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Environmental
& Statistical
Consultants

PROPOSAL FOR:

**WILDLIFE DATA
SYSTEMS
ASSESSMENT
ARFQ DNR 21_42
COST**

APRIL 1, 2021

Submitted to:
Jamie Adkins
Property and Procurement Office
West Virginia Division of Natural Resources
324 4th Avenue
South Charleston, WV 25303



ENVIRONMENTAL & STATISTICAL CONSULTANTS

415 West 17th Street, Suite 200, Cheyenne, Wyoming 82001
Phone: 307-634-1756 ♦ www.west-inc.com ♦ Fax: 307-637-6981

April 1, 2021

Jamie Adkins
Property and Procurement Office
West Virginia Division of Natural Resources
324 4th Avenue
South Charleston, WV 25303

Dear Mr. Adkins,

Western EcoSystems Technology, Inc. (WEST) is pleased to submit the enclosed proposal in response to the Request for Proposals (RFP) from the State of West Virginia Division of Natural Resources to complete a Wildlife-Data Systems Assessment (WV ARFQ DNR 21_42) on behalf of the Wildlife Resources Section (WRS). The inventory and assessment of databases, processes and applications utilized by WRS staff including in 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.

WEST has direct experience providing database services for natural resources management. Recent examples include recommendations for a monitoring data solution for APLIC, the Avian Power Line Interaction Committee and a data solution for the Spokane Tribe of Indians and their limnology monitoring program. The recommendations for both solutions included detailed budgeting and project planning for the data collection and storage phase and a data application development phase. Our assembled team of WEST staff meets and far exceeds the minimum qualifications outlined in the RFP.

Thank you for the opportunity to provide this proposal. Please do not hesitate to contact me with any questions or for further details. I can be reached by phone at 307-721-3171 and by email at showlin@west-inc.com.

Best regards,

Shay Howlin
Project Manager/Senior Data Scientist/Board President

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INTRODUCTION

The State of West Virginia Division of Natural Resources has issued a Request for Proposals (RFP) to complete a Wildlife-Data Systems Assessment (WV ARFQ DNR 21_42) on behalf of the Wildlife Resources Section (WRS). The inventory and assessment of databases, processes and applications utilized by WRS staff includes 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. In response, Western EcoSystems Technology, Inc. (WEST) is pleased to provide the following proposal.

WEST provides environmental and data science consulting services and contract research nationally and internationally to industry, government, and private organizations. We offer our clients a full range of services in natural resources, natural resources management, facilitation, statistics and data management. We have a unique ability to work in the natural resources-management interface, with all the skills necessary to help translate monitoring and research into highly functional databases and applications that provide the data needed to access information to make natural resource management decisions. We also have a strong administrative program, with in-house information technology specialists, data specialists, applications developers and natural resource experts to implement the contract on time and within budget, and in a manner that will be beneficial to the stated objectives of the RFP.

Assumptions

1. WRS will provide WEST with an initial list of databases and applications for all 8 units/programs prior to the kick-off workshop.
2. Up to 130 databases and/or applications will be reviewed under this scope using the rubric of the RSA matrix developed in Task 1.3 and reviewed in the deliverables for Task 4.1 and 5.1.
3. For each of the 130 individual databases and/or applications, we will not recommend data structure or architecture changes (e.g. changing the format or adding constraints to certain fields).
4. Materials requested but not received by WRS units/programs after an agreed upon date will not be considered in the final analysis recommendations.
5. WRS will provide comments on draft recommendations from Task 4.2 within 21 calendar days of receipt from WEST.
6. Final recommendations will be presented to the audience via one webinar that may also be recorded for future use by WRS.
7. All budget estimations provided as a part of this contract's deliverables will be based on the WEST rate sheet and represent approximations.
8. WEST will consult with WRS to identify up to three recommendations to provide detailed budget estimates.

ATTACHMENT A. WVDNR Data Systems Assessment - Pricing Page

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

Item No.	DESCRIPTION	Unit of Measure	Quantity	Amount
4.1.1	Task 1: Project Kick Off Meeting and Initial Interviews	Job	1	\$ 17,360
4.1.2	Task 2: Program Interview Sessions	Job	1	\$ 30,005
4.1.3	Task 3: Database and Application Analysis	Job	1	\$ 30,415
4.1.4	Task 4: Draft Recommendations	Job	1	\$ 44,700
4.1.5	Task 5: Final Recommendations and Presentation	Job	1	\$ 12,415
TOTAL:				\$ 134,895

Western EcoSystems Technology, Inc. (WEST)

Vendor



Authorized Signature

1 April, 2021

Date



Environmental
& Statistical
Consultants

PROPOSAL FOR:

**WILDLIFE DATA
SYSTEMS
ASSESSMENT
ARFQ DNR 21_42
TECHNICAL**

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WEST has direct experience providing database services for natural resources management. Recent examples include recommendations for a monitoring data solution for APLIC, the Avian Power Line Interaction Committee and a data solution for the Spokane Tribe of Indians and their limnology monitoring program. The recommendations for both solutions included detailed budgeting and project planning for the data collection and storage phase and a data application development phase. Our assembled team of WEST staff meets and far exceeds the minimum qualifications outlined in the RFP.

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Best regards,

Shay Howlin
Project Manager/Senior Data Scientist/Board President

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INTRODUCTION

The State of West Virginia Division of Natural Resources has issued a Request for Proposals (RFP) to complete a Wildlife-Data Systems Assessment (WV ARFQ DNR 21_42) on behalf of the Wildlife Resources Section (WRS). The inventory and assessment of databases, processes and applications utilized by WRS staff includes 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. In response, Western EcoSystems Technology, Inc. (WEST) is pleased to provide the following proposal.

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QUALIFICATIONS AND EXPERIENCE

WEST is committed to providing the highest level of professional consulting services, resulting in original solutions to a wide range of natural resource problems.

