Evaluation of Community Decision Support Software

by the National Consortium for Rural Geospatial Innovations (RGIS)

April, 2004
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To: Planning Software Support Vendors

From: National Consortium for Rural Geospatial Innovations (RGIS)
Dr. Stephen Ventura, Project Director

Re: Evaluation of Community Decision Support Software

Date: April 12, 2004

Prepared by: Professors Ben Niemann and Fred Limp

Introduction

The National Consortium for Rural Geospatial Innovations (RGIS) is a U.S. Department of Agriculture (USDA-CSREES) supported group working to improve the accessibility of geospatial technologies to rural communities through technology transfer, pilot studies, educational efforts and other approaches. Various communities working with their RGIS sites have indicated an increased interest in effective planning support software (PSS) systems to assist community leaders in effective management of change. Ten planning support software products (PSSP) were made available for review and evaluation by each RGIS site. Sites selected those products or sub-product components, which they judged were the most appropriate for their selected rural focused community demonstration project application(s). Ten product evaluation criteria were developed by RGIS. These criteria were organized into two groups; one for technical factors and one for application factors. These criteria were used by each site to evaluate the products or sub-product components. Of the 160 potential product evaluations, RGIS sites collectively conducted 55 product or sub-product evaluations. For those products evaluated in response to technical merit, RGIS sites generally concluded that these products were technically ready for use. In response to the usefulness of the product, RGIS sites also generally concluded that these products were appropriate for the issue or project being addressed. Since these PSS products are still in an early release status, we are encouraged that as the products mature the ease of use and appropriateness will only get better. We also believe this bodes well for rural America as these tools are incorporated into their geospatially driven products and have become incorporated into their daily land planning and management responsibilities. The RGIS sites provided assessments and recommendations that are included in the report. A series of composite recommendations are also provided as part of this summary report.


**Background**

During the past eighteen months, seven of the eight RGIS sites have undertaken a collective process to identify and evaluate PSS products. The selected products were viewed as potentially applicable to help rural areas and its citizens address land planning and management issues of their concern. Each participating site chose to focus on one or more land planning and management issues as part of a RGIS sponsored and funded community demonstration project. Each site selected from ten available products and vendor representatives provided hands-on training in three separate locations for their products. RGIS resources were used to help the sites become familiar with the software, determine products appropriateness, and become initially familiar with its implementation.

Based on these user workshops and demonstrations, each participating RGIS site individually selected an applicable set of PSS products that they concluded would be most helpful to meet the needs of their community demonstration projects(s).

**Evaluation Process and Outcome**

In December of 2003, at the annual RGIS Technical Meeting, each site presented and discussed the results of their individual community demonstration project(s). Prior to the meeting, each site was also asked to prepare an evaluation of the PSS products they considered and/or used as part of their community demonstration project based on ten common questions (see Evaluation of Community Demonstration Projects: November 18, 2003). Ten overall criteria were assessed and ranked for each product. For each PSSP or module, five questions focused on technical issues and five questions focused on application issues. Of the potential 160 possible evaluations, 55 evaluations were conducted and provided (see Composite of RGIS Site Evaluations of Selected PSS Products and RGIS Evaluations by Site for each PSS Product).

In response to technical criteria, the overall consensus by RGIS sites is that the products technically work (i.e., ranking of 2.7 where 1.0 = strongly agree and 5.0 = strongly disagree). Also, the overall consensus by the RGIS sites is that these products are useful (i.e., ranking of 3.5 where 1.0 = the product was not appropriate and 5.0 = the product was very appropriate). As in any ranking system there are always caveats and assumptions. To gain insight into these perspectives we suggest each vendor review and consider each site’s individual evaluation of their product. As part of the overall review of these evaluations we offer some selected suggestions and recommendations for the products. These recommendations range from software and hardware changes and modifications to increased documentation (see Summary of Selected Recommended Changes and/or Additions for PSS Products, circa December 2003).
Summary

We, as users of PSS technology, are encouraged by the results of our evaluations. First, we are encouraged by the vendors’ willingness to share and offer their products for evaluation. Second, given these PSS products are ‘new’ and ‘just-off-the shelf’ this bodes well for the long-term evolution and use of these products. It also bodes well for those in rural America who wish to incorporate these tools into their land planning and management deliberations.

We sincerely wish to thank the PSS developers for their willingness to share their products. We also wish to thank them for their willingness to give of their time, experience, and expertise and to thank Congress and CSREES for their continued financial and administrative support which has made it possible to conduct and share these product evaluations.

cc: Dr. Greg Crosby, CSREES  
RGIS Sites
## Summary of Selected Recommended Changes and/or Additions for PSS Products

**December 2003**

<table>
<thead>
<tr>
<th>Product</th>
<th>Recommended Changes/Additions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CITYgreen</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>CommunityViz</strong></td>
<td>This sub-component of the product and its capabilities has been dropped. Original product found to be complicated, overly expensive, and its agent based allocation process was arbitrary. Process of allocation not similar or compatible with other allocation methods. However, we do not recommend or concur with dropping the policy simulator component as part of CommunityViz. Being able to simulate policy alternatives is a fundamental component of CommunityViz. We recommend, as an alternative that; (1) Orton formally merge its policy simulator component with What if? as part of the overall CommunityViz product and; (2) in doing so Orton creates, as initially advertised, a seamless two way integration with What If? vs. its present one way solution.</td>
</tr>
<tr>
<td><strong>CommunityViz</strong></td>
<td>Provide a means to override the requirement to update the data base for each run when the user deems it appropriate. The open-ended pallet of tools does what they do well but this requires considerable expertise and assistance. We suggest some well-documented step-by-step case study examples that would, a) alert the initial user for when there would be need for assistance, and b) provide the initial user more insight as to the possible applications.</td>
</tr>
<tr>
<td>Product</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CommunityViz SiteBuilder 3D</td>
<td>Expand its analytical capacity by including parametric options. Provide a more extensive navigation system such as being able to spin or rotate and zoom the scene manually. Provide the capability to select and display objects by querying attributes. Increase the graphic fidelity of distance viewing. Add 3D analytical tools such as viewshed analysis. Consider purchase/merger with Rapid Site, World Construction Set and ModelBuilder to expand 3D functionality and output products.</td>
</tr>
<tr>
<td>ModelBuilder ESRI ModelBuilder Product</td>
<td>Powerful incorporation into ARC/GIS version 9.0 now limited by only grid/raster analysis and by the number of analytical functions. Hopefully these issues will be resolved in the 9.0 release.</td>
</tr>
<tr>
<td>Multi-Gen Paradigm ModelBuilder Product</td>
<td>None</td>
</tr>
<tr>
<td>OrthoMapper</td>
<td>Even though the product clearly identifies the impacts of data quality on accuracy, an ability to include source meta data as part of a “red flag” accuracy test would help alleviate the potential misuse of the product especially by new users.</td>
</tr>
<tr>
<td>PlaceIt! PC Monitor Display Version Smart Board Display Version</td>
<td>Provide a means to more easily enter new data into the system. Provide more flexibility in how many land use types and densities can be allocated. Write version for ArcGIS (i.e., 9.x). Seek other smart board hardware options such as lighter and more transportable tables.</td>
</tr>
<tr>
<td>What if?</td>
<td>Eliminate the need to be constrained by UAZ’s (Uniform Allocation Zones) so similar UAZ’s can be combined into larger similar ownership geographic units based on adjacency or similar ownership parcels. Provide the means to be able to incorporate variable population growth projections</td>
</tr>
</tbody>
</table>
across a different area of analysis. Provide the ability to update data without reassembling the initial data base.

Strongly recommend that What if? develop a formal product working relationship(s) with other Planning Support Software system vendors such as the Orton Foundation’s CommunityViz product, which is now without a robust policy simulation module.
Community Decision Support Software
Evaluation Guidelines

Background
As part of our agreement with the various Planning Support Systems (PSS) software developers, we agreed to collectively provide each PSS developer an evaluation of their product. The PSS vendors to be evaluated are:

<table>
<thead>
<tr>
<th>PSS System</th>
<th>Developer</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITYgreen</td>
<td>Forest Federation</td>
</tr>
<tr>
<td>CommunityViz</td>
<td>Orton Foundation</td>
</tr>
<tr>
<td>Policy Simulator</td>
<td></td>
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<tr>
<td>Scenario Constructor</td>
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<tr>
<td>SiteBuilder 3D</td>
<td></td>
</tr>
<tr>
<td>ModelBuilder</td>
<td>ESRI</td>
</tr>
<tr>
<td>OrthoMapper</td>
<td>Dr. Frank Scarpace</td>
</tr>
<tr>
<td>Pop Dot (PlaceIt!)</td>
<td>LICGF, GeoAnalytics, and ESRI</td>
</tr>
<tr>
<td>PC Version</td>
<td></td>
</tr>
<tr>
<td>Smart Board Version</td>
<td></td>
</tr>
<tr>
<td>What if?</td>
<td>Dr. Richard Klosterman</td>
</tr>
</tbody>
</table>

Task
Evaluate, document and review with RGIS sites:
   a) the ease of use (i.e., the technical component) and,
   b) the appropriateness to address the selected application (i.e., the application component).

Evaluation
We request that each site prepare an separate evaluation for each PSS product which was incorporated in their CDP to do this. Please address and prepare a response to the following ten questions:
Technical Component

Ranking of Each Product

Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>

1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward”

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

Application Component

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.
7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

<table>
<thead>
<tr>
<th>Not Appropriate</th>
<th>Not Very Appropriate</th>
<th>Appropriate</th>
<th>Quite Appropriate</th>
<th>Very Appropriate</th>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</table>

*Where:*
1. Not Appropriate – not at all useful or adaptable.
2. Not Very Appropriate – consider technical support needed to be useful and adaptable.
3. Appropriate – with technical expertise support, use and adaptable.
4. Quite Appropriate – limited technical support needed to be useful and adaptable.
5. Very Appropriate – hits the target out of the box, both useful and adaptable.

