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# INTELLECTYX PROPOSAL RESPONSE

## ARFQ Wildlife-Data Systems Assessment



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## COVER LETTER

Intellectyx is pleased to submit the proposal response for “**ARFQ Wildlife-Data Systems Assessment**”.

Intellectyx, Inc ( a Colorado Corporation, headquartered in Denver | TIN - 272787154 ) is an AI + Data Science company founded in 2010, providing solutions around Integrated Digital and Data solutions (Web & Mobile), Artificial Intelligence, Modern Datawarehouse, Data Lake, Big Data, BI, Analytics, and Visualization for Public, Private and Non Profit organizations. We are a women-owned company with over 200+ employees and locations in Denver CO, Los Angeles CA, Edison NJ, and at various client locations in the USA. We also have global offshore delivery locations in India. To read more about us, please visit <https://www.intellectyx.com/about/>

Our mission is to “DO THE RIGHT THING RIGHT” with a focus on delivering the right solutions combined with the industry practices and a long-term view to ensure solutions are adaptable and delivered in the shortest duration possible. We are experienced in providing consulting services and have been helping organizations of different scales and structures to improve and modernize IT strategies. We consistently keep track of emerging technologies to deliver advanced software solutions. Our IT strategy consulting will provide recommendations for improving data systems to streamline workflows and better meet user needs, by providing the right technologies for your business and industry, map out implementation strategy, also to help you implement them.

This proposal shall address all the evaluation criteria and solution that is in alignment with West Virginia Division of Natural Resources and Wildlife Resources Section (WRS)’ vision, technical requirements, and operational goals. Our team will provide a deep analysis of how your business and employees use your existing enterprise applications, databases, and processes and shall provide a strategy based on risk and strategic alignment to the organization.

Thank you for providing us an opportunity to participate and please don’t hesitate to call or email me if you need any clarification.

Looking forward to working with you.

Date: April 20, 2021

Sincerely,



Raj Joseph

President, Intellectyx

720.256.7540 | [raj@intellectyx.com](mailto:raj@intellectyx.com) | [www.intellectyx.com](http://www.intellectyx.com)

## ORGANIZATION OVERVIEW

### ORGANIZATIONAL INFORMATION

**About** – Intellectyx develops innovative Data + AI enterprise solutions using Data, Data Science, and AI solutions. A global company established *in 2010*, Intellectyx is headquartered in Denver, the USA with associates working across the country and globally.

**Years in Business** - Intellectyx is a global software service provider specializing in software development, IT consulting services and has successfully implemented many full life cycle projects in data, data science, and AI for *over a decade*.

**Employee Strength** – We are 200+ employees strong spread across the world. Consultants and SMEs are used on a need basis.

**Mission** – Intellectyx mission is to “Do the Right Thing Right” and we take the long-term view to ensure that solutions are adaptable, extensible with new capabilities combining the right amount of change and delivered in the shortest duration possible – allowing our clients to be a market leader.

**Hours of Operation** – 24 hours given distributed locations in the U.S.

#### Legal Name & Address –

Legal Name	Intellectyx, Inc.
U.S Headquarters	600 17th Street 2800 South, Denver, CO 80202
Corporate Office	680 East Colorado Blvd. #180, Pasadena, CA 91101
New Jersey Office	611 Cinder Road, Edison, NJ 08820

## DIFFERENTIATION

The following factors set us apart from other companies and will help the West Virginia Division of Natural Resources benefit from using our services.

- **Extensive Experience** – We are an established IT service firm with more than a decade of technology expertise and experience in project management, web, and mobile development at an advanced level, database development, and management at an advanced level.
- **IT Strategy Consulting** – Intellectyx has more than a decade of experience in providing IT Strategy Consulting services to various Private, Government, and Non-governmental organizations. Given our expertise in both business and technology, our IT strategy consultants can facilitate the development of an integrated IT strategy for the organization. We are experts in devising strategies for cutting costs, increasing revenue, and making key decisions.
- **Local Presence in the US** – Our presence in the US with an extended arm in India helps a lot in collaborating 24/7 across disparate stakeholders (onsite/virtual) to establish trust, confidence and align with overall goals.
- **Focus on all three: People, Process, Technology** - We see business outcomes are not met with just Technology, but with all these three elements playing a critical role – People, Process, and Technology. All our implementation considers building an application simple to use but more robust to scale.
- **Similar Projects/Clients** – Our experience in delivering similar solutions to other notable organizations shall prove valuable and critical in delivering to the West Virginia Division of Natural Resources within the planned timeline.
- **Data Science, Digital and Intelligence Expertise** - Intellectyx can leverage its combined three different practice and support various initiatives around data visualization, reporting, narration, machine learning, conversational support, AI, etc.,
- **Technology Selection based on the existing ecosystem**- We have come up with the technology preferences and solutions based on the requirements plus the economies of scale for adoption. We want to drive user adoption and efficiency, which means it's critical that we deliver a solution that contains cost and does not increase licensing cost with user adoption.

## SERVICES/OFFERINGS

Intellectyx offers a portfolio of products and services that enable our partners and clients to deliver high-quality training solutions around the globe. Our solution offerings include,

### UI-UX Design



We offer complete UI/UX design services by understanding human behavior and unlocking exceptional user experience. Adopting a user-centric design approach, we help the world to experience our customer brand and its product.

### Business Intelligence



Intellectyx offers comprehensive BI services that can help our customers make more informed decisions faster and optimize business performance across the entire enterprise.

### Analytics



Intellectyx provides analytics to BI platform to gain and uncover value and insights from enterprise data accumulated over decades, make faster and smarter decisions across the enterprise, increase the productivity of business users, and improve the satisfaction level.

### Visualization



We embed data visualization tools with BI applications to help you gain insight into your complex scientific datasets and dealing with large, complicated datasets to get to the core of what the customer looking for.










### Enterprise Applications









Our application development and maintenance solutions drive efficiency and effectiveness and help you build adaptable platforms for the enterprise. Custom applications development using existing and emerging technologies that work well with any software portfolio to meet specific business requirements.



## TECHNOLOGY

Technology/Domain	Technology Details
	<p>C#, ASP.Net, VB.Net, AJAX, SQL Server, ASP.Net Charts, Silverlight, WPF, WCF, WF, ActiveX, MFC, VC++ and ATL COM, SSIS, SSRS</p>
	<p>Java Enterprise Edition, Spring, Struts, Hibernate, JBoss SEAM Framework, Swing, JSF, JSP, EJB 2.x - 3.x, myBatis, Junit, Mockito, Eclipse, and IntelliJ, MyEclipse, RSA (Rational Software Architect), RAD (Rational Application</p>
	<p>Angular, Backbone, Knockout, Kendo UI, MEAN, Bootstrap, Marionette, jQuery, jQuery UI/Mobile, JS, HTML5, JS, CSS, Underscore, D3, High charts, AM Charts, Handlebars, Mousetrap, JAWR, Require, Sammy, Amplify, Bundle</p>
	<p>iOS, Android, and Blackberry; Sencha, Xamarin, Java ME MIDP; J2ME Polish; Sun Wireless Kit, IBM Work light, Google Android Studio, Objective C, Swift</p>
	<p>CI (Travis, Jenkins, Hudson, Bamboo, Team City), Infrastructure management and Deployment (Vagrant, Docker, Puppet, Chef, PowerShell, Ansible), Monitoring (Logstash, Kibana), Repository management (Artifactory, Nexus)</p>
	<p>Functional Testing, Load and Performance Testing, Acceptance Testing, Test Automation</p>
	<p>IBM Watson, Azure Bot Service, Alexa</p>
	<p>ESRI, SpatialLite, Cesium, pycsw, ILWIS, gvSIG, ArcGIS, AutoDesk, Intergraph</p>
	<p>OS – Red Hat Enterprise Linux, Ubuntu Linux   App Server – JBoss, and Apache, Web Servers – Apache Tomcat   Web - PHP Development, Symphony Framework, Zend Framework, and Code Igniter Framework Web 2.0 Development – AJAX Toolkits – jQuery, DOJO, GWT, Node.js, SocketIO, Yeoman, Grunt, npm, Bower, Karma, Mocha, Chai, PhantomJS, Jasmine,</p>



 <b>Cloud Platforms</b>	Microsoft Azure, MS SQL Azure, Amazon, and AppFabric
 <b>Databases</b>	Microsoft SQL Server, Oracle, PostgreSQL, MySQL, SQLite, Sybase, Couchbase, Amazon DynamoDB, MongoDB, PostgreSQL, MySQL
 <b>Microsoft SharePoint</b>	Microsoft Office SharePoint Server, Windows SharePoint Services, and SharePoint Foundation. Custom Web Parts, Workflows / Process Flows.
 <b>Big Data</b>	Casandra, Hadoop, MapR, Apache HBase, Apache Drill, Apache Storm, Spark, Horton Works, Flink, Kafka, Cloud Era, Apache Solar, Logstash, Elasticsearch, Lucene, Splunk, Neo4j.
 <b>Analytics and Visualization</b>	Karma Sphere, Greenplum, D3.js, Kibana, Clearstory, Tableau, Platfora, angular js, Teradata, Metamarkets, Qlik, sisense, H2O, Harman, Databricks, Feedzai, NetOwl, Visually, Redis, mahout, Jasper, Palantir, Rapidminer
 <b>Business intelligence</b>	Microsoft, Oracle, Jasper soft, MicroStrategy, Pentaho, Business Intelligence, SAP, Flume, IBM Cognos, QlikView, Tamr, Trifacta, Tibco, Fico, Informatica, Oracle Hyperion, SAS, Oqoop, Kognitio, Birt.

