GIS Personnel Issues

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GIS resources required for each stage of GIS project development.

Full-time responsibilities depend upon the complexity of the system.

Stages of project development	GIS Resources													
	Leader	Manager	Analyst	GIS processor	Database administrator	Programmer	System administrator	Cartographer	Drafter	Digitizer	End user	Contractor/ consultant	User group	Steering committee
Study														
Long-range plan	X		X								X	X		X
Information needs study	X		X								X	X		X
Map inventory	X		X								X	X		X
Cost/benefit study	X		X								X	X		X
Implementation														
Pilot project	X	X	X	X	X	X			X	X	X	X		X
Base map conversion	X	X	X	X	X			X	X	X	X	X		X
Applications development		X	X	X	X	X		X	X		X	X		X
Operation														
Database management		X	X	X	X	X	X	X	X				X	
Network management		X	X			X	X						X	
Operations support		X		X	X	X	X		X	X			X	
Cost recovery		X		X			X						X	
Typical staff size by complexity of system														
Large multi-user system														
Centralized minicomputer														
Small microcomputer network														
Single microcomputer														

GIS Compensation

There is a significant difference in the compensation of GIS programmers based on which GIS and GIS programming language they are using. Programmers who are expert in Intergraph/MDL typically make 25% more than Arc/Info/AML programmers who possess similar experience

	Average Low	Average	Average High
COMBINED NATIONAL			
GIS Project Manager	38,400	47,250	59,400
GIS Programmer *	33,200	46,600	59,730
GIS Specialist (1-4 yrs. exp.)	19,400	26,100	37,800
GIS Specialist (5-10 yrs. exp.)	31,800	44,600	48,800
COMBINED NORTHEAST			
GIS Project Manager	36,000	44,350	48,000
GIS Programmer *	34,000	53,700	74,900
GIS Specialist (1-4 yrs. exp.)	18,000	27,550	37,000
GIS Specialist (5-10 yrs. exp.)	36,000	43,400	59,000
COMBINED SOUTHEAST			
GIS Project Manager	39,000	48,000	65,000
GIS Programmer *	28,000	42,900	68,000
GIS Specialist (1-4 yrs. exp.)	18,000	24,377	39,000
GIS Specialist (5-10 yrs. exp.)	26,000	39,964	51,000
COMBINED MIDWEST			
GIS Project Manager	44,000	48,300	58,000
GIS Programmer *	31,000	48,125	62,000
GIS Specialist (1-4 yrs. exp.)	18,000	25,900	39,000
GIS Specialist (5-10 yrs. exp.)	30,000	42,625	52,000
COMBINED ROCKY MOUNTAIN/SOUTHWEST			
GIS Project Manager	35,000	46,500	52,000
GIS Programmer *	34,000	43,000	54,000
GIS Specialist (1-4 yrs. exp.)	18,000	25,825	36,000
GIS Specialist (5-10 yrs. exp.)	31,000	41,900	52,000
COMBINED PACIFIC WEST			
GIS Project Manager	44,000	48,300	58,000
GIS Programmer *	31,000	48,125	62,000
GIS Specialist (1-4 yrs. exp.)	18,000	25,900	39,000
GIS Specialist (5-10 yrs. exp.)	30,000	42,625	52,000

Year of Statistics and Source

POSITIONS

- GIS PROJECT MANAGER
- GIS PROGRAMMER
- GIS SPECIALIST (1-4 years/experience/ 5-10 years experience)

Senior Data Preparation Technician
Data Preparation Technician

Senior Digital Conversion Technician
Digital Conversion Technician

Cadastral Compiler
Senior Cadastral Technician
Cadastral Technician

Graphics Workstation Operator
Senior GIS Applications Specialist
GIS Applications Specialist

Scanning/Vectorization Technician

IMPACT ON PERSONNEL

BENEFITS

- ☺ Benefit as a decision-making tool
- ☺ Improved work quality (through data based decisions)
- ☺ Greater use of information
- ☺ Satisfaction of better serving customers
- ☺ Better utilization of resources (greater production from fewer people)
- ☺ Reallocation of personnel to areas of greater need
- ☺ Cost savings realized
- ☺ Greater demand for services
- ☺ Fosters cooperation between groups
- ☺ More efficient

IMPACT ON PERSONNEL

TRANSITION ISSUES

- Staff need to learn to use different tools
- Changes the way staff work through projects
- Increased demand for service
- Employee resistance to change
- Lack of expertise in internal support staff
- Short-term lack of experience utilizing technology
- Cost of training/converting staff to the new technology
- Staff uncomfortable with new technology

IMPACT ON PERSONNEL
IMPEDIMENTS

- ☹ Short-term costs
  - Financial cost of technology procurement
  - Cost of training (money and time)
  - Impacts include significant reallocation of resources
- ☹ Experience/lack of expertise
  - Hard to stay in technology mainstream
- ☹ Maintaining a consistent vision
- ☹ Greater demand for services

