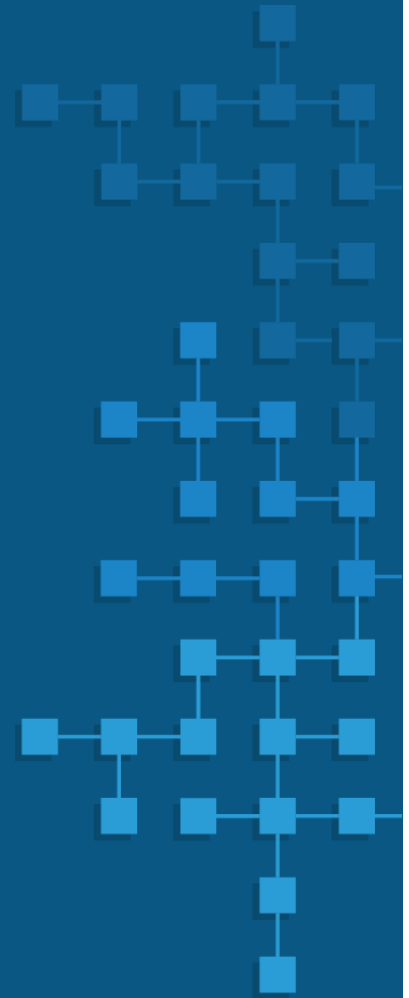


STATEMENT OF QUALIFICATIONS



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RESOURCE DATA

Overview

Resource Data is a software development, system integration, and geographic information systems (GIS) development company with 30 years of experience. We specialize in supporting medium- to large-sized enterprises. With a staff of nearly 200 employees, we provide expertise in all aspects of software implementation and IT management.

What We Do

We solve business problems through software solutions. We develop custom software applications for government and business, focusing on web-based, database, and GIS applications, using technologies such as .NET, Java, Oracle, Microsoft SQL Server, Esri software, and a variety of open source tools. Refer to the next page for additional details.

Where We Are

We started in Alaska and now have five branch offices nationwide—two in Alaska (Anchorage, and Juneau), one in Boise, Idaho, one in Houston, Texas, and one in Portland, Oregon. Our corporate staff supports all the branches with contract management, billing, human resources, and system administration, allowing the branches to focus on delivering excellent results.

How We Operate

We are able to succeed in diverse disciplines by recruiting outstanding talent. We have a stable, highly skilled, and experienced team that is accustomed to working in new and varied environments. Because of our low employee turnover rate, our clients get to know our staff and together we build great working relationships.

How We Manage Our Work

We have developed innovative management tools to run our business and support clients. Key to managing our extensive staff is a resource

scheduling tool called WorkloadManager (WLM). This web tool allows us to track and forecast workloads for each employee and client. WLM tracks work assignments and leave time, identifying conflicts between them. In addition, assignments are automatically posted to employees' home pages and projects are linked to their time sheets.

Client Access

Our clients also enjoy unique web tools for managing Resource Data projects. We provide clients with secure web access to our business database, and have all employees enter their timesheets daily (via another web-based tool) so that project budgets are always current and available for clients to review.

Stability

We are a stable, growing company. With prudent management, we have avoided large fluctuations in employees and revenue. In 2015, Resource Data grossed \$25 million while maintaining a very low employee turnover rate.

Great People, Great Results

Our motto is Best People, Best Technology, Best Results. We focus on recruiting and retaining the best in the industry. We stress a healthy work/life balance, continual professional development, and long-term careers. The net result is a happy, productive workforce that makes for successful projects and many long-term clients.

Services We Offer

- Analysis (business processes, workflow, and requirements)
- System design and data modeling
- Custom programming (database, GIS, web, mobile, and open source)
- Software implementation (commercial off-the-shelf [COTS] and custom software)
- IT system integration
- Technical writing and documentation
- Web design
- Training
- Project management
- Mentoring and support
- Data processing and conversion (spatial and tabular)

Technical Expertise

Geographic Information Systems

- ArcGIS Server
- ArcInfo & ArcGIS Desktop
- ArcSDE & ArcIMS
- ArcObjects
- AutoCAD
- Google Earth/Google Maps

Database

- SQL Server
- Oracle
- Access
- DB2
- MySQL
- PostgreSQL

Work Management

- Maximo
- PassPort

Reporting

- SQL Server Reporting Services
- Crystal Reports
- Oracle Reports Services

Programming Languages

- ASP
- ASP.NET
- C#
- C/C++
- Ruby
- ColdFusion
- HTML5/CSS
- Java
- JavaScript
- Perl
- PHP
- PL/SQL
- Python
- Transact-SQL (T-SQL)
- Visual Basic .NET (VB.NET)
- Visual Basic for Applications (VBA)
- VBScript
- Visual Basic

Tools

Development

- Visual Studio
- Eclipse

Source Control

- Team Foundation Server
- Subversion
- Git

Content Management

- SharePoint
- WordPress
- DotNetNuke
- Joomla!

HR/Financials

- PeopleSoft
- Oracle Financials
- SAP

Client Relationship Management (CRM)

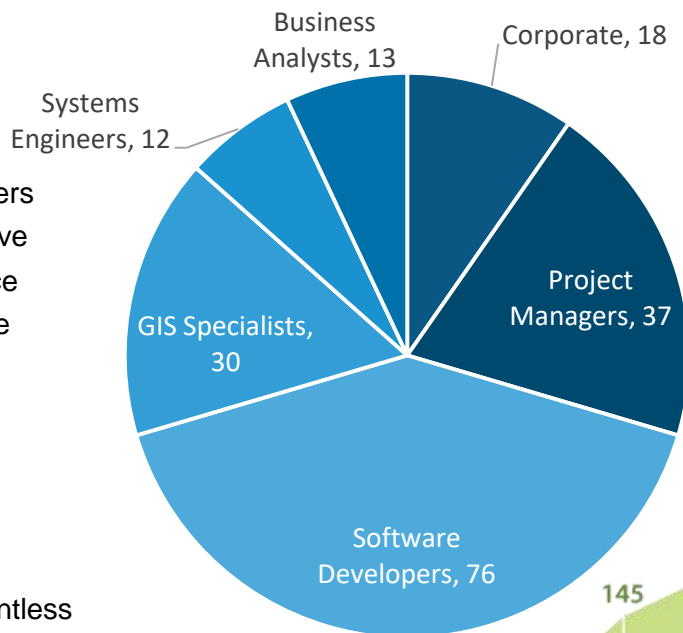
- Microsoft Dynamics

By the Numbers

Resource Data is a successful, growing company. Since starting with one person in 1986, we have grown to nearly 200 employees with branch locations in Alaska, Idaho, Oregon, and Texas. Our full-time, permanent employees enjoy one of the finest places to work, and as a result, they stay with us for a long time. Our clients also benefit from our strong, stable staff; they stay with us for a long time, too!

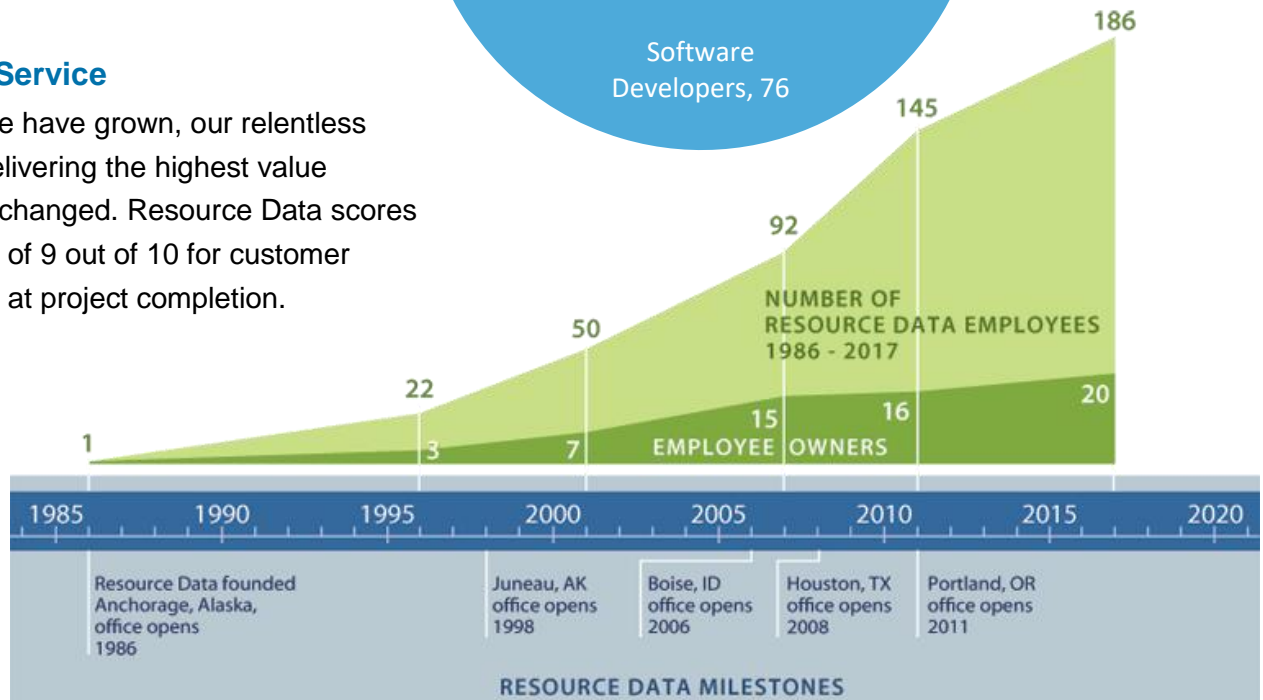
Steady Growth

From our founding to our present incarnation with nearly 200 employees and 20 employee owners in 5 offices across 4 states, we have huge range of skills and experience to meet almost any need. We have remained a stable, debt free company with revenue over \$20 million.



Superior Service

Although we have grown, our relentless focus on delivering the highest value remains unchanged. Resource Data scores an average of 9 out of 10 for customer satisfaction at project completion.



INDUSTRY EXPERIENCE

Environmental

Our expertise with geographic information systems (GIS) technology makes Resource Data a perfect partner for many environmental projects. For over 30 years, we've utilized GIS systems to support permitting, analysis, land selection, spill cleanup, mapping, routing, wetlands, and remediation projects. Clients seek out Resource Data for our unique combination of expertise in technology and understanding of the process and language of environmental projects.

Wetlands Analysis System

Resource Data developers created a GIS and database for wetland and environmental studies, including a Smart Client application to allow users located in offices across the US to access common tabular and spatial data for wetlands and vegetation mapping/analysis. Scientists use custom handheld devices for field work, collecting global positioning system (GPS) coordinates, photos, and attribute data. All data is uploaded nightly to the master database, and then users across the country can download and process the data as required. We provided tools to allow classification based on multiple criteria. We also provided extensive reporting to allow generation of assessments, classifications, and reports required by agencies when considering wetlands permitting issues.

Mine Permitting

We developed a comprehensive data management/GIS website to support an environmental studies project for a mineral exploration and development company. For this project, we organized and managed GIS data to be used for mapping and impact analysis. We also developed and automated GIS routines to perform spatial analysis and reporting in tabular form. The project used .NET technology to build a website for tracking project-related information, housing a project-related document library, and storing field and chemical (lab) analysis data. Data was stored in an Oracle 9i database.

