

Duties		Tasks											
<b>A</b>	<b>Collect /Create Data</b>	<b>A-1</b> Research existing geospatial data	<b>A-2</b> Manually collect attribute data in the field (82%)	<b>A-3</b> Electronically collect spatial data in the field (e.g. GPS, traffic counters, total station, yield monitors)	<b>A-4</b> Acquire existing geospatial data	<b>A-5</b> Scan non-digital data (91%)	<b>A-6</b> Digitize feature geometry	<b>A-7</b> Create features	<b>A-8</b> COGO (55%)	<b>A-9</b> Enter data base information	<b>A-10</b> Geocode (Adv.)	<b>A-11</b> Reverse geocode (82%) (Adv.)	
<b>A</b>	<b>Collect /Create Data continued</b>		<b>A-12</b> Perform dynamic segmentation (18%) (Adv.)	<b>A-13</b> Create metadata	<b>A-14</b> Administer questionnaires (27%)								
<b>B</b>	<b>Modify Data</b>	<b>B-1</b> Post-process electronically collected field data (73%) (Adv.)	<b>B-2</b> Create topology for related features (64%) (Adv.)	<b>B-3</b> Edit feature geometry	<b>B-4</b> Transform spatial data (e.g. reprojections)	<b>B-5</b> Rectify raster data (e.g. rubbersheeting)	<b>B-6</b> Import CAD files (82%)	<b>B-7</b> Join non-spatial data	<b>B-8</b> Update spatial data attributes	<b>B-9</b> Update non-spatial data attributes	<b>B-10</b> Convert data between formats (e.g. KML, XML, RSS) (Adv.)	<b>B-11</b> Geoprocess data (e.g. clip, buffer, union)	<b>B-12</b> Categorize data
<b>C</b>	<b>Maintain Data</b>	<b>C-1</b> Establish file structure (Adv.)	<b>C-2</b> Back-up data	<b>C-3</b> Optimize data file folders (Adv.)	<b>C-4</b> Optimize data files (Adv.)	<b>C-5</b> Optimize database structure (Adv.)	<b>C-6</b> Update metadata	<b>C-7</b> Validate data changes (multi-editor environ.) (91%) (Adv.)	<b>C-8</b> Quality Assurance / Quality Control (Adv.)				
<b>D</b>	<b>Disseminate Data</b>	<b>D-1</b> Design map layouts	<b>D-2</b> Create interactive maps (82%) (Adv.)	<b>D-3</b> Create static maps	<b>D-4</b> Create map series templates	<b>D-5</b> Create charts (82%)	<b>D-6</b> Create reports (91%)	<b>D-7</b> Export data structures	<b>D-8</b> Publish digital spatial information (CD, DVD)	<b>D-9</b> Publish spatial information on-line (64%)	<b>D-10</b> Publish metadata	<b>D-11</b> Present project summary	<b>D-12</b> Provide technical support for users (Adv.)
<b>E</b>	<b>Maintain Professional Development</b>	<b>E-1</b> Interact with co-workers	<b>E-2</b> View job related information (e.g. blogs, news feeds, print publications, forums)		<b>E-3</b> Complete job related classes (online / classroom)	<b>E-4</b> Participate in job related workshops	<b>E-5</b> Participate in job related professional organizations	<b>E-6</b> Acquire GIS Certification (45%)	<b>E-7</b> Network with other job related professionals	<b>E-8</b> Attend User Conferences	<b>E-9</b> Present at User Conferences (55%) (Adv.)	<b>E-10</b> Automate repetitive tasks (Adv.)	<b>E-11</b> Perform Community outreach
<b>F</b>	<b>Perform Administrative Responsibilities</b>	<b>F-1</b> Complete Company documentation	<b>F-2</b> Communicate with co-workers	<b>F-3</b> Communicate with clients	<b>F-4</b> Organize files according to Company procedures	<b>F-5</b> Supervise interns (82%) (Adv.)							

**Key:** ( \_%): Percentage of panel member organizations who conduct this task when less than 100% (Adv.) Advanced level task - not entry level

**GIS Technician:** “A multi-disciplined individual who applies sophisticated computer hardware and software to collect, store, retrieve, process, analyze and present information in a geospatial context”

# DACUM Research Chart: GIS Technician

**DRAFT**

## General Knowledge

Scale  
Accuracy & precision  
Coordinate systems  
Projections  
Quality control & assurance procedures  
Database structure  
Legal descriptions  
Land divisions  
Land descriptions  
Land measurements

Computers  
Data custodianship  
"ISO 9000" standards  
Copyright laws  
Cadastral  
Contour mapping  
Mathematics  
Remote sensing  
OSHA requirements

## Skills

Technical writing  
Verbal communication  
Organization  
Communication  
Drafting  
Problem solving  
Time management  
Keyboarding  
Research techniques  
Scientific methods  
Problem solving

## Worker Behaviors

Detail orientated  
Dress code  
Punctuality  
Ethical behavior (integrity)  
Self motivation  
Outgoing (friendly)  
Common sense  
Professionalism

## Tools, Equipment, Supplies and Materials

GIS software  
Scanner  
Printer, Plotter  
Computer workstation  
Personal Digital Assistant (PDA)  
Vehicle  
Office software  
Internet

## Concerns

Budget constraints  
Shortage of properly trained workers  
Difficulty remaining current with skills  
Problem with data reliability & integrity  
Regional financial disparities

## Future Trends

Growth of emergency response  
GeoWeb (e.g. Google Earth)  
Desktop functionality moving to the web  
Growth of oblique photography  
Growing importance and application of standards  
Growth of privacy issues  
Information acquisitions  
Service based architecture  
Licensure certification  
Personal portable GIS  
Intelligent Transportation Systems (ITS)

Growing awareness & use of geospatial data  
Personal portable GIS  
Declining cost of ortho-photography  
Location based services (LBS)  
Open source GIS

## Acronyms

CAD Computer Aided Design  
COGO Co-ordinate Geometry  
XML Extensible Markup Language  
GIS Geographic Information Systems  
GTS Geospatial Systems Technicians  
GPS Global Positioning Systems  
ITS Intelligent Transportation System  
ISO International Standards Organization  
KML Keyhole Markup Language  
OGC Open Geospatial Consortium  
OSHA Occupational Safety & Health Admin.  
RSS Real Simple Syndication  
RTK Real Time Kinematic  
TSP Technical Service Provider  
VRT Variable Rate Technology

## DACUM Panel

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## DACUM Facilitators

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Kay Hanley, Recorder

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