



City of Philadelphia Mayor's Office of Information Services

DecisionMaps and ArcGIS Server: Matching Business Needs with Philadelphia Assets

Problem

The city needed a mechanism that would allow business owners and economic development or planning authorities to identify neighborhood revitalization areas based on a custom set of criteria.

Goals

- Create a Web tool for defining and prioritizing a custom set of criteria.
- Enable sophisticated analysis of spatial information but hide complexity from the person using the Web tool.
- Generate maps highlighting areas that best match the criteria.

Results

- Authorities access an easy-to-use online tool to create custom sets of economic development criteria.
- City of Philadelphia leverages its significant investments in GIS data and IT infrastructure to provide centralized GIS processing and analysis.

“GIS has played an important role in Mayor Street’s Neighborhood Transformation Initiative. Decision tools have helped make, analyze, and interpret policy and guide resources and investments. The city has embraced these methods and will be expanding the role and use of these tools to provide more effective service to the citizens of Philadelphia.”

Eva Gladstein
Director of Neighborhood
Transformation Initiative

When he took office in January 2000, Mayor John F. Street, embarked on an ambitious plan to revitalize Philadelphia’s neighborhoods and the city through a series of initiatives. His Neighborhood Transformation Initiative (NTI) is a comprehensive strategy to rebuild the city’s neighborhoods, remove blight, and attract private development. Mayor Street called on the Mayor’s Office of Information Services (MOIS) to help enhance city services by creating self-serve online tools for residents and businesses. Mayor Street also asked MOIS to develop a reliable and efficient technical infrastructure to support critical city operations including one of the nation’s most robust geographic information systems (GIS).

The Challenge

One of the ways in which MOIS strives to support Mayor Street’s vision for Philadelphia is to build online tools that help decision makers analyze and identify economic development issues throughout the city. To this end, MOIS needed to provide NTI stakeholders with a means for describing social, economic, and geographic factors that influence institutional and business location decisions and also categorize areas that would be attractive and suitable to new development. In addition, the solution needed to be shared among different departments and organizations working with the city but not require GIS expertise to successfully perform the analysis.

The screenshot shows the 'MOIS Decision Maps' web application. At the top, there are navigation links for 'phila.gov', 'citymaps', and 'MOIS Decision Maps'. Below this, there are links for 'ULRS Home', 'Logout', and 'Return To Start'. The main content area is titled 'Search Definition' and contains three instructions: (1) Select a search template, (2) Adjust your preference weights by clicking on the scale, and (3) To execute this search, give the search a name and click go. The 'Scenario' is set to 'Food and Hospitality Business' and the 'Name' is 'Search001'. Below this, there is a table of preferences with scales from -3 (Avoid) to 3 (Prefer) and a 'Weight' column.

Preferences	Avoid	-3	-2	-1	0	1	2	3	Weight
Demographics									
High density of owner occupied homes								3	3
High density of population							2		2
High density of population age 15 to 19 yrs									0
High density of population age 20 to 24 yrs							1		1
High density of population age 25 to 34 yrs							1		1
High density of population age 35 to 44 yrs							2		2
High density of population age 45 to 54 yrs									0
High density of population age 55 to 64 yrs									-1
High density of population age 65 and over									-1
Proximity									
In Wireless Philly zone									0
Short walk to a university campus									0
Short walk to east Center City									0
Short walk to SEPTA rail stop								3	3
Short walk to west Center City									-1
Tax Incentive Area									
In Center City District								1	1

* Click scale to adjust weights

DecisionMaps is a Web-based application that allows the user to define and prioritize a set of critical spatial factors associated with property information.

To learn more about ArcGIS Server, visit www.esri.com/arcgisserver.