Superfund Cleanup Portal

Resource Data developed a project portal website that provides comprehensive information about the cleanup of properties on Annette Island, AK for an environmental restoration project. The portal allows users to store and retrieve digital documents and photographs; well and borehole information; restoration site history; project budget information and schedules; laboratory results; contact information; site actions, projects, and descriptions; tasks; and stakeholder information. This information is available in map and text view. The site includes query integration between data input forms, reports, document and photo repositories, and an island-wide mapping component.

Resource Data leads the industry in knowledge and experience in applying GIS to environmental projects.

Gulf of Mexico Oil Spill Support

Resource Data was selected to be the lead GIS vendor to manage and support corporate, federal government, and private contractors working on the Gulf of Mexico oil spill. Resource Data was tasked with three main areas of responsibility: onsite staffing for mapping, data processing, and display; development of GIS tools for the management, display, and integration of data; and management of all GIS staff from other agencies, contractors, and vendors. Resource Data developed dashboard tools for management views of GIS and innovative tools to manipulate and analyze data, supported map

production, and provided 24 hour staffing at the response center.

Pipeline GIS

Resource Data designed and implemented an interactive web application for a complete pipeline GIS for a pipeline services company. Data included United States Geological Survey (USGS) base maps, rivers, roads, hydrography, land parcels for urban areas, aerial photos, environmental data, spill response information, corrosion and pipeline integrity data, and pump stations. A custom menu system allowed easy access to data along with unique pan/zoom tools and distance measuring tools. Intelligent map tips allowed users to hover their cursors over features and dynamically display attribute data.

Federal Government GIS

We currently provide onsite GIS support for the Mineral Management Service (MMS), which is responsible for management of oil and gas reserves on the outer continental shelf. In this capacity, we write ArcView extensions to help MMS scientists keep track of diverse environmental and cultural phenomena ranging from bowhead whale population distribution to shipwreck locations. We also create user manuals that include step-by-step instructions and graphics explaining installation and use of extensions.

Environmental GIS for State Agency

For this project, we automated in-house spatial data and data from other state agencies and municipalities into a GIS format. Data included contaminated sites, leaking underground storage tanks (LUSTs), drinking water sources, contingency plan sites, seafood processors, and Computer-Aided Management of Emergency Operations (CAMEO) data. We also obtained and converted base map data for Anchorage, Kenai Peninsula Borough, Mat-Su Borough, and Fairbanks into the Alaska Department of Environmental Conservation's GIS.

Spills Database for Alaska

We developed a web-based database system to track hazardous spills in Alaska. This system allows users from any part of the state to view and manipulate spill-related data via the state's intranet. The application uses a multi-database back end, while storing and retrieving from four different SQL Server databases.

Environmental Baseline Studies

We provided environmental data compilation and GIS services for a mining and mineral development company's Pogo gold mine project in central Alaska. Tasks included compiling wetlands, environmental, and base map GIS data; creating maps for field mapping; scanning and digitizing data; summary acreage reporting of wetland and other classifications; and development of color maps for inclusion in reports. We also supported and developed wetlands field data containing extensive field notes corresponding to digital photos.

Wetlands Mapping

For this project, we designed and implemented the Esri GIS for Yukon Pacific Corporation (YPC). We provided database management and GIS support of YPC's gas pipeline environmental studies and converted public and private data to GIS spatial datasets. Work included paper map conversions through scanning and vectorization, GPS data capture, and conversion of digital AutoCAD and raster data. We captured digital photos and stored field notes to support route selection. We also designed the system to track and organize YPC survey data, such as vegetation, hydrology, and soils reports, and provided features, such as secure multi-level user access.

Fish and Wildlife Data Compilation

For this project, we acquired and mapped various data layers, including wildlife habitats, subsistence use areas, air corridors, airstrip locations, and cultural uses, as well as land status. Results included summary maps of potential use conflicts and calculation of corridor lengths to show affected areas.

Financial Systems

Resource Data has implemented business-critical financial systems for many large companies and public agencies. We have developed custom software solutions for financial intranets as well as tax and accounting systems that process millions of dollars in monthly transactions. The following are some recent examples of our work:

Financial Intranet

The Municipality of Anchorage (MOA) needed a better way for staff to access information in its PeopleSoft system. We developed a suite of Intranet applications—collectively called Muniverse—through which MOA staff can easily access financial transactions such as payables, receivables, budgets, purchase requests, vendor reports, and contracts.

Permanent Fund Dividend Online Application

A division of the State of Alaska, Permanent Fund Dividend Division oversees the program through which the state distributes nearly a billion dollars to qualified Alaska residents each year. When the state began to allow residents to submit their annual PFD application online, we were contracted to help the PFD Division update its systems.

As part of this work, we developed the online application process: We rebuilt the back-end data systems; updated system tables, screens, and business logic; implemented the Pick. Click. Give. program for charitable contributions; and improved the site's connection with myAlaska, the state's website for authentication. Our PFD system has successfully distributed over \$600 million dollars a year for several years, yielding the single largest Automated Clearing House (ACH) transaction in the nation.

Oracle Financials Implementation Support

When Arctic Slope Regional Corporation (ASRC) implemented a new enterprise financial system

based on Oracle Financials, we provided a variety of IT support and programming services to assist them.

Trans Alaska Pipeline System Quality Bank System

Each month, the Trans Alaska Pipeline System (TAPS) Quality Bank must compute the net worth of oil transported via the TAPS in accordance with its tariff. Resource Data developed the database and applications that compute the needed financial adjustments for differences in crude oil value. The system tracks samples, calculates crude oil assays, determines crude oil values, and handles bank transactions worth millions of dollars every month.

Because the information in the Quality Bank is highly proprietary, the system includes security measures similar to those used by banks and other financial institutions. We also developed thorough quality control procedures and worked with Quality Bank auditors and bank personnel to ensure accurate Quality Bank adjustments.

Resource Data is a valued partner on many important financial systems, and our clients trust us to consistently deliver high-value, confidential service.

State Corporate, Motor Fuels, and Mining Tax System

The State of Alaska selected Resource Data to reengineer business processes and build new systems for collecting and managing its corporate, motor fuels, and mining taxes. This multi-year, million-dollar project is critical for the state's

Department of Revenue, and all results are fully audited. The goal of the reengineering and system rewrite was to prepare the state's system for the next 20 years of business by using the newest technology and state-of-the-art processes.

Financial Reporting System

Chugach Electric Association (CEA) needed to facilitate financial reporting and analysis from its corporate accounting system. To meet this need, we built a data warehouse to collect data from PeopleSoft's General Ledger, Accounts Payable, Project Costing, Human Resources, and Payroll modules. We also incorporated data from CEA's inventory management, contract management, and purchasing systems into the warehouse.

Utility Customer Information System

When Anchorage Water and Wastewater Utility (AWWU) implemented a new customer information system, we developed innovative tools to improve access to and use of the system. These tools included electronic bill viewing and payment, custom reports, integration with AWWU's permitting system, and a field work scheduling system.

PeopleSoft Enhancements

Resource Data managed PeopleSoft enhancements for AWWU. Our work included creating a custom check printing application, modifying PeopleSoft functionality, adding budget reporting options to integrate with National Association of Regulatory Utility Commissioners (NARUC) requirements, developing budget reports for tracking project grant and loan payment status, and developing a new cash receipts module for accounts receivable.

Financial Intranet System

A large environmental consulting firm needed a system to support its administrative business functions. We developed a full-service, web-based business system that includes timesheets, a general ledger, bill and project coding, electronic invoicing, and invoice routing.

401(k) Contribution System

A major Alaska Native corporation needed a tool to manage its 401(k) plans. We developed a comprehensive system to process and reconcile 401(k) contributions. This system supports varying 401(k) plans for subsidiaries across the United States.

Online Permitting and Licensing System

The Alaska Department of Revenue (DOR) Tax Division previously used a number of solutions to manage and collect tax and licensing data in the state. We developed specifications to streamline the DOR's processes and developed the Online Permitting and Licensing (OPAL) application. This modular system allows users to apply for licenses and pay fees online with full security and authentication.

Shareholder Management System

A major Alaska Native corporation needed a system to manage data concerning its shareholders and stock. We designed and deployed a custom shareholder stock management system, which includes tools to track owners, estates, stock transactions, dividends, and all accounting associated with managing shareholders.

Fisheries

For nearly 20 years Resource Data has actively provided IT solutions for fisheries management agencies in Alaska and the Pacific Northwest. We have helped them better manage their fisheries data with comprehensive data warehouses, data collection and reporting applications, mobile solutions, interactive management tools, and more. Our technical teams understand the intricacies of fisheries datasets, and the way that changing management policies affect the industry's IT systems. We're proud of the role we play in ensuring decision makers have the best data available to assess the health of fish stocks and the effectiveness of new management policies.

In early 2016, Resource Data acquired Finsight, LLC, a company specializing in developing databases, web applications, and mobile apps for the fisheries industry. The acquisition brought even more talent to Resource Data's well-established fisheries work.

Mobile Apps

Longline Sablefish Surveys

Since 1987, the Alaska Fisheries Science Center (AFSC) has been conducting annual longline surveys to estimate the relative abundance of major ground fish species. Surveyors aboard at-sea vessels count, measure, tag, and collect data on each fish caught as the 3,600-hook longlines are retrieved from the water. In 2011, AFSC partnered with Resource Data to create a system for collecting at-sea survey data using Trimble Yuma rugged mobile tablets. In addition to syncing the mobile data collection system, the application validates and transmits data from the tablets at least daily to a database on the vessel, where it can then be packaged and sent to the Auke Bay Laboratories (ABL) team to compile and analyze survey results. Data are provided to the North Pacific Fishery Management Council, the NMFS Alaska Regional Office, fishing industries, state and federal regulators, and international treaty bodies.

Pink Salmon Port Sampling App

One of the many responsibilities of Alaska Department of Fish & Game (ADF&G) port samplers is to count the number of male vs. female pink

salmon harvested. To support this effort and facilitate accurate counts, ADF&G engaged Resource Data to develop a mobile application for collecting this data in the field. The application was designed for the Division of Commercial Fisheries to work in an entirely disconnected mode for field collection, and then sync with the primary Oracle database when the unit was returned to the office and placed in the cradle.

Interactive Public Tools

Fisheries Genetics Database

In collaboration with the Idaho Department of Fish & Game, Resource Data created FishGen.net, a final repository for salmon and steelhead genetic data used for the Genetic Stock Identification and Parentage Based Tagging projects in the Columbia River basin and throughout the Pacific Coast of North America. <https://www.fishgen.net/>

Lake Information and Stocking Map

Resource Data created a website for the Alaska Department of Fish & Game that consolidates Alaska lake data including fish stocking, sampling, and lake survey information into a Google Earth map. The

database contains contour maps, photographs, fish data, stocking records, and historic documents dating back to the 1950s for over 1,300 water bodies throughout Alaska. <http://www.adfg.alaska.gov/index.cfm?adfg=fishingsportstockinghatcheries.lakesdatabase>

Web-Based Management Tools

Economic Data Reports for PSMFC

The Pacific States Marine Fisheries Commission (PSMFC) collects economic information from any owner or leaseholder of a processing plant or catcher vessel that harvested or processed crab in the Bering Sea and Aleutian Islands crab fisheries or any person who holds an Amendment 80 Quota Share (QS). Since 2009, Resource Data has provided programming support and ongoing maintenance for the database that houses this economic data. In addition to facilitating data storage and reporting, we've also implemented several data collection solutions, including include fillable PDF, Oracle (APEX), and .NET XML forms. We have modified these applications repeatedly to meet Amendment 80, Amendment 91, Crab Rationalization, and Saltwater Charter survey needs.

