Exploring Your CommunityViz Version 4.0 Upgrade

communityviz®
Scenario
360

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Introduction to CommunityViz Version 4.0

CommunityViz® Version 4.0, including Scenario 360™ and the all-new Scenario 3D™, is the newest update to CommunityViz multi-dimensional GIS decision-making software.   Taking advantage of the latest advances in 3D technology and taking guidance from ever-growing real-world experience of practitioners in the field, this new release offers:

- an all-new 3D modeling tool designed for easy creation of information-rich, interactive 3D scenes

- a completely redesigned build-out tool, now making build-out analysis easier than ever

- a new tool for quickly creating custom analyses

- technology upgrades for faster and more stable performance

This short guide, intended for people who are already using CommunityViz 3.3, provides a tour of the major new features available in Version 4.0. As always, detailed, context-sensitive help is available within the software itself to answer specific questions.

Here is a summary of the major new features and enhancements being introduced in Version 4.0. Read on for more details about each one.

Scenario 3D

Scenario 3D is an all-new ArcGIS Desktop extension that lets you create realistic, interactive, three-dimensional models of the places represented by your ArcGIS maps. It is included as part of the CommunityViz 4 package, replacing the SiteBuilder 3D extension that was found in earlier versions of CommunityViz. Scenario 3D takes advantage of the latest advances in 3D technology to provide great performance, high levels of realism, and compatibility with industry-standard 3D modeling tools like SketchUp and most CAD systems.

Custom Impacts Wizard

The existing *Common* Impacts Wizard is a very-easy-to-use decision tool that generates about a dozen analyses of commonly used environmental, economic and social indicators associated with new growth and development. Version 4 introduces the *Custom* Impacts Wizard, designed to help users progress beyond common impacts and into more specialized analyses they can create themselves. It's still easy to use, though, and it only takes some careful thinking and a few mouse clicks to set up the dynamic attributes, assumptions, indicators, and/or charts you need. While it's ideal for newer users, it is also a great time-saver for experienced users as well.

Build-Out Wizard

The hugely popular CommunityViz Build-Out Wizard has been completely redesigned for Version 4.   A new "Navigator" menu makes it easier and faster to jump around to any screen in the wizard. More advanced functions have been moved to a special "Advanced" version of the wizard, and more common functions have been redesigned for much greater ease of use.

Plus…

As always, the new release is full of small refinements to existing features, all based on user feedback and all designed to improve your CommunityViz experience. One of our favorites: the new **Azimuth( )** function for finding the angle of rotation of line and polygon features. Also look for subtle but helpful improvements to the **Where Condition Assistant** and the **Formula Editor.**

