A GIS Tool for Viewshed Analysis using LIDAR

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Manassas National Battlefield Park

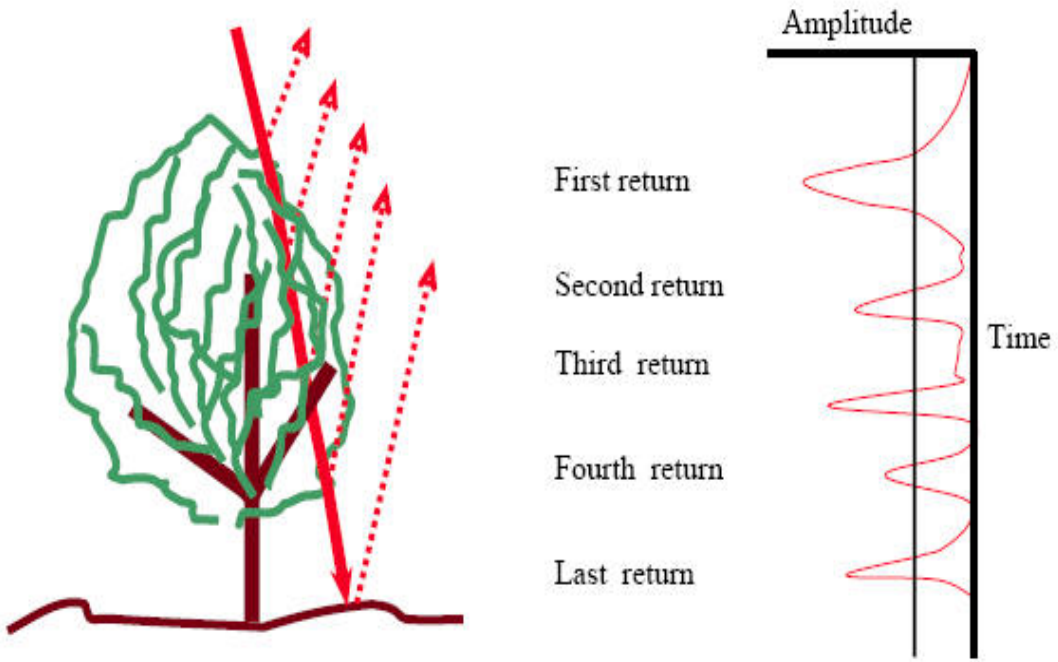
Purpose: GIS Viewshed Internship

Partnership between Manassas National Battlefield Park & the Geological Society of America's Mosaics in Science Program to Support a GIS project that would:

- Identify where proposed developments obstruct area of visibility (Viewshed) from historic sites
- Determine maximum height at which structures can be constructed before they become visible from historic sites

Getting Started

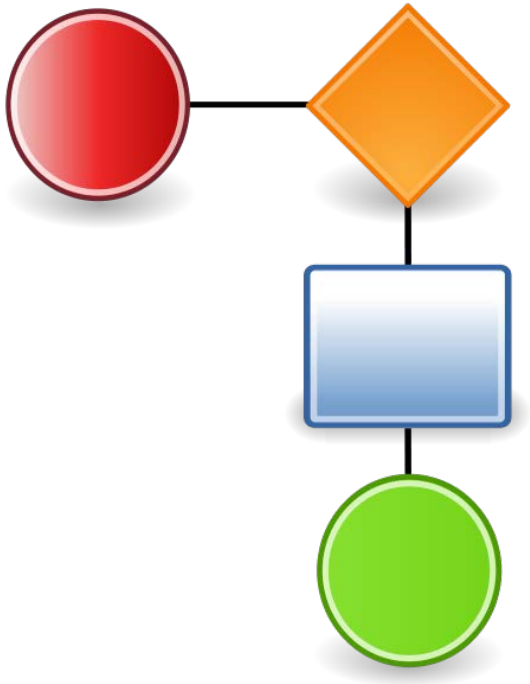
- Literature Review (DEM vs. DSM)
- Using high-resolution Light Detection and Remote Sensing (LIDAR) data
- What is a Viewshed?
  - The area visible from a point or series of points over an area.
  - If I am standing here, what can I see?
- What is LIDAR?
  - Light Detection and Remote Sensing (LIDAR)
  - Wavelength (amplitude & time)
  - Distinguish features

