Title: Change Detection Research for *The National Map*

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Abstract:
The National Geospatial Technical Operations Center (NGTOC) of the U. S. Geological Survey is currently researching an automated or semi-automated change detection process to support streamlined maintenance of data, products, and services in *The National Map (TNM)* (http://nationalmap.gov/). This project is focused on five of the eight *TNM* data themes (Hydrography, Transportation, Boundaries, Structures and Geographic Names), consisting of over 20 vector data layers of national coverage. The objective is to minimize maintenance resource expenditures by identifying and focusing efforts where change is occurring within existing data. Several aspects of performing change detection are being examined including methodological workflows, data schema requirements, and data storage and historical archiving strategies. Change detection methodologies under evaluation include out-of-the-box Esri ArcGIS and Safe Software FME Desktop solutions in conjunction with tools developed by NGTOC. The proposed process will first evaluate existing raster change data sources. Areas identified to experience rapid change will then be examined using detailed change detection tools on *TNM* vector feature classes. This paper will discuss initial findings and will assess additional research and development required for operational implementation.