RICHARD L. DOTY

Research Demographer
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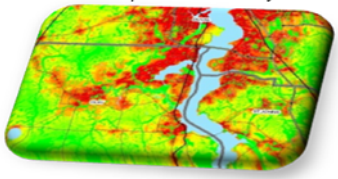
Qualifications

Rich Doty is a research demographer with the Bureau of Economic and Business Research (BEBR). He has 24 years of demographic estimation and forecasting experience and GIS experience with the Esri product line, including:

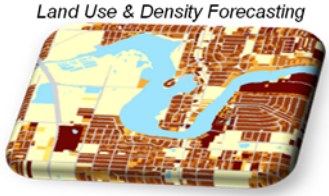
- ***Demography/Data Analysis Experience***
  - Expertise with the design, development and implementation of geospatial models for small-area population estimation and forecasting covering roughly 2/3rds of the State of Florida
  - Analytical expertise with socioeconomic and demographic data and research methods
  - Expertise with collecting, standardizing, manipulating, reformatting and analyzing large data sets using a variety of software, including ArcGIS, Microsoft Excel, and a variety of database software
  - Expertise in writing code to automate processes and manipulate data in ArcGIS and Excel
  - Expertise in developing estimates and projections of water and conservation based on population data
  - Expert witness for population estimation and forecasting
- ***GIS Experience***
  - Program, personnel and project management
  - Implementation planning and workflow optimization
  - Database design, development and QA/QC
  - Geospatial analysis and model development
  - GIS and GPS training and data collection
  - Custom application and tool development
  - Web-based GIS
  - GIS and GPS expert witness services
  - Map, metadata, and report production
  - Public meetings, presentations and negotiating stakeholder buy-in
- ***Managerial Skills***
  - Corporate governance
  - Personnel management
  - Program management
  - Project management, including managing multiple projects simultaneously

Population Forecasting

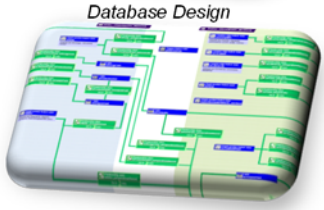
Development Probability



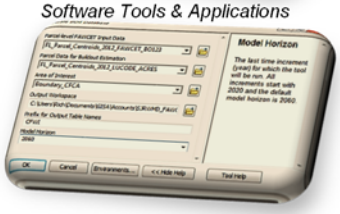
Land Use & Density Forecasting



Database Design



Software Tools & Applications



Cartographic Mapping

Education

M.A. in Urban and Regional Planning / Concentration in GIS – University of Florida, 1997

- Departmental Award for Excellence in Geographic Information Systems
- Distinguished Alumnus of the Year, 2014

B.S. in Food and Resource Economics / Minor in Business Administration – University of Florida, 1990

Work History

Bureau of Economic and Business Research (BEBR), University of Florida, Research Demographer (2015-present) – Research Demographer for an applied research center at the University of Florida that produces Florida's official state and local population estimates and projections, conducts a variety of economic and demographic analyses, houses a large survey research center, and maintains a storehouse of data on Florida's population, employment, income, earnings, education, housing, and government. Main roles include development of population estimates, small-area population estimates and projections, geospatial modeling and analysis, grant writing, and the development of new products and services.

GIS Associates, Inc., Vice-President and Principal (2000-present) – Vice-President of a GIS consulting firm specializing in developing geospatial models and tools for estimating and forecasting population for small areas. Main roles include technical direction, program and project management, and business development.

GeoFocus, Inc., GIS Manager, (1997-2000), GIS Analyst (1994-1997) – GIS consultant and manager with a GIS and GPS consulting firm. Worked on and/or managed projects to develop GIS models, databases, applications, and provide consulting support. Promoted in 1997 to GIS Manager, responsible for managing projects and personnel, marketing, sales, budgets, and contracts.

University of Florida GeoPlan Center (1991-1994) – Graduate Research Assistant working on and managing projects to build and implement geospatial models and analytical tools for forecasting population, service area networks, and ecological greenways and trails.

