

*CommunityViz® software enables users to see what different land use and development scenarios would look like if they were to actually occur. It allows users to create hypothetical scenarios and assess the economic, environmental, social, and visual impacts of those scenarios.*



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## Introduction

[CommunityViz®](#) is a [GIS](#)-based planning tool supported and distributed by Placeways, LLC. It is an extension to the Environmental Systems Research Institute's ArcGIS® software.

CommunityViz enables users to visualize and analyze the environmental, social, and economic consequences of potential land use scenarios. Users can create three-dimensional models of existing or proposed land uses, and present this information to others involved in the planning process.

Once existing spatial and tabular data (roads, buildings, etc.) is mapped, users can construct hypothetical scenarios with various land use planning choices, growth rates, and other variables to explore the series of impacts these scenarios would have on their community. For example, users can envision how zoning an area residential and a 3% annual growth rate would affect the physical form of the community in the coming years and decades.

While some features of CommunityViz are accessible to users with limited GIS familiarity, tapping the

software's full potential requires GIS skills and planning knowledge. Organizations that do not have the in-house expertise to fully utilize the power of the software would need to work with professional consultants to effectively take advantage of the software.

Municipalities, private consultants, nonprofits, government agencies, and universities across Pennsylvania and in more than 40 countries use CommunityViz.

## Planning Benefits

CommunityViz allows users to:

- Construct future land use scenarios and visualize their real-world impacts on the environment, local economy, and community character. With this analysis, planners and officials can make more informed decisions as they implement land use planning strategies in the short and long term.
- Generate reports, which present complex information in accessible, easy-to-read formats. Reports can serve as educational tools that help decision makers and the public understand the potential consequences of land development in their communities. They can also inform citizens of the long-term consequences of alternative government decisions regarding zoning and other land use regulations.

## Challenges

To benefit from CommunityViz, an organization or government must first be able to:

- Provide accurate geographic data in order to produce high-quality, useful analysis.
- Devote staff time (whether or not a consultant is hired) to identify the issues and situations that will be explored.

In addition, an organization or government must have the means to:

- Hire an experienced consultant, or
- Invest considerable resources in staff training and purchase CommunityViz software, as well as the basic GIS program, ArcGIS (if it isn't already owned). See [purchasing information](#) on the CommunityViz website.

## Key Components

CommunityViz includes two major components: Scenario 360 and Scenario 3D. Each has a variety of features applicable to conservation-specific efforts as well as planning and land use in general.

### Scenario 360

Scenario 360 helps users design and experiment with hypothetical scenarios, view the impacts of proposed changes, and connect to three-dimensional visualization tools like Google Earth.

Common uses of Scenario 360 include comprehensive planning, build-out analysis, site selection and evaluation, and visual impact analysis. Scenario 360 can also help with forest management planning, natural hazard risk assessment, habitat fragmentation evaluation, and water quality management.

To learn more, see the [Scenario 360 page](#) on the CommunityViz website.

### Scenario 3D

Scenario 3D displays potential land use changes and scenarios in an interactive three-dimensional format, making it a useful visual tool for communicating the potential impacts of land use decisions. In Scenario 3D, users can walk through or fly over an area, click on objects to learn more, and follow links to multimedia content. The scenes can be explored by anyone through a free viewer.

To learn more, see the [Scenario 3D page](#) on the CommunityViz website.

## Case Studies

The following case studies show how various Pennsylvania communities used CommunityViz to study land use options and inform future planning.

### Monroe Township (Central Pennsylvania Conservancy, 2009)

Central Pennsylvania Conservancy created a visioning presentation for the Monroe Township Supervisors to help them envision the future of their community and the impacts of land use decisions. The presentation shows a community build-out analysis for the Conservation Zone located within Monroe Township.

[View/Download Case Study](#)

### Cumberland, Dauphin, and Perry Counties (Tri-County Regional Planning Commission, 2011)

In an effort to update both its *Regional Growth Management Plan* and *Regional Transportation Plan*, the Tri-County Regional Planning Commission implemented scenario build-outs throughout its entire service region, which includes 103 municipalities in Cumberland, Dauphin, and Perry counties. The study includes a discussion of the merits and challenges of using CommunityViz for the project.

[View/Download Case Study](#)

### Allegheny County (Placeways LLC, 2008)

*Allegheny Places*, Allegheny County's first comprehensive plan, establishes an overall vision for their future and a road map to get there. The comprehensive plan sets policies for development, conservation, and economic initiatives. The plan provides a framework for the strategic use of public resources to improve the quality of life for all residents.

[View/Download Case Study](#)

### Milford Township (Center for Sustainable Communities, Temple University, 2004)

This study describes the GIS techniques and methods used to develop and design a growth management plan for Milford Township in Bucks County. It analyzes Milford's existing zoning and land use plan

and discusses a buildout scenario based on that plan, as well as alternative development scenarios, using 3D visualizations.

[View/Download Case Study](#)

Additional case studies from around the globe are available online at

<http://placeways.com/communityviz/gallery/casestudies.php>

## Additional Information

Visit the [CommunityViz website](#) for more information about the software. The website includes detailed descriptions of program features, video tutorials, product support, system requirements, purchasing information, and more.

<http://placeways.com/communityviz/index.html>

## Resources at ConservationTools.org

To find experts and other information on the topics covered by this guide, see the right-hand column of the on-line edition at

<http://conservationtools.org/guides/75>

### Related Guides

[Build-out Analysis](#)

[Community Visioning](#)

[Development Threat Analysis](#)

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## Submit Comments

Help improve the next edition of this guide. Email your suggestions to the Pennsylvania Land Trust Association at [aloza@conserveland.org](mailto:aloza@conserveland.org). Thank you.

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