## LOCATIONS



## CUSTOMERS & PARTNERS

### Government and Non-Profits

**City of Spokane**  
**WASHINGTON STATE HOUSING FINANCE COMMISSION**  
*Opening doors to a better life*  
**Department of Commerce**  
*Innovation is in our nature.*

**iie**  
*The Power of International Education*  
**American Printing House for the Blind, Inc.**

**Retail**

**Banking & Finance**

**Insurance**

**Media & Entertainment**

**Manufacturing & Automotive**

**Pharma + Healthcare**

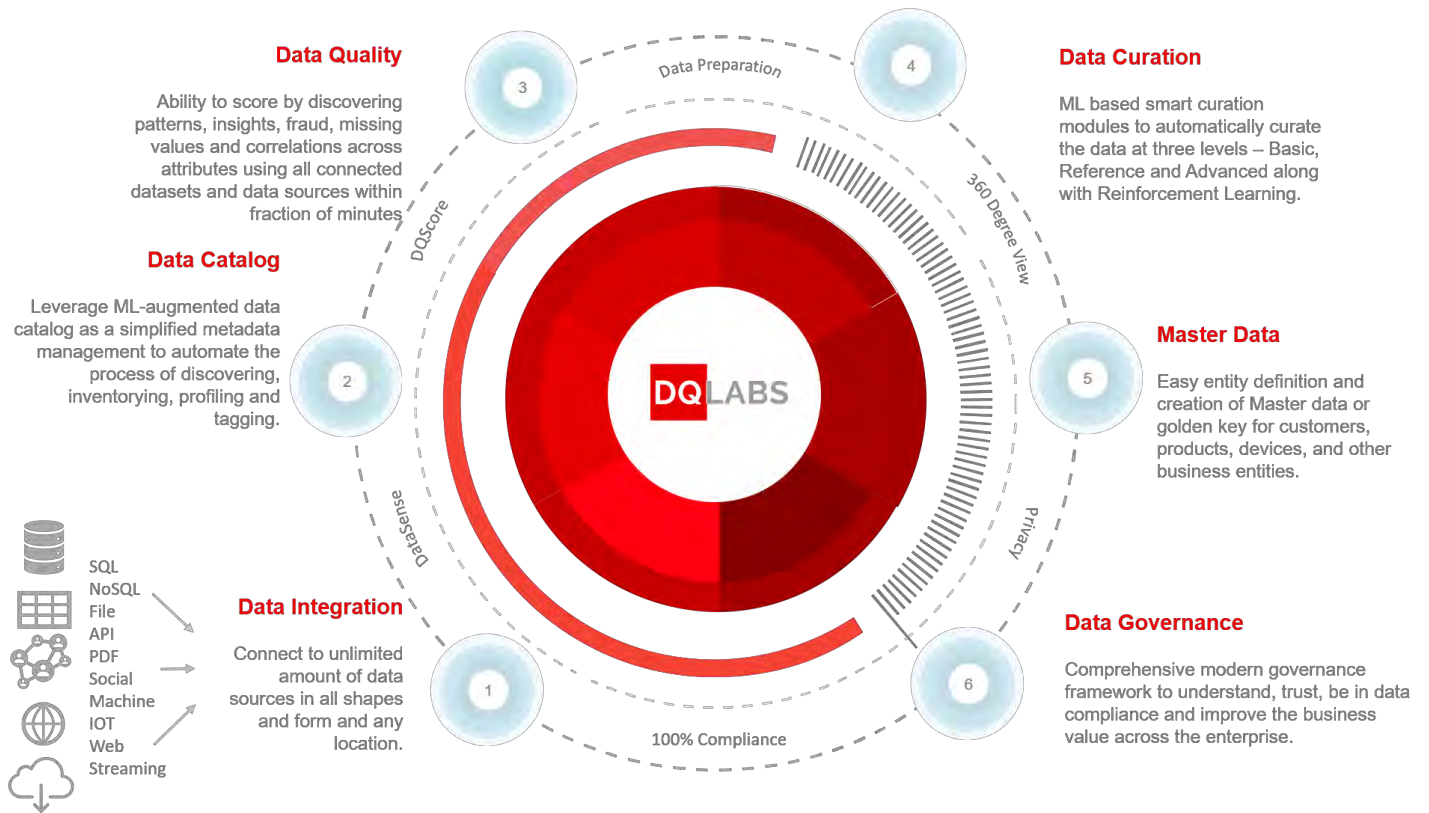
**Education**

**HR Others&**

**Partnerships**

**Awards**

## AI-AUGMENTED DATA MANAGEMENT PRODUCT EXPERIENCE



With a decade of experience in data services, we have also created a data management cloud-based platform – [DQLabs.ai](https://DQLabs.ai).

DQLabs was created with the vision to provide a simple way for organizations to handle issues around data quality, governance, curation, master data management effectively. DQLabs platform is built with modern architecture, reliable and proven technologies. Our platform is a web-based, intuitive user interface and shall be hosted either on the cloud or on-premises.

Our platform has inbuilt connectors into Salesforce, Property Management systems that support REST API, SOAP XML-based messaging, and also data extraction from Relational databases such as MSSQL, MYSQL, Oracle, Postgres, etc., plus other NoSQL databases as well. It has further expanded capabilities to extract data from PDF, Websites by scraping data, FTP, Storage systems such as S3, OneDrive, Dropbox, etc., With the use of AI and Machine Learning – the sophistication of the technology is blended carefully with the art of simplicity. All complex tasks around connection, data profiling, curation, master data management, and reporting are all done in a few clicks.

The platform has the following capabilities –

- Combine all your data effectively from a variety of sources to get a single view of your organization's data using our platform's AI-powered built-in connectors.
- Connect to any offline, online, and real-time sources with few clicks using out-of-the-box connectors. With the AI-driven DataSense™ module, DQLabs modernizes the metadata, catalog, and taxonomy management with an integrated AI/ML and automated rules and learning capabilities.
- Not only it centralizes all metadata information, its relevant business terms, rules, data structures, data schemas, relationships, and metadata from sources but also enables search and query capabilities of metadata to facilitate the discovery of data assets.
- An Autonomous Data Quality profiling framework that scans various types of data sources and data sets in real-time and provides scoring with the ability to track, manage, and improve data quality over time.
- It also can discover patterns, insights, fraud, missing values, and correlations across attributes using all connected datasets and data sources within a fraction of minutes.
- Machine Learning-based smart curation module that identifies the optimal data preprocessing strategies and automates data curation with controls on data quality thresholds.
- Create Master Data Management for customers, products, devices, and other business entities and feed master records into MDM, update, and extract MDM for processing and export for further ingestion and reference data in other applications.
- Further, the MDM layer is supported with Pre-built APIs, RESTful web services for viewing and controlling master data directly in other applications.
- Out-of-the-box standard data governance model with established governance processes, stewardship roles, and information health metrics to improve data quality.
- Continuous compliance automation to simplify compliance program decision-making with a powerful research data portal and sensitivity analysis.



## RELEVANT PROJECTS

Below are a few of our noteworthy projects, which also involve the assessment of existing systems, data sources, tools, technologies, IT infrastructure, and overall processes followed by the respective organizations. Intellectyx high-level project team visits onsite and conducts several meetings and discussions with the stakeholders to completely review, analyze the existing systems and gather requirements from the stakeholders, and performs a fit-gap analysis. We provide our clients the overall report on What the current status is? Where the lag is? What needs improvement? What systems can be eliminated and what can be newly added? How the overall processes can be improved thereby improving organizational efficiency? And How to become a data-driven organization? etc. After analysis, we also help the organizations to achieve the desired outcomes by implementing the recommended solutions.

### MASTER DATA MANAGEMENT PORTAL WITH ADVANCED REPORTING AND VISUALIZATION CAPABILITIES

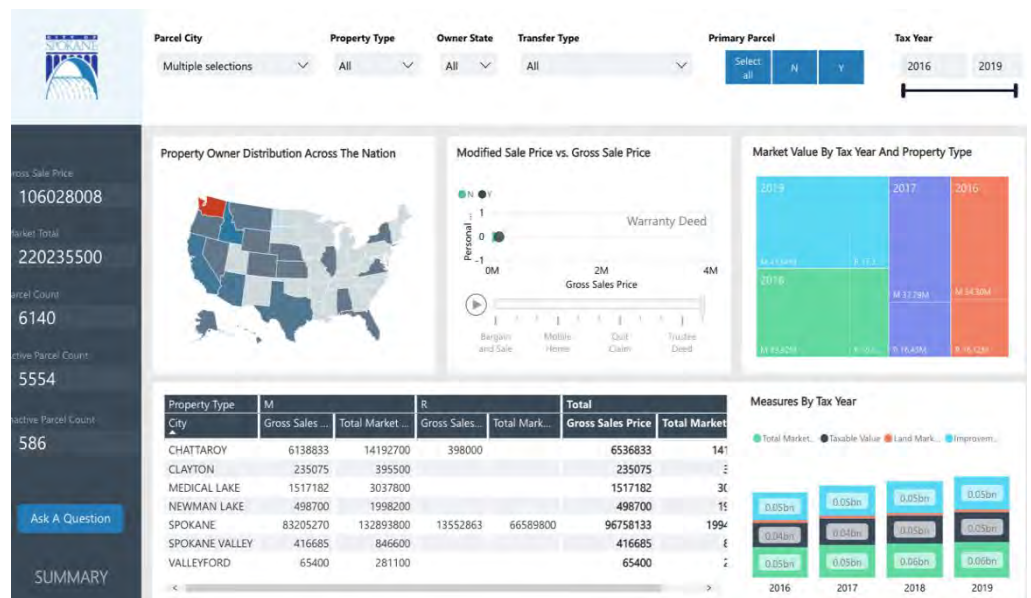


#### CHALLENGE

The City of Spokane, through its Innovation and Technology Services Department, wanted to implement a Master Data Management Solution to promote government transparency and accountability. The current challenge for the City of Spokane is to streamline efficiencies in sharing frequently requested city datasets that are needed for analytics and reporting purposes by standardizing a method of publishing and disseminating the data through a central location.