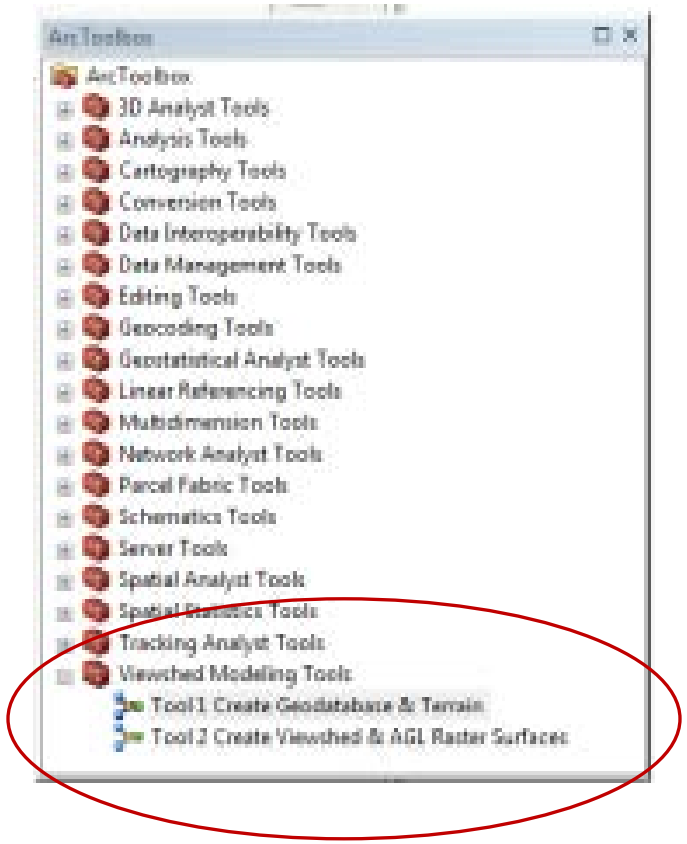


Viewshed Model Workflow

LEARNING HOW TO WORK WITH LIDAR

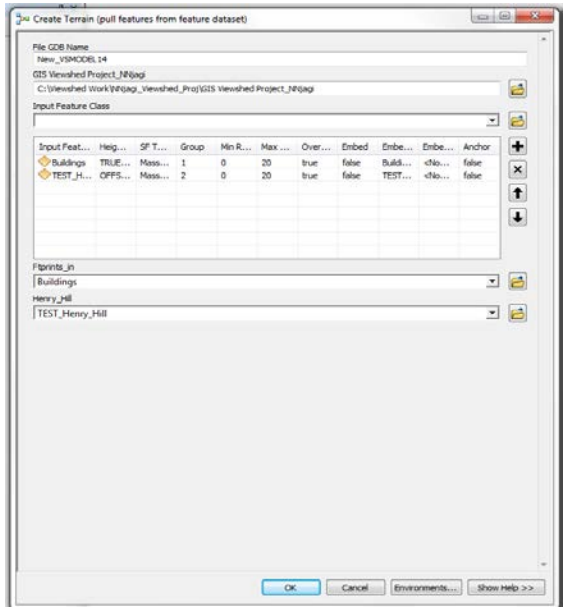
