Dear Agencies,

Aakavs Consulting (Aakavs) is pleased to submit this SOQ to provide professional services to you as needed on your projects Following are some strategic advantages that you can leverage by using our team.

- We take pride in providing a "One-Stop-Shop" for our customers by delivering total IT and GIS consulting solutions. We are a multi-disciplinary firm and provide end-to-end IT and GIS consulting services for your enterprise as trusted systems integrators. We also possess extensive expertise on web, mobile and cloud technologies. Being platform and vendor independent (we do not resell any software products), we mostly work with third party IT software and systems that suit your enterprise and business needs. This product-neutral approach also helps us to act effectively as your agent and work in your best interests rather than for any software vendor or other companies. Bottom line, your success is our main focus as we do not receive any kick-backs or commissions from any other vendors or product/ services organizations.

- We have extensive expertise in evaluating, assessing, and integrating multiple IT systems across the enterprise e.g. financials, purchasing, work order systems, public works, law enforcement, IT portals, GIS, document management, asset management, supply chain management, permitting, leasing, business process re-engineering, business process streamlining and automation, data analytics, and automation. Our consultants and developers are self driven, highly skillful professionals, and possess an array of industry's best project experiences conforming to the highest standards. We innovate ways to integrate niche business processes and cutting edge information technology solutions based on industry standards and best practices. Our consultants' unparalleled domain expertise warrant repeat businesses and develop fruitful long term relationships.

- Our core areas of expertise are:

  o Enterprise IT and GIS - Strategic planning, needs/ requirements assessment, business and workflow analysis, BPR, application development, database development, implementation, and support

  o Platform independent IT and business systems integration

  o Enterprise Asset Management – GIS based, mobile based, cloud or on-premises

  o Mobile apps (Android, iOS, Windows) and Cloud migration/ deployment

  o Information Security

  o Data development and conversion e.g. CAD to GIS, geodatabases

  o Remote sensing analysis

- We have considerable breadth and depth of offshore resources. Our onshore (US) and offshore (India) operations provides flexibility, high availability, talent pool and cost benefits to our customers.

- Our consultants have been working with Govt. entities over the past 30+ years, and were responsible for developing various IT and GIS systems to serve local Govt. functions at various departments and levels of districts, cities, counties, states and federal. We have extensive experience in developing enterprise architectures and integrating various complex scenarios with respect to GIS, land/ property inventory and management, asset management, utilities, permitting, leasing, document and content management, financial systems, portals and dashboards, natural resource management, inter-departmental workflows, etc. Our team's combined experience is over 270 man years.

- You may have a need to consume collect, analyze, process, and illustrate data and information whenever needed in office or in the field over various media and gadgets. In near future, it will not matter to the user how the data is consumed (web, app, laptop, desktop, mobile) from where (cloud, on-premises). You will be consuming hybrid applications (web and mobile) from hybrid sources (cloud, third party services and on-premises) in future. We have extensive expertise on cutting edge technologies including security, web and mobile applications, cloud hosted and on-premise solutions. We believe that such knowledge will be critical while reviewing and assessing various COTS software, performing business process analysis, developing future processes and enterprise architecture, producing enterprise geodatabases, developing robust implementation plans, and implementing/ deploying the components to GO LIVE.

- We have observed that the success of any project largely depends on the people involved in the project and not just technology itself. Over the years, we have successfully built invaluable relationships with multiple levels of stakeholders within various local Govt. agencies. This demonstrates a real, common understanding of team chemistry, local Govt. dynamics, and personality compatibilities to work as a team, conflict resolution, and consensus development skills – key factors for delivering complex projects on time and within budget.

- Our pricing on all of our past projects have been very competitive and affordable, with good quality work being delivered. We will strive to live up to our already established good reputation, and keep delivering good quality work and deliverables at a very affordable price.

- We have always worked with our customers as their agent and with their best interests in our mind. Our consultants will always walk the extra mile for your success. We will keep doing the same in future as we believe in building long term partnerships and be vested in your success. We consider ourselves as strategic partners rather than just vendors because we take long term stakes in your success. This type of trustworthy partnership is critical to the success of complex, large projects.