**Deliverables**

*We request that each site:*

   a) submit a written review for each PSS product utilized in their CDP(s) following the above outline,
   b) present these findings in the upcoming SIPI meeting to the other sites,
   c) participate in a roundtable discussion of the findings, and
   d) be prepared to discuss future CDP opportunities.
## Composite of RGIS Site Evaluations of Selected PSS Products (circa December 2003)

**KEY:** c = text comments no numeric evaluation, **Technical (T):** 1=high 5=low, **Application (A):** 5=high 1=low

<table>
<thead>
<tr>
<th>Products</th>
<th>Chesapeake Wilkes Univ (CWU)</th>
<th>Chesapeake Penn State (CPS)</th>
<th>Great Lakes (GL)</th>
<th>Great Plains (GP)</th>
<th>Mid-South (MS)</th>
<th>Pacific Northwest (PNW)</th>
<th>South Georgia (SG)</th>
<th>Technical</th>
<th>Application</th>
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<tr>
<td>CITYgreen</td>
<td>1.0 3.5</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>1.0 3.5</td>
<td></td>
</tr>
<tr>
<td>CommunityViz Policy Simulator</td>
<td>c c 5.0</td>
<td>4.2 1.0</td>
<td>c c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.2 1.0</td>
<td>4.1 1.0</td>
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<tr>
<td>Scenario Constructor</td>
<td>2.4 3.0</td>
<td>2.0 2.0</td>
<td>2.8 3.0</td>
<td>2.1 4.0</td>
<td>1.3 5.0</td>
<td>2.5 4.0</td>
<td>2.3 3.8</td>
<td></td>
<td></td>
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<tr>
<td>SiteBuilder 3D</td>
<td>2.4 3.0</td>
<td>2.7 3.0</td>
<td>2.8 3.0</td>
<td>2.1 5.0</td>
<td>1.3 5.0</td>
<td>2.3 5.0</td>
<td>2.4 4.0</td>
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<tr>
<td>ESRI ModelBuilder</td>
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<td>3.7 3.0</td>
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<td>MultiGen Paradigm</td>
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<tr>
<td>OrthoMapper</td>
<td>1.7 5.0</td>
<td>2.5 3.0</td>
<td>1.8 4.0</td>
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<td>2.2 3.0</td>
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<td>Placelit! PC Monitor Display Version</td>
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<td>Smart Board Display Version</td>
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<tr>
<td>What if?</td>
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<td>2.5 3.0</td>
<td>1.8 4.0</td>
<td>c c</td>
<td>2.2 4.0</td>
<td></td>
<td>2.2 3.7</td>
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<tr>
<td>Total Evaluations</td>
<td>4 4 3 0</td>
<td>7 7 5 5</td>
<td>2 2 2 2</td>
<td>6 6</td>
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<td></td>
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<tr>
<td><strong>Total Score</strong></td>
<td>2.5 3.4</td>
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</tbody>
</table>
RGIS – Chesapeake Wilkes University

CITYgreen Evaluation

December 2003

RGIS Site Contact Information

Dale Bruns
College of Science & Engineering
Wilkes University
150-180 South River Street
Wilkes-Barre, PA 18766
570-408-4603
dbruns@wilkes.edu

PSS Evaluation Contact Information

Same as site contact information.

Background

As part of our RGIS agreement with the various planning support software (PSS) developers, we are providing an evaluation of:

CITYgreen
American Forests

Evaluation

We have prepared a separate evaluation for each PSS product, which was incorporated in their CDP to do this. We address the following ten questions:

Technical Component

Ranking of Each Product

Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where
1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

We have installed the software for CITYgreen (Cg) in our GIS teaching lab, and on various faculty and research project PC laptops purchased as part of various RGIS project developments, including its use for the Dallas borough application integrated into CommunityViz. We encountered no difficulties and did not need any technical support from our GIS technicians or IT help desk staff, who often provide these services to professors at Wilkes University. Occasionally, an operational error would occur in the early uses, and the software would need to be reloaded, but usually things went well and stabilized on the second try. We followed installation instructions as provided in the manual. We would rate our experience with Cg as an “agree” or score of 1.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

The learning curve was not extremely steep, nor extremely long. However, two days of moderate difficulty training is needed to be successful. The good part is that the first day is a reasonable introduction to GIS concepts and to ArcView for new users. The conceptual basis of Cg is good and accessible to most interested and informed people even though they might be first time users of GIS.

In general, the documentation was well written and one can learn some good introductory GIS and also become familiar with the basic options and power of Cg software. We would “agree” (i.e., a rating of “2”) with the documentation being well written with good examples and available help files. We also agree on a ranking of “agree” (rating of 2) in regard to the statement on “easy to use.”

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

The software performed quite well in general, and speed, responsiveness, stability, and reliability were very good. Occasionally, a segmentation error would occur, but
a “repeat run” of the particular parameters of interest usually went without a problem (sometime, not often though), one would need to logout out of the software and start again, but generally, basic data files were intact (if they were saved). Overall rating of 2 (agree) on this statement.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

In its current version, Cg now easily uses either satellite imagery (for regional or watershed applications) or local aerial photography (for single home or neighborhood, or development, or urban area) for more detailed applications. The ease of using satellite imagery only became available in the last two years and this adds a lot of capability. Rating on these criteria: 1 (strongly agree).

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

Excellent pricing for universities, non-profits, local government, and industry. Strongly agree (1).

Application Component

6. Background: Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The client is a local borough manager and an emerging community watershed group, along with local merchants who want to restore a “historic” downtown ambience to their borough; a visioning group and land trust organization are also active. No one has much technical expertise but there is considerable interest and motivation with developing GIS capability within the community. The community is out of the mining area located nearby but under extreme pressure for development (strip malls and large suburban homes). The community (under the leadership of the borough manager) is applying for planning and environmental management grants and GIS is critical in their game plan. We also used this for another smaller community development project as an environmental engineering student team design project; there were similar background issues as for the Dallas borough application (within CommunityViz).
7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

In conjunction with the use of CITYgreen with CommunityViz, applications to date have helped identify and re-enforce their ongoing concerns about maintaining quality of life, moving forward with regional planning via a “council of governments” (4 townships, including the borough), working on environmental issues of watershed management, strategizing on traffic blockages and congestion, and developing regional marketing ideas for ecotourism for the borough with a view toward “landscape” and “watershed” ecology. In other words, the borough manager has progressively expanded his vision and our applications would appear to facilitate solutions to these emerging issues and community activities. For the student project, stand-alone use of Cg was excellent and well received.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

For the Dallas borough, none were observed. For the other stand alone student project, their Cg application was presented at a national meeting of applied geographers and peer reviewed and published in their annual proceedings (two of the three students are now in graduate school).

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

None at this time.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

<table>
<thead>
<tr>
<th>Not Appropriate</th>
<th>Not Very Appropriate</th>
<th>Appropriate</th>
<th>Quite Appropriate</th>
<th>Very Appropriate</th>
</tr>
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5. Very Appropriate – hits the target out of the box, both useful and adaptable.

CITYgreen was appropriate to quite appropriate (rating of 3.5) since some technical skill is required. However, it is a good application tool for new users of GIS who have an interest in environmental planning.

Site Overview

A. A description of the goals and objectives of your CommunityViz Pilot

Our primary goals with CommunityViz software include: developing watershed, subwatershed, and local plot/local government (urban and/or rural) applications for environmental planning, conservation easements, environmental education, and 3-D visualization of various land use/land cover scenarios vs. predicted environmental responses and conditions. Our objectives are focused on "tech transfer" and implementation of SiteBuilder 3D and Scenario Constructor in a variety of spatial scales and settings, urban to rural, local to watershed. In addition, we would like to offer training in CommunityViz as part of our tech transfer efforts in the promotion of geospatial technologies consistent with the mission of RGIS. In the longer term, we would like to be able to use Policy Simulator with a fully developed local data set (parcel based, local scale) and a core group of trained GIS analysts with local government; this would be an objective for our second or third year RGIS work with CV.

We plan to work closely with the North Branch Land Trust (NBLT) to develop several education and planning modules for our joint use in environmental planning in the Upper Susquehanna-Lackawanna Watershed. The NBLT is networked closely with other GIS practitioners, especially those in County Conservation Districts in our region. These folks are at various technical levels of expertise, but typically at entry level and in need of basic GIS training - which we are sponsoring both through RGIS and EPA. The Heritage River steering committee, a local sanitary authority, and several other watershed partners will be brought in for coordination, GIS demo’s or environmental education with CV, but NBLT will be the central partner in our initial efforts.

B. A description of your RGIS Site

Our RGIS site is focused on the Upper Susquehanna-Lackawanna Watershed, an American Heritage River (AHR), in eastern PA. We also work with other rural counties in the region, but generally as part of the larger Chesapeake Bay Watershed. The AHR watershed has been heavily impacted over the last 100 years not only from
coal mining in the Northern Anthracite Field but also from more than 200 combined sewer overflows (CSOs) that unload human sewage mixed with stormwater into the mainstem river during storm events. Although the cities of Scranton, Wilkes-Barre, and Hazleton are recognized as a Metropolitan Statistical Area, with combined populations around 150,000, the other 188 townships, municipalities, and boroughs in the watershed make up the remaining population of 350,000. These live largely in small towns across 10 counties with the usual problems of economic stagnation in rural areas but strongly exacerbated by the negative legacy of coal mining. In 1998, President Clinton designated the Upper Susquehanna-Lackawanna (US-L) River as one of 14 American Heritage Rivers (AHR) from a field of over 120 applicants nationwide.

C. A description of the Pilot Site

We anticipate and plan to use the entire AHR watershed (2000 square miles) for a broad-scale environmental application and visualization with CommunityViz. However, certain aspects of land use, land cover, conservation, and/or “smart (sustainable) development” might be highlighted for a selected small tributary watershed (e.g., 4-400 square miles) or local study “plot” within a watershed or local community (e.g., 0.25-0.50 square miles).

D. Proper contact information for the person at your site that will be involved with / coordinating the CommunityViz Pilots

Dale Bruns
PA GIS Consortium
GeoEnvironmental Sciences and Engineering Department
Wilkes University
Wilkes-Barre, PA 18766
570-408-4610 (department office phone)
570-408-07865 (FAX)
dbruns@wilkes.edu

E. Anything else important to your pilot (relative to CommunityViz)

Short-term assets for broad scale watershed applications with CV include various geospatial databases and GIS analyses for the AHR watershed and individual tributaries (but these have not been integrated nor visualized via a GIS platform like CV). A longer-term asset is that we are partnering with several counties that have made local parcel scale data available for GIS demo projects. As we develop expertise in CV, and train these local partners, we may be able to use the “higher” end applications of CV like Policy Simulator. In addition, web based GIS with ESRI’s ArcIMS is a special focus area with our local partners and this would also open up interesting future applications of CV results and analysis with a regional strategy of distributed, web based GIS.
Bruns, D.A., T. Sweet, J. Thomas, B. Toothill, J. Longmore, and J. Moskovitz

Title: A GIS visualization tool for watershed assessment in environmental planning.

Abstract: The PA GIS Consortium and the GeoEnvironmental Sciences and Engineering Department at Wilkes University have been conducting watershed analysis of land use, land cover, and water quality for the Upper Susquehanna-Lackawanna American Heritage River over a regional watershed of 2000 square miles. Toby Creek is an important tributary stream in this watershed and lies within the heart of the scenic “Back Mountain” area valued by most residents for its high quality of life. Since this area is a prime candidate for significant ongoing suburban development, a borough and three townships are forming a council of governments (COG) to work together on community planning, sustainable development strategies, and conservation and watershed issues. In this context, a local watershed group is emerging and a GIS capability is being developed to assist in the decision support process currently underway. To date, CommunityViz has been used in conjunction with CITYgreen to develop and visualize environmental indicators and predict stormwater runoff and water quality changes regarding a “build-out” scenario on agricultural meadows within the Toby Creek watershed as a whole. This was intended as a first step to facilitate environmental outreach, education, and the use of GIS in community watershed planning.

One member of the COG, Dallas Borough, is conducting a community visioning process and taking on a leadership role in the formation of the watershed group. Plans and GIS data development are underway to evaluate environmental change in regard to several zoning scenarios based on the use of CommunityViz-CITYgreen analysis from an “interactive” mode (i.e., “on-the-fly” in real-time response to citizen questions); the goals are to facilitate community discussion and decision making, support sustainable growth and community development objectives, and promote watershed protection. The use of the 3-D GIS component of CommunityViz is planned for selected examples in the Dallas Borough.
RGIS Site Contact Information
Dale Bruns
College of Science & Engineering
Wilkes University
150-180 South River Street
Wilkes-Barre, PA 18766
570-408-4603
dbruns@wilkes.edu

PSS Evaluation Contact Information
Same as site contact information.