Scenario 3D™

Introducing Scenario 3D

If you are already using SiteBuilder 3D, you know the benefits of photo-realistic 3D scenes: they make your map come alive. They communicate in a language everyone understands. The show massing, sight lines, vegetation and density in a powerful way that rarely comes through in two dimensions.
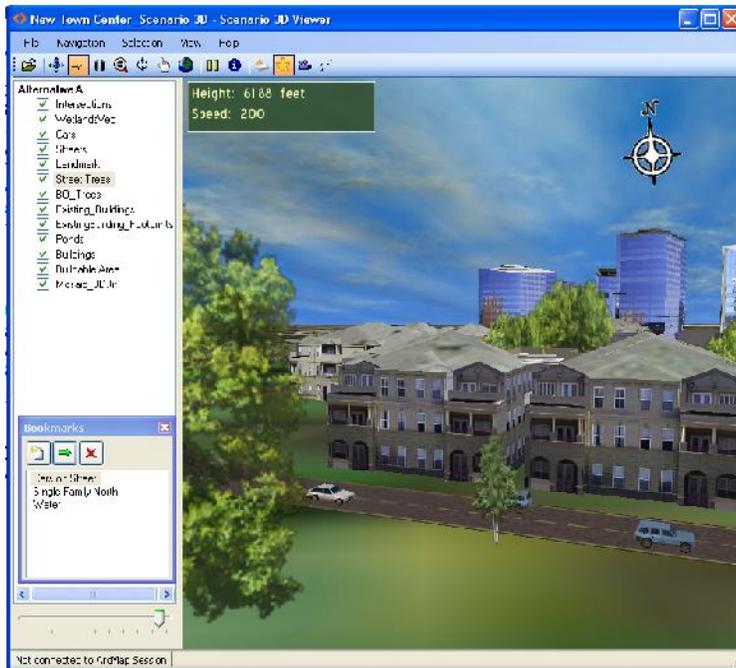
CommunityViz Version 4 replaces and upgrades SiteBuilder 3D with the latest in interactive geospatial visualization: **Scenario 3D**. Scenario 3D is an all-new tool based on a new technical platform and industry-standard formats. For 3D models, is uses KMZ files, the format popularized by SketchUp and Google Earth. It also supports 3DS, used by tools like Autodesk 3ds Max, and COLLADA (DAE), used as an interchange standard by other popular 3D modeling tools like Maya. The viewer platform is based on OGRE 3D, an open source tool from the video gaming industry, which boasts excellent performance and the ability to support incredibly realistic "materials" (also known as "shaders") like rippling water. And to round out the innovations, the Scenario 3D Exporter uses a completely new, user-friendly wizard designed for an intuitive, straightforward experience.

> ▷ **Quick Start**
>
> Scenario 3D has its own Help system with a built-in demo and Quick Start. To find it, just turn on the Scenario 3D extension (ArcMap Tools menu ▸ Extensions…) and the Scenario 3D toolbar (ArcMap View menu ▸ Toolbars…). Find the Scenario 3D Help on the Scenario 3D drop-down menu.

Comparing to SiteBuilder 3D

A table comparing SiteBuilder 3D to Scenario 3D appears on the next page. Some highlights:

- SiteBuilder 3D uses OpenFlight (*.flt) format; Scenario 3D does not. It is possible to convert models from *.flt to *.kmz, but separate tools are required. We have converted the entire library of OpenFlight models from earlier versions of the CommunityViz SiteBuilder 3D Model Library and included them in the new version, so if you have older SiteBuilder 3D scenes made with CommunityViz models, you can recreate them in Scenario 3D.
- Scenario 3D supports models created in Google SketchUp. A huge, free library is available on-line in Google's 3D Warehouse. CommunityViz also includes a library of models to get you started.
- Scenario 3D navigation provides many convenient modes and features, including the ability to change speed while flying using the mouse's scroll wheel.
- 3D objects in Scenario 3D carry their GIS attributes. You can "Identify" features and click on them to launch hyperlinks to multimedia events like sound recordings.
- The large variety of 2D-3D substitution methods in Scenario 3D includes useful features like random models and templates.
- Scenario 3D supports shadows and lighting as Environment Settings. Shadows are correct based on time-of-day and latitude, though they only fall on ground images—not other objects or ground textures.

Here are some more details about how the two tools compare. This is still an abridged list.