Economic Data Collection for NWFSC

The Northwest Fisheries Science Center (NWFSC) used to mail paper forms to all West Coast Groundfish Trawl fishery participants to report information about their vessels, investments, expenses, earnings, payments, quotas, and permit expenses. After learning about the electronic data records project that Resource Data completed for AKFIN, NWFSC contracted with us to design, develop, and implement a secure web-based application for collecting confidential economic data. The online system accommodates a broad range of users with an intuitive design. Resource Data and NWFSC conducted rigorous testing jointly, and tracking issues.

Electronic Fish Tickets

Prior to our merger in 2016, Resource Data collaborated with Finsight, LLC, to address a wide variety of technical issues with the Pacific States Marine Fisheries Commission (PSMFC) fish ticket applications and data. Our work began with the design of a new database and web portal used to

capture and report on electronic fish ticket data collected along the West coast. The new central database is capable of accurately storing online submissions. Sub-tasks included analyzing and adjusting fish ticket data, enhancing the eTix and CM portals, configuring a simplified eTix and CM database application deployment, and implementing a new eTix Portal that allows users to view and submit eTix through a browser-based web application.

Data Warehouses

Alaska Fisheries Information Network

The Alaska Fisheries Information Network (AKFIN) data warehouse is a repository for fisheries data from state and federal agencies. For more than 15 years, Resource Data has played a key role in helping to build and maintain the AKFIN system, from developing the underlying data warehouse to working closely with the AKFIN team and other analysts to deploy complex datamarts to fulfill reporting needs. The AKFIN data warehouse is used by North Pacific Fisheries Management Council (NPFMC) and the National Marine Fisheries Service (NMFS) economists and social scientists to study the impacts of management decisions to individuals and communities and requires solid understanding of how catches are estimated, stored, and reported.

Pacific Fisheries Information Network

The Pacific Fisheries Information Network (PacFIN) operates an extensive data warehouse that acts as a repository for fisheries data from West Coast state and federal agencies. PacFIN contracted Resource Data to design and develop a new data warehouse using modern technologies. We designed the warehouse to incorporate complex business rules; advanced extract, transform, and load (ETL) procedures; and data validation and analysis. A large amount of data was then migrated into the new system. Analytical tools allow users, including biologists, economists, and fisheries managers, to estimate fish stocks, examine economic trends, check for regulatory compliance, and make decisions about acceptable levels of fishing. Since the warehouse was developed, Resource Data has continued to provide PacFIN with new analytical tools..

Government

At Resource Data, our government clients rely on us to implement cutting-edge solutions at affordable prices. We support our public institutions with solutions ranging from tax collection systems to job banks to billion-dollar financial systems. Whether we're creating a small desktop system or a statewide enterprise solution, Resource Data is a trusted partner to get the job done. The following are examples of our recent work:

Permanent Fund Dividend Online Application System

The Permanent Fund Dividend Division of the State of Alaska oversees the program through which the state distributes nearly a billion dollars to qualified Alaska residents each year. When the state began to allow residents to submit their annual PFD application online, we were contracted to help the PFD Division update its systems.

As part of this work, we developed the online application process. We rebuilt the back-end data systems; updated system tables, screens, and business logic; implemented the Pick. Click. Give. program for charitable contributions; and improved the site's connection with myAlaska, the state's website for authentication. Our PFD system has successfully distributed over \$600 million a year for several years, yielding the single largest Automated Clearing House (ACH) transaction in the nation.

Logistics Database System

To plan and execute a deployment to an overseas theater of battle, the Department of Defense (DoD) must retrieve data from systems operated by each service branch and several intelligence agencies. Resource Data developed a system that uses data mediation tools and web services to provide this access. The solution was a part geographic information system /part database system with graphic and tabular displays.

State of Alaska Authentication System

The State of Alaska needed to develop a single user authentication system for all persons doing e-business with the state. To meet this need, we developed myAlaska for all state agencies needing secure user login functionality. The myAlaska application, which includes an administrative web interface and a web service, required complex code that met strict standards.

We support our public institutions with systems such as tax collection, job banks, and billion-dollar financial systems as well as simple web pages and geographic information systems (GIS) tools.

Online Permitting and Licensing System

The Alaska Department of Revenue, Tax Division used a number of solutions to manage and collect tax and licensing data in the state. We developed specifications to streamline their processes and developed the Online Permitting and Licensing Application (OPAL). This modular system allows users to apply for licenses and pay fees online with full security and authentication.

Petroleum Property Tax

To support changes in Alaska petroleum taxes, we have developed tools for collecting data about, billing for, and assessing all equipment related to petroleum production in Alaska. These tools streamline and automate the yearly process for petroleum producers and state tax collection personnel and also support auditing and analysis.

Data and Document Management System

The Alaska Banking and Securities Division is responsible for regulating and chartering financial institutions in Alaska. To support its operations, which include examinations, registrations, and filings, we developed a data and document management system.

Financial Intranet

The Municipality of Anchorage (MOA) needed a better way for staff to access information in its PeopleSoft system. We developed a suite of intranet applications—collectively called Muniverse—through which MOA staff can easily access financial transactions, such as payables, receivables, budgets, purchase requests, vendor reports, and contracts.

Utility Portal

We deployed a portal to allow Anchorage Water and Wastewater Utility (AWWU) staff easy access to a vast array of data. With this tool, users can access data such as customers, pipe and infrastructure, ownership, maintenance, permits, land use, and inspections in real time from more than a dozen disparate systems. Users can find information by querying graphically from a map or entering text criteria. We also developed a portable version of the tool that can be downloaded to laptops for field crews to use.

AGIA Invoice Reimbursement System (AIRS)

Our firm used Scrum methodology to develop the AGIA Invoice Reimbursement System (AIRS) to assist the Department of Revenue (DOR) with processing the charges that TransCanada forwards to the Department of Revenue for reimbursement, as outlined in the Alaska Gasline Inducement Act (AGIA). This system contains an external application for TransCanada representatives to upload thousands of submissions and supporting documentation for review in the internal application.

All transactions are validated and corrected through the external application before final submission to the internal application, which was developed to help DOR auditors review and accurately approve and account for reimbursement expenditures.

CRM Case Management System

The Office of the Governor chose Microsoft Dynamics CRM to replace its current independent systems for its Constituent Relations, Scheduling Office, Boards and Commissions, Office of International Trade, and Communications teams. Our firm collected requirement and built prototypes in CRM, configuring the platform for the specific business needs of the Governor's staff.

Our team used Microsoft Dynamics CRM to distill business processes, create user groups that provide security access & control. We also built a unified office database point that is visible across all offices and business roles and developed a new user-friendly interface that enables reporting, querying, process management, and legacy application management.

Fisheries Data Warehouse

The Alaska Fisheries Information Network (AKFIN) data warehouse is a repository for all fisheries data from state and federal agencies. The warehouse adheres to a series of complex business rules. We developed the AKFIN data warehouse; advanced extract, transform, and load (ETL) procedures; and data validation and analysis tools.

Utility Data Warehouse

AWWU performs cost of service studies to justify adjusting rates or maintaining rates at current levels; these studies are often used in rate cases submitted to the Regulatory Commission of Alaska (RCA) for approval. We developed a data warehouse and the reports needed to analyze historic data from 60,000 customers and multiple divisions of AWWU.

Health Care

Resource Data has implemented innovative health care and medical applications for hospitals, government human services agencies, Alaska Native organizations, and community health centers. Our technological expertise coupled with knowledge of health care delivery needs makes us the ideal choice for modernizing health information systems. The following are examples of our recent work:

OnCall Alaska

Resource Data teamed with Anchorage physician R.J. Hall to develop OnCall Alaska, a web-based tool that simplifies the physician scheduling process in hospital emergency rooms. The system allows users to update personal contact information, check current on-call schedules, and trade duty days. Users can access OnCall Alaska via web browsers or mobile phones. In addition, OnCall Alaska supports record keeping and reporting as required by federal law.

Electronic Health Care Systems for Alaska

Alaska Psychiatric Institute (API) is on the leading edge of the health care IT revolution. With ongoing project management and support from Resource Data, this 80-bed hospital is implementing Meditech's electronic medical records (EMR) system. Resource Data is assisting the State of Alaska's IT staff with EMR, electronic billing, Telebehavioral Health, disaster recovery, risk management, and rollout of wireless tablet computers.

Alaska Telehealth Solution

As a member of the Alaska Federal Health Care Access Network (AFHCAN) team, we helped complete a highly successful tele-health project that serves over 700 users in remote Alaskan locations. Using customized medical hardware and a user-friendly interface, health technicians in a rural village can send medical readings and images to remote doctors for diagnosis. During the project, we assisted

with design, programming, testing, and website development.

Behavioral Health Services Needs Assessment

Behavioral Health Services of the Southcentral Foundation needed to identify common data record requirements among its eight divisions. Our business analysts conducted a needs assessment, interviewing key stakeholders at each division. We inventoried existing software and procedures, and then recommended improvements and new software packages.

Women's Wellness Database

A nonprofit medical foundation conducted a longitudinal outcome measurement study to promote awareness of cardiovascular disease and breast and cervical cancer among Alaska Native women. To support this study, Resource Data developed a database that relates lifestyle choices to disease incidence and then forwards results to the Centers for Disease Control.

Resource Data systems span the latest innovations in health care, from telemedicine to outcome measurement and electronic health records.

Patient-Provider Contact Data Mart

A medical nonprofit contracted Resource Data to develop a web-based patient-provider contact data mart using Microsoft BizTalk. This data mart collects data from various remote databases and provides

reports of contact information. Its reporting system provides fundamental medical records information, such as visits, client demographics, diagnostic and treatment summaries, and provider workload.

Operating Procedures Document Management System

Fairbanks Memorial Hospital needed to standardize its approach for storing, updating, and distributing standard operating procedures (SOPs) to all staff. We developed a web-based system using InfoPath 2007 and SharePoint that allows hospital staff to create, view, and update SOPs electronically. Employees can enter content in dynamic forms, and

the information is stored in the database. With SharePoint, users perform tasks such as versioning, content approval, and issue tracking.

Community Health Websites

Our professional web designers and graphic designers routinely work with community health organizations such as Juneau Family Health and Birth Center, Alaska Federal Health Care Partnership, and Valley Medical Care to develop websites to publicize their services. For these small organizations, it is important to complete professional-quality websites quickly.

Mining

Resource Data has been providing GIS and database support to the mining and exploration industry for 30 years. Our company founders were two economic geologists who spent years doing mineral exploration work. Their background has influenced our use of technology to support resource development, mine permitting, and exploration. We have worked for many large mining companies in North and South America. Clients seek out Resource Data for our unique combination of expertise in technology and understanding of the process and language of mining projects. The following are some examples of projects we have completed for the mining industry:

Mine Permitting

We developed a comprehensive data management/GIS website to support an environmental studies project for mine permitting. This work involved organizing GIS data for mapping and impact analysis and developing GIS routines to perform spatial analysis and reporting in tabular form. The project used .NET technology to build a website for tracking project-related information, including a document library, and storing field and chemical (lab) analysis data. Data was stored in an Oracle 9i database.

Exploration Geology/Geochemistry Database

This project included creation of a GIS interface and a sample-tracking data entry system for all South American field samples taken by a multinational mining company. The work also entailed training field personnel and developing a database application in both Spanish and English. The application includes code verification and standardization of numerous geological/geochemical parameters.

