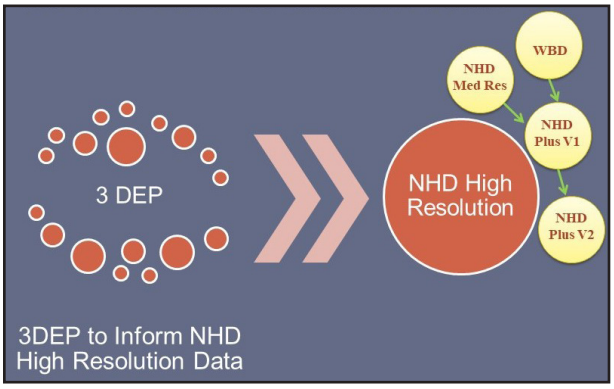

Figure 15. Using LiDAR to inform National Hydrography Dataset (NHD).

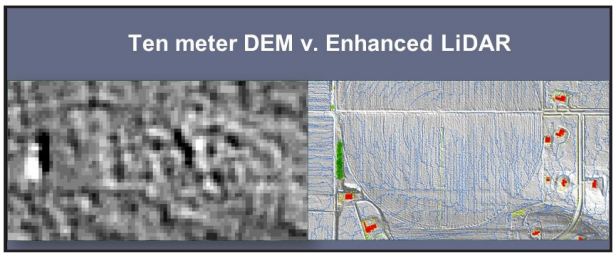

Figure 16. Benefits of LiDAR.

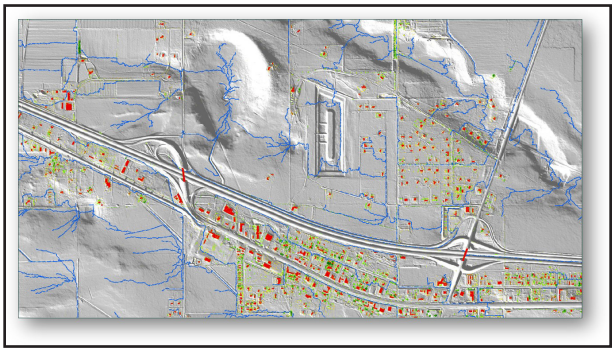

Figure 17. High quality level two data.

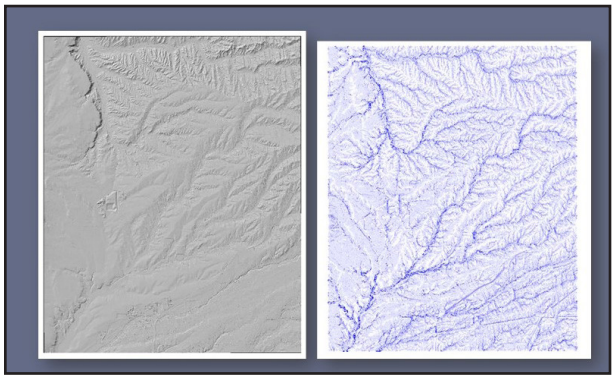

Figure 18. LiDAR and derived data.

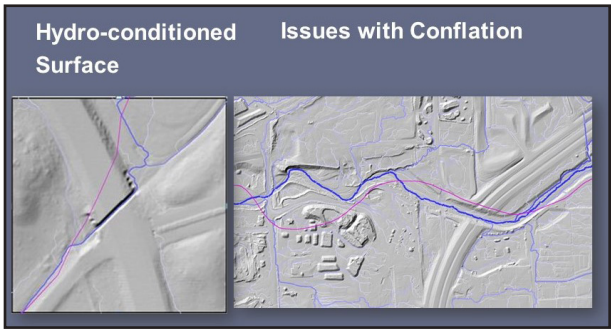

Figure 19. Use 3D Elevation Program (3DEP) to inform NHD.

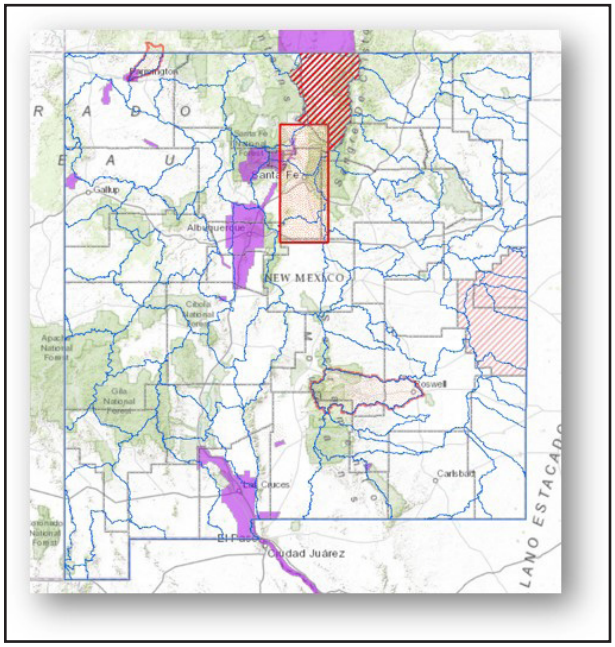

Figure 20. 3DEP acquisition status.

Figure 21. New Mexico Association of Regional Councils' Ristra Project.