- We have been successfully re-hired by the same customer to perform work or future phases of continual work. This demonstrates our successful project delivery history and capabilities that has led our customers to hire us over and over again. We do not take this lightly and strive to live up to the challenge.

- We are a minority, woman owned consulting firm dedicated to developing long term partnerships with our customers. We are looking forward to opportunities to serve you. Our efforts will always complement your commitments to projects by providing knowledgeable, high-value consulting services at an affordable price and in a manner that meets or exceeds all of your critical needs and milestones.

- We exercise a huge price advantage over our competitors by using US – India (Onshore – Offshore) operations. We have dedicated outfit in India that we leverage to deliver affordable pricing to our clients without compromising quality or delivery schedule. Being our own outfit and not just a 3rd party vendor, we have extensive influence on delivery management and pricing that we pass on as a benefit to our clients. The ultimate responsibility and accountability on all deliverables conforming to US standards always lies with the US team.

On behalf of our team, I thank you for the opportunity to submit this SOQ. Please contact me for all technical, contractual, financial, and any other matters. I look forward to hearing from you. Thank you.

Sincerely,

Arnab Bhowmick

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STATEMENT OF QUALIFICATIONS

We have 3 major focus areas as follows:

GIS CONSULTING & SOLUTIONS

Strategy and approach are keys to any successful enterprise GIS systems implementation. We always start an enterprise GIS consulting assignment or a geospatial data project with the end deliverables and project goals in mind. We provide enterprise consulting services for all your geospatial and remote sensing needs supporting both ESRI based and Open Source GIS. We also develop the backend based on Oracle, SQL, NoSQL, big data and other industry standard databases. We primarily address enterprise GIS with respect to all application and data development - mobile, web based, and desktops. Some of our major focus areas are:

- *Strategic Planning and Business Process Consulting*
- *Asset and Facilities Management including Mobile Work Order app*
- *Management & Operations Dashboards – GIS or non-GIS based*
- *Mobile & Web Applications*
- *Business Intelligence & Data Analytics*
- *Enterprise GIS Systems Architecture Design*
- *Infrastructure and Hardware Sizing*
- *Geodatabase Development*
- *CAD to GIS Data Conversion*
- *Remote Sensing &Image Classification*
- *3D Modeling and Analysis: LiDAR, Orthos, IFSAR*
- *Terrain Modeling*
- *Cadastral Mapping & Surveying*

We also address Remote Sensing and Image Analysis projects with specific data analytics or decision support needs.

IT CONSULTING & SOLUTIONS

We provide end to end IT consulting services for your enterprise as trusted systems integrators. Being platform and vendor independent, we mostly work with 3rd party systems and implementation platforms that suits your enterprise and business needs. Our consultants have already delivered world class enterprise integration solutions and services to a variety of industries integrating multiple federated or "silo" systems e.g. financials, purchasing, work order systems, IT portals, ERP, supply chain management, business process re-engineering, business process streamlining and automation, data analytics and automation, industrial production management. Some of our core IT focus areas are:

- *Mobile & Web Applications*
- *IT Systems Architecture*
- *Rapid Web Development*
- *Cloud Migration and Deployment*
- *Office 365 Migration*
- *SharePoint on the Cloud*
- *Financial Systems*
- *Industry Standard Databases including Oracle and SQL Server*
- *Security and Authentication including Self-Service*

Enterprise IT Systems Integration

Enterprise IT Security and Compliance

Cloud Deployment

Web GIS Dashboards

Rapid Mobile and Web Applications

Business Intelligence

Enterprise Asset Management

Data and Geodatabase Development

Remote Sensing Image Analysis, Classification

Financial Systems

- ➢ *Business Intelligence*
- ➢ *Enterprise Content Management*
- ➢ *Legacy Data Migration*