Historic Drill Hole Compilation

The client had a large number of drill logs spanning several decades. Different standards for logging and assaying made cross correlation difficult and time consuming. We developed a database to compile the

drill logs, and conversion routines to standardize lithologies and assays.

Baseline Studies

We provided environmental data compilation and GIS services for the Pogo gold mine project in central Alaska. Tasks included compiling wetlands, environmental, and base map GIS data; creating maps for field mapping; scanning and digitizing data; creating summary acreage reporting of wetland and other classifications; and developing color maps for inclusion in reports. We also supported and developed wetlands field data containing extensive field notes corresponding to digital photos.

Resource Data leads the industry in knowledge and experience in applying GIS to mining and exploration projects.

Development Drilling Database

Resource Data designed and populated a database for all drill hole data from offshore Nome gold placer. The database included over 30,000 assayed intervals from approximately 8,000 drill holes. Custom database applications calculated the amount of gold for each interval, the amount of gold for each drill hole, and normalizing intervals of unequal length and unequal recoveries. Additional data included types of sediment and concentrations of other heavy minerals.

Data entry screens were developed to capture data in the field as holes were drilled.

Prospect Drilling Database

Resource Data created a drill hole database to track survey information and drill hole intervals for use in exploration drilling. Users enter collar and down hole survey information as well as intervals of interest. The system calculates an xyz coordinate based on the footage and drill hole survey information. Drill hole data can be plotted through AutoCAD or entered into other GIS software. Plots were made with histograms of gold values along drill holes and as colored intervals representing gold values. The database application allows compositing of samples based on cutoff values and cross correlation of geology and assay results.

Land Record and Geochemical/Mineral Resource Database

Resource Data compiled land records for Doyon region based on legal descriptions and used a region-wide database to analyze land selections and values. Data was compiled in ArcInfo and turned over to Doyon for in-house use; the project included extensive product training and consulting support. The database contains over 30,000 field samples.

Environmental Monitoring Database

This database provides a method for tracking data for marine and fresh-water effluent and tailings disposal. Requirements included monitoring effluent and runoff, saltwater quality, and air quality using piezometers on the tailings dam, and tailings monitoring. All parameters had to be tracked to ensure compliance with maximum contaminant levels. Reports, including tabular summaries and time-series graphs, were prepared for various government agencies.

Three-Dimensional Mine Modeling System

This system combined output from an ore reserve model with daily survey data to calculate a predicted volume of material mined and gold recovery based on the model. This data was then correlated and compared to actual recoveries. In addition, the system used AutoCAD to render three-dimensional images of the excavation and unmined blocks.

Data Compilation, Analysis, Map Generation

This project involved converting baseline data layers, buffering proposed road routes, automating land status, mapping wetlands, and displaying all of these layers on maps. The GIS was designed to be turned over to planners and engineers for further use in development of the mine.

Environmental Assessment GIS

Resource Data completed a compilation and analysis of natural resource, habitat, and environmental data in a GIS to support development of an environmental assessment. Data was captured from aerial photos, raster images, maps, and field notes. Data included soils maps, vegetation types, contours, hydrography, USGS quadrangle overlays, and other layers.

Mine Expansion Support

Resource Data provided a number of support services for the Teck Mining Corporation's Pogo Project in Central Alaska. These services included data conversion, creation of maps for field mapping transfer, scanning and digitizing data capture, creating summary acreage reporting of wetland and other classifications, and developing color maps for inclusion in final reports. Resource Data was the repository for all of the project's digital data.

Nonprofit Organizations

Resource Data is a software development, system integration, and geographic information systems (GIS) development company with 30 years of experience. We specialize in supporting medium to large-sized enterprises. With a staff of nearly 200 employees, we provide expertise in all aspects of software implementation and IT management.

Mobile Development

Anchorage Park Foundation: Mobile Park Report Card

The Anchorage Parks app is a mobile app for iPhone that helps users locate park land in the Anchorage area by name or by proximity to the user. The app can also be used to send photos to the Anchorage Park Foundation and create a My Anchorage Parks account to use the Park Passport, which lets users “stamp” a park when they are inside the park boundaries.

The app was built on the MonoTouch framework with the MonoDevelop IDE, which allows developers to build iPhone applications using C#. We used SQLite for the local phone database and SQL Server 2008 as the hosted database for the application. The app stores very little user information—only an email address and a password. BCrypt.Net, based on the Blowfish encryption algorithm, is used for password encryption. The app also includes functionality for resetting a forgotten password. Artwork originally created by a local artist for Anchorage Park Foundation t-shirts was used to drive the overall look of the application.

For park spatial information, we used public KML data provided by the city, which includes polygons for almost all 223 parks in Anchorage. The app uses an algorithm to determine whether or not a point (i.e., the user’s phone) is inside of a polygon (i.e., a park), enabling users to “check in” when they are physically inside of a park. Because many parks lack Internet coverage, the app stores park stamp information

locally in the SQLite database on the phone until the user has reliable network connectivity.

Website Design

Alaska Mental Health Trust Authority: Website Development

With funding from the Alaska Mental Health Trust Authority, Resource Data developed four CMS-powered websites for Trust partner agencies. Two sites (www.ionia.org and www.choices-ak.org) were developed in WordPress. The Alaska Youth and Family Network site (www.ayfn.org) was built with Drupal CMS. The Alaska Peer Support Consortium (www.akpeersupport.org) was built with Sitefinity CMS.

All projects included client training sessions that enabled non-technical client staff to manage and maintain their sites using CMS controls.

Database Development

Alaska Brain Injury Network: Custom Database Application

The Alaska Brain Injury Network (ABIN) educates, plans, coordinates, and advocates for a comprehensive service delivery system for traumatic brain injury survivors and their families. ABIN previously used a variety of spreadsheets to record and track information regarding new and existing survivors (people who have suffered a traumatic brain injury), contacts (anyone, survivor or not, who has contacted the ABIN office about a case or information), and resources. Resource Data worked

with ABIN personnel to understand their existing work processes and develop recommendations for implementing IT solutions to streamline core business functions.

Following the initial high-level analysis, our developers defined and analyzed specific business requirements to create a detailed set of technical requirements. We then designed and implemented an Access 2010 database to manage ABIN's data through a custom user interface, and migrated the old data into the new database. The database was built to be highly scalable and reliable despite its complexity. Ongoing support has included enhancements, bug fixes, and new reports and queries, as well as maintaining ABIN's workstation fleet, small business server, and network equipment.

SharePoint Support

Oregon Food Bank: SharePoint Migration

The Oregon Food Bank (OFB) uses SharePoint extensively—from automating business processes, to managing documents and intranet content, to sharing information with partners. To take advantage of new features and improvements, OFB keeps their SharePoint infrastructure updated. However, because OFB uses SharePoint so heavily, upgrading can be a significant task. Realizing their staff had neither the time nor the technical expertise required to upgrade to SharePoint 2013, OFB asked Resource Data for help.

To upgrade OFB's SharePoint from 2010 to 2013, we first developed a detailed plan for the new SharePoint farm. Our scalable architecture design included 3 servers:

- • A web server with SharePoint 2013, including all content sites and service applications
- • A SQL server for the databases
- • A work server with 2 new applications: Office Web Apps (for viewing and editing Office documents in a browser) and Workflow Manager for long-running workflows

We then built the servers and configured all services from scratch. With a stable, new platform in place, we migrated and upgraded all of OFB's existing content to SharePoint 2013.

Because of OFB's reliance on SharePoint, the new farm and migrated content had to work flawlessly. We ensured a stable platform by thoroughly testing each part as we built it, focusing on known problem areas, such as synchronizing SharePoint user profiles with Active Directory.

Although OFB planned to migrate content using a commercial tool, we recommended the database attach method. With this approach, the SharePoint 2010 database is attached to the 2013 farm, and all content is migrated at once. Done properly, this method is a much simpler, less time-consuming upgrade path.

We approached content migration as an iterative process, repeating a migrate/test/fix issues cycle until all major errors were resolved. Each time, we carefully documented the process and fixed issues using PowerShell scripts. With these measures, the migration was consistent and repeatable, ensuring an accurate final production cutover.

Oil and Gas

Resource Data has been supporting the oil and gas industry with information technology for over 30 years. We have worked in all phases of the business. Our employees have experience working with geologists, engineers, accountants, and field staff. We are very flexible with work locations. In some cases, we simply deliver a software application remotely; in other cases, we deploy an onsite team to work locally.

Resource Data has offices in Alaska, Idaho, Oregon, and Texas, placing us in the heart of the oil industry. During our long history, we have worked for every major oil and pipeline company operating in Alaska, and we maintain an excellent reputation in the industry. The following are examples of our recent work by industry sector:

Exploration, Land, and Environmental

Mackenzie Gas Pipeline Environmental Geographic Information System

Resource Data created a comprehensive GIS database for permitting and analysis.

North Slope Environmental GIS

We compiled all base map and infrastructure data and provided web-based tools for analysis and reporting.

Arctic Oil Development GIS

We developed a GIS to support permitting and development of offshore Alaska oil leases.

North Slope Lease Ownership GIS

We designed a database and GIS to provide up-to-date lease data. The system pulls attribute data from multiple sources and resolves differences, links to map data, and provides users with comprehensive lease data and history.

Facilities Mapping Program

We converted an annual oil field facilities reporting process from an expensive manual process to a semi-automated one.

Environmental and Habitat Mapping

We designed a GIS system to support permitting activities for a wide variety of development initiatives in Alaska.

North Slope Land Ownership and Status GIS

We developed a land status GIS for multiple users.

Remote Weather Stations

We established web-based data links to remote weather stations for operations and monitoring.

Production and Oil Field Services

Production Database Support

Resource Data supported the primary database for tracking a major North Slope operator's oil production data. We also developed new programs, data loaders, and query tools as required.

Field Tickets Tool

We created a tool that automates rig data for invoicing and reporting with automatic transmission to the company's home office on a regular basis.

Geophysical Data Management

Resource Data provided support for a major oil company in managing and processing geophysical and downhole data. We specialized in well log data, including analysis and plotting.

Spider Maps

We developed graphic programs to build spider maps from production database attributes. The maps are interactive and can be customized for various users.

Spill Response GIS

We developed multiple spill response systems for terrestrial and marine environments. We deployed these systems in multiple technologies and integrated them with external oil dispersion models.

Forward Looking Infrared Radar Integration

We integrated real-time Forward Looking Infrared Radar Integration (FLIR) data into an emergency response GIS.

Pipelines

Denali Gas Pipeline

Resource Data built the GIS that supported the design of the 2,700-mile gas pipeline from the Alaska North Slope to southern Canada. We compiled all relevant data; generated alignment sheets; and built tools to support engineering analysis, cost estimating, logistics planning for field work, environmental review, and management oversight.

Pipeline GIS

We built a GIS with more than 2,000 miles of pipeline data for integrity management of North Slope pipelines, including all relevant infrastructure (e.g., bends, settlement, welds, sleeves, and coupons). The system automates mapping of inline and external inspection data.

Risk Assessment Models

We integrated analytical models with a GIS for corrosion analysis and management for all Alaska North Slope pipelines.

Trans Alaska Pipeline System GIS

Resource Data developed a GIS for the Alyeska Pipeline Service Company's 800-mile pipeline. The system provides real-time access to numerous external databases. Primary users come from the engineering and environmental fields.

Engineering Data Management

We supported and developed corrosion analysis and integrity monitoring tools for trans-Alaska pipeline and pipelines on the North Slope of Alaska.