Background
As part of our RGIS agreement with the various planning support software (PSS) developers, we are providing an evaluation of:

CommunityViz
Scenario Constructor
SiteBuilder 3D

Orton Foundation

Evaluation
We have prepared a separate evaluation for each PSS product, which was incorporated in their CDP to do this. We address the following ten questions:

Technical Component

Ranking of Each Product
Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where
1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

We installed the software on the PC laptop purchased as part of this RGIS project. We encountered no difficulties and did not need any technical support from our GIS technicians or IT help desk staff, who often provide these services to professors at Wilkes University. Based on hearing from other RGIS sites, we anticipated a few problems, but basically we did not seem to have encountered these. We followed installation instructions as provided in the manual. We would rate our “painless” experience very high with a “strongly agree” or score of 1.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

The learning curve did not seem to be extremely steep (SiteBuilder and Scenario Constructor only; we did NOT try Policy Simulator) but it was a fairly long and detailed road in getting familiar with all the options and to develop reasonable skill with both of these modules. The training in Boulder was crucial and it provided an excellent opportunity for the RGIS sites to network with each other on our community development projects and with the training staff. Without the Boulder training though, it would seem to be a difficult path with a steep learning curve.

One needed to be very organized in setting up indicators for use “on the fly” but the menus were straightforward and the examples provided in training were very helpful. Likewise, one needed to be very organized in looking at alternative scenarios and comparing them. Neither activity was difficult but keeping an “eye on QA” demanded that formula used in the indicators and scenario comparisons to be doubled checked for typing errors. Also, it took me (Dale) a while to be able to “fly in 3-D mode” but after consistent practice this came fairly natural.

One of our “higher-end” GIS Analysts was able to work through the sample examples and early versions of my third to fourth examples of small watershed applications of CommunityViz. He then quickly picked up the skill to populate a whole borough with houses symbolized by zoning category and set up a 3-D fly through or drive through that were quite effective for demonstrations. He did not work through Scenario Constructor so we do not have other attempts for evaluation.
One of our senior students with excellent GIS skills was able to make it through most of the training modules for Scenario Constructor without any critical problems.

In general, the documentation was well written and one needs to be patient to become familiar with the options and power of these modules. We would “agree” (i.e., a rating of “2”) with the documentation being well written with good examples and available help files. We are probably “neutral” (rating of 3) in regard to the statement on “easy to use.”

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

The software performed quite well in general, and speed, responsiveness, stability, and reliability were very good for fly throughs on a 3-D watershed basis (e.g., based on “TIN” foundation and a greater than 1500 square mile watershed area covering two full counties) and for a local borough of with roads, houses, buildings (n = 1492 for houses and business buildings), trees, and streams all in the “3-D terrain.” However, when flying in from a distance of 3-5 miles toward the borough (with the borough visible on the horizon in 3-D) and still in “watershed” spatial scale, CommunityViz was very slow (and “clunky”): one had to fly away from the direct line of view of the borough and fly-in at an obtuse angle with the borough just out of view. Once close up, in “borough” spatial scale, the software performed very good again on these criteria. Overall rating when in either “watershed” or “borough” spatial scales – 1.5 (agree to strongly agree); in “mixed mode” (both watershed and borough in direct view for fly through mode): 4 (disagree with these criteria).

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

We started with data at a watershed spatial scale (e.g., remote sensing imagery at 30m pixel size) and later acquired local scale photogrammetric (2 foot pixel size) and planimetrics (e.g., roads and streams). Software easily accommodated data and integrated well with the two different types of data and spatial scales. It also allowed integration of data products and statistics from another software package (CITYgreen) via “indicators” capability. Rating on these criteria: 1 (strongly agree).

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”
We still consider ourselves to be in “R&D” mode at present with our application. In this context, we are probably “neutral” (rating of 3) in our ranking for this criterion. However, for local communities who want to use CV, especially without Policy Simulator, we would not agree (rating of 4) that the software is well priced and of value. Perhaps, the software could be sold in separate modules at more reasonable prices for the “easier to use” modules and one could purchase Policy Simulator when the local folks later develop better GIS expertise and need.

**Application Component**

6. **Background**: Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The client is a local borough manager and an emerging community watershed group, along with local merchants who want to restore a “historic” downtown ambience to their borough; a visioning group and land trust organization are also active. No one has much technical expertise but there is considerable interest and motivation with developing GIS capability within the community. The community is out of the mining area located nearby but under extreme pressure for development (strip malls and large suburban homes); the community (under the leadership of the borough manager) is applying for planning and environmental management grants and GIS is critical in their game plan.

7. **PSS Appropriateness**: Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

Applications to date have helped identify and re-enforce their ongoing concerns about maintaining quality of life, moving forward with regional planning via a “council of governments” (4 townships, including the borough), working on environmental issues of watershed management, strategizing on traffic blockages and congestion, and developing regional marketing ideas for ecotourism for the borough with a view toward “landscape” and “watershed” ecology. In other words, the borough manager has progressively expanded his vision and our applications would appear to facilitate solutions to these emerging issues and community activities.

8. **Outcomes**: Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).
None were observed. On a minor note, the sophistication of CV might have “scared” some casual community participants relative to jumping into GIS, but this should be overcome through training and the use of student interns.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

Make the pricing and components more modular, for flexible and gradual integration into community projects at their own pace.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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5. Very Appropriate – hits the target out of the box, both useful and adaptable.

CommunityViz was appropriate (rating of 3) since considerable technical skill is required. Its potential is enormous, but the learning curve might be perceived as steep by local communities just barely starting on their “GIS” journey.

**Site Overview**

**A. A description of the goals and objectives of your CommunityViz Pilot**

Our primary goals with CommunityViz software include: developing watershed, subwatershed, and local plot/local government (urban and/or rural) applications for environmental planning, conservation easements, environmental education, and 3-D visualization of various land use/land cover scenarios vs. predicted environmental responses and conditions. Our objectives are focused on "tech transfer" and implementation of SiteBuilder 3D and Scenario Constructor in a variety of spatial
scales and settings, urban to rural, local to watershed. In addition, we would like to offer training in CommunityViz as part of our tech transfer efforts in the promotion of geospatial technologies consistent with the mission of RGIS. In the longer term, we would like to be able to use Policy Simulator with a fully developed local data set (parcel based, local scale) and a core group of trained GIS analysts with local government; this would be an objective for our second or third year RGIS work with CV.

We plan to work closely with the North Branch Land Trust (NBLT) to develop several education and planning modules for our joint use in environmental planning in the Upper Susquehanna-Lackawanna Watershed. The NBLT is networked closely with other GIS practitioners, especially those in County Conservation Districts in our region. These folks are at various technical levels of expertise, but typically at entry level and in need of basic GIS training, which we are sponsoring both through RGIS and EPA. The Heritage River steering committee, a local sanitary authority, and several other watershed partners will be brought in for coordination, GIS demo’s or environmental education with CV, but NBLT will be the central partner in our initial efforts.

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D. Proper contact information for the person at your site that will be involved with / coordinating the CommunityViz Pilots

Dale Bruns  
PA GIS Consortium  
GeoEnvironmental Sciences and Engineering Department  
Wilkes University  
Wilkes-Barre, PA 18766  
570-408-4610 (department office phone)  
570-40807865 (FAX)  
dbruns@wilkes.edu

E. Anything else important to your pilot (relative to CommunityViz)

Short-term assets for broad scale watershed applications with CV include various geospatial databases and GIS analyses for the AHR watershed and individual tributaries (but these have not been integrated nor visualized via a GIS platform like CV). A longer-term asset is that we are partnering with several counties that have made local parcel scale data available for GIS demo projects. As we develop expertise in CV, and train these local partners, we may be able to use the “higher” end applications of CV like Policy Simulator. In addition, web based GIS with ESRI’s ArcIMS is a special focus area with our local partners and this would also open up interesting future applications of CV results and analysis with a regional strategy of distributed, web based GIS.

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response to citizen questions); the goals are to facilitate community discussion and decision making, support sustainable growth and community development objectives, and promote watershed protection. The use of the 3-D GIS component of CommunityViz is planned for selected examples in the Dallas Borough.
RGIS – Chesapeake Wilkes University

OrthoMapper Evaluation

December 2003

RGIS Site Contact Information

Dale Bruns
College of Science & Engineering
Wilkes University
150-180 South River Street
Wilkes-Barre, PA 18766
570-408-4603
dbruns@wilkes.edu

PSS Evaluation Contact Information

Tom Sweet
College of Science & Engineering
Wilkes University
150-180 South River Street
Wilkes-Barre, PA 18766
570-966-6826
tsweet@lircgis.com

Background

As part of our RGIS agreement with the various planning support software (PSS) developers, we are providing an evaluation of:

OrthoMapper

Image Processing Inc.

Evaluation

RGIS-Chesapeake Wilkes University is providing this review of OrthoMapper. It should be stated, however, that the software evaluated was not considered a planning support software package. OrthoMapper is a softcopy photogrammetric software package designed to provide GIS professionals a low cost alternative to the more expensive soft copy photogrammetric software packages and to avoid the cost associated with certified photogrammetrist. Utilizing a methodology called “visual orientation” OrthoMapper can be used to create orthophotos from scanned unrectified photographs. The original intent was to evaluate the ability of OrthoMapper to meet the self imposed challenge of producing digital orthophotos without the cost increasing factors listed above. It quickly became apparent that it could and a secondary evaluation component emerged focusing on the implications of its use.
**Technical Component**

**Ranking of Each Product**

Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

**Ranking 1: 1**

The package loaded the first time in accordance with the documentation. We experience no loading problems.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

**Ranking 2.1: 2**

“The software was easy to use,” is at best a relative statement. With 10 plus years or experience in designing, managing, delivering and providing QA/QC activities to photogrammetric projects for local government applications we found the software a bit challenging to use but significantly less so than other Soft Copy software packages. Its ease of use was significant enough in complex product development that consideration should be given that this process may not be for those with no experience in photogrammetry and that to do so may produce product unable to support the intended application though it may look as though it does.

**Ranking 2.2: 2**

The documentation provided by the hard copy manual that came with the software was largely free of significant errors or inconsistencies and provided adequate technical backup.
3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to "The software performed very well."

**Ranking 3: 2**

The software was loaded on a Dell Inspiron 7500 with 256K of RAM running Microsoft’s NT 2000 professional. There were no hardware issues. The performance of the OrthoMapper software package was uneventful. It’s demand upon the hardware was similar to the AutoCAD, MicroStation and ARCINFO software packages running on the same computer. According to the manufacturer it will run adequately on a computer with significantly less resources. We found no reason to believe it would not. The minimum specifications were:


**Minimum Memory:** 64 MB of RAM.

**Recommended Memory:** 128 MB of RAM. Additional memory will speed up operations on large images.

**Parallel Port:** A parallel port to which you attach the hardware key is required. The key is passive and will not affect the use of a printer or other peripheral attached to the port.

