



AN ESRI
PROPOSAL

June 23, 2023

Proposal for Professional Services for Various Departments and Agencies of the County of Hawai`i Letter of Interest

Prepared for:

Mr. Robert Ewbank, Director of Information Technology
County of Hawai`i
25 Aupuni Street
Hilo, Hawai`i 96720

Esri Proposal # P015701

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1.0 Letter of Interest

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Mr. Robert Ewbank, Director of Information Technology
County of Hawai`i
25 Aupuni Street
Hilo, Hawai`i 96720

June 23, 2023

RE: Letter of interest for Professional Services for fiscal year 2023 – 2024

To Whom it May Concern,

Environmental Systems Research Institute, Inc. (Esri) is pleased to have the opportunity to express its interest in providing professional services for Geographic Information Systems (GIS) to Various Departments and Agencies of the County of Hawai`i (County).

We would like to be considered for Category DS.1 for Computer Engineering (GIS Mapping/Programming Services) respectively. Please find below the contact information for Esri's points of contact for contractual matters and receipt of any future notices.

For the purpose of this proposal, Esri's points of contact will be:

| Esri Contractual POC | Esri Future Notices Receipt POC |
|--|---|
| Jasmine Deo 380 New York Street Redlands, CA 92373 Phone: (909) 793-2853 x 4309 E-mail: JDeo@esri.com | Desiree McAllister 380 New York Street Redlands, CA 92373 Phone: (909) 369-4392 Email: dmcallister@esri.com |

Please don't hesitate to contact Desiree McAllister or Jasmine Deo should you have any questions regarding our proposal. We look forward to the opportunity to work with the County on any future projects or services needs that may arise.

Sincerely,

John D. Perry
Contracts Department Manager
Esri Professional Services

2.0 Statement of Qualification

2.1 Statements 1 – 5

As requested by the County of Hawai'i in its notice, Esri is providing the following statements of qualification to supplement the letter of interest above.

Statement 1: Name of firm or person, contact information, principal place of business, and location of all its offices.

Esri Response:

- Environmental Systems Research Institute, Inc. (Esri)
- Contact Information:

| Esri Contractual POC | Esri Future Notices Receipt POC |
|--|---|
| Jasmine Deo 380 New York Street Redlands, CA 92373 Phone: (909) 793-2853 x 4309 E-mail: JDeo@esri.com | Desiree McAllister 380 New York Street Redlands, CA 92373 Phone: (909) 369-4392 Email: dmcallister@esri.com |

- Esri's Corporate Headquarters are located at 380 New York Street, Redlands, CA 92373
- Esri has offices in the following locations:

| Office Type | Locations |
|--|--|
| Regional and Satellite Offices | Redlands, CA; Sacramento, CA; San Diego, CA; Denver, CO; Washington D.C., Washington D.C; Miami, FL; Atlanta, GA; Chicago, IL; Kansas City, KS; Boston, MA; Portland, ME; Minneapolis, MN; St. Louis, MO; Charlotte, NC; New York, NY; Portland, OR; Johnstown, PA; Philadelphia, PA; Houston, TX; San Antonio, TX; Lodi, WI |
| International Offices | Abu Dhabi, AE; Dubai, AE; Sharjah, AE; Vienna, AT; Melbourne, AU; Ottawa, CA; Zurich, CH; Beijing, CN; Paris, FR; New Delhi, IN; Rotterdam, NL; Singapore, SG; Aylesbury, UK; Cardiff, UK; Edinburgh, UK; Ankara, TR; Tijuana, MX; Stuttgart, DE |
| Individual Home Offices/Remote Employees | Esri has many more employees supporting from home office locations or remotely as well throughout the United States and internationally. |

Statement 2: The age of the firm and its average number of employees over the past five years.

Esri Response:

- Esri was founded in 1969 and has been in business for 54 years
- The average number of domestic employees employed at Esri for the past five years has been 4,362 (YTD)

Statement 3: The education, training, and qualification of key members of the firm.

Esri Response:

Esri has identified key resources that are representative of the skillsets and experience that would suit Category DS.1 for Computer Engineering (GIS Mapping/Programming Services) that Esri would like to be considered for. Therefore, Esri has provided those key resources' resumes below.

Kathryn Browning

Certified senior GIS technical consultant for water utilities and local government projects

Senior Consultant/Technical Analyst

Summary

Ms. Browning joined Esri as a consultant in 2012. Prior to Esri, she worked over sixteen years for Anchorage Water & Wastewater Utility (AWWU), where she held the position of Database Manager and led various projects at AWWU. She was responsible for the administration of geodatabases, Oracle databases, Oracle application servers, Maximo application servers (Weblogic & Websphere), and ArcGIS for Server. She has over 16 years of experience working with GIS technology, 20 years of experience working with Maximo, and over 30 years of experience integrating enterprise systems.

Career Highlights

- Industry expert in GIS Roadmaps, GIS strategic planning, GIS upgrades, and GIS to Maximo integration for water and wastewater utilities.
- Technical Advisor for Esri's private and public water and wastewater utility customers.
- Member of AWWU teams that received Special Achievement in GIS (SAG) awards from Esri in 2003 and 2012

Experience

Esri: 10 years
Total: 38 years

Esri Certifications

- Enterprise GeoData Management Professional
- Enterprise Geodatabase Management Professional 10.1

Education

- BS, Economics, University of Alaska at Anchorage, Anchorage, Alaska, United States, 1984
-

Technical Capabilities

- **ArcGIS Apps/Mobile** - Field Maps, Survey123
- **ArcGIS Online** - Configurable Apps, Geocoding Services
- **ArcGIS Platform** - ArcMap, ArcGIS Enterprise
- **Database** - Oracle, SQL Server, Postgresql
- **Programming Language** - Python, SQL, Arcade
- **Technical Skill** - System Architecture Design, System Integration, Data Governance, Geodata Management And Migration, Utility Network Implementation, Performance Testing

Selected Experience

Senior Consultant, Water Utility Customers

Ms. Browning is responsible for working with clients with GIS design, GIS Roadmaps, GIS Strategic Planning, geodatabase support, Utility Network support, and application development projects for the Water, Wastewater, and Water Resources vertical markets. Time frame: 2012-present

Esri Enterprise Advantage Program Technical Advisor, Multiple Clients

As the Esri Advantage Program Technical Advisor for multiple clients including the Honolulu Board of Water Supply, Ms. Browning provides technical guidance and program support on short and long-term planning for GIS Enterprise enhancement within the Water Utilities Industry. Time frame: 2012-present

Stormwater MS4 GIS System Implementation Project Phase 1 and 2:

Ms. Browning was the project manager for this multi-year and several phase project. Esri designed and implemented a system to streamline the creation of the Municipal Separate Storm Sewer System (MS4) report required by the National Pollutant Discharge Elimination System (NPDES) stormwater permit. The system is being implemented in phases. The first phase implemented commercial-off-the-shelf (COTS) solutions and the second phase enhanced the Phase 1 workflow and implemented some custom solutions.

GIS Integration and Implementation, Anchorage Water and Wastewater Utility

As a database manager at Anchorage Water and Wastewater Utility (AWWU), Ms. Browning was a co-project manager for a GIS Upgrade project that redesigned the GIS model, migrated to a new model, integrated GIS to Maximo Asset Management System for linear assets, and spatially enabled Maximo. She was involved in the implementation of the enterprise GIS at AWWU and all upgrades of the GIS environment. Time frame: 1996-2012

Employment History

| Employer | Position Title | Position Dates |
|--------------------------------------|----------------------------------|-----------------------|
| Esri | Sr. Consultant / Project Manager | 2012–Present |
| Anchorage Water & Wastewater Utility | Database Manager | 1996–2012 |
| Anchorage School District | Systems Programmer | 1992–1996 |
| Unicom | Consultant/Systems Analyst | 1986–1992 |
| Alaska Computer Institute | Lab Instructor | 1984–1985 |

Continued Professional Development

Training

- Branch Versioning, 2021
- ArcGIS Pro Editing, 2021
- Configuring Utility Network, 2020
- ArcGIS Enterprise Administration Workflows, 2019
- Working with Utility Networks, 2019
- FME - Utility Network Migration Training, Safe Software One-Off Training, Virtual, 2018
- Migrating from ArcMap to ArcGIS Pro, Esri Learning Center, Redlands, CA, 2018
- Internal Esri Platform Overview, Esri Learning Center, Redlands, CA, 2016
- System Architecture Design Strategies, Esri Learning Center, Redlands, CA, 2016
- QA and Release, In-House, Online, CA, 2016

Presentations

- Getting Started with ArcGIS Online and Mobile Data Collection for Hawaii User Group, 2023
- Using GeoAI for Meter Boxes for Charlotte Water, Esri User Conference 2022
- Using Artificial Intelligence to Find Water Meter Box Locations Using GeoAI, NC GIS User Conference 2021

Other Achievements

- Member of AWWU teams that received Special Achievement in GIS (SAG) awards from Esri in 2003 and 2012

David Crosby

Senior Systems Engineer

Technical Consultant, System Architect and
Technical Lead with significant experience
in managing GIS implementation

Summary

Mr. Crosby joined Esri in November 2007 as an enterprise support analyst in the Educational Services division. Much of his professional career has been in the State and Local Government markets with a focus on the practice and management of GIS and spatial analysis, systems design and evaluation, and project coordination. Joining the Professional Services division in 2012, his current role is providing system and solution architecture and design services as well as technical leadership and consulting services to customers in the State and Local Government, water, energy, and business partner sectors.