Most Important SUCCESS Factors

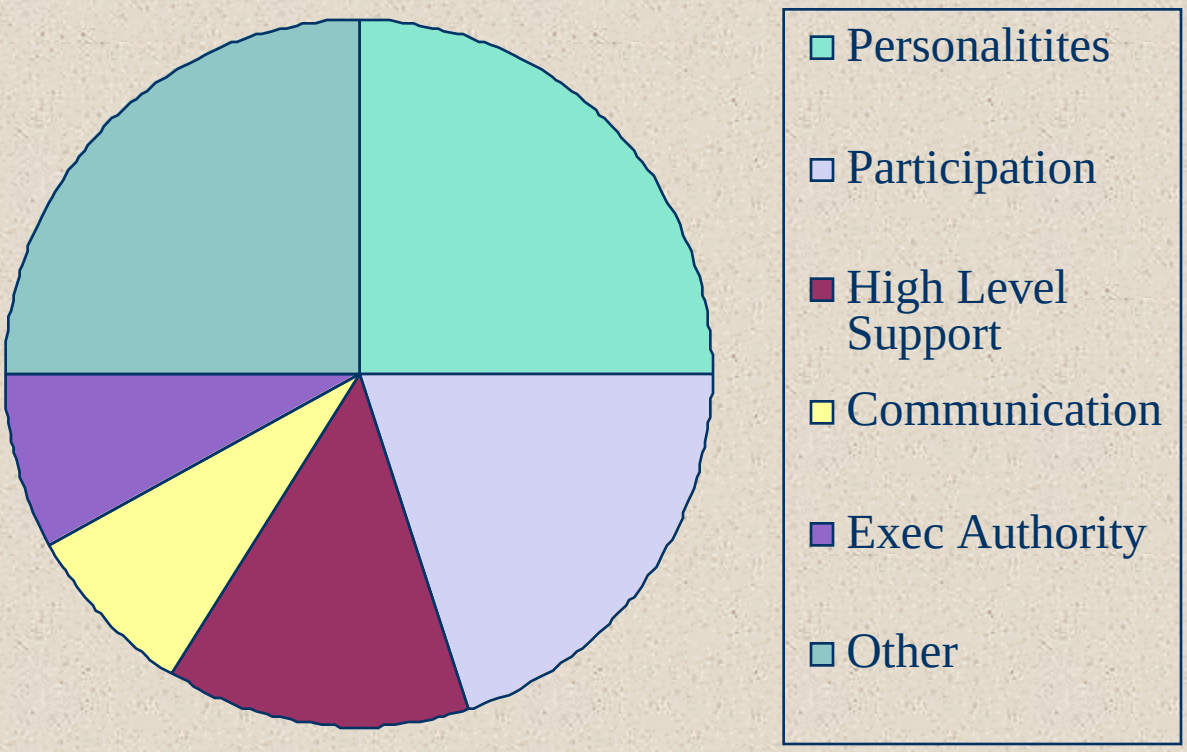
- Executive authority and support
- Unity of direction
- Cooperation of people working in GIS to reduce costs and share experience
- Member participation
- Specific individuals go out and do the work no matter what anybody else does
- Small group
- Good communication
- Perseverance
- Commitment
- Consensus via compromise
- Efforts of individuals
- Mutual respect
- Determination
- Mission makes sense
- Personalities
- Finding a champion
- Leadership and vision

Most Important HINDERING Factors

- Lack of time and resources of participants
- Complexity of issues
- Legislative constraints and politics
- No authority
- Loss of executive support
- No formal technical assistance/training entity
- No tradition of multi-agency management
- Lack of financial support
- Home agency agenda - turf issues
- Great differences in needs and experience
- Lack of coordination
- Lack of support staff
- Member personalities
- Hard economic time
- Lack of higher level direction Proliferation of systems makes joint planning difficult

Not a Technical Problem, but a People/Personnel Problem

Factors Influencing Accomplishments



Early Warning Signs

- Insufficient commitments for staff, funding support
- Lack of vision from executive or team member
- Inadequate technical commitment
- Delays to reduce short-term budget crunches
- Casual attitudes from participants
- Inadequate database maintenance commitment
- Conflicting project objectives
- Reluctance to develop implementation plan
- Attempting too much too soon
- Failure to educate executive committee members
- Ineffective communication channels
- Hidden agendas
- Inability to reach consensus
- All responsibility/ no authority

Measures of Success

- ✗ Continued support from management and user
- ✗ Sustained funding
- ✗ Responsive resource commitment
- ✗ Technical achievements
- ✗ Successful completion dates
- ✗ Tangible benefits
- ✗ Money saved
- ✗ Increased profit margin
- ✗ Lower overhead
- ✗ Improved customer service
- ✗ Quality product
- ✗ Triumph over adversity