WEST specializes in a common sense, defensible, and professional approach to the solution of natural resource problems facing both industry and government. We offer clients a unique combination of experience and expertise in field ecology and environmental analysis. WEST uses state-of-the-art statistical principles in the design, conduct, and analysis of ecological field studies. We maintain a permanent core of ecologists, botanists, wetlands professionals, and data scientists who have extensive experience in basic and applied ecological studies and the sophisticated analysis of natural resource data.

WEST provides consulting services to government, industry, and non-government organizations. Our experts have a thorough understanding of regulatory procedures and expectations. That knowledge, in conjunction with strong relationships with local, state, and federal agencies, makes achieving and maintaining compliance easier.

The fields of information technology, scientific computing, and quantitative data science move quickly. Many natural resource scientists receive some general training in these areas as part of college coursework, but often feel out-of-touch with the latest and greatest tools. WEST scientists are well-versed in foundational data science concepts and actively participate in developing and applying new methods. More importantly, our database and applications developers work and

consult with wildlife biologists and managers on a daily basis, so we understand how to help practitioners get up to speed quickly on the methods and models that they need to know, with just the right amount of technical detail.

WEST has been collecting, storing and reporting on ecological field research related data for over 25 years. We maintain 10 proprietary databases and associated data entry and reporting applications which all adhere to strict data security requirements as set out in ISO 27001/02. Our data solutions have housed ecological field data, analysis output and encompass all five of the standard data types. WEST understands the intricacies and non-conforming issues associated with “messy” field ecology data.

In 2007, following a business case assessment of data storage functionality and security concerns, WEST underwent a significant transition to the more secure and reliable MSSQL platform to house these proprietary databases. WEST staff are adept at designing, implementing, and maintaining these databases in MSSQL and PostgreSQL. The transition to this format also included a significant data migration project. Whether we are designing systems for internal use, or for our clients, the lessons learned from that transition have guided the way we design our entire portfolio of complex Data Solutions.

WEST works predominantly with MSSQL databases for spreadsheet-type data and PostGreSQL for spatial data and we have advanced knowledge of the MSOffice products including MSAccess and MExcel. Our programming staff have created custom web applications, desktop applications, and R Shiny applications for internal and external use. We specialize in enabling our clients to ‘see’ their data by providing state-of-the-art data visualization and reporting tools. All of our applications and data storage solutions utilize defined valid values so that the associated data entry constraints can be enabled, ensuring the highest quality data.

WEST project managers have been refining the craft of project management for over 30 years using lessons learned and feedback from clients to ensure we are providing reliable and timely client services and high quality deliverables. We pride ourselves on bringing data driven natural resource solutions to our clients. We listen to the needs of our clients and while understanding the inherent complexity of real world ecological data provide smooth data entry, storage and reporting solutions.

Our GIS team provides a depth of understanding of spatial data storage and accessibility expertise. If needed, we can bring in these professionals to assist WRS with spatial data solutions. Our internal data storage solutions have recently transitioned to state-of-the-art spatially enabled geodatabases and data collection tools such as ArcGIS Collector.

Project Team Experience and Qualifications

WEST is providing WRS a team of experts with extensive demonstrated experience that will be essential in meeting the stated needs of the RFP. Please see Table 1. Experience and Qualification of Key Personnel below, as well as Attachment A, Resumes of Key Personnel, and the Qualifications section for an overview of firm experience.

Table 1. Experience and Qualification of Key Personnel

Qualification	WEST Team Total Years	Team Individual Years of Experience	Narrative
Established IT and Consulting	45 yrs	Bryan Sholten- 24 yrs Warren Meyer - 21 yrs	IT professionals have managed internal systems since inception of the company; client data for 15 yrs; external projects for 8 yrs.
Data Systems Assessment	72 yrs	Warren Meyer - 21 yrs Shay Howlin - 10 yrs Fawn Hornsby- 5 yrs Sara Decker - 5 yrs	Designed and implemented relational database systems for field data for natural resource field studies. Assessed the original WEST data system and transitioned to a more robust, reliable, scalable and secure system. Continual assessment of internal data systems.
Project Management	44 yrs	Shay Howlin - 12 yrs Brian Sholten – 24 yrs Fawn Hornsby- 8 yrs	Proven project management professionals who put an emphasis on quality client services and deliverables.
Technology Expertise	97 yrs	Bryan Sholten - 24 yrs Warren Meyer - 21 yrs Shay Howlin - 20 yrs Arjun Dongre – 15 yrs Fawn Hornsby - 10 yrs Sara Decker - 7 yrs	Advanced knowledge of dealing with natural resource data and IT needs from tablets, drone imagery, machine learning algorithms, statistical modeling, geodatabases, real-time data solutions, data visualization, relational databases and applications.
Advanced web and mobile development	14 yrs	Warren Meyer - 8 yrs Sara Decker - 6 yrs	Developed and maintained various web applications for natural resource field studies in .NET, asp.net, MVC, HTML5, and JavaScript.
Advanced database development	21 yrs	Warren Meyer - 15 yrs Sara Decker - 6 yrs	Designed and maintained 7 internal MSSQL databases and 3 PostgreSQL databases for wildlife field studies.
Natural Resources Management Data and Biological Data and processes	59 yrs	Shay Howlin - 21 yrs Arjun Dongre – 15 yrs Fawn - 12 yrs Sara Decker - 7 yrs Warren Meyer - 4 yrs	Designed field protocols, datasheets, data entry solutions, automated QAQC, analysis and reporting processes. MSSQL databases for standard field survey types, reference tables, and project management processes.

Project Team

The WEST team includes the following key personnel:

Shay Howlin, Project Manager/Senior Data Scientist/Board President: Shay Howlin is a consulting data scientist based in WEST's Laramie, Wyoming office, where she has been involved primarily in statistical analyses, data science and quality management. Shay has managed both data science and statistical projects applying numerous statistical techniques to ecology. She has experience in managing projects and reviewing analyses where complex analytical approaches are utilized. Shay's clients have included the U.S. Geological Survey, U.S. Fish and Wildlife Service, U.S. Forest Service, National Park Service, Wyoming Department of Environmental Quality, and Western Association of Fish and Wildlife Agencies. Her experience in the implementation of survey techniques, recommending data storage solutions, leading the development of data entry and reporting applications and developing analyses qualify her to assist in the design, conduct, and analysis of wildlife field studies.

