

# USGS Hydrography Seminar – Lightning Talk

## Creating Local-Resolution NHD From LiDAR Terrain Sources

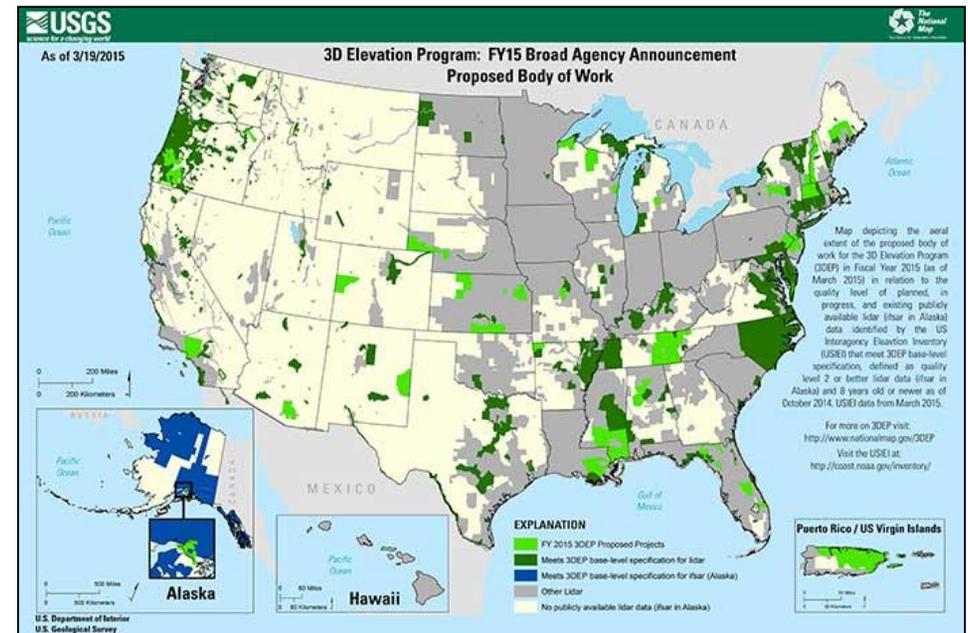
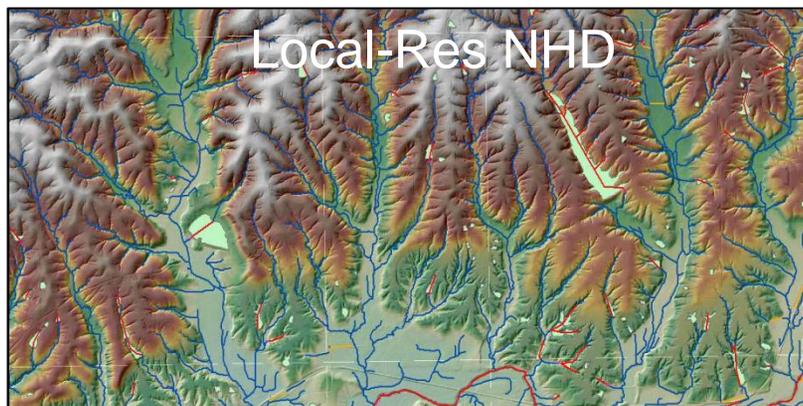
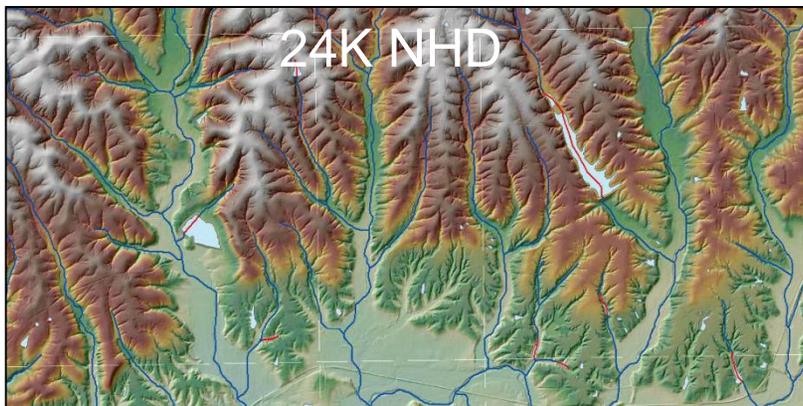
Susan Phelps, CFM, GISP - AECOM