**CD-ROM Drive:** Required for program installation.

**Hard Disk Space:** Although this software without examples takes up less than 20 MB of disk space, a 2 GB hard drive is considered a minimum for realistic projects or complete installation of the examples. At least, 250 MB of free space should be available for the operating system to use as swap space when processing images. A larger hard drive may be required for large projects.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources."

**Ranking 4: 1**

The OrthoMapper software package successfully loaded all of the digital files we attempted to use in the operation of our tests.
5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

**Ranking 5.1: 1**

When *quantitatively* comparing OrthoMapper, at $2,000 to $3,700, to Socet Set Softcopy (as Dr. Scarpace frequently does) it is very difficult to give OrthoMapper anything put a rating of “strongly agree,” when considering the $150,000 to $200,000 retail price of a Socet Set Softcopy license and accompanying hardware (not to mention the salary to run it).

**Ranking 5.2: 2**

When *qualitatively* comparing OrthoMapper to Socet Set Softcopy it is a bit more challenging and requires some subjective interpretation of the intended purpose of the software package. On the one hand, the professional mapping and photogrammetric firms that assisted in this evaluation determined to their individual levels of satisfaction that the algorithms and or procedures representing the core engine(s) of OrthoMapper operate sufficiently to produce similar quality products as compared to Socet Set, and give similar quality inputs. On the other hand persons of lower technical expertise consistently produced outputs of lower quality and less efficiently given identical inputs. However, our subjective analysis is that OrthoMapper was intended to compete in markets focusing on the quality and of limited quantity of output terms, not in markets focusing production quantities of output.

Comparison of the products on a production tool level basis would lead to a significantly different ranking in this, as well as, most other categories.

**Application Component**

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The evaluation of OrthoMapper originally focused on the capabilities of OrthoMapper as a softcopy photogrammetric software package, frequently compared to Socet Set Softcopy software and therefore its ability to provide GIS professionals a low cost alternative to the more expensive soft copy photogrammetric software packages. Utilizing a methodology called “visual orientation” OrthoMapper can be used to create orthophotos from scanned unrectified photographs. The original intent was to evaluate the qualitative capabilities of OrthoMapper such as, but not limited to:
FEATURES:

- User interface
- Impact of scanner quality: desktop scanners vs. photogrammetric quality scanners
- Tie and control points management
- Visual Orientation™ Methodology - the point and click method of orienting images
- Camera calibration data impacts: having it vs. not having it
- Orthophoto production
- Block adjustment
- Updating existing orthophoto from new imagery
- Display digital images in color or black and white
- Flicker function for change detection
- Transformations between projections and datums
- Importing DEMs
- Importing scans, JPEG files etc.
- Rotation of digital images

To facilitate our evaluation we secured input from certified photogrammetrists from two different private sector professional mapping firms licensed to work in their state. We chose contract prints from areas that we had already completed the creation of 200 scale planimetrics and digital orthos using traditional photogrammetry and Socet Set Softcopy. We used a variety of scanners and DEM sources with and without camera calibration reports. We used the original planimetrics as a benchmark on the digital ortho’s created with OrthoMapper.

7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

To gauge the appropriateness of the use of OrthoMapper requires that one knows the application that the OrthoMapper generated products are being created to support. The quality of the OrthoMapper generated outputs is entirely dependent upon the quality of the inputs. In some instances the outputs that OrthoMapper generated would not have met National Map Accuracy standards. Is this an issue? In some applications we suspect that it would be, in others we suspect not. It is, however, an important element for the metadata files as data once created has a habit of being disseminated and ultimately being used for purposes that it was not intended for.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).
Ultimately we found that OrthoMapper does indeed deliver on the promises it makes to provide a low cost alternative to the more expensive softcopy software packages to the GIS and Natural Resource professional(s). Further we found that given high quality inputs and a solid technical understanding of photogrammetry OrthoMapper outputs compare almost indistinguishably from those produced by Socet Set Softcopy.

However, OrthoMapper falls short of being a viable production tool where efficiency and related production costs are taken into consideration. The “bells and whistles” of the production tools like Socet Set and other softcopy photogrammetric software packages will most likely be deemed necessary when compiling the digital orthos and related mapping products for hundreds or thousands of square miles. Further, it has become apparent that under certain conditions OrthoMapper in the hands of the uninformed or untrained could easily lead to the compilation of good looking yet inaccurate data sets that could adversely affect decision making. Yet it is clear that this type of activity is not the result of the software but rather the misuse by its owner.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

We intend to publish our finding in an RGIS bulletin and continue the evaluation of OrthoMapper as time and resources permit including its use with QuickBird imagery.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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Where:
1. Not Appropriate – not at all useful or adaptable.
2. Not Very Appropriate – consider technical support needed to be useful and adaptable.
3. Appropriate – with technical expertise support, use and adaptable.
4. Quite Appropriate – limited technical support needed to be useful and adaptable.
5. Very Appropriate – hits the target out of the box, both useful and adaptable.

**Ranking 10.1: 1**
However, where the product is being used to support an application over a limited area where all of the inputs themselves are within the accuracy parameters established by the application its use would be very appropriate and cost effective.

**Ranking 10.2: 5**

However, where the product is being used to create base mapping products as a foundation for and enterprise wide GIS deployment utilizing inappropriate inputs and equipment such as free 30 meter DTM’s from the net, desk top scanners and college interns or minimally trained local government staff its use would be very inappropriate if the ultimate goal was 200 scale, NMAS compliant data sets.
RGIS – Chesapeake Penn State
CommunityViz Evaluation
December 2003

___________________________________________________________________

RGIS Site Contact Information
Rick Day
College of Agricultural Sciences
116 A.S.I. Bldg
University Park, PA 16802
814-863-1615
rday@psu.edu

PSS Evaluation Contact Information
Same as site contact information.

Background
As part of our RGIS agreement with the various planning support software (PSS) developers, we are providing an evaluation of:

- CommunityViz
  - Policy Simulator
  - Scenario Constructor
  - SiteBuilder 3D
- Orton Foundation

Technical Component

Ranking of Each Product
Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

**Rating: 2**

Installation was simple, however, installation of the tutorials was time consuming (different files needed to be placed in different folders).

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

**Easy to Use: 2**  
**Well Documented: 4**

The learning curve on CommunityViz was short. The software is relatively self-explanatory – particularly if using the wizard, once you understood how the program functions. However, technical issues with the software (including the dbf files) have some named ranges and decimal place settings that prevented the build-out from functioning correctly.

These issues came into play when running buildout on a LARGE AREA with many zoning categories. In this situation, the wizard was too slow to manage the input of 200+ zoning categories so we by-passed the wizard and edited the DBF files directly in EXCEL to save time.

The software is seemingly designed for use with smaller communities as opposed to larger areas.

**Problem One: Named Ranges**

For example, the dbf file contained a named range, which encompassed the zoning categories that were added to the default zoning categories. However, if you attempted to edit the dbf file outside of ArcView, you need to modify the named range to include the new zoning categories. If you do not do this, when you run through the wizard in CommunityViz, the added zoning categories will NOT APPEAR.

**Problem Two: Decimal Settings**

Also, in the minimum lot size field of the DBF, the cell are set to “0” decimal places. What this means is that when you have a lot size of .23 acres, it will round down to
“0”. This in turn affects buildout because the lots with a size of “0” will not be developed.

**Problem Three: Default Values**

When editing the landuse categories in the wizard you can “edit defaults”. This allows you to bring up and edit the defaults.dbf table. This table contains all of the landuse values (minimum lot size, efficiency, etc.) together with the zoning codes.

It would seem natural to edit that table instead of running through all of the steps of the wizard and inputing the data separately. However, when you edit the defaults table, you are NOT changing the settings for each category field (i.e., you can change the default minimum lot size value for “R1”). However, if you do not change the value in the “Density” tab of the wizard, the new value will NOT take effect.

This glitch was acknowledged in the update to Viz, however, it still presents a source of potential confusion for anyone who wishes to input their data all at once as opposed to going through the many different tabs offered in the wizard.

**Documentation Issues**

Documentation on these issues did not exist at the time. Improved documentation was available in the Viz update, however, it did not address the issues of the DBF tables.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

**Rating: 4**

The software performed well at a LARGE scale – that is with a SMALL AREA. However, it took several days to run an entire county’s worth of data.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

**Rating: 2**

While data compilation consumed a large portion of our time in this project, we ran into no problems in terms of the data integrating into the software. The software integrated well into our workflow.
Policy Simulator Rating: 5

The policy simulator did not integrate into our workflow because of its “closed, black box” approach. We could not find documentation that explained the model used in computing the results of the simulations. Therefore, we did not use it!

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

Rating: 5

While I do believe that the software is an INVALUABLE planning tool, particularly for individuals with limited advanced GIS knowledge, the cost of the software deems it inaccessible to many different and important target audiences. Rural communities simply do not have the kind of funding necessary to purchase this software. In addition, the software REQUIRES some sort of GIS support in terms of gathering and compiling the data to begin with. The software is simply TOO EXPENSIVE for smaller communities. However, it is more affordable to larger institutions and government bodies.
RGIS – Great Lakes

Evaluation of Planning Support Software (PSS) used in Community Demonstration Projects

December 2003

RGIS Site Contact Information
Steve Ventura
Land Information & Computer Graphics Facility
University of Wisconsin-Madison
550 Babcock Drive
Madison, WI 53706
608-263-5534
sventura@wisc.edu

PSS Evaluation Contact Information
Tom McClintock
Land Information & Computer Graphics Facility
University of Wisconsin-Madison
550 Babcock Drive
Madison, WI 53706
608-263-5534
tlmcllin@wisc.edu

Technical Component

Ranking of Each Product

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

**CommunityViz – Policy Simulator**

Installation: 3

**CommunityViz – Scenario Constructor**

Installation: 2

Program installs easily with wizard and loads in ArcView as an extension.
CommunityViz – SiteBuilder 3D  Installation: 2

Program installs easily with wizard and loads in ArcView as an extension.

ModelBuilder  Installation: 3

OrthoMapper  Installation: 2  Easy to install.

Placelt!  Installation: 2  Easy to install.

What if?  Installation: 2  Easy to install.

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2. How easy was the software to use, what was the shape of the “learning curve.”
What technical skills (outside of any planning or “domain” skills) were needed to
effectively use the software? How well was the documentation written, the help
files? Provide a numeric score for your response to “The software was easy to
use” and to the statement “The software was well documented.”

CommunityViz – Policy Simulator

2a. Ease of use: 5 - Program was very difficult to use and took a long time to learn.
Results appeared unrealistic and skewed from incomplete local building and
agent data.

2b. Documentation: 3

CommunityViz – Scenario Constructor

2a. Ease of use: 3 - Requires proficiency in use of ArcView. Basic tasks are
moderately easy but full use of the program (i.e. formula writing) requires several
weeks of learning.

2b. Documentation: 2 - Documentation is good and support is as well.

CommunityViz – SiteBuilder 3D

2a. Ease of use: 3 - Requires proficiency in use of ArcView. Can take a while to learn
navigation skills.

2b. Documentation: 3 - Seems reasonable.

ModelBuilder

2a. Ease of use: 4 - Difficult to learn how to use.

2b. Documentation: 4 - Documentation is not very good.
**OrthoMapper**

2a. Ease of use: 3 - Some functions in OrthoMapper are very easy to use but to fully use the program requires a weeks worth of training and some background in photogrammetry.

