

Spring 5-1-2003

# Project Report for Berkley Mid-Atlantic Group Web Portal

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Project Report for  
Berkley Mid-Atlantic Group Web Portal

**BY: Shannan Gerjets**

**A project submitted in partial fulfillment of the requirements  
for the Master of Science in Information Systems  
Dakota State University  
2003**

**MSIS INTEGRATIVE EXPERIENCE  
INFORMATION SYSTEMS PROJECT**

**Project Approval Form (PAF)**

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## Abstract

This report describes the implementation of a web portal for Berkley Mid-Atlantic Group (BMAG), a property and casualty insurance company based in Richmond, Virginia. BMAG previously had a limited web presence, with a website only available to Independent Insurance Agents licensed to sell BMAG products. This website did not offer all of the information BMAG wanted to share with their Agents. In addition, they wanted to reach a larger audience.

The report will describe BMAG's web presence prior to the project, objectives of the project, tasks involved in all project phases, and challenges encountered. The appendices contain various project tools used and give samples of code.

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## CHAPTER 1: INTRODUCTION

This report will describe the design and implementation of a web portal for Berkley Mid-Atlantic Group (BMAG), an insurance company based in Richmond, Virginia. The report will give an overview of the insurance industry, describe BMAG's web presence prior to this project, and outline the steps taken to enhance BMAG's web presence. Project management tools such as a Gantt chart, a work breakdown structure, and a requirements document were used in the implementation of this project, and will be included in this report. Samples of the programming code used to create the website will also be shown.

This chapter will provide information about Berkley Mid-Atlantic Group, its industry, the identification of an information system opportunity, and the objectives of this project.

### Overview of Berkley Mid-Atlantic Group

Berkley Mid-Atlantic Group (BMAG) sells property and casualty insurance products to business consumers. Property and casualty insurance companies typically sell products in one of three ways: directly to consumers, through "captive" Agents, or via Independent Insurance Agents. BMAG's method of product distribution falls under the third category. Independent Insurance Agents are contracted to sell BMAG's products to businesses. Those Agents are also contracted to sell the products of other insurance companies, enabling them to tailor insurance programs specific to each customers' needs.



BMAG is part of the W.R. Berkley Corporation's Regional Property Casualty Insurance Division. Formed four years ago through the consolidation of four of the corporation's regional insurance companies, BMAG markets products to the Mid-Atlantic region of the United States, including North Carolina, South Carolina, Virginia, Delaware, Maryland, Pennsylvania and the District of Columbia. They sell their products through their 250 Independent Agency partners.

The last four years have been challenging as BMAG has worked to bring the four companies together into a cohesive unit. The products offered by each company were combined into a single product within each product line. The four companies' policy, claims, and billing data were migrated to one computer system. One of the main reasons for consolidation was to provide cost savings to the corporation. The number of employees was reduced and current employees' time and talents are often utilized for a wide variety of projects. Erich Schelin is the Vice President of Information Services, managing a small staff, typically one to two persons.

#### Identification of Issue

Berkley Technology Services (BTS) is another company within the W.R. Berkley Corporation, which provides policy processing and claims systems to BMAG and other companies within W.R. Berkley. The author of this report has duties including development and support of an online insurance policy information and quoting system called e+Plus.

Prior to this project, e+Plus was BMAG's only Internet presence. E+Plus is a secure site, with an audience limited to Independent Insurance Agents currently

contracted to sell BMAG's products. Access to e+Plus can only be granted by BMAG; Agents do not have authority to set up their own sign-ons. E+Plus is advantageous to both Agents and BMAG. Agents may quickly view information about their customers' policies, reducing time spent on phone calls to BMAG. With less phone calls being received, BMAG is able to concentrate more closely on marketing and service. Agents also have the ability to input data about potential customers and instantly receive a quoted premium for the policy. This real time transaction cuts out days of waiting time for the Agents. In addition, compared to policy applications mailed or faxed to BMAG, policies submitted through e+Plus contain more accurate and complete data, since e+Plus edits Agents as they enter data. This eliminates the follow-up calls necessary for mailed or faxed applications which are incomplete or illegible.

However, despite the advantages of e+Plus, there are downfalls associated with this approach to gathering policy data. Just as insurance companies have computer systems which store policy data, Independent Agents also have systems on which they keep their customers' policy information. Since Agents are contracted with multiple insurance companies, often they obtain quotes from more than one of those companies and select the one best suited to their customer. For years Agents have requested that insurance companies work together to develop a way to enter data once and send it to multiple companies and to the Agent's computer system, a process that's been termed "SEMCI" (Single Entry Multiple Company Interface). Recently developed solutions for SEMCI are promising, but the industry is still a few years away from fulfilling this wish.

Until SEMCI is achieved, and probably even after that, insurance companies will provide policy information and quoting capabilities through their own websites. As

Independent Agents access the websites of many insurance companies, they gravitate toward those that are straightforward and easy to use. Sites lacking these qualities create a strike against the insurance company as Agents make decisions as to which company's products to use. Though not the deciding factor in placing business, a user-friendly site enables Agents to work efficiently and directly affects the Agency's bottom line.

Most insurance company sites contain a non-secure area for general users and a secure area for Agent users. E+Plus, as BMAG's only web presence, provided the secure Agent area, but offering a non-Agent area was not within the scope of the e+Plus application. In addition, BMAG desired to offer more information to Agents than what resided in e+Plus. However, there were limitations involved in offering this additional information via e+Plus. The e+Plus product in use by BMAG is also used by three other insurance companies within the W.R. Berkley Corporation. BMAG is limited in the changes it can make to the e+Plus site, because proposed changes must be approved by the other companies. The only area BMAG can change without approval from the other companies is the main frame on the home page. Without sole control over the design of e+Plus, BMAG could not use it to create a look consistent with their other marketing efforts. For example, BMAG uses green in their marketing materials, but the e+Plus website is mostly blue.

Through the author's involvement with e+Plus, she became aware BMAG did not have a website available to non-Agents and did not have anyone on staff with the skills necessary to create a site. Upon contacting BMAG's Vice President of Information Services, Erich Schelin, about creating a site, it was discovered they had been in the final stages of hiring an outside vendor to implement a site. It was decided they would instead

work with BTS. Erich indicated in the first correspondence about the site that they didn't have "any deep requirements" and didn't want anything "very complicated...a stand alone 'phase one' site." He mentioned they were "looking for a half dozen pages" and "the big selling point is that it allows our Agents to download things that we would otherwise have to print, package and mail to them." These comments left the direction fairly open-ended.

Through further discussions with Erich and with Rachel Hogge, Marketing Coordinator, it was discovered they wanted a site which could function as a web portal, directing Agent users to e+Plus and all users to insurance industry sites. In addition, they wanted a secure area of the site to provide information such as BMAG company manuals and forms, to which Agents refer when selling policies. Providing these on the Internet would greatly reduce time and expense involved in mailing them.

### Objectives and Deliverables

Taking into consideration the insurance industry, BMAG's current situation, and BMAG's resources, three objectives became clear. One, create a web portal which Independent Insurance Agents would use. Second, reach an audience beyond the Agents currently associated with BMAG. Three, provide a site which BMAG could easily maintain. These objectives will be met by delivering an attractive, easy to use website on which Agents and non-Agents can rely for useful information. A successfully delivered website will be simple for BMAG to maintain.

## CHAPTER 2: RESEARCH

This chapter summarizes information discovered during a literature review and other research.

### Review of Other Websites

To determine the best way to fulfill the project's objectives, various sources were used. Other insurance company websites were reviewed to gain an understanding of what other sites are providing. This included the sites of Acadia Insurance, Admiral Insurance Company, Clermont Specialty Managers, Ltd., Continental Western Group, Union Standard Insurance Group, Nautilus Insurance Group, and W.R. Berkley Corporation. It also encompassed a review of the websites of insurance companies outside of the Berkley Corporation, including those of Progressive Casualty Insurance and Travelers Property Casualty.

### Apache Web Server

Discussions were begun with one of the Database Administrators for Berkley Technology Services. Besides his database duties, Doug Meyers also has some web server responsibilities. He indicated there was a machine named WRBCLP4 at the BTS Network Operations Center (NOC) which could host the site. It currently hosts the websites of other companies within the Corporation. The machine has a Linux operating system, an Apache web server, and an Informix database. Informix is the corporate database standard, but in the next couple of years the corporation will be migrating to DB2.

The machine utilized Apache's Virtual Host capability, which allows more than one server to be set up on a single machine by assigning a separate domain to each server. Two types of hosts can be constructed: IP-based and name-based. IP-based require a separate IP address for each host, since they use the IP address of the connection when determining the virtual host they will serve. Apache's website states:

Name-based virtual hosting is usually simpler, since you need only configure your DNS server to map each hostname to the correct IP address and then configure the Apache HTTP Server to recognize the different hostnames. Name-based virtual hosting also eases the demand for scarce IP addresses. Therefore you should use name-based virtual hosting unless there is a specific reason to choose IP-based virtual hosting.

Doug created a test area on machine BTSLP3, and set up the virtual hosting capability on it. In the Apache configuration file, httpd.conf, he inserted this entry:

```
<VirtualHost *>
    ServerAlias webtest.bts.wrbc webtest.bmag.wrbc webtest
    DocumentRoot /htdocs/webtest
    ServerName webtest.bts.wrbc
    ErrorLog /var/apache/logs/webtest/error_log
    TransferLog /var/apache/logs/webtest/access_log
</VirtualHost>
```

The names listed in the ServerAlias directive cannot be used until they are mapped to an IP address, which is done in the DNS server configuration. When the site is implemented on production, the same type of entry will need to be made there.

## Security

A user name and password to access Acadia Insurance's secure Agent area was obtained. While Rachel wanted the BMAG area to be similar, she did request the sign-on process to work differently. On Acadia's site, an Agent signs on to the Agent area, and from there can reach e+Plus by clicking on a link. Before going to e+Plus, the user is presented with another sign-on box. Rachel preferred to have the Agent sign on once for both the Agent area and e+Plus. The Agent area of the sites of Continental Western Group and Union Standard Insurance Group were also observed. On these sites, a link to e+Plus is provided to Agents. When the link is clicked, the Agent sees a sign-on box. After signing on, the Agent sees the e+Plus home page, which contains a link to the "extranet" (Agent area). By clicking on the extranet link, the Agent is taken out of the secure area of the site, meaning the extranet is not truly secure. There are no links on the home page directly to the extranet, so a user would need to know the exact URL in order to reach the extranet, but once the URL is known, a user can access the area without logging in.

When it was demonstrated how the other companies' extranets were not completely secure, BMAG expressed their preference for a more secure area. Doug, the DBA, was consulted about setting up a secure area by storing sign-ons and passwords in Informix, and designating specific pages on the site as secure, and other pages as not. Doug remarked that although it was possible to handle security through an Informix table, if the site was to contain sensitive data, a Secure Sockets Layer (SSL) should exist. Without SSL, he explained, there would be a possibility of someone "sniffing" the system

and intercepting user names and passwords as Agents signed on, thereby gaining a way to access the site.

SSL, according to Garfinkel's and Spafford's Web Security & Commerce (233-249), is "a general purpose protocol for sending encrypted information over the Internet." It adds another layer to a server, between the TCP/IP protocol and the application layer. A site using SSL provides the advantages of authentication via digital signatures, encryption which gives data confidentiality, and data integrity. One disadvantage to SSL is its negative impact on transmission speed. Because of this, many companies only encrypt their sensitive data and transmit the remainder without SSL. Both Netscape Navigator and Microsoft Internet Explorer provide support for SSL, and both have settings which enable display of warning messages when switching between encryption and non-encryption mode.

The web server machine did not have SSL, and Doug indicated the preferred method for storing sensitive data would be on the e+Plus web server, which is already secure. He didn't feel it was necessary to create another SSL site, which would mean more maintenance time and additional costs. Also, maintaining two sites where agents sign in would require two user lists to store user names and passwords.

But, as using the e+Plus server was not BMAG's preferred method for access to the Agent area, the option of installing SSL on the server for the new site was also explored. Doug was in the middle of installing SSL with Apache on a different server, and prior to that had never installed it with Apache. He knew it was possible to install the two together, but the installation on the BMAG server would be different in that the server also hosted other sites, which did not need to be secure.