#### SOLUTION

Intellectyx is helping the City of Spokane with a Master Data Management implementation using Microsoft Azure’s Modern data warehouse architecture and PowerBI, AzureML based analytics platform to develop advanced reporting, visualization, and pull out-of-the-box reports. The City of Spokane IT department carries different information’s Criminal Justice



Information (CJI), Payment Card Industry (PCI), Health Insurance Portability and Accountability (HIPAA), Federal Energy Regulatory Commission (FERC), County Parcel, GIS, Tax Jurisdiction, and other PII. All these datasets have structured, Unstructured data this was a major challenge to maintain a single version of truth data. We used the Azure Data Warehouse to perform extract, transform, load, (ETL), and achieved credibility and consistent data through data quality and master data management services.

- We initially created a Datawarehouse where all the ETL transformation take place and created a structured dataset thus achieved to develop a centralized single repository.
- We have Created and schedule data-driven workflows (called pipelines) that can ingest data from disparate data stores.
- Build data visualization with interactive reporting, drill-down and roll-up, and dashboard reporting capability embedded with appropriate charts and graphs using a combination of visualization.
- Publish output data to data stores such as Azure SQL Data Warehouse for business intelligence (BI) applications to consume.

## OUTCOMES

Some of the key benefits that the City of Spokane to be gained from the proposed solution are:

- Created a Master Data Management which has only a single version of data.
- Improved City applications and interfaces.
- Optimizing the manual effort required to manage and use data across the departments.
- Enhancing business intelligence, reporting, and analytic capabilities.
- Safe easy data access across the departments and reduced data quality errors.

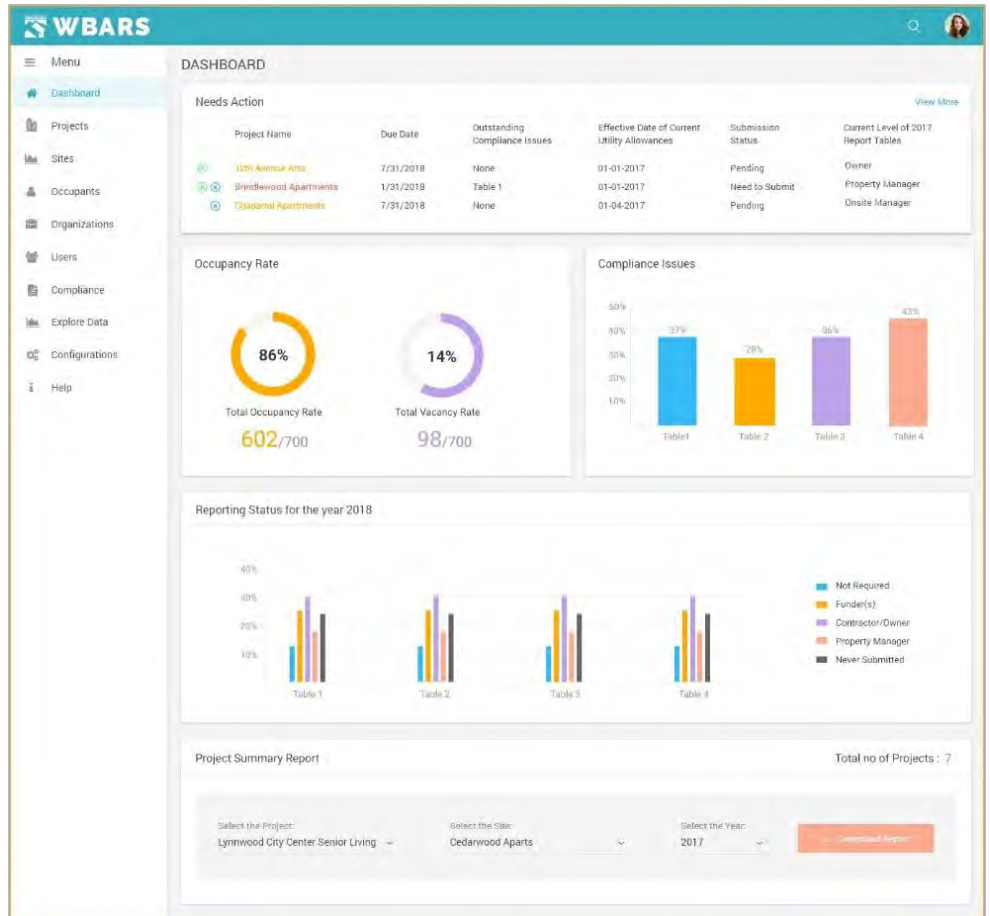
Now with having a single centralized repository city of Spokane has a widespread of opportunities to interact with citizens and other stakeholders.

## WEB-BASED ANNUAL REPORTING SYSTEM FOR HOUSING FINANCE COMMISSION

### CHALLENGE



Washington State public funders wanted to implement an online reporting system for use by property owners and managers to report data from their affordable multifamily rental projects. The public funders include the Washington State Housing Finance Commission, State Department of Commerce (Housing Trust Fund), City of Seattle, King County, Snohomish County, City of Tacoma, and UPIPS. Washington State had a challenge on consolidating and cleansing all data from different partners while needing to make this available through a user-friendly portal with mobile and accessibility features.



### SOLUTION

Intellectyx helped to build and maintain a custom Real-Time Housing Compliance Portal using a value-added innovation approach. The solution involved extracting data from different departmental databases and deduping, matching, and linking with the source registry data. We implemented effective data architecture to support the requirements we have mastered all the records performed (ETL) operations, created a unique record for each individual for easy identification and query mechanism. Intellectyx demonstrated how each of the dataset's measures could be produced from the data warehouse, showing the accuracy and completeness of the data model. The portal provides affordable housing project details in an easy-to-use format with in-depth data and advanced reporting - providing accurate, actionable information that can be used to track and the compliance status of any housing projects.



## OUTCOMES

By the end of the project, Intellectyx's solution enhanced the capabilities of retrieving, reporting, and visualizing the data with quick turnaround time. The system satisfies program and contract reporting requirements and tracks most of the main components of project performance (operation indicators, income, expense, the status of reserves, tenancy, etc.).

- It also had the ability to integrate with various housing systems, search real-time in a fraction of seconds over massive data from funders, tenants, and builders, and track compliance status.
- Now with no worry's public funders, property owners and property managers can easily transfer the data to the upgraded version – all of that will happen behind the scenes.

With the help of NoSQL and AWS we scaled up the instances to store the data, thus now their system is not facing any storage issues.

## NEW MEXICO SCHOOL FOR THE BLIND AND VISUALLY IMPAIRED



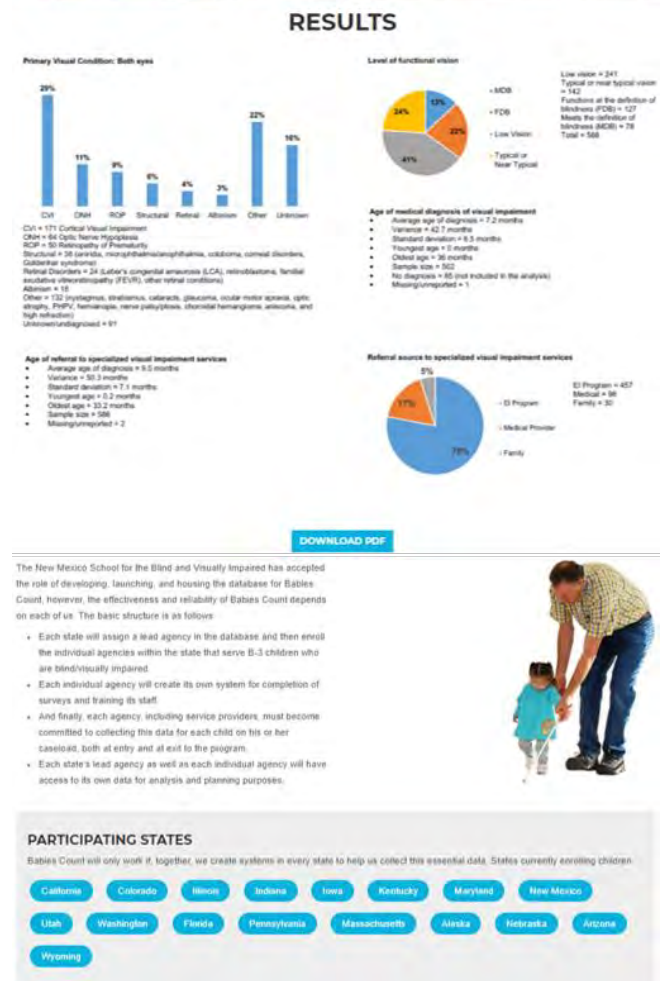
### CHALLENGE

The New Mexico School for the Blind and Visually Impaired (NMSBVI) wanted to create a **National Registry** of young children aged birth to 36 months of age with visual impairments that work in conjunction with public and private agencies to collect standardized epidemiological and demographic data regarding children, their visual conditions, and the systems created to support them and their families.



