<table>
<thead>
<tr>
<th>Duties</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Create / Acquire GIS Data* (3)</td>
<td>A-1 Define data requirements (C)</td>
</tr>
<tr>
<td>A Create / Acquire GIS Data* (3) continued</td>
<td>A-2 Research available data (C)</td>
</tr>
<tr>
<td>A</td>
<td>A-3 Purchase new data</td>
</tr>
<tr>
<td>B Create Image Data</td>
<td>A-4 Develop databases (e.g. define geometry, attributes) (C)</td>
</tr>
<tr>
<td>C Maintain GIS Data* (1)</td>
<td>A-5 Define feature relationships/behaviors (e.g. relate tables, relationship classes) (C)</td>
</tr>
<tr>
<td>C</td>
<td>A-6 Define feature behaviors (e.g. subtypes &amp; domains) (C)</td>
</tr>
<tr>
<td>D Conduct Spatial/Non-spatial Analysis (4) (Vector, Raster)</td>
<td>A-7 COGD legal descriptions (E)</td>
</tr>
<tr>
<td>D</td>
<td>A-8 Perform tablet digitization (E,C)</td>
</tr>
<tr>
<td>E Generate GIS Products* (2) (hard copy, electronics)</td>
<td>A-9 Perform &quot;heads-up&quot; (on-screen) digitization (E,C)</td>
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<tr>
<td>F Develop Software Applications</td>
<td>A-10 Geocode data (E,C)</td>
</tr>
<tr>
<td>F</td>
<td>F-1 Define user software needs (C)</td>
</tr>
<tr>
<td>G Manage GIS Data</td>
<td>F-2 Determine application design format (e.g. platform, language)</td>
</tr>
<tr>
<td>G</td>
<td>F-3 Develop software applications</td>
</tr>
<tr>
<td>H Provide Technical Support*</td>
<td>F-4 Customize commercial software (C)</td>
</tr>
<tr>
<td>I Perform Administrative Tasks*</td>
<td>F-5 Create map templates (C)</td>
</tr>
<tr>
<td>J Pursue Professional Development</td>
<td>F-6 QA/QC software applications (e.g. beta test) (C)</td>
</tr>
<tr>
<td>J</td>
<td>F-7 Build help files</td>
</tr>
<tr>
<td></td>
<td>F-8 Enhance existing custom applications</td>
</tr>
</tbody>
</table>

Key: * Primary Duty  (1) Ranking of Duties by Time Spent  (E) Entry Level Task  (C) Included in Curriculum
General Knowledge


Current GIS software: MapInfo, SmallWorld, ArcGIS, ArcView, GeoMedia, Cartographic principles, Image processing (ERDAS), Cartographic software: ArcGIS, ArcIMS, ArcSDE, ArcPad, ArcGIS Extensions, Workstation ArcInfo, SmallWorld, MapInfo, MS Access, Auto CAD, Micro Station, IRASC, ERDAS Imagine, MS Office, MS Frontpage, Dreamweaver, Adobe Illustrator

Photogrammetry, Programming languages (VBA), Land surveying, GPS, Reading engineering-grade plans, Databases, Census data, Windows operating system, General Geography, Data exchange procedures

Tools, Equipment, Supplies and Materials

Plotters, Printers, Scanners, P.C.s, Calculators, Engineering/Architectural scales, Servers, GPS (Trimble-GeoXT, Sokkia-GR 1000, Static or RTK), Laptops, Tablet PCs, PDA, Pocket PC, Digitizer, Total Station, GIS Software: ArcGIS, ArcIMS, ArcSDE, ArcPad, ArcGIS Extensions, Workstation ArcInfo, SmallWorld, MapInfo, MS Access, Auto CAD, Micro Station, IRASC, ERDAS Imagine, MS Office, MS Frontpage, Dreamweaver, Adobe Illustrator

Future Trends and Concerns

Dominance of ESRI, lack of competition, Rapidly changing technology, Explosion of data, Public access to data, Security restrictions on data, Trend toward licensing & certification, Need for on-going training, Mobile computing (remote access), Data standardization, Integration of software, Decentralization of GIS, End user Web applications, Data integration tools (GeoMedia)

Contributors

County of San Diego
City of San Diego
US Fish & Wildlife
EDAEN
WEST Consultants Inc.
Sweetwater Authority
City of Encinitas
Jones & Stokes
Padre Dam Municipal Water Dist.

Nolte & Associates, Inc.
Tijuana River NERR
City of Chula Vista
CALTRANS
City of Oceanside
Geornorphs
AMEC
GeoVisual Solutions
SANDAG
Valley Center munic. Water Dist.

Quartic Solutions, LLC
City of San Diego
PBS & J Valley Center M.W.D.
City of Encinitas
San Diego Data Processing
Corp San Diego Reg. Econ.
Dev’t Corp.
US Marine Corp
Sweetwater Authority
San Diego Police Dept.

Vista Irrigation District
Helix Environmental Planning
SANGIS
MACTEC Eng. Consulting, Inc.
Sweetwater Authority
City of Lemon Grove
SWFSC
City of Escondido
ESRI Business Solutions

Worker Behaviors

Multi-tasking, Resourcefulness, Oral Communication, Writing, Technical writing, Printing legibly, Presentation, Cartographic Design, Analytical, Organizational, Time Management, Team Player, Ability to work independently, Facilitation, Computer, Network configuration, Data entry, Keyboarding

Initiative, Mentor, Sense of humor, Adaptability, Self-disciplined, Ethical, Willingness to learn, Self-motivated, Punctual, Organized, Detail-oriented, Open-minded

DACUM Panel

Lisa Canning, Senior Engineering Aide, Metropolitan Waste Water Division, City of San Diego
Sue Carnevale, Senior Regional Planner/GIS Analyst, Technical Services, San Diego Association of Governments
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DACUM Facilitators

John Johnson, Instructor, San Diego Mesa College (Facilitator)
Sara Halstead, Employee Training Institute (Co-facilitator)

DACUM Research Chart: GIS Technician

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