2b. Documentation: 3 - Documentation is spotty in places.

**PlaceIt!**

2a. Ease of use: 2 - This is a very easy program to use.

2b. Documentation: 3 - The documentation is not very detailed.

**What if?**

2a. Ease of use: 4 - The Setup module is difficult to learn and requires advanced GIS technical skills to put together the analysis layers in the UAZ file.

2b. Documentation: 2 - The documentation is generally okay but does not completely address some of the problems that can occur.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to "The software performed very well."

**CommunityViz – Policy Simulator**

Performance: 5

Policy Simulator took way too long to calibrate and run a simulation. Program often crashed but it was still in beta.

**CommunityViz – Scenario Constructor**

Performance: 2

Great additional tools to ArcView, although some calculations take too long.

**CommunityViz – SiteBuilder 3D**

Performance: 2

**ModelBuilder**

Performance: 3

Performance is okay.

**OrthoMapper**

Performance: 2

The product performs very well.
**Placelt!**

Performance: 2

The performance is based on how well ArcView performs since this is an ArcView project.

**What if?**

Performance: 2

Program runs quickly and is stable.

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4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

**CommunityViz – Policy Simulator**

Integration with data and Processes: 5 - Very data intensive and required use of APA’s LBCS categories, which was too inflexible.

**CommunityViz – Scenario Constructor**

Integration with data and Processes: 1 - Works with existing data in ArcView at any level of complexity. Variables and formulas allow for great flexibility in customizing applications.

**CommunityViz – SiteBuilder 3D**

Integration with data and Processes: 3 - Much better tools then 3d Analyst. Some data was too detailed to extrude in 3d, like forest polygons, and didn’t work right.

**ModelBuilder**

Integration with data and Processes: 4 - Requires converting all data to Grid format.

**OrthoMapper**

Integration with data and Processes: 3 - Can accept most image formats. Dems require exporting as an ASCII file.

**Placelt!**

Integration with data and Processes: 5 - Very difficult to use this program with clients data. The two projects (Verona and Town of Clover) required customizing the program to use their data. Requires Avenue programming skills to use it with any other data.
**What if?**

Integration with data and Processes: 2 - Input and output are shapefiles so can work with other ESRI related programs easily.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

   **CommunityViz – Policy Simulator** Value: 4
   
   This product won’t sell! The vendor no longer sells it anyway.

   **CommunityViz – Scenario Constructor** Value: 2
   
   A bit expensive but a lot for your money.

   **CommunityViz – SiteBuilder 3D** Value: 3

   **ModelBuilder** Value: 4

   **OrthoMapper** Value: 2

   **PlaceIt!** Value: 1 It's free so it's a bargain.

   **What if?** Value: 3

**Application Component**

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

   **CommunityViz – Policy Simulator**

   The client was the Town of Verona looking to create an open space plan and farm priority zones. Verona’s rural character is threatened by development pressure. Future growth scenarios were of interest. Verona’s Planning Task Force was very motivated but did not have many GIS technical skills.
**CommunityViz – Scenario Constructor**

Program was used in the Black Earth Creek watershed in Dane County to calculate impervious surface area for future development scenarios.

**CommunityViz – SiteBuilder 3D**

Program was used to visualize a proposed mixed use development in Verona.

**ModelBuilder**

Winnebago County was interested in having Environmental Corridors created using a model that allowed adjusting criteria and scoring.

**OrthoMapper**

Program was used at the Arboretum for ortho-rectifying new aerial photograpy.

**PlaceIt!**

Used it for the Town of Verona and the Town of Clover to explore existing land use and future land use.

**What if?**

The product was used in the Black Earth Creek watershed in Dane County to model future growth looking at several different densities of development. The results were then used in Scenario Constructor to calculate impervious surface area for the future development scenarios.

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7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

**CommunityViz – Policy Simulator**

Product never really addressed the future growth scenarios in a way the Task Force could use.

**CommunityViz – Scenario Constructor**

Program was a useful tool for the project and captivated the interest of the Wisconsin DNR, USGS Hydrologist and the Black Earth Creek Watershed Association, to name a few.
CommunityViz – SiteBuilder 3D

It has been difficult to produce 3d visualization that has had a significant impact on the decision process so far.

ModelBuilder

Works pretty well for suitability analysis. We were able to change the importance of floodplains and rerun the analysis in about 5 minutes.

OrthoMapper

The product was very appropriate for the task.

PlaceIt!

Worked very well in engaging citizens in the exploration and allocation process without a lot of GIS training. In conjunction with Smart Board technology, it allowed groups of people to interact with the program at the same time.

What if?

Worked okay for general growth analysis using different suitability criteria and growth assumptions but has problems allocating on a parcel level. Adjustments to the criteria can be made on the fly in a meeting but adding new factors requires creating a new UAZ file and running the Setup module again. Some problems with build out scenarios allocating to the wrong land use.

8. Outcomes: Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

CommunityViz – Policy Simulator

The Orton Foundation found it useful to have their software tested while in Beta.

CommunityViz – Scenario Constructor

Because of a published article in ArcNews there has been significant interest in the project and SC from people outside of Wisconsin.

CommunityViz – SiteBuilder 3D None.

ModelBuilder None.

OrthoMapper None.
We found citizens adapting to the program on the Smart Board very quickly and they wanted to “be in the drivers seat.”

None.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

**CommunityViz – Policy Simulator**

If another attempt is made to develop an allocation model better to not use an agent based one. Use something along the lines of the What if? program.

**CommunityViz – Scenario Constructor**

Better integration with a program like What if? for allocation and impact assessment. Speed up calculations of formulas or allow turning them off when not needed.

**CommunityViz – SiteBuilder 3D**

Needs better analytical tools and integration with GIS.

**ModelBuilder**

Include all the functionality in Spatial Analyst and include vector functions.

**OrthoMapper**

Needs better documentation.

**Placelt!**

Needs a utility to translate a client’s spatial database into the format Placelt! requires and a method to easily change the variables and icons.

**What if?**

Needs to solve the problem of being constrained by the minimum size of individual UAZ’s when 2 adjacent UAZ’s meet the allocation. Better integration with Scenario Constructor for impact assessment would be useful size requirement.
10. **Ranking of Each Product**: On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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- **CommunityViz – Policy Simulator** Value: 1
- **CommunityViz – Scenario Constructor** Value: 4
- **CommunityViz – SiteBuilder 3D** Value: 3
- **ModelBuilder** Value: 3
- **OrthoMapper** Value: 3
- **PlaceIt!** Value: 2
- **What if?** Value: 3
RGIS – Great Plains

Summary of Planning Software Support (PSS) Systems

December 2003

RGIS Site Contact Information
Leon Osborne
Odegard Hall, Room 257
University of North Dakota
4125 University Ave
Grand Forks, ND 58202-9007
701-777-2479
leono@rwic.und.edu

PSS Evaluation Contact Information
Scott Kroeber
Odegard Hall, Room 257
University of North Dakota
4125 University Ave
Grand Forks, ND 58202-9007
701-777-2398
scottk@rwic.und.edu

Technical Component

Ranking of Each Product

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CommunityViz

There were no issues with the installation of software and no problems were encountered. CommunityViz software as a whole was not easy to use. I would have to say the shape of the learning curve was steep. As an overall package I am “neutral” on the statement that this software is easy to use. Scenario Constructor was acceptable but Policy Simulator with its data intensive inputs was very time consuming and difficult. Policy Simulator was not used at RGIS-GP for our Community Demonstration Projects (CDP). Concerning the software performance, speed and responsiveness was good, but stability and reliability was questionable. We were running the software on a Sony Vaio and seemed to encounter “segmentation violation” type errors when working with scenarios. I know that CV
recommended Dell hardware for CommunityViz and that might have been the problem. The concern I have with hardware specific software is that in the actual user community you do not have that luxury of purchasing at will and usually have to work with current systems. The price of the software was acceptable but would be more beneficial if Policy Simulator was not incorporated in the main package and the price was lowered. I feel the main strength of this software is the visualization and I don't think anyone should underestimate its value purely from that standpoint. I also think that ModelBuilder should replace Policy Simulator and keep the price the same.

Installation was simple and straightforward: 2
The software was easy to use: 3
The software was well documented: 4
The software performed very well: 3
The software integrated well with existing processes and data sources: 2
The software is well priced with respect to its value and target audience: 3

OrthoMapper

There were no issues with the installation of software and no problems were encountered. OrthoMapper as a whole was easy to use. Software performance was good, with speed and responsiveness being machine “hardware” dependant. Stability and reliability were also good. The software integrated with other software well since the output was a common file format. The price of the software was acceptable with respect to its target audience.

Installation was simple and straightforward: 2
The software was easy to use: 1
The software was well documented: 2
The software performed very well: 2
The software integrated well with existing processes and data sources: 2
The software is well priced with respect to its value and target audience: 2

Pop Dot (Placelt!)

There were no issues with the installation of software and no problems were encountered. The software was fairly easy to use with the shape of the learning curve being moderate. Again, the software performance was good, with speed and responsiveness being machine “hardware” dependant. The software integrated well with other software. With respect to integrating with external aspects of our workflow I would have to say that since RGIS-GP does not have an emphasis in community planning we would defer judgment on that aspect. I would say that the cost of the software is comparable to its value and that most user groups would feel the same.
Installation was simple and straightforward: 2
The software was easy to use: 2
The software was well documented: 3
The software performed very well: 3
The software integrated well with existing processes and data sources: 2
The software is well priced with respect to its value and target audience: 2

What if?

There were no issues with the installation of software and no problems were encountered. What if? as a whole was easy to use. Software performance was good, with speed and responsiveness being machine “hardware” dependant. Stability and reliability were also good. The software integrated with other software well since the output was a common file format. The price of the software was acceptable with respect to its target audience. I would say that its simplicity is its strong point for those communities with limited budgets and technical expertise compared to a CV type of software. With its ability to “union” data layers it makes it easy for non-technical people to comprehend the processes involved. With respect to integrating with external aspects of our workflow I would have to say that since RGIS-GP does not have an emphasis in community planning we would defer judgment on that aspect

Installation was simple and straightforward: 2
The software was easy to use: 1
The software was well documented: 2
The software performed very well: 2
The software integrated well with existing processes and data sources: 2
The software is well priced with respect to its value and target audience: 2

CITYgreen and ESRI ModelBuilder were not specifically evaluated for any Community Demonstration Projects (CDP). At the RGIS Washington meeting in 2002, RGIS-GP indicated that we did not have a desire at this time for evaluating those two software packages. ESRI ModelBuilder has been used in the past at RGIS-GP and potentially has a use at our site in the future.

Application Component

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The rural issue that was addressed was the possibility of overland flooding due to extreme rain events within a hydrologic basin and incorporating meteorological data
sets into a GIS. The client was a small bedroom community that has very little expertise. The mayor has a tremendous amount of motivation to see the community grow.

7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

The PSS to some extent addressed the rural issue but since the issue was not specifically a community-planning project other GIS software was used to augment the process.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

No unanticipated outcomes were encountered. Work needs to be continued with this PSS project since just the building blocks have been put in place.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

   **a) What procedural changes would you implement?**

   It is recommended that the PSS vendor list be expanded to provide a broader list of support categories. RGIS-GP was at a disadvantage in the past year as its emphasis is not in community planning. If this broader list is not possible, it is recommended that participation be optional or that individual site be permitted to pursue their own software evaluation under the auspices of the RGIS effort.