Career Highlights

- Senior GIS Analyst on the largest government land use planning process ever undertaken in North America
- Lead Architect for the first deployment of ArcGIS Enterprise to Oracle Cloud Infrastructure
- Certified GIS Professional (GISP)
- Presenter at national and regional GIS meetings

Experience

Esri: 15 yrs 4 months

Total: 25 yrs 7 months

Education

- BA, Physical Geography/GIS, University of Toronto, Toronto, Ontario, Canada, 1996
- MA, Geography/GIS, University of South Florida, Tampa, Florida, United States, 2006
- Graduate GIS Certificate, GIS, McMaster University, Hamilton, Ontario, Canada, 1997

Technical Capabilities

- **ArcGIS Apps** - ArcGIS Maps for Office, Field Maps for ArcGIS, Drone2Map for ArcGIS, , Navigator for ArcGIS, ArcGIS Dashboards, Survey123 for ArcGIS, Web AppBuilder for ArcGIS, Workforce for ArcGIS
- **ArcGIS Desktop/Pro Extensions** - ArcGIS Publisher, Spatial Analyst, 3D Analyst
- **ArcGIS Enterprise Roles** - ArcGIS Image Server, GeoEvent Server
- **ArcGIS Online** - ArcGIS Marketplace, ArcGIS Hub, Configurable Apps, Utility Services, Esri Basemaps, Locator Services, Imagery Services, Story Maps
- **ArcGIS Platform** - ArcGIS Pro, ArcGIS Enterprise, ArcGIS Desktop
- **ArcGIS Solutions** - ArcGIS for Local Government
- **Business Skill** - Business Consultancy, Requirements Gathering and Discovery, Technical Advisory, Technical Writing, Governance Workshops and facilitation
- **Technical Skill** - Enterprise Security, Enterprise Deployment, troubleshooting, tuning, Geodata Management and Migration, Geospatial Analysis, Performance Testing, Performance Optimization, Platform Configuration, Spatial Analysis, System Architecture Design

Selected Experience

ArcGIS Site and System Review, Forsyth County and the City of Winston-Salem, North Carolina

The goal of this project was to provide a review of the city-county (MapForsyth) GIS implementation and provide recommendations on system architecture and how to expand the system to increase return on

investment. During the five-day onsite engagement, Mr. Crosby met with over twenty-five departments to learn their business processes and recommendations were made on how GIS and the ArcGIS Platform could be applied to provide increased government transparency and improve business processes. The result was a comprehensive report making architectural recommendations and a mapping of business needs to ArcGIS COTS configurations.

ArcGIS Site Review, Jefferson County, Alabama

The goal of this project was to review the ArcGIS platform implementation at Jefferson County and to provide recommendations on how the footprint of GIS could be expanded and how the system could be modernized. Over the course of three days, Mr. Crosby met with over fifteen departments to review how they use GIS and how GIS could be applied to increase efficiencies and streamline workflows. The result of the project was a comprehensive report that the county was able to turn into a strategic plan for the modernization of their GIS. After this project the county recognized the value of the Esri Enterprise Advantage Program (EEAP) and subsequently purchased the EEAP to assist in the modernization and deployment of the ArcGIS Platform.

Enterprise GIS Health Check, City of Greenville, South Carolina

Mr. Crosby met with the GIS staff and multiple departments to review workflows and make recommendations on how to make workflows more efficient using new tools available with the ArcGIS platform. Mr. Crosby also met with the IT staff to review the system architecture and discuss how to best deploy ArcGIS Server in the customer environment, covering such topics as enterprise logins, security, and best-practices architecture. The final report provided architecture recommendations, system tuning advice and resolution to many ‘pain points’ being experienced by the city in terms of system performance.

Employment History

| Employer | Position Title | Position Dates |
|---------------------------------------|---|-----------------------|
| Esri | Sr. Systems Engineer/Technical Analyst | 2012 – Present |
| Esri | Group Leader, Server Products and Development Support | 2009 - 2012 |
| Esri | Senior Server Analyst | 2007 - 2009 |
| Sarasota County | Manager, Enterprise GIS | 2006 - 2007 |
| Sarasota County | Senior GIS Architect | 2001-2006 |
| Ontario Ministry of Natural Resources | Project Leader, GIS and Remote Sensing | 1999 - 2001 |
| Ontario Ministry of Natural Resources | GIS Analyst and System Administrator | 1997 - 1999 |

Continued Professional Development

Training

- ArcGIS Enterprise for Kubernetes, Redlands, CA 2021
- System Architecture Workshop, Esri Applied Technology, Redlands, CA, 2018
- Legendary Service - Virtual Class, Esri Professional Development, Online, 2017
- HUB Workshop, In-House, Redlands, CA, 2017
- Platform Engineering Summit, Esri Applied Technology, Redlands, CA, 2017

- Certified GIS Professional, GIS Certification Institute 3rd Party Certification, Virtual, 2016
- Enterprise Health Check, Esri Applied Technology, Redlands, CA, 2016
- ArcGIS Enterprise/Portal Boot Camp, Esri Learning Center, Redlands, CA, 2016
- Emergency Management Offering, Applied Technology, Redlands, CA, 2016

Selected Presentations

- ArcGIS Monitor: Beyond the Basics, Esri International User Conference 2021
- Maximize Value Using ArcGIS Templates, Esri International User Conference 2017
- Enterprise Health Checks – Get a Second Opinion, Esri Public Sector User Conference, West Palm Beach, FL 2017
- ArcGIS Server: Optimizing Performance and Scalability, Esri Southeast User Conference, Charlotte, NC, May 2016

Publications

- Crosby, David Alexander, "The Effect of DEM Resolution on the Computation of Hydrologically Significant Topographic Attributes" (2006). Graduate Theses and Dissertations. <https://scholarcommons.usf.edu/etd/3859>
- Resolution Dependency of Hydrologic Parameters from LiDAR DEMs, Proceedings of the 2006 AWRA Spring Specialty Conference: GIS and Water Resources IV
- Evaluation of LiDAR Digital Elevation Models for Hydrologic Modeling, Proceedings of the Association of American Geographers Annual Meeting, 2006

Jeff DeWeese

Senior Enterprise Solutions Architect

Expert enterprise solutions architect with 30+ years of broad IT experience leading teams, architecting and implementing systems, and evaluating technology

Summary

Mr. DeWeese joined Esri in 1998 as a senior field support engineer and is currently a senior Enterprise Solutions Architect within Esri's Implementation Services Department. Mr. DeWeese has over 30 years of experience leading teams, supporting sales initiatives, providing technical management, architecting systems, implementing systems, evaluating technology, and providing technical consulting to meet customer business objectives.

Career Highlights

- Architect lead for multiple GIS systems for one of the largest gas/electric utilities in the United States
- Architected GIS system for the largest water utility in the United States
- Architected GIS system for largest utility in Canada

Experience

Esri: 24 yrs 2 months
Total: 31 yrs 2 months

Education

- Technical, Electronics, Devry College, City of Industry, California, USA, 1988
- Technical, Technical Management, Devry College, Pomona, California, USA, 1998
- MBA, Business, Keller Graduate School, Online, Online, USA, 2012

Technical Capabilities

- **ArcGIS Enterprise Roles and Extensions** - ArcGIS Monitor
- **ArcGIS Platform** - ArcGIS Enterprise, ArcMap
- **Business Skill** - Onsite Implementation, Business Consultancy, Project Management, Requirements Gathering and Discovery, Technical Advisory, Technical Lead, Technical Writing
- **Database** - Oracle, SQL Server
- **Platform** - Android, Azure, Citrix, IIS, Linux, Windows
- **Programing Language** - Python
- **Technical Skill** - Enterprise Security, Geodata Management and Migration, Performance Testing, Platform Configuration, Security Design and Engineering, System Architecture Design, System Integration

Selected Experience

ArcGIS/Citrix Performance Investigation, American Water

Mr. DeWeese is actively working with project and technical staff to review the Citrix deployment at American Water and troubleshoot specific issues related to the ArcGIS deployment. Time frame: 2016-Present

ArcGIS/Citrix Performance Investigation, United Water

Mr. DeWeese worked with project and technical staff to review the Citrix deployment at American Water and troubleshoot specific issues related to the ArcGIS deployment. Time frame: 2013

GIS System Architecture Review, Cal Water

Mr. DeWeese reviewed the GIS system architecture for Cal Water and made recommendations related to their plans for upgrading their ArcGIS infrastructure from ArcGIS 9.3.1 to ArcGIS

10.1. This involved identifying new server hardware to support the upgrade and also identifying any issues with the current architecture. Time frame: 2012

Deploying New Web Applications, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)

Mr. DeWeese provided an updated system architecture document addressing additional requirements and changes as they related to a system architecture design review that was performed in 2010. The original review focused on evaluating various aspects of the GIS and supporting infrastructure and identified additional computing capacity requirements to support future web application growth. Time frame: 2012

Employment History

| Employer | Position Title | Position Dates |
|---------------------------------|--------------------------------|-----------------------|
| Esri | Enterprise Solutions Architect | 2007–Present |
| Esri | Senior System Design Analyst | 1998–2007 |
| AlliedSignal Technical Services | Operations Systems Engineer | 1991–1998 |

Continued Professional Development

Training

- ArcGIS Enterprise Data Management and Collaboration (Technical Bootcamp), Esri Learning Center, Redlands, CA, 2018
- Spatiotemporal Big Data Store, Esri Learning Center, Redlands, CA, 2016
- Project Management Essentials, Knowledge Structures Inc. Professional Development, Redlands, 2016

Guru Ganesarethinam

Project Manager / Sr. Technical Manager

Project Manager, Technical Advisor, and Senior Technical Manager for Water Utilities and Local Government.