Relevant Project Experience

Population Projection Modeling and Demographic Analysis, Southwest Florida Water Management District (SWFWMD) – Project Manager. Developed and, for the past 11 years, annually updating comprehensive, geospatial model that projects future population for a 16-county area at the property parcel level to 2040 in five year increments. The GIS-based model incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, etc. In addition to permanent population, projections of peak seasonal, functional seasonal, tourist, and net commuter populations were developed. The latest projections and documentation are available online: http://www.swfwmd.state.fl.us/data/demographics/utility-parcel-layer.php. Gave numerous presentations of methods and results in public workshops to build consensus for future planning and permitting decisions based on model results. Also developed custom demographic and parcel-based data products for SWFWMD in support of planning and conservation projects. Performed analyses of unserved population within utility service areas, and developed custom demographic and parcel-based data products for SWFWMD in support of planning and conservation projects. Provided technical support regarding population and water demand projections submitted to SWFWMD by water utilities as part of the permitting process.

Population Forecasting and Customer Database Development, JEA – Project Manager. Managed project with two primary components:

1. Developed a population forecast at the property parcel level for the four counties overlapping JEA's service areas using GISA's Small Area Population Projection Model. The Model projects future population in five year increments to the year 2040. It incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, etc. Growth trends from historical population estimates were constrained and guided using

the geospatial data, and total growth was calibrated to the county level forecasts of the University of Florida's Bureau of Economic and Business Research (BEBR). Property parcel level results were attributed with all permutations of JEA's service areas to facilitate service area summaries.

2. Completed the geocoding of JEA customers (electric, water, wastewater, and reclaimed water) and established relationships between JEA's premise point data and the parcel level population projections and additional property parcel data. Because not all population located within JEA's service areas is served by JEA, JEA's customer databases were also analyzed and queried to develop current estimates of served population by all combinations of JEA's service areas. Future growth projections from the GISA Model were added to these estimates to derive the served population projections.

The parcel level forecast and the linkage between JEA's customer data and parcel data and projections will support future planning, demand management activities, hydraulic and hydrologic modeling, consumptive use permitting, etc. JEA has requested GISA to develop a new scope for developing automated tools to facilitate analysis and queries of this robust database.

FAWCET Water Conservation Database Forecasting Tool for the St. Johns River Water Management District (SJRWMD) (Subcontract to Jones Edmunds) – GISA Project Manager. Developed concept, specification, process and database for an ArcGIS Tool to forecast parcel-based growth for any area within Florida to serve as an input into SJRWMD's FAWCET Water Conservation Tool. Developed database of statewide parcel centroids of existing development (with FAWCET attributes), and another with all parcels with attributes to calculate build-out. User may input an area of interest (or multiple) and select forecast horizon (to a maximum of 2060). Forecasts are made in 5-year increments, and outputs include FAWCET input table and growth and water use summary tables.

Spatial Distribution of Estimated Water Use for the St. Johns River Water Management District (SJRWMD) (Subcontract to Jones Edmunds) – Principal Analyst. Developed spatial distribution of 2000-2012 water use estimates for 175 counties in Georgia, Alabama, and South Carolina that fell within the North Florida-Southeast Georgia (NFSEG) groundwater model domain. Estimated indoor and outdoor water use by type (public supply, domestic self-supply, industrial self-supply, golf course self-supply, and power generation self-supply) using a combination of 2010 census block data, the USGS National Land Cover Database (NLCD), and individual large water use locations. Derived the monthly values by applying historic monthly average indoor and outdoor use from SJRWMD data, adjusting the outdoor use for "wet," "dry," and "normal" climate conditions using North American Land Data Assimilation Systems (NLDAS) rainfall data, and applying the weighted average of hose and in-ground irrigation methods to the outdoor use for each census block. Calibrated total water use to USGS county water use estimates by type.

Population and Water Demand Forecasting in Support of Consumptive Use Permitting, Gainesville Regional Utilities, Florida – Project Manager. Developed served population and water demand projections using geospatial model, which incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, etc. Developed three projection scenarios to 2040 in five-year increments:

- Forecast (calibrated at county level to BEBR medium projection)
- High growth (calibrated at county level to BEBR high projection)
- An average of the forecast and high growth scenarios

Analyzed historic water use patterns by category (residential, commercial/industrial, university, power plant, water utility, unaccounted for water, reclaimed potable offsets, etc.) Worked with GRU and consultant team to develop projections for each category based on forecasted growth, historical water use and large development plans. Helped negotiate with SJRWMD and SRWMD staff to build consensus for permit forecast.