There are a couple choices of SSL software which can be used with Apache. Mod\_SSL is a popular SSL software which is described in Kabir's Apache Server Administrator's Handbook as a "clean solution...much cleaner and better documented" than Apache-SSL. It was developed in 1998 by Ralf S. Engelschall, who started with Apache-SSL as a base. The Mod\_SSL installation allows the configuration of path, port, and timeout values.

Engelschall's Mod\_SSL website provides information about SSL in general and Mod\_SSL in particular. It explains how SSL uses cryptographic algorithms to transform messages before sending. Of the two categories of cryptographic algorithms, conventional and public key, public key is used when SSL is installed on Apache. Public key cryptography uses two keys, public and private, to encrypt messages. One key encrypts, the other decrypts, and it is possible to publish only one key (the encrypter) and not reveal the private key (the decrypter). Any web user with the public key is able to send an encrypted message to the SSL site, but only the site which owns the private key can decrypt the message. This eliminates the problem with conventional cryptography, where both the web user and site owner need to know the private key before exchanging information.

Not all security concerns are addressed by encrypting a message. It may still be possible for someone to modify the message or insert a different message. To address this situation, message digests are used. Using an algorithm, they summarize a message in such a way that each message digest is unique and concise enough to not reveal the content of the actual message.

Once public and private keys and a message digest exist, it is still sometimes desirable for the message recipient to verify the message is truly coming from the person they expected. This can occur through a digital signature, which contains encrypted versions of the message digest, a unique sequence number, and the sender's private key.

One last link in secure communication is certificates, which further assure another party the certificate holder is who it says it is. Garfinkel's and Spafford's book explains digital certificates are "used to establish identity and assure the authenticity of information that is delivered over the Web." The book goes on to explain why certificates are sometimes necessary on the web, "One proven way for establishing identity in the physical world is to carry credentials from a trusted authority... Things are not so neat and tidy in cyberspace." Though certificates are optional, Garfinkel and Spafford state server certificates are required unless both the client and the server implementations of SSL accept Diffie-Hellman key exchange protocol, one of several possible protocols.

Public key certificates are issued by certification authorities. The certification authorities, which create certificates including a person's or company's name, public key, and serial number, are like a trusted authority in the physical world, vouching the key belongs to a certain person or company. Web users have become accustomed to seeing the certification authorities' logos on websites, which are meant to offer a sense of security to users. Certificates prove to them a business is real and assure them when they communicate the data is being shared privately.

The W.R. Berkley Corporation often uses certificates from certification authority VeriSign. The VeriSign website explains their two certificate types, 40-bit SSL

certificate and 128-bit Global Server ID. Every encrypted transaction on a server creates a session key, and “128-bit sessions...[are]...trillions of times stronger than 40-bit sessions” since they have a longer key which makes their encryption code harder to break. The 128-bit Global Server ID is not supported by as many servers as the 40-bit certificate, but Apache Mod\_SSL does support it. Discussions about VeriSign and SSL were centered on server side certificates, not client side. At one time e+Plus used client side certificates and the Berkley companies did not feel their benefits were worth the time required to maintain them, so instead they began using cookies.

### Cookies

Gosselin's JavaScript (504-526) says the Internet and the HTTP protocol used on it were initially designed as stateless, meaning as users accessed websites, no data about their experiences was kept. As a result Web browsers do not keep track of which pages a user has visited, and have no way of knowing if a user goes to multiple pages within one site, or leaves the site after accessing only the first page. Eventually, website owners saw a need for capturing information about state. With this information, they could customize a user's experiences by tracking user preferences, allowing “shopping cart” applications which keep track of purchases as users navigate between pages and counting how many times a particular user visited their site. Three ways to store state information are with hidden fields within HTML forms, in query strings, and in cookies.

Both hidden form fields and query strings maintain state information only temporarily; until the Web page that reads them is closed. Cookies, however, allow storage of information on a more permanent basis. Cookies are small text files created by

the web server and stored on the user's (client's) computer. When the user visits the website, cookies saved during previous visits are sent to the web server. With the information stored in the cookie, the web server can customize the user's experience. For example, to help users, a website may obtain the person's user name from a previously-created cookie, eliminating the need for the user to recall it.

Cookies don't have much to offer in the way of security. Merely checking for the presence of a cookie on a users' machine doesn't prove anything, since everyone who obtains a sign-on, whether rightfully or maliciously, has a cookie placed on their computers the first time they sign in.

The mechanics of cookies are fairly simple. They make trips between client and server as an HTTP header, with six possible parameters. The parameters are name, value, expiration date, path, domain, secure. A cookie is initially stored in a user's browser memory, but moves to the user's computer hard drive when the browser is closed. Cookies are not welcomed by all users, however, as discussed on the website [cookiecentral.com](http://cookiecentral.com). Some people do not like cookies because they feel the personal information captured by cookies compromises their privacy. Others are concerned cookies may harm their computer. However, since cookies are not programs or plug-ins, and cannot access a user's hard drive or spread a virus, they don't really have the potential to do harm. Some users activate their browser's option to reject cookies, but are then unable to visit sites which require cookies.

To address Internet users' concerns about privacy, the World Wide Web Consortium (W3C) developed a specification for a Platform for Privacy Preferences (P3P). The three major goals of P3P are:

- To inform a user agent of a site's data collection and privacy practices.
- To allow a user agent and service to automatically negotiate and to come to an agreement satisfactory to both parties; alternatively, for the user agent to notify the user and take instruction concerning proposed data exchanges from the user.
- To exchange data when such exchange is authorized by the user and consistent with a user's preferences and any outstanding agreement.

Cookiecentral.com goes on to explain:

Now an official specification, P3Ps use an XML file to describe in as much detail as possible how a website uses personal data during and after a user's session.

This can include the intended usage of cookies to hold or refer to such information.

Alternatively, a site can create a P3P policy that refers solely to its cookie use. These Compact Privacy Policies are a focal point in Microsoft's new strategy in addressing the cookie "problem."

Users of Internet Explorer 6 can set their Privacy preferences based upon whether the target site has a Privacy Policy or not. If a site does not have a policy, its cookies may be automatically rejected by IE, and the user will see an icon on the status bar indicating a conflict with the user's privacy preferences.

P3P may have a broad impact on cookies and their future use. Especially in the context of advertising and commerce. Even though compact policies are essentially straightforward to create, users still stand to regain a great deal of control over their browser's communications.

In response to some of the downfalls of cookies, recently the e+Plus website used by BMAG switched its method of tracking users - from cookies to Microsoft behaviors technology. Dynamic HTML (DHTML) behaviors were introduced in Internet Explorer 5.5 and are, according to Microsoft's website, "components that encapsulate specific functionality or behavior on a page." The default behavior of a page element can be enhanced by using these components, and content can be separated from style. When the behavior attribute is applied to a userData object, the object is able to persist data, similar to a cookie. Microsoft describes the benefits of userData behavior:

[It] persists information across sessions by writing to a UserData store. This provides a data structure that is more dynamic and has a greater capacity than cookies... The UserData store is persisted in the cache using the save and load methods. Once the UserData store has been saved, it can be reloaded even if Microsoft Internet Explorer has been closed and reopened.

Since e+Plus users are instructed to use Internet Explorer, behaviors technology was a good solution for that application.

### Software Research

Since the corporation does not have a set of website standards, the format of the site could be whatever best suited BMAG's needs. With BMAG's request for a site that's easy to maintain, The Complete CSS Guide and Brian Wilson's Index DOT CSS, the Advanced CSS Resource were referenced for information on cascading style sheets. These would be helpful in the creation of classes to be used throughout the site, which

would contain a background image, different font sizes and colors, and various margins.

Brian Wilson's website indicates:

Style sheets allow a much greater degree of layout and display control than has ever been possible thus far in HTML. The amount of format coding necessary to control display characteristics can be greatly reduced through the use of external style sheets which can be used by a group of documents.

The site also declares:

It [SGML and its HTML derivative] was never meant to convey physical formatting information. HTML has crossed this line and now contains many elements and attributes which specify visual style and formatting information. One of the main reasons for style sheets is to stop the creation of new HTML physical formatting constructs and once again separate style information from document content.

There are three methods for implementing CSS: external style sheets, embedded style sheets, and inline styles. The external style sheets method is the only one which allows the benefit the site needed for ease of updating: application of the same style to multiple documents. To obtain the hex codes for colors used on the style sheet, Lynda Weinman's Education by Creative Professionals was referenced.

Based on sample site pages provided by BMAG, it appeared frames would be useful, but there are disadvantages to using them. Information about frames was gathered from HTML Frames, Don Gosselin's "Windows and Frames" chapter in JavaScript, Reva

Sehr, and Brian Wilson's [Index DOT HTML, the Advanced HTML Resource](#). Although frames can sometimes cause problems in Netscape Navigator, BMAG's Agents predominantly use Microsoft Internet Explorer, which handles frames well. Agents using e+Plus are instructed to access it using Internet Explorer, so they are already accustomed to it. Also, e+Plus is built on frames technology, so Agents already have a level of comfort with frame functionality. However, non-Agent users of the new site could be using Netscape, so testing needed to be conducted there to ensure there were no problems. BMAG was not concerned with supporting other browsers.

BMAG was, however, concerned with maintenance, and frames would make maintenance much easier since the two navigation bars and the title bar would be used on every page.

To further make the site simple to maintain, options for creating one footer document which could be utilized by every page were researched. This could be done in JavaScript. Another option would have been to use server side includes, directives placed in HTML documents that are evaluated by the server as it is serving pages. Per the Apache website, this requires a change to the configuration of Apache.

By including the copyright statement in the JavaScript document, BMAG would only have one file to update when the year changes. Also, this would be a convenient place to include code for a "date last modified" statement. For JavaScript information, Don Gosselin's "Variables, Functions, Objects, and Events" chapter in [JavaScript](#), the JavaScript guide found on the Netscape website, and "YALMS (yet another 'last modified' script)" from [planetsourcecode.com](http://planetsourcecode.com) were consulted.



For HTML information, sources were Brian Wilson's Index DOT HTML, The Advanced HTML Resource, and Web Monkey, The Web Developer's Resource. Tables used in HTML have not always been handled well by all browsers, but Wilson's website states tables "are fairly safe to use now," since browsers have matured. However, Netscape renders tables only after it has received the entire table structure; while Internet Explorer renders as it receives. This is something to keep in mind when using tables; if they're not needed they shouldn't be used since they can affect downloading time.

BMAG's request for a "Contact Us" type form led to Don Gosselin's JavaScript book again, this time to the chapter entitled "Forms." BMAG's example of the page showed several fields they wanted the user to be able to fill and send in the email. Gosselin's book states two disadvantages to emailing form data: not all browsers support forms which use the "mailto" action attribute, and the performance is unreliable. Another option was discussed with Doug, that of using an Informix stored procedure to call a Linux "sendmail" program. Java could also be used to call sendmail and mail a form.

### Database

The site had six areas conducive to using a database: employment opportunities, announcements, Agent finder, company manuals, company forms, and policywriting rules. All of these areas would have text documents associated with them, and BMAG wanted pages on the site to provide links to the documents. Informix database software was already installed on the web server. The first option considered was creation of a database for each area, which would store information about each document and store the document itself as a blob type. Doug, however, recommended storing the documents directly on the web server, as there was really no advantage to storing them in the

database. The database would still be needed for other information BMAG would want to capture about each document, including product with which it was associated, state to which it applied, and its effective date.

For the web pages which would display this information and contain links to the documents, consideration was given to Java Server Pages (JSP) technology and to an Informix tool called Data Director for the Web, through which many e+Plus pages have been created. In the past few years, Berkley Technology Services has been incorporating Java into some of its software products. Therefore, BTS is familiar with JSP's and they would be a technology preferred over Microsoft's Active Server Pages (ASP).

JSP's, as discussed in Pekowsky's JavaServer Pages, overcome the disadvantage of CGI programs, which take up time as they must be restarted for each new request. Though JSP's themselves do not need to be compiled, when they are accessed on a website they are converted to servlets, which are compiled and loaded once, the first time they are needed. Their use requires a Java runtime environment and servlet container software to be installed. The Java runtime environment can be downloaded from the Internet, and Tomcat is a free servlet container which is used with Apache.