   **b) What changes would you recommend the PSS vendors incorporate in the PSS product?**

   The only changes I would recommend is that vendors work on documentation so that examples are given as to how to do something along with educating rather than the common tutorial method of “click here” and then “click here” mentality. Most rural communities are still in the infancy stage with respect to geospatial processes.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.
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CommunityViz: 3
OrthoMapper: 4
Pop Dot (PlacEl!): 3
What if?: 4
CITYgreen: NA
ESRI ModelBuilder: NA
RGIS – Mid-South
CommunityViz Evaluation
December 2003

RGIS Site Contact Information
Fred Limp
Center for Advanced Spatial Technologies
12 Ozark Hall
University of Arkansas
Fayetteville, AR 72701
479-575-7909
fred@cast.uark.edu

PSS Evaluation Contact Information
Brian Culpepper
Center for Advanced Spatial Technologies
12 Ozark Hall
University of Arkansas
Fayetteville, AR 72701
479-575-8745
brian@cast.uark.edu

Background
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Orton Foundation

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

**Ranking: 2**

Installation of the CommunityViz product Suite was well documented and relatively easy considering the separate licensing requirements of the various components (Scenario Constructor, SiteBuilder 3D, Policy Simulator). Licensing each component separately is problematic; especially since licenses are hard-coded to a computer's processor. Excellent technical support and documentation provide sufficient guidance for installation by most GIS users.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

**Ranking: 3**

Users of these products will require training and I believe most GIS users will agree that training is required. Documentation is well-prepared and online help and “Quick-Start Scenarios” are very helpful, but for the 1.3 version of CommunityViz, an above-average understanding of ArcView 3.3 and the Avenue scripting language is helpful for new users.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

**Ranking: 1.5**

While the software was not flawless, it does perform well when users follow the minimum hardware specifications provided within the documentation. Developers have made more than an honest attempt at ‘idiot-proofing’ the Scenario Constructor module by providing data backup and recovery options. I did experience an occasional “lock-up” of the ArcView product during intensive processing of large datasets within Scenario Constructor.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its
output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

Ranking: 2

Most users will require the use of the “optional extensions” to ArcView for data pre-processing. For instance, the clipping of digital elevation models (DEM) for our study area was completed within the Spatial Analyst extension. Novice GIS users will have a challenge with data gathering/formatting and preparation. A multidisciplinary team approach would be recommended for adopters of these technologies, and CommunityViz is well-suited for this workflow as long as the project team is able to interact with the same computer/scenario set-up.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

Ranking: 2

Our project team has informally agreed that this “extension” to ArcView provides many useful capabilities and functions that are “worth” the expense; however, some constituents have wondered when the ArcGIS release will be available. These constituents have already committed to the latest version of ESRI’s software and although they still use ArcView 3.3, they would prefer to purchase the 2nd generation of these CommunityViz components.

Application Component

6. Background: Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

Our community demonstration project was geared to expose a group of local community leaders and their technical support staff to the current capabilities of a desktop decision support system (CommunityViz). The community is facing rapid growth; is moderately sized; and has an established GIS support office, but has not leveraged any near-real-time decision support tools with the capabilities of CommunityViz. Their GIS staff maintains the skills required to adopt these technologies, but lack the available time (and resources) required to educate their leadership as to the possibilities/limitations of these community decision support systems. Our demonstration project team was able to quickly identify possible uses of these products and provide guidance and support during their development, but an exact strategy for incorporation into day-to-day actions was/is still a challenge.
Our goal is to broaden our target audience to include citizen members of the city’s planning related sub-committees such as the Parks and Trails Sub-committee. These plans have not yet been fully executed.

7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

I believe our project team was truly impressed with what could be accomplished within the CommunityViz products, but so far, only the GIS Analyst for the Public School System has expressed an interest in incorporating these tools into day-to-day operations. The team-members from the City who were most excited were at the administration level and do not possess the time or technical capabilities required to develop scenarios or manipulate the software themselves. Therefore, the burden of development and manipulation would fall upon an already overloaded staff within the GIS program office. However, I do feel part of the GIS staff’s hesitation was related to the demonstrated version of the software not meshing with the ArcGIS product, so after the projected December ‘03 release of “Scenario 360” and “SiteBuilder 3D” for ArcGIS we may see a brighter spark of interest from the City’s GIS office.

Other smaller community government organizations and private sector businesses that have seen the results from our local demonstration project have shown great interest in the tools and how they might be applied to their specialty.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

Instant adoption was not evident within our immediate project team, with the exception of Robert Guadagnini of the Fayetteville Public Schools, but this may be due to the pure coincidence of the growth and planning pressures that have been placed upon his school district due to phenomenal growth. Plus, Robert’s administrators have witnessed several “decision support” demonstrations developed within the RGIS-Mid-South office over the past five years. Robert’s position was opened partly due to the demonstrations of GIS technologies to the School Board during our early CADIS projects.

Another unanticipated outcome during this demonstration was the interest generated in an “accurate” estimation of impervious surfaces within the Fayetteville planning area. During our delineation of the Impervious Surface Scenario, several other methods were discussed which included a remotely sensed methodology using Quickbird (DigitalGlobe, Inc.) high-resolution (2.4m/.61m resolution) satellite imagery. The City of Fayetteville and the Fayetteville Public School system...
partnered with RGIS-Mid-South on the purchase of imagery and funded research towards the classification of impervious surfaces within their planning region, which is scheduled to be completed before the end of the 2003 calendar year. The products derived from the Quickbird imagery will enable us to quantify the “impervious surface estimates” we’ve developed within our CommunityViz scenario using only two vector GIS datasets (streets and building centroids). Not to mention the lessons we’ve learned during this process that will be broadcast to our current and future RGIS constituents.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

We’ve gained an appreciation of the technical requirements for a “Scenario” developer and a much better idea of the software’s limitations with regards to data requirements and the extent/size of the datasets that can be incorporated into a decision support system. We could have made our study area much larger for the scenario construction, but would have been near our limits for the current version of the SiteBuilder 3D module. This was a major concern during our early experiments with the product and led us to be more conservative during our study area determination.

I believe this vendor has already taken steps to alleviate the licensing complications of the earlier version of this product, and these enhancements will be available in the near future release.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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4. Quite Appropriate – limited technical support needed to be useful and adaptable.
5. Very Appropriate – hits the target out of the box, both useful and adaptable.

**Ranking:**  
Scenario Constructor (1.3) = 4  
SiteBuilder 3D = 5
RGIS – Pacific Northwest
Planning Support Software (PSS) Evaluation
December 2003

RGIS Site Contact Information
Graeme Aggett, Director
Center for Spatial Information
Central Washington University
400 East 8th Avenue
Ellensburg, WA 98926-7420
509-963-1625
aggettg@cwu.edu

PSS Evaluation Contact Information
Same as site contact information.

Background
As part of our RGIS agreement with the various planning support software (PSS) developers, we are providing an evaluation of:

- CommunityViz
- Policy Simulator
- Scenario Constructor
- SiteBuilder 3D
- What if?

Orton Foundation
Dr. Richard Klosterman

Evaluation
The following report evaluates, documents and reviews the ease of use (i.e., the technical component) of the CommunityViz 1.3 software as well as the appropriateness of the software to address the selected application (i.e., the application component). CommunityViz 1.3 is composed of three modules: Scenario Constructor, SiteBuilder 3D and Policy Simulator. RGIS-PNW reviewed all three modules but only Scenario Constructor and Site Builder 3D were applied within the Community Demonstration Project. Policy Simulator was found to be very data intensive and conceptually difficult to understand (i.e., agent based modeling theory). It should be noted that new version of CommunityViz that has been integrated into the ArcGIS platform has now discontinued the Policy Simulator component.
The What if? planning support software (PSS) system has been used by RGIS-PNW staff but has not been incorporated into the Community Demonstration Project. What if? is an explicitly policy-oriented planning tool for determining what would happen if public policy choices are made and assumptions about the future prove to be true. Under specific land use policy criteria, What if? has the ability to predict where future land development may occur. The Community of Roslyn, at this point in time, is aware of where development may occur within its city limits and what it requires most is an impact analysis of different development scenarios, which may be proposed. This impact analysis of different development strategies will hopefully enable City Council members to make more informed land use decisions in an attempt to meet the objectives of the involved stakeholders. What if? may be more suitable at the County government scale where public policy choices will require long range analysis in an effort to analyze the impacts of land use policies over the long term.

**Technical Component**

**Ranking of Each Product**

Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

“Installation was simple and straightforward.”: 2

Installing CommunityViz 1.3 was a straightforward procedure. The software provides easy to follow instructions and installation wizards to lead the user through the process. The licensing procedure is cumbersome. It requires the user to first apply for two temporary licenses (i.e., One for SiteBuilder 3D and one for Scenario Constructor/Policy Simulator), and then re-apply for two permanent licenses. CommunityViz has recently released a new ArcGIS compatible product, Scenario 360 and also has released CommunityViz 1.4, which continues to operate off of the ArcView 3.2/3.3 GIS platform. The licensing process for these new versions may have been revised making it more user friendly.
2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

“The software was easy to use.”: 2
(assuming a good level of experience working with ArcView GIS knowledge)

“The software was well documented.”: 1

CommunityViz 1.3 was relatively easy to use but initially the learning curve was steep. The CommunityViz user manual states up front that it assumes that users are somewhat familiar with ArcView before using CommunityViz. The user must become familiar with many terms and definitions in order to gain a full understanding of the concepts that are embedded within the software. It is a real asset to have previous experience using GIS technologies especially ArcView 3.2/3.3. Familiarity with GIS concepts and procedures as well as a good understanding concerning the operation and capabilities of ArcView 3.2/3.3 will allow users to quickly learn and effectively use CommunityViz 1.3. The Scenario Constructor and SiteBuilder 3D modules each come with a very comprehensive user manual, which guides new users through the exploration and creation of scenarios and 3D scenes. The CommunityViz website also provides excellent case study information which enables new users the opportunity to observe how actual projects have been developed, including specific formulas and variable creation.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to” The software performed very well.”