July 30<sup>th</sup>, 2015



# Why Local-Res NHD? Drivers Include:

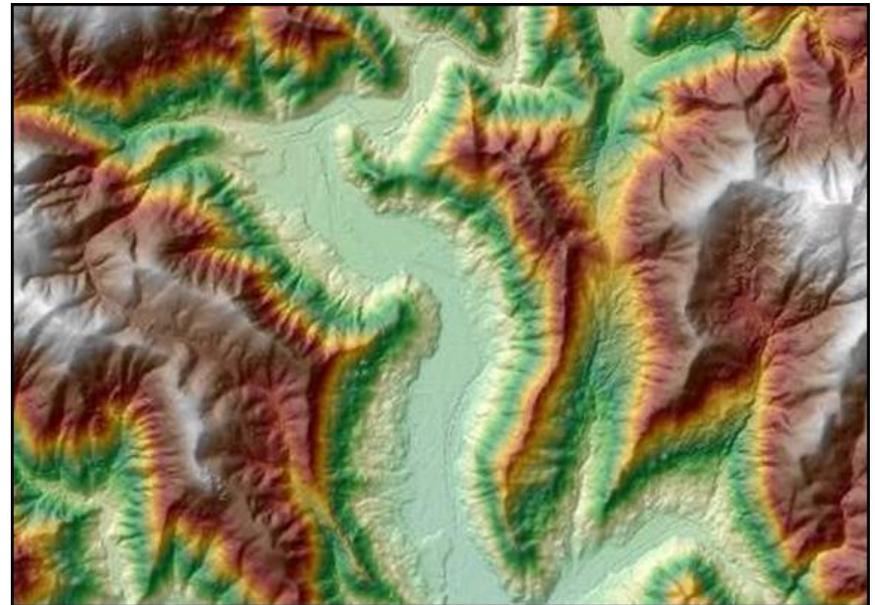
- Enhanced quality, content
- Uniform mapping
- Improved platforms for NHD data
- More accurate framework layers



# Local-Res NHD Project Approach

## –LiDAR-Based NHD workflow:

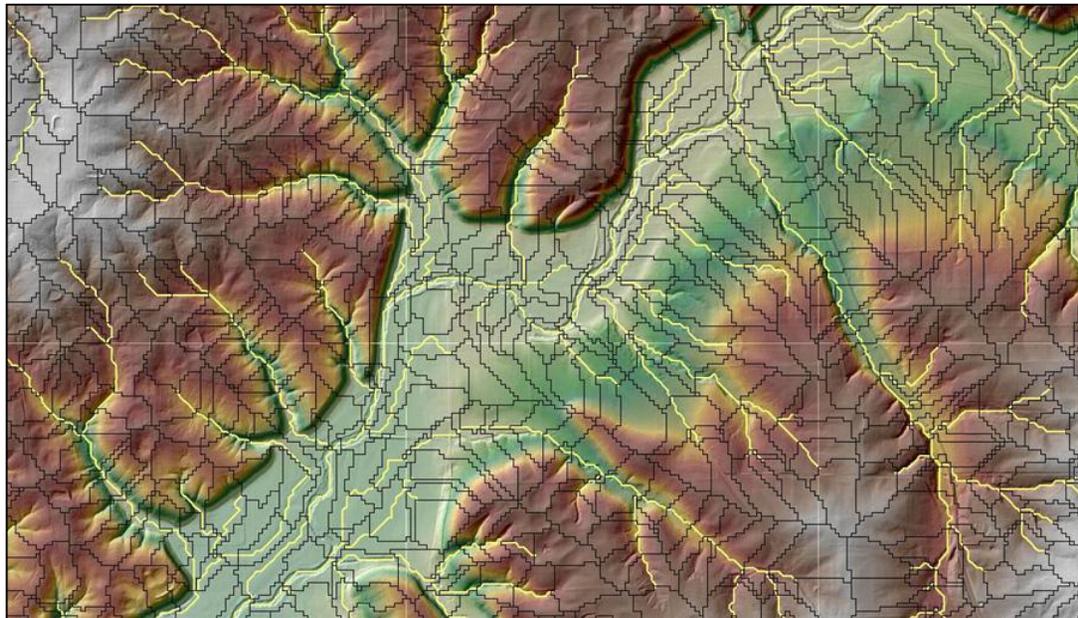
1. Base Data Collection and Prep
  - LiDAR, Imagery, 24K NHD, local hydro, stormwater data
2. Terrain Processing
  - A. Import elevation data into AECOM's WISE™ software program
  - B. Build TINs
  - C. Hydro-correct elevation data