IT'S ABOUT A PROCESS – THE WORKFLOW

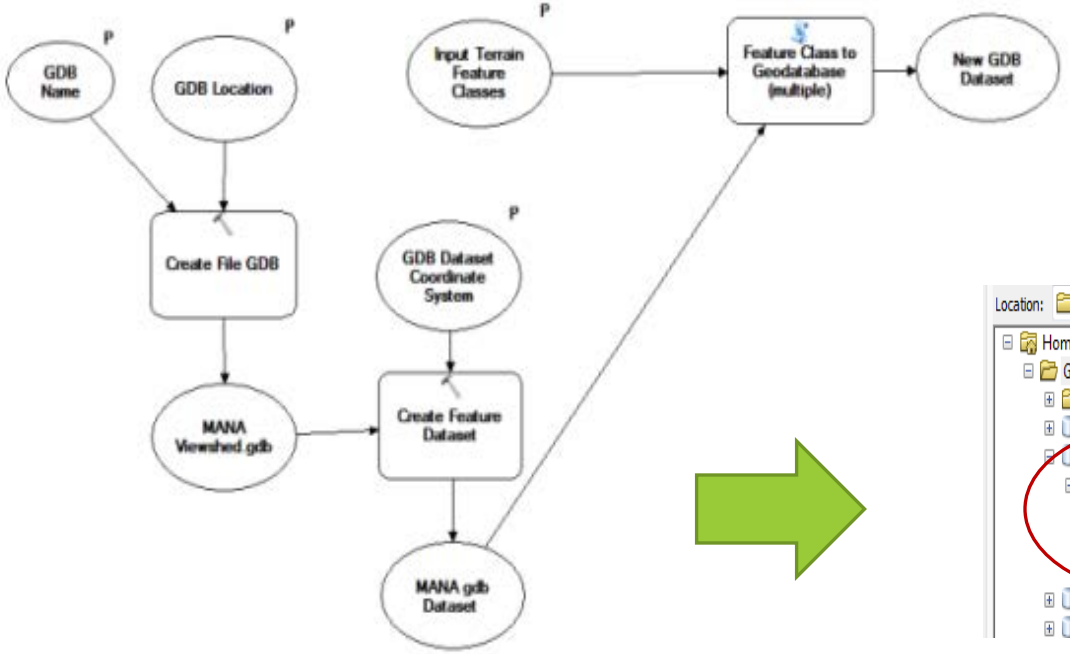


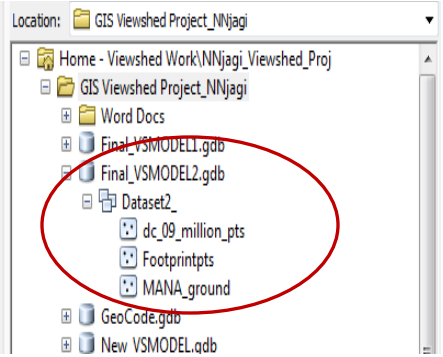


