

DACUM Research Chart for GIS Technician

DACUM Panel

Ann Boyd
Lead GIS Analyst
City of Bellevue
Bellevue, WA

Glenn Brooks
Geographic Information Officer
Northwest Response
Woodinville, WA

Beth Carpenter
Engineering Technician
City of Sammamish Public Works
Sammamish, WA

Blane Moore
GIS Analyst
PACE Engineers Inc.
Kirkland, WA

Jennifer Recco
Planning Technician
City of Puyallup
Puyallup, WA

DACUM Facilitators

Erik Tingelstad
Highline Community College

Nancy Warren
Highline Community College

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Duties		← Tasks				
A	Create/Maintain Geographic Data Sets	A-1 Research Data Sources	A-2 Acquire Data	A-3 Design Database Structure	A-4 Create Database Tables	A-5 Perform Data Entry (e.g. digitize geographic features, college GPSdata, collect field data, create Auto-Cad)
B	Fulfill Map/Data Requests	B-1 Gather User Requirements	B-2 Research Data Sources	B-3 Design Maps	B-4 Design Cartographic Elements	B-5 Create Maps
C	Conduct Data Analysis	C-1 Respond to Geographic Queries	C-2 Run Database Queries and Calculations	C-3 Interpret Imagery	C-4 Automate Manual Processes	
D	Manage Geographic Data Sets	D-1 Manage Data Files	D-2 Design Database Structure	D-3 Create Database Tables	D-4 Create Database Queries	D-5 Create Database Reports
E	Create Technical Documentation	E-1 Maintain Data Dictionaries	E-2 Create and Update Meta Data	E-3 Document Project Results		
F	Perform Project Management	F-1 Gather User Requirement	F-2 Develop Project Plan	F-3 Estimate Task Schedule	F-4 Coordinate with Project Team	F-5 Coordinate Projects with Stakeholders
G	Manage Equipment and Supplies	G-1 Maintain Plotters and Printers	G-2 Order Supplies	G-3 Schedule Equipment	G-4 Maintain Hardware and Software	
H	Participate in Training and Outreach	H-1 Create Presentation Materials	H-2 Educate and Promote GIS Capabilities	H-3 Give Informational Presentations	H-4 Organize Staff/Department Training	H-5 Train Other Staff
I	Perform Related Technical Duties	I-1 Manage Web Content	I-2 Prioritize Work Load	I-3 Respond to Public Records Request	I-4 Provide Technical Support	I-5 Provide Technology Recommendations

A-6 Convert Data Source (e.g. Auto-CAD)	A-7 Perform Geo-coding	A-8 Automate Manual Processes (e.g. scripting, modal building(A-9 Update Existing Data			
B-6 Perform Graphic Design	B-7 Plot Map	B-8 Publish Map Products	B-9 Create Presentation Materials	B-10 Load/Burn Data onto Media	B-11 Create Mail Lists	B-12 Deliver Maps and Data
D-6 Automate Manual Processes	D-7 Ensure Data Quality (Quality Control, Quality Assurance)	D-8 Conduct Ground Truthing				
F-6 Coordinate work with Consultants						
H-6 Participate in User Groups						
I-6 Participate in Hiring and Supervisory Activities	I-7 Coordinate with Information Technology (IT)	I-8 Research GIS Technology Trends				

General Knowledge and Skills

Database development
Database administration
Cartographic principles/theory
Experience with relational databases
Experience with computer programming concepts
Basic survey principles
Statistics
Web development
Web content management
File transfer
Global GPS system
Relevant domain knowledge
GIS software
Basic remote sensing theory
People skills
Team building
Team participation
Leadership skills
Ability to multi-task
Time management skills
Ability to learn
Teaching skills
Understand: technological standards, projections
scale, map datum, Geoid, geographic principles
Map interpretation
“Think Outside the Box”
Problem solve
“See the Big Picture”
Interpret legal descriptions
Coordinate systems
Windows networks
Computer networking
Network with peers
Analytical thinker
Critical thinking
Communication skills
- oral
- written
- email

Worker Behaviors

Follow procedures
Communicate
Use appropriate office etiquette
Easy-going
Hygienic
Can-do, positive attitude
Solution-oriented
Attention to detail
Flexible
Adaptable
Open-minded
Good sense of humor
Self-starter
Respectful of others
Self-initiated learner
Pride in work
Can work independently and in team
Open to new tasks, assignments, ideas
Organized
Participate outside of office (e.g. within user groups)

Future Trends and Concerns

The ability to program, web integration and scripting
are all growing more important
Staying on top of changing technology
Use of Lidar data
Greater interest in reg. collaboration and standards
Mapping will be more of a household experience
causing an increasing demands on GIS techs
More non-professionals using GIS technology
Funding shift from core GIS effort to whiz-bang
applications
Demand for higher GIS skill levels-programmers
More non-professional opportunities with low/no pay
Production level work being outsourced
Data Quality Concerns
Move toward web-based GIS entry
Mobile GIS/Computing-increasing
More candidates than jobs (entry-level)
Preference given to 4-year degree

Tools, Equipment, Supplies and Materials

Photoshop
Illustrator
Arc GIS Map
Database (Oracle, Excel, Access, SQL)
Plotter
Scanner
Computer/Laptop
GPS
Camera – digital
Compass
MS Office
Auto CAD
Internet Browsers
Mr. Sid
ER mapper
Pathfinder Pro
Data Modeling Tools – Visio
Python
PageMaker
Unix/Linux
Fax machine
U/M map server
Image Server
MS Project