ENGINEERING CONSULTING & SOLUTIONS

We provide a variety of engineering design and drawing services, in addition to modeling and analysis. We work with customers across the globe to provide them economic and efficient engineering services on mission critical projects. From structural wonders to effective designs of mechanical beasts, we play significant roles in modeling, design and drawing. Engineers who work for us have extensive international exposure in creating cutting edge models and designs, in addition to re-doing existing designs for efficiency and economy. Some of our major focus areas are:

- ➢ *Industrial Parts and Components Design*
- ➢ *Product Design*
- ➢ *Finite Element Analysis*
- ➢ *Structural Analysis*

CUSTOMER PORTFOLIO

Through our services and the "hi-tech, hi-touch" attitude, we have managed to gain the faith of various clienteles in different industry verticals. We are hi-tech and leverage technology in various ways to execute projects, but we are always in touch with our customers whenever they need us to be present physically. We handhold our customers through planning and implementations, and do not take their trust lightly. Our customers value us due to our extensive GIS and IT domain knowledge and complex enterprise integration expertise, and for being there with them when needed. Most of our customers are US Government entities including States, Cities, Counties, and Federal in addition to some private sector domain leaders in Natural Resources, Telecommunications, Utilities, Energy, E-Commerce etc. Following is the brief snapshot of some of our clientele:

Our key consultants have also worked with City of Seattle, Seattle City Lights, King County, City of Bellevue, Sound Transit, WSDOT, Snohomish County, Oregon Department of Administrative Services, Bonneville Power, CentruyTel, New Mexico CIO Office, Cucamonga Valley, Contra Costa, City of Encinitas, City and County of Walla Walla, Josephine County, Wyoming CIO Office, City of Berkley, City of Missoula, City of Portland, City of Dallas among other major clients.

Rapid Web Deployment

Enterprise Systems Architecture Design

LiDAR & Orthos

Enterprise Content Management

Data Analytics

Legacy Data Migration

Oracle, SQL Server

Engineering Design

Finite Element Analysis

Structural Analysis

Contact:

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AAKAVS ADVANTAGE

As we are growing stronger every day, we stay flexible and agile to meet your urgent and changing needs thus minimizing your time to market with your projects. We cut operating, administrative, marketing, and communication costs to maximize value for your dollars. What we do not compromise with are:

- *Creativity*
- *Quality of work and reliability of our services*
- *Guaranteed on-time Delivery within Budget*
- *Partnership Service Philosophy – We build relationships*
- *Extremely Responsive and Responsible*
- *Walk the extra mile – do what is right*
- *Highly professional staff with long standing and reputable industry experience*
- *Affordable pricing without compromising quality – US - India operations*
- *Continuous learning attitude with open minds*

Our Depth of Experience includes:

- *Municipal Clients*
- *Utility Domain*
- *Enterprise GIS Implementation/ Integration with other business systems*
- *Asset Management – ArcGIS Integration*
- *AutoCAD to ArcGIS Migration*
- *GIS Data Maintenance – editing, geoprocessing, modeling, analysis, printing etc.*
- *Agile Development, Implementation and Deployment*
- *Problem Solving for Unknowns*

OUR COST STRUCTURE

- *It's common for us to surprise our customers with our affordable costs without compromising quality.*
- *Part of our affordability can be attributed to all the following cost cuts:*
- *Operating Costs*
- *Administrative Costs*
- *Communication Costs*
- *Marketing Costs*

What We Don't Cut:

- *Quality of Work*
- *Passionate resources who love what they do*
- *Creativity that helps us and our customers*
- *Continuous training and development to keep up with technology and processes*
- *Reliability*
- *Safety and Security*

MANAGEMENT PRINCIPLES AND STRATEGIES

- *We only make promises that we can keep.*
- *We believe in trustworthy, transparent, fruitful, and long-term relationships*
- *We do not aim to become a super-big, obese company and start charging our clients insane overheads.*
- *We work depth, not breadth – we handle few customers in depth and get vested in their success.*
- *We do not like surprises – ask our customers about our transparent approach*