JSP's would allow access to data stored in Informix, via the Java DataBase Connectivity (JDBC) classes. JDBC allows an application to be written without specific knowledge about the database to which the program is connecting. The application contains commands in standard Structured Query Language (SQL) and interacts with a standard Application Programming Interface to obtain data. A JDBC driver for the specific type of database is necessary to allow communication between the JDBC classes and the database.

Data Director for the Web (DDW), the Informix tool, would also allow access to data in the database. However, DDW would not provide a long-term solution, as Informix is being replaced in the Corporation gradually over the next couple of years, meaning web pages written using DDW will need to be rewritten.

Whether JSP's or DDW pages were used, the database could be updated via browser-based input forms, rather than requiring BMAG to update Informix directly. However, plans to use Informix were altered after it was learned that, despite the ability to update the database indirectly via browser-based pages, BMAG did not feel comfortable involving Informix in that section of the site. BMAG employees were accustomed to Access, and since Informix is a more complicated database system, they did not want to add to the maintenance complexity by using it. They were, however, willing to use Informix if needed to store user names and passwords for the security portion of the site.

Next the possibility of installing Microsoft Access on Linux was considered. Doug did not think Access would run on Linux, unless it was possible to use PHP with an ODBC driver to make Access work. Online postings from Matt on Future Quest Inc. website, Adrian Teasdale on PHPBuilder, and Arthur Wood on Experts Exchange, did not provide much hope for making a smooth connection between Access and Linux, so research continued into other options. Doug and I discussed the possibility of building a web page by reading the list of PDF documents from the server directory. One drawback to this method would be the inability to include additional columns, such as state, effective date of the document, and a document title other than the PDF document name.

Srinivas Junnuru, another colleague, pointed out Java could be used to read a properties file containing extra information.

However, it was decided this solution may not meet BMAG's long-term needs. Once they had compiled a list of all of the manuals, forms, rules, etc. they would gain more flexibility by storing this information in a database rather than on a file server. In a database, they could add additional columns, possibly making the database useful with other applications. In addition, BMAG had asked for a site that was easy to maintain, and adding a Java environment meant adding another level of complexity.

At this point Reed Koehnen, who maintains the website for Union Standard Insurance Group, was contacted. For the Union Standard website, he maintains databases containing the same type of information BMAG wanted. Using queries to pull information from the tables, he creates reports which he saves as HTML files. He then uses File Transfer Protocol (FTP), initiated by a DOS batch file, to send the reports to the website. All of this is simply handled by macros run on Access. The reports become the site pages, containing hyperlinks to the PDF documents referenced on them. The corresponding PDF documents are manually transferred to the site, again using FTP.

The reports created by Access and copied to the web server would provide links to many individual documents. After discussing file format options with Reva Sehr, the recommendation was made to BMAG to create the documents in Portable Document Format (PDF). PDF is a widely used document format, commonly encountered by web users. It has the advantage of being non-modifiable by users viewing it. It requires Adobe Acrobat software, but this doesn't provide any real hindrances since the software is free and readily available for download over the Internet. BMAG planned to include a

link to Adobe to make it simple for Agents without the software to obtain it. In order to create documents in PDF, BMAG would need another Adobe software product, which they already had.

## CHAPTER 3: METHODOLOGY AND RESULTS

This chapter will summarize the methodology used in the construction of the website and the results achieved.

### Methodology

One of the greatest challenges in building an information system is clearly understanding the customer's needs and creating something of value to them. According to Dennis and Wixom in Systems Analysis and Design:

...the primary objective of the systems analyst is not to create a wonderful system. The primary goal is to create value for the organization...Many failed systems were abandoned because the analysts tried to build a wonderful system without clearly understanding how the system would fit with the organization's goals, current business processes, and other information systems to provide value.

Information systems projects generally follow a systems development life cycle consisting of four phases: planning, analysis, design and implementation. For the BMAG project, a project plan was submitted in Fall 2002. Research for the website would fall under the analysis phase, as BMAG's current situation, their needs, and their goals were researched. The design stage would include deciding the types of software and architecture which would fit BMAG's needs. Implementation of the website would involve writing programming code and deploying it to a machine where it would be made available through the Internet.

As part of the project plan, a Gantt chart was created showing the project tasks and estimated time to complete each one. Microsoft Project was used to create the chart, allowing completion percentage of each task to be recorded. The tool also enables tasks to be marked as precursors to other tasks, and from that information a critical path can be determined. A work breakdown structure was also utilized, listing the tasks associated with the project. The major headings of the WBS were Analysis, Design, Coding, Testing, Implementation, and Wrap Up.

During the analysis phase of the project, a formal document detailing BMAG's requirements and some design issues would be created. Within this document would be a site plan description, examples, and a definition of project scope, with the overall goal being to verify BMAG and BTS were envisioning the site in the same manner. BMAG did not have any formal requirements for the site, which meant the document would need to be started from scratch. It is usually difficult for customers to write requirements documents on their own; it works best when these are a collaborative effort between developer and customer. Sometimes requirements documents are followed with technical design documents, which, as implied by their name, are more technical in nature and detail the design of the system. However, since BMAG was anxious to implement the site, time would not permit both documents to be created in this case, so it was decided to instead include some design issues in the requirements document.

### Analysis

In the Fall of 2002, Dr. William Figg, Dakota State University Professor of Computer Information Systems, was asked to be the supervisor on the project. The high

level overview of the website was discussed with Dr. Figg, then a proposal was submitted. The proposal was approved and the remainder of the project committee was formed - Dr. Zehai Zhou, Dakota State Computer Information Systems Professor, and Kari Wulf, e-Business Software Development Manager at Berkley Technology Services.

In November 2002, after initial research of other insurance company websites, an information-gathering document was produced detailing standard sections seen on these sites and a list of information which would be needed to add these sections to BMAG's website. Erich Schelin, Vice President of Information Services, answered some of the questions, and forwarded the document to others, including the Marketing Department, for more information.

Information was gathered from BMAG about their target audience and about what types of information they had seen on other websites. The Marketing Department was a driving force behind the site since communicating with Agents is one of their key roles. Their frequent interaction with Agents gave them a good idea of the type of Agent users who would access the site. While they work with some large insurance agencies, many agencies are small. These agencies are often accessing the Internet using dial-up access, and users could be categorized as mostly beginner to novice. Since dial-up access is often slow, the site needed to be able to load quickly. Most of the users would not feel comfortable downloading extra software, such as multimedia plug-ins, so the site should not require these. However, BMAG was comfortable with providing hyperlinks to documents in Portable Document Format (PDF), reasoning that most of the users will be familiar with PDF's and already have Adobe Acrobat software for viewing them. For those without Acrobat, BMAG wanted to provide a link to Adobe's website where the



software can be downloaded. As far as browsers Agents are using, BMAG believed most would be using Microsoft Internet Explorer, but requested the site also work on Netscape Navigator.

Agents were the main target audience, but BMAG also hoped to reach Agents not currently contracted with them, current and potential policyholders, and potential employees. For Agents and non-Agents alike, BMAG wanted the site to offer easy, convenient access to information. They wanted it to serve as a portal to insurance industry websites, with links to the websites of the Independent Insurance Agents & Brokers of America association, insurance rating organization A.M. Best Company, and standards organization ACORD. Persons responsible for purchasing business insurance are often very knowledgeable about the insurance industry, so the first two of these organizations are of interest to both Agents and policyholders.

For their partner Agents, the site would be a portal to e+Plus. Also of interest to much of the audience would be a link to W.R. Berkley Corporation information on the New York Stock Exchange website. In addition, BMAG wanted current or potential policyholders to have a way to find an Agent near them. Before including links to these other websites, the sites were visited to determine if they had any regulations about linking to them. They requested asking their permission before displaying a logo. Logos may be added at a later date; Rachel was pursuing contacting the other sites when she went on medical leave. Until then, only links will be provided.

## Design

At the end of November, the author attended meetings in Maine regarding a new e-Business product the four W.R. Berkley insurance companies were considering. Rachel Hogge, BMAG Marketing Coordinator, also attended. She expressed the Marketing Department's wish to become very involved in the website project, since they saw the opportunity the website would have in providing a distinct image and website presence for BMAG. Upon her return to BMAG, she met with Dave Keller, Vice President of Marketing, to review the sites of other W.R. Berkley companies and discuss possibilities for the BMAG site. They expressed to Erich their desire to become more involved in the site design.

Rachel then provided an example of how they envisioned the site home page. Using the sample home page as a guide, a small prototype of the site was created. At another meeting in Dallas at the end of January, the prototype was demonstrated and Rachel's feedback requested. One thing she mentioned was the possibility of adding a green color to the left side of the page, where a navigation bar existed, and possibly also adding green along the top of each page. After the meeting, some of the minor changes requested were made to the prototype and it was moved to the test Linux machine so BMAG could view it through a browser. Feedback was requested from Rachel, Erich, and Dave.

Feedback from the Marketing Department came in the form of a Microsoft PowerPoint file, which displayed an example of each page they wanted on the site. Although this meant changes to the design, it was a great tool for discussing the site layout and functionality. In the requirements document provided to BMAG, the

PowerPoint examples were a good reference as the functionality on each page was discussed.

### Coding

The web pages were created in Notepad using mostly HTML. An external Cascading Style Sheet named `sitestyle.css` contains classes with various values for attributes such as `font-style`, `font-weight`, `font-family`, `font-size`, `margin-left`, and `color`. One class uses the CSS `background-image` attribute to set a lighthouse image. The use of tables was limited in order to speed up page rendering, using them on few pages and within those pages only in the sections where they were needed.

Research results led to the conclusion frames have both advantages and disadvantages, and since there are other sites employing using them successfully, it was decided to use them on the BMAG site.

In `index.html`, two framesets exist. The first frameset contains a frame for `title.html`, which is placed along the top of the pages, and a frame for `contentsbar.html`, which is also located near the top of the pages and provides navigation abilities. The second frameset is nested within the first frameset. It contains a frame for `navbar.html`, another navigation bar, and a frame for `homepage.html`. As each page on the site is accessed, it will be displayed in this last frame. `index.html` also contains a message for users whose browsers do not support frames: "Your browser does not support the technology used on this page." is placed between "noframes" tags.

The left navigation bar in the Agent area will display different links than the navigation bar in the non-secure area. The top navigation bar will remain the same so

Agents can move back to the non-secure area. Due to the different left navigation bar and a different home page, the Agent area uses file agentindex.html. Its first two frames are the same as those used in index.html. The last two frames are agentnavbar.html and agenthome.html.

A JavaScript file was created to be called by each page as a footer. The footer contains a copyright phrase; links to a privacy page, a terms and conditions page, and the W.R. Berkley Corporation website; an email link to the webmaster; and a last modified date phrase. When users see recent dates on the last modified date line, it will give them confidence the site is kept current. Since not all browsers can use JavaScript, each page contains a section within “noscript” tags stating: “Your web browser does not support the programming language used on this page (JavaScript).” However, since most of the target audience is believed to be using Internet Explorer, they will be able to see items coded using JavaScript.

Despite some risks, use of an HTML form was considered the best solution for providing an email page. Since the other areas of the site did not need to use Informix or Java, it didn't seem justifiable to install a Java environment or create an Informix database and install Informix Data Director pages simply for an email form. If an HTML form did not work, the Contact Us page could simply provide a link to email and not capture additional information via form elements.

The site had several areas conducive to using a database. Since BMAG did not want to use Informix, and Access would not run on Linux, an alternative solution, as described in Chapter 2, will use an Access database installed on BMAG's network.

A prototype was developed using this format and via Microsoft NetMeeting the prototype was presented to Erich and Rachel at BMAG. They were pleased with the results and consequently this method was chosen. The simplicity of the process would ensure current employees were able to maintain the data with very little training, as they were already familiar with Access. It would be likely the site would be kept current due to the simple process. Though Access is not the most powerful database available, it was suited to BMAG's needs, as they would not be performing complex operations on the database, the website would not be connecting directly to the database, and Access could handle the amount of data being stored in the tables.