Summary

Mr. Ganesarethinam is a project manager and senior technical manager in Esri's Professional Services Division. He has more than 20 years of experience in GIS technology with project and technical management skills. He has managed and worked a wide variety of GIS projects. Mr. Ganesarethinam serves as the Technical Advisor for Esri's Local Government and Utility customers. He is also one of Esri's Technical Consulting Services Program Coordinators.

Career Highlights

- Managed and executed several data migration and conversion projects successfully.
- In charge of managing Esri's standard Water/Wastewater Geodatabase Design files.
- Developed Esri's Irrigation Data Model Template
- Collaborated in creating Water Asset Package for Utility Network

Experience

Esri: 21 yrs 1 month

Total: 27 yrs 11 months

Education

- BS, Geography, Bharathidasan University, Kumbakonam, Tamil Nadu, India, 1991
- MS, Geography, Madras University, Chennai / Madras, Chennai / Madras, India, 1993
- Master of Technology (MS), Remote Sensing & GIS, School of Earth Sciences, Tiruchirappalli, Tamil Nadu, India, 1995

Technical Capabilities

- **ArcGIS Apps/Mobile** - Collector for ArcGIS, Explorer for ArcGIS, Operations Dashboard for ArcGIS, Web AppBuilder for ArcGIS
- **ArcGIS Extensions (Desktop and Enterprise)** - ArcGIS Data Interoperability, ArcGIS Data Reviewer, ArcGIS Workflow Manager
- **ArcGIS Online** - Configurable Apps, Geocoding Services, Imagery Services
- **ArcGIS Platform** - ArcMap, ArcGIS Enterprise
- **Business Skill** - Onsite Implementation, Business Consultancy, Project Management, Proposal Development, Requirements Gathering and Discovery, Technical Advisory, Technical Lead, Technical Writing
- **Database** - Oracle, SQL Server
- **Programming Language** - PISQL, Python, SQL
- **Technical Skill** - Cartography, ETL Development, Geodata Management and Migration, Geospatial Analysis, Image Analysis, QA/QC, Remote Sensing

Selected Experience

Esri Enterprise Advantage Program, Various Clients

As a Technical Advisor, Mr. Ganesarethinam is responsible for coordinating an annual planning meeting with the customer, understanding the customer's GIS requirements, creating and managing a work plan document, identifying resources to support the implementation, and scheduling work. Mr.

Ganesarethinam is currently serving as a Technical Advisor to

the following Utility and Local Government agencies: El Paso Water Utilities, California [2015 –

current], Santa Margarita Water District, California [2015 – current], Sweet Water Authority, California [2015- current], Central Basin Municipal Water District, California [2016 – 2017], and City of Lubbock, Texas [2012 – current] to help them implement and upgrade ArcGIS platform solutions. Time frame: 2012-Present

Santa Margarita Water District Data Conversion

Mr.Ganesarethinam is working as a Project Manager for Santa Margarita Water District Data Conversion project to convert domestic water atlas map pages data into Esri's Water Utility Data Model schema. Mr.Ganesarethinam is also managing a data conversion vendor as part of this project, managing the project schedule and project budget. Time frame: 2018-Present

Colonial Pipeline Company APDM to UPDM ArcGIS Pipeline Migration Project

Mr.Ganesarethinam is working as technical consultant and also a project manager on the Colonial Pipeline project. Mr. Ganesarethinam role on this project includes providing technical advice for data mapping, data modeling and data migration tasks, and also managing the data migration. The scope of this project is to migrate Colonial Pipeline data from APDM to UPDM (APR) schema. Time frame: 2017-Present

Employment History

| Employer | Position Title | Position Dates |
|--------------------------|--|----------------|
| Esri | Project Manager / Senior Technical Manager | 2000–Present |
| Tata InfoTech Limited | Senior Software Engineer/Team Lead | 1998–2000 |
| Nobel Systems | Project Manager | 1996–1998 |
| Bharathidasan University | Junior Research Fellow | 1995–1996 |

Continued Professional Development

Training

- EEAP Technical Advisor Training, Esri In-House, Esri, Redlands, 2018
- ArcGIS Enterprise Data Management and Collaboration (Technical Bootcamp), Esri Learning Center, Redlands, CA, 2018
- ArcGIS Pipeline Referencing Training, Esri Applied Technology, Redlands, CA, 2017
- Utility Network Tech Transfer Workshop, Esri Applied Technology, Redlands, CA, 2017
- Performance Review Training, Esri In-House, Redlands, 2016
- Timekeeping Refresher, Esri PS In-House, Redlands, 2016
- Introduction to the ArcGIS GeoEvent Extension for Server, Esri Learning Center, Redlands, CA, 2016
- Coaching for Performance, Esri Professional Development, Redlands, 2016
- Clarifying Your Teams Purpose, Esri Professional Development, Redlands, 2016
- Inspiring Trust, Esri Professional Development, Redlands, 2016
- The 4 Imperatives of Great Leaders, Esri Professional Development, Redlands, 2016
- Timekeeping Esri Internal Training, Esri (Internal) Vendor, Redlands, 2016
- Portal Server Bootcamp, Esri Vendor, Redlands, 2015
- Survey123 ArcGIS Hands-On Workshop, Esri Applied Technology, Redlands, CA, 2015

Michelle Johnson

Senior GIS Quality Assurance Lead

Focused on quality GIS data and customer needs to enable successful application of customer GIS

Summary

Ms. Johnson joined Esri as a data entry operator, digitizer, and data processor in 1989. Since joining, she has held various positions with increasing responsibilities within Geodata Services. Her current position is acting as a quality assurance/quality control and technical lead for several GIS projects. She has proven experience in the effective use of the Esri product suite on data conversion/migration and quality control activities. Ms. Johnson's previous position was as a Product Engineer for ArcGIS Data Reviewer, the GIS data quality control extension to ArcGIS. She has over 25 years of experience working on GIS projects and has since introduced several major enhancements to Data Reviewer.

Career Highlights

- QA/QC Lead & Release Manager on projects in Geodata Services
- ArcGIS Data Reviewer advocate
- Internal Auditor for Database Services ISO 9001 program

Experience

Esri: 31 yrs 11 months

Esri Certifications

- ArcGIS Desktop Associate 10.1
- Enterprise Geodatabase Management Associate 10.1

Education

- AS, Computer and Information Science, Crafton Hills College, Yucaipa, CA, USA, 1996
- BS, Information Systems, University of Redlands, Redlands, CA, USA, 2004

Technical Capabilities

- **ArcGIS Extensions (Desktop and Enterprise)** ArcGIS Data Interoperability, ArcGIS Data Reviewer
- **ArcGIS Platform** - ArcGIS Enterprise, ArcMap
- **Business Skill** - Agile Product Owner, Agile Scrum Master, Release Management, Requirements Gathering and Discovery, Technical Advisory, Technical Lead, Technical Writing, Onsite Implementation, Project Management, Proposal Development
- **Database** - SQL Server
- **Platform** - Windows
- **Technical Skill** - QA/QC, ETL Development, Geodata Management and Migration, Performance Testing

Selected Experience

ArcGIS Data Reviewer Support, Various Clients

These projects consisted of providing ArcGIS Data Reviewer support to help customers get set up with automated quality control of their GIS data. Ms. Johnson would either travel onsite or conduct webcasts to provide the client knowledge transfer of using Data Reviewer and create Reviewer Batch Job(s) specific to the customer's needs to support their GIS data requirements. She supported New Jersey American Water, City of Bellevue, Orange County Sanitation District, Otay Water District, Tucson Water, Austin Water, Honolulu Board of Water Supply, and City of Arvada.