GIS Coordination and Utility Mapping for the Town of Lady Lake, Florida – Project Manager. Managing ongoing project to develop city-wide enterprise geodatabase, with particular emphasis on water, wastewater, and reclaimed water systems. Tasks have included:

- Evaluate GIS needs and current resources, and develop a program to meet future goals
- Coordinate GIS activities
- Map utility infrastructure using a combination of GPS, CAD drawings and as-built documents
- Design and build enterprise geodatabase and geometric network of utility data

- Develop custom GIS Web portal to serve data grouped by theme to Town staff and general public

Water Conservation Data Analysis for the City of Ocoee, Florida – Principal Analyst. Geocoded the last 3 years of monthly water use data to customer locations (linking water use to property parcels) for pilot subdivisions to analyze potential for future conservation efforts. Estimated indoor, outdoor and total water use by customer, and created thematic maps to communicate the results to the utility. Future work includes assistance in the development of a water conservation plan.

Department of Land Acquisition and Management GIS Coordination, Suwannee River Water Management District – Project Manager / Principal Consultant. Managed continuing GIS services project for 10 years, including:

- Coordination of GIS activities within the Department
- Provision and management of on-site GIS staff
- Evaluation of GIS needs and current resources, and development of program to meet future goals
- GIS and tabular database schema design and organization
- Design and organization of enterprise GIS and related databases
- Migration of various data formats (shapefiles, CAD files, Access, Excel) to enterprise geodatabases
- Spatial modeling and analyses (raster and vector)
- GIS and GPS instruction for District personnel
- Custom application development to automate complex or repetitive tasks
- Establishment of GIS and GPS standards for staff and consultants, and assistance with determining how data should be collected and/or digitized
- Developed Standard Operating Procedures (SOP) manuals working with Geodatabases
- Providing direction, expertise, and oversight to district staff and contractors regarding:
  - Converting data in various formats into Oracle and Geodatabases
  - Establishing relationships between databases to allow them to be linked
  - Quality assuring tabular and spatial databases
  - Spatially referencing databases (linking tabular data to spatial features) using related tabular fields and/or GIS data layers

Analysis of Recent Declines in Historical Water Use for the City of Cocoa, Florida (Subcontract to CH2M HILL) – Subject Matter Expert. Geocoded the last 3 years of monthly water use data to customer locations (linking water use to property parcels). Analyzed changes in water use over 3-year period, focusing on large bulk customers and other large users. Summarized water use by FDOR detailed land use designation, Developments of Regional Impact (DRI), and jurisdiction (the large service area covers multiple cities and much of the county). Identified and filtered anomalous water use data values, and summarized results and conclusions for recent declines in water use to help the utility understand the implications of those declines to future planning and permitting efforts.

Population and Water Demand Forecasting in Support of Hydraulic Modeling for the City of Cocoa, Florida (Subcontract to CH2M HILL) – Project Manager. Developed comprehensive, spatial model that projects future population for all of Brevard County at the property parcel level to 2040 in five year increments. The GIS-based model incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, etc. Applied growth rates to geocoded customer-based water use data to derive spatially precise future demands assigned to nodes in the hydraulic model.

Population and Water Demand Forecasting in Support of Consumptive Use Permitting of the Taylor Creek Reservoir for the City of Cocoa and Orlando Utilities Commission (Subcontract to Water Resource Associates) – Project Manager. Served as subject matter expert for population and water demand projections for permit for alternative water supply for multiple utilities. Facilitated acceptance of population and demand projections by the St. Johns River Water Management District based on slight adjustments to old GIS Associates model runs.

Population and Water Demand Forecasting for Bay County, Florida, for the Northern Trust Company – Expert Witness. Served as subject matter expert for population and water demand projections contesting a permit for new groundwater supply for Bay County Utilities. In addition to average day projections, developed separate demand forecasts in the event of a Category 3, 4, and 5 hurricane. Testimony was primary reason the administrative law judge ruled in client's favor, recommending denial of permit.

Wind-Wildlife Modeling of the Everglades Agricultural Area, Wind Capital Group (Subcontract to Normandeau Associates) – GIS Manager. Managed GIS portion of project to build a wind-wildlife collision model for South Florida, including the development of a comprehensive GIS database to support this effort. Managed staff performing these services, and coordinated the technical direction provided to the prime consultant.