High Consequence Area Analysis

We determined high consequence areas (HCAs) for pipelines on Alaska's North Slope, which required combining environmental data with pipeline integrity data.

Spill Response

Gulf of Mexico Spill Support

Resource Data was selected to be the lead GIS vendor to manage and support corporate, federal government, and private contractors working on the Gulf Oil Spill. Resource Data was tasked with three main areas of responsibility: onsite staffing for mapping, data processing, and display; development of GIS tools for the management, display, and integration of data; management of all GIS staff from other agencies, contractors, and vendors. We developed dashboard tools for management views of GIS along with innovative tools to manipulate and analyze data, supported map production, and provided 24-hour staffing at the response center.

Oil Spill Contingency Planning

We participated in Spills of National Significance (SONS) drills, providing situation mapping, trajectory planning, and a Shoreline Cleanup Assessment Team (SCAT). We belong to the Crisis and Incident Management teams for a global oil and gas company. We designed, programmed, and implemented an interactive web application to facilitate oil spill response along the trans-Alaska pipeline.

Pipelines

Resource Data has been working on Alaska pipeline geographic information systems (GIS) projects for 30 years, beginning in 1986 with alignment sheets for the Yukon Pacific gas line project and continuing to the present with a GIS for the 2,700-mile proposed gas pipeline from Alaska to the Lower 48. Over the years, we've completed numerous pipeline GIS projects for the major pipeline and oil and gas companies in Alaska. Currently, we are supporting two major oil and gas companies with separate large pipeline integrity GIS projects automating all of the lines and relevant data on the North Slope.

But we haven't confined our use of GIS technology to pipelines alone: We've leveraged the technology in support of permitting and regulatory compliance, too. Multiple large Alaska projects have used our tools as part of their permitting processes.

With nearly 200 full-time staff members in offices in Alaska, Idaho, Texas, and Oregon, Resource Data is unmatched in depth of experience with Arctic pipeline GIS projects and number of staff devoted to GIS technology. The following are examples of our significant GIS linear infrastructure projects:

Pipeline GIS Projects

Natural Gas Line—Alaska to Lower 48

Resource Data provides ongoing support for route selection, including compiling relevant spatial data, supporting field crews, and deploying the collaboration site.

Risk Assessment GIS

We generate spatial data and technology to support development of a GIS to evaluate the state of North Slope pipelines for a major oil and gas company.

High Consequence Area Reporting

For this project, we generate linear GIS data for pipelines controlled by the Department of Transportation (DOT) to support HCA reporting of Alaska assets to the US DOT for a large oil and gas company. This is a yearly project.

North Slope Infrastructure GIS

We are building a GIS of North Slope piping infrastructure to support the pipeline inspection and integrity management programs.

Northstar Development

We deployed GIS technology to assist in permitting development projects on the North Slope of Alaska to expand an oil production facility.

Resource Data has 30 years of pipeline GIS experience, and in the past few years, has built systems for over 6,000 miles of pipe!

Liberty Development

We developed a GIS to assist in permitting for an oil field development project in the North Slope of Alaska

Enterprise GIS: Trans-Alaska Pipeline

Resource Data produced a GIS for Alyeska using linear measurement technology. We resolved problems with dynamic segmentation associated with rerouting and conflicting stationing vs. mileposts. The GIS is primarily used by engineering, environmental, and lands fields.

Engineering GIS for Trans-Alaska Pipeline

We compiled corrosion and integrity data into a GIS for analysis and map generation. We also generated alignment sheets and plan-view maps to display all integrity and related engineering data. Products were used for regulatory issues in Washington, DC.

Pipeline GIS

We generated pipeline route, stationing, and dynamic segmentation data for planning the Alpine pipeline route on Alaska's North Slope.

Natural Gas Pipeline Alignment Sheets

We generated alignment sheets of the proposed Yukon Pacific line and related data.

Permitting/Regulatory GIS Projects

Mine Road Alignment

Resource Data developed an extensive GIS to support permitting, analysis, and design of the road route for an advanced mineral exploration project. The GIS included environmental, routing, topographic, photographic, wetlands, and other related data.

Analysis of Road Routes

We developed a GIS for analyzing and routing the Pogo mine road. Permitting and wetlands delineation were key to the project.

Access Route Permitting

We developed a GIS to support permitting and access routes for a new mine in the interior of Alaska.

Mine Permitting

Resource Data developed a GIS for decision support and permitting for the Fort Knox original mine site.

Mackenzie River Pipeline Corridor

We developed an environmental GIS for Mackenzie Gas Pipeline in northern Canada

North Slope Alaska Environmental Data

We developed an environmental GIS for North Slope Alaska.

Arctic GIS

Resource Data gathered and organized all spatial data to support oil and gas development in the Arctic for one of the largest oil companies in the US.

Emergency Response GIS

We gathered data and generated mapping technologies to support emergency response for all Alaska assets for a major oil company.

Other Linear Infrastructure Projects

Alaska Railroad GIS

Resource Data automated the railroad the same way we automate pipelines to resolve stationing vs. mile post issues and handle multiple routes.

Natural Gas Utility Network

We are developing an enterprise GIS and related meter reading tools for the ENSTAR gas utility in south central Alaska.

Other Enterprise GIS Projects

Electric Utility GIS

Resource Data provided GIS support for electric lines and related data for Chugach Electric Association.

Water & Wastewater Utility

We automated all piping infrastructure and integrated a GIS with an enterprise web portal for Anchorage Water and Wastewater Utility.

Gulf of Mexico Spill

A global oil and gas company selected Resource Data to provide GIS expertise and staffing to support spill tracking and cleanup in the Gulf of Mexico oil spill.

Spill Response

Resource Data has been supporting the oil industry with information technology for spill response since 1989. Our personnel led the geographic information systems (GIS) and database teams for the Exxon-Valdez spill, and more recently led the GIS response team in the Gulf of Mexico oil spill. Between those two events, we have developed numerous spill response data systems, participated in multiple drills, and worked on risk analysis systems for major pipeline networks. With nearly 200 professionals, Resource Data has the resources and talent to support incident response teams in the field and in the office.

The following are some highlights of our experience:

Gulf of Mexico Oil Spill Support

Resource Data was selected to be the lead GIS vendor to manage and support corporate, federal government, and private contractors working on the Gulf of Mexico oil spill. We were tasked with three main areas of responsibility: onsite staffing for mapping, data processing, and display; development of GIS tools for the management, display, and integration of data; management of all GIS staff from other agencies, contractors, and vendors. We developed dashboard tools for management views of GIS along with innovative tools to manipulate and analyze data, supported map production, and provided 24-hour staffing at the response center.

Oil Spill Contingency Planning

We participated in Spills of National Significance (SONS) drills, providing situation mapping, trajectory planning, and a Shoreline Cleanup Assessment Team (SCAT). We are a member of the Crisis and Incident Management Teams for a global oil and gas company. We designed, programmed, and implemented an interactive web application to facilitate oil spill response along the trans-Alaska pipeline.

Spill Response GIS

We developed the Prince William Sound, Alaska GIS, which includes both Internet-based and stand-alone applications. Converted government and environmental data, generated contours from USGS DEM data, and merged with environmental data.

Exxon-Valdez Spill

Resource Data was the lead GIS vendor for the data compilation and response planning for the Exxon-Valdez Spill. We provided field teams in the response center that generated maps, data, and analysis. Our field teams also coordinated development of the environmental sample database, chain of custody forms, and labels for all scientific sample collection. We coordinated data uploads from laboratories and compiled a comprehensive data system.

Spill Drill Team

Resource Data provided staff and technology for multiple spill drill exercises. These ranged in size and duration, but typically included GIS systems, data integration with field sensors and GPS, trained personnel in the command center, and on-the-fly product generation.

Forward Looking Infrared Radar (FLIR) for Spill Response

We built tools to integrate FLIR from airborne sensors into GIS. These tools allow real-time responders to combine airborne and ground-based data to plan response tactics during spill response.

Risk Analysis Tools

Resource Data has developed multiple systems for risk analysis and determination of high consequence areas for most major oil pipelines in Alaska. Our work included integrating detailed surface mapping, constructing 3-D versions of lines, loading relevant

environmental and base map data, and integration with various risk and integrity models.

Annette Island Clean Up

We developed a GIS and database to support the multi-agency cleanup project at the Annette Island Superfund site. The database included maps, photos, drill hole and sample locations, sample analysis, documents, and all relevant project data. The system was accessible via satellite link and updates were processed onsite and remotely. The project was recognized by a federal agency as a groundbreaking use of technology.

Utilities

Resource Data has provided innovative technology and state of the art solutions to a variety of utilities for 30 years. Resource Data has supported a broad range of projects including geographic information systems (GIS), electronic time card, work management, financial, customer service, rate cases, and permitting systems. Utilities benefiting from Resource Data include water and wastewater, gas, electric, and telephone.

In addition to supporting the utility market, we have also worked with utility regulators. In Alaska, Resource Data has been a long-time contractor for the Regulatory Commission of Alaska (RCA). This work has helped us develop extensive knowledge of the operations and regulatory sides of the utility business. Here are a few examples of recent projects:

Water Utility Facility Inventory System

A water utility wanted to test mobile GIS tools for verifying facilities in the field, including pipes, valves, fire hydrants, and manholes. Desiring highly accurate data, the utility required that Real Time Kinematic (RTK) GPS tools, which exceed normal field GIS handheld capability, be used. We developed a custom system, which included real-time GPS monitoring and built-in lookup tables for coding facilities. In addition, the system allowed field technicians to monitor signal quality so they could adjust data collection procedures.

Water and Sewer Utility GIS Portal

The Geospatial Portal project for the Municipality of Anchorage (MOA) is an innovative GIS that was implemented to provide utility staff with a single system for easy access to utility and municipal information. The portal includes mapping data as well as links to databases for building permits, septic tanks/wells, utility assessments, capital projects, and customer data. Mapping includes features such as lines, hydrants, pipes, valves, land ownership, topography, hydrography, and aerial photography.

This project represents conversion from the traditional Esri coverage data model into the new Oracle-based geodatabase model. The portal utilizes

geodatabase, ASP, and .NET technology to integrate GIS parcel and water utility data with 14 external databases, many in other departments within the MOA. Esri has recognized this project as a landmark accomplishment in municipal systems integration, earning Resource Data the Special Achievement in GIS award. The project also received official recognition for excellence from the Anchorage Assembly, the governing municipal body of Anchorage.

Work Management System

We provided project management, planning, analysis, and implementation of the Maximo Computer Maintenance Management System for Anchorage Water and Wastewater Utility.

During the first phase of this project, we configured Maximo and then implemented it to all workgroups that conduct maintenance activities. Functionality included work orders, job plans, preventative maintenance, and labor and material management. We provided full documentation and user training for the system.

During the second phase, we added functionality for equipment lifecycle management and reliability-centered maintenance (RCM). Software was

evaluated, purchased, and configured to enable RCM analysis of Maximo data.

Electronic Timecard

We managed the implementation of WorkTechTime, an electronic timecard system, for Anchorage Water and Wastewater Utility (AWWU). Tasks included requirements analysis, interface development between the timecard and the Municipality of Anchorage's PeopleSoft system, report writing, and documentation.

Gas Bidding System

We developed the web-based application used by the natural gas utility ENSTAR to solicit daily bids for natural gas from various producers. The system issues and tracks gas bid requests for emergency and spot purchases, allows producers to submit bids in response to the requests, and enables ENSTAR to reserve gas amounts based on the bids received. We used rapid application development techniques to meet ENSTAR's tight deadline and budget.