Time frame: 2014-Present

Water Utility Network Editing and Analysis Support, Various Clients

These projects consist of configuring the Water Utility Network Editing and Analysis solution, which consists of tools to help streamline the editing experience and includes the Attribute Assistant add-in. Ms. Johnson would either travel on-site or conduct webcasts to gather requirements, create the configuration, provide and set up the configuration files, and conduct a knowledge transfer to the client. She has supported San Jose Water, County of Cherokee Water and Sewer Authority, and Harlingen Water Works System. Time Frame: 2017-Present

Data Migration Projects, Various Clients

These projects consisted of migrating the customer's data into Esri's Local Government Information Model (LGIM) or a customized data model. As the Quality Assurance (QA) Lead, Ms. Johnson wrote QA Plans and performed quality control using ArcGIS Data Reviewer. Reviewer Batch Jobs were created to validate field value mapping. Given her attention to detail, she performed manual data inspections to verify that the correct data was mapped for each field for each feature class based on the individual project specifications. Her projects include Maui's Automated Planning and Permitting System (MAPPS), ITC Holdings Inc., State of Hawaii Office of Planning, City of Carlsbad, EPCOR Utilities, Central Contra Costa Sanitary District, County of Mecklenburg, NC, Colonial Pipeline Company, and Sandia National Labs. Time frame: 2014-Present

GIS Data Conflation, CPS Energy

This project consists of re-aligning several GIS datasets to an updated, more accurate and industry-used land base source. As a Quality Assurance (QA) Lead, Ms. Johnson developed Reviewer Batch Jobs for the automated data validation. She conducts the data review of the deliverables from the subcontractor. Ms. Johnson also provides a summary of the data review findings, which is used to determine if the deliverable is acceptable or not. Time frame: 2016 – 2018

GIS Parcel Data Conversion, County of San Luis Obispo, CA

This project consists of converting parcel data from scanned paper maps directly into the Parcel Fabric. As a QA Lead and Data Reviewer expert, Ms. Johnson's main focus on this project is to help establish and document the automated quality control procedures. She created Reviewer Batch Jobs based on the Parcel Fabric and the customer's requirements. She also helped defined the statistical sampling requirements to conduct manual data review of deliverables coming from the production team, Esri India. Time frame: 2015-Present

Community TIGER, U.S. Census Bureau

This project consisted of developing a web-based system for data exchange and management of address and street features in a cloud-based platform. Ms. Johnson supported the data submission portion of the project, where partners process their data to standardize the data for consumption

into Community TIGER and identify any data issues. Her responsibilities included testing the Python Add-In tool that processed the partner’s data and helped to fine-tune the requirements for standardizing the addressing data. Based on her expertise with ArcGIS Data Reviewer, she reviewed and updated the data checks in the Reviewer Batch Job, which was being used to perform the automated data validation of the address and street data. Ms. Johnson was also responsible for creating Task Assistant Manager (TAM) workflows, which consisted of steps utilizing core editing tools and GP models to address data errors for partners who were not familiar with ArcGIS. Time frame: 2014-2015

Employment History

| Employer | Position Title | Position Dates |
|------------|-----------------------------------|----------------|
| Esri | Senior GIS Quality Assurance Lead | 2014–Present |
| Esri | QMS Internal Auditor | 2004–Present |
| Esri | Product Engineer | 2007–2014 |
| Esri | Quality Control Lead | 1998–2007 |
| Esri | Technical Lead | 1994–2007 |
| Esri | Database Analyst | 1993–2003 |
| Esri | Digitizer | 1989–1993 |
| McDonald’s | Swing Manager Trainee | 1988–1989 |

Continued Professional Development

Training

- FME - Utility Network Migration Training, Safe Software One-Off Training, Virtual, 2018
- SANS: Advanced Persistent Threat (APT), Global Learning Systems In-House, Redlands, 2017
- Cadastral Work Week, Esri Applied Technology, Redlands, CA, 2017
- ArcGIS Pipeline Referencing Tech Transfer, Esri Applied Technology, Redlands, CA, 2017
- SANS: Data Security and Data Destruction, In-House, online, 2017
- Editing and Maintaining Parcels Using ArcGIS, Esri Learning Center, Redlands, CA, 2016
- Coaching for Performance, Esri Professional Development, Redlands, 2016
- Clarifying Your Teams Purpose, Esri Professional Development, Redlands, 2016
- Inspiring Trust, Esri Professional Development, Redlands, 2016
- The 4 Imperatives of Great Leaders, Esri Professional Development, Redlands, 2016
- Policy and Procedure Training: Labor - Timekeeping, Esri - Dept Training Vendor, Redlands, 2016

Matthew Keeling

Database Analyst

Environmental Systems
Research Institute (Esri),
Inc. – Category 3

Summary

Mr. Keeling joined Esri in 2010 and has worked on a variety of projects with a focus on data processing, migration, and ArcGIS Enterprise. He has worked on projects for national and local governments and for large private companies. He has expertise in developing processes that include large datasets like geocoding, land records, and caching.

Career Highlights

- Managed AWS cloud environment for Landscape and World Imagery projects that involved processing terabytes of data in the AWS Cloud
- Technical lead for installing the World Geocoder on site and training private customers in its use

Experience

Esri: 11 yrs 8 months
Total: 15 yrs 7 months

Esri Certifications

- ArcGIS Desktop Professional 10.0
- ArcGIS Desktop Professional 10.1
- Enterprise System Design Associate 10.5

Education

- BS, Natural Resources Planning & Interpretation: GIS &, Humboldt State University, Arcata, California, USA, 2005
 - MS, Information Systems and Technology, Claremont Graduate University, Claremont, California, USA, 2016
-

Technical Capabilities

- **ArcGIS Apps/Mobile** - Collector for ArcGIS, GeoPlanner for ArcGIS, Operations Dashboard for ArcGIS, ArcGIS Indoors, ArcPad
- **ArcGIS Developer** - ArcGIS API for Python
- **ArcGIS Enterprise Roles and Extensions** - ArcGIS Image Server, Esri Production Mapping for Server
- **ArcGIS Extensions (Desktop and Enterprise)** - ArcGIS 3D Analyst, ArcGIS Data Interoperability, ArcGIS Data Reviewer, ArcGIS Geostatistical Analyst, ArcGIS Workflow Manager, ArcGIS Network Analyst, ArcGIS Spatial Analyst
- **ArcGIS Focused Solutions** - Esri Production Mapping
- **ArcGIS Online** - Network Services, Esri Basemaps, Elevation Services, Geocoding Services, Imagery Services, Landscape Services
- **ArcGIS Platform** - ArcGIS Desktop (ArcGIS Pro), ArcMap, ArcGIS Enterprise
- **Business Skill** - Onsite Implementation, Requirements Gathering and Discovery, Technical Advisory, Technical Lead, Technical Writing
- **Database** - Oracle, PostgreSQL, SQL Server
- **Platform** - Aws, Azure, Linux, Windows
- **Programming Language** - Python, SQL
- **Technical Skill** - Spatial Analysis, System Architecture Design, Workflow Design, Image Analysis, Platform Configuration, Remote Sensing, Server Development, 3D Gis, Big Data, Cartography, Data Visualization, Desktop Development, Etl Development, Geodata Management and Migration, Geospatial Analysis

Selected Experience

World Geocoder Installation and Technical Transfer, Various Clients

The World Geocoder is a solution that gives clients the capability of geocoding data from around the world using Esri technology in their own environment, on site, or in a cloud environment. Mr. Keeling is in charge of installations at customer sites for private customers and doing the technical transfer so they can use the World Geocoder as part of their own processes and applications. Time frame: 2015-Present

Address and Locator Maintenance Project, State of Hawaii Office of Elections

This project provides the Office of Elections the ability to maintain its own address database used for voters and includes a process to automatically update geocoding and other services using data updates from various county offices. Time frame: 2015-Present

Parcel Manager Migration, Cyprus Department of Lands and Surveys

Mr. Keeling worked on and off site with the Department of Lands and Surveys to build a unique land record data migration process. This will be used for a new parcel maintenance workflow for the country of Cyprus. Time frame: 2018-Present

Employment History

| Employer | Position Title | Position Dates |
|-----------------------|------------------|----------------|
| Esri | Database Analyst | 2010–Present |
| ACS | GIS Analyst | 2007–2010 |
| Project Partners Inc. | GIS Site Manager | 2005–2007 |

Continued Professional Development

Training

- System Architecture Design Strategies, ESRI Learning Center, Redlands, CA, 2017
- Techniques for Presenting Successful Demos of ArcGIS Platform, Esri Professional Development, Redlands, 2016
- Spatiotemporal Big Data Store, Esri Learning Center, Redlands, CA, 2016
- Enterprise Health Check (Redlands), Esri Applied Technology, Redlands, CA, 2016
- Editing and Maintaining Parcels Using ArcGIS, Esri Learning Center, Redlands, CA, 2015
- Portal Boot Camp, Esri Vendor, Redlands, CA, 2015
- Advanced Python, DevelopMentor Vendor, Redlands, CA, 2015
- Big data, Better World?, Claremont Graduate University Vendor, Claremont, CA, 2014
- JavaScript Essentials, Duarte Inc. Vendor, Redlands, CA, 2014

Presentations

- Creating GIS enabled dashboards to help decrease hospital readmissions, Esri User Conference, San Diego, CA, July 2015

Publications

- Keeling, M. “Tracking the True Cost” (ArcUser, Summer 2009) – Article describing the Graffiti Abatement Tool application (built on the ArcGIS Flex API with ArcGIS Server) and how it was used at the City of Riverside

Other Achievements

- Awarded Esri Fellows scholarship in 2014 to complete his Masters of Science in Information Systems and Technology from Claremont Graduate University in 2016

Jennifer Laws

Consultant / Project Manager

A consultant/project manager at Esri who strives to empower users with Web GIS and the ArcGIS Platform.