Habitat-Based Wind-Wildlife Risk Tool With Application to the Upper Great Plains Region: Collisions and Habitat Displacement, U.S. Department of Energy (Subcontract to Normandeau Associates) – GIS Manager. Managed GIS portion of project to create habitat-based wind-wildlife collision GIS model for the entire upper great plains region using ESRI's Spatial Analyst and Fragstats landscape analysis. Directed and provided technical support to staff performing this work.

Population and Water Demand Forecasting in Support of Consumptive Use Permitting, City of Fruitland Park, Florida (Subcontract to De la Parte & Gilbert, P.A.) – Subject Matter Expert. Developed served population and water demand projections using GIS-based model, which incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, etc. Negotiated projections with SJRWMD staff to build consensus for permit forecast.

Population and Water Demand Forecasting in Support of Consumptive Use Permitting, JEA – Project Manager/Expert Witness. Developed and awarded multiple contracts to update comprehensive, spatial model that projects future population for a 4-county area at the property parcel level to 2035 in five year increments. The GIS-based model incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, etc. Negotiated projections with SJRWMD leadership to build consensus for permit forecast. Also providing on-going technical support regarding population and water demand projections.

Water Customer Database Development, JEA – Project Manager. Managed project to geocode over 700,000 current and historical water customers and link their locations to consumption data to support future planning and permitting. This database would serve as the basis for forecasting and conservation analyses.

Water Demand Projections and Spatial Distribution, Suwannee River Water Management District – Project Manager. Managed project to develop population and water demand projections for a groundwater model domain covering much of northern Florida and southern Georgia. Analyzed water use estimates from multiple sources and calibrated to USGS county values for consistency with other models. Estimated locations and sources of current and projected withdrawals for groundwater model, and summarized and documented results.

Served Population and Water Demand Projection Updates, St. Johns County Utilities Department (SJCUD) (Subcontract to Jones Edmunds) – Project Manager. Updated and implemented geospatial model for estimating and projecting population served by SJCUD. The GIS-based model developed projections at the property parcel level to 2050 in five year increments. It incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, utility account data, etc.

Consumptive Use Permit Reviews, St. Johns River Water Management District (SJRWMD) – Project Manager / Principal Consultant / Expert Witness. Provided eight years of on-going technical support regarding population and water demand projections submitted to SJRWMD by water utilities as part of the permitting process. Tasks included:

- Training SJRWMD staff to review and analyze estimates and projections of population and water demand
- Analyzing new data provided by utilities, planners, developers, etc.
- Incorporating new, credible data into model and updating projections

- Discussing results and recommendations with utilities and planners
- Making final recommendations to SJRWMD permit reviewers
- Serving as an expert witness for SJRWMD

Geospatial/Geostatistical Analysis and Population and Water Demand Projection Modeling, St. Johns River Water Management District (SJRWMD) – Project Manager. Developed and awarded multiple contracts to update a comprehensive, spatial model that projects future population and water demand for an 18-county area at the property parcel level to 2035 in five year increments. Developed and implemented methodologies for projecting water demand by category (public supply, domestic self-supply, commercial/industrial/institutional self-supply, recreational self-supply, agricultural self-supply and reclaimed water). Developed and implemented methodologies for spatially distributing water demand to groundwater model domains. Made numerous presentations of model results to various public agencies and utilities to build consensus for future planning and permitting decisions based on model results. Assisted with development of SJRWMD's 2008 Water Supply Assessment, and trained staff in permit review methods, the use of model data, water use data updates and quality assurance.

Storm Water Fee Project, City of Fort Myers (Subcontract with Burton & Associates) – Project Manager. Managed GIS project to estimate the impervious surface by parcel in support of the determination of stormwater fees for the City of Fort Myers. Tasks included:

- Joining property appraiser data to billing data
- Estimate impervious surface by parcel based on various property appraiser data
- Comparison of parcel owner information with utility billing customer information to determine who the fee should be billed to and the address to which it should be billed

Population and Water Demand Projection Modeling, Marion County, Florida – Project Manager. Awarded multiple contracts to update and implement a comprehensive, spatial model that projects future population and water demand countywide at the property parcel level in five year increments to 2060 in support of hydraulic modeling, planning and permitting. The GIS-based model incorporates parcel data, census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, historic water use data, etc. In addition to permanent population, projections of peak seasonal, functional seasonal, tourist, and net commuter populations were developed. Made numerous presentations of model results to various public agencies and utilities to build consensus for future planning and permitting decisions based on model results. Developed county-wide, parcel-based, build-out density map as model input in a joint effort with County, City, and regional planners and utilities and other stakeholders.