City of Philadelphia, Mayor's Office of Information Services

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ESRI Software Used

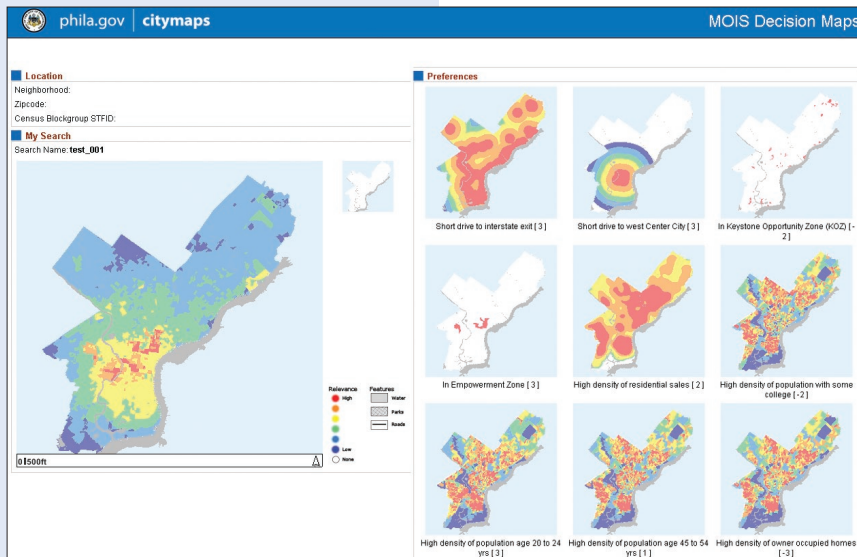
- ArcGIS Server
- ArcIMS®

Other Software Used

- DecisionMaps

The Solution

The City of Philadelphia partnered with Avencia, a geospatial analysis firm serving governments, universities, nonprofit organizations, and businesses, and developed a Web-based tool called DecisionMaps. DecisionMaps integrates property information and the property's critical spatial factors, such as proximity, with a variety of community assets. DecisionMaps makes use of ESRI's ArcGIS® Server software, which connects Web applications to powerful geoprocessing tools and functionality.



Based on the criteria, DecisionMaps processes the data on a centralized server, then generates a map highlighting areas that best match the criteria.

DecisionMaps is a Web-based economic development tool that helps users make decisions about where to site a business based on a set of geographic decision factors chosen by the user. The application returns an interactive map with red hot spots indicating the most desirable place to locate. Users have the ability to select scenarios, such as food and hospitality businesses, which present them with the most relevant decision factors.

Avencia's business development manager, Bradley Breuer, says that DecisionMaps "uses ArcGIS Server to enable users across the city to access Web-based decision-making tools. The application masks the complex raster cell-based modeling that occurs behind the scenes on a centralized server while enabling non-GIS users to make sophisticated weighting choices about what is most important to them in siting their business."

Users are given a menu of geographic priorities such as proximity to transit lines, proximity to business districts,

and whether the site is in an economic incentive zone or wireless Internet coverage area. They are also given a menu of various demographic factors such as age, per capita income, and educational attainment. Based on this menu of decision factors, users weight their preferences by giving some factors high "prefer" scores and other factors low "avoid" scores and leaving other factors neutral.

After weighting these factors, users are presented with a map showing hot spots—the most desirable business siting locations. Users can pan and zoom on the map from a citywide overview to a street-by-street analysis.

For More Information



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Results

Through Mayor Street's Neighborhood Transformation Initiative, the City of Philadelphia uses various economic development strategies to revitalize Philadelphia neighborhoods. These strategies incorporate online tools that city employees now use to support economic development initiatives and help businesses make informed choices about location. Departments and organizations seeking ways to make use of DecisionMaps include the Philadelphia Industrial Development Corporation (a private, not-for-profit Pennsylvania corporation), the Mayor's Office of Information Services, the Commerce Department, and the Neighborhood Transformation Initiative.

The combination of DecisionMaps and ArcGIS Server literally joins the ideas of simplicity of use with sophisticated GIS analysis capabilities to create an easy-to-use decision-support tool that doesn't require GIS experience or knowledge.

Jim Querry, City of Philadelphia GIS director, remarks, "Philadelphia's neighborhoods are undergoing a transformation unlike any in the city's history. Enterprise GIS has played a vital role in Mayor Street's Neighborhood Transformation Initiative, and I am extremely proud to be part of the team that continues to support these efforts through innovative applications such as DecisionMaps."

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To learn more about ArcGIS Server, visit www.esri.com/arcgisserver.