Summary

Ms. Jennifer Laws joined Esri in August 2017 as a Consultant/Project Manager on the Natural Resources team in Professional Services. Currently, she assists as a technical resource on projects for the Natural Resources team and leads the implementation of Web GIS Launch Kits (WGLK) – collaborative, onsite engagements that empower Esri users with the knowledge and tools they need to administer and populate their ArcGIS Online or Portal for ArcGIS organizations with high-quality web maps and applications.

Career Highlights

- Two successful Web GIS Launch Kit implementations in Oregon and California since August 2017

Experience

Esri: 6 yrs
Total: 9 yrs 5 months

Education

- Master of Environmental Science and Management, Bren School of Environmental Science & Management at the University of California, Santa Barbara, 2017
- Bachelor of Science in Environmental Studies, Minor in Political Science, Santa Clara University, 2015

Technical Capabilities

- **ArcGIS Apps** - ArcGIS Maps for Office, Collector for ArcGIS, Explorer for ArcGIS, Operations Dashboard for ArcGIS, Survey123 for ArcGIS, Web AppBuilder for ArcGIS, Workforce for ArcGIS
- **ArcGIS Online** - ArcGIS Open Data, Geocoding Services, Configurable Apps, Esri Basemaps, Imagery Services, Story Maps
- **ArcGIS Platform** - ArcGIS Enterprise, ArcGIS Desktop, ArcGIS Pro
- **ArcGIS Solutions** - Arc Hydro
- **Business Skill** - Business Consultancy, Technical Writing, Onsite Implementation, Requirements Gathering and Discovery, Technical Advisory
- **Technical Skill** - Cartography, Data Visualization, Geospatial Analysis, Performance Testing, Platform Configuration, QA/QC, Spatial Analysis, 3D GIS, Enterprise Security, Image Analysis, Remote Sensing

Selected Experience

Web GIS Launch Kit, Foothill Municipal Water District

Led a collaborative, onsite engagement with Foothill Municipal Water District to empower them with the knowledge and workflows they needed to administer and populate their ArcGIS Online organization with high-quality web maps and applications. By the end of the three-day onsite engagement, we were successful in creating and testing two iterations of a Water Meter Reads Collector for ArcGIS application in the field for their distribution operators, as well as a first iteration of a Story Map Series web application of their Capital Improvement Program projects for their Board of Directors. Time frame: November 2017

Web GIS Launch Kit, Rogue Valley Sewer Services

Assisted with a collaborative, onsite engagement with Rogue Valley Sewer Services to empower them with the knowledge and workflows they needed to administer and populate their Portal for ArcGIS organization with high-quality web maps and applications. By the end of the four-day

onsite engagement, we were successful in creating and presenting a Maintenance Collector for ArcGIS application, Map Change Request application, and a Maintenance Performance Operations Dashboard for their field crew and managers. Time frame: October 2017

Environmental Impact Assessment of Land Use Conversion at Kohala Institute, Kohala Institute

Collaborated on a master’s group project for Kohala Institute to assess their land use conversion impacts on water quality, carbon emissions, and wildlife habitat availability over the next twenty years. As the lead Data Manager and co-Project Manager, I helped successfully manage our project’s budget, schedule team meetings, manage GIS resources, and present our findings to Kohala Institute and the public. Time frame: April 2016 – June 2017

Employment History

| Employer | Position Title | Position Dates |
|---|----------------------------|-----------------------|
| Esri | Consultant/Project Manager | 2017–Present |
| University of California, Santa Barbara | GIS Research Assistant | 2015–2017 |
| Esri | Project Management Intern | Summer 2016 |
| Esri | Industry Solutions Intern | Summer 2015 |
| Santa Clara University | GIS Research Assistant | 2013–2015 |
| Santa Clara University | GIS Teaching Assistant | 2013–2015 |
| Esri | Product Management Intern | Summer 2014 |
| City & County of Honolulu | Storm Water Quality Intern | Summer 2013 |

Continued Professional Development

Presentations

- Web GIS Launch Kit, City of El Cajon, El Cajon, CA, November 2017
- Web GIS Launch Kit, City of Placentia, Placentia, CA, November 2017
- Big Island Impacts: An Analysis of Land-Use Conversion on Water Quality, Carbon Emissions, and Wildlife at Kohala Institute; The Master of Environmental Science and Management Class of 2017 Public Presentations; Santa Barbara, CA; April 2017
- Big Island Impacts: An Analysis of Land-Use Conversion on Water Quality, Carbon Emissions, and Wildlife at Kohala Institute; The Master of Environmental Science and Management Class of 2017 Defenses – Week 2; Santa Barbara, CA; March 2017

Joseph Munyao

Consultant / Project Manager

An expert in web mapping application design and configurations with wide experience in ArcGIS products & Arc Hydro tools

Summary

Mr. Munyao joined Esri in December 2014 as a Consultant / Project Manager in the Natural Resources sector. He has vast experience with the Esri ArcGIS Platform suite of products among other GIS and Remote Sensing software. Mr. Munyao has over five years of technical professional experience in the application of geospatial technology and three years managing enterprise-wide GIS projects. His technical specialties include ArcGIS Online configurations, ArcGIS for Server, ArcGIS for Desktop, Esri Mobile solutions, applications configurations, software testing, and quality assurance and control. He is actively involved in technical advisory to clients on how best to implement the ArcGIS Platform, web applications installations and configurations, and project scope.

Career Highlights

- Supported ArcGIS Open Data initiative for different clients including USFS, Placer County, and Oregon Department of Transportation.
- Supported quality assurance and release management of the Massachusetts Department of Transportation Project Planning System (MaPPS) application.

Experience

Esri: 8 yrs 3 months
Total: 11 yrs 3 months

Education

- BA, Geography, Moi University, Eldoret, Rift Valley Province, Kenya, December 10, 2010
- MS, Geographic Information System, University of Redlands, Redlands, California, United States, December 10, 2014

Technical Capabilities

- **ArcGIS Apps** - AppStudio for ArcGIS, ArcGIS Maps for SharePoint, Navigator for ArcGIS, Collector for ArcGIS, Explorer for ArcGIS, ArcGIS Maps for Adobe Creative Cloud, ArcGIS Maps for Office, Operations Dashboard for ArcGIS, Web AppBuilder for ArcGIS, Workforce for ArcGIS, GeoPlanner for ArcGIS, Survey123 for ArcGIS
- **ArcGIS Online** - ArcGIS Open Data, Elevation Services, Esri Basemaps, ArcGIS Marketplace, Configurable Apps, Imagery Services, Landscape Services, Story Maps
- **ArcGIS Platform** - ArcGIS Desktop, ArcGIS Pro, ArcGIS Enterprise
- **ArcGIS Solutions** - Arc Hydro, ArcGIS for AutoCAD, ArcGIS Community Analyst
- **Business Skill** - Onsite Implementation, Agile Product Owner, Business Consultancy, Release Management, Requirements Gathering and Discovery, Technical Advisory, Technical Writing
- **Programming Language** - Python, SQL
- **Technical Skill** - Cartography, Data Visualization, Geospatial Analysis, QA/QC, Spatial Analysis, Geodata Management and Migration, Platform Configuration, Workflow Design

Selected Experience

Public Lands, Acquisitions and Recreational Assets Inventory, Washington State Recreation and Conservation office (WA RCO)

Washington Recreation and Conservation Office (RCO) was tasked by the State Legislature to develop a web-based solution that would provide a one-stop shop for the public to access information related to the State public lands, planned acquisitions and the recreational assets coverage. To achieve this, Esri worked with RCO to perform a rigorous requirement gathering

and analysis, built a solution design, database architecture and ETL procedures, spatial analysis to understand current coverage of the State’s recreational assets, gap analysis based on population and demographic data, and configuration of out of box web applications for the solution. This was a multi-agency project that involved several stakeholders including WA DNR, DFW, State Park, Washington HomeTown and WA RCO. As the Implementation Lead, Mr. Munyao was in charge of requirements validation, workflow definition and execution advisory, coordination of the agencies data acquisition and aggregation, oversight of solution design that factors the inputs from different agencies, and web applications configuration. In his role as a Project Manager, Mr. Munyao was in charge of project monitoring, communication, and reporting. He also ensured that all the project deliverables met the standards by working together with the quality assurance and control team for the product release. In addition, he was involved in the coordination of project monthly meetings and the management of the project schedule and budget.