Through her career in consulting at WEST, Shay has witnessed the project management life cycle from protocol development, field resources support, data collection, data entry, quality assurance/quality control, analysis, report writing, and client communication. This experience helps her lead the Quality Program within WEST to continually improve client services and deliverables. Through the Quality Program, Shay works to advance WEST's core values regarding high quality services and products and working as a team to develop innovative solutions.

Shay holds a Bachelor of Science in Wildlife and Fisheries Science from The Pennsylvania State University and a Master of Science in Statistics from Oregon State University, where her research focused on utilizing ordination analyses to establish an index of biological integrity for cold water streams in Oregon and Washington.

Fawn Hornsby, Deputy Project Manager/Data Infrastructure Lead/Data Scientist: Fawn joined WEST in February of 2009 as a research biometrician. Fawn holds a Bachelor of Science degree in Statistics and Applied Mathematics with a minor in biological sciences from North Carolina State University as well as a Master of Science degree in Statistics from the University of Wyoming. Since joining WEST, Fawn has performed a wide-range of statistical analyses. This work has included kernel smoothing of benthic variables, completing resource selection modeling for walrus, study design and analysis for creel surveys, spatial capture-recapture models for dolphins, and occupancy estimation for Lesser Prairie Chickens. Fawn is adept in R programming and has recommended data solutions for Limnology Monitoring for the Spokane Tribe of Indians and contributed an R packages to the public domain. Fawn has also taught numerous workshops across the U.S.

Bryan Sholten, Enterprise Technology Director: Bryan is WEST's Enterprise Technology Director. Bryan has 24 years of technology leadership experience starting as the Science Information Systems Manager for Antarctic Support Associates working with researchers for the US Antarctic Program. Most recently, Bryan worked as the Vice President of Information Technology for the Southern Ute Indian Tribe in Durango, Colorado. Bryan has experience

supporting technology for Long Term Ecological Research (LTER) programs in the Antarctic, Natural Resource Programs for the State of Montana and technology infrastructure for the Microsoft Corporation.

Bryan obtained an MBA in Information Systems from the University of Colorado and a BBA in Information Systems from Idaho State University. Bryan maintains professional certifications as a Project Management Professional (PMP) and ITIL Foundation for technology governance. He is a lifelong learner and is eager to acquire new skills and provide leadership supporting the full spectrum of technology for WEST employees and customers.

Warren Meyer, Senior Software Developer: Warren Meyer is a Senior Software Developer with over 20 years of experience architecting, developing, and maintaining .NET software applications and M.S. SQL Server databases. Warren has developed applications that used M.S. SQL Server, PostgreSQL, MySQL, and Oracle databases. He has experience with C#, .NET/Core, T-SQL, HTML, CSS, JavaScript, and jQuery.

Warren also has experience as a full stack developer on a top 100 e-commerce website. Additionally he architected, developed and implemented a Windows client application (SQL Server data storage) to manage the workflow from start to finish of eventually over a million digital assets through multiple departments totaling 40-50 employees, saving countless hours. The application also tracked each asset as it progressed through multiple stages of modification and then organized and stored them when for easy searching and retrieval when the modifications were complete.

Sara Decker, Database Developer: Ms. Decker is a database and application developer with experience designing and maintaining relational databases and application code. She has professional experience addressing data management and reporting requirements by developing ETL solutions, user interfaces, and source code for custom desktop and web application software using C#, R, SQL, VBA, JavaScript, ASP.NET, Python, and more. She also contributes to R packages for WEST, and provides technical support to end-users as well as architectural design guidance to the R development teams.

Her previous experience includes transforming GPS data for ungulate species to fit an enterprise GIS schema; this included design of relational databases using MS SQL server, development of complex SQL queries and generation and maintenance of statistically analyzed spatial data with R and ArcGIS.

Arjun Dongre, Software Developer: Arjun Dongre is a Software Developer with over 15 years of experience in geospatial data analysis and has over 6 years of experience in software development. Arjun is skilled at distilling complicated data to inform strategic decisions, and understanding client needs to deliver appropriate complexity of software deliverables, utilizing cost-effective methodologies.

Please see Attachment A for the resumes of key personnel.

Representative Project Experience

Data Solutions

WEST has developed data solutions for field ecology studies to assist our clients with data processing from data collection to the reporting stage. Recommendations for a monitoring data solution for APLIC, the Avian Power Line Interaction Committee included a field protocol, database schema, cloud storage options, an application programming interface and a web-based data entry application. Detailed budgets and work plans designed to meet client needs were also provided with the recommendations.

The data solution for the Spokane Tribe of Indians' limnology monitoring program started with the development of study and analysis protocols and progressed to recommendations for a centralized database and user interface to house and export monitoring data. This work included proposed workflows, migration of historical data and security layer recommendations. All of our data solutions focus on the most efficient, reliable and user friendly applications while acknowledging the limitations of initial and maintenance.

WEST Renew series of databases

WEST has developed a series of databases to house wildlife analysis output associated with pre- and post-construction surveys. This compilation of information from over 600 post-construction reports led to the release of our first annual comprehensive summary of fatality rates and species composition of fatalities.

National Oceanic and Atmospheric Administration Deepwater Horizon

WEST provided data management and analytical support for several technical working groups of the Natural Resource Damage Assessment for the Deepwater Horizon Oil Spill. WEST worked with the marine mammal, sea turtle, nearshore, and oyster technical working groups. Analyses performed included survival analysis, population estimation, metric calculations, linear statistical models, habitat modelling, and geostatistical kriging. WEST also utilized Microsoft SQL databases to perform quality assurance/quality control work, and recommend data collection to data process options including review of changes through several interested parties.