Reports were developed in Access which could be sent via FTP to the web server. First, six tables were constructed in Access to store information about each area: tblAgents, tblAnnounce, tblInsuranceForms, tblJobs, tblManuals, tblRules. The tables hold information such as a system-generated ID as the key, manual name, applicable state, effective date, and associated PDF file name.

Next, queries were created which sort data in the manner in which it is to be sorted on the website. For example, the manuals query creates a list of insurance manuals sorted alphabetically by product type, then by state, followed by title, and finally in descending numerical order by effective date. The queries are used by reports which are embedded with HTML code. The data from the tables is interspersed with the HTML. These reports become the website pages.

Everything is tied together by Access macros which perform various actions in order to produce the reports. There is a macro related to each table. Each macro starts by opening the associated query. It then opens the report. However, most of the macros are

set up to open the report not just once but multiple times, because one report is being used to create multiple web pages. For example, the manuals macro opens report rptManuals with a Where Condition stating [LOB]="Businessowners". LOB is an insurance term meaning line of business, or in other words, the product type. Because BMAG wants to provide a page for each line of business, a report is created solely for Businessowners, and when copied to the web server, it becomes the Businessowners manual page. The manuals macro continues on, creating reports for each line of business. Each one is saved on a drive on BMAG's network.

The last macro action is type "RunCode" which runs a Visual Basic function called runmanuals. Runmanuals dimensions a String named stAppName and sets its value to a network location, "M:\wrbmag\_internet\batch\_files>manuals.bat." This is a DOS batch file which calls FTP with another file, manualsput.ftp, as a parameter. Manualsput.ftp contains all of the FTP information such as user name, password, change directory command, and the mput command.

To make the database easier to use, an Access form was created with buttons Announcements, Forms, Rules, Manuals, Jobs List, Agent Find. When pressed, these buttons launch the associated macros. This makes updating the HTML pages simple and does not require HTML knowledge. Continuing with the manuals example, if a new manual is added, BMAG will perform three steps. First, they'll add the manual information to the table tblManuals. Then they'll select the Manuals button on the form, which will insert the new manual into the appropriate position on the report and FTP the report to the web server. Last, they'll FTP the associated PDF file to the web server.

The instructions for using the Access portion of the website are included in a document created for BMAG, called Website Reference Guide, which can be found in Appendix D of this report.

The use of cookies on the new BMAG site was considered. However, there was not a real need for them. BMAG did not wish to customize anything on the site for individual users and they weren't particularly interested in counting the number of visits per user. They were interested in page hits, but the Apache log files analyzed through Analog software would handle that. Though BMAG wanted to offer a link to a company store which would market items with the BMAG logo, that application would be maintained by an outside vendor. BMAG would know which Agents were accessing the secure area of the site, since users had to obtain login information from BMAG. The site will contain product information that may lead to interest from Agents with whom they're not currently associated, but attracting new Agents is not a major goal of the site, and there is no need to set cookies on these users' computers. Due to BMAG's method of product distribution, potential policyholders are unable to purchase products directly from them and specific information about these users does not need to be tracked. Current policyholders don't need cookies either. In reality, most policyholders will use their agency's website, not BMAG's. There are no plans to allow policyholders access to their policy information via the BMAG site.

Even though no cookies would be used, this did not mean BMAG would have no information about users. As mentioned above, the Apache web server, along with Analog software, could provide user statistics. Analog, a logfile analyzer, could be configured on the web server and its results made available to BMAG through a URL.

The report produced by Analog would contain information such as number of successful requests, number of failed requests, activity per hour, and amount of traffic in each server directory.

During the analysis of security issues, it was discovered name-based virtual hosting is used on the web server that will host the BMAG site. Name-based virtual hosting is recommended by Apache, except in certain situations. One of those situations is if SSL is used on the server. In that case, IP-based virtual hosting must be used. However, this issue can be circumvented because it is possible to use both name-based and IP-based virtual hosting on one server. The web server can therefore be configured to use IP-based virtual hosting for the BMAG site and continue to use name-based hosting for the other sites on the server.

Doug was still not convinced BMAG needed SSL on the server and felt the e+Plus server was most appropriate for holding secure data. Through more conversations with BMAG, it was discovered they were less concerned with someone obtaining the information in the secure area of the site, than they were concerned about someone gaining access to their backend systems. Since we were not making any connections directly to their network, it was explained to them this would not be an issue.

In the interest of looking at all options, a prototype was developed showing how the e+Plus home page could be tailored to become what BMAG envisioned as an Agent area. This would take advantage of the security built into e+Plus and require maintenance of only one user list. Links would bring Agents out of e+Plus to an extranet where they could access insurance manuals and rules, forms, and announcements, as the Continental Western and Union Standard sites do. Though these documents would not



be totally secure, it would take some hunting for someone without a sign-on to be able to find them.

BMAG did not want to implement this option for a couple of reasons. One, even though the information in the secure area was not completely sensitive, they wanted SSL on the server so the content would not be limited in the future to non-sensitive information. Two, they felt making Agents enter e+Plus, with its different style, would disrupt the continuity of the users' experiences. The e+Plus home page could be altered, but only its main frame and not the left frame, which is blue.

Another option would again involve changing the e+Plus home page. Links to the Agent information, instead of going to the BMAG web server, could connect to documents stored on the e+Plus web server. This option was not viable either. It would still give Agents what BMAG felt would be a disjointed experience. Additionally, the e+Plus team did not want to introduce new risks to e+Plus by hosting other applications on the same server.

What about not implementing SSL, but requiring a user name and password? Again, this would limit BMAG's ability to post sensitive information in the future. In addition, as it was important to BMAG that Agents be able to use the same login information for the new site as used for e+Plus; if someone was able to intercept this information, they would not only have access to the new site, but also potentially to e+Plus.

In the end, BMAG chose the option of implementing SSL on Apache. As of the date of this report, the SSL is in the process of being implemented.

## Testing

Unit testing occurred throughout the project. As coding occurred, testing was performed on a local development environment, using Internet Explorer. When the site was originally accessed using Netscape, some coding changes needed to be made. The biggest issue was with the sizing of the frames where the navigation bars reside. These had to be resized numerous times before they looked acceptable on both Internet Explorer and Netscape. Additionally, the last modified date code on Internet Explorer recognized the year without any coding involving the century; for Netscape it was necessary for the code to determine which century it is. Next, the lighthouse logo did not appear on Netscape. Changing a backslash in `sitestyle.css` to a forward slash remedied that. Last, Netscape didn't recognize some of the font sizes used in the style sheet; when changed to percentages, both browsers worked fine.

Near the beginning of March, the code was moved to the test box and BMAG was asked to begin acceptance testing. The test box was not a true mirror of production, since it did not include the other applications which reside on the production box. However, since those other applications will reside in different directories and be contained under different virtual hosts, this was not a big risk.

During the acceptance testing phase, Erich Schelin tested with a lower monitor resolution and as a result, some areas of the site were not appearing correctly. Changes, mostly to the cascading style sheet, were made to address this issue.

## CHAPTER 4: CONCLUSIONS AND SUMMARY OF FUTURE WORK

This chapter will describe challenges encountered, conclusions, and a summary of future work.

### Conclusions

The objective of creating a web portal for Independent Insurance Agents was fulfilled. Agents may link to insurance industry sites, stock information, and e+Plus, and they can obtain timely information from BMAG. Offering company manuals and forms to current Agents not only provides a convenient access method, but also provides a way for BMAG to reduce costs associated with mailing these items.

In addition, the portal appeals to a larger audience, including: potential Agents by providing information about BMAG and its products; current policyholders by providing information about the company, including contact information; potential policyholders by providing company information, product information, and Agent information; and, lastly, potential employees by providing a list of employment opportunities. Thus, the site meets the project's second objective.

During the project, there were some minor resource challenges. There were two contacts on this project: BMAG's Vice President of Information Services and their Marketing Coordinator. The project began with the VP as the main contact, but the Marketing Coordinator had a more specific vision for the site and provided most of the material. This worked out well for the most part, however, at the end of March the Marketing Coordinator began a five-week medical leave. Some outstanding issues then

shifted to the VP. A few changes he requested conflicted with the original requests from the Marketing Coordinator.

Issues with security were challenging from both a technical and a resource standpoint. The author was caught in the middle a little bit, between a customer who wanted SSL and BTS employees who weren't convinced it was necessary, and if it was, it would be more appropriate to deploy secure pages on an existing SSL web server. In addition, in the last weeks of the project, Doug's position changed to only include database duties, making him unavailable to finish the SSL implementation on the web server. Technically speaking, security became a much bigger issue than had been anticipated and much research needed to be done to gain a good understanding of it.

As with many projects, trying to complete the website following the initial timeline was also a challenge. On the Gantt chart, task times were underestimated. Since this was not a project assigned as part of the author's job, time spent on it was to be outside of regular work time. However, contact with BMAG and colleagues within BTS needed to be made during the day, while trying to keep work-time hours on the project to a minimum. This was challenging at times.

As of the writing of this document, the website has not been implemented in a production environment, although it is very close to that point. Until it is in use, it is difficult to determine if the project's third objective, providing a site that's easily maintained, was fulfilled. However, since the site information with the most potential to change frequently is updated via a simple Access database, much of the site maintenance will not require personnel with a strong technical background.

### Summary of Future Work

The website will be deployed at URL [www.wrbmag.com](http://www.wrbmag.com). The SSL will be added shortly and at that time access to the secure area will change slightly. For the initial deployment, plans are to use the e+Plus security, bringing the Agents into e+Plus, where there will be a link to the extranet area of wrbmag.com. Once the wrbmag.com web server has SSL, the secure area will be controlled through that web server and the e+Plus security will no longer be utilized for the Agents area. When the SSL is enabled, it may be necessary to write an application to authenticate users. However, it's possible the authentication could be handled by Apache's database authentication modules.

The requirements document was a good place to set expectations and clarify responsibilities. However, it is often difficult to clearly define the end of an IT project; and this document may have been too ambiguous in that regard. As more research was done, additional questions arose and as a result not all of the requirements were stated upfront. Lacking a clearly defined project endpoint, it is anticipated BMAG will ask that some additional work be performed on the site.

Additionally, especially in the absence of the Marketing Coordinator, there may not have been adequate acceptance testing, so as site usage increases, more changes will probably be requested. As BMAG has ideas for enhancements, the challenge will be to define the point at which development ends, and the maintenance phase begins. While it is not desirable to deny their requests for changes, this is not a project that would normally be handled by BTS and therefore they would like it to be finished as soon as possible.

Overall, it is believed BMAG will be pleased with the site and the new opportunities for communication it provides them.