# Local-Res NHD Project Approach

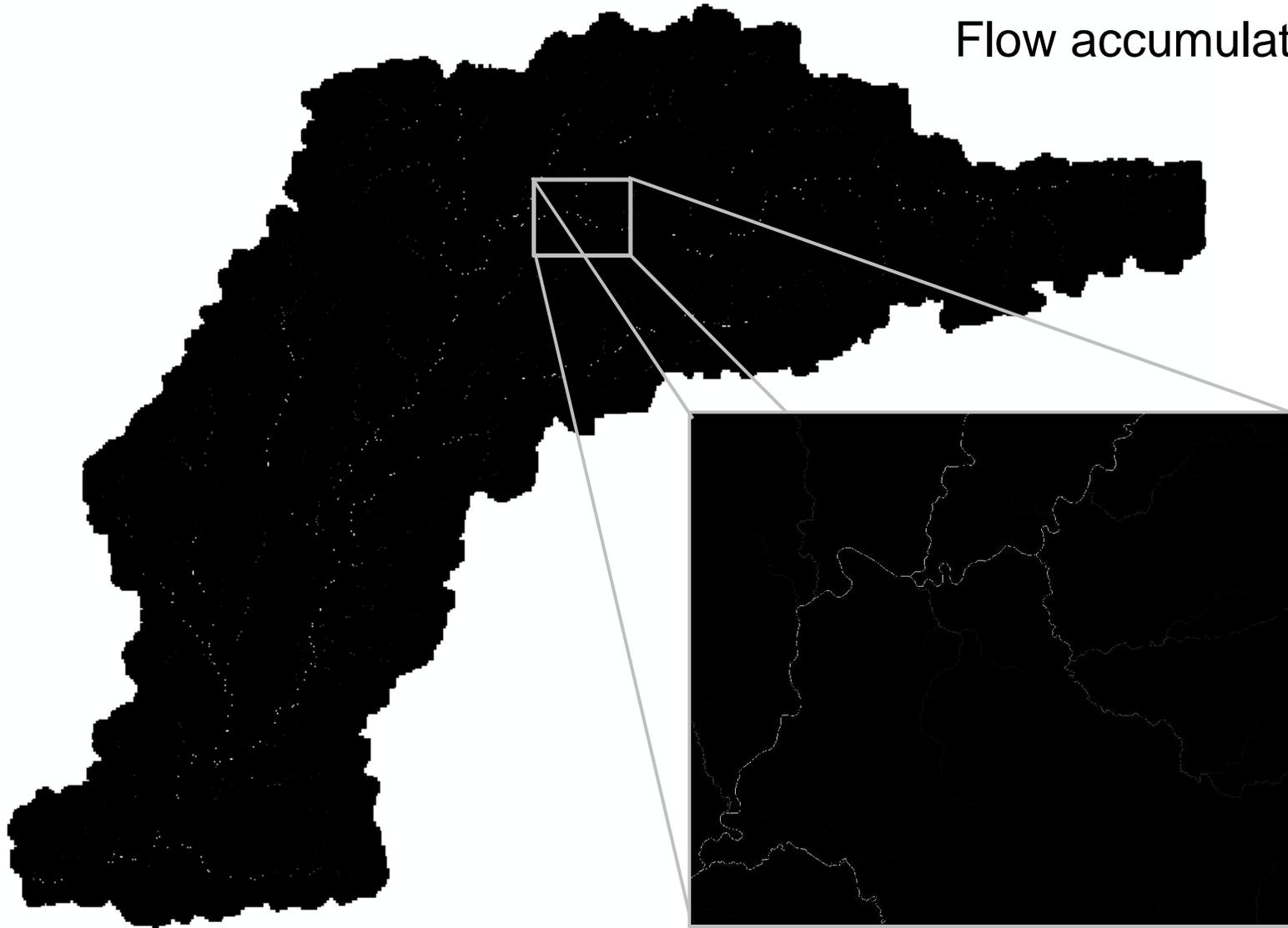
## 3. Generate Terrain Reference Files

- A. Hydro-corrected DEMs, hillshades for reference
- B. 6 acre basins, streams (or other upstream limits as defined by client requirements/project scope)
  - Guideline for upstream limits, general stream location and stream/basin coverage
- C. Generate flow accumulation grids, flow vectors (optional)