National Park Service IDIQ

WEST maintains a permanent core of biometricians who collaborate with ecologists, botanists, wildlife biologists, and wetlands professionals. This extensive experience offers NPS a large statistical team with a wide range of expertise and a proven record of effective ecological applications. WEST biometricians have worked with several Inventory and Monitoring (I&M) Networks of the National Park Service (NPS) over the past 20 years and are familiar with the goals and challenges of the I&M Program. These collaborations have resulted in many interesting statistical research projects and resulting analysis products that have contributed to the success of the I&M Program. Building on previous services provided, WEST was awarded an IDIQ in 2018. Through this IDIQ, WEST's statistical experts provide professional consulting on an hourly basis, including

- review of NPS reports and monitoring program protocols (i.e., narrative and standard operating procedures);
- design and analyses of Generalized Random Tessellation Stratified (GRTS) surveys;

- project-specific tasks such as status and trend estimation, survey design, and advanced statistical writing for manuscripts of NPS reports and publications in peer-reviewed journals;
- training workshops in statistical analysis and R programming;
- and task development with the Contract Office Representative (COR) and NPS Regional Coordinators.

SCOPE OF WORK

Task 1: Project Kick-off and Initial Interviews

The identification of the project team and their roles, an initial understanding of the breadth of WRA databases and applications, an understanding of WRA risks and strategic priorities and the development of a comprehensive Risk and Strategic Alignment Assessment (RSA) matrix are the focus of Task 1.

1.1 Project Kick-off Workshop

We propose to start the project with an introductory meeting to a focus on outlining roles and responsibilities of the project team. Expectations and timelines will be discussed with all involved WRS staff. The kick-off workshop will also include a detailed discussion and refinement of the RSA matrix (described in task 1.3 below) based on a draft matrix provided before the meeting. Initial WRS staff interviews (described in task 1.2 below) will begin immediately after the kick-off workshop. Additional discussion topics include communication preferences and protocols for requesting and transferring information from WRS staff. It is our experience that taking the time to get the project team aligned with common goals at the outset can ensure the deliverables meet the expectations of WRS.

All eight of WRS Units/Programs will be invited to the kick-off workshop, including the Game Management Unit, Game Research Program, Fish Management Unit, Fish Hatchery Program, Wildlife Diversity Unit, Natural Heritage Program, Environmental Coordination Program, and the GIS and Technical Support Program. WEST will schedule and ensure all participants are invited to the appropriate meetings for the project. We are capable of hosting a real-time video meeting in the Zoom format for all meetings.

1.2. Initial Interviews

Initial interviews will be conducted by WEST for each WRS unit/program. During this interview we will aim to establish relationships, identify contacts for additional information exchange, identify key stakeholders within the unit/program, request information pertaining to all databases and applications, provide technical information for a secure data transfer protocol, and determine if there are any additional data needs of the unit/program.

1.3. Risk and Strategic Alignment Matrix Development

We propose to develop a Risk and Strategic Alignment Assessment (RSA) matrix to evaluate WRS databases and applications. The matrix will focus on risk to WRS and alignment with WRS strategies, but will also include the WRS unit/program, format/platform, main purpose, types of users, and downstream uses of the output or information. Prior to initial evaluations, we will designate categories, or valid values, for each field in the RSA matrix (e.g., risk labeled as low, medium and high), though we expect categories may be added or refined during the assessment. Additional fields, such as consolidation potential, will be added to the matrix as part of Tasks 3 and 4.

The draft matrix will be provided in preparation for the kick-off workshop. Additionally, we propose a short pre-meeting with the designated WRS project manager to ensure we have a basic understanding of WRS' view of the risks facing the agency and the strategic direction identified for the agency, if this information was not provided via written documents before the workshop.

A draft of the RSA matrix will be reviewed during the kick-off workshop with input and feedback by the WRS staff discussed and potentially incorporated at that time. Composite scoring procedures, potentially including weighting criteria, that will contribute to output from the matrix exercise will be discussed and reviewed. The development of a usable and relevant Risk and Strategic Alignment Assessment (RSA) Matrix will be crucial to ensure success of this project and establish a project team that is in alignment as the project progresses.

Task 2: Program Interview Sessions

2.1 Program Interviews

WEST proposes to host follow-up interview sessions with each of the eight participating units/programs focusing on their applications, databases, and processes. More than one follow-up interview session may be needed for units/programs with a significant number of databases and/or applications. These interviews will be crucial to understanding the types of information that can not be gathered from data dictionaries including redundant tasks, pinch points in workflows, duplicated data entry and data that is not useful in downstream processes or exports. The interviews will engage internal users of applications in an effort to gain accurate portrayals of the user experience. Examples of datasheets, databases, data dictionaries, applications, user guides, and reports will be gathered during this phase, as allowable under the contract.

2.2 Initial Assessment: Review of Database and Application Portfolios

Each database and application will be reviewed. WEST will ensure we have an accurate understanding of the purpose of each database and application of each unit/program. During this phase, WEST will evaluate the set of WRS databases and applications across the eight units/programs. This comprehensive evaluation will determine if there are data storage redundancies, the possibility of duplicate workflows/processes, or even contradictory workflows or processes within or across the eight units/programs. Data storage instances or workflows that

result in orphaned data, i.e., data that is not useful or usable in the current format, will also be identified.

2.3 Define Data Sources

We envision developing a comprehensive workbook including a linked table of contents and associated information for all databases and applications in use by the unit/program (workflows may be listed as well if appropriate). This deliverable would be provided as a linked excel workbook or in another analogous format. Each database or application will be listed in a Table of Contents with basic information described for the RSA matrix above (name, users, etc.). Subsequent sheets will be linked to each item in the Table of Contents and will include information relevant to that database or application. For databases, we will include a formal or informal data dictionary if available, descriptions of data collection and/or entry processes, storage format and downstream uses of data components. For applications, this information will include the format, associated database, dependent applications if any, and users/user permissions. We expect not all information may be available for each database/application. This comprehensive workbook will provide a way to organize and define each data source and provide a quick overview of the utility of each.