Viewshed Modeling Toolbox

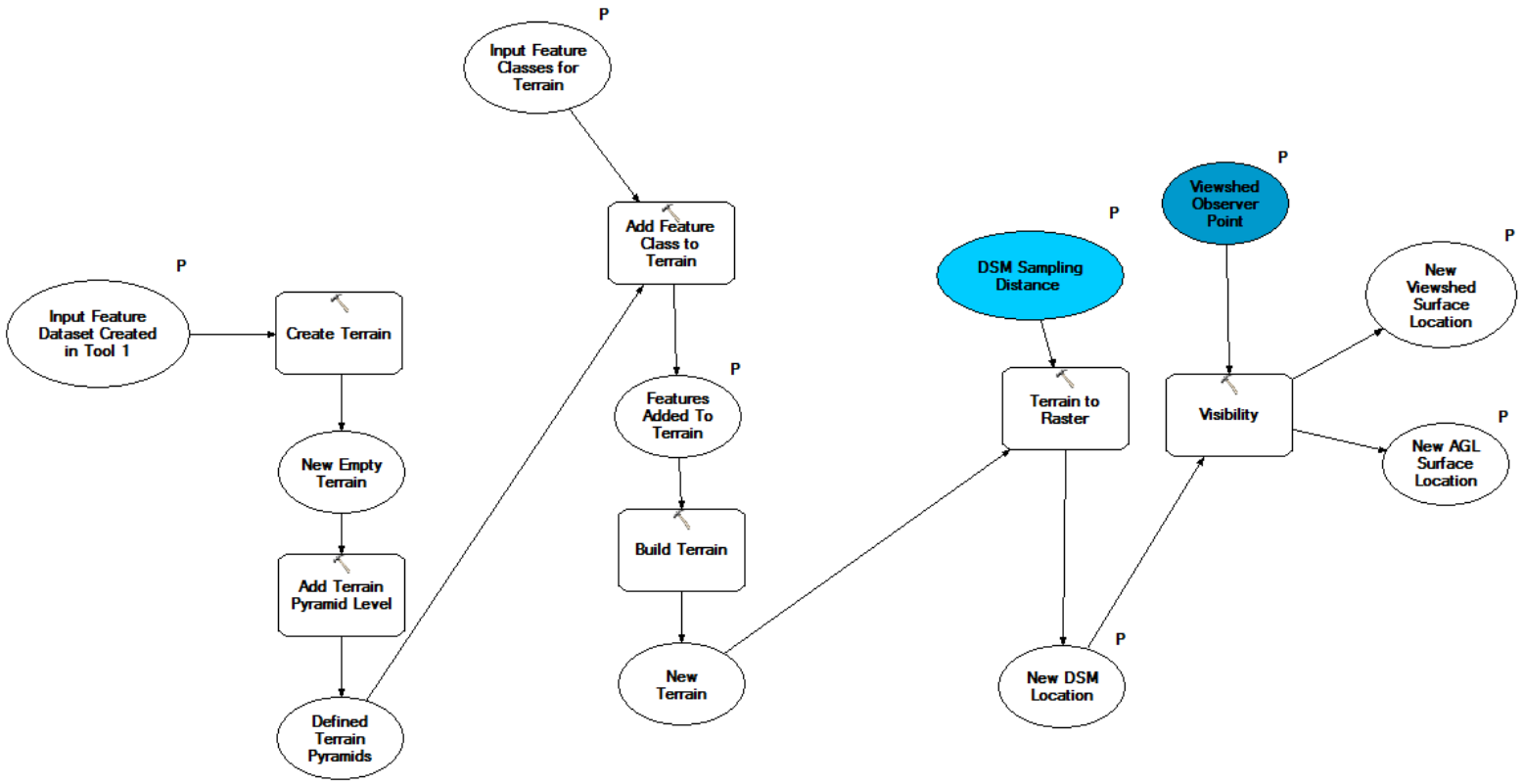
Tool 1: Workflow
Create Geodatabase & Add Features