### SOLUTION

Intellectyx built a next-generation web and mobile-friendly national registry to collect epidemiological and demographic data seamlessly and effectively. The solution also addresses various aspects of private and public agency participation in the project and benefit from its implications on program development (including personnel preparation), program evaluation, and funding opportunities. More importantly, we to aggregate data from all its various databases into the single centralized repository (SQL Database), and analysis and visualization modules are included to understand the current trends that have not been uncovered. Using this module, trends shall be computed for questions such as impaired vision due to damage of the brain, immature blood vessel impact in premature infants, underdeveloped optic nerves with or without additional midline brain misinformation.



### OUTCOMES

With the ability to retrieve aggregated data for research purposes, NMSBVI, representing the International Preschool Symposium can identify epidemiological trends in population, improve teacher preparation programs and increase the quality of responsive EI services.

## AFFORDABLE HOUSING DATA PORTAL



### CHALLENGE

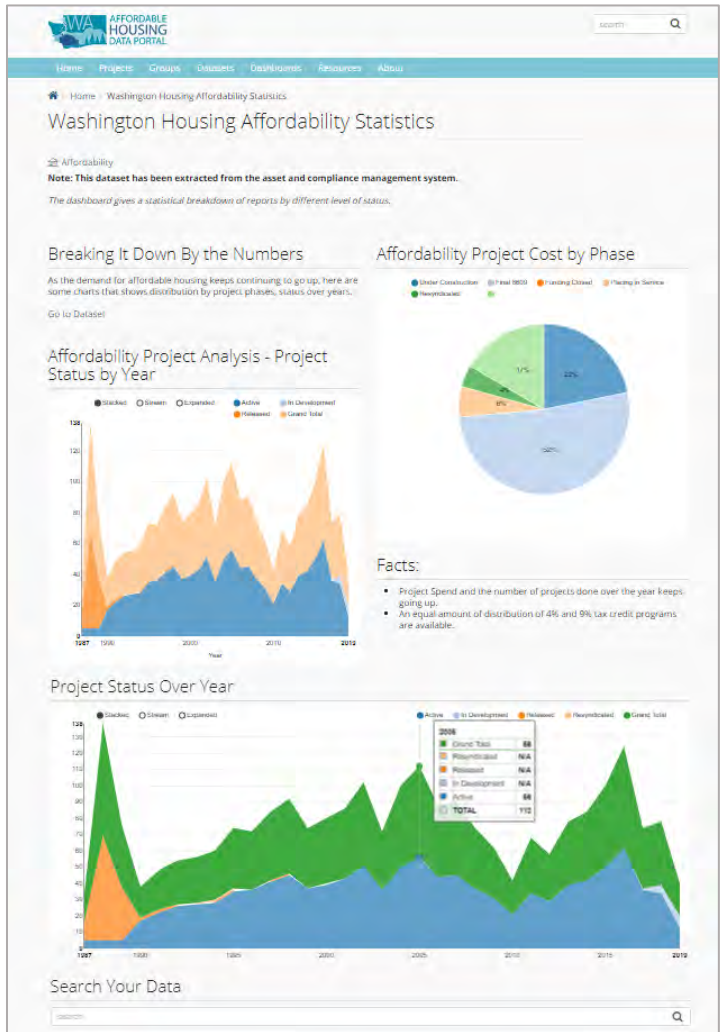
The data analytics team at the Commission is dedicated to increasing housing access and affordability and expanding the availability of quality community services for the people of Washington. They wanted to build an affordable open data dashboard platform to increase transparency and accountability and to help the public and city officials access valuable government data.

### SOLUTION

Intellectyx proposed to build this affordable dashboard portal on a managed instance. The open data portal is a cloud-based reporting and data visualization solution that displays an individual government's financial and non-financial data, including its revenues and expenditures by fund, department, and type of account. The portal comes with a powerful data management system that makes data accessible – by providing tools to streamline publishing, sharing, finding, and using data. The solution provides a streamlined way to make the data discoverable and presentable along with a rich search experience that allows for quick 'Google-style' keyword search as well as faceting by tags and browsing between related datasets.

### OUTCOMES

The developed tool has the ability to federate and normalize data easily from a variety of external federal sources like the Bureau of Labor Statistics, Census data, CDC, CMS, and other third-party data providers. The developed system is quick and responsive and can access a large set of queries and It can customize the data and present it in rich graphical formats. Users can pull the reports easily with more customizable and infographic ways.



## DATABASE ADMINISTRATION SERVICES AND DEVELOPMENT OF WAYFINDING SOLUTION



### CHALLENGE

The Superior Court of California, Santa Clara wanted an experienced entity to provide Database Administration, Case Management Integration, Analysis Services, and Development of a wayfinding solution. The Court manages its data majorly through various SQL databases. The Court wanted to optimize the performance of its databases and set up/maintain additional backup strategies along with other various database administration needs. Additionally, the court wanted to integrate its case management system and develop a web-based Wayfinding solution to help court customers find their case and details such as where it is being heard and the location in the respective court facility. The web-based wayfinding application should be built for touchscreen-based devices as the court intends to deploy the solution in free-standing touch screen displays in the court lobby.

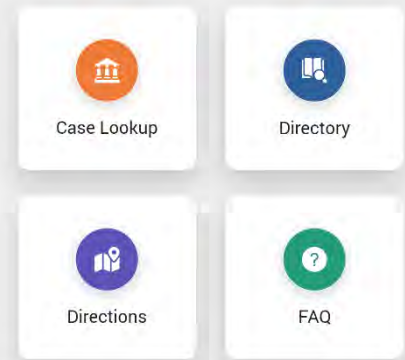
### SOLUTION

Intellectyx is helping the Superior Court of California through developing a Progressive Web Application (PWA) with Angular, .NET Core 3.1, and C#. The web-based wayfinding application is being built for touchscreen-based devices such as Calendar Boards, Touch Screen Kiosks, and Mobile Devices as the court intended to deploy the solution in free-standing touch screen displays in the court lobby. We implemented a pluggable Micro-frontend into the Admin Portal using the Angular Module Federation standard for the CourtHub V2 application. This Angular-based micro-frontend shell lazy loads a separately compiled and deployed micro-frontend. We defined various routes to lazy load in the admin portal to help manage various functionalities and features around Managing Courts, Cases, Announcements, Calendar boards, maps, and Directions, and Devices. We utilized the RESTful API using C# .net to integrate with CourtStack CMS and Wayfinding Applications. We developed a

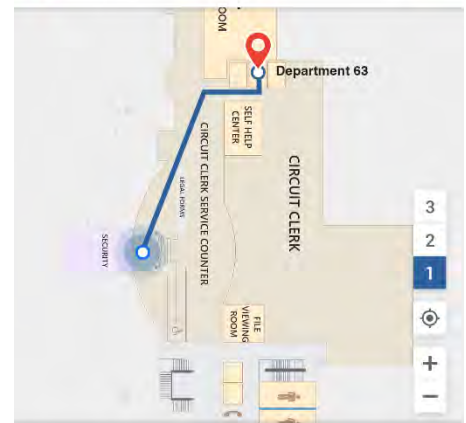
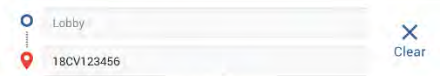


Menu

### What you are looking for?



### Directions



Case # 18CV123456  
Department 64 | Floor - 1

Today  
12:34 PM

- ← Turn Left in the service desk
- ↑ Go Straight in the service area
- Turn Right in the service desk

Progressive Web Application supporting devices including TV, kiosk, and mobile to provide the users with the ability to find information about their cases and the way to the location where the case is being held.

## OUTCOMES

The following are the features and technical capabilities of our application that helped the Court to meet its business and technical requirements,

- Ability to showcase Case Location Details in Calendar Boards for a given day.
- Display Announcements in Calendar Boards or separate boards (TV).
- Ability to easily digest and track Case Details and Departments across different devices such as TV, Kiosk, and mobile web.
- A wayfinding solution for Departments and Rooms in the Court, allowing customers to find their case and its details.

## CUSTOM APPLICATION DEVELOPMENT AND ARTIFICIAL INTELLIGENCE SERVICES

Intellectyx is the official partner of the Institute of International Education to provide Application Development, including services related to the development, maintenance, and support of web applications and Artificial Intelligence services including Azure Machine Learning to build, train, and deploy your machine learning models, Azure Cognitive Search AI capabilities to easily extract insights from all your content, Azure Bot Service, Azure Databricks and ONNX (Open Neural Network Exchange), Machine Learning in Azure Synapse Analytics.



## DASHBOARD DESIGN AND DEVELOPMENT - POWER BI

Intellectyx is helping the Buffalo Public School with the designing and constructing components of Data Dashboards using Microsoft Power BI. The service includes pulling data from the back end of their enterprise systems including the student information systems - Infinite Campus, and the staff information systems – MUNIS and developing interactive data dashboards along with reporting and analytics capabilities.





## KEY PERSONNEL

Intellectyx is highly experienced in providing reliable IT strategic consulting services for more than a decade. We are assigning highly experienced professionals for this project to successfully achieve the project objectives.

### TECHNICAL LEADERSHIP

**Raj Joseph, B.E., M.B.A** is the founder of Intellectyx, ([www.intellectyx.com](http://www.intellectyx.com)) - a company that develops innovative enterprise applications, data visualization, BI, and analytics solutions. With over 22 years of leadership experience, he has held various positions with multinational companies and his experience includes Venture based Startup Experience, Strategy & Planning, Product Development & Launch, Change Enablement across the Organization. He has extensive direct experience by working with Housing authorities and financing Commission, Department of Commerce, and various City, Federal and State initiatives around affordability housing projects, Homeless Information Management systems, and data integration from various Property Management Systems.

