

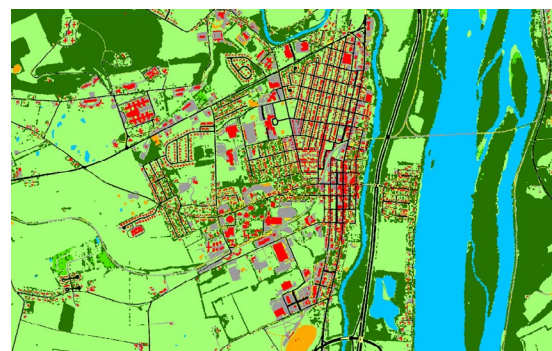
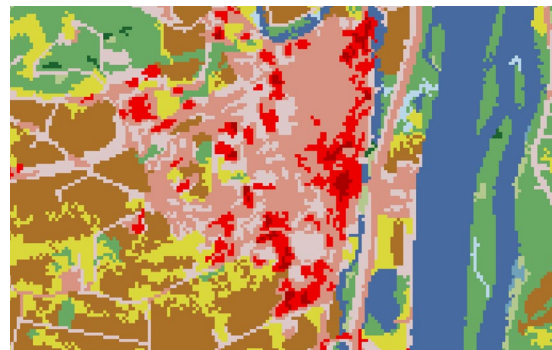
High-Resolution Data

Leveraging aerial imagery, LiDAR elevation data, and advanced classification techniques to produce high-resolution maps that help to prioritize conservation and restoration opportunities

In 2016, in partnership with the University of Vermont and WorldView Solutions, Inc., the Chesapeake Conservancy's Conservation Innovation Center completed one of the nation's largest, high-resolution land cover datasets. The dataset is one-meter resolution land cover data that spans approximately 100,000 square miles of land in the Chesapeake Bay watershed and the surrounding counties.

This new classification provides 900 times the information as conventional 30-meter resolution land cover data, effectively creating a more detailed foundation to leverage technology, furthering precision conservation and restoration goals. Beyond land cover, the CIC has applied advanced geospatial modeling and remote sensing techniques to the production of other high-resolution datasets, such as flow paths and drainage area identification.

The CIC works with organizations of all types and sizes, including land trusts, community watershed organizations, soil and water conservation districts, private environmental firms, and local, state, and federal agencies. No matter who we work with, we emphasize the importance of understanding each organization's unique challenges and designing customized solutions. We strive to help our partners integrate geospatial data and analyses into their work to effectively overcome these challenges. In addition to developing new products, we also conduct hands-on training, host workshops, and create customized user's guides.



Data Generation Services: The CIC provides a variety of data generation services to help your organization create, collect, or transform the information you need to be successful.

Imagery Analysis

translates raw aerial and satellite imagery into usable data that can categorize the landscape and help make decisions about where and how to work.

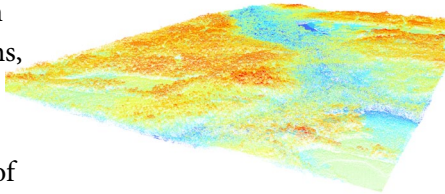


The CIC helps partners understand what imagery is available, determine what is best-suited for a project, and provide a full suite of image analysis services that help get the information needed to make informed management decisions at all scales. The services include:

- Supervised, Unsupervised, and Object-Based Land Cover Classifications
- High-Resolution Land Cover Generation
- Satellite and aerial image interpretation and feature extraction
- Change Detection and time-series analysis
- NDVI and vegetative health analysis
- Data Acquisition, cleaning, and mosaicing
- Geo-referencing and correcting scanned images and maps

LiDAR elevation

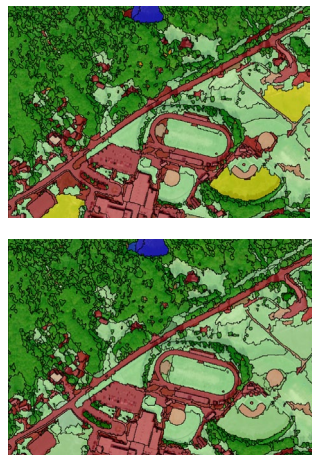
data can be leveraged to see the landscape in three dimensions, lending to a more precise understanding of how an area may be impacted.



Our services allow for the landscape to be modelled with a high degree of precision allowing managers to better understand how small changes in project design or location can create dramatic differences in a project's effectiveness. Starting with hundreds of millions of points, LiDAR can be processed into a variety of high-resolution products that provide this detail, such as:

- Digital Elevation Models (DEMs) and Digital Surface Models (DSMs)
- Normalized Digital Surface Models (nDSMs) depicting canopy and building heights
- Hydrologically conditioned DEMs for hydrologic modeling
- Flow direction, flow accumulation, and concentrated flow path mapping

Data cleaning and processing enables an organization to base decisions for future projects on the most current information.



Legacy data, collected in spreadsheets, Microsoft Access databases, or on paper, can hold critical insights for project planning and design, but only if they can be integrated into today's systems. The CIC has developed methods to clean, format, and integrate a variety of data sources so they work for your process, including:

- Formatting, standardizing, and remapping fields between datasets
- QA/QC data to ensure consistency, quality, and accuracy of datasets
- Mapping spatial data that currently exists only in tabular form