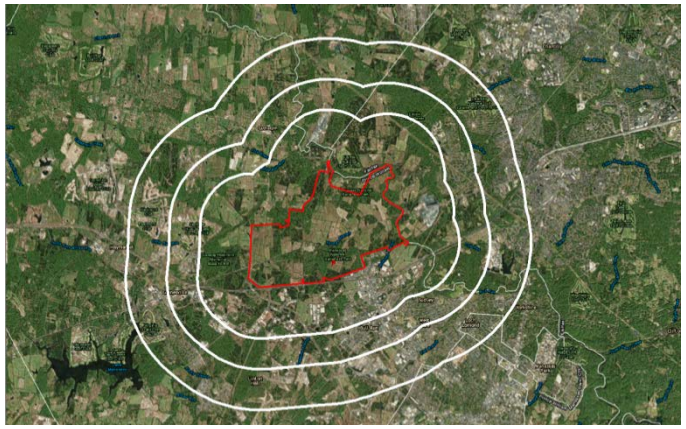


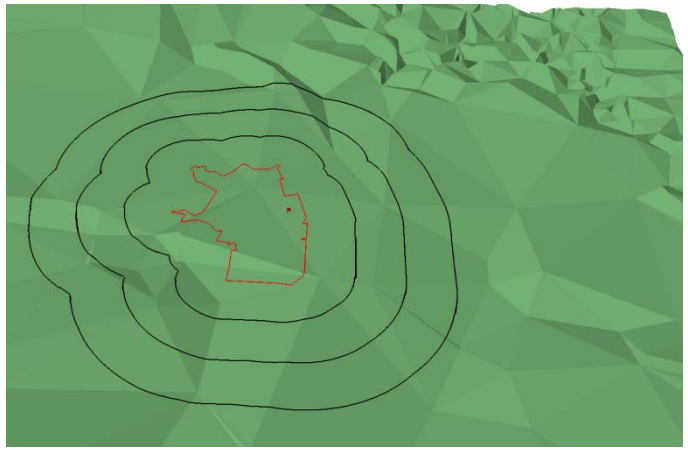


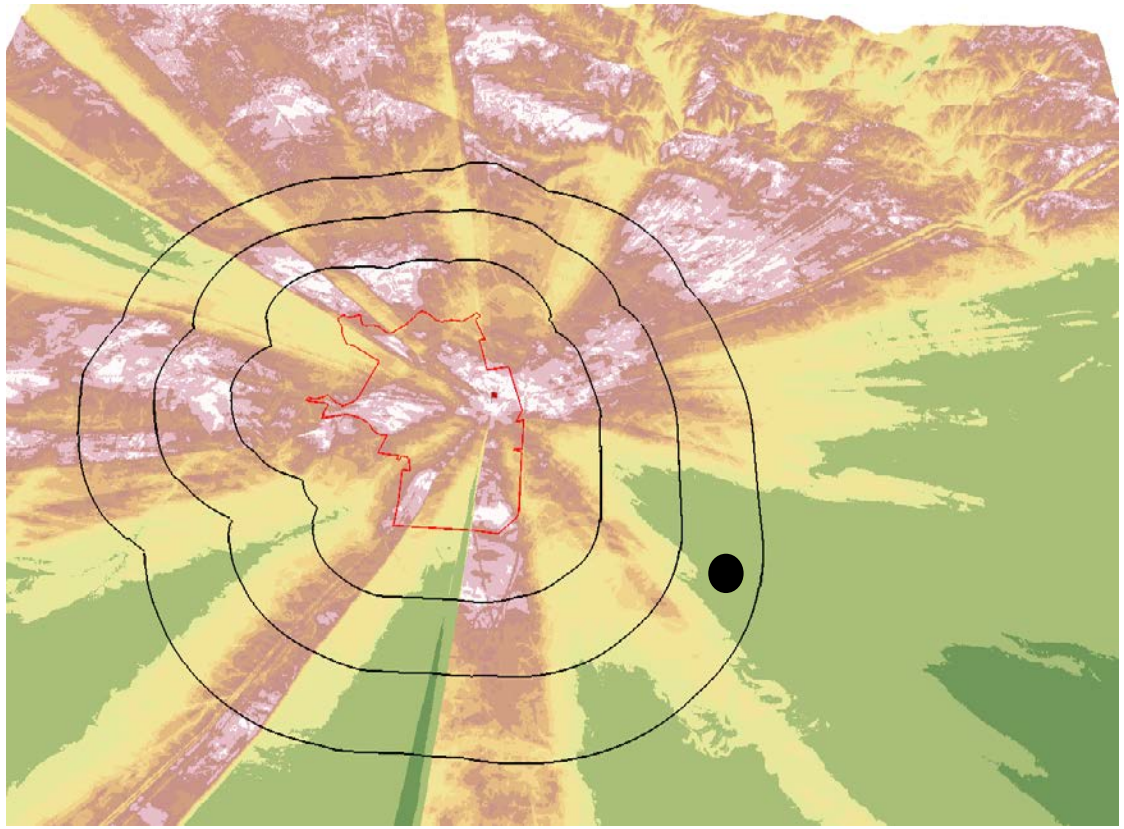
Tool 2: Workflow
Create Viewshed & AGL Raster Surfaces



Results: Viewshed Model for Manassas National Battlefield Park







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