|	SiteBuilder 3D	Scenario 3D
VIEWING FEATURES		
Fully interactive 3D scenes		
Navigation modes	Fly, drive, walk	Maneuver, fly, walk, select, zoom, full extent
Height above terrain	Set via menu	Controlled interactively
Speed	Set via menu	Controlled interactively
Layer control	Turn layers on and off independently	Turn layers on and off independently; change transparency and image draw order
Environmental effects	Sun, clouds, moon, time of day, lighting, fog	Lighting, shadows, fog, time of day
Scenarios	Changes with Scenario 3D	User controlled view
Field of view	Variable	Variable
Feature attributes	Not available	Available
Hyperlinks	Not available	Available
Stored locations	Eyepoints, paths (some versions)	Flythroughs, bookmarks
Share and Display		
Portability	Self-viewing files	Free viewer
Movies	Record movies in common formats	Record movies
Screen shots	Save screen snapshots in common image formats	Save screen snapshots in common image formats
Performance		
Technology platform	OpenFlight™	OGRE 3D
Materials	Not available	Available
CREATION FEATURES		
3D Objects		
Formats	OpenFlight (.flt)	Google SketchUp (.kmz), COLLADA (.dae), CAD (.3ds)
Library	Over 350 exclusive pre-made models	Over 350 exclusive pre-made models
Make/add your own	Using ModelBuilder 3D or Creator	Using SketchUp, CAD, 3ds Max, Maya, and more
Extrusions	Extrude polygons and lines	Extrude, offset, polygon-to-point
Model templates	Not available	Fully customizable
Textures	Colors, photos, graphics	Colors, photos, graphics, materials
Height and orientation	Manual or from feature attributes	Manual or from feature attributes
Terrain		
Terrain Creation	From features with elevation data such as contour line	From features or DEM
Textures	Drape aerial photos, maps, or other images conforming to the terrain	Drape aerial photos, maps, or other images conforming to the terrain
Backgrounds	Not available	Available

Custom Impacts Wizard

Introducing the Custom Impacts Wizard

In the course of a project, there are some kinds of analysis models—we call them analysis "structures"—that you find yourself setting up time and time again. They tell you about counts, totals, or classifications, and they often use variable assumptions as inputs. These models involve several components, like dynamic attributes and indicators, but they are not as complex as, say, an entire suitability or build-out analysis. You probably know how to do them, but in the past it has taken you several steps to set up each component and link them all together. Now, with the Custom Impacts Wizard, setting up these analyses is much faster and easier.

The impact models supported by the Custom Impacts Wizard cover some of the most commonly used simple structures. You can:

- Count features based on their location, such as counting all the trees in a park or counting all the septic tanks near a river
- Count items in features, such as counting all the chimneys in a group of houses
- Add amounts per feature attribute, such as amount of water needed to irrigate a polygon layer representing farm fields
- Classify and count features based on one of their existing attribute values, such as calculating how many roads are local, collector, and arterial, respectively
- Classify and count features based on their proximity to other features, such as counting how many septic tanks are near each of four rivers
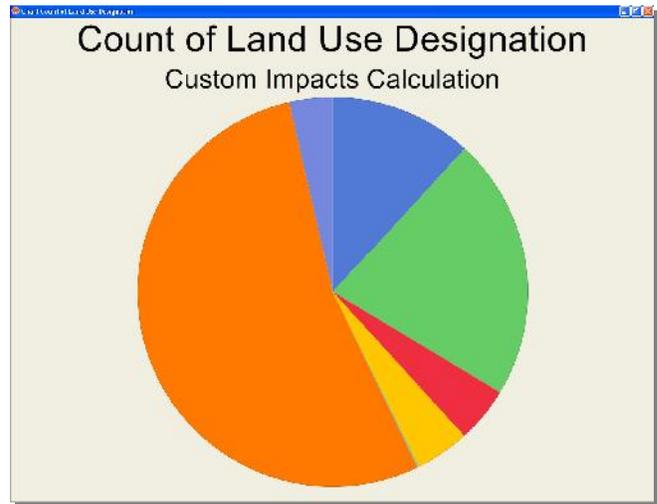
Example

Say you want to count how many houses are within X feet of a fire hydrant. In the wizard, you might specify:

- "Count features based on their location"
- Layer to be counted = "Houses"
- Layer to be near to = "Fire Hydrants"
- Distance considered 'near' = "Safe Distance Assumption" and its settings

Based on these inputs, the wizard would automatically set up a model that produces an indicator and a chart giving the number of houses. It would use your assumption for the "safe distance," and if you changed that assumption value during scenario analysis, the number of houses would update automatically.

Comparison to Common Impacts

Custom Impacts allows you to create your own impact measurements on any topic. Common Impacts sets up particular impact measurements that are commonly associated with growth. Common Impacts also provides default values for many of the assumptions it uses; Custom Impacts needs you to specify assumption settings.

Feel free to use both Common Impacts and Custom Impacts in the same analysis.