# LiDAR-Based Reference Data for NHD Production

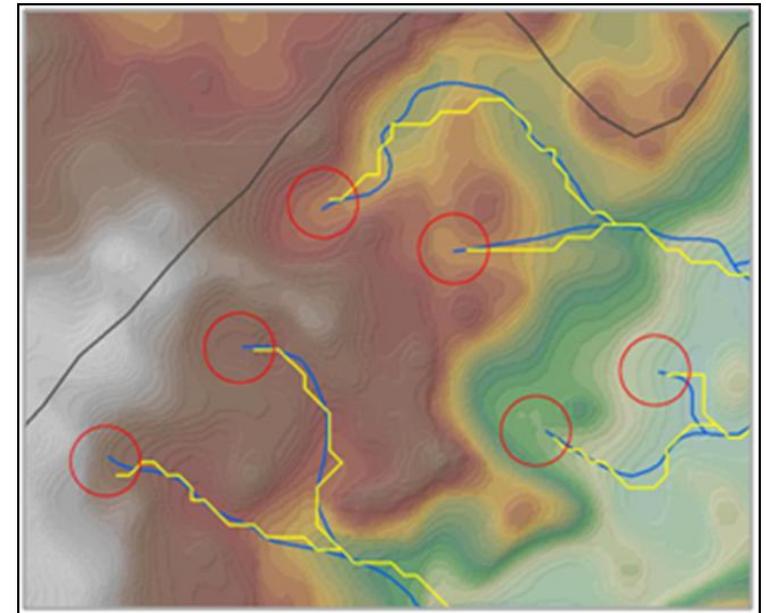
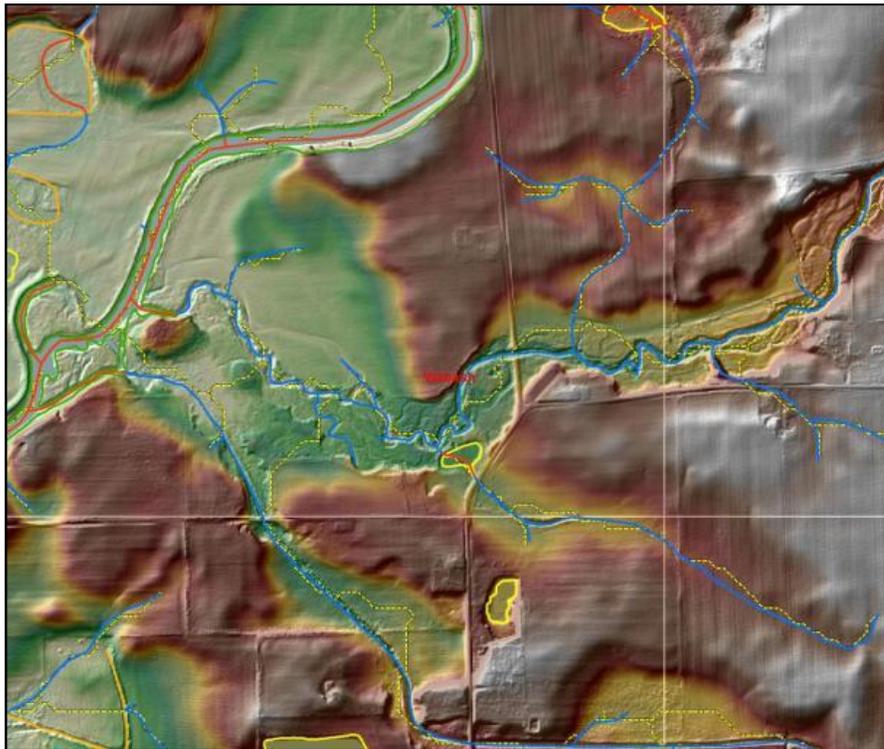
Flow accumulation grid



