

communityviz®

Exploring Your
CommunityViz
Version 4.3 Upgrade



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Introduction to CommunityViz Version 4.3

CommunityViz® Version 4.3, including Scenario 360™ and Scenario 3D™, is the newest update to CommunityViz software for planners. This version introduces two new Scenario 360 premium decision tools:

- **360 Indicators Wizard**
- **Hazus Risk Assessment Wizard and Exporter**

This version also provides:

- **Integration with ArcGIS Custom Toolboxes**
- A new, **streamlined decision-tool licensing** system
- Performance **improvements for network functions** and **layer display**
- Plus, **improvements and updates** to a number of existing CommunityViz capabilities.

This short guide, intended for people who are already using CommunityViz 4.2, provides a tour of the major new features available in Version 4.3. As always, detailed, context-sensitive help is available within the software itself to answer specific questions.

Comprehensive planning assessment

Version 4.3 introduces the **360 Indicators Wizard**, a powerful new CommunityViz tool that provides a well-rounded, “360-degree” planner’s assessment of community planning scenarios.

Starting from standard planning layers you provide, the wizard automatically creates indicators and supporting analysis components in the categories of

- Demographics
- Employment
- Environment
- Housing
- Land Use
- Recreation
- Transportation

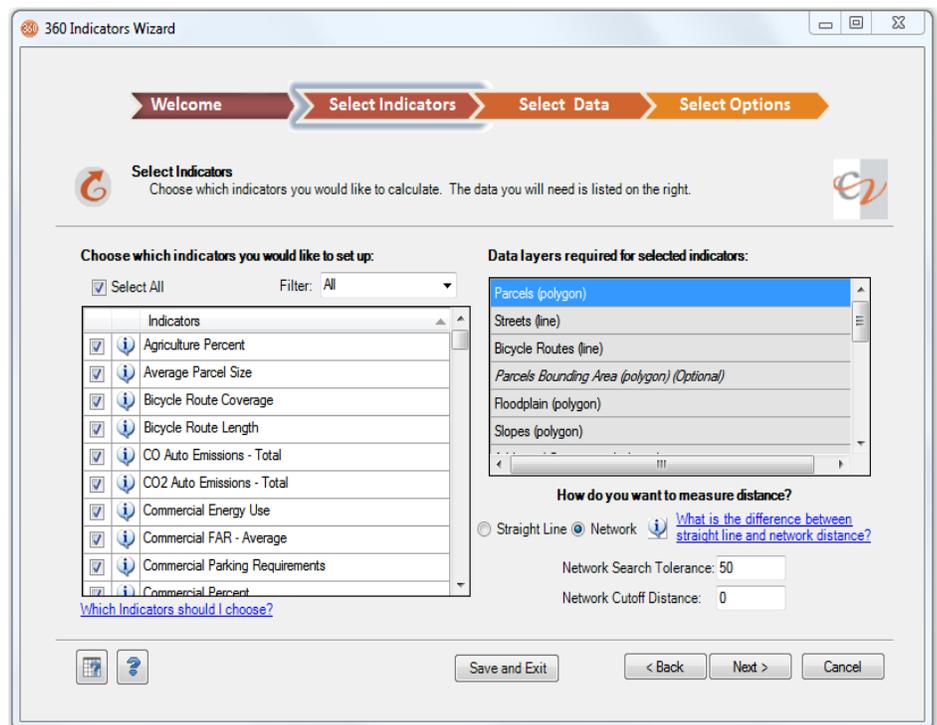
Up to **101 indicators** are available from this single wizard if all the input layers are available.

Anywhere from 1 to 19 input layers are needed, depending on the indicators you want to create. The primary requirement is a land use layer such as parcels, and optional layers include common planning data such as roads and transportation networks, amenities, schools, and constraints to development. Depending on the indicators you want, some basic data preparation on these layers may be required.