Task 3: Database and Application Analysis

We propose to use the RSA matrix developed in Task 1 and the information amassed in the comprehensive data sources workbooks in Task 2 to develop a summary for each database and application (described in Task 4.1) and recommendations (described in Task 4.2).

Task 4: Draft Recommendations

4.1 Executive Summary of Database and Application Analysis

We will provide a comprehensive description of each database and application reviewed under Task 3. The summary report will contain a brief business description of the database or application and the score received when evaluated with the RSA Matrix. For any feature of the database or application that is driving the score into an unusually high or low range, we will include the rationale for the score within the summary descriptions.

4.2 Recommendation Approach

WEST proposes to provide WRS with a formal recommendation on future approach for each database and application. The recommendations will focus on overall risk to WRA, alignment to strategic goals and objectives, and privacy concerns as appropriate. Overall recommendations will identify areas for consolidation given the overall goal of streamlining functioning across the eight WRS units/programs as well as within each unit/program. These recommendations will consider the entirety of the data solution with respect to newer technologies such as cloud solutions to housing data, custom web applications, and updated user interfaces. Capacity for change by the users and managers will be assessed during the interview process. Any data analysis or other “downstream” process will also be considered in these recommendations.

Discussions with IT personnel may be needed to assess WRS storage capacity, network issues, off-site connectivity capability, and maintenance costs or issues.

We propose to provide recommendations that are compartmentalized to enable WRS to take incremental steps in achieving succinct, reliable and secure data storage and user interface solutions, while providing clear budgetary guidance for each compartmentalized recommendation. Each database and application will be classified into three categories for future status: discontinue, migrate, or continue; though it is expected some modules may have different short term and long term classifications. For example, it may be advisable to continue with a given data solution until other aspects of the data infrastructure are consolidated.

Discontinued databases, applications or processes are those for which we recommend WRS does not provide continued support to maintain. Examples may include databases or applications that are redundant with newer solutions already in use, or those that cost more to maintain than the estimated benefit to WRS and strategic goals of the agency. All modules for which we recommend be discontinued will be accompanied by the rationale category (e.g. redundancy).

Databases, applications or processes that we recommend WRS **migrate** are those for which provide useful information or a needed service to one or more WRS unit/program but that WRS should consider changing storage, utility or user interface to achieve program efficiencies or reduce business risks. Examples may include multiple databases that could consolidate to one centralized database if a few additional fields were added, or databases that are housed on a single workstation but that would improve workflows for other users if centrally housed and accessible by additional staff.

Continued databases, applications or processes are those for which we recommend WRS continue with no significant changes to platform, user interface, format or permissions. Examples may include an application that has utility and both low maintenance cost and no serious business risks for WRS.

We expect that the analysis of approximately 130 databases will result in recommendations for updating and/or upgrading the platform or accessibility for many. In addition to the compartmentalized recommendation format described above, we expect there will be a need to prioritize recommendations for the databases, applications or processes that we recommend WRS migrate or change. The priorities will be based on risk levels defined in the RSA matrix, consolidation opportunities and the business case for making certain changes concurrently. We will provide the level of effort and estimated budget for each recommendation.

Given the expected need for WRS to prioritize and consolidate recommendations, a range of alternatives shall be provided for major recommendations. We will provide draft recommendations to WRS to provide input and perspective.

Task 5: Final Recommendations and Presentation

The input received from WRS on the draft recommendations will inform final recommendations. The final recommendations will evaluate and potentially incorporate suggestions from WRA. In

addition, we will identify up to three recommendations to provide more detailed non-binding budget estimates. For all other recommendations, WEST will provide general cost estimates. The final recommendation report will include the executive summary completed as part of Task 4.1.

WEST will present the final recommendations in a real-time video conference format and make available all supporting materials to support these conclusions. We will provide an opportunity for key stakeholders, such as unit/program leaders, to ask questions about the recommendations. We expect to provide one video presentation to the WRS staff and to facilitate one follow-up discussion with each unit/program to provide detailed explanations as needed.

Deliverables

WEST will provide the following deliverables

1. Completed RSA Matrix with scoring
2. Comprehensive data infrastructure workbook for each unit/program
3. Executive Summary as described in Task 4.1
4. Draft recommendations as described in Task 4.2
5. Final recommendations as described in Task 5.1

Project Meetings

WEST is planning to meet with the designated WRS project manager for the six meetings designated in the RFP. During these meetings, we will update the project manager on efforts to date, proposed next actions, and discuss solutions to any hurdles in execution of work. Good communication is an important component of project management at WEST and we aim to be responsive to clients throughout the project life-cycle. We expect additional meetings with the project manager or WRS staff may be required and will be scheduled as needed.

WEST will schedule and ensure all participants are invited to the appropriate meetings for this project. We are capable of hosting real-time video meetings in the Zoom format for all meetings, if appropriate for WRS staff.

Assumptions

1. WRS will provide WEST with an initial list of databases and applications for all 8 units/programs prior to the kick-off workshop.
2. Up to 130 databases and/or applications will be reviewed under this scope using the rubric of the RSA matrix developed in Task 1.3 and reviewed in the deliverables for Task 4.1 and 5.1.
3. For each of the 130 individual databases and/or applications, we will not recommend data structure or architecture changes (e.g. changing the format or adding constraints to certain fields).
4. Materials requested but not received by WRS units/programs after an agreed upon date will not be considered in the final analysis recommendations.
5. WRS will provide comments on draft recommendations from Task 4.2 within 21 calendar days of receipt from WEST.

6. Final recommendations will be presented to the audience via one webinar that may also be recorded for future use by WRS.
7. All budget estimations provided as a part of this contract's deliverables will be based on the WEST rate sheet and represent approximations.
8. WEST will consult with WRS to identify up to three recommendations to provide detailed budget estimates.