USFS GeoPlatform Prototype, U.S. Forest Service Chief Information Office (USFS CIO)

The United States Department of Agriculture (USDA), Forest Service (USFS) is implementing a prototype geared towards enhancing and extending its existing enterprise GIS to help the agency become a “World Class Purveyor of Information.” Esri is supporting this objective by developing and testing USFS best practices for enterprise GIS architecture, cloud services administration, and thematic data access and management. In his role as a Project Manager, Mr. Munyao has been ensuring that the USFS requirements are well communicated to the Esri technical team for implementation. In addition, he is involved in coordination of project monthly meetings, quality control of the deliverables, and management of the project schedule and budget. Also, Mr. Munyao led the technology transfer on ArcGIS Online and Open Data configuration for the Forest Service.

MaPPS Application Development, Commonwealth of Massachusetts

Massachusetts Department of Transportation (MassDOT) was looking for a web based solution to support their project planning process so they can simplify their existing workflow with a web based wizard approach that was transparent for all users. The Esri project team worked to build a 7-step system which incorporated the initial phase of the planning process for MassDOT. As the Product Owner, he was in charge of the project requirements backlog and prioritization, and as the Release Manager, he was responsible for quality control, documentation, and technology transfer. He also attended project meetings and provided software demonstration to the client on the different application functionalities.

Web GIS Implementation, Southern California Association of Governments (SCAG)

As the nation's largest metropolitan planning organization, representing six counties, 191 cities and more than 18 million residents, SCAG wanted to implement Web GIS to geo-enable their operations and workflows. Mr. Munyao worked with the SCAG planning, GIS, and IT teams to establish an ArcGIS Online site as well as troubleshoot various performance bottlenecks for their ArcGIS Server deployment. He also helped them to implement various best practices for ArcGIS online, application development (with large sizes of data records), users account management, and security management. After the onsite visit, SCAG has been able to achieve high performance with their web services as well as enable efficient communication between their technical staff and the executives using geospatial applications and dashboards.

Topo Product-On-Demand Application, USGS National Geospatial Program

The United States Geological Survey (USGS) is responsible for the development and production of high quality maps that meet their specific look, feel, and design requirements. To automate their map production process and workflows, Esri supported the USGS in prototyping Esri's Production Mapping (PM) Server and Product on Demand (POD) application which utilizes online mapping services to enable production of high quality and detailed cartographic products. In his role as a Project Manager, Mr. Munyao was in charge of project monitoring, communication, and reporting. He also ensured that all the project deliverables met the standards by working together with the quality assurance and control team for the product release. In addition, he was involved in the coordination of project monthly meetings and the management of the project schedule and budget.

Employment History

| Employer | Position Title | Position Dates |
|---------------------|---|-----------------------|
| Esri | Manager – Southeast US Professional Services Node | 2015 – current |
| Green Belt Movement | GIS Specialist | 2011 – 2013 |
| Geomaps Africa | GIS Analyst | 2010 – 2011 |

Continued Professional Development

Training

- Managing Geospatial Data in ArcGIS, Esri Learning Center, Redlands, CA, 2019
- Implementing Versioned Workflows in a Multiuser Geodatabase, Esri Learning Center, Redlands, CA, 2019
- Distributing Data Using Geodatabase Replication, Esri Learning Center, Redlands, CA, 2019
- ArcGIS Pro: Essential Workflows, Esri Learning Center, Redlands, CA, 2019
- Technical Consulting Partner Workshop, Esri Applied Technology, Redlands, CA, 2018
- Certified Scrum Product Owner, Innovel 3rd Party Certification, Redlands, CA, 2018

Fred Souza

Consultant/Project Manager

Project manager, technical advisor,
and consultant for water utilities and
local government projects

Summary

Mr. Souza joined Esri as a Consultant/Project Manager in 2013. Prior to Esri, he worked over twelve years for Local Government and Water Utilities, where he held various positions, the latest was Systems Manager for the City of Garland Water Utilities. As Systems Manager, Mr. Souza led various projects including system development, implementation and integration (SCADA, AVL, GIS and work management systems).

Career Highlights

- Industry expert in GIS strategic planning, implementation, and integration for water and wastewater utilities.
- Technical Advisor for Esri's private and public water and wastewater utilities customers.

Experience

Esri: 9 yrs 4 months

Total: 22 yrs 8 months

Education

- Bachelor of Science, Geography, University of North Texas, Denton, Texas, USA, 2001

Technical Capabilities

- **ArcGIS Apps** - Collector for ArcGIS, Explorer for ArcGIS, Operations Dashboard for ArcGIS, Web AppBuilder for ArcGIS
- **ArcGIS Online** - Configurable Apps, Story Maps
- **ArcGIS Platform** - ArcGIS Pro
- **Business Skill** - Technical Advisory, Business Consultancy, Requirements Gathering and Discovery

Selected Experience

Sewage Spill Right to Know Solution Configuration, Connecticut Department of Energy & Environmental Protection (DEEP)

To improve communication between local utilities and DEEP regarding the reporting of issues related to sewage spills, the Sewage Spill Right to Know Solution provides users with a centralized web portal for data collection, reporting, and viewing; extending DEEP's ArcGIS Online functionality with

additional capabilities of the ArcGIS platform. Mr. Souza was the project manager leading meetings and assisting with solution design.

GIS Roadmap, Santa Clara Valley Water District (SCVWD)

Esri Water Practice Professional Services provided consulting support to assess SCVWD's current and planned GIS implementation, identify additional business needs, and recommend a GIS roadmap to support SCVWD's GIS planned implementation. As the project manager and industry expert consultant, Mr. Souza led the roadmap workshop and created the GIS Roadmap plan based on workshop findings.

ArcGIS Platform Configuration, White House Utility District (WHUD)

White House Utility District, Tennessee (WHUD) has a geo-centric focused approach to implementing technology to support key business needs. While the utility has had great success

using this approach, the organization was seeking improved processes to integrate systems such as customer billing, SCADA, hydraulic modeling, work order/asset management, Automated Vehicle Locating (AVL), and GIS for improved real time management of the District’s operations. As the technical advisor for WHUD, Mr. Souza led the Esri team that assisted WHUD with the configuration of the ArcGIS Platform, using a configure-first approach to deploy ArcGIS for Water Utilities solutions and deliver configurable apps. As a result, WHUD is a real-time utility and has ArcGIS integrated with numerous systems including work order management, SCADA, AVL, and outage notification.

GIS Implementation Plan, Solano Irrigation District (SID)

Esri Water Practice Professional Services provided consulting support to assist SID with development of a high-level GIS implementation plan, including reviews of existing data, geodatabase schema, GIS workflows, and integration needs with other business systems. As the project manager and industry expert consultant, Mr. Souza led the review/information gathering workshop and created the GIS Implementation Plan.

Various Positions, Multiple Clients

Mr. Souza worked for Local Government and Water Utilities in Dallas, Texas. As a GIS Analyst, he was responsible for data maintenance/management, ArcGIS management and development, deployment, and management of Internet and Intranet web mapping applications. As coordinator and project manager, he was responsible for overseeing the design and implementation of GIS projects. As systems manager, he was responsible for overseeing strategic technology planning for the water & wastewater utilities and also responsible for operational oversight of the Systems Operations and Information Systems divisions.

OpenSky AVL Integration with ArcGIS - City of Milwaukee Department of Public Works

Project Manager for the integration of the City's Harris OpenSky Automatic Vehicle Location (AVL) system with ArcGIS to improve fleet accountability, operational awareness, and decision support capabilities.

Employment History

| Employer | Position Title | Position Dates |
|---------------------------------|----------------------------|-----------------------|
| Esri | Consultant/Project Manager | 2013 – Present |
| City of Garland Water Utilities | Systems Manager | 2010 – 2013 |
| Town of Little Elm Public Works | GIS Coordinator | 2009 – 2010 |
| City of Garland Water Utilities | Project Coordinator | 2007 – 2009 |
| City of Garland IT/GIS | Interim GIS Manager | 2006 – 2007 |
| City of Garland IT/GIS | GIS Analyst | 2000 – 2006 |

Continued Professional Development

Training

- Unlisted Learning Center Courses, Esri Learning Center, Redlands, CA, 2018

- FME - Utility Network Migration Training, Safe Software One-Off Training, Virtual, 2018
- Utility Network Tech Transfer Workshop, Esri Applied Technology, Redlands, CA, 2017
- Portal Server Boot Camp, Esri Learning Center, Redlands, CA, 2016
- OneEsri Bootcamp, In-House, Redlands, CA, 2016

Certifications

- PMP Certification, Project Management Institute, Dallas, Texas, Year Issued: 25-May-2011, Expiration Date: 24-May-2023

Srinivas Suryanarayanaiah

Senior Technical Manager

Senior technical manager handling project management, technical advising, and support for water and wastewater utilities

Summary

Mr. Suryanarayanaiah joined Esri as a senior technical manager for Database Services in 2007. His responsibilities include project management, technical advisory and providing support for database design, data conversion, data migration, management and quality control. He has more than 18 years of experience working with GIS projects, primarily in the water/wastewater utilities industry. Mr. Suryanarayanaiah has successfully managed many GIS data conversion and data migration projects.