St. Johns River Water Supply Project Service Area Demand and Affordability Study, St. Johns River Water Management District (Subcontract with Burton & Associates) – Subject Matter Expert. Utilized comprehensive, spatial model to project future population and water demand for a 2-county study area at the census block level to 2025 in five year increments. The GIS-based model incorporates census data, current and future land use/land cover, wetlands, planned developments, transportation infrastructure, utility service area boundaries, historic water use data, etc. Solicited input on model results from various public agencies and utilities, made revisions to model inputs, generated updated results by Traffic Analysis Zones.

VA Hospital Nationwide Service Area Delineation, U.S. Department of Veterans Affairs – Project Manager / Principal Consultant. Developed service areas for VA hospitals and clinics based on drive time (30, 60, 90, 120, and 240 minutes). Created nationwide population density grid by smoothing 2000 Census tract data by calculating the mean density of a 1-mile circular neighborhood. Classified the resulting grid into high urban, urban, transitional urban, rural, and frontier zones, and overlaid these on a nationwide road network. Reduced the estimated mph of each road class based on its population density classification, and calculated drive time-based service areas for VA hospitals and clinics. Overlaid 30, 60, 90, 120, and 240-minute service areas atop veterans data (summarized by zip code centroid), and generated tabular reports of the results by county and VA Network. Used results to estimate VA enrollees per hospital and clinic, and to identify veterans (by zip code) that lack services.

Division of Water Supply Management GIS Support, St. Johns River Water Management District (SJRWMD) - Project Manager / Senior Consultant. Managed continuing GIS services project for nine years, including:

- Provided direction for GIS activities within the division
- Management of GIS and related projects
- Public meetings and presentations
- Evaluation of GIS needs and current resources, and development of program to meet future goals
- Design and development of Oracle RDBMS modules
- Design and organization of GIS and related databases and conversion from GIS and various tabular (Excel, dBase) and text formats to ArcSDE enterprise geodatabase
- Extensive spatial modeling and analyses (raster and vector)
- GIS instruction for staff
- GIS programming to automate complex tasks
- Development of custom ArcMap Documents for personnel to facilitate common tasks
- Establishment of GIS and GPS standards for staff and consultants, and assistance with determining how data should be collected and/or digitized
- Developed Standard Operating Procedures (SOP) manuals for working with Geodatabases
- Providing direction, expertise, and oversight to district staff and contractors regarding:
    - Converting data in various formats into Oracle and Geodatabases
    - Establishing relationships between databases to allow them to be linked
    - Quality assuring tabular and spatial databases
    - Spatially referencing databases (linking tabular data to spatial features) using related tabular fields and/or GIS data layers

GIS Implementation Plan Development, City of Alachua, Florida – Project Manager. Developed GIS Implementation Plan for the City of Alachua. Interviewed relevant staff and developed evaluation of GIS needs and current resources. Developed detailed objectives, staffing options and itemized budget tailored to meet the City's future goals but stay within its budget parameters.

SR 429 Northwest Extension Planning Area Ecological Impact Decision Support Modeling, East Central Florida Regional Planning Council (Subcontract to Pandion Systems) – GIS Manager. Characterized the ecology of the Planning Area through raster GIS modeling and statistical analysis. Modeled the ecological impacts of four alternative build-out scenarios using raster GIS-based ecological sensitivity indices, including: natural integrity (reclassified from land use); contextual (focal neighborhood) analysis of the natural integrity; patch size; proximity to fire adapted communities, wetlands, lakes, natural uplands; recharge areas and springs; xeric species habitat layers (including gopher tortoise, gopher frog, Florida mouse, Sherman's fox squirrel, sand skink, scrub lizard, pine snake, and short-tailed snake); and non-xeric species habitat layers (including black bear, scrub jay, bald eagle, wading bird, and indigo snake).