“The software performed very well.”: 2

Speed & Responsiveness: These two performance categories are largely dependent upon the technical specifications of the computer on which the software is loaded. The speed of the program and its response time are also directly related to the size of the scenario study area and complexity of the 3D scenario data. As the size of the study area and complexity of the 3D scenario data increase, the program speed and response time becomes increasingly slower. We have tested the software on a machine, which has the following technical specifications:

2.2 Ghz CPU; 60 GB HD; 512 RAM; 64 MB graphics card; Windows XP OS.

The 3D scenario study area was approximately 630 acres and was graphically complex.
Stability & Reliability: CommunityViz has performed very well in both these areas under the above stated computer hardware specifications. In a few situations, SiteBuilder 3D has ‘crashed’ during its operation of a 3D scenario. The termination of the program was usually due to 3D image complexity. But by reducing the graphic complexity, the program performed very well. This issue can also be solved by increasing the RAM memory of the computer as well upgrading the computer’s graphic card.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

“The software integrated well with existing processes and data sources.”: 1

CommunityViz 1.3 is tightly coupled with ArcView 3.2/3.3 as an extension module. It works very effectively with the components of ArcView. ArcGIS functionality was sometimes required to prepare datasets such as grids and the conversion of coverages to shapefile formats. These issues are now remedied with the release of CommunityViz 360. Scenario 360 combines the features of the original Scenario Constructor application with the powerful GIS capabilities of ArcGIS 8.3.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

“The software is well priced with respect to its value and target audience.”: 3

The price of CommunityViz 1.4 suite (latest ArcView version) has been priced at $4,500. CommunityViz is one of the only land use decision support tools that couples GIS capabilities with an extraordinary visual component (SiteBuilder 3D). This technology has greatly enhanced the public participatory decision making process as it generates effective dialogue between many interested parties. The ability for CommunityViz to be used in a public forum and allow interest groups the opportunity to analyze the impacts of different land use proposals in a real time environment has justified the expense of this software. Our Community Demonstration Project was directed at the City Council of Roslyn, WA. In general, the mayor and City Council have desired the Center for Spatial Information to develop land use scenarios and impact analysis based on specified areas of interest rather than purchasing the software themselves and expending energy upon learning how to utilize the technology. If the financial barriers associated with initial start up costs could be reduced this may entice the above audiences to invest time and funds and begin to apply and direct the use of this technology on their own.
Application Component

6. **Background**: Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The rural community of Roslyn, located in Central Washington, has recently been placed under considerable pressure to develop its land resources, which have typically been enjoyed as ‘open space’. The City Council and the community of Roslyn are concerned that this conversion of open space to residential uses may have unforeseen cultural, economic, environmental, and aesthetic impacts. The Roslyn City Council wanted to address the impacts of development upon their community and also have the capacity to develop alternative development strategies, which they could propose to land development agencies. The Mayor of Roslyn and the City Council have the authority to influence how development occurs within the city limit boundaries. At present, there is no expertise available to the City of Roslyn with regards to the application of GIS and Decision Support Tools such as CommunityViz and ArcView.

7. **PSS Appropriateness**: Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

The CommunityViz 1.3 planning support system was very useful in successfully addressing the development issues facing the Community of Roslyn, WA. Residents and City Council members were interested in assessing the impacts future development may upon water resources, recreation resources, as well visual impacts. CommunityViz was very successful and analyzing these impacts and presenting the results in an easily understandable format. The Mayor of Roslyn has written a letter of support highlighting the development situation Roslyn is facing and expressing continued interest in the application of CommunityViz to aid the community in understanding the implications of future development proposals.

8. **Outcomes**: Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

One unexpected outcome was level of distrust that some community members had with respect to the application of CommunityViz and to what ends the data derived from the analysis would be used. Some community members were concerned that the analysis completed using the PSS would be used to support the developer’s perspective and not be representative of the community’s perspective as a whole. This response was unexpected due to the fact that the Center for Spatial Information (CSI) went to great lengths to convey the message that this PSS tool was to be used
equally by all stakeholders to ensure that the decision making process would continue to be a democratic one by incorporating input from all involved stakeholders.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

a) With regards to implementing the project, CSI thought it would be beneficial to create ‘mock development proposals’ for the Community of Roslyn in an effort to showcase the advantages and strengths of applying the CommunityViz software in analyzing land use development impacts. Some community members reacted strongly to the presentations and suspiciously thought that it was an actual development proposal, even though it was continually repeated that the scenarios were merely for demonstration purposes. In the future, it may be useful to select demonstration scenarios which are not located so close to the community so that individuals participating in the workshops can focus more of their attention upon the information being presented at the workshops.

b) It would be beneficial to have more control and options with respect to how information is displayed in the dynamic indicator charts that CommunityViz provides. This improvement may have been implemented in the latest edition of CommunityViz 1.4, which has been incorporated into the ArcGIS software platform.

It would be useful to have increased connectivity between the 3D environment and the 2D environment. For instance, if a feature is selected in 2D, it would be beneficial to visually observe that element highlighted in the 3D dimensional environment.

As well, it would be useful to have the ability to label elements within the 3D environment, such as streets and buildings, with ‘text labels’ to allow users increased ease of site orientation.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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5. Very Appropriate – hits the target out of the box, both useful and adaptable.

Ranking: CommunityViz 1.3 Planning Support System Software

General Public: 3
Users must have a moderate level of training in the use of ArcView and GIS concepts to make full use of this software program.

Trained GIS technicians: 5
Software is very appropriate and easily utilized by individuals with a background in GIS/Urban Planning disciplines.
RGIS – South Georgia
CommunityViz Evaluation
December 2003

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### Technical Component

#### Ranking of Each Product

Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

2 – Agree

The installation process was simple and easy to follow. No problems were encountered during the install.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to
effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

3 – Neutral

Without the weeklong training in Colorado, there would have been more problems encountered. That training helped to provide a basic understanding of the components within the CommunityViz suite and how they worked. This was essential for determining what components to use for specific applications. The “learning curve” would have been more skewed if the training was not offered.

3 – Neutral

The manuals that came with the software provided help for some areas, however, they seemed to be written for the highest level of end user. It didn’t seem as if a person with no knowledge of ArcView could use this program with any success. Of course, it may not be intended for a beginning user, but that market seems to be ignored.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

2 – Agree

After speaking with the software support people and determining what I was doing wrong, the software preformed extremely well.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

2 – Agree

No problems were experienced with the integration of the CommunityViz software suite with other software applications. Also, since it is an extension of ArcView, it made the use of the product even easier.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus
capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

3 – Neutral

The software itself seems reasonably priced for what it can do. However, acquiring the other items required to adequately use the software to its full capabilities could cause the potential cost to be much more then anticipated. From the training sessions, to personnel time, this product could potentially be very expensive.

**Application Component**

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The main project this software was used for was the redevelopment of a downtown area in a small rural community of South Georgia. The City of Hahira has a downtown core that is “leftover” from the railroad days. There are several acres of land in the downtown that were targeted for redevelopment.

The City Council was the client for this project. They were interested in how to redevelop this land to meet several of the needs for the community including additional retail space and more housing. The city was involved in all stages of the site selection and development. The types of buildings and styles of buildings were determined by the Council and the citizen committee that was formed to evaluate this project.

This software worked well for this particular application because the residents were able to participate in the process and see how the development could change the downtown without actually developing the land.

7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

The CommunityViz software suite allowed us to show the City of Hahira how to redevelop an area of their downtown that was being under utilized. Since Hahira is a very rural area, they don’t have the resources to perform these projects or analyses on their own. The software allowed for redevelopment plans to be shown to the “decision makers” of the city without having to disturb the ground. It allowed for multidimensional views of the areas targeted for the redevelopment.
From the various meetings that were held with the City Council and other citizens, the plans received very positive responses. The City has engaged in conversations with the property owners for potential acquisition, therefore showing a real interest in seeing a project of this nature come to fruition.

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8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

One aspect of the CommunityViz software suite that was interesting was the three components were usable independent of each other or all as one piece. If a user wanted to concentrate on one component of the suite, an entire project could be done without the use of the other two components.

It was also very interesting to see what types of development the community felt would best help revitalize the area. There was a mix of small retail storefronts with apartment space above them. This type of building was typical for downtown areas and fits in the current downtown.

__________

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

For future projects of this nature, a key element is ownership of the property. The project that was done for the City of Hahira was a very viable and possible plan that could help revitalize the downtown and make the community more independent. One of the major issues that is holding up this project is ownership of the properties to be redeveloped. Since the City does not currently own this property, there is a possibility that this project may not happen.

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10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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5. Very Appropriate – hits the target out of the box, both useful and adaptable.

4 – Quite Appropriate

After some of the initial technical issues were cleared up, CommunityViz worked very well for this type of project. However, to properly run this software, the user needs to be proficient with ArcView. Since CommunityViz is an extension of ArcView, having a basic knowledge of the functionality of ArcView is essential to properly work within the CommunityViz extension.
RGIS – South Georgia
ModelBuilder Evaluation
December 2003

RGIS Site Contact Information
Vance Roberts
South Georgia Regional Development Center
116 McKey Street
Valdosta, GA 31601
229-242-1988 x11
vroberts@sgrdc.com

PSS Evaluation Contact Information
Eric Vorwald
South Georgia Regional Development Center
327 West Savannah Avenue
Valdosta, GA 31601
229-333-5277
evorwald@sgrdc.com

Technical Component

Ranking of Each Product

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2 – Agree

The installation process was simple and easy to follow. No problems were encountered during the install.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to
effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

3 – Neutral

There was limited use of this software. Since it was a “read-only” version, there was little work actually done with the software. However, the tutorials provided were easy to follow and provided some excellent information.

3 – Neutral

There were no manuals provided with the “read-only” version. Tutorials were downloadable and easy to use.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

2 – Agree

After speaking with the software support people and determining what I was doing wrong, the software performed extremely well.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

3 – Neutral

No significant work was done with ModelBuilder, therefore there was no experience with integration between software.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

2 – Agree
The software itself seems reasonably priced for what it can do. The ability to show a photo-realistic environment to potential clients, however, could prove to be invaluable.

**Application Component**

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The main project this software was used for was the redevelopment of a downtown area in a small rural community of South Georgia. The City of Hahira has a downtown core that is “leftover” from the railroad days. There are several acres of land in the downtown that were targeted for redevelopment.

The City Council was the client for this project. They were interested in how to redevelop this land to meet several of the needs for the community including additional retail space and more housing. The city was involved in all stages of the site selection and development. The types of buildings and styles of buildings were determined by the Council and the citizen committee that was formed to evaluate this project.

7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

ModelBuilder was not used for this particular project. A full licensed copy was not purchased.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

ModelBuilder was not used for this particular project. A full licensed copy was not purchased.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

I think ModelBuilder would have been beneficial to this particular project. It would have added one more layer of reality to the community for a visual representation.
Since the software was not purchased, there is no basis to comment on the question.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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**4 – Quite Appropriate**

Since the ModelBuilder software was not purchased the experience with it is limited. It definitely seems appropriate for this type of application and can be used as such. Whenever a client can see a computer generated, three dimensional layout of their surroundings, and have actual buildings be shown in that layout, then it becomes easier for them to buy into what is being proposed. ModelBuilder seems to offer that ability with little trouble.
RGIS – South Georgia
OrthoMapper Evaluation

December 2003

RGIS Site Contact Information
Vance Roberts
South Georgia Regional Development Center
116 McKey Street
Valdosta, GA 31601
229-242-1988 x11
vroberts@sgrdc.com

PSS Evaluation Contact Information
Chris Strom
South Georgia Regional Development Center
327 West Savannah Avenue
Valdosta, GA 31601
229-333-5277
cstrom@sgrdc.com

Technical Component

Ranking of Each Product

Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

**1 – Strongly Agree**

OrthoMapper was easy to install, with no problems encountered.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to effectively use the software? How well was the documentation written, the help
files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

4 - Disagree

The instruction class in Madison provided knowledge necessary to use the software. The software is not well documented as there is no online help.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

2 - Agree

The software seemed slow at times but for the tasks we were asking it to perform (mosaic images), that is understandable.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

1 – Strongly Agree

The software had no problems reading our existing images. Exporting to a format other software could read was no problem either.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

3 - Neutral

The software is good for ortho rectification and manipulation. But, for its price, Erdas Imagine is worth the added expense and worth more overall.