# Local-Res NHD Project Approach

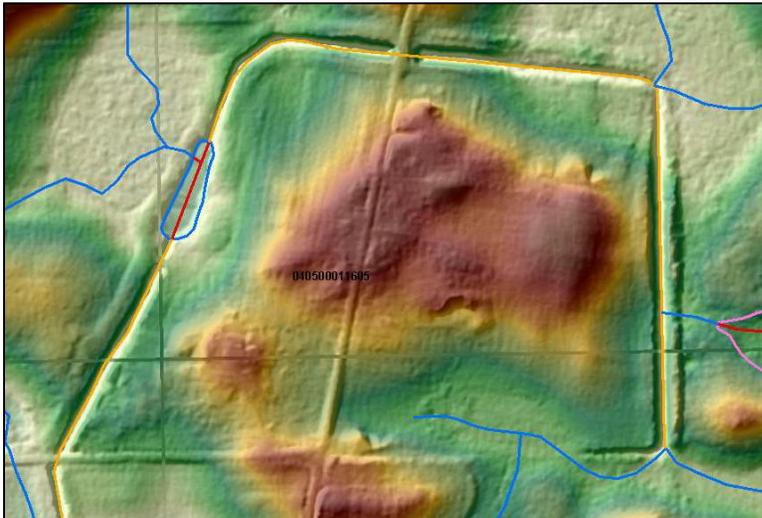
## 4. Digitize Local-Res NHD Linework Using Reference Files

- Imagery, DEMs and hillshades are primary data sources for horizontal stream location
- LiDAR-based “guide” streams and 24K indicate where streams should be digitized and how far up into the basin

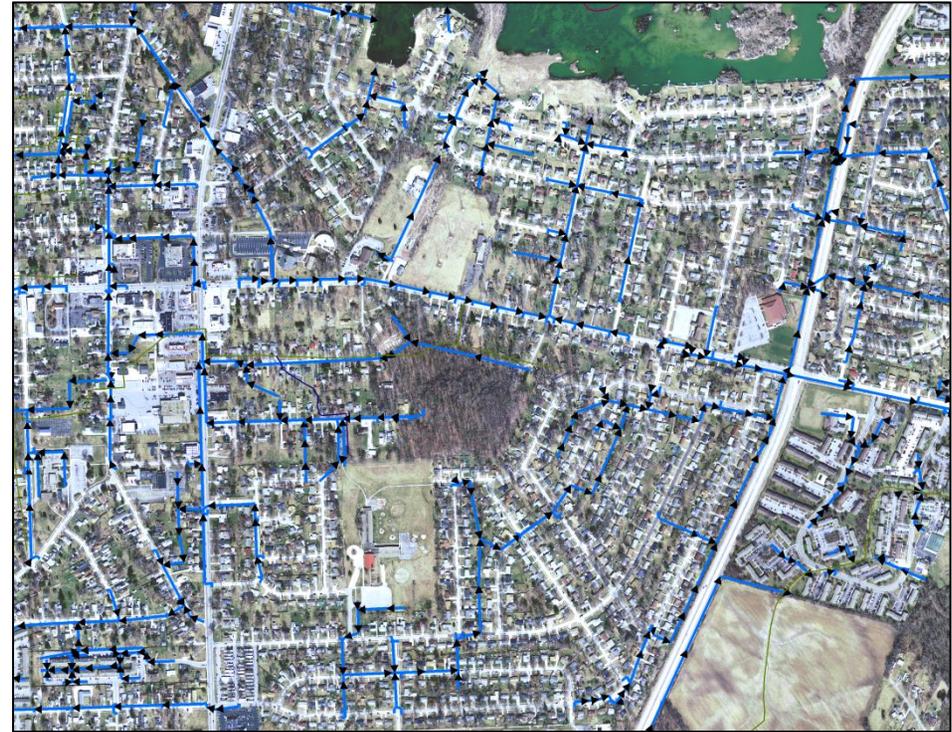


# Challenges with LiDAR-Based NHD

- Areas where stream flow has been altered
  - “Guide” streams typically not as accurate
  - Rely more on imagery, terrain, local data



Urban areas



Agricultural areas

Susan Phelps - [susan.phelps@aecom.com](mailto:susan.phelps@aecom.com)  
(336) 207-3938

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