Community Planning with Digital Crayons and Real–Time 3D

Delaware community members deliberate the future of their neighborhood using "digital crayons" with real-time geographic 3D visualization.

Location: Milford, Sussex County, Delaware

Partners: Delaware Office of State Planning Coordination; University of Delaware Sustainable Coastal Community (SCC) Initiative; City of Milford, Delaware; CommunityViz® support provided by University of Delaware and Donley & Associates, Inc.
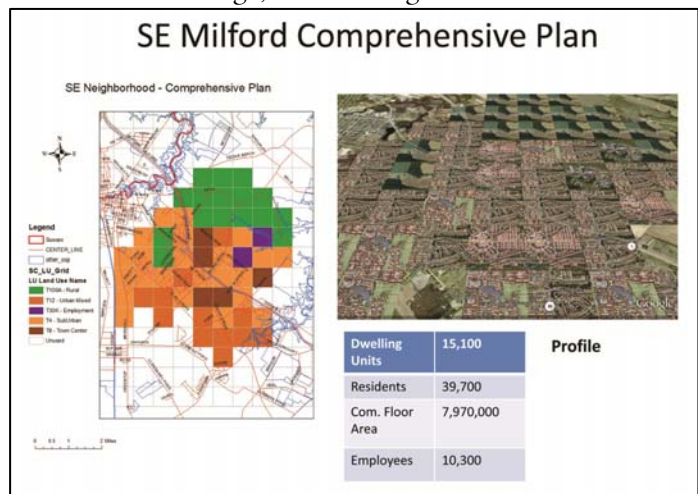

Context: Sussex County, Delaware's population grew over 23% over the past decade, driven by retirees and seasonal land-owners attracted to its Atlantic coastal beaches. The rapid development has the potential to impact agricultural lands and natural areas. The City of Milford is a jurisdiction within the county. Recent residential growth has occurred in subdivisions southeast of Milford, on lands annexed from the county. Milford's Comprehensive Plan includes an urban boundary that extends into the county and shows proposed land uses in a "Southeast Neighborhood." The City, County and the Delaware Office of State Planning Coordination agree that there are opportunities for further annexations, but those lands should be the focus of a Master Plan that addresses issues such as infrastructure, density, and employment. The University of Delaware Sustainable Coastal Community program led a robust program of community engagement to guide Master Plan development for Milford's Southeast Neighborhood.

Project Description: The project team used CommunityViz to develop the "University of Delaware SCC Land Use Model." The model uses 100-acre tiles in a grid across Sussex County to illustrate potential development patterns. A palette of colors ("crayons") represents 13 typical land use types (4 rural, 6 suburban/urban mixed, and 3 non-residential), each with its associated residential and non-residential densities, population, employment, tax, water and wastewater usage, and traffic generation characteristics.

To help people visualize the land uses, the team used CommunityViz Scenario 3D and Google Earth to create three-dimensional models for each of the 13 land use types.

The team engaged stakeholders and the public through a series of workshops. At *Meeting One*, citizens reviewed current plans for the neighborhood, learned about constraints to development, and identified their values. They viewed and deliberated about three potential long-range growth scenarios based on 3D representations of land use types and their associated demographics. At *Meeting Two*, citizens used a table exercise

SE Milford Comprehensive Plan

Profile	
Dwelling Units	15,100
Residents	39,700
Com. Floor Area	7,970,000
Employees	10,300

to plan the Southeast Neighborhood, using colored tile "crayons" placed on an aerial map. The attendees produced seven somewhat different plans that were merged into three scenarios: "Current Trends," "New Community," and "Suburban." Build-outs of each scenario were analysed in numeric terms, mapped, and visualized in 3D, and had their associated demographic impacts estimated. At *Meeting Three*, citizens viewed the results of the analyses and discussed the benefits, challenges and cost implications of each. They used keypads to vote on preferred scenarios. A resulting Composite Scenario was developed and has become the basis for a new Master Plan for the neighborhood.

Technology and Tools: CommunityViz® Version 4.1, including Scenario 360™ and Scenario 3D™; Google SketchUp and Google Earth Pro; ArcGIS 9.3.1; CommunityViz Land Use Designer to assign land use types as "crayons" applied to 100-acre grid in Milford; keypad polling; stakeholder and public workshops.

The SSC model uses one point to depict each 100-acre tile rather than hundreds of lines and points for individual parcels. Yet each point conveys detailed summaries of the future infrastructure and environmental impacts. A basic laptop can analyze the grid of points more rapidly than more detailed models. The grid-based model leverages the CommunityViz Land Use Designer Tools. Users can revise scenarios with a couple of keystrokes and view the impacts in seconds. The 13 land use designations support Form-Based Code principles illustrating development transects. By removing site specific zoning districts and owner parcels, these features represent impartial land use types with varying densities, residential/nonresidential ratios, and single/mixed use variations to illustrate the character of the community.

> *"CommunityViz empowered the people of Milford to work collaboratively to identify a pattern for the future built environment of their community to allow the Town, the State and the development community to implement the many coordinated actions necessary to develop shovel-ready projects while preserving the quality of live for today and future Delawareans."*
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> — Bryan Hall, Delaware Office of State Planning Coordination

Outcomes: The project modeled an expanded public process combining scenario development and deliberation, analysis, and decision-making. According to project leaders, citizens were astounded to be able to significantly influence the resulting plan. The County Plan had envisioned approximately 18,000 dwelling units for the area and the City Plan showed approximately 15,000 dwelling units. The agreed-upon Composite Scenario results in only 8,500 dwelling units, incorporates open space, consolidates commercial areas, and retains areas of farmland.

The materials generated using CommunityViz alternative scenarios, the consensus-based Composite Scenario, maps, and analyses were used by the City Planner to prepare a Proposed Master Plan Land Use Map which is under review by the State of Delaware and its agencies. Once the reviews have been completed, the City of Milford will use the Plan to propose an amendment to its Comprehensive Plan. The University is now working on a similar project with the Town of Georgetown.

KEY LINKS
CommunityViz
  http://placeways.com/communityviz
Delaware Office of State Planning Coordination
  http://www.stateplanning.delaware.gov
University of Delaware Sustainable Coastal Community Initiative
  http://www.scc.udel.edu
City of Milford
  http://www.cityofmilford.com