Career Highlights

- Supported data migration for City of Milwaukee, WI
- Supported data migration for City of Bellevue, WA
- Supported data migration for City of San Jose, CA
- Managed data conversion for City of Minneapolis Water Department, MN
- Managed data migration for “2nd Generation Computerized Land Information System” (2GCLIS) for the Lands Department of the Government of Hong Kong SAR.
- Managed data conversion for 20+ water systems for California Water Service Company.

Experience

Esri: 14 yrs 9 months
Total: 24 yrs

Education

- Diploma, Mechanical Engineering, Sri Jayachamarajendra Polytechnic, Bangalore, Karnataka, India, 1992
-

Technical Capabilities

- **ArcGIS Apps** - Collector for ArcGIS, Explorer for ArcGIS, Operations Dashboard for ArcGIS, Survey123 for ArcGIS, Web AppBuilder for ArcGIS
- **ArcGIS Online** - Configurable Apps
- **ArcGIS Platform** - ArcGIS Pro
- **ArcGIS Solutions** - ArcGIS for AutoCAD
- **Business Skill** - Onsite Implementation, Business Consultancy, Requirements Gathering and Discovery, Technical Advisory, Technical Writing
- **Programming Language** - Python
- **Technical Skill** - Platform Configuration, Data Visualization, ETL Development, Geodata Management and Migration, QA/QC, Spatial Analysis, Workflow Design

Selected Experience

Migration of GeoMedia data to Esri LGIM, City of San Jose, Public Works Department, CA

City of San Jose, Public Works Department was using GeoMedia for mapping their sanitary and storm water assets. Esri assisted the City in migrating the data to Esri’s Local Government Information Model (LGIM). Mr. Suryanarayanaiah was the technical lead and managed several activities including workshops for database design, data migration, quality control and configuring ArcGIS Data Reviewer, ArcGIS Workflow Manager, Water Utilities Network Editing Template and ArcGIS Online maps and apps. The City has now successfully deployed

the Esri platform for data management and dissemination. Time frame: 2015-2016

Fire Plan Maps, Parcel Update Process & eSearch Widget Enhancement, City of Fremont, CA

The City of Fremont creates Site Plan maps for Fire crews. Mr. Suryanarayanaiah setup tools to assist the City in creating PDF maps of the Site Plans using geoprocessing tools and python. The City also regularly updates its parcels using data from Alameda County, CA. Mr. Suryanarayanaiah setup tools to download the information from County’s spatial data portal and compare it with City’s version to identify changes. The City then reviews the changes and processes them as appropriate. Mr. Suryanarayanaiah also configured Address Management Template’s Attribute Assistant to auto-populate attribute information in the address points when they are created. Timeframe: 2012-2016

Data Migration Project, City of Bellevue

City of Bellevue was using AutoCAD to represent its sewer, storm water and water infrastructure data. Attribute data was stored in an Oracle database. Mr. Suryanarayanaiah developed the data model and migration tools for the migration of City’s infrastructure data from AutoCAD to Esri’s Local Government Information Model (LGIM). He also configured Water Utilities Network Editing Template to enhance data editing, ArcGIS Data Reviewer to perform data validation, and ArcGIS Workflow Manager to streamline the overall data maintenance process. Timeframe: 2015-2016

Employment History

| Employer | Position Title | Position Dates |
|--------------------|--------------------------|----------------|
| Esri | Senior Technical Manager | 2007–Present |
| Nobel Systems Inc. | Operations Manager | 2002–2007 |
| Nobel Systems Inc. | Project Manager | 1998–2002 |

Continued Professional Development

Training

- Creating and Managing Utility Networks with ArcGIS, Esri Learning Center, Redlands, CA, 2019
- ArcGIS Enterprise Data Management and Collaboration (Technical Bootcamp), Esri Learning Center, Redlands, CA, 2018
- FME - Utility Network Migration Training, Safe Software One-Off Training, Virtual, 2018
- Esri Enterprise Advantage Program Workshop, TA Training, Redlands, CA, 2018
- Insider Threat Awareness, Esri In-House, Online, 2018
- ArcGIS Pro: Essential Workflows, Esri Learning Center, Redlands, CA, 2018
- Workplace Harassment, Esri Vendor, Online, 2018
- Ethics and Code Conduct, Esri Vendor, Online, 2018
- Utility Network Tech Transfer Workshop, Esri Applied Technology, Redlands, CA, 2017
- Configuring Web Apps Using Web AppBuilder for ArcGIS, Esri Learning Center, Redlands, CA, 2016

- Introduction to the ArcGIS GeoEvent Extension for Server, Esri Learning Center, Redlands, CA, 2016
- Esri Security Awareness and Training, Esri Ethics and Compliance In-House, Online, 2017
- Policy and Procedure Training: Labor - Timekeeping, Esri Learning Center (unlisted), Online, 2016
- AppStudio for ArcGIS Boot camp, Esri Vendor, Redlands, CA, 2015
- Security Awareness Essentials, KeyStone OnDemand Vendor, Online, 2015

Presentations

- Design a Geodatabase – Lightning Talk, Esri UC, San Diego, July 2014, 2015, 2016

Statement 4: A list of recent projects and the names of up to five clients who may be contacted, including at least two for whom services were rendered during the preceding year.

Esri develops geographic information systems (GIS) software that helps organizations deliver effective and sustainable solutions to problems around the world. Esri software and services support more than 350,000 organizations. As the industry leader in GIS, Esri is engaged in over 2,000 projects and completed over 4,500 projects for government agencies since May 2015. Some have been for individual aspects of a GIS implementation, and others have been comprehensive, turnkey solutions involving all aspects of GIS implementation, from needs assessments to database design to operational rollout, and much more. Below is a sampling that Esri believes represents the type and scale of recent projects we have completed for other clients.

| Client Contacts | | | |
|--|---|---------------------|--|
| Name (Title) | Organization | Telephone Number | Email Address |
| Ms. Lyann Okada (Manager, Technical Engineering Project Branch) | Honolulu Board of Water Supply | (808) 748-5255 | Lokada@hbws.org |
| Ms. Joan Delos Santos (IT Specialist, Enterprise Technology Services Offices) | Hawaii Statewide GIS Program | (808) 220-3941 | joan.m.delossantos@hawaii.gov |
| Ms. Justine Nihipali (Coastal Zone Management Program Manager, Planning & Sustainable Development Office) | Planning & Sustainable Development Office | (808) 587-2875 | justine.w.nihipali@hawaii.gov |
| Ms. Kristana Erikson (GIS Manager) | County of Maui Information Technology Services Division | (808) 270-7518 | kristana.erikson@co.maui.hi.us |
| Ms. Bertha Yagi (Honolulu Land Information System) | Honolulu Dept. of Planning & Permitting | (808) 768-8064 | byagi@honolulu.gov |

Statement 5: Any promotional or descriptive literature which the individual or firm desires to submit.

Esri Response:

Esri is providing the following information relating to its corporate history, experience, and what forms of support we envision being able to provide in support of the breadth of types of work the County of Hawai'i may require assistance on.

Esri Company Profile

Esri develops GIS software that helps organizations deliver effective and sustainable solutions to problems around the world. We offer ArcGIS, a mapping and spatial analytics system that combines the science of geography with powerful GIS technology to reveal deeper insights into data. We also provide user education and training, technical support, and consulting services to help our users apply our technology to make more effective decisions and improve outcomes.

Founded in 1969, Esri is a financially stable, privately owned corporation with a policy of zero debt. Private ownership means no stockholders forcing short-term decisions at the expense of long-term objectives. This lets us maintain a strong commitment to innovation and rapidly address the changing and emerging needs of our user community. Each year, we reinvest nearly 30 percent of our revenue in research and development to support new advancements in our platform technology.

To help our users effectively implement geospatial technology to meet their needs, Esri maintains a worldwide partner network of more than 2,200 partners, including global alliances with major technology leaders such as Autodesk, SAP, Microsoft, Amazon Web Services, IBM, and SAS. We also have more than 80 international distributors that support Esri users in more than 150 countries.

Esri's top priority is helping customers use GIS technology to solve important challenges. We invest in our customers, seek to understand the issues and opportunities they face, and work closely with them to build viable solutions for every industry. As a result of this commitment to customer success, our platform has become widely pervasive and supports users in many industries.

Today, Esri software is used by more than 350,000 organizations worldwide including:

- Most US federal and national mapping agencies
- All 50 US state health departments
- Each of the 200 largest US cities
- More than 24,000 state and local governments worldwide
- More than two-thirds of Fortune 500 companies

- 45 of the top 50 petroleum companies
- More than 7,000 colleges and universities
- Many others in dozens of industries

Esri Professional Services Expertise

Esri’s Professional Services Division has been supporting Esri’s customers for over 50 years by supporting the implementation, configuration, and customization of Esri’s ArcGIS Enterprise Platform and products. Esri’s services run the gamut from focused consulting services, enterprise architecture design, implementation support, interactive workshops, application design, requirements analysis, data conversion and migration, installation, customized training, and more.