### Highlights

- Overall, 22 years of experience with a specialization in Data Analysis, Data warehouse Architecture, ETL architecture, Integration architecture.
- Provides technical leadership and assumes accountability for the technical delivery of projects. Acts as a point of technical escalation and resolution during the project lifecycle as it relates to technical decisions.
- Extensive experience in the full life cycle of the Software Design Process including Customer Handling, Project Management, Requirements Definition, Requirement Tracking, solution architecture, solution design, integration, testing, production rollouts, and maintenance.
- Execute across the full range of activities in the strategy development process – problem definition, framework development, hypothesis generation, data gathering, robust analysis, and financial modeling, synthesis of findings, development of clear recommendations and presentations, development of the business case, and assisting with the execution of the key strategic initiatives.
- Experience in strategic and management consulting, internal strategy, corporate development, investor relations, business planning, and project management.

- Has the proven ability to translate strategic plans, objectives, and business goals into actionable, well-defined programs, projects, and initiatives.
- Cross Vertical experience across intensive Data warehousing architecture and software development using Microsoft Business Intelligence (MSBI) Tools and SQL Server. Designing and creating complex ETL packages (Staging, ODS, MDW) using SSIS (SQL Server Integration Services), creating drill thru & drill down reports using SSRS, and visually compelling dashboards using Power BI and Business Intelligence.
- Experience in Data Warehouse/Data Marts Designing, OLAP, MOLAP, ROLAP, HOLAP, Performance tuning, Data Modelling, Application Development using SSAS (SQL Server Analysis Services).

## PROJECTS

- Work with various clients on data strategy and developing technology solutions using BI, Analytics, Machine Learning, and Visualization technologies.
- Currently Leading and building a Master Data Platform – DQLabs using AI, ML models.
- Conducts digital transformation workshops to ideate, strategize, and drive adoption using digital solutions.
- Client solutions built using Big Data, Mobility, and AI technologies.
  - Master Data Management Portal implementation aggregating citizen data for the **City of Spokane, WA**
  - Centralized Reporting Platform and Open Data Housing Finance Portal for **Washington State Housing Finance Commission**
  - Sales/Marketing Visualization Portal for **NY Times** using Hadoop, Elastic, D3 for gaining behavioral insights using trillions of clickstream data
  - Customized visualization and Operational analytics platform for **HID Global**
  - First Party Media and Analytics Measurement Platform for **TruEffect** for cross-sell products.
  - Contingent Workforce Mobile Hybrid Platform with AI/ML for **AdCorp**.



- Centralized Employee Engagement Data Portal for **People Element** using MEAN and NoSQL.

## VP OF PRE-SALES AND SOLUTIONS

**Shanmuga Pragash, M.B.A.**, has Over 18 years of Technical, Business, and Leadership experience in Pre-Sales, Business Analysis, Innovation Consulting, Strategic Consulting, Solution Design & Architecture. Effective communicator with strong leadership, people management, Technical, Analytical, and problem-solving skills. At equal ease in interacting with people across hierarchical levels in the organization for ensuring smooth task execution. He has extensive experience in Data Strategy, Data Consulting, Visualization using his experience of working with both public and private sector organizations. He is responsible for planning, research, plan insight, and participation in business discussions and strategy development.

### Highlights

- Extensive experience with and knowledge of technologies, techniques, and practices for the evaluation of business performance data; ability to analyze business performance using advanced statistical methods to justify and drive future business planning.
- Keep on top of current and emerging technologies and recommend staff training and development programs for upcoming new technologies.
- Experienced in strategic and management consulting, internal strategy, corporate development, investor relations, business planning, and project management.
- Collaborate across all departments to develop goals towards delivering solutions that balance business strategy with technology innovation and capabilities.
- He works closely with clients and their partners to define POV and MVP to deliver industry solutions using cutting-edge technologies. Lead the technology advisory practice for current and potential clients.
- Overall responsible for the delivery with the experience to maintain, develop, and execute client relationships, understand the competitor landscape in the practice area. Identify the value proposition and differentiators.
- Experienced in managing a cross-functional/cross-geography team of Architects, Analysts, and Developers leveraging industry-standard application development methodologies.

- Assist with initial project mobilization as needed, support and coach advisor and delivery teams. Leverage technical background, industry knowledge, and understanding of the business goals to ensure the appropriate direction for product enhancements.
- Educate internal and external stakeholders on service offerings. Identify and review opportunities and prioritize activities to optimize the pipeline.

## PROJECT/DELIVERY MANAGER

**Lily Caroline, M.B.A.**, has 13 years of IT experience in Information Technology, Project Management, Software Testing & Quality Assurance. She has diverse experience in Agile and Traditional Project Management principles and methodologies such as Scrum, Kanban, and traditional waterfall and cultivated heavy experience in managing and delivering data and digital-related projects. She has demonstrated skills in project delivery, technical leadership, customer liaison, team health and composition, project management, risk management, business development, and budget management.

### Highlights

- Experience in both Agile-based project management methodologies such as Scrum, Kanban, and traditional waterfall.
- Draft end-to-end project plans to track milestones/quality toll gates & delivery timelines to further track and escalate project risks, issues, dependencies, control gaps, and minutes of the action items.
- Focused on managing data-related projects for over 5+ years and have delivered successfully for both states, nonprofits, and private fortune 100 clients and has extensive experience in Requirement Analysis, Design, Generation, and Execution of Test cases.
- Overall responsible for the delivery with the experience to maintain, develop, and execute client relationships, understand the competitor landscape in the practice area. Identify the value proposition and differentiators.
- Educate internal and external stakeholders on service offerings. Identify and review opportunities and prioritize activities to optimize the pipeline.
- Has the proven ability to translate strategic plans, objectives, and business goals into actionable, well-defined programs, projects, and initiatives.

- Lead the large delivery team, articulates job requirements for resources needed, supporting talent acquisition and fulfillment.
- Articulate risk, issues, budgeting challenges, and upcoming project planning summary clearly and concisely via weekly, bi-weekly, and/or monthly reports to stakeholders/executives at all levels.

## DATA ARCHITECT

**Anoop Tiwary, M.C.A**, With Overall 14 years of experience in Data warehousing architecture and software development using Microsoft Azure, PowerBI, Microsoft Business Intelligence Tools, and SQL Server. Experience in designing and creating complex ETL packages using SSIS (SQL Server Integration Services), creating drill thru & drill-down reports and dashboards using SSRS (SQL Server Reporting Services) and power view, creating cubes using SSAS (SQL Server Analysis Services) Tabular and Multidimensional. Also, good experience in SQL Server complex queries, defining stored procedures and user-defined functions, job scheduling, and basic DBA activities.

### Highlights

- Experience in strategic and management consulting, internal strategy, corporate development, investor relations, business planning, and project management.
- Execute across the full range of activities in the strategy development process – problem definition, framework development, hypothesis generation, data gathering, robust analysis, and financial modeling, synthesis of findings, development of clear recommendations and presentations, development of the business case, and assisting with the execution of the key strategic initiatives.
- Strong knowledge of data architecture concepts such as data cubes and OLAP multi-dimensional systems, data marts, data mining systems, operational data stores, data warehouses, staging databases, and data servicing layers.
- Experience in MDM and Data Warehouse/Data Marts Designing, OLAP, MOLAP, ROLAP, HOLAP, Performance tuning, Data Modelling, Application Development, and Product Support on Windows NT & UNIX.
- Designing and creating complex ETL packages (Staging, ODS, MDW) using SSIS (SQL Server Integration Services), creating drill thru & drill down reports using SSRS, and visually compelling dashboards using Power BI and Business Intelligence.

- Good experience in SQL Server complex queries, defining stored procedures and user-defined functions, job scheduling, and basic DBA activities.
- Expertise in producing conceptual, logical, and physical data models, has proven experience with data modeling tools including PowerDesigner, Oracle SQL Developer Data Modeler.
- Good understanding of reporting/analytics technologies (Cognos, SQL Server Reporting Services, Crystal Reports, SQL Server Analysis Services).

## LEAD SYSTEMS/DATA ANALYST

**Meyy, B.Tech.**, has around 12 years of experience. He is an experienced Systems/Data Analyst with DBMS and Information Technology skills focusing on Business Intelligence and Data Integration. He possesses demonstrated ability to deliver projects through all phases of the SDLC methodology, from planning to deployment, using best practices. A proven technical professional that can work with dissimilar hardware systems, languages, software applications - both custom and 3rd party. He has proven experience with ensuring data integrity, monitoring logs, troubleshooting, establishing policy, developing procedures to prevent issues, and creating effective methods for problem resolution.

### Highlights

- Experienced in providing analytical insight and recommendations to the various teams within an organization to optimize portfolio performance.
- Strong knowledge in performing and facilitating data warehouse analysis and dimensional data warehouse design and modeling.
- Responsible for working closely with the Data Governance, Data Quality, and Data Reconciliation teams to ensure a unified approach to providing high-quality data.
- Evaluate centralized and decentralized models and provide clients with supporting recommendations and implementation strategies.
- Collaborate with Key's Risk Management and Technology & Operations departments to identify the most efficient means of harvesting data for analysis and reporting.
- Assists in the development of the IT Department's policies and procedures and recommends to management suggestions for improvement.

- Evaluates existing systems and procedures to identify deficiencies and maintain more effective data handling, conversion, input/output requirements, and storage.
- Assists with analyzing, developing, and revising existing system logic difficulties and documentation as necessary and works on all phases of applications systems analysis activities.

## LEAD BUSINESS ANALYST

**Harry P, M.Tech.**, has 12 years of experience in defining business solutions in the IT environment, working with Business Owners and IT development teams. Strong analytical, planning, and process improvement skills, combined with the ability to coordinate these efforts to achieve high success levels to understand how to interpret customer business needs. Skilled in grasping the big picture, conceptualizing, developing, implementing solutions & partnering closely with various stakeholders and senior-level executives.