OUR PROFESSIONAL SERVICES MATRIX

Professional Services	Description	Example Deliverables
Information Systems Assessment and Planning	Determine the best overall systems, hardware, software, data, and solutions to support business requirements, processes and practices.	• Business Process Analysis and Reengineering • Gap and Solutions Options Analysis • Benchmarking Analysis • COTS Software Assessment and Evaluation • Enterprise-wide IT/ GIS Plans • IT/ GSI Implementation Plans • IT/ GIS Audits

Systems and Applications Development, Engineering and Implementation	Determine system architecture, select software components, design databases, configure and integrate off-the-shelf solutions, write and test codes, document codes and procedures, and train/support clients.	• System Requirements Analysis
		• Software and Platform Selection
		• Enterprise Systems Integration
		• Websites and Web Portals
		• Mobile apps and systems
		• Cloud Deployment and Hosting
		• Interactive Content and Videos
		• Enterprise GIS
		• Asset Management System
		• Document Management System
		• Financial System
		• Software Engineering
		  – Analysis
		  – Specifications
		  – Design
		  – Development
		  – Implementation
		  – Application Testing
		  – QA/QC
		  – Production Rollouts
		  – Training
		• Software Support

Data Development and Management	Convert hardcopy maps or tabular data to digital format, collect field data, transform existing digital data to required formats, and produce map displays based on various analysis techniques. Design enterprise databases and geodatabases. Design and implement portals, and document management systems	• Data Conversion • Legacy Data migration • Geodatabase and Databases • Field Data Acquisition • GPS and LIDAR data processing • Portals and Dashboards • Data Warehousing • Data Mining • Mapping Products (2-D and 3-D) • Data Models • Spatial Models • Database Views and Displays
System Management	Provide IT Professional Services.	• Project Management • Systems Integration • Systems Implementations • System Configuration, Operation and Administration • Network Management • System Maintenance • User Training • Data Management • Technical Writing • User Manual Writing and Updates • Ad Hoc/ On Call/ Help Desk Support
Specialized Verticals	Software and Systems Evaluation, Implementation, and Integration within the Enterprise	• Asset Management • Permitting • Leasing • Compliance and Regulatory • Environmental • Natural Resources • Land and Parcel Management • Cadastral and Surveying • Lidar • Photogrammetry

KEY PROJECT SUMMARIES

We are the prime contractor and enterprise systems integrator for **Idaho Department of Lands, ID (IDL)** servicing them on a wide variety of IT and GIS (ESRI) projects within the State of Idaho. Several sub contractors are also working with us to service IDL. We have already been working with IDL since 2007 and recently signed a long term contract till 2022 to implement various projects in phases. IDL presents challenging, large and complex enterprise level projects for assessment, planning and implementation. From Inception Planning to Elaboration to Construction and Implementation – we are involved in all kinds of phases on various types of IT and GIS projects within IDL. It involves large scale state-wide strategic planning, interviews and workshops, needs assessment, business process and requirements analysis, evaluation and assessment of Commercial-Off-The-Shelf (COTS) software, development of custom software, implementation and deployment, training and overall project management and delivery management. Infrastructure varies from desktops to client server architectures to field mobile devices. Systems includes various technologies e.g. Microsoft, SharePoint, Navision, ESRI GIS, various COTS, mobility. Functional areas serviced within IDL includes forestry and forest management, natural resource management, navigable waters, water rights, land and parcel management, minerals, oil and gas, asset and facilities management, property management, leasing, permitting, instrument management, highways and roads, easements and rights of ways, fire, hazardous materials management etc.