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## APPENDIX

### Appendix A - Work Breakdown Structure

#### Analysis

- Discuss high level overview of website
- Create project proposal
- Submit project proposal
- Receive approval of project
- Form project team
- Research other insurance sites, including those within WRBC
- Research search engines
- Develop requirements document
- Determine software needed
- Determine host location
- Receive BMAG signoff on requirements

#### Design

- Design site
- Receive BMAG approval of design

#### Coding

- Coding
- Create user documentation

#### Testing

- Unit testing
- Integration testing
- Regression testing

#### Implementation

- Deploy application
- User training

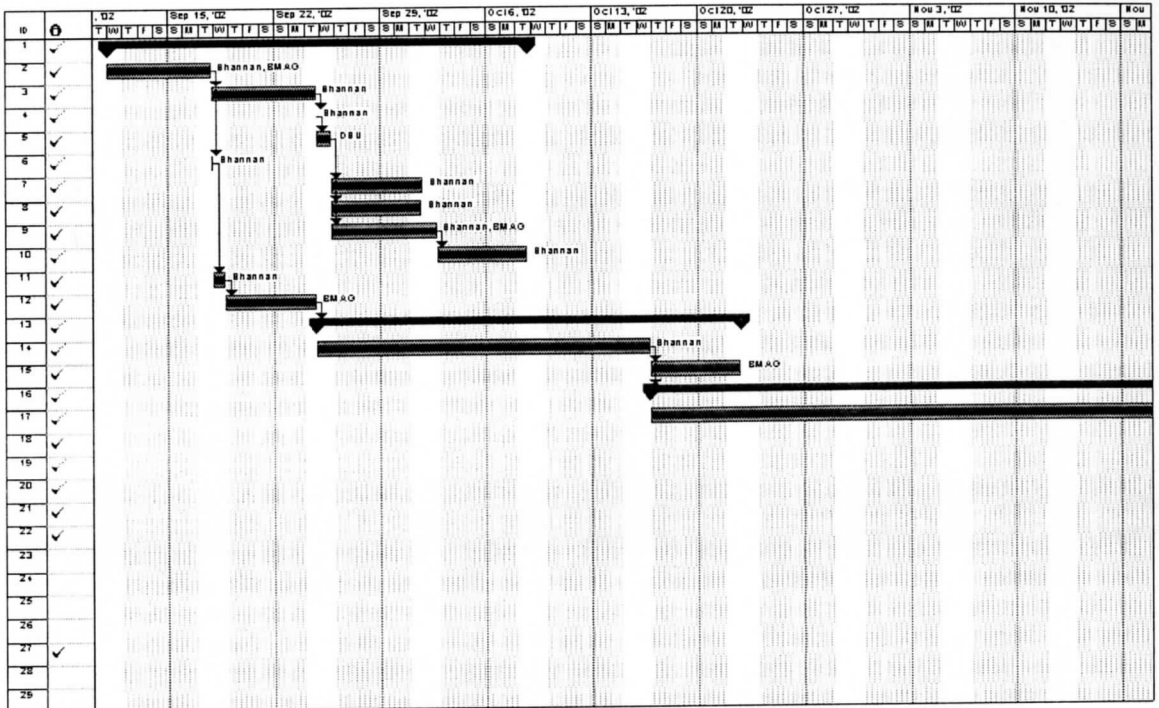
#### Wrap Up

- Write project report
- Prepare presentation
- Give presentation

# Appendix B - Gantt Chart

Figure B.1 Left Side of Gantt Chart

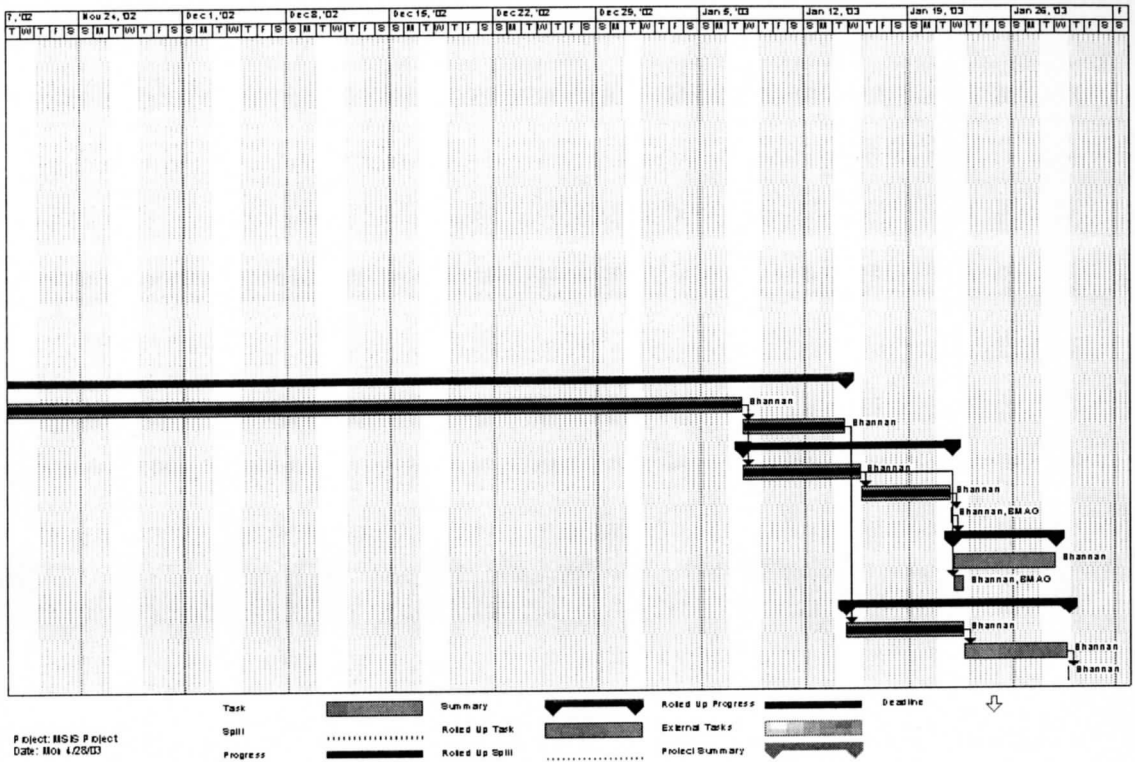
DIVIAJ WED FORA



Project: ISIS Project  
Date: Nov 4/25/02

Task		Summary		Noted Up Progress		Deadline	
Spill		Noted Up Task		External Task			
Progress		Noted Up Spill		Project Summary			
Milestone		Noted Up Milestone		External Milestone			

Figure B.2 Right Side of Gantt Chart



## Appendix C - Requirements Document

**REQUIREMENTS AND DESIGN SPECIFICATIONS**  
**FOR**  
**BERKLEY MID-ATLANTIC GROUP**  
**WEB PORTAL**

**Prepared by:**  
**Shannan Gerjets**

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## PROJECT SUMMARY

### 1.1 Summary

This project includes development and implementation of a web portal for Berkley Mid-Atlantic Group (BMAG), a member of the W.R. Berkley Corporation. The portal will include access to office location information, legal and privacy statements, an agent locator, employment information, and secure access for agents to obtain agent manuals and other company information. The site will function as a portal to e+Plus, the company's on-line quoting and policy inquiry system.

### 1.2 Business Need

Currently, BMAG does not have a presence on the World Wide Web. E+Plus is an on-line quoting and policy inquiry system available only to agents currently associated with the company. A web portal will give BMAG the opportunity to reach a wider audience, including potential customers, potential agents, and potential employees.

### 1.3 Audience

The intended audience for this web portal includes both current and prospective insurance agents, current and prospective insureds, and prospective employees. The portal will not function as an Intranet for current employees.

### 1.4 General Constraints

#### Hardware or software environment

A web server will be required to house software needed for the web portal (this server is already available at Berkley Technology Services' Network Operations Center (NOC) in Wilmington, Delaware).

#### End-user environment

Users accessing this site must have Internet access, with browser software Internet Explorer version 5.5 or higher or Netscape version 7.0.

### 1.5 System Interfaces

- Microsoft Access database of agencies, which is already being maintained by BMAG
- Database which will store login names and passwords of BMAG agents who have been granted access to the site

- BMAG e-mail system. Note: BMAG will be responsible for setting up e-mail accounts to which site users can send mail.

## 1.6 Maintenance

- Once the web portal is implemented, ongoing maintenance will be performed by BMAG. Implementation will be considered complete when functionality exists as described in this document.
- BMAG will be responsible for obtaining any training necessary to maintain the site.
- Generally speaking, BMAG will need to insure all information on the site is kept current. This includes, but is not limited to, the information listed below:
  - Agent manuals
  - Agent forms
  - Agent announcements
  - Database containing agent information to be used with agent locator functionality
  - Database of agent sign-on's and passwords to agent's area
  - Product information
  - All hyperlinks to other pages within the site and on other sites
  - Employment information
  - E-mail links
  - References to specific BMAG personnel
  - Office location information
  - e+Plus information
  - Billing options information

## 1.7 Training and Documentation Requirements

- Developer (Shannan Gerjets) will be responsible for creating basic maintenance documentation for BMAG's use. This documentation will be located within the web pages as comments wherever possible.
- Documentation provided by developer will assume reader audience has technical knowledge; documentation will not include instruction on the various technologies used.
- BMAG will be responsible for creating any necessary documentation for users. Specifically, this may include agents who need a password to access the Agent Section of the portal. It would also include documentation for individuals who will be responsible for site maintenance.

## 1.8 Testing

### 1.8.1 Validation/User Acceptance Testing

Validation, or User Acceptance, testing will include verifying site functionality. This should include testing all hyperlinks, performing agent searches, testing e-mail functionality, verifying security into the agent section works as expected, linking to e+Plus and either entering a quote or inquiring on a policy, and reviewing each page of the web portal.

Testing will occur on machine BTSLP3, located at the Berkley Technology Services' NOC in Delaware. The URL for this site is webtest.bts.wrbc.

### 1.8.2 Regression Testing

Since this is a new web site, regression testing will be limited. It should include verifying the agent database functionality has not been affected by the web portal development and implementation.

## 1.9 Risks

- If resources are not available to provide information to the developer and to perform testing, site implementation will be affected
- The portal will be dependent on the web server at the NOC in Delaware, so issues with the web server may affect the availability of the site
- BMAG resources may need to pursue training to obtain the skill set needed for site maintenance.

### 1.10 Primary Business Contacts

Name	Company	Telephone
Erich Schelin	BMAG	804-285-2700 ext 1184
Rachel Hogge	BMAG	804-285-2700 ext 4108

## 2 DESIGN

---

### 2.1 Site Hosting

#### 2.1.1 Summary

The web portal will be hosted at the Berkley Technology Services' NOC in Delaware on machine wrbclp4.

#### 2.1.2 Assumptions

- The NOC resources will be able to incorporate hosting of the BMAG website into their workload.
- There is room on the wrbclp4 machine for the BMAG website code.

#### 2.1.3 Dependencies

- Machine must be available for hosting

### 2.2 Stylesheet

#### 2.2.1 Summary

Style elements such as fonts, colors, and margins will be managed by cascading stylesheet technology, which allows separation of the structure and content of web pages.

#### 2.2.2 Modules

<b>.Module Name</b>	<b>Technology</b>	<b>Description</b>
sitestyle.css	Cascading stylesheet	Will manage design elements within the pages of the website.

## **2.3 Navigation bars**

### **2.3.1 Summary**

Navigation bars will be used for site navigation. They will provide links to other pages within the site. There will be one navigation bar on the left side of each page and another along the top of each page, under the page heading. Many times, links change color once a user has visited the corresponding page. However, because the left side bar will be green and the top bar will be black, the links within these sections will remain white whether visited or not visited, for ease of viewing.

The left side navigation bar will contain different links for agents who are within the password-protected agent's area.

### **2.3.2 Example**

See Appendix.

## **2.4 Lighthouse logo**

### **2.4.1 Summary**

A lighthouse logo will appear in the center background (with a "watermark" effect) of each page of the web portal.

### **2.4.2 Example**

See Appendix.

## **2.5 Header**

### **2.5.1 Summary**

A header will be placed at the top of each page on the web portal.

### **2.5.2 Example**

See Appendix

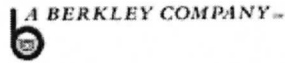
## **2.6 Footer**

### **2.6.1 Summary**

A footer will be placed at the bottom of each page on the web portal containing copyright information, links to a "Terms and Conditions" page and a "Privacy Policy" page, and the Berkley Company logo.

## 2.6.2 Example

© Copyright 2003 Berkley Mid-Atlantic Group. All rights reserved.  
Use of this site is subject to the following [terms and conditions](#) and our [privacy Policy](#).



## 2.7 Home page

### 2.7.1 Summary

This will be the first page a site visitor sees when accessing the site. It will contain the BMAG vision statement and links to: the Independent Insurance Agents site ([www.???](#)), [www.adobe.com](http://www.adobe.com), A.M. Best Company ([www.???](#)), and ACORD ([www.???](#)).

### 2.7.2 Modules

Module Name	Technology	Description
index.html	HTML	See example in Appendix

## 2.8 Terms and Conditions Page

### 2.8.1 Summary

This page will set forth the terms and conditions to which users of the web portal must adhere. An email link to Rachel Hogge will allow users to inform BMAG of intentions to link to the BMAG site.

### 2.8.2 Modules

Module Name	Technology	Description
terms.html	HTML	See example in Appendix

## 2.9 Privacy Policy Page

### 2.9.1 Summary

This page will provide users of the web portal with information on BMAG's Privacy Policy.