SCHEDULE

WEST proposes to complete a virtual project kick-off workshop with appropriate WRS staff within 10 days of contract signing. WEST intends to have at least one discussion with the WRS project manager prior to this meeting in order to understand WRS' view of the risks facing the organization and the strategic direction for the agency. WEST will provide a draft matrix at least 2 business days prior to the kick-off workshop. Initial WRS staff interviews will begin after the workshop and may take up to two weeks. Follow-up interviews will be scheduled as needed for each unit/program. Major timepoints and deadlines for this project include: Kick-off workshop within 10 business days of contract finalization, initial interviews begin the same week as kick-off workshop, and final recommendations provided to WRS within 200 calendar days of Notice to Proceed.

ORGANIZATION AND MANAGEMENT APPROACH

Project Management

WEST has developed a 2-tier management system that allows efficient and productive project management to our clients, as well as professional development of our employees. Project management is provided by experienced individual project managers who have final authority over services and deliverables provided to clients. Project managers provide project scheduling, cost control, scope adjustments and change orders, and other capabilities associated with individual projects. WEST personnel management system includes a senior management team that provides administrative, company management, and mentoring support for individual project managers, field and technical staff, and support staff. WEST provides all the necessary support, capabilities, and flexibility to meet project management needs.

WEST has a fully functioning accounting department, including legal expertise, for support to project managers on contracting, contract amendments, invoicing, accounts receivable, and expense accounting. WEST also has a full suite of support sections, such as human resources, health and safety, data management, technical review and editing, and administrative and office management. WEST upholds good internal control and oversight of fiscal matters, and maintains good accounting practices while expanding our commitment to providing exceptional service. WEST's Chief Financial Officer, Suzanne Shea-Kuno, works closely with the Board of Directors and executive team to ensure sustainable fiscal business continuity.

WEST has established and time-tested procedures in place to ensure smooth administration of long term contracts such as the proposed indefinite delivery indefinite quantity (IDIQ). We utilize

Deltek Vision enterprise level accounting software, which is a recognized platform for consulting- and project-based firms. Our accounting and contracting teams actively manage multiple federal, state agency and private industry contracts.

Quality Assurance and Technical Procedures

WEST's proposed quality control procedures are based on client needs, project team member responsibilities and qualifications, deliverable preparation and review protocol, and project file guidance. These procedures apply to the activities of WEST project management and technical and administrative staff to the extent that such activities may affect the quality of project deliverables.

The following Team Roles and Responsibilities provide the basis for the system of management controls established for proposed WRS project:

Project Manager

The WEST Project Manager is the key point of contact for the WRS. The WEST Project Manager will direct the administrative and technical activities of the WEST Project Team and will be responsible for ensuring implementation of the system of project quality controls. The WEST project manager will be responsible for ensuring that the project staff develops and produces project deliverables that are consistent with the requirements established by the WRS. The WEST project manager will monitor the progress and performance of work to ensure that deliverables meet established project objectives, will report to the WRS project manager on the progress and status of the project, and will identify and resolve significant issues as they arise. The WEST project manager may delegate specific tasks and authorities to other project task managers and team members, as appropriate. The WEST project manager will be primarily responsible for interacting with the WRS on all issues involving project cost and scheduling, and will have responsibility for the resolution of issues concerning the overall technical content and quality of the project deliverables.

Supporting Data Scientists and Information Technology Managers and Specialists

The supporting data scientists to the project manager provides resources and ensures that the WEST project manager provides project deliverables that meet WEST's standards, governing regulations, and the expectations of the WRS. The supporting data scientists will provide quality assessment and quality control (QA/QC) of all data and valid, accurate and repeatable statistical analyses. Data scientists are responsible for the professional quality, technical accuracy, timely completion and coordination of all reports or other analytical services or materials furnished by WEST.

ATTACHMENT A. RESUMES OF KEY PERSONNEL



EDUCATION

M.S.
Oregon State University
Corvallis, Oregon
Statistics

B.S.
The Pennsylvania State University
University Park, Pennsylvania
1993
Wildlife & Fisheries Science

Shay Howlin, Senior Data Scientist/Quality Program Manager

PROFESSIONAL EXPERIENCE

- 2018-Present *Consulting Biometrician and Quality Program Manager*, Western EcoSystems Technology, Inc., Cheyenne, Wyoming
- 1999-2017 *Consulting Biometrician*, Western EcoSystems Technology, Inc., Cheyenne, Wyoming
- 1997-1999 *Research Assistant*, Environmental Protection Agency, Western Ecology Branch, Corvallis, Oregon
- 1998-1999 *Teaching Assistant*, Department of Statistics, Oregon State University, Corvallis, Oregon
- 1997-1997 *Research Field Assistant*, Forest Science Department, Oregon State University, Corvallis, Oregon

SPECIALTY AREAS

Data Science: Shay Howlin has conducted extensive data analysis as a consultant for WEST. Shay has applied numerous statistical techniques to ecology, including generalized linear models, multivariate methods, meta-analysis, simulation and sampling. She has been involved in multiple projects estimating survival of animals using proportional hazard survival models. Specific examples of habitat selection analyses include brown bears on the Chugach National Forest, nest selection by passerines in Eastern Oregon, and den selection by polar bears on Wrangel Island and the North Coast of Alaska.

Quality Engineering: Shay's work includes establishing a Quality Program focusing on continuous improvement of WEST's consulting services and deliverables. This program advances WEST's core values regarding quality through communicating and supporting a culture of quality. She has designed and implemented an internal training program and continues to provide management and direction to the Corporate Training Coordinator.

Collaborative Programs: Shay has recently worked with the Middle Rio Grande Endangered Species Collaborative Program as a statistical reviewer and facilitator. While working with the Technical Committee of the Platte River Endangered Species Partnership, she designed and tested study protocols for monitoring reproduction by least tern and piping plover, for monitoring habitat use of migrating whooping cranes, and for documenting changes in physical and biological habitat on the central Platte River.

