Viewshed Analysis
Raster Surface Visibility

• Determine how many observers can see a given location
• Determine which observers see a specific location
• Find the height a non-visible location must be raised to become visible
Line of Sight
Visibility Along 2-Point Sightlines

- Determine visibility along a line
- Identify the obstructions preventing the end point’s visibility
- Use Construct Sight Lines to generate 2-point lines between observer points and target features
Skyline Analysis
Studying the Horizon

• Delineate the horizon for each observer
• Segment the horizon by each contributing feature
• Graph the percent of possible sky that is obstructed by observers
Shadow Modelling
Shadows from the Sun and Localized Light Sources

- Shadows cast by sunlight for a given date/time
- Find the shadows cast by localized light sources

Hillshade at 45°
Hillshade at 90°
Sun Shadow Volume
Controlling the Observer
Visibility Analysis Concept

- Vertical angle range
- Azimuth range
- Visible distance range
Atmospheric Refraction

Visibility Analysis Concept

- Adjusts visibility to account for bending of light passing through atmosphere
- Influenced by variations in air pressure, density, humidity, temperature and elevation
- Refraction coefficient supported by:
  - Line of Sight
  - Skyline
  - Viewshed tools (Viewshed, Observer Points, Visibility, Viewshed 2)
  - Solar radiation tools in Spatial Analyst
Exploratory Analysis
Interactive Tools in ArcMap

Target Surface Layer: Surface layer in document that will be processed by interactive tools.

Line of Sight: Determines visibility of sight line & identifies possible obstructing point.

Profile: Creates profile graph of surface or point cloud.
3D Community on ArcGIS Resource Center
http://resources.arcgis.com

- **Helpful Utilities**: Many custom tools and useful applications
- **Solution Templates**: Guides and sample data to illustrate best practice applications for tasks in 3D
- **News**: Learn about the latest developments in GIS.
At the UC
- Product Island
  main conference hall
- Tech Support
  follow up assistance

Online
- GeoNet
  http://geonet.esri.com/welcome
- 3D GIS Resource Center
  http://resources.arcgis.com/communities/3d
- ArcGIS Desktop Help
  http://help.arcgis.com
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