We have been engaged with the **City of Renton, WA**, in this multi-year, multi-phase enterprise IT systems development and integration project since 2007 that includes GIS and IT strategic assessments and strategic plan, survey monument preservation, GIS, and enterprise asset management. Through various phases and over the years, we have conducted a series of assessment and planning meetings and workshop, evaluated workflows and business processes, inter-departmental integration issues, made programmatic recommendations including efficiencies and deficiencies, and developed implementation plans. We authored the strategic GIS and IT plan and revamped the GIS program in terms of data and custom application development on ESRI platform. Technology services programs were refined and streamlined within the City. We also helped the City identify enterprise asset management (EAM) software and implemented that within the City (Note that the City did not implement our first recommendation to start with but is now testing what we recommended initially). Further, we integrated the EAM with other important business functions like GIS, utility billing, financial system, document management system etc. Currently, we are developing a mobile based system to preserve survey monuments across the City. The premise is base on crowd sourcing on mobile platform where the monument data quality is guaranteed to enhance over time at minimal or no cost to the City, thus preserving more monuments and spending less to recreate or rebuild monuments.
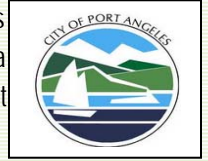
We have been engaged with the **City of Issaquah, WA**, in this multi-year multi-phase strategic enterprise IT and GIS systems development and integration project including strategic planning, assessment of IT efficiencies and deficiencies, COTS software survey and recommendations, enterprise asset management (EAM), website development, etc. All specialized software and systems in each department including Development Services, Engineering, Public Works, Finance, Parks, Natural Resource and Sustainability, Police, HR, Sustainability, Physical Security, including Cameras, Communications, Mayor's Office, etc., were evaluated for enhancements or replacements. Since Inception phase study and assessment/ planning reports in 2012, we have built a lot of financial applications, websites, records and document management applications, mobile employee time card system, and mobile EAM applications for the City. All these software and systems were planned to leverage the common enterprise IT architecture for integration and communication. Currently, we are in the fourth phase implementing a cutting-edge mobile asset management (EAM) app based on phones and tablets for the public works department. This mobile app has a desktop version also to be used by office staff. Various departments beyond the public works will also use the mobile EAM app for operations and maintenance of facilities and assets across the City.
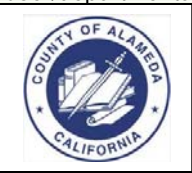
KEY PROJECT SUMMARIES

Our team led this enterprise IT, GIS and asset management program and all the multiple projects inside the program at the **City of Port Angeles, WA**, including data and geodatabase development, GIS-based operations and management dashboard development, and enterprise asset management (EAM) implementation. We conducted the GIS and IT infrastructure study and assessment, departmental business processes analysis, development of enterprise GIS architecture, needs evaluation for each City department, and enterprise IT architecture design. Weaknesses and gaps were identified and appropriate COTS software solutions were recommended and implemented. The custom developed operations and management dashboards are used to monitor the City's Key Performance Indicators (KPIs) regarding asset management and real time data feed from SCADA systems. We also developed the first ever waste water treatment plant geodatabase model that was later shared with ESRI for the benefit of the GIS user community.

Our team worked with the **County of Alameda, CA**, for almost a decade and led a number of complex and resource intensive IT and GIS (ESRI) programs and initiatives within the county comprised of individual departmental projects and countywide enterprise efforts. We performed multiple enterprise IT and GIS projects including custom application development, COTS evaluation, acquisition, implementation and integration in various departments e.g. Surveying, Engineering, Public Works, Registrar of Voters, Assessor, Department of Health, Fire. Each project presented its own challenges in terms of complexity, competing user/departmental priorities, variety of user needs and personalities, functional and technical specifications, overarching strategies, business process definitions and deployment scenarios. Strategic planning, business process analysis, enterprise IT-GIS architecture designs, GIS data development to streamlining business processes, GIS data conversion, mission-critical application development, COTS systems evaluation, acquisition and integration, document management system integration – we led and managed all kinds of projects for the County.