Wekiva River Protection Area (WRPA) Ecological Impact Decision Support Model, East Central Florida Regional Planning Council (Subcontract to Pandion Systems) – GIS Manager. Characterized the ecology of the WRPA through raster GIS modeling and statistical analysis of land use/land cover, habitat, etc. Development of 18 ecological sensitivity GIS indices, including: natural integrity; landscape contextual (focal neighborhood) analysis; patch shape and size; proximity and connectivity to fire-adapted communities, wetlands and lakes, natural uplands, built areas, and the river and tributaries; soil erodibility and recharge areas; species richness and black bear habitat; and nodal significance layers (scrub jays, eagles, wading birds, and springs).

St. Johns County Vegetative Community and Wildlife Survey, St. Johns County, Florida (Subcontract to Pandion Systems) – GIS Manager. Developed a vegetative community map converting FLUCCS data to FNAI classifications (providing more detailed natural classes), which will be used for land acquisition and management and a myriad of other uses. Compiled and analyzed land cover and environmental data to identify suitable, representative areas for field surveys. Generated geostatistics of acreage by land cover type for the site and the county as a whole, and tax data for the parcels intersecting the sites (for access permission

and acquisition). Helped develop and deploy GIS/GPS field survey system with ArcPad software on a PDA, and helped train field biologists in its use.

St. Lucie County Native Habitat Inventory, St. Lucie County, Florida (Subcontract to Pandion Systems) – GIS Manager. Created land cover GIS layers for 1992 and 2002 using a combination of South Florida Water Management District 1990 and 1995 land cover data and 2003 property parcel data from the County's Property Appraiser. Calculated the statistical change by land cover type from 1992–2002, and helped evaluate the relative importance of the remaining natural areas using other ecological data. Created property owners database for the parcels intersecting the sites (for access permission and acquisition). Deployed GIS/GPS field survey system with customized ArcPad software on a PDA.

Silver Glen Springs Carrying Capacity Study, Florida Department of Environmental Protection (Subcontract to Pandion Systems) – GIS Manager. Set up GIS/GPS field data collection system using ArcPad software. Trained and supported field biologist mapping bathymetry data and submerged aquatic vegetation in spring run, performed final topology-related data quality assurance and clean up, and interpolated continuous bathymetry surface from depth point and shoreline data.

Florida Department of Transportation's Turnpike District National Pollution Discharge Elimination System (NPDES) Project (Subcontract to the University of Florida) – Project Manager. Managed subcontract with the University of Florida to develop custom MapObjects module for GPS field data collection; automate updating GPS field data to corporate database; develop tools for QA of spatial data; automate report generation; deploy and supervise field teams inventorying physical assets using GPS; and develop training course and provide training to FDOT personnel.

GIS/GPS Mapping of Submerged Aquatic Vegetation, Suwannee River Water Management District (Subcontract to Golder Associates) – GIS Manager. Oversaw the development and deployment of a GIS/GPS field data collection system using DynaMo-GIS software and Trimble hardware. Assisted with training and support of field biologist mapping submerged aquatic vegetation on the lower Suwannee River. Performed final topology-related quality assurance and clean up of the data, and developed ½-km section maps of the data.

St. Marys River Management Plan, St. Marys River Management Committee, Florida (Subcontract to Pandion Systems) – GIS Consultant. Collected, created, edited, and standardized GIS data layers and generated maps for a management plan providing assessments and recommendations regarding surface water and groundwater quality, natural systems and floodplains, recreation and public use, and growth management and economic development.

GIS Network Model Development, City of Gainesville Fire Rescue, Florida – Project Manager / Consultant. Developed a fire station service area model using ArcInfo Network modeling software, and later redeveloped with ArcView's Network Analyst. Model allocated Alachua County's road segments (and thus its residents) to individual fire stations based on road distances (2 miles, 4.5 miles, etc.). Gaps were analyzed, and possible locations for new fire stations were modeled and mapped for presentation. Awarded multiple work orders to analyze various scenarios.

Site Investigations for Fort McClellan, Alabama (Subcontract to MACTEC) – GIS Consultant. Managed GIS for environmental assessment project using workstation ArcInfo. Work performed included AML programming, database development, editing, analysis, and map production.