Electric Utility Circuit Tracing and Load Calculations

Resource Data developed an application that traces the flow of electricity through Idaho Power's transmission lines and calculates the load at specific points in the network. This challenging project employed Esri's geometric network technology and Oracle PL/SQL to generate data tables for driving a variety of reports. The application reduced the cycle time to process the entire power grid for the state of Idaho from one week to a few hours.

Electric Utility GIS

We provided comprehensive GIS support to Chugach Electric Association (CEA), a large electric utility. Our professionals provided a range of services including software development environment (SDE) administration; application support for in-house and third-party tools; development of advanced tools for data analysis, input, and integration; and user support for all aspects of GIS. In addition, we provided a GIS technical lead for two major projects, including an upgrade to ArcGIS 9.3 with geodatabase migration.

Gas Utility Information Portal and GIS

Resource Data designed and developed an enterprise web portal for viewing, searching, and editing spatial data stored in an Oracle ArcSDE database. The site featured Silverlight technology and advanced map caching for smooth movement and navigation through maps.

We created a custom search feature to provide users quick, easy access to a large amount of customer and asset data. Additional features included advanced feature identification with integration into documents and a customer information system.

Gas Utility Cache Management Tool

We designed and developed an automated Esri Cache Management System that monitors and updates GIS data caches on a user-defined schedule. The system included a Silverlight user interface allowing users to monitor, create, kill, analyze (run reports), and create new cache jobs.

Natural Gas Facility Corrosion Tool

A local natural gas utility needed a mobile GIS solution to support its facility verification program. We started with a requirements analysis, followed by hardware/software evaluation with the client, a pilot, and the full production. The field tool used ArcPad with .NET programs to coordinate bar code scanner and camera input. Crews used the tools to inventory and quality control (QC) over 25,000 sites in one summer. Nightly data dumps sent information to a SQL Server database, and updates to the corporate system were used for transactional updates to the GIS and asset systems. The result was an efficient field tool that allowed technicians to rapidly assess each site.

Electric Utility Financial Reporting

CEA needed to facilitate financial reporting and analysis from its corporate accounting system. To meet this need, we built a data warehouse to collect data from PeopleSoft's General Ledger, Accounts Payable, Project Costing, Human Resources, and Payroll modules. We also incorporated data from CEA's inventory management, contract management, and purchasing systems into the warehouse.

TECHNOLOGY & TOOLS

Database

Relational databases provide the back-end processing for most modern applications whether they are data warehouses, web applications, document management, client-server, or distributed database systems. Resource Data's expertise covers the gamut of database technology from design to fine tuning.

Our seasoned professionals are experts in data modeling, transaction processing, stored procedures, distributed queries, data migration, real-time recoverability, fault-tolerant redundancy, and performance optimization across a number of commercial database products.

Data Modeling and Database Implementation

We develop data models and logical and physical database designs and implement them. When designing a database, we might start from scratch or we might begin from an existing legacy or relational model. This completed database design identifies the structure of the database that will be implemented during the project.

Trans Alaska Pipeline System Quality Bank

Each month, the Trans Alaska Pipeline System (TAPS) Quality Bank must compute the net worth of oil transported via TAPS in accordance with its tariff. We designed the data model and also developed the database and applications that compute financial adjustments for differences in crude oil value. The system tracks samples, calculates crude oil assays, determines crude oil values, and handles bank transactions worth millions of dollars every month. In addition, because the information in the Quality Bank is highly proprietary, the system includes security techniques similar to those used by banks or other financial institutions.

Utility Oracle Database Upgrades

When a large Anchorage utility was doing a major database upgrade to Oracle 10g, we managed the implementation team, analysis work, and

development. Our tasks included extensive SQL programming, database administration (DBA) services, data migration, and user support.

Logistics Database System

To plan and execute a deployment to an overseas theater of battle, the Department of Defense (DoD) must retrieve data from systems operated by each service branch and several intelligence agencies. We developed a system that uses data mediation tools and web services to provide this access. The final solution was a part-geographic information system/part-database system with graphic and tabular displays.

State of Alaska Authentication System

The State of Alaska needed to develop a single user authentication system for all persons doing e-business with the state. To meet this need, we developed myAlaska, which is used by all state agencies needing secure user login functionality. This application, which includes an administrative web interface and a web service, required advanced SQL programming.

Data Warehousing

We have built many data warehouses to improve our clients' businesses. Although each data warehouse serves a different purpose, they were all designed

and built using our standard development methodology.

Patient-Provider Contact Data Mart

For a medical nonprofit, we developed a web-based, patient-provider contact data mart using Microsoft's BizTalk product. This data mart collects data from various remote databases and provides reports of contact information. Its reporting system provides fundamental medical records information, such as visits, client demographics, diagnostic and treatment summaries, and provider workload.

Fisheries Data Warehouse

The Alaska Fisheries Information Network (AKFIN) data warehouse is a repository for all fisheries data from state and federal agencies. We developed this warehouse, which was designed to incorporate complex business rules; advanced extract, transform, and load (ETL); and data validation and analysis.

Utility Data Warehouse

Anchorage Water and Wastewater Utility (AWWU) performs cost of service studies to justify maintaining rates at current levels or adjusting rates; these studies are often used in rate cases submitted to the Regulatory Commission of Alaska (RCA) for approval. We developed a data warehouse and the reports needed to analyze historic data from 60,000 customers and multiple divisions of AWWU.

Web Database Programming

Today, virtually all applications need to be accessible over the web and interact with databases. We are experts in the analysis, design, development and implementation of internal and external web-based database applications. The following are some recent examples of our work.

Permanent Fund Dividend Online Application System

The State of Alaska Permanent Fund Dividend (PFD) division oversees the program through which the state distributes nearly a billion dollars to qualified

Alaska residents each year. When the state began to allow residents to submit their annual PFD application online, we were contracted to help the PFD division update their systems.

As part of this work, we developed the online application process; rebuilt the back-end data systems, updated system tables, screens, and business logic; implemented the Pick. Click. Give. program for charitable contributions; and improved the connection with myAlaska (the state's website for authentication). This system has successfully distributed over \$600 million dollars a year for several years. The output from our system yields the single largest Automated Clearing House (ACH) transaction in the nation.

Virtual Private Network System Database/Portal

A large oil producer that operates offices and facilities around the world implemented a sophisticated and secure virtual private network system to provide electronic connectivity for its staff, regardless of location. We developed a portal site that was the international gateway to this virtual private network.

Wetlands Smart Client Application

A growing environmental science consulting firm needed an enterprise system to enter and analyze wetlands delineation information. System users needed to use one database but access the system from anywhere in the United States with little support, but maximum security and functionality. In addition, because of the data involved, the system had to support a complex mix of data, pictures, maps, and analysis.

To meet this need, we developed a Smart Client system, which provides a rich user interface, multi-user access, enhanced performance, and robust security through a web deployment. This architecture combines the best of the web and desktop worlds by providing the convenience of a web application with the speed and performance of a desktop application.

Mobile Development

Resource Data has been building mobile apps for field data collection and analysis since the mid-1990s. Today, many firms provide mobile platform development. However, very few firms offer the same depth of IT development understanding of back-end data systems, and track record of success to back up their technical teams. What sets Resource Data apart is not just knowledge of the latest technical platforms, but our ability to put the new technology in context and make sure that the resulting application is solid, data is properly managed, and the IT project is a success.

LEO Reporter Mobile App

Resource Data worked with Alaska Native Tribal Health Consortium's Center for Climate and Health and the Local Environmental Observer (LEO) Network to create the LEO Reporter mobile app. The LEO Network facilitates communication and collaboration between western science and traditional ecological knowledge to help tribal communities around the world make informed decisions. Through this free, user-friendly mobile app, local observers and topic experts can share observations and raise awareness about environmental events in their communities.

The LEO Reporter app is available for iOS and Android. Users can pan and zoom the LEO map to view observations by region; search observations by topic, time, and source; view a live feed of trending observations; and post their own observations of unusual wildlife or environmental events.

Our team provided project management, UI/UX design, and development. We also designed the logo and iconography. Some of the technology our developers leveraged included Xamarin, GeoJSON for defining location-based data, and Azure SQL Server 12 for the primary database.

The LEO Reporter app is available for download at both the iTunes store and Google Play.

Anchorage Parks Report Card

The Anchorage Parks app is an iPhone mobile app that helps users locate park land in the Anchorage area by name or by proximity to the user. The app can also be used to send photos to the Anchorage Park Foundation and "stamp" a park when they are inside park boundaries using the Park Passport.

The app was built on the MonoTouch framework with MonoDevelop IDE, which allows developers to build iPhone applications using C#. We used SQLite for the local phone database and SQL Server 2008 as the hosted database for the application. The app stores very little user information—an email address and a password. BCrypt.Net was used for password encryption. Local artist artwork originally created for Foundation t-shirts drove the overall app look.

For park spatial information, we used public KML data provided by the city, which includes polygons for nearly 223 parks. The app uses an algorithm enabling users to "check in" when physically inside a park. Because many parks lack Internet coverage, the app stores park stamp information locally in the SQLite database on the phone until the user has network connectivity.

ScrambleScore

This mobile application is used to administer and score golf tournaments. It provides tournament directors with functionality to administer tournaments,

and allows players to enter scores and monitor the leaderboard using their mobile phones. The app runs on any device. ScrambleScore uses app cache and local storage to support off-line editing, enabling it to run disconnected and then synchronize when connectivity is restored. It leveraged technologies such as HTML5, JavaScript, Backbone.js, Bootstrap, Ruby on Rails, and PostgreSQL. The app is deployed to Heroku, a PaaS provider.

Wetlands Smart Client Application

A growing environmental science consulting firm needed an enterprise system to enter and analyze wetlands delineation information. System users needed one database to access the system from anywhere in the United States with little support, but maximum security and functionality. In addition, the system had to support a complex mix of data, pictures, maps, and analysis. Resource Data developed a Smart Client system where data is collected on IKE handheld devices with Esri ArcPad software and then uploaded seamlessly into the Smart Client application. This architecture combines convenience of a web application with the speed and performance of a desktop application.

Environmental Data Collection System

Multiple environmental scientists, under contract to an oil company, needed to collect environmental data on Alaska's North Slope. They needed an easy, accurate method to store data on a GPS computer that ensured the collected data was complete and formatted in accordance with existing ArcSDE and Oracle tables. To meet their needs, we developed a system using the Trimble GeoXM GPS computer and Esri ArcPad software, which appends collected data to existing tables and feature classes in ArcSDE and Oracle. We also developed an ArcPad export tool which enables scientists to use ArcMap to gather, select, and clip spatial and raster data from multiple sources and export the prepared data to the GeoXM field units.

Oil Field Equipment Inventory System

A large oil company needed to rapidly inventory more than 26,000 vibration dampers, which are hung on above-ground pipe segments to prevent wind induced oscillations. For the project, we developed a

mobile geographic information system (GIS), combined with laser range finders and GPS. When the system was complete, we deployed a truck-based crew, which surveyed and inventoried the vibration dampers in less than a week. Innovative use of GIS data was a key factor in our success.

Water Utility Facility Inventory System

A water utility wanted to test mobile GIS tools for verifying facilities in the field—including pipes, valves, fire hydrants, and manholes. Desiring highly accurate data, they required Real Time Kinematic (RTK) GPS tools, which exceed normal field GIS handheld capability. We developed a custom system, which included real-time GPS monitoring and built-in look-up tables for coding facilities. The system also allowed field technicians to monitor signal quality and adjust data collection procedures, if necessary.