We advised **Puget Sound Regional Council, WA (PSRC)** on statewide asset management program to better manage Washington State's roadways, pavements and bridges. PSRC serves as the region's Metropolitan Planning Organization (MPO) and conducts all long term transportation planning activities in collaboration with Washington State Department of Transportation (WSDOT) and federal funding programs/ agencies. We performed extensive interviews within PSRC and other participating agencies - cities and counties of Washington State, transportation agencies like Sound Transit, other MPOs from San Francisco, Denver, Michigan, Reno etc. - to understand the objectives, processes and goals of such asset management and conditions assessment initiative. We collected information on pavements and bridges conditions data collection methods, analysis methods, planning and reporting components, and how the program interact with other state and federal programs e.g. Map 21 initiatives, 2020 and 2040 plans etc. High level needs were identified that helped develop the systems and functionality matrix. In the next step, we used the matrix and performed a detail survey on COTS systems and solutions available in the market including what other peer level MPOs are using. A comprehensive survey report was developed with identified COTS software and recommendations. We also helped PSRC build final presentations to present the project information and COTS recommendations to the board and other key stakeholders.

We finished the "inception" phase of this enterprise IT/ GIS project with **King County Water District #90 (KCWD90)**. The overarching goal was to understand and document business processes and workflows based on which GIS and enterprise asset management (EAM) systems will be identified. A detail implementation plan with tasks, budget, schedule, and resource loading (both internal district resources and external consulting resources) was developed. Based on findings, GIS is being implemented by the District to perform their regular data work. The District has bought our mobile GIS based Aktivov asset management app for conducting their asset and facilities maintenance and management activities. Our GIS is bundled with the app, and the District is using our GIS without investing in GIS. We are also performing CAD to GIS data conversion for the District for all their asset data that is used within our Aktivov asset management app. The District is using Android based mobile app, but we support all platforms.

The **Port of Douglas County, WA (Port)** had an imminent need to manage all their documents in a easy way on mobile devices that can be spatially searched and retrieved. Prior to us, the Port invested in a large costly solution that failed. Later, our Docterrier document and content management product was implemented to address Port's needs for mobile GIS based document management. The Port doesn't have any GIS, and is using our GIS bundled with the product without investing in GIS. User inside and outside the Port, their customers, and citizens can access the mobile GIS based app to directly access and review any document without asking or chasing anyone for documents for answers. This has cut down meeting time and increased productivity and decision making. We are supporting iOS and Android devices and mobile platforms, but we can extend the solution to any device or platform.

PROJECT REFERENCES

Each client and project is unique involving certain stakeholders with specific scope, outcomes and deliverables. We have multiple client contacts within each project and each client handling specific things within a contract. Based on what you are looking for, we will be able to direct you to the right reference. Not knowing what your project scope and needs are, there is no way we can provide correct reference. We have seen through experience that general reference results in general conversation which is not conducive to either of us. Specific references will talk to you about your specific needs, and how well we can service those specific needs to help you. We encourage you to contact us with specific scope and project needs, and we will provide you specific references.

CONCLUSION

As is evident from our company profile, some major themes have emerged that you may find these noteworthy:

- All applications and systems that were developed in later phases (e.g. construction, implementation, and transition) follow the strategy and implementation plans developed by us in the previous phases (e.g. inception, elaboration) for our clients. Most clients like a similar phased approach to implement systems – the length of a task/ phase and efforts on each phase may vary depending on specific project needs.

- We have been hired to serve as our customers' "agent" to protect their best interests, and supervise and implement enterprise scale projects with multiple software vendors and sub consultants over multiple phases and years. This is because we do not work on kick-backs and commissions from any other vendor, but only work in our customer's best interests. Individual software vendors and other consultants worked with us to implement their pieces while we worked on our pieces and managed the overall project and deliverables as a prime vendor to meet the customers' program goals and objectives.

- Our approach on every task and phase of any project has been very interactive ensuring appropriate "buy in" from key stakeholders. This approach has delivered immense success to our customers.

- Customers have re-hired us "over and over again" for subsequent phases following the plans developed by us in the preceding phase(s). This illustrates our high quality of work, affordable pricing, commitment to deliver projects successfully within scope, budget and schedule, and our trustworthy relationship as partners, rather than vendors, vested in our customers' long term success.

We are eagerly looking forward to hear from you. Our contact information is on the second page of this document.