Our technical staff is composed of experts in consulting, architecture, programming, program and project management, and data conversion and migration. They bring extensive experience in using GIS as the core technology platform for business application integration. These include systems engineering, cartography, computer science, operations research, logistics management, business management, facilities management, planning, land surveying, terrain modeling and analysis, geodesy, geology, hydrology, and many others. Additionally, many of our staff are subject matter experts within several industry verticals such as 3D and Facilities, Utilities, and State and Local Government.

Because GIS needs can come in many forms, we in Professional Services have a number of different engagement options to best provide what our customers need, when they need it. These options include:

1. Project-based services – on a time-and-materials (T&M) or firm-fixed-price (FFP) basis
2. Technical consulting – short-term hourly engagements that provide the skills of highly capable and experienced consultants and technical staff members to Esri GIS users
3. Integrated support – builds on the level of service provided by Standard or Premium Support Services through additional technical resources, a broader scope of work, and an Integrated process
4. Service packages – short-term, high-impact services that provide knowledge transfer, best practices, and consulting support on a variety of Esri products and GIS management tasks
5. Esri Advantage Program – annual subscription program for a flexible framework for focused and dedicated support towards meeting an organization’s vision to broadly adopt GIS for business objectives
6. Managed Cloud Services – offers Esri hosted and managed environments as well as other services such as cloud system architecture workshops and readiness assessments and proofs of concept

Each of these options are described in more detail below.

It is critical to implement GIS and related technologies within the context of the organization's mission statement and goals. Esri can support development of comprehensive strategic implementation plans that provide a blueprint for developing and maintaining GIS operations within the organization. This planning can address administrative, policy, and personnel considerations as well as the specific detailed steps of supporting a complete GIS system. Critical success factors, deliverables, realistic schedules, measurable milestones, and an assessment of personnel requirements are all part of this planning process.

With over 800 staff in the Professional Services division, we anticipate being able to form the necessary teams to best support any required support services request.

Professional Services Avenues of Engagement

During a requested service activity review, Esri would work closely with our business partner to understand the requirements, the level of effort, and the schedule. Based on this, Esri and its partner would decide which service offering would best support the requirements, timeline, and staffing needs.

Below is a more detailed description of the various ways customers may engage Esri Professional Services.

Project-based Services – Firm Fixed Price (FFP) or Time and Materials (T&M)

If the requested support is based on a need that requires designed deliverables with user acceptance testing, Esri would provide a proposal with detailed tasks and deliverables covering the design, development, testing, delivery, and maintenance project life cycle. The proposal would include agreed-upon product acceptance criteria, a defect management process, firm fixed prices by task, and a detailed project schedule. Additionally, Esri can support providing project-based services on a time and materials basis for activities.

Technical Consulting – Short-term Hourly Engagements

Esri has provided on-site technical and consulting support to meet our users' diverse and growing needs through our Technical Consulting services program since 1988. The Technical Consulting program provides the skills of highly capable and experienced consultants and technical staff members to Esri GIS users. Users define a work agenda and take advantage of a consultant's specialized services on a short- or long-term basis for a predetermined period of time. The program has placed Esri staff members with extensive Esri software experience in their professional areas of expertise at user sites around the world for periods ranging from a few hours to several months.

Through the Technical Consulting program, Esri offers a full range of support including on-site technical and consulting support; assistance with GIS database and system design, installation and configuration; application development; data management; and operations, performance, and scalability.

Esri provides technical consulting services to both beginning and advanced Esri GIS users located domestically and internationally.

Integrated Support

Integrated Support builds on the level of service provided by either Standard or Premium Support Services. It provides additional technical resources, a broader scope of work, and an integrated process to elevate support cases between Esri support analysts and professional services consultants who are familiar with your environment, infrastructure, and applications. As an Integrated Support customer, you will still have access to all the components provided under Standard Support, which is included in your annual maintenance, or Premium Support, available on a subscription basis. This includes:

- A technical account manager (TAM) who acts as a single point of contact and works with your organization to ensure that your engagement with Esri Support is consistent and effective.
- Prioritized case management to ensure cases are routed with elevated priority to senior technical support staff who respond within an hour of submission to Esri.
- Proactive reviews and information sharing to review your support cases, as well as proactively communicate Esri software news and updates.

Integrated Support also covers cases related to your configuration of ArcGIS, as it was designed and/or implemented by Esri Professional Services during a project or consulting engagement. As an integrated support customer solution support engineers (SSEs) will become familiar with your environment, support history, use cases, workflows, and restrictions. The SSEs work with the TAM and support analysts to triage cases, provide insight, and lead case management and troubleshooting of the cases as needed. Due to the SSEs familiarity with your environment and their broader scope of work the Integrated Support team can quickly troubleshoot customer specific environment and application issues that fall outside of the normal scope of support.

Service Packages

Esri Service Packages are short-term, high-impact services that provide knowledge transfer, best practices, and consulting support on a variety of Esri products and GIS management tasks. Service Packages are delivered by Esri professionals to assist you with implementing Esri products faster and becoming self-sufficient with Esri technologies and are designed to help you:

- Reduce product installation and implementation time.
- Quickly adopt new Esri technologies.
- Improve productivity and operational effectiveness.

Service Packages are standardized service offerings with a defined scope and fixed price. The following types of Service Packages are offered:

- Workshops: Interactive, hands-on technology transfer to help you become self-sufficient in using Esri technology. Workshop-based packages cover specific Esri technology and GIS- or industry-related activities. Examples include the ArcGIS Data Reviewer and ArcGIS Workflow Manager workshops, both described in more detail below.
- Jumpstarts: Designed to help you quickly become self-sufficient in installing, implementing, and managing Esri software. Jumpstart packages typically provide knowledge transfer and best practices for the use of Esri products. Examples include the ArcGIS Enterprise Jumpstart and Web GIS Launch Kit.
- Remote Support: Provides a defined number of hours of telephone and email assistance after the conclusion of a workshop or jumpstart Service Package.
- Enterprise Consulting: Offers specific assistance from our Enterprise Services consultants in key areas such as enterprise GIS architecture design and health checks.

Advantage Program

In addition to project and technical consulting support, Esri offers its Advantage Program. The Advantage Program is a flexible framework to help organizations reach their vision for broadly adopting ArcGIS to meet business objectives. The program provides proactive technical advisory, annual planning/review meetings, a collaboratively developed technical work plan, participation in community technology webcasts as well as access to consulting services, premium technical support, and training.

The Advantage Program provides a means of assisting organizations with a variety of possible activities such as:

- Conduct a review of client’s current GIS environment, capabilities, and targeted objectives
- Provide recommendations for potential growth and expansion of GIS and geospatial enabled workflows across your business operations and technology environment
- Engage key Esri technical and industry subject matter experts to discuss, plan, and/or demonstrate key concepts and capabilities
- Provide the opportunity to leverage prioritized technical support to assist with key enterprise applications
- Grow foundational GIS knowledge for the organization through focused workforce development and training

The flexible framework of Esri’s Advantage Program allows for choice and configuration to meet objectives. The program provides access to a range of activities including technology strategy review, system design review, standard launch kit and jumpstart packages, and other general technical consulting activities. However, project-specific activities requiring Esri's Professional Services will be scoped, budgeted, and scheduled separately from the program.

Managed Cloud Services

Esri developed its Managed Cloud Services (Managed Services) practice to assist customers interested in deploying the ArcGIS platform in the public cloud. For the past 10 years, the Managed Services team has helped 100-plus customers move all or part of their GIS practice to the cloud. Organizations across the globe, from a wide variety of industries, have trusted Esri Managed Services to design, deploy, and manage GIS applications, data, and workflows in the cloud. Customers who leverage these services get access to cloud and GIS experts with years of experience helping customers realize the promised benefits of the cloud. With the assistance of our Managed Services team, customers are free to focus on their business while trusting the administration of their platform to Esri.

The services offered through Esri's Managed Services are designed to help customers regardless of where they are in their cloud adoption journey. Managed Services offers both managed services as well as consulting services. Managed service environments are designed to grant customers access to all of the features of the ArcGIS platform while removing the responsibilities normally associated with administering the platform. These environments are designed, deployed, monitored, and managed by the Managed Services team. Managed Services offers a range of environments suited to your organization's size, security, and service requirements. For customers looking for additional information or experiences before determining their next steps, Esri's Managed Services offers a variety of consulting services. These services range from cloud system architectures to proofs of concept. Engaging the Managed Services team through a consulting engagement gives organizations the confidence they need to make a cloud migration decision. Regardless of the type of engagement, customers using Managed Services are able to reduce their time to value and dedicate administrative resources elsewhere within the organization.

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