Natural Gas Utility Field Tool

A natural gas utility needed a mobile GIS solution to support its facility verification program. Resource Data started with a requirements analysis followed by hardware/software evaluation with the client, then a pilot and full production. Field tools used ArcPad with .NET programs to coordinate bar code scanner and camera input. Nightly downloads to a SQL Server database provided the data for analysis and follow up work while updates to the corporate system were used for transactional updates to the GIS and asset systems. The result was an efficient field tool that allowed technicians to rapidly assess over 25,000 sites in one summer.

Pipe Joint Tracking System

A pipe supplier with a large yard containing multiple buildings needed to track the status of each pipe joint as it was processed with various treatments and coatings. Because the buildings do not have network access, the solution had to be wireless. We developed a system with a master database in the main office and laptops in each building that communicated via wireless to the production database. Using handheld devices, production staff enter data for each pipe joint on the production floor. Then the handheld device updates the local laptop, which synchronizes with the production server.

Geographic Information Systems

Resource Data has been a leader in geographic information systems (GIS) since 1986. Over the past 32 years, our projects have evolved with the technology, and we continue to be at the forefront of GIS development. Esri, the world's leading GIS software company, has long recognized Resource Data as a premium GIS companion. As a long-term Esri Business Partner, we even assist them with technical product support.

Although it is nice to be recognized by the world's largest GIS vendor, we place more importance on recognition from our peers, competitors, and clients as a premier GIS shop. Repeat business from government agencies, utilities, oil companies, and other private companies is the best testimony to our quality work:

Recent Large GIS Projects

The following are some recent examples of our work.

- GIS web applications to assist with planning cleanup of the Gulf of Mexico oil spill
- Statistical analysis of environmental data for land use development and planning
- New systems for the Alaska Department of Natural Resources
- Land records systems for North Slope oil producers
- Pipeline GIS for a major pipeline service company
- GIS tools for the Department of Defense, Joint Chiefs of Staff
- Award-winning GIS integration for Anchorage Water and Wastewater Utility (AWWU)
- Extensive wetlands and permitting systems for mining companies
- Highway and traffic data systems
- Comprehensive web-based tools for environmental cleanup

Worldwide Experience

We have worked all over the world on diverse projects, including the following:

- Parcel mapping for one of Japan's largest mapping companies
- Environmental GIS for one of the world's largest oil companies
- Land records and natural resource mapping for one of the nation's largest private landholders
- Natural resource GIS for one of the world's largest mining companies

Development and Maintenance of GIS in Multi-User Enterprise Environments

Deploying GIS to a multi-user enterprise environment is the norm. We are recognized by our clients for repeated success at large GIS deployments and have received national awards for our work.

Examples include:

- Major oil company—Developed a web-based North Slope pipeline GIS to the entire company. The GIS provides access to pipeline and extensive land base data.
- Chugach Electric Association (CEA)—Supported CEA on multiple projects related to its enterprise GIS.
- Major oil company—Developed a North Slope pipeline GIS focused on pipeline integrity. The

GIS is accessed by numerous users on their corporate network.

- Advanced mineral exploration project GIS—Developed and continue to manage the storehouse of all environmental and land base data for a mineral exploration project, which is accessed by multiple users.
- Municipality of Anchorage—Developed a new traffic data analysis GIS for enterprise deployment. This multi-user system is a tool for engineers to analyze traffic control systems and design improved roads.
- Alaska Railroad—Developed a GIS used by engineers and environmental officers at the railroad.

Remote Data Acquisition

We have developed numerous field-based GIS systems for data collection, which are synchronized with an enterprise GIS. Examples of such projects include the following:

- Mobile GIS supported survey of vibration dampeners on North Slope pipelines
- GPS-based GIS for locating pipelines and valves in an urban environment
- Mobile GIS data collection of pavement condition for all municipal roads
- Field tools for measuring wetlands and collecting environmental samples
- Tools to collect storm drain locations for municipal pipe systems
- Systems to allow remote users to enter validated data directly to the enterprise GIS via remote satellite link
- Remote weather stations that send data to an enterprise GIS

Web-Based GIS

We are known for our expertise in deploying GIS over the web and have provided multi-user systems accessible through web tools for many years. Examples of these systems include the following:

- AnchorageLive—Parcel-based GIS showing land ownership and land values for Anchorage, Alaska (www.anchoragelive.com)

- NANA Lands—Land query-based tool for the NANA Regional Native Corporation (www.nanalands.com)
- Annette Island GIS—Private, web-based GIS for all land mapping and sample data from environmental cleanup of this large Superfund site
- Mine Permitting—Private, multi-user GIS that supports all permitting, route planning, land ownership, and environmental data for a world-class, copper-gold deposit in Alaska

Specific Projects

Spill Response Effort

Resource Data was selected to be the lead GIS vendor to manage and support corporate, federal government, and private contractors working on the Gulf of Mexico oil spill. Resource Data was tasked with three main areas of responsibility: onsite staffing for mapping, data processing, and display; development of GIS tools for the management, display, and integration of data; and management of all GIS staff from other agencies, contractors, and vendors. Resource Data developed dashboard tools for management views of GIS along with innovative tools to manipulate and analyze data, supported map production, and provided 24-hour staffing at the response center.

Utility Geospatial Portal

The Geospatial Portal project is an innovative GIS-implemented project to provide AWWU staff with a single system for easy access to utility and municipal information throughout the organization. The portal includes mapping data as well as numerous links into other related databases, such as building permits, septic tanks/wells, utility assessments, capital projects, and customer data. Mapping includes features such as lines, hydrants, pipes, valves, land ownership, topography, hydrography, and aerial photography.

The portal utilizes Esri Geodatabase, ASP, and .NET technology to integrate GIS parcel and water utility data with 14 external databases, many in other departments within the Municipality of Anchorage (MOA).

This project was recognized by Esri as a landmark accomplishment in municipal systems integration and earned the Special Achievement in GIS award.

Gas Utility: Silverlight Enterprise Web Portal

Resource Data designed and developed an automated Esri Cache Management System that monitors and updates GIS data caches on a user-defined schedule. Included with the system was a Silverlight monitoring user interface that allowed users to monitor, create, kill, analyze (run reports), and run new cache jobs. The project utilized the following technologies: Oracle 10g SDE, ArcGIS Server 9.3.1, Silverlight 3, Microsoft .NET 3.5 (C#), and Python.

Traffic GIS Project

Resource Data is developing an enterprise, web-based, traffic safety data management application for the Municipality of Anchorage, Traffic Department. This is a multi-phase project that includes web, GIS, and third-party vendor technologies.

The system's accident module allows for capture and maintenance of current 12-200 accident forms via a web interface. The report engine integrates with GIS layer and provides a navigable map for detailed, visual statistics. The Volume and Studies phase allows the capture, organization, and reporting of

roadway volume information. A multi-purpose document repository is also included. The Annual Report phase includes data verification, rate calculations, and statistical reports designed to support the annual report process. Finally, other features are included such as collision diagrams and integration with Anchorage Police Department and Alaska Department of Transportation (DOT) accident reporting systems.

Resource Data participated in the project from requirements to geodatabase design to web implementation, and it stands as a premiere example of our work in the municipal GIS area.

Electric Utility GIS

Provided comprehensive GIS support to Chugach Electric Association, a large electric utility. Our professionals provided a range of services including SDE administration, application support for in-house and third party tools; development of advanced tools for data analysis, input, and integration; and user support for all aspects of GIS. In addition, we provided the GIS technical lead roles for two major projects. One was the upgrade to ArcGIS 9.3 along with geodatabase migration, and the second was the project to bring GIS tools into the engineering department.

SharePoint

Microsoft SharePoint is a core technology at Resource Data, Inc. Our company's deep expertise in the analytical, database, and development aspects of SharePoint makes us an ideal partner when it comes to leveraging the vast capabilities of this powerful tool.

SharePoint provides impressive out-of-the-box functionality, but it can be a daunting environment when considering how to best leverage its extensibility. Resource Data helps bridge this gap by working closely with clients to form the best usage strategy, whether SharePoint is to be a small part of the enterprise or a central element.

SharePoint Services

- Custom hardware recommendations, installation, and configuration
- Multi-tiered, multi-site configurations for intranet and Internet systems
- Custom site templates, definitions, and branding
- Custom web part design and development
- Application Integration using the Managed Client Object Model
- Custom workflow and processes using Visio, SharePoint Designer, and Visual Studio

SharePoint Experience

- Nearly ten years of experience with SharePoint versions 3.0, 2010, 2013, and 2016
- Experience with SharePoint Designer and Visual Studio for high- to low-level customization
- More than 30 employees with SharePoint experience
- More than 70 .NET and SQL Server experts, many with more than 10 years of experience

The following are examples of our recent SharePoint work

Enterprise Search and Records Archiving

A major oil company required a way to import 300,000 legal documents into existing SharePoint libraries, and then allow its legal team to search the documents and archive them in a records management system. Resource Data helped define the import process for the legacy documents, then used SharePoint's full-text indexing capabilities, custom web parts, and database searching algorithms to allow users to search and archive selected documents.

Geospatial SharePoint

Resource Data built and actively supports a SharePoint site for a State-sponsored gasoline development project. The site is used as a collaboration portal and document management system for the entire organization, including contractors. It includes a suite of customizations (e.g., workflows, event handlers, custom metadata, list definitions) as well as custom branding. Within this effort, we extended the functionality of SharePoint to add geographic information systems

(GIS) and mapping capabilities inside the standard SharePoint site, with extensive integration into lists and other built-in data sources. Silverlight development delivers an intuitive and dynamic end-user experience.

Hummingbird to SharePoint Conversion

The goal of the Hummingbird Conversion project was to replace the Alaska Native Tribal Health Consortium Division of Environmental Health and Engineering (DEHE) document management system with SharePoint. The process involved two parallel development tracks. The first entailed automating the conversion of over 200,000 existing Hummingbird documents to SharePoint, including translating existing metadata, retaining document versions, and auditing fields. The second development track involved creating a new document management system using SharePoint that would not only manage DEHE's existing 200,000 documents, but eventually scale out to handle over 80,000 new documents every year. The new Document Center includes customizations to SharePoint's built-in document management features, such as automatic content routing, metadata navigation, and enterprise search.

Project Information Portal

Resource Data designed and implemented a Project Information Portal on SharePoint for a major pipeline company. The enterprise collaboration and content management portal was designed to manage diverse content, satisfy compliance and legal records management, and provide integrated web content management for a major project. We:

- Configured SharePoint and design
- Created custom SharePoint themes, master pages, and branding to fit project standards
- Created custom web parts to support enterprise document and record searching, as well as updating and archiving records into a regulatory compliance record center
- Custom loaded bulk file system documents
- Developed and deployed InfoPath forms
- Implemented a Single Sign On (SSO) solution utilizing active directory integration.

Board of Directors Portal

The Alaska Native Tribal Health Consortium (ANTHC) Board of Directors holds bi-monthly board meetings and numerous committee meetings. Each meeting includes an agenda and a paper "meeting packet" that must be distributed to board members in many parts of the state. Resource Data built a SharePoint Portal to give ANTHC board members and administrative staff a central location to collaborate, plan, and execute executive-level meetings, as well as digitally distribute agendas, meeting packets, and other relevant information.