Floodplain Analysis and Storm Water Management Plan for Marion County, Florida (Subcontract to MACTEC) – GIS Consultant. Managed GIS for floodplain mapping project using workstation ArcInfo. Work performed included AML programming, database development, editing, analysis, map production, and training. Managed GIS team consisting of one engineer and two technicians.

Environmental Baseline Survey for Fort McClellan, Alabama (Subcontract to MACTEC) – GIS Consultant. Managed GIS for environmental assessment project using workstation ArcInfo. Work performed included AML programming, database development, editing, analysis, and map production.

RI/FS and Phytoremediation Demonstration for Milan Army Ammunition Plant, Milan, Tennessee (Subcontract to MACTEC) – GIS Consultant. Managed GIS for environmental assessment project using workstation ArcInfo. Work performed included database development, editing, and map production.

Groundwater Treatment Plant Hydraulic Analysis for Letterkenny Army Depot, Pennsylvania (Subcontract to MACTEC) – GIS Consultant. Managed GIS for project using workstation ArcInfo. Work performed included database development, editing, analysis, and map production.

GeoFocus Enterprise-wide Agricultural GIS/GPS System Development – Project Manager / Senior Consultant. Developed enterprise-wide GIS systems for large citrus operations and agricultural service providers. Coordinated development of ArcView-based AgTrac™ GIS software application, Goat™ and Chameleon™ GPS/DGPS Yield Monitors, GPS post processing application, and yield mapping. Designed custom databases and coordinated digitization of data layers from georeferenced aerial photography. Provided GIS and GPS training and ongoing support.

Impervious Surface Database Development, St. Johns County, Florida – Project Manager. Managed the development of an impervious surface database for stormwater assessment from digital aerial photography. Directed heads-up digitization and classification by technicians and performed the quality assurance/quality control checks.

Reedy Creek Improvement District (RCID), Florida – GIS Analyst. Provided a full range of GIS and GPS consulting services, including multiple work orders for database and application development, analysis, mapping, and training. Provided technical support to personnel working with GIS databases and GIS/GPS applications. Developed, updated, and documented GIS databases, including the RCID GIS Library System. Developed image catalog of digital aerial photography. Assisted in the development of field data collection applications and in the preparation of the RCID GIS Five Year Plan. Assisted developing custom training materials and training approximately 40 personnel in the use of ArcView GIS software with their own data.

Florida Greenways Decision Support Model, Florida Department of Environmental Protection (Subcontract to the University of Florida GeoPlan Center) – GIS Consultant / Model Developer. Developed software application to model the Florida Statewide System of Greenways and Trails using ArcInfo Grid. Assimilated and analyzed extensive amount of environmental, physical, and cultural data. Suitability surfaces were created to link ecological hubs and trailheads. The result was an integrated system of ecological corridors and human trails of various types. Made presentations of the model results to public agencies for review.

Population Growth Model Development, Duke Power (University of Florida GeoPlan Center) – Graduate Assistant. Led a team to develop a GIS model to distribute future customer growth with ArcInfo Grid. Published project maps in the 1993 ESRI Map Book and the April, 1994 edition of Planning Magazine.

Population Growth Model Development, Florida Power and Light (University of Florida GeoPlan Center) – Graduate Assistant. Led a team of graduate students to develop comprehensive spatial models to forecast future population to help site future service centers and substations. A comprehensive raster model was developed to distribute future customer growth over a potential growth surface with ArcInfo Grid. A network model was developed to allocate current and future customers to service centers and substations based on drive time and distance, respectively, and gaps were analyzed. The project database was the precursor to the Florida Geographic Data Library (FGDL), which now consists of 200+ GIS data layers.

Selected Publications

Doty, R.L. (2013), "The Small Area Population Projection Methodology Used by the Southwest Florida Water Management District". GIS Associates, Inc. Gainesville, FL.

Doty, R.L., and J.K. Teisinger (2013), "Updates to GIS Associates' Small Area Population Projections for the Southwest Florida Water Management District". GIS Associates, Inc. Gainesville, FL.

Doty, R.L. (2012), "The Small Area Population Projection Methodology Used by the Southwest Florida Water Management District". GIS Associates, Inc. Gainesville, FL.

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