SELECTED PROFESSIONAL PUBLICATIONS

- Baasch D. M., P. D. Farrell, **S. Howlin**, A. T. Pearse, J. M. Farnsworth, C. B. Smith. 2019. Whooping crane use of riverine stopover sites. *PLoS ONE* 14 (1): e0209612. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0209612>.
- Rocheffort, R. M., **S. Howlin**, L. Jeroue, J. R., Boetsch, L. P. Grace. 2018. Whitebark Pine in the Northern Cascades: Tracking the Effects of Blister Rust on Population Health in North Cascades National Park Service Complex and Mount Rainier National Park. *Forests* 9(244).
- Prosser, D. J., J. L. Nagel, **S. Howlin**, P. R. Marban, D. D. Day, and R. M. Erwin. 2017. Measuring the effects of local shoreline and subestuary watershed condition on waterbird use: Influences of geography, scale, and season in the Chesapeake Bay region. *Estuaries and Coasts* DOI: 10.1007/s12237-017-0288-0.
- Suring, L. H., K. A. Murphy, **S. Howlin**, and K. Preston. 2017. Modeled Distribution of Human Use and Potential Wildlife Disturbance in Western Prince William Sound. In: A.J. Poe and R. Gimblett, eds. *Sustaining Wildlands: Integrating Science and Community in Prince William Sound*. The University of Arizona Press.
- Esslinger, G. G., D. Esler, **S. Howlin**, and L. A. Starcevich. 2015. Monitoring population status of sea otters (*Enhydra lutris*) in Glacier Bay National Park and Preserve, Alaska—Options and considerations: U.S. Geological Survey Open-File Report 2015-1119, 42 p., <http://dx.doi.org/10.3133/ofr20151119>.



Fawn Hornsby, *Data Infrastructure Lead/Data Scientist*

PROFESSIONAL EXPERIENCE

- 2009-Present Research Biometrician, Western EcoSystems Technology, Inc., Laramie, Wyoming
- 2008 Defense of Homeland Security Summer Scholar, Pacific Northwest National Laboratory, Richland, Washington
- 2008 Independent Study, North Carolina Department of Environmental and Natural Resources & North Carolina State University, Raleigh, North Carolina
- 2007 Defense of Homeland Security Summer Scholar, Los Alamos National Laboratory, Las Alamos, New Mexico
- 2005-2007 Independent Study, New Jersey Department of Environmental Protection & North Carolina State University, Raleigh, North Carolina
- 2006-2007 Independent Study, Department of Statistics, North Carolina State University, Raleigh, North Carolina
- 2006 *Summer Intern*, NSF VIGRE Program at North Carolina State University, Raleigh, North Carolina

SPECIALTY AREAS

Database Management and Computing: Ms. Hornsby has extensive experience in the use of access databases as well as large MSSQL relational databases. She has helped to create the database design and schema. Additionally, she has helped create easy-to-use data entry forms, such that data entry errors are kept to a minimum. She has also directed, written code for, and implemented data QA/QC procedures for numerous relational databases.

Statistical Design and Analysis: Ms. Hornsby has had many years of experience in the design natural resource studies, including creel and occupancy survey design. She has performed advanced data analyses including Brownian bridge movement models, resource selection functions, occupancy models, principal component analysis, capture-recapture analyses, and survival modeling. She also has experience with avian and bat use analyses and fatality estimation. She is trained in sampling and experimental design, ANOVA, generalized linear models, bootstrapping, as well as Bayesian statistics.

Statistical Computing: Ms. Hornsby has advanced computing skills (e.g. parallel process computing), and is proficient in R and SAS programming as well as familiarity with Winbugs, T-SQL (used in MSSQL), Jet-SQL (used in access), and VBA (used in MS excel). She has contributed a publicly-available R package called "pom", which performs single-season site occupancy estimation and has developed custom code for numerous clients to analyze their own data with. In addition, she is familiar with Program PRESENCE, Program DISTANCE, and ArcGIS and also experienced with Microsoft Access, Excel, PowerPoint, and Word.

Teaching: Ms. Hornsby has lead workshops and been an invited speaker on various topics including: R programming basics, basic sampling designs, ANOVA and basic linear modeling, kernel estimation, Brownian bridge movement models, and occupancy estimation.

SELECTED PROFESSIONAL PUBLICATIONS

Hornsby, F. and Jackson, W. "An Analysis of Continuous Mercury Air Pollution Data." Undergraduate Research Journal of NC State University. (Volume II, Issue 1, pp 29-43). NC State Office of Undergraduate Research.

Jay, C. V., Grebmeier, J. M., Fischbach, A. S., McDonald, T. L., Cooper, L. W., and **Hornsby, F. E.** (2014) Pacific Walrus (*Odobenus rosmarus divergens*) Resource Selection in the Northern Bering Sea. PLoS ONE 9(4): e93035. doi:10.1371/journal.pone.009303

McDonald, L., Beauprez, G., Gardner, G., Griswold, J., Hagan, C., **Hornsby, F.**, Klute, D., Kyle, S., Piman, J., Rintz, T., Schoeling, D., and Van Pelt, B. 2014. Range-wide population size of the lesser prairie-chicken: 2012 and 2013. Wildlife Society Bulletin, 38: 536-546. doi: 10.1002/wsb.417.