The wizard make take some time to complete because it collects a large amount of data from you, but the subsequent time savings are significant. The wizard itself is straightforward to use and has just 4 or 5 screens. Almost all inputs are optional, though of course missing inputs will reduce the number of outputs. You start by selecting the indicators you want, during which you receive guidance about the data layers each indicator will require. In subsequent steps you point the wizard to the appropriate data sources, set up a land-use correspondence table so the wizard recognizes your land-use codes, set some additional options, and finish. Throughout, status icons and hover-over tooltips give you real-time information about your work.

In addition to indicators and indicator formulas themselves, 360 Indicators produces numerous **charts, variable assumptions** with appropriate **default values**, and other components. As usual with CommunityViz, all formulas and components generated by the wizard are completely transparent, and you can view or edit them using standard Scenario 360 formula tools. Look for categories and components that include ‘**360I**’ in the name.

FAQ: How does 360 Indicators compare to Common Impacts?
 Answer: It’s more complex and sophisticated. Common Impacts is a great tool for getting started and making quick estimates in just a few clicks; 360 Indicators takes more work but gives more, and more refined, indicator calculations. At this time only Common Impacts indicators can be automatically linked to TimeScope Time.



Quick Start

Try out the 360 Indicators Wizard with a simple example. Open an analysis that contains a land use layer, such as parcels, attributed with at least a land use designation, dwelling units, commercial floor area, and if you have them employees and population. (The Buildable Area layer from a Build-Out analysis would work nicely if you have one.)

- Open the 360 Indicators Wizard from the Decision Tools toolbar and step through.
- When prompted to choose indicators, choose Select All. The Wizard will later remove the ones for which you don't have the necessary input data.
- On the Select Data screen, assign a source for the Parcels layer on the left-hand panel. Ignore all the other layers.
- Still on the Select Data screen with the Parcels layer selected on the left, select data sources on the right-hand panel for as many attributes as you happen to have available in your parcels layer.
- When finished selecting attribute data sources, click Next. You will see a message saying you are missing some data and asking if it's okay to remove some of your indicators. Say Yes.
- Finish going through the wizard. If your parcels layer has a land use attribute, the wizard will ask you to match your land use names to the standard 360 Indicators land uses using another table. When ready click Run Now. The wizard may take several minutes to complete depending on the size of your datasets.

To see your results, look at Indicators, Charts, and Assumptions in the Category called 360 Indicators (not 360 Indicators Base).

Hazus Risk Assessment Wizard and Exporter

Two-way connections to FEMA's Hazus tool

Planners in the US (and soon Canada) who need to assess financial and other risks associated with **floods, earthquakes,** and wind events such as **hurricanes** often turn to the US Federal Emergency Management Agency's **Hazus-MH** multi-hazard loss estimation methodology. Hazus is free from FEMA. It includes a thorough, comprehensive database of structures and infrastructure around the country as well as advanced models for estimating potential losses due to hazard events.

The new CommunityViz *Scenario 360* Hazus Risk Assessment Wizard and Exporter are two sister decision tools that connect Hazus outputs to CommunityViz and vice versa. They work with Hazus-MH 2.0 and 2.1 (which are supported by FEMA in ArcGIS 10 up to SP2), and they assume you as a user already have Hazus on your computer and know something about it.

The **Hazus Risk Assessment Wizard** in Scenario 360 is the usual starting place. It represents the Hazus → CommunityViz direction of data flow. You open it from the Decision Tools toolbar and use it to import one or more risk events that you have already created in Hazus (e.g., a 500-year flood for your study area). The wizard creates a new scenario in your analysis for each event, and it also creates new layers, assumptions, indicators and charts according to your preferences. A typical run creates **hundreds of components** for you, and all told more than 800 components are possible.

You can use the newly created components however you like for display, scenario comparison, and further analysis within CommunityViz. For example, you might want to do a side-by-side scenario comparison, compare financial risks to current municipal budgets, or use the Hazus outputs as inputs to a suitability analysis.