### Highlights

- Experienced in Business Analysis, Agile & SCRUM methodologies, Product Governance & Compliance, Electronic Data Interchange for integration, Web & Mobile application development.
- Performs the Product Owner role as part of the Agile delivery team. Involves in product prototyping with the UI team developing wireframes for the proposed solution and demo casting the same to the product management team and clients for UI Sign-off
- Assists technical teams in analyzing and translating business requirements to ensure accurate understanding and application design.
- Manage Process, Product, and Project Management duties for assigned business initiatives, workstreams, and operational components.
- Worked on different documents related to requirements, functional specifications, sow, CRS, charter, cost and timeline analysis, process flow, use cases, test cases, implementation plan, and lessons learned.
- Manage operational and system enhancement projects in accordance with corporate goals and initiatives, develop through business requirement documents which are utilized to execute the UAT scenarios for validations.
- Good experience in preparing functional design documents and analyzing business and customer requirement documents (BRD, BRS, CRF). Reviewing Test Procedures, defining Test Cases, reviewing

and maintaining Test Scripts, analyzing bugs, interacting with team members in fixing errors, and User Acceptance Testing (UAT)

## PROJECT APPROACH

### OUR UNDERSTANDING

Intellectyx understands that the West Virginia Division of Natural Resources (WVDNR) is responsible for wildlife management, hunting, and fishing regulations, and boater safety and also manages state parks and resorts. The WVDNR provides a comprehensive program for the exploration, conservation, development, protection, enjoyment, and use of the state's renewable natural resources. It is also responsible for preserving and protecting natural areas of unique or exceptional scenic, scientific, cultural, archaeological, or historic significance. Additionally, WVDNR provides several outdoor recreational opportunities for West Virginia residents and visitors.

The Wildlife Resources Section (WRS) is one of the three primary divisions of the WVDNR. The WRS's responsibility is to conserve, protect, and manage the state's fish and wildlife resources for the use and enjoyment of WV citizens. The primary objective of this section is to maintain and perpetuate fish and wildlife at levels compatible with the available habitat while providing diverse opportunities for recreation, research, conservation, and education. Currently, WRS utilizes a large number of databases, processes, and applications across various Units and Programs including the Game Management Unit, Game Research Program, Fish Management Unit, Fish Hatchery Program, Wildlife Diversity Unit, Natural Heritage Program, Environmental Coordination Program, and GIS and Technical Support Program.

The WVDNR on behalf of the WRS is embarked on a journey to complete user needs and data systems assessment to identify the best strategy for meeting current and future information management and reporting needs for its staff and key partners. To help achieve success in its journey, WRS is looking for a consultant to provide strategy consulting services that involve the assessment of its data management systems, key audiences, and user needs that are associated with managing and reporting on its goals and activities. Through this project, WRS is looking to achieve the following objectives including but not limited to –

- inventory and assess a large number of databases, processes, and applications currently utilized by staff across the above-mentioned Units and Programs.
- better understand and document the current portfolio of applications, databases, and processes by collaborating with WRS
- to define an action for each based on risk and strategic alignment to the organization.

- Identify and quantify the “technical debt” and other related information for each application and database
- establish baseline scoring (priority matrix) criteria for both agency risk and alignment with WRS priorities, and
- to provide alternatives for system improvements, including costs, and a preferred recommendation for improving data systems to streamline workflows and better meet user needs.

## OUR APPROACH

### TASK 1- INITIAL INTERVIEWS AND PROJECT KICK-OFF

#### PROJECT KICK-OFF

The core purpose of the project kickoff is to lay the foundation for a project to become successful. We utilize this as a platform to ensure the stakeholders and the project team are on the same page with the scope, goals, budget, timeline, and everything in between. Before the kickoff meeting, we shall prepare a project kickoff email to announce the agenda, when and where the meeting will be, and other details. We shall seek the availability of the WRS Staff and other stakeholders (representatives from WRS Units/Programs) to prepare the schedule for the kickoff meeting. The project kickoff email shall consist of a minimum of Date and time along with a calendar invite, Location, or video meeting link, a list of items WRS will need to prepare, and any remaining questions on the project team’s end that will need to be answered before the meeting. The project kickoff email will then be sent to WRS to seek approval and feedback. Based on the feedback we shall modify the agenda and or other things desired by WRS. Upon receiving the approval and acceptance from WRS, the kickoff meeting will be conducted as planned.

During the project kickoff meeting, we shall discuss the following important factors including but not limited to –

- The Statement of Work – A clearly describing what services will be provided, what will be our deliverables, and the deadline to complete it.
- The project scope - a detailed description of project deliverables and the work needed to accomplish them.
- The project timeline – a detailed overview of what is expected to be delivered and when.
- Deliverables – items we will send to WRS at end of each task within the agreed-upon timeline.



At the end of the kickoff meeting, we shall provide the consolidation of the Recap of the kickoff meeting, a list of next steps and due dates, and a list of any remaining questions or concerns.

## **INITIAL INTERVIEWS**

During the initial interviews, stakeholders from both sides will get introduced, discuss the project scope, goals, timelines, deliverables, and other important factors to make sure everyone is on the same page. We planned to conduct several meetings/interviews such as One-on-One Interviews, Group Interviews, Questionnaires/Surveys, User Observation, etc., with stakeholders. It is to understand more about the current IT infrastructure of WRS, processes involved, data sources, business applications, tools, and technologies being used, all range of stakeholders involved from the high-level to the end-users.

We shall analyze these factors to understand the project background and the purpose of the project, what will make this project successful, what needs to be done to do so, and finally prepare a plan to work collaboratively to achieve success. We shall utilize the interview sessions to carry out different tasks including - IT operational reviews, overall technology environment evaluations, technical architecture reviews, IT departmental and organizational analyses, Technology staff skills assessments, Application and data management, General security and operating practices, Documentation and reporting, Change management procedures, Gap analysis and comparisons of needs to best practices, Staff capacity and capability assessments, Internal controls reviews, and Quality assurance. Many of these tasks shall be completed during the next stages of this project.

## **RISK AND STRATEGIC ALIGNMENT**

Risk management is one of the important factors that play a vital role in ensuring that the organization is running in alignment with its business strategy and goals. Our team shall identify the risks to the objectives of WRS and evaluate the impact of those risks to choose an appropriate response. Intellectyx risk management programs are focused on and consistently aligned with strategic priorities and initiatives to provide the most efficient approach to organizational risk management. Strategic priorities often change over time, and if risk management activities do not address these changes and priorities, thereby ensuring that strategic alignment is maintained, associated efforts can become reactive, misaligned, and compliance-focused rather than supportive of strategic decision-making.

- We shall clearly define the risk management goals and objectives to ensure that WRS is strategically aligned by asking questions such as,
- What are WRS's business objectives and strategies? What are the targets? What values does WRS want to build and reinforce?

- What specific possible future events would WRS face? Are they related?
- How sensitive are WRS's strategies and operations to the occurrence of future events?
- How risky are WRS's tangible and intangible assets for creating value? What are the loss drivers affecting those assets?
- Which specific future events could, if they occurred, affect the WRS organization's ability to achieve its objectives relating to quality, innovation, timeliness, safety, compliance, etc., and to execute its strategies successfully?
- How capable are we of responding to events beyond our control that may happen in the future?

Our approach will provide a powerful context for defining and aligning risk management goals along with strategic and operational objectives. We shall create and provide matrices with scores to help guide lifecycle decisions for each database and application. We shall conduct a workshop to collaborate with WRS staff to review the drafts to ensure they include all relevant information.

## TASK 2: PROGRAM INTERVIEW SESSIONS

### REVIEW OF DATABASE AND APPLICATION PORTFOLIO

The databases and applications used by various programs and Units of WRS need to be inventoried to complete the review process. It helps to understand how many items, such as applications and hardware appliances, exist in the current WRS environment, along with their dependencies. Our team of experts shall collaborate with the WRS team to create the inventory. We shall review the initial list of databases and applications that will be provided by WRS before preparing the inventory. The inventory is not only limited to applications but will also contain Dependencies of each app, such as databases, message brokers, configuration storage systems, and other components, Services supporting your application infrastructures, such as source repositories, continuous integration (CI) tools, and artifact repositories, Servers, either virtual or physical, Physical appliances, such as network devices, firewalls, and other dedicated hardware. While preparing the inventory, we shall also gather various other information including Source code location, and if we can be able to modify this source code, Deployment method for the workload in a runtime environment, for example, if you use an automated deployment pipeline or a manual one, Network restrictions or security requirements, Licensing requirements for any software or hardware. Based on the dynamicity of the IT environment, we shall consider using a tool for automating the inventory creation.

The example of the application inventory will be as given below,

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Name	Source code location	Technologies	Deployment procedure	Other requirements	Dependencies	System resources requirements
Enterprise resource planning (ERP)	Proprietary app	Vendor Z, Model C, Version 7.0	Manual	N/A	SQL database	10 CPU cores 32 GB of RAM
Bio-diversity Program App	Proprietary app	Vendor X Model Y Version 1.2.0	Manual	Data must reside inside California	SQL database	10 CPU cores 32 GB of RAM
Stateless microservices	Organization repository	Java	Automated	N/A	Caching service	4 CPU cores 8 GB of RAM

During this process, we shall also create the inventory of all databases being in use by different Units and Programs. The dependencies of the applications with the databases will also be identified in this process.

## DEFINE DATA SOURCES

In this, we shall try to identify and clearly define the data sources where the data originates from. We shall leverage the inventory of existing WRS databases to document what data are being used, created, or maintained within each application to support future efforts. The deliverable of this process will be a list of databases and applications and formal notes for each specific to the data being used and managed.

