



FREQUENTLY ASKED QUESTIONS ABOUT Geographic Information Systems (GIS)

ROBERT PECCIA & ASSOCIATES

WHAT IS A GIS?

A Geographic Information System (GIS) is used for creating, storing, analyzing, mapping, and managing spatial data and associated attributes. A GIS combines cartography data, spatial location, and database information into a single source.

HOW DOES A GIS WORK?

A GIS is developed from tabular data, spatial locations, and visual relationships. Data collected in the field using GPS equipment can provide spatial information needed to develop a GIS. Data can also be manually created or "digitized" by inputting information based on existing data, terrain, or aerial photography. Associated tabular data known as "attributes" are tied to the spatial data and can be integrated with standard spreadsheet packages.



WHAT ARE THE APPLICATIONS FOR GIS?

Weather forecasts, emergency services, driving directions, and other commonly used services all rely on GIS data and technologies to provide information. Internet map server technology allows for GIS data to be accessed and analyzed over the internet. Beyond general public services, a GIS can be used for land-use planning, travel demand forecasting, utility location and analysis, maintenance activities, advanced cartography, and any number of other tasks where spatial relationships exist.



WHAT ARE THE BENEFITS OF A GIS?

A GIS provides the ability to create visual aids, complete advanced cartography, analyze data, conduct spatial analysis, and examine data relationships. The digital data can be continually updated, enhanced, and modified to provide the most accurate information possible. GIS applications provide intelligent planning tools used to analyze relationships between sets of data and can help determine the most efficient use of available resources. GIS-based modeling applications can be applied to predict future conditions and analyze "what if" scenarios to aid in the decision making process. This helps increase accuracy and productivity, ultimately saving time and money.

HOW DOES GIS DIFFER FROM A MAP?

A GIS is not simply a mapping program; it is a combination of database management, visualization aids, spatial information, and data analysis tools which allow for the ability to conduct advanced analysis and perform intelligent cartography. A traditional map is static and is only used for visualization purposes. A GIS allows for the examination of spatial and attribute related information, the results of which can be illustrated by developing "smart" maps.

RPA provides a complete spectrum of GIS services designed to meet client needs and assist in project development.

If you have any questions regarding services we can provide, please contact the following individuals:

Brian Wacker, P.E.
VICE PRESIDENT

Scott Randall, EI
TRANSPORTATION PLANNER /
DESIGNER

Gary Lesofski
CADD DEPARTMENT MANAGER

HELENA
P.O. Box 5653
825 Custer Avenue
Helena, Montana 59604
(406) 447-5000
FAX (406) 447-5036

KALISPELL
P.O. Box 5100
102 Cooperative Way, Suite 300
Kalispell, MT 59903
(406) 752-5025
FAX (406) 752-5024

BUTTE
Thornton Building
65 East Broadway
Butte, MT 59701
(406) 533-6770
FAX (406) 533-6830



FREQUENTLY ASKED QUESTIONS ABOUT - *continued*

Geographic Information Systems (GIS)

ROBERT PECCIA & ASSOCIATES

WHY DO I NEED A GIS?

Current trends are increasing the popularity of GIS and are resulting in more and more data being available from both the private and public sectors. A GIS combines numerous systems which historically would require multiple software, databases, and staff members to effectively utilize information. A GIS seamlessly integrates spatial data, attributes, tabular information, visualization tools, and analysis techniques thereby increasing productivity and decreasing costs.



WHAT IS THE FUTURE OF GIS

GIS, with its increasing popularity and broad application base, is only going to continue to grow and mature in the future. Efforts made by Microsoft and Google provide free GIS-based applications for the public which has substantially increased the appeal and usability of GIS. Current trends point to large increases in the use of GIS, particularly with web-based GIS applications. This trend, fueled by the broad spectrum of GIS-based software and tools available, is likely to continue far into the future. The exceptionally active GIS market has increased competition resulting in lower costs and continual improvements to all things GIS. A much wider application of GIS technology is expected to continue in the future throughout the public and private sectors.



HOW CAN RPA HELP?

RPA utilizes GIS technologies to provide leading-edge solutions to meet client needs and assist in project development. We provide a complete spectrum of GIS services and support for private and public clients. RPA has a broad range of experience utilizing GIS for anything from utility database design, to travel demand modeling, to Google Earth interfacing. We employ the latest GIS technologies to ensure accuracy and develop the highest quality product. Contact RPA at (406) 447-5000 for a free consultation of GIS services or go to our website for more information.

WHO NEEDS A GIS?

GIS has a variety of uses that can appeal to any number of agencies and companies. The transportation industry commonly uses GIS to analyze traffic patterns, maintain road inventories, and aid in planning efforts. Environmental agencies may use GIS to determine the location of protected areas and wetlands to help with project development. More and more businesses are using GIS to help establish proper business location, analyze consumer markets, and determine potential customer locations. Utility agencies often use GIS to map facility location, analyze maintenance activities, and inventory existing utilities. Planners use GIS to evaluate impacts of growth, conduct land use planning, and analyze future impacts. Anybody from government agencies, to environmentalists, to public health organizations, to consulting firms can benefit from a GIS.