Application Component

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.
The main project this software was used for was the redevelopment of a downtown area in a small rural community of South Georgia. The City of Hahira has a downtown core that is “leftover” from the railroad days. There are several acres of land in the downtown that were targeted for redevelopment.

The City Council was the client for this project. They were interested in how to redevelop this land to meet several of the needs for the community including additional retail space and more housing. The city was involved in all stages of the site selection and development. The types of buildings and styles of buildings were determined by the Council and the citizen committee that was formed to evaluate this project.

This software worked well for this particular application because the residents were able to participate in the process and see how the development could change the downtown without actually developing the land.

7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

OrthoMapper successfully clipped multiple images to a smaller size. This made the image easier to use in other applications.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

No unanticipated outcomes occurred.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

Online help would be extremely useful. Even though dialog boxes were verbose at times, online help and “sample input/output” would have been useful to see.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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5. Very Appropriate – hits the target out of the box, both useful and adaptable.

3 - Neutral

Software was appropriate to complete needed tasks.
Technical Component

Ranking of Each Product

Please (a) provide a written discussion of each technical component below and (b), on a scale of 1 to 5, also respond to the statements about each PSS product area using a scale of 1-5 where

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

2 – Agree

The installation process was simple and easy to follow. No problems were encountered during the install.

2. How easy was the software to use, what was the shape of the “learning curve.” What technical skills (outside of any planning or “domain” skills) were needed to
effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

3 – Neutral

Without the weeklong training in Colorado, there would have been more problems encountered. That training helped provide a basic understanding of Policy Simulator, however, since the program is so complex, more training would have been helpful. The “learning curve” is still being determined.

4 – Disagree

The manuals that came with the software provided help for some areas; however, they seemed to only touch on some of the more important aspects of the Policy Simulator component. There was very little help in dealing with error messages and how to correct data that had errors in the calibration.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

3 – Neutral

No project was ever completed to properly answer this question.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

4 – Disagree

The data required for Policy Simulator had to be in a specific format. If data already existed, it needed to be added to or converted to work within the parameters of Policy Simulator. If this was not done, the calibration could not be properly executed.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”
3 – Neutral

The software itself seems reasonably priced for what it can do. However, acquiring the other items required to adequately use the software to its full capabilities could cause the potential cost to be much more then anticipated. From the training sessions to personnel time, this product could potentially be very expensive.

**Application Component**

6. **Background:** Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

The main project this software was used for was the redevelopment of a downtown area in a small rural community of South Georgia. The City of Hahira has a downtown core that is “leftover” from the railroad days. There are several acres of land in the downtown that were targeted for redevelopment.

The City Council was the client for this project. They were interested in how to redevelop this land to meet several of the needs for the community including additional retail space and more housing. The city was involved in all stages of the site selection and development. The types of buildings and styles of buildings were determined by the Council and the citizen committee that was formed to evaluate this project.

7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

The Policy Simulator component was not used in this project. A model was attempted, however, the complexity of the data that was required and the formatting required left too many questions and problems to adequately perform the simulation. Since the data that would have been used for this model already exists, determining how to reclassify the data proved to be too cumbersome to properly balance out the work that would have been required. Also, since the targeted project area was so small, the amount of front-end work required to run a simulation model would not have proven prosperous.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).
The Policy Simulator component proved to be more work than worth. The requirements and format of the data needed to properly run a simulation outweighed the potential value of the simulation. If a user is starting from scratch and building the data as required, Policy Simulator may be easier to use, however, most rural communities don’t have the time, money, or personnel to perform such tasks.

9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

I would recommend the Policy Simulator component be left out or modified so it is not as complex. This component seems to be more powerful than necessary for the scale of the rural communities it is being used in. It may work better for larger, more urban areas, but in the small rural communities we have worked with, it has not proven useful.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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**1 – Not Appropriate**

Policy Simulator was not useful in this application. The required data already existed, however, since the formatting was different, it was not easily transferable to the program. Also, the study area was so small that Policy Simulator was not necessary to use. I would not use Policy Simulator for this application again.
RGIS – South Georgia
SiteBuilder 3D Evaluation
December 2003

___________________________________________________________________

RGIS Site Contact Information
Vance Roberts
South Georgia Regional Development Center
116 McKey Street
Valdosta, GA 31601
229-242-1988 x11
vroberts@sgrdc.com

PSS Evaluation Contact Information
Eric Vorwald
South Georgia Regional Development Center
327 West Savannah Avenue
Valdosta, GA 31601
229-333-5277
evorwald@sgrdc.com

Technical Component

Ranking of Each Product

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1. Discuss any issues associated with installation of software, problems encountered, etc. Provide a numeric score for your response to “Installation was simple and straightforward.”

2 – Agree

The installation process was simple and easy to follow. No problems were encountered during the install.

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effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

3 – Neutral

Without the weeklong training in Colorado, there would have been more problems encountered. That training helped to provide a basic understanding of the components within the CommunityViz suite and how they worked. This was essential for determining what components to use for specific applications. The “learning curve” would have been more skewed if the training were not offered.

2 – Agree

The manuals that came with the software provided help for most of the problems that were encountered. The SiteBuilder 3D component was easy to use and navigate through. All the major problems that were encountered were addressed in the manuals.

___________________________________________________________________

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

2 – Agree

After speaking with the software support people and determining what I was doing wrong, the software performed extremely well.

___________________________________________________________________

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

2 – Agree

No problems were experienced with the integration of the CommunityViz software suite with other software applications. Also, since it is an extension of ArcView, it made the use of the product even easier. The .avi files recorded from a designated flythrough were easily imported into other presentation formats such as Microsoft PowerPoint.

___________________________________________________________________

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus
capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”

3 – Neutral

The software itself seems reasonably priced for what it can do. However, acquiring the other items required to adequately use the software to its full capabilities could cause the potential cost to be much more than anticipated. From the training sessions to personnel time, this product could potentially be very expensive.

Application Component

6. **Background**: Describe the rural issue that was addressed in the CDP(s), describe the client in terms of authority, technical expertise, motivation, etc.

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This software worked well for this particular application because the residents were able to participate in the process and see how the development could change the downtown without actually developing the land.

7. **PSS Appropriateness**: Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

The SiteBuilder 3D component allowed the community of Hahira to actually see what was going to happen if they decided to go with a certain development pattern. This allowed the citizens to see their current downtown and see what it could look like with the suggestions they made. Since the SiteBuilder 3D component has the capability to “fly” around the models and change the perspective, it makes the overall model more real and thus gives a fairly accurate account of what could be.
8. **Outcomes**: Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

The biggest outcome from the use of this product was the interest from different groups that saw potential applications for just the 3D component. From our industrial authorities to city clerks associations, many different groups were interested in this component of CommunityViz. For some, the interest was for economic impact and others were interested because "it was just neat to see."

9. **Recommendations**: If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

One recommendation would be more models to choose from. When trying to build projects for industrial sites, the models in the library were limited. In some cases, the same model was used multiple times to create one large structure. Also, the vegetation models seemed to focus on one or two particular geographic areas. In South Georgia, most of the trees around here are pine trees. The vegetation models did not contain one pine tree that was similar to what actually exists in South Georgia.

10. **Ranking of Each Product**: On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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**5 – Very Appropriate**

With most people, visualization is the key. If you are trying to get people interested in something, you have to be able to show them an example of "what could be." SiteBuilder 3D made it possible to show the City of Hahira how a redevelopment plan would look in the context of their downtown. From landscaping to new parking lots, all components of the redevelopment plan were easily incorporated into the SiteBuilder 3D model.
Technical Component

Ranking of Each Product

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effectively use the software? How well was the documentation written, the help files? Provide a numeric score for your response to “The software was easy to use” and to the statement “The software was well documented.”

3 – Neutral

Without the training in Wisconsin, there would have been more problems encountered. That training helped to provide a basic understanding of the components within the What if? software and how they worked. This was essential for determining what components to use for specific applications. The “learning curve” would have been more skewed if the training were not offered.

3 – Neutral

The manual that came with the software provided help for some areas; however, they seemed to be written for the highest level of end user. Some of the sections of the manual were hard to follow.

3. How did the software perform in terms of speed, responsiveness, stability, reliability? Provide a numeric score for your response to “The software performed very well.”

2 – Agree

After speaking with the software support people and determining what I was doing wrong, the software preformed extremely well.

4. How well did the software integrate with other software and external aspects of your workflow? Did you have difficulties in getting data into the software or use its output products? Provide a numeric response to the statement “The software integrated well with existing processes and data sources.”

3 – Neutral

This was not tried. The only integration that was used was with ArcView, and that is required to run the program. No other attempts at integration with other programs were preformed.

5. How did the price of the software compare to its value? What do you think will be the reaction of the various groups that you interact with to the price versus capabilities given their price points? Provide a numeric response to the statement “The software is well priced with respect to its value and target audience.”
3 – Neutral

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7. **PSS Appropriateness:** Describe to what extent the PSS application successfully addressed the rural issue being addressed. Explain to what extent the client was satisfied with the product(s) outcome and, if available, evidence to support the client’s satisfaction.

What if? was not used for any community demonstration projects. An allocation model was run, however, the outcome proved to have no value in the terms of the selected project.

8. **Outcomes:** Describe any unanticipated outcomes (i.e., both positive and negative) due to the use of a PSS product(s).

One outcome that was noted was the lack of change. For the City of Hahira, the population density is very small at just under one acre per person. With their current rate of population growth, there is enough land for the city to grow exponentially for the next 20-50 years and not see any major changes. Because this is the case, the software showed no difference in the current time to a 30-year build out.
9. **Recommendations:** If you were to conduct the project again: a) what procedural changes would you implement and b) what changes would you recommend the PSS vendor incorporate into the PSS product?

The What if? software definitely has a market. It seems to be a more basic and user-friendly version of the CommunityViz Policy Simulator. The format is easy to follow and it accepts the data in whatever format exists. However, when dealing with small communities it is hard to properly allocate growth based on very minimal growth patterns. Some communities may only see a population increase of 50 persons over a ten-year span. This makes a software package like What if? almost unnecessary. If the values were reconfigured for a smaller community the growth and allocation patterns may become more useful.

There seemed to be a limited number of land use categories. This is good from a complexity standpoint, but there could potentially be options that are overlooked. Some communities doing some very dramatic things will overlay zones and mixed use land use options could enhance this program.

10. **Ranking of Each Product:** On a scale of 1 to 5, rank each PSS product(s) evaluated as to its appropriateness to address the related issue.

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**4 – Quite Appropriate**

As stated previously, the What if? program definitely has a beneficial place with these types of projects. There is, however, the small growth or low growth options that need to be addressed. Also, the limit of land use allocations has the potential to limit a community’s option. However, from an overall standpoint, this product could prove very useful for the right situations.
The Community Demonstration Project at SIPI assisted the Laguna Pueblo in the development of geospatial capabilities. Due to the fact that there was not a GIS program or support personnel, we began with the basics, which included the needs assessment. SIPI supplied equipment and personnel (student interns) to complete their E-911 project. Due to the lack of trained personnel, SIPI had to first work with the tribe and tribal offices to begin working on the development of an enterprise GIS. Once there is an appropriate knowledge base, SIPI will begin the introduction of the planning support software.