This solution was built using SharePoint out-of-the-box components including calendars, meeting workspaces, and task lists. Access was provided for security roles via built-in SharePoint groups. We also built a custom workflow supporting the assembly of meeting packets.

Environmental Document Management System

A nationwide consulting firm needed an easy way for its contractors to collaborate on geospatial data from various projects. Resource Data deployed and managed a SharePoint Server site to facilitate collaboration and provide workflows for contractor documents. Our responsibilities included recommending hardware, installing and configuring software, importing existing documents, and implementing custom workflows to meet the firm's needs.

Geospatial Document Management

The Idaho Military Division required a way to organize its diverse site documents using a geographically enabled web portal. Resource Data designed the GIS web system with a custom SharePoint 2010 integration module that leveraged the Managed Client Object Model so users could upload and organize documents from the user interface into SharePoint without having to open an actual SharePoint site. The integration also allowed for full-text searching of existing SharePoint documents for inclusion in a geospatial reference

Work Management

Resource Data has more than 15 years of experience implementing work management systems (WMS) for a number of our major clients. They use this technology for improvements, maintenance, work order processing, parts warehousing, time keeping, job costing, and maintenance activities.

The following are some examples of our work:

Maximo Implementation

For Alaska USA Federal Credit Union, we implemented Maximo and Maximo Mobile Work Manager, which will help this financial institution better manage its facilities and major assets.

Extended Work Order System

To help rural Alaska school districts comply with statutes requiring a structured preventative maintenance system, we developed an extended work order system for the Southeast Regional Resource Center. The web-based system is based on Maximo and DataSplice. Rural school districts can use the system to print work orders, change work order status, enter labor and material data, and create new corrective maintenance work orders.

Utility Support

We have assisted Anchorage Water and Wastewater Utility (AWWU) during all aspects of their enterprise WMS: from procurement to implementation to upgrading.

During the procurement process, we developed standard criteria for evaluating vendors and data models of proposed software to ensure the system could be easily integrated with other AWWU systems. In addition, we provided support to AWWU throughout the procurement process to ensure the utility received the best possible product at the right price.

We implemented Maximo at AWWU using a phased approach that included planning, analysis, and implementation. In the first phase, we configured Maximo, provided user training, and deployed it for all work groups.

In a second phase, we added functionality for equipment lifecycle management and reliability-centered maintenance (RCM). This phase included evaluating and purchasing software and configuring it to enable RCM analysis of the Maximo data.

In addition, we did planning, integrating geographic information systems (GIS), training, developing data entry forms, report writing, and data loading.

The initial install was Maximo v 4.0. Since then, we have assisted AWWU in upgrading through three versions. Included was a major transition to the new web-based version requiring rewriting many reports and interfaces.

Consulting

We have provided WMS consulting to multiple clients, including for Chugach Electric Association's PassPort WMS and Cascade WMS (for its Energy Supply division) and for the Alaska Railroad's implementation of a WMS for heavy machinery and purchasing.

RELATED SERVICES

Management and Analysis

Successful projects are well managed and result from well understood business problems. To ensure success, Resource Data has developed active practices in project management and business analysis.

At Resource Data, we have developed a complete online project management system coupled with a seminar-style training program. Our approach has been deemed so successful that our clients often request we train their internal project managers or that we provide project management services for their internal projects.

We have found similar success with our business analysts. Originally, we created the practice of business analysis to support our development teams on client projects. This has worked better than we expected. Our analysts are recognized for their skill and efficiency, and as a result, we are often engaged solely for business analysis to help clients solve problems, understand their businesses, and build road maps for future automation and business growth.

The following engagements are representative of both practices.

Shareholder Management System

A major Alaska Native corporation needed a system to manage their shareholders. We first completed extensive requirements analysis and wrote a detailed specification for a custom shareholder stock management system. The completed application includes tools to track owners, estates, stock transactions, dividends, and all accounting associated with managing shareholders.

Online Permitting and Licensing Analysis

The Alaska Department of Revenue and Tax Division elected to move their permit and license application processes online. They retained Resource Data to analyze their business and design a modular application based on one previously developed for the Department of Environmental Conservation.

The business rules were documented through process modeling techniques, process descriptions, and use case tables. We developed over 120 use

cases, 19 process diagrams, 77 prototype screens, and six detailed application maps.

These products were used for system diagramming and interface prototyping and to communicate the flow and behavior of the system. These design documentation sets served as a blueprint for the system.

Utility Cost of Service Study

The Anchorage Water and Wastewater Utility (AWWU) performs cost of service studies to determine their rates with the Regulatory Commission of Alaska (RCA). The billing system is one of the major inputs; new reporting structures were required.

Resource Data performed a requirements analysis and determined that the billing system did not maintain the historical data that is required.

Consequently, we designed a data warehouse and the necessary reports.

Resource Authorization Systems

The Alaska Department of Natural Resources (DNR) is required to maintain information on all the permitted uses, users, and applicants on state land. The DNR contracted with Resource Data to conduct an analysis of their processes and produce both requirements specifications and design documentation.

Electric Utility Electronic Time Card System

Anchorage Municipal Light & Power (ML&P) decided to implement an automated, online timecard system by issuing a request for proposals (RFP). Resource Data was hired to manage the process and to ensure the RFP reflected the needs for integration. We managed and conducted a project to assess and document the requirements (functional and technical) for the new timecard system for ML&P.

Management of Oil Pipeline Quality Bank

Resource Data provides project management, software, and administrative support for the Trans Alaska Pipeline System (TAPS) Quality Bank. The Quality Bank software implements the price determination portion of the oil price tariff as specified by the Federal Energy Regulatory Commission (FERC). In essence, the system calculates the difference in value between all the oil fields and identifies debits and credits for producers and shippers.

Resource Data has provided overall project management of this effort, including the coordination of software changes, data input, data quality control, and activities being conducted by external entities. A “project office” structure was implemented with a single overall project manager directing the activities of project leads. The project team was comprised of individuals in Dallas, Houston, Anchorage, and the North Slope.

Case Management System

The RCA is engaged in a multi-tiered process to improve efficiency. Resource Data is the overall project manager for this multi-million dollar project including:

- Analysis of business processes, workflows, and roles.
- Documentation of these processes so they can be implemented in software.
- Procuring and implementing a commercial-off-the-shelf (COTS) Case Management System.
- Converting existing electronic and hardcopy data.
- Designing, developing, and implementing a web portal to provide information to the public.

As a result of these projects, duplicative steps and manual steps were eliminated and tools are available to allow the RCA and the utilities it regulates to operate on a substantially higher managerial plane

IT Support Services

Our offering is straightforward: Systems Engineers work seamlessly with your IT staff to optimize your infrastructure, keep your systems running, and resolve problems. In fact, our engineers are at their best when doing project-based work, tackling complex problems.

Our areas of expertise include network and infrastructure, IT security, servers & virtualization, disaster recovery solutions, cloud services, strategic planning, project management, and more.

As a local IT provider, Resource Data focuses on developing long-term relationships. Moreover, if your needs expand beyond IT services, our Systems Engineers are backed by a team of experts ready to provide business analysis, system integration, and end-to-end software implementation.

Networks

Good networks deliver data quickly and reliably. Our team designs wired and wireless, local and enterprise networks with complex security, high density, and room for growth. We leverage our experience with a variety of network hardware to resolve complex issues, reduce growth problems, and automate adding new infrastructure.

Network Infrastructure Implementation

Resource Data designed and implemented a new IT infrastructure for Alaska Gasline Development Corporation. The network component featured a corporate LAN, a datacenter network, and point-to-point link connecting to a datacenter-hosted core infrastructure, and secure Palo Alto firewalls.

Network Redesign and Enhancements

After analyzing Municipal Light & Power's Supervisory Control and Data Acquisition (SCADA) network, operational systems, traffic paths, and device interconnectivity, we architected and installed a new network design. The design improved performance and reliability, allowing expansion to two new power plants.

Wireless Campus Planning and Implementation

We assisted Chugach Electric Association in developing and implementing a wireless network upgrade plan. After comparing multiple vendor solutions, including equipment demonstrations and testing, we implemented the new network which covered seven buildings.

Server, Storage, and Virtualization

Our server engineering and administration services include server and storage design, implementation, upgrades, backups, migrations, and support. Our engineers also specialize in VMware and Microsoft virtualization platforms that run critical infrastructure. Whatever the problem in your datacenter, our staff can find an appropriate solution.

Server Support and Datacenter Design

We provided long-term, operational server support at Cook Inlet Region, Inc. We also coordinated and executed moving the entire server and network infrastructure to new headquarters. Working with architects, we helped design the new server room, including cable management, racks, UPS and power distribution hardware, electrical circuits, and security.

Business Separation

When a Resource Data client sold its Alaska tourism subsidiary, it required assistance with separating its shared IT systems and migrating the subsidiary's assets to a new, separate infrastructure stack and Active Directory domain. Resource Data led a team of our systems engineers, client technical staff, and 3 vendors to execute the successful separation.

Virtual Machine Consolidation and Upgrade

Resource Data supported Alaska's largest internet service provider to consolidate VMware virtual machines from multiple physical locations and different versions of VMware vSphere to a single, modern, virtualized datacenter. Our team executed more than 200 virtual machine migration/upgrades with minimal downtime.

Cloud Services

Our cloud architects can design, implement, and migrate your systems and applications from physical servers to a virtualized cloud. We help select cloud providers, migrate from in-house to outsourced platforms, and verify security and data integrity.

Regional Data Center Design

Our team drafted a technical design document and implementation plan for a new regional datacenter. The datacenter needed to house a geographic information system (GIS) scalable to support 23 participating agencies while providing the flexibility, reliability, and security of an enterprise level cloud infrastructure. We designed an Esri ArcGIS solution based on the Amazon Web Services' (AWS) Elastic Computing (EC2) platform.

IT Security

Resource Data conducts security audits to identify gaps or areas of weaknesses and make actionable recommendations to help clients become more secure. We also assist with the technical security implementations, ensuring proper network protection through well-managed network and application firewalls, virtual private networks (VPNs), content-filtering systems, and log-aggregation systems.

Security Review

Municipal Light & Power requested a capability-based review of security management practices.

Following the Computer Emergency Response Team's (CERT) Resilience Management Model (RMM), we audited process areas, focusing on insider threats, separation of duties, and principles of least privilege.

Information Security Evaluation

Alaska Gasline Development Corporation (AGDC) contracted Resource Data to assess its IT and Information Security maturity. We based our assessment on ISO 27001 standards and identified gaps in organizational structure, policy and process, and overall IT general controls. The review of security management practices focused on AGDC's ability to operate during times of increased operational stress or disruption.

2-Factor Authentication

Resource Data assisted Alaska's largest internet service provider in implementing RSA 2-Factor authentication for new Palo Alto VPN network access supplied to more than 1,600 employees, contractors, and vendors.

IT Strategic Planning

Without a strategy in place, IT departments can get out of sync with the organizations they serve. Our Systems Engineers know how to understand and translate business needs into IT processes and projects. Resource Data can develop strategic plans, roadmaps, and project charters to take your IT department in the right direction for future automation, efficiency, and growth.

IT Management Strategic Planning

Resource Data conducted an IT management strategic planning study to understand a major state agency's IT infrastructure, project management, and operational needs. The study resulted in a 5-year Strategic Plan.

Network Assessment and Strategic Planning

Resource Data developed a long-term network infrastructure strategy for the Matanuska-Susitna Borough School District. The strategic plan focused on network infrastructure, security, monitoring, and organization roles and responsibilities. The District has since implemented many of our recommendations.