To assess the hazard risks of future scenarios or mitigation strategies, use the **Hazus Risk Assessment Exporter**. It represents the direction of data flow and allows you to export Scenario 360 point layers such as the Build-Out Buildings CommunityViz → Hazus layer into a format (UDF) Hazus can use. If you use Build-Out outputs, many of the attributes Hazus needs are automatically populated for you. Once the output is complete you can go to Hazus to see the CommunityViz buildings and work with them, developing a **sophisticated understanding of risks** associated with your potential plans. You can even go full circle and send those results back to CommunityViz with another run of the Wizard.

Custom Scripts

ArcGIS Custom Toolbox Integration

CommunityViz Version 4.3 offers the ability to combine the geoprocessing power of ArcGIS Custom Toolbox Scripts with the analytical framework of CommunityViz formulas. Your Python-based custom script tool becomes part of a CommunityViz formula using the Scenario 360 functions **CustomScript**, **CustomScriptB**, and **CustomScriptS**.

This capability opens up new opportunities for CommunityViz analyses that take advantage of Python-based ArcGIS geoprocessing tools and models that you have available. Scenario 360 formulas containing scripts update in the same way other dynamic CommunityViz formulas do, but instead of performing a built-in function such as `MinDistance` or `GetFromClosest`, they execute the custom script based on input parameters provided in the formulas. Similarly, they return results generated by the custom script.

The new Custom Script functions replace those in earlier versions that used the older VBA script language. The new ones use the ArcGIS custom toolbox format and support the newer, widely popular **Python** language.

New Licensing

Integrated licensing for premium decision tools

Starting with CommunityViz Version 4.3 you will no longer need to use separate license codes for premium decision tools like Allocator and 360 Indicators. Instead, your level of authorization will be handled behind the scenes and fully integrated with your main CommunityViz license. The appropriate decision tools will be automatically activated when your CommunityViz license is activated.

If you are already using Version 4.2 you will need to reactivate your main CommunityViz license after you upgrade to Version 4.3. This will require your original license ID and password, but it will not use up any of your license unlocks. And because of this new feature, upgrading will not require you to relicense your premium decision tools.

If you change your licensing level in the future, your premium decision tool authorization changes will be administered as part of the change.

Network license server improvements

Users with network licenses will find the Version 4.3 license server now has an improved interface with upgraded menus. The new integrated Decision Tools licensing is also available with network licenses.

When you upgrade to CommunityViz Version 4.3, you will also need to upgrade to Network License Server for 4.3 which is available along with [installation instructions](#) on our [CommunityViz Resources](#) page.

Performance Improvements

Version 4.3 continues the ongoing evolution of CommunityViz capabilities for supporting ever-larger and more complex projects. In the previous release and now this one, innovative upgrades to the existing software are providing much faster processing for targeted computing-intensive operations.

Faster Network Functions

If ArcGIS Network Analyst is available on your computer, CommunityViz can take advantage of it via the **NetworkMinDistance** and **NetworkGetFromClosest** functions. These are ideal for measuring walking, biking, and driving distances along transportation networks, among other applications. In CommunityViz Version 4.3, the algorithm for these functions has been changed to yield much faster performance. The result is quicker response times and capabilities for handling larger networks.

Faster Layer Display Updates

A new method of handling dynamic layer displays in Version 4.3 means that even very large datasets with numerous layers and layer groups will display smoothly, with almost-seamless toggling of layer visibility (turning layers on and off).

Plus...

In addition, look for these upgrades and improvements:

- Updates to Common Impacts auto emissions assumption default values
- Fixes for Land-Use Designer Wizard
- Fixes for Charts
- General updates for wizards, functions, and interface

As always, **up-to-date Help documentation** can be found [online](#) or throughout your CommunityViz 4.3.

We hope you enjoy the new CommunityViz Version 4.3!