### 2.9.2 Modules

Module Name	Technology	Description
privacy.html	HTML	See example in Appendix

## 2.10 Products and Services Page

### 2.10.1 Summary

This page will list products and services offered by BMAG.

### 2.10.2 Modules

Module Name	Technology	Description
products.html	HTML	See example in Appendix

## 2.11 Find An Agent Page

### 2.11.1 Summary

A list of states will function as links to lists of BMAG agents within each state. The pages which display will be populated with information from a database. The name, address, phone number and fax number will display for each agent.

### 2.11.2 Modules

Module Name	Technology	Description
agentfind.html	HTML	See example in Appendix
delaware.jsp?	JSP?	See example in Appendix
washdc.jsp?	JSP?	
maryland.jsp?	JSP?	
northcarolina.jsp?	JSP?	
pennsylvania.jsp?	JSP?	
southcarolina.jsp?	JSP?	
virginia.jsp?	JSP?	

## 2.12 Employment Page

### 2.12.1 Summary

Information on employment opportunities within BMAG will be listed here. A brief description of each open job position will be displayed, with a link to a PDF document which contains more details about the job. A link will also allow potential employees to send email to the BMAG human



resources department.

### 2.12.2 Modules

Module Name	Technology	Description
employment.html	HTML	See example in Appendix

## 2.13 Locations Page

### 2.13.1 Summary

This page will list BMAG locations.

### 2.13.2 Modules

Module Name	Technology	Description
locations.html	HTML	See example in Appendix

## 2.14 Company Store Page

### 2.14.1 Summary

It has not yet been determined if this page will be included in the scope of this project.

## 2.15 Agent's Area Sign-on Page

### 2.15.1 Summary

This will be the first page of a password-protected area, only accessible by BMAG agents which have been granted access by BMAG. The agent will be required to input a sign-on name and password. The system will verify the sign-on and password exist in a database maintained by BMAG. The page will also contain a link to e+Plus, where they can go to receive policy, billing and claims information or obtain a quote.

### 2.15.2 Modules

Module Name	Technology	Description
agentarea.html?	HTML?	See example in Appendix

## 2.16 Agent's Home Page

### 2.16.1 Summary

This page will be within the Agent's Area and will contain a service commitment statement.

### 2.16.2 Modules

Module Name	Technology	Description
agenthome.html?	HTML?	See example in Appendix

## 2.17 Agent's Small Business Page

### 2.17.1 Summary

This page will be within the Agent's Area and will contain information about the BMAG Small Business group.

### 2.17.2 Modules

Module Name	Technology	Description
smallbusiness.html	HTML	See example in Appendix

## 2.18 Agent's Excess and Surplus (E&S) Page

### 2.18.1 Summary

This page will be within the Agent's Area and will contain information about subsidiary Berkley Excess.

### 2.18.2 Modules

Module Name	Technology	Description
e&s.html	HTML	See example in Appendix

## 2.19 Agent's Loss Control Page

### 2.19.1 Summary

This page will be within the Agent's Area and will contain information about loss control.

## 2.19.2 Modules

Module Name	Technology	Description
losscontrol.html	HTML	See example in Appendix

## 2.20 Agent's e+Plus Page

### 2.20.1 Summary

This page will be within the Agent's Area and will contain information about e+Plus. It will have links to: e+Plus, a Quick Quote User's reference guide, e+Plus FAQ page, How to Find a Policy documentation, How to Quote Online documentation, and email to e+Plus support personnel. It will also contain a search box???

### 2.20.2 Modules

Module Name	Technology	Description
e+Plus.html	HTML	See example in Appendix
links to ???		

## 2.21 Agent's Billing Options Page

### 2.21.1 Summary

This page will be within the Agent's Area and will contain information about BMAG billing options. It will have links to e+Plus and How to find Installment Schedule documentation.

### 2.21.2 Modules

Module Name	Technology	Description
billing.html	HTML	See example in Appendix
links to ???		

## 2.22 Agent's Forms Page

### 2.22.1 Summary

This page will be within the Agent's Area and will contain a list of links to insurance forms. The forms will be stored in PDF format on the web server (wrbclp4).

## 2.22.2 Modules

Module Name	Technology	Description
forms.html	HTML	See example in Appendix

## 2.23 Agent's Manuals Page

### 2.23.1 Summary

This page will be within the Agent's Area and will contain a list of links to BMAG manuals. The manuals will be stored in PDF format on the web server (wrbc1p4).

### 2.23.2 Modules

Module Name	Technology	Description
manuals.html	HTML	See example in Appendix

## 2.24 Agent's Announcements Page

### 2.24.1 Summary

This page will be within the Agent's Area and will contain a list of links to BMAG announcements. The announcements will be stored in PDF format on the web server (wrbc1p4).

### 2.24.2 Modules

Module Name	Technology	Description
announce.html	HTML	See example in Appendix

## 2.25 Agent's Contacts Page

### 2.25.1 Summary

This page will be within the Agent's Area and will contain a form which agents can fill out and email to BMAG.

### 2.25.2 Modules

Module Name	Technology	Description
contacts.html	HTML	See example in Appendix

## 2.26 Appendix

Examples are shown in Microsoft Powerpoint presentation, provided by Rachel Hogge, BMAG.

## Appendix D - Website Reference Guide

# Berkley Mid-Atlantic Group

## Website Overview

[www.wrbmag.com](http://www.wrbmag.com)

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## Introduction

This is an overview of the Berkley Mid-Atlantic Group website, [www.wrbmag.com](http://www.wrbmag.com). It contains general information about the site and a list of each page of the site (as of April 2003) including special instructions as necessary.

## Web Server

The site is hosted by the Berkley Technology Services Network Operations Center in Delaware. The web server name is wrbclp4.wrbc.com. The web server software used is Apache, and the machine is running on a Linux operating system.

## Technologies

Each page on the site uses hypertext markup language (HTML). Some Javascript coding is also used within the HTML. The pages can be edited using Notepad.

Most of the fonts, colors, and margins for the site are set using a cascading stylesheet named sitestyle.css. The lighthouse watermark is set in this document also.

Microsoft Access is used to maintain lists of forms, rules, manuals, jobs, agents, and announcements. See Microsoft Access section below for more information.

## Page Structure

Each page of the website has four sections:

1. Title bar (title.html)
2. Top navigation bar (contentsbar.html)
3. Side navigation bar (navbar.html or agentsnavbar.html - see navigation section for more info)
4. Main page (this changes depending on the link clicked in the navigation bars)

Index.html sets up each section using the HTML frame and frameset tags. Within the secure Agents' Area, agentindex.html is used instead of index.html.

## Navigation Bars

Two navigation bars are always displayed.

The first appears near the top, under the title (contentsbar.html).

The second appears on the left side of the page. When a user is not within the password-protected Agents' Area, this navigation bar is populated by navbar.html. When a user is signed in to the Agents' Area, agentnavbar.html populates the bar.

Because the top bar is black and the left bar is green, for ease of viewing the links in these sections will remain white rather than changing colors once visited.

## Header

Each page displays “Berkley Mid-Atlantic Group” as its header (title.html). The four companies comprising the group are listed underneath this.

## Footer

Each page displays a footer containing: a copyright notice, links to terms and conditions and to the privacy policy, an email link for problem reporting, a link to the W.R. Berkley website, and text indicating when the page was last modified. This is file footer.js, which is a javascript file called by each page. This will be simple to update when it’s time to change the copyright to 2004.

## List of Pages

Page Name	File Name	Links to other sites/programs*	Special Instructions
Home	homepage.html	IIABA, Adobe Acrobat, A.M. Best, ACORD, W.R. Berkley page of New York stock exchange	none
About Us	about.html	W.R. Berkley Corporation	none
Products/Services	products.html	None	none
Find Agent	agentfind.html	delaware.html,dc.html,maryland.html,northcarolina.html,pennsylvania.html,southcarolina.html,virginia.html	When changes are made to the list of agents, a Microsoft Access macro will update the individual state pages
Jobs/Employment Opportunities	jobslst.html	Will contain links to each current job opportunity	If jobs need to be added or deleted to the list, the Microsoft Access table tblJobs needs to be updated and pressing the Jobs List button on the Access form will update jobslst.html. Also, each new job description needs to be converted to pdf

			format and copied to the web server.
Office Locations	locations.html	none	none
Contact Us	contacts.html	When "Submit Mail" button is clicked, will launch user's default email program and populate an email message.	none
Company Store	store.html	none	Launches a new window containing an "under construction" message, since this portion of the site will be implemented later.
Terms and Conditions	terms.html	<a href="mailto:webmaster@wrbmag.com">webmaster@wrbmag.com</a>	none
Privacy Notice	privacy.html	none	If Richmond address ever changes, will need to update this page
Agent Service Commitment	agenthome.html	none	none
Commercial Lines	commlines.html	none	none
Loss Control	losscontrol.html	none	none
Premium Audit	premiumaudit.html	none	none
E+Plus	eplus.html	E+Plus, Quick Quote User's reference guide, e+Plus reference guide, email to <a href="mailto:eplus.bmag@wrbmag.com">eplus.bmag@wrbmag.com</a>	none
Billing Options	billing.html	E+Plus, How to Find an Installment Schedule	none
Forms, Rules, Manuals	docmenu.html	Links to forms, rules, manuals	If forms, rules, or manuals are added or deleted, the Microsoft Access tables tblCoFormsRules and tblManuals need to be updated and pressing the corresponding button on the Access form will update the

			documents to which docmenu.html is linked. The pdf documents on the website need to be updated accordingly.
Announcements	announce.html	Links to individual announcements	If announcements need to be added or deleted, the Microsoft Access table tblAnnounce needs to be updated and pressing the Announcements button on the Access form will create a new announce.html and copy it to the web server. Also, each new announcement needs to be converted to pdf format and copied to the web server.

\*Note: the footer of all pages contains links to: terms and conditions page, privacy page, and an email link to [webmaster@wrbmag.com](mailto:webmaster@wrbmag.com)

## Microsoft Access Database

A Microsoft Access database exists for those items on the site which have pdf documents associated with them. The database contains tables for each category of pdf documents. When pdf documents are added or deleted, updating these tables and selecting the appropriate button on a form within Microsoft Access will create a new report including the additions/deletions. The report, in html format, will be copied to the web server and will then be available on the website. The report will contain hyperlinks, which can be clicked to access the pdf documents.

**Example:** A new BOP form has been developed. On the website, there is a list of available BOP forms. To add this form to the list, it first needs to be added to the table of BOP forms which exists in Microsoft Access. On the Microsoft Access Form called

“Update Website,” clicking the “Forms” button will create a report which contains the new form, and will copy that report to the website. After that, the last step is to copy the pdf document to the website.

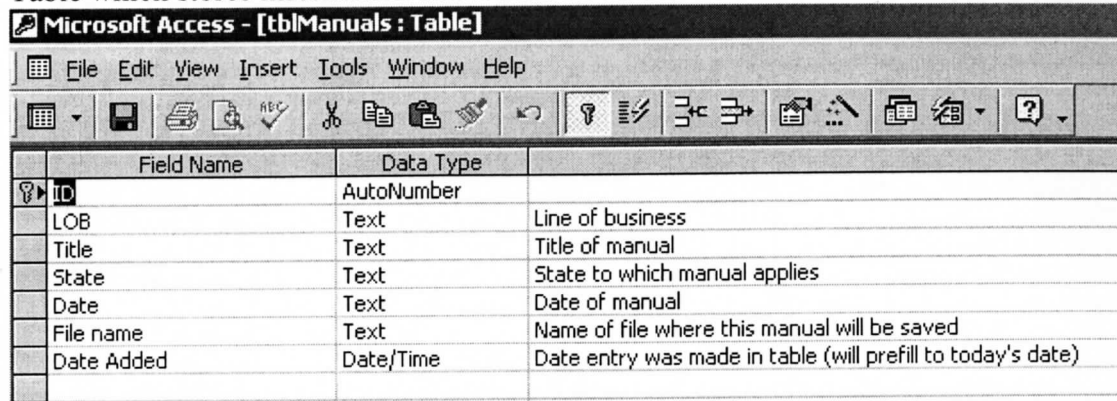
### **Instructions**

1. Within Microsoft Access, open database “Website.”
2. Under the Objects listed on the left, select Tables.
3. Update the appropriate table.
4. Under the Objects listed on the left, select Forms.
5. Open the form entitled “Update Website.”
6. Press the appropriate button. You may see reports briefly appear on the screen as they are created.
7. Close Microsoft Access.
8. Copy the associated pdf documents to the web server.