## TASK 3: DATABASE AND APPLICATION ANALYSIS

The inventory of the databases and applications being used by WRS will be created in prior tasks and the data sources will be defined and documented. In this task, we shall analyze each database and application that are documented in the inventory. We shall analyze various factors to prepare an assessment of data management systems, key audiences, and user needs to be associated with managing and reporting on WRS goals and activities. Below are the factors that will help understand better and assess the current portfolio.

## USER RESEARCH

We shall conduct user experience workshops to focus on the essentials of what, why, and for whom. We will understand the user's pain points and behavior, describe how users use a particular feature of the application. look at how users interact with the app, including the steps users take to accomplish each task. identify user frustrations and problems with the application through one-on-one sessions where a "real-life" user performs

tasks on the WRS application, and conduct user interviews to determine where the apparent or potential pain points are.

## **CODE REMEDIATION OF EXISTING APPLICATION**

We shall try to find the answers for a variety of questions including but limited to – 1. What language(s) is the application written in? 2. Is this a multi-tier application? Describe the tiers. 3. What platform/OS does the application run on currently? 4. Is the existing application managed by your company or a 3rd party? 5. How frequently is the application updated? 6. Are all external system and service dependencies documented? Please provide a system context diagram. 7. What middleware products are the application utilizing? App server, messaging. 8. What are the communication protocols supported/required by the application? 9. Does the current application use non-HTTP(S) ports? 10. Does the application directly use OS native functions? 11. Is the current application distributed over multiple nodes? Please specify what are the distributed application components. 12. Does the application contain batch jobs/scheduled tasks? 13. Does the current application rely on access to files? 14. Is there a set of test cases and test data for application? How many of the test cases are automated? 15. What is the use case for this app? 16. Who is the target audience (persona) of this app? 17. What is the call flow? (some end-to-end scenarios).

## **SECURITY AND COMPLIANCE**

The security and compliance of the existing systems are important to identify the best path forward for meeting current and future information management. We shall evaluate this factor based on - 1. What Identity Management system is used by the existing application? 2. How are Security and Access roles/groups defined and managed currently? 3. How are keys managed by the current App? 4. Is someone else managing security for you? If so, who? 5. How are application code and containers currently being tested for vulnerabilities and threats? 6. Authentication mechanisms used for downstream services (on-prem and external)? 7. What part of the application needs compliance? 8. Is any specific compliance required such as PCI, HIPAA, CJI, etc.

## **PERFORMANCE**

This is to identify the performance of the applications and databases. We shall evaluate this factor based on - 1. Does the application deployment and rollout plan take into account expected changes to capacity and resource measures? - a) What are the phases of the rollout plan? - b) What are the trigger conditions that drive the continued rollout? 2. How are business capacity and resource consumption characteristics being measured, logged, analyzed, and reported (through notification)? - a) During system test? - b) During runtime? 3. What are the testing tools being used for performance (load) testing? 4. How many users are currently (or estimated) registered to the app? 5. What is the maximum number of concurrent active users (or estimated)? 6. What are

the maximum (peak) and the average number of requests/second the application should support? 7. What is the allowed latency per request for the application? 8. What are the range (peak, low) and average data size related to requests? 9. What is the threshold time to scale for the application? 10. What is the threshold refresh rate for the application?

## **INTEGRATION**

This to identify the integration possibilities of the current systems. We shall evaluate this factor based on – 1. What on-prem services/applications do the current application have integrations with? 2. How are these services invoked and what kind of data is exchanged? 3. What external services does the application have integrations with? 4. How are these external services invoked and what kind of data is exchanged?

## **REPORTS AND ANALYTICS**

This to identify the reporting and analytics capabilities of the current systems. We shall evaluate this factor based on – 1. Describe any reports that the current app produces. 2. Describe any dashboards that the current system produces. 3. Are the reports interactive or run automatically on a schedule? 4. Are these reports distributed via email or any other mechanism? Please describe. 5. External reporting/analytics solution integration (Splunk, other)? 6. Clickstream analytics (Tealeaf, other)?

## **RESILIENCY (HA / BACKUP / DR)**

This to identify the resiliency of the current systems. We shall evaluate this factor based on – 1. What is the availability requirement SLOs for the App? - a) Are these requirements for the App or individual services? - b) What are the 3rd part services on which this application is dependent, which are exclusions from the availability requirements? 2. What are the Backup requirements? - a) RPO (Return Point Objective) - b) RTO (Return Time Objective) - c) Residency requirements for backup. 3. What are the DR requirements? - a) Vital - b) Critical - c) Important - d) Discretionary 4. What are the minimum distance requirements for DR? 5. Are there data residency requirements for DR? 6? Where is the app hosted today? 7. What are the failover rules and requirements?

## **INFRASTRUCTURE DELIVERY (NETWORKING)**

This to identify the current infrastructure delivery/networking of WRS. We shall evaluate this factor based on – 1. What are the network capacity/throughput requirements of the current application? 2. What are the IP requirements of the current application? 3. Does the current application need access to specific ports? 4. What is the Distributed Denial of Service (DDoS) requirements for the current solution? 5. What are the internet access

requirements? 6. What are the VPN access requirements? - a) Do you have a preferred VPN provider? - b) Do you require more than one simultaneous VPN access path to their Intranet? 7. Does the solution require the use of a Global Load Balancer? If so which one? 8. What is the latency requirement?

#### TASK 4: DRAFT RECOMMENDATIONS

##### **RECOMMENDATIONS PER DATABASE OR APPLICATION**

After gathering complete information and performing a thorough analysis of the databases and applications being used by various Units and Programs, the Intellectyx project team shall prepare a draft recommendation document based on the analysis and findings. The document shall consist of matrix scores and a brief business description of the database or application such as an executive summary that includes scores, a brief narrative from interviews, and a rationale driving the recommendations for each database/application. We shall establish baseline scoring (priority matrix) criteria for both agency risk and alignment with WRS priorities. Our team of experts shall provide a range of alternatives for system improvements, including costs, and for improving data systems to streamline WRS workflows and better meet user needs. Our recommendations will provide the best path forward for meeting current and future information management and reporting needs for WRS staff and key partners. In this document, we shall also quantify the technical debt and other related information for each application and database.

##### **RECOMMENDATION APPROACH**

Intellectyx team shall provide a formal approach and recommendation for each database and application to make it future-ready. We shall clearly define the level of effort and budgetary estimates required for each recommendation. In our recommendation, we shall provide a range of alternatives shall be provided for improvements, including estimated costs, and other preferred recommendations. We shall deliver the recommendations in the draft and final stages. We shall seek input on the recommendations during the draft stage from the WRS. During this phase, we shall conduct several meetings to draft the recommendations based on the WRS technical and business requirements. In the final draft recommendations, as desired by WRS we shall segregate the recommendations into major categories to help WRS in prioritizing decision-making. The major categories as desired by WRS are as follows –

Discontinue – After thorough analysis and understanding of the current infrastructure including applications and databases, we shall identify and document the databases and applications that can be eliminated by the WRS team to improve the overall efficiency along with an alternate solution.

Migrate – In this section, our team shall clearly define the applications and databases that need to be migrated or integrated into another system to improve overall efficiency.

Continue – This section contains the existing applications and databases that are good to be continued and do not have any issues nor affect the efficiency.

The completed draft recommendation shall be sent to WRS to review and provide feedback. Based on the feedback, we shall modify the draft. The modified draft document shall be sent to WRS seeking approval.

## TASK 5: FINAL RECOMMENDATIONS AND PRESENTATION

Once the draft document is approved by WRS, we shall finalize the recommendation document and deliver it to WRS. We shall conduct a meeting to present the final recommendations including all the findings and analysis results gathered as part of the project. We shall clearly explain the outcomes of our assessment and shall cooperate with WRS to review the deliverables with relevant stakeholders that were not part of the assessment project team and inform them about the results and findings of the assessment. The following are the objectives that shall be collectively achieved at the end of the project –

- The inventory of databases, processes, and applications currently utilized by staff across various Units and Programs.
- A clear understanding of the current portfolio of applications, databases, and processes along with appropriate documentation.
- A defined action for each database and application based on risk and strategic alignment to the organization.
- Identified and quantified technical debt and other related information for each application and database.
- Established priority matrix criteria for both agency risk and alignment with WRS priorities, and
- Recommended and documented alternatives for system improvements, including costs, and a preferred recommendation for improving data systems to streamline workflows and better meet user needs.

