GIS Services
Data Visualization • Spatial Analysis • Cartography
Database Management • Data Modeling

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Services Offered

GIS Data Compilation, Management & Administration. Geodatabase design, construction and maintenance using ESRI Products, Microsoft products; QA/QC design and implementation including topology, coded/range domains; imagery/document georeferencing; heads-up digitizing; spatial and attribute data editing; CADD integration; legacy GIS format conversion; historic data and map research.

Raster GIS Analysis including but not limited to:

- Landform and terrain analysis
- 3D modeling
- Image mosaicking
- Elevation, slope, aspect, geomorphology analysis
- Basic hydrologic modeling
- Viewshed analysis
- Object- and pixel-based imagery classification and machine learning

Using *ArcGIS Analysis*, *Geostatistical Analyst*, *Spatial Analyst*, *3D Analyst, GeoDa*

Vector GIS Analysis including but not limited to:

- Interpolation of point or line vector data to create raster datasets
- Point or kernel density analysis
- Probability modeling
- Site suitability analysis
- Queries and resulting exports as Excel or CSV tables, etc.
- Proximity analysis
- Spatial linear regression and spatial autocorrelation analysis

Programming & Automation using Python programming language and *ModelBuilder* to create efficiency in common GIS workflows.

WebGIS & Web Applications Development

Products:
- *ArcGIS Online*
- *Web Experience Builder*
- *Web AppBuilder*
- *ArcGIS Dashboards*
- *ArcGIS StoryMaps*

Customized visualizations using:
- Arcade programming language code
- HTML
- JavaScript/CSS as needed
- Some experience with *ArcGIS Javascript API*

Mobile GIS Design, Development & Implementation of tablet or phone-based mobile-worker data collection systems using *ArcGIS Survey123*, *ArcGIS FieldMaps*, etc. Field GIS data gathering also includes use of older *Trimble* and *Garmin GPS* data collection techniques, including data dictionary design and implementation. Training of field personnel on data collection methods, and field support of field personnel.

Remote Sensing & Imagery Management, Analysis and Interpretation

RS Data:
- Satellite imagery
- Aerial imagery
- LiDAR

Data Products/Results:
- NDVI/NDBR and other spectral indices analysis
- Time series analysis
- Satellite imagery processing

Cartography & Data Visualization

- maps
- data visualizations
- choropleth maps
- hosted in web applications (e.g., ArcGIS Online, Tableau)
- charts / infographics
- reference maps
- interactive maps
- profiles and cross-sections
- graphs
- thematic maps
- heatmaps
- digital formats (e.g., PDF, JPG, PNG, AI)

Metadata Documentation to document data development methods, quality, precision, accuracy, geoprocessing, publication, attribution, etc.

Open-Source Data & Software capabilities including QGIS, Google Earth, GitHub, GeoDa