## Appendix E - Database

*Figure E.1 Table*

Table which stores information about BMAG insurance manuals



The image shows a screenshot of the Microsoft Access interface. At the top, the title bar reads "Microsoft Access - [tblManuals : Table]". Below the title bar is a menu bar with "File", "Edit", "View", "Insert", "Tools", "Window", and "Help". Underneath the menu bar is a toolbar with various icons for file operations, editing, and navigation. The main area of the screenshot is a table structure view for the table "tblManuals". The table has four columns: "Field Name", "Data Type", and two unlabeled columns. The fields listed are: "ID" (AutoNumber), "LOB" (Text), "Title" (Text), "State" (Text), "Date" (Text), "File name" (Text), and "Date Added" (Date/Time). Each field has a corresponding description in the rightmost column.

Field Name	Data Type		
ID	AutoNumber		
LOB	Text		Line of business
Title	Text		Title of manual
State	Text		State to which manual applies
Date	Text		Date of manual
File name	Text		Name of file where this manual will be saved
Date Added	Date/Time		Date entry was made in table (will prefill to today's date)

Figure E.2 Query

Query which selects information about BMAG insurance manuals.

The screenshot shows the Microsoft Access interface for a query named "qryManuals : Select Query". The design grid is as follows:

Field:	LOB	State	Date	Title
Table:	tblManuals	tblManuals	tblManuals	tblManuals
Sort:	Ascending	Ascending	Descending	
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

Figure E.3 Report

Report which creates HTML document for website, with links to PDF documents.

<b>Report Header</b>
<pre>"&lt;html&gt;&lt;head&gt;&lt;title&gt;Manuals Report for Berkley Mid-Atlantic Group&lt;/title&gt;&lt;link rel='stylesheet' href='../sitestyle.css' type='text/css'/&gt;&lt;/head&gt; &lt;body bgcolor='#FFFFFF' link='#009999'&gt;&lt;span class='greenBold'&gt;Manuals&lt;/span&gt;&lt;BR&gt;&lt;BR&gt; &lt;table width='80%' border='1' bordercolor='#FFFFFF' align='center'&gt;&lt;font face='Times New Roman'&gt;"</pre>
<b>LOB Header</b>
<pre>"&lt;TR&gt;&lt;TD colspan='5'&gt;&lt;font Color='#009999'&gt;&lt;b&gt;" &amp; [LOB] &amp; "&lt;/b&gt;&lt;/font&gt;&lt;BR&gt;&lt;/TD&gt;&lt;/TR&gt;"</pre>
<b>State Header</b>
<pre>"&lt;TR&gt;&lt;TD width='20'&gt;&lt;/TD&gt;&lt;td colspan='4'&gt;&lt;font color='#009999'&gt;&lt;BR&gt;" &amp; If([State] Is Null,"Common",[State]) &amp; "&lt;/font&gt;&lt;/TD&gt;&lt;/TR&gt;&lt;TR&gt;&lt;TD&gt;&lt;/TD&gt;&lt;TD align='center' bgcolor='#009999'&gt;&lt;font color='#FFFFFF'&gt;&lt;b&gt;Title&lt;/b&gt;&lt;/font&gt;&lt;/TD&gt;&lt;TD align='center' bgcolor='#009999'&gt;&lt;font color='#FFFFFF'&gt;&lt;b&gt;Date&lt;/b&gt;&lt;/font&gt;&lt;/TD&gt;&lt;/TR&gt;"</pre>
<b>Detail</b>
<pre>"&lt;TR&gt;&lt;TD&gt;&lt;/TD&gt;&lt;TD width='20'&gt;&lt;/TD&gt;&lt;TD bgcolor='#EEEEEE'&gt;&lt;a href="" &amp; [File Name] &amp; ".pdf"&gt;" &amp; [Title] &amp; "&lt;/a&gt;&lt;/TD&gt;&lt;TD bgcolor='#EEEEEE'&gt;" &amp; [Date] &amp; "&lt;/TD&gt;&lt;/TR&gt;"</pre>
<b>Report Footer</b>
<pre>"&lt;/font&gt;&lt;/table&gt;&lt;BR&gt;&lt;BR&gt;&lt;BR&gt;&lt;div class='footer'&gt; &lt;script language='JavaScript' src='../footer.js'&gt; &lt;/script&gt; &lt;noscript&gt; Your web browser does not support the programming language used on this page (JavaScript).</pre>



*Figure E.4 Macro*

Macro which runs the manuals query, creates the report, and copies the report to the website.

Action	
▶ OpenQuery ▼	Run a query to obtain a list of manuals from the table
Close	
OpenReport	Create Boiler and Machinery manuals report
OutputTo	
Close	
OpenReport	Create Businessowners manuals report
OutputTo	
Close	
OpenReport	Create Commercial Auto manuals report
OutputTo	
Close	
OpenReport	Create Commercial Output manuals report
OutputTo	
Close	
OpenReport	Create Commercial Package manuals report
OutputTo	
Close	
OpenReport	Create Commercial Property manuals report
OutputTo	
Close	
OpenReport	Create Crime manuals report
OutputTo	
Close	
OpenReport	Create Farmowners manuals report
OutputTo	
Close	
OpenReport	Create General Liability manuals report
OutputTo	
Close	

*Figure E.5 Module*

Modules within Access which use batch files and FTP to copy reports to the website.

```
website - Send to webservice (Code)
(General) (Declarations)

Call Shell(stAppName, 1)

End Function

Function runmanuals()

Dim stAppName As String

stAppName = "C:\wrbmag internet\batch files\manuals.bat"
Call Shell(stAppName, 1)

End Function

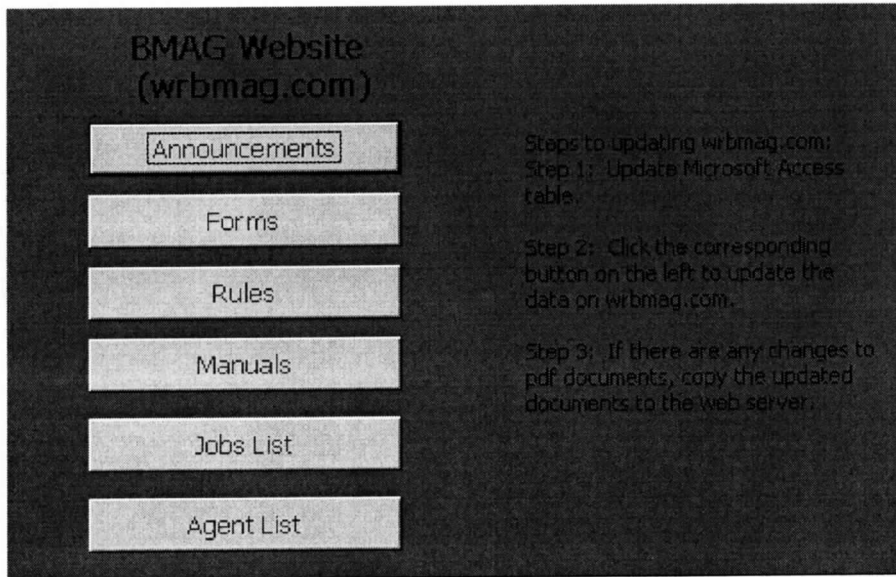
Function runannounce()

Dim stAppName As String

stAppName = "C:\wrbmag internet\batch files\announce.bat"
Call Shell(stAppName, 1)
```

Figure E.6 Form

Access form used to start the macros.



## Appendix F - Code Examples

### Figure F.1 index.html

```
<html>
<head>
<title>Berkley Mid-Atlantic Group</title>
</head>

<!-- Set up frames -->
<FRAMESET rows="18%,8%,*" frameborder=0>
  <NOFRAME>Your browser does not support the technology used on this
page.</NOFRAME>
  <FRAME src="title.html" name="title" scrolling="NO">
  <FRAME src="contentsbar.html" name="contents" scrolling="NO">
  <FRAMESET cols="18%,*" frameborder=0>
    <FRAME src="navbar.html" name="nav">
    <FRAME src="homepage.html" name="main">
  </FRAMESET>
</FRAMESET>
</html>
```

Figure F.2 navbar.html

```
<html>
<head>
<title>Navigation bar (left side) for Berkley Mid-Atlantic Group
website</title>
<link rel="stylesheet" href="sitestyle.css" type="text/css">
</head>

<body bgcolor="#009999">

<!-- Create a navigation bar which will be used on each page (except in agent's
area) -->
  <a class="navlink" href="homepage.html" target="main">Home</a><BR><BR>
  <a class="navlink" href="about.html" target="main">About Us</a><BR><BR>
  <a class="navlink" href="products.html"
target="main">Products/Services</a><BR><BR>
  <a class="navlink" href="agentfind.html" target="main">Find an
Agent</a><BR><BR>
  <a class="navlink" href="./jobs/employment.html" target="main">Employment
Opportunities</a><BR><BR>
  <a class="navlink" href="locations.html" target="main">Office
Locations</a><BR><BR>
  <a class="navlink" href="contacts.html" target="main">Contact
Us</a><BR><BR>
  <a class="navlink" href="agentarea.html" target="main">Agent's
Home</a><BR><BR>
  <a class="navlink" href="store.html" target="_blank">Company
Store</a><BR><BR>
  <a class="navlink" href="privacy.html" target="main">Privacy
Notice</a><BR><BR>

</body>
</html>
```



Figure F.4 docmenu.html

```
<html>
<head>
<title>Menu of forms, rules, and manuals for Berkley Mid-Atlantic Group
website</title>
<link rel="stylesheet" href="sitestyle.css" type="text/css">
</head>

<!-- Links to all the forms, rules and manuals -->
<body class="normal" link="#009999">
<span class="greenBold">Forms, Rules, and Manuals</span>
<table width="90%" border="1" bordercolor="#FFFFFF" align="center">
  <tr bgcolor="#009999" bordercolor="#FFFFFF">
    <td colspan="4"></td>
  </tr>
  <tr bgcolor="#EEEEEE">
    <td width="41%"><font color="#000000">Boiler & Machinery</font></td>
    <td align="center" width="21%"> <a
href="./forms/boilerforms.html">Forms</a></td>
    <td align="center" width="19%"><a href="./rules/boilerrules.html">Rules
</a></td>
    <td align="center" width="19%"> <a
href="./manuals/boilermanuals.html">Manuals</a></td>
  </tr>

  <tr bgcolor="#EEEEEE">
    <td width="41%" height="18"><font
color="#000000">Businessowners</font></td>
    <td align="center" width="21%" height="18"><a
href="./forms/bopforms.html">Forms</a></td>
    <td align="center" width="19%" height="18"><a
href="./rules/boprules.html">Rules</a></td>
    <td align="center" width="19%" height="18"><a
href="./manuals/bopmanual.html">Manuals</a></td>
  </tr>

  <tr bgcolor="#EEEEEE">
    <td width="41%"><font color="#000000">Commercial Auto</font></td>
    <td align="center" width="21%"><a
href="./forms/clautoforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="./rules/clautorules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="./manuals/clautomanual.html">Manuals</a></td>
  </tr>

  <tr bgcolor="#EEEEEE">
    <td width="41%" height="21">Commercial Output Program</td>
    <td align="center" width="21%" height="21"><a
href="./forms/cloutputforms.html">Forms</a></td>
    <td align="center" width="19%" height="21"><a
href="./rules/cloutputrules.html">Rules</a></td>
    <td align="center" width="19%" height="21"><a
href="./manuals/cloutputmanual.html">Manuals</a></td>
  </tr>

  <tr bgcolor="#EEEEEE">
    <td width="41%" height="21">Commercial Package</td>
    <td align="center" width="21%" height="21"><a
href="./forms/clpackageforms.html">Forms</a></td>
```

```

    <td align="center" width="19%" height="21"><a
href="./rules/clpackagerules.html">Rules</a></td>
    <td align="center" width="19%" height="21"><a
href="./manuals/clpackagemanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%" height="21"><font color="#000000">Commercial
Property</font></td>
    <td align="center" width="21%" height="21"><a
href="./forms/clpropforms.html">Forms</a></td>
    <td align="center" width="19%" height="21"><a
href="./rules/clproprules.html">Rules</a></td>
    <td align="center" width="19%" height="21"><a
href="./manuals/clpropmanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%">Crime Policy</td>
    <td align="center" width="21%"><a
href="./forms/crimeforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="./rules/crimerules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="./manuals/crimemanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%">Farm and Ranch Owners</td>
    <td align="center" width="21%"><a
href="./forms/farmandranchforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="./rules/farmandranchrules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="./manuals/farmandranchmanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%"><font color="#000000">General Liability</font></td>
    <td align="center" width="21%"><a
href="./forms/glforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="./rules/glrules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="./manuals/glmanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%"><font color="#000000">Inland Marine</font></td>
    <td align="center" width="21%"><a
href="./forms/imforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="./rules/imrules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="./manuals/immanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%">Surety</td>
    <td align="center" width="21%"><a
href="./forms/suretyforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="./rules/suretyrules.html">Rules</a></td>