When to Use Custom Impacts

Use Custom Impacts for convenience when you are setting up analysis models that conform to its built-in formats (count, add, classify). For other kinds of impact calculations, set up assumptions, dynamic attributes, indicators, and/or charts individually using Scenario 360 Setup tools.

The dynamic attributes, indicators, and/or charts created by Custom Impacts are identical to ones you would create yourself and can be modified and edited as desired using Scenario 360 Setup tools.

New Build-Out Wizard

The New Wizard

The Build-Out Wizard is the most senior of all Scenario 360 decision tools: the first to be introduced and the most widely used. Also, because of the variety of ways local jurisdictions approach growth planning, the Wizard supports many, many options for refinements on the basic density-times-area calculation that lies at the heart of build-out analysis.
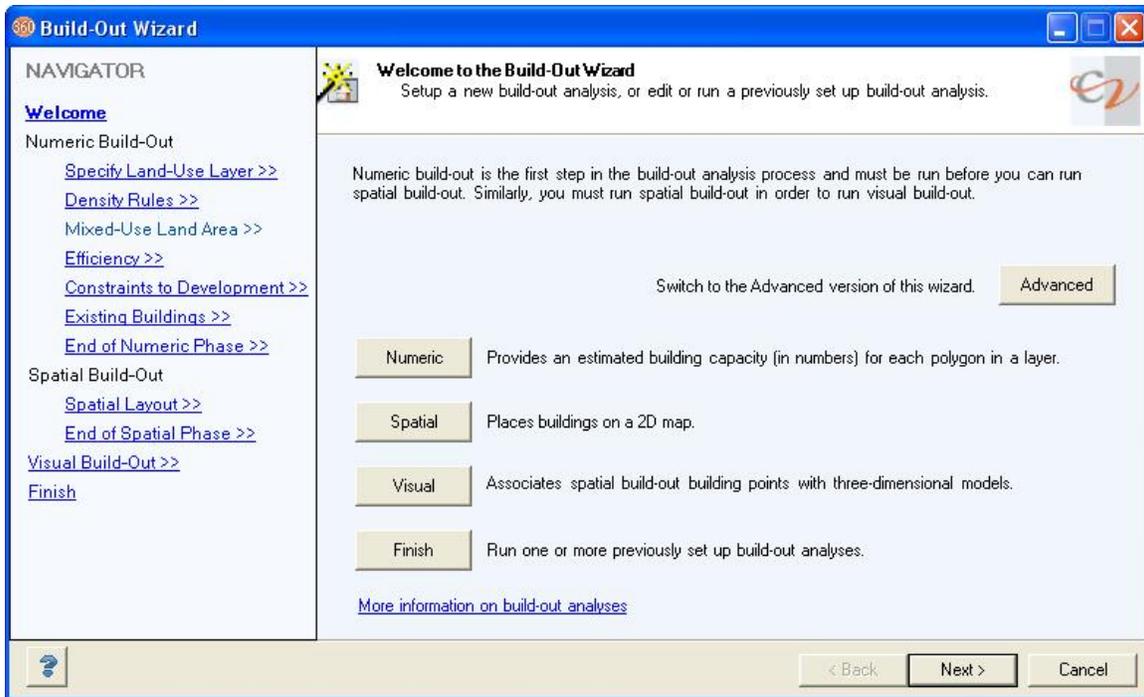
In Scenario 360 Version 4, all those options and features have been reorganized into a new, friendlier design. Highlights:

- A **Navigator** panel on the left that lets you jump straight to any valid screen, making it faster and simpler to tweak your analysis as you work.
- **Default values** are pre-populated into several common fields to save time and to help new users along
- **Advanced** features, like those pertaining to mixed-use buildings or external table imports, are moved to a separate version of the Wizard that you access from the first screen. This streamlines the normal build-out process while retaining the advanced features that some people need.
- A new **3D Model Selector** finds models (and their thumbnails, if available) anywhere you specify on your computer.