## SCHEDULE

Sub-Tasks	Deliverables	Timeline
<b>TASK 1- INITIAL INTERVIEWS AND PROJECT KICK-OFF</b>		
SOW Submission & Signoff	Project Kickoff, Project Plan, Finalized Timeline, Defined Deliverables documentation, Initial assessment documentation, and presentation materials	Month 1 (Week 1)
Project Kickoff Meeting		
Understanding WRS IT Landscape (Review of IT Tools & technologies, WRS Data policies, Infrastructure, Hosting & Accessibility)		
Stakeholder Interviews – Information gathering, user need requirements gathering		
Understanding WRS Units & Programs		
Review the initial list of databases and applications		
Review all data elements captured and identify additional data elements		
Analysis of risks and strategic alignment		
Documentation of work		
Documentation review & Signoff		
<b>TASK 2: PROGRAM INTERVIEW SESSIONS</b>		
Follow-up interview sessions	Finalized Inventory of Databases and Applications, review and understanding of applications, databases, and processes used in each program & unit, defined data sources documentation, established baseline scoring (priority matrix) criteria	Month 1 (Weeks 2, 3, & 4)
Interview with Game Management Unit and analysis of applications, databases, and processes		
Interview with Game Research Program and review of applications, databases, and processes		



Interview with Fish Management Unit and review of applications, databases, and processes		
Interview with Fish Hatchery Program and review of applications, databases, and processes		
Interview with Wildlife Diversity Unit and review of applications, databases, and processes		
Interview with Natural Heritage Program and review of applications, databases, and processes		
Interview with Environmental Coordination Program and review of applications, databases, and processes		
Interview with GIS and Technical Support Program and review of applications, databases, and processes		
Review of existing workflows		
Defining Data Sources for each program and unit		
Documentation of the review of applications, databases, and processes of each program and units		
Establish baseline scoring criteria/ priority matrix in alignment with the WRS team		
Documentation review & Signoff		

<b>TASK 3: DATABASE AND APPLICATION ANALYSIS</b>		
Analysis of applications, databases, and processes of Game Management Unit	Analysis documentation of applications, databases, and processes of each program and unit, review of risk and strategic alignment	Month 2 (All weeks) & Month 3 (Weeks 1, 2, & 3)
Analysis of applications, databases, and processes of Game Research Program		
Analysis of applications, databases, and processes of Fish Management Unit		
Analysis of applications, databases, and processes of Fish Hatchery Program		
Analysis of applications, databases, and processes of Wildlife Diversity Unit		
Analysis of applications, databases, and processes of Natural Heritage Program		
Analysis of applications, databases, and processes of Environmental Coordination Program		
Analysis of applications, databases, and processes of GIS and Technical Support Program		
Analysis of risk and strategic alignment		
Documentation of each process		
Documentation review & Signoff		
<b>TASK 4: DRAFT RECOMMENDATIONS</b>		
Preparation of recommendations per database or application	Draft recommendations documentation including -	Month 3 (Week 4) &

Matrix scores and a brief business description of the databases and applications	Recommendations per database or application, and Recommendation Approach	Month 4 (Weeks 1, 2, and 3)
Drafting Documentation of approach and recommendation for current and future state		
Preparing and Documenting recommended effort and budgetary estimates for each recommendation		
Preparing and Documenting recommended alternatives for improvements, including estimated costs		
Review of draft recommendation with WRS		
Modifications to draft documentation		
Finalized Draft Recommendation Documentation Review & Signoff		
<b>TASK 5: FINAL RECOMMENDATIONS AND PRESENTATION</b>		
Final Recommendation Documentation	Final Recommendation Documentation, Presentation materials, and all other project-related documentation	Month 4 (Week 4)
Presentation Meeting		
Knowledge Sharing		
Educating WRS stakeholders of the results and findings		
Q & A sessions		
Post-Project Review a questionnaire, Post Project Review Report		

## PROJECT MEETINGS/COMMUNICATION

### COMMUNICATION

Communication is a critical element of any service delivery or transition. Intellectyx shall provide dedicated technical and customer account management to ensure business alignment at all-time throughout various tasks of this initiative. Intellectyx team will be communicating to the client daily to update the status of the project as needed and via weekly updates on the overall status to the leadership. Our project manager shall meet a minimum of six (6) times with a designated WRS project manager as desired by WRS. In those meetings, the Intellectyx project manager shall update the WRS project manager of efforts to date, proposed the next actions, and description of any hurdles in the execution of work. The project manager will provide a detailed report on the tasks performed in the current week and the tasks that are scheduled to be performed in the coming week. We also planned to conduct several meetings, (planned and ad hoc meetings) with the WRS project manager or WRS staff when needed. Meetings shall be conducted remotely via real-time web meeting platforms such as Teams, Webex, etc., that is preferred by the WRS team. If required, the Intellectyx project team shall visit on-site (WRS location) for face-to-face meetings adhering to covid-19 precautionary guidelines.

Moreover, Account management is a professional function at Intellectyx and will provide:

- A central point of communication for the overall Wildlife Resources Section (WRS) team.
- Scheduled management and status reviews to track adherence to program objectives.
- Change order management as needed.
- Coordinate with the WRS team for roadmap, plans, identifying interdependencies with all key stakeholders.
- An “always available” point of escalation for business and technical issues.

# BUDGET

**REQUEST FOR QUOTATION**  
**West Virginia Division of Natural Resources**  
**WVDNR Data Systems Assessment**  
**Exhibit A - Pricing Page**

<b>Item No.</b>	<b>DESCRIPTION</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Amount</b>
4.1	WVDNR-Data Systems Assesment	Job	1	\$ 48,640
<b>TOTAL:</b>				<b>\$ 48,640</b>

Company Name: Intellectyx, Inc.



\_\_\_\_\_  
Authorized Signature

April 20, 2021

\_\_\_\_\_  
Date

## CONCLUSION

Intellectyx is highly enthusiastic about the opportunity to work with the West Virginia Division of Natural Resources on the “**ARFQ Wildlife-Data Systems Assessment**”. We feel below are some of our differentiators but not limited to -

**Extensive Experience** – We are an established IT service firm with more than a decade of technology expertise and experience in project management, web, and mobile development at an advanced level, database development, and management at an advanced level.

**IT Strategy Consulting** – Intellectyx has more than a decade of experience in providing IT Strategy Consulting services to various Private, Government, and Non-governmental organizations. Given our expertise in both business and technology, our IT strategy consultants can facilitate the development of an integrated IT strategy for the organization. We are experts in devising strategies for cutting costs, increasing revenue, and making key decisions.

**Award-winning Company** - We are awarded at the national level and presented with the 2019 COSB National Champion award for our commitment towards the services. <https://cosbvi.org/cosb-news/2019-cosb-awards/>

**Local Presence in the U.S.** – We plan to spend a lot of time on-site, conducting face-face meetings with each disparate stakeholder, to win their confidence and trust, while aligning with the roadmap and delivering the goals.

**Focus on all three: People, Process, Technology** - We see business outcomes are not met with just Technology, or by an out-of-the-box product, but we see all these three elements play a critical role – People, Process, and Technology. All our implementation considers building an application as simple and robust that aligns with the department’s goal using digital and data technologies.

**Data Science, Digital and Intelligence Expertise** - Intellectyx can leverage its combined three different practice and support various initiatives around data integration, data warehouse, master data management, data visualization, reporting, narration, machine learning, conversational support, AI, etc.,

We look forward to working with the West Virginia Division of Natural Resources and welcome any questions regarding this proposal.



## FORMS & ATTACHMENTS

### DESIGNATED CONTACT

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Raj Joseph, President/CEO

(Name, Title)

Raj Joseph, President/CEO

(Printed Name and Title)

1705 Mission Street, South Pasadena, CA 91030

(Address)

720.256.7540 NA

(Phone Number) / (Fax Number)

raj@intellectyx.com

(email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Intellectyx, Inc.

(Company)



Raj Joseph, President/CEO

(Authorized Signature) (Representative Name, Title)

Raj Joseph, President/CEO

(Printed Name and Title of Authorized Representative)

April 20, 2021

(Date)

720.256.7540 NA

(Phone Number) (Fax Number)

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## ADDENDA ACKNOWLEDGEMENT

### ADDENDUM ACKNOWLEDGEMENT FORM SOLICITATION NO.: ARFQ DNR21\*42

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification. Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

*(Check the box next to each addendum received)*

- |                                     |                |                          |                 |
|-------------------------------------|----------------|--------------------------|-----------------|
| <input type="checkbox"/>            | Addendum No. 1 | <input type="checkbox"/> | Addendum No. 6  |
| <input checked="" type="checkbox"/> | Addendum No. 2 | <input type="checkbox"/> | Addendum No. 7  |
| <input type="checkbox"/>            | Addendum No. 3 | <input type="checkbox"/> | Addendum No. 8  |
| <input type="checkbox"/>            | Addendum No. 4 | <input type="checkbox"/> | Addendum No. 9  |
| <input type="checkbox"/>            | Addendum No. 5 | <input type="checkbox"/> | Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Intellectyx, Inc.

Company



Authorized Signature

April 20, 2021

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

GOOD STANDING CERTIFICATE

OFFICE OF THE SECRETARY OF STATE  
OF THE STATE OF COLORADO

**CERTIFICATE OF FACT OF GOOD STANDING**

I, Jena Griswold, as the Secretary of State of the State of Colorado, hereby certify that, according to the records of this office,

INTELLECTYX INC.

is a

Corporation

formed or registered on 06/05/2010 under the law of Colorado, has complied with all applicable requirements of this office, and is in good standing with this office. This entity has been assigned entity identification number 20101321120 .

This certificate reflects facts established or disclosed by documents delivered to this office on paper through 03/04/2020 that have been posted, and by documents delivered to this office electronically through 03/05/2020 @ 09:57:46 .

I have affixed hereto the Great Seal of the State of Colorado and duly generated, executed, and issued this official certificate at Denver, Colorado on 03/05/2020 @ 09:57:46 in accordance with applicable law. This certificate is assigned Confirmation Number 12130000 .



*Jena Griswold*

Secretary of State of the State of Colorado

\*\*\*\*\*End of Certificate\*\*\*\*\*  
*Notice: A certificate issued electronically from the Colorado Secretary of State's Web site is fully and immediately valid and effective. However, as an option, the issuance and validity of a certificate obtained electronically may be established by visiting the Validate a Certificate page of the Secretary of State's Web site, <http://www.sos.state.co.us/biz/CertificateSearchCriteria.do> entering the certificate's confirmation number displayed on the certificate, and following the instructions displayed. Confirming the issuance of a certificate is merely optional and is not necessary to the valid and effective issuance of a certificate. For more information, visit our Web site, <http://www.sos.state.co.us/> click "Businesses, trademarks, trade names" and select "Frequently Asked Questions."*