```



```

    <td align="center" width="19%"><a
href="/manuals/suretymanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%"><font color="#000000">Umbrella</font></td>
    <td align="center" width="21%"><a
href="/forms/umbrellaforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="/rules/umbrellarules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="/manuals/umbrellamanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%">Workers Comp</td>
    <td align="center" width="21%"><a
href="/forms/workcompforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="/rules/workcomprules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="/manuals/workcompmanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#EEEEEE">
    <td width="41%">Other</td>
    <td align="center" width="21%"><a
href="/forms/otherforms.html">Forms</a></td>
    <td align="center" width="19%"><a
href="/rules/otherrules.html">Rules</a></td>
    <td align="center" width="19%"><a
href="/manuals/othermanual.html">Manuals</a></td>
</tr>

<tr bgcolor="#FFFFFF">
    <td colspan="4">&nbsp;</td>
</tr>
<tr bgcolor="#009999">
    <td colspan="4" align="center">
        <font size="4">Sorted By Form Number</font>
    </td>
</tr>
<tr bgcolor="#EEEEEE">
    <td>A complete list of forms</td>
    <td align="center"><a href="/forms/allforms.html">Forms</a></td>
    <td>&nbsp;</td>
    <td>&nbsp;</td>
</tr>
<tr bgcolor="#FFFFFF">
    <td colspan="4">&nbsp;</td>
</tr>
<tr bgcolor="#009999">
    <td colspan="4" align="center">
        <font size="4">Sorted By Rule</font>
    </td>
</tr>
<tr bgcolor="#EEEEEE">
    <td>A complete list of rules</td>
    <td>&nbsp;</td>
    <td align="center"><a href="/rules/allrules.html">Rules</a></td>
    <td>&nbsp;</td>
</tr>
<tr bgcolor="#FFFFFF">

```

```
<td colspan="4">&nbsp;</td>
</tr>
<tr bgcolor="#009999">
  <td colspan="4" align="center"><font size="4">Sorted By Manual</font></td>
</tr>
<tr bgcolor="#EEEEEE">
  <td>A complete list of manuals</td>
  <td>&nbsp;</td>
  <td>&nbsp;</td>
  <td align="center"><a href="./manuals/allmanuals.html">Manuals</a></td>
</tr>
</table>
<BR><BR><BR>

<div class="footer">
<script language="JavaScript" src="footer.js">
</script>
<noscript>
Your web browser does not support the programming language used on this page
(JavaScript).
</noscript>
</div>
</body>
</html>
```

*Figure F.5 eplus.html*

```
<html>
<head>
<title>E+Plus Page for Berkley Mid-Atlantic Group website</title>
<link rel="stylesheet" href="sitestyle.css" type="text/css">
</head>

<body class="picture" link="#009999">
<span class="greenBold">E+Plus</span><BR><BR>
<!-- Set up table -->
<TABLE cols=4 cellpadding=0>
<TR><TD width=5%></TD><TD width=70%>
<b>What is e+Plus?</b><BR><BR></TD><TD width=2%></TD><TD></TD></TR>
<TR><TD width=5%></TD><TD width=70%>
E+Plus (formerly Anet) is our Agency Interface program available on the
Internet. It allows our agents to access policy, claims, and billing
information (through various search methods), and run various reports
(i.e. loss runs, payments due, renewal lists, etc.). The search engine
provides a user-friendly interface and enables agents to access up-to-the
minute policy information, regardless of the time of day. E+Plus is also the
source of our on-line rating program, Quick Quote.<BR><BR></TD>
<TD width=2%></TD><TD>To sign on to e+Plus, please click the link below.<BR>
<a href="https://eplus2.wrbc.com/mag" target="_blank"></a><BR></TD></TR>

<TR><TD width=5%></TD><TD width=70%>
<b>e+Plus Access</b><BR><BR>
Not signed up for e+Plus? First check with your Systems Administrator to see
if your agency has access. If not, have your Administrator call your local
marketing representative.<BR><BR>
After a few questions, your Systems Administrator will be provided
administrative access. They will then be able to handle setting up individual
access for everyone else in your agency.<BR><BR>
</TD><TD width=2%></TD><TD><b>Resources</b><BR><font color="#009999">Quick
Quote User's Reference Guide<BR><BR>e+Plus User's Reference
Guide</font></TD></TR>

<TR><TD width=5%></TD><TD width=70%><b>Technical Support</b><BR><BR></TD><TD
width=2%></TD><TD></TD></TR>

<TR><TD width=5%></TD><TD width=70%>At the right, and at the e+Plus site, you
will find a User's Reference Guide, a Frequently Asked Questions page, and some
step-by-step guides. If you have forgotten your password, or need to setup a
new password, please contact your Systems Administrator. For all other
technical issues, please call the e+Plus Help Desk at 800-283-1153 x9999 or <a
href="mailto:e+plus.bmag@wrbmag.com">e+plus.bmag@wrbmag.com</a>
<BR><BR><BR></TD><TD width=2%></TD><TD></TD></TR>
</TABLE>

<div class="footer">
<script language="JavaScript" src="footer.js">
</script>
<noscript>
Your web browser does not support the programming language used on this page
(JavaScript).
</noscript>
</div>
</body>
</html>
```

*Figure F.6 footer.js*

```
document.write("&#169 Copyright 2003 Berkley Mid-Atlantic Group Insurance  
Company. All rights reserved.<BR>Use of this site ");  
  
document.write("is subject to the following <a href='terms.html'>terms and  
conditions</a> and our <a href='privacy.html'>privacy notice</a>.<BR>");  
  
document.write("Please report any problems with this site to <a  
href='mailto:webmaster@wrbmag.com'>webmaster@wrbmag.com</a><BR>");  
  
document.write("<a href='http://www.wrbc.com' target='_blank'><img  
src='images/wrbclogo.gif' border='0'></a>");  
  
document.write ("<BR><BR><i>This page was last modified on ");  
  
document.write (getDate() + ".</i></div>");  
  
function getDate() {  
    DateTimeStr = document.lastModified;  
    aDate = new Date(DateTimeStr);  
    dateOfMonth = aDate.getDate();  
    monthNo = aDate.getMonth() + 1;  
    year = aDate.getFullYear();  
    if (year < 1000) {  
        year = year + 1900;  
    }  
    dateStr = monthNo + "/" + dateOfMonth + "/" + year;  
    return dateStr;  
}
```

Figure F.7 sitestyle.css

```
/*
Berkley Mid-Atlantic Group website
CSS Stylesheet
*/

.picture { background-image: url(images/lighthouse.jpg); background-attachment:
fixed; background-repeat: no-repeat; background-color: #FFFFFF; background-
position: 35%}
.header {font-style: italic; font-family: 'Times New Roman'; font-size: 300%;
color: #009999; font-weight: bold}
.headerSmall {font-family: 'Times New Roman'; font-size: 65%}
.normal {font-family: 'Times New Roman'; font-size: 100%; margin-right: 12%;
margin-left: 5%; color: #000000}
.greenBold {font-family: 'Times New Roman'; font-weight: bold; font-size: 125%;
margin-left: 5%; color: #009999}
.greenBoldSmall {font-family: 'Times New Roman'; font-weight: bold; font-size:
96%; margin-left: 5%; color: #009999}
.greenBoldSmallNoMargin {font-family: 'Times New Roman'; font-weight: bold;
font-size: 96%; color: #009999}
.indent {font-family: 'Times New Roman'; margin-left: 10%; font-size: 96%;
color: #000000}
.indentList {font-family: 'Times New Roman'; margin-left: 3%; font-size: 96%;
color: #000000}
.indentList2 {font-family: 'Times New Roman'; margin-left: 6%; font-size: 96%;
color: #000000}
.home {font-family: 'Times New Roman'; font-style: italic; font-size: 110%;
margin-left: 10%}
.footer {font-family: 'Times New Roman'; font-size: 80%; text-align: center}
.navlink {font-family: 'Times New Roman'; color: #FFFFFF; font-size: 100%; }
.agentnavlink {font-family: 'Times New Roman'; color: #FFFFFF; font-size: 120%;
}
.link {font-family: 'Times New Roman'; font-size: 75%}
```

## Appendix G - Web Page Examples

Figure G.1 Website Home Page

**Berkley Mid-Atlantic Group**  
Fireman's Insurance of Washington, DC / Chesapeake Bay Property and Casualty Insurance Company / Berkley Insurance Company of the Carolinas / Presque Isle Insurance Division

Home | About Us | Products/Services | Find Agent | Jobs | Locations | Contact Us | Agent's Home | Store

Home  
About Us  
Products/Services  
Find an Agent  
Employment Opportunities  
Office Locations  
Contact Us  
Agent's Home  
Company Store  
Privacy Notice

HABA  
Adobe Acrobat Software  
A.M. Best  
ACORD  
W.R. Berkley Stock

*Our vision is to be the best regional insurance company by each of us focusing on profitability, service and growth. This vision is achieved through personal accountability for results, the maintenance of a positive attitude, and responsiveness to the needs of our stockholders, agent policyholders and fellow employees/associates.*

© Copyright 2003 Berkley Mid-Atlantic Group Insurance Company. All rights reserved.  
Use of this site is subject to the following [terms and conditions](#) and our [privacy notice](#).  
Please report any problems with this site to [webmaster@wrbmag.com](mailto:webmaster@wrbmag.com)

A BERKLEY COMPANY

This page was last modified on 4/12/2003.

Done My Computer

Figure G.2 Agent Home Page

**Berkley Mid-Atlantic Group**  
Firemen's Insurance of Washington, DC / Chesapeake Bay Property and Casualty Insurance Company / Berkley Insurance Company of the Carolinas / Presque Isle Insurance Division

[Home](#) | [About Us](#) | [Products Services](#) | [Find Agent](#) | [Jobs](#) | [Locations](#) | [Contact Us](#) | [Agent's Home](#) | [Store](#)

**Products / Services**  
[Commercial Lines](#)  
[Loss Control](#)  
[Premium Audit](#)

**Billing / Claims**  
[etPlus](#)  
[Billing Options](#)

**Information Resources**  
[Forms, Rules, Manuals](#)

**Communication**  
[Announcements](#)  
[Contact Us](#)

[Agent's Home](#)

### **Service Commitment to our Agents**

We believe that service sells and we are committed to providing above average service to our agents and insureds. We also believe that strong company/agency relationships are very important in the writing of and retaining of profitable business. We will earn the right to write and retain an increasing share of your profitable business by adhering to the following standards:

#### **New Business**

- All New Business quotes completed and delivered to agents by the "need by" date indicated on new submissions. If no "need by" date is given, we will deliver quotes within 14 days of our receipt of the quote request. If we choose not to quote for underwriting reasons, we will advise agents within 14 days of request.
- Should there be a need for negotiation, we will respond immediately.
- Once our quote is accepted and we receive the order, we will process the New Business policy within 10 days.

#### **Renewals**

- On quoted renewals, we will deliver the quote to agents by 20 days prior to the policy expiration date.
- Should there be a need for negotiation, we will respond immediately.