Using 3D Analyst, CityEngine & ArcGIS 360VR

Visibility Analysis

Amber Wittner | GIS Analyst | 2017 International Users Conference
Problem

Present day ‘blank’ educational kiosk due to lack of view
Solution

• Determine possible viewsheds in ArcGIS Pro
• Identify key geographic features (mountains, peaks etc)
• Import visibility assessment into CityEngine
• Create 3D scene(s)
• Export to 360 VR Experience
• Team Review of scenarios
Analysis Workflow

- For Iterate at 100 m intervals out to 30 km
- Identify AOIs (Mtns/Peaks of interest)
  - Raster to Point
- Construct sight lines from observer to points
- Line of sight with obstructing vegetation
- Determination of max vegetation height to determine area of removal
  - Import data into CityEngine
  - Create 3D environment (trees etc)
  - Export to .3VR format

Input:
- DEM 30 m
- Obs Point

Output:
- 300 Skylines

Skyline
Communicating Scenarios

• 2D maps don’t define the reason for treatment location

• Passionate land stewards want the very best for the public and the environment – means for heated debate

• Visualization critical component to understanding scenarios

• Screen captures of analysis require ink, paper and a trained eye for printing the best angle
Enter Technology

Virtual Reality  VS  Augmented Reality
ArcGIS 360 VR

- Quick iterable workflow for reviewing scenarios
- No heavy 3D data processes to view
- Shareable with the pass of a device or a .3VR file
- Currently curated via CityEngine but plans for other apps
- Viewed using a Samsung Galaxy phone and GearVR headset
- Does not require GIS or 3D know-how
Screen captures from Headset

- Circulate headset around room
Issues defined/Resolved

• This process enabled determination of XXX NEPA approaches for restoration/maintenance plans

• Other uses:
  • Fire Watch Tower View shed assessment
  • Radio Coverage Gap Analysis

• Moving forward...
<Questions>

Amber Wittner
amberwittner@gmail.com