EDUCATION

M.S.
University of Wyoming
Laramie, Wyoming
2012
Statistics

B.S.
North Carolina State University
Raleigh, North Carolina
2008
Statistics & Applied Mathematics;
Minor: Biological Sciences

SCIENTIFIC ORGANIZATION MEMBERSHIPS

American Statistical Association
The Wildlife Society



Bryan Sholten, *Enterprise Technology Director*

PROFESSIONAL EXPERIENCE

- 2021-Present *Enterprise Technology Director*, Western EcoSystems Technology, Inc., Fort Collins, Colorado
- 2017-2020 *Vice President, IT Operations*, Southern Ute Indian Tribe, Ignacio, Colorado
- 2011-2017 *Senior Director, Information Technology*, Colorado Christian University, Lakewood, Colorado
- 2010-2011 *Chief Information Officer*, State of Montana, Department of Natural Resources and Conservation, Helena, Montana
- 2007-2010 *Manager, Information Technology*, Microsoft Corporation, Denver, Colorado
- 2003-2007 *Director, Information Technology*, Garfield County Government, Glenwood Springs, Colorado

SPECIALTY AREAS

Bryan Sholten is an Enterprise Technology Director with over 24 years of technology leadership experience starting as the Science Information Systems Manager for Antarctic Support Associates working with researchers for the US Antarctic Program. Most recently, Bryan worked as the Vice President of Information Technology for the Southern Ute Indian Tribe. Bryan has experience supporting technology for Long Term Ecological Research programs in the Antarctic, Natural Resource Programs for the State of Montana. Bryan maintains professional certifications as a Project Management Professional and IT Infrastructure Library Foundation for technology governance.

PROFESSIONAL EXPERIENCE

Human Resources: HR Information Systems hiring, retention, and career development

Geographic Information Systems: Installation and configuration of ESRI software and databases supporting local government

ERP: Implementation and integration of Oracle PeopleSoft, Microsoft Dynamics and Ellucian

Project Management: Development of detailed project plans, schedule and resource allocation

Application Support: Business Intelligence, Microsoft SQL database, SSRS, SSIS, SSAS

Compute Platforms: Microsoft Service OS, Windows PC, Linux, Cisco UCS, Intel servers

Storage Systems: NetApp SAN, Dell Compellent SAN, HP Network Attached Storage (NAS)

Virtualization: VMware configuration and management, vSphere administration and security

Telecommunications: Cisco VOIP, customer call centers, 911 dispatch centers, vendor services

Service Desk: ITIL customer service methodologies, call center telephony, ticketing systems

Business Continuity: Disaster recovery planning and testing ,administration backup strategies

Cyber Security: NIST/CSF, CIS controls, CJIS, firewalls, endpoint anti-virus, server patching

Remote Access: Virtual Private Networks, Citrix application access, mobile devices

EDUCATION

MBA
University of Colorado
Colorado Springs
2008
Information Systems

BBA
Idaho State University
Pocatello, Idaho
1988
Information Systems

CERTIFICATIONS & MEMBERSHIPS

PMP – Certified Management Professional
Project Management Institute

ITIL - Certified IT Infrastructure Library Foundation

Member - Project Management Institute

Member - Center for Internet Security, Multi-State Information Sharing & Analysis Center



Warren P. Meyer, Senior Software Developer

PROFESSIONAL EXPERIENCE

- 2017-Present *Senior Software Developer*, Western EcoSystems Technology, Inc.,
Cheyenne, Wyoming
- 2007-2017 *Senior Software Developer*, Sierra Trading Post/TJX Digital, Cheyenne,
Wyoming
- 2005-2007 *Computer Programmer*, Wyoming Legislative Service Office, Cheyenne,
Wyoming
- 2002-2005 *IT Specialist*, Wyoming Department of Education, Cheyenne, Wyoming
- 2000-2002 *IT Specialist*, Wyoming Department of Audit, Cheyenne, Wyoming

EDUCATION

B.S.
University of Wyoming
Laramie, Wyoming
1998
Business Administration, Minor in
Finance

SPECIALTY AREAS

Warren Meyer is a Senior Software Developer with over 20 years of experience architecting, developing, and maintaining .NET software applications and M.S. SQL Server databases. Warren has developed applications that used M.S. SQL Server, PostgreSQL, MySQL, and Oracle databases. He has experience with C#, .NET/Core, T-SQL, HTML, CSS, JavaScript, and jQuery.

Warren also has experience as a full stack developer on a top 100 e-commerce website. Additionally he architected, developed and implemented a Windows client application (SQL Server data storage) to manage the workflow from start to finish of eventually over a million digital assets through multiple departments totaling 40-50 employees, saving countless hours. The application also tracked each asset as it progressed through multiple stages of modification and then organized and stored them when for easy searching and retrieval when the modifications were complete.

ADDITIONAL TRAINING AND SKILLS

Programming languages and frameworks:

C#, .NET Framework, .NET Core, VB.NET, TSQL, JavaScript, jQuery, HTML, CSS

Development environments, technologies and frameworks:

Visual Studio, ASP.NET, MVC, WCF, Web API, WPF, Windows Forms, Entity Framework, ADO.NET, SQL Server Management Studio



Sara Decker, Database Developer

PROFESSIONAL EXPERIENCE

- 2014-Present *Database Developer*, Western EcoSystems Technology, Inc., Laramie, Wyoming
- 2014 *Data Specialist Intern*, Wyoming Geographic Information Science Center, Laramie, Wyoming
- 2012-2014 *Graduate Teaching Assistant*, Zoology Department, University of Wyoming, Laramie, Wyoming

EDUCATION

Graduate course work
University of Wyoming
Laramie, Wyoming
Zoology and Physiology

B.A.
Temple University
Philadelphia, Pennsylvania
Biology

SPECIALTY AREAS

Ms. Decker is a database and application developer with experience designing and maintaining relational databases and application code. She has professional experience addressing data management and reporting requirements by developing ETL solutions, user interfaces, and source code for custom desktop and web application software using C#, R, SQL, VBA, JavaScript, ASP.NET, Python, and more. She also contributes to R packages for WEST, and provides technical support to end-users as well as architectural design guidance to the R development teams.

Her previous experience includes transforming GPS data for ungulate species to fit an enterprise GIS schema; this included design of relational databases using MS SQL server, development of complex SQL queries and generation and maintenance of statistically analyzed spatial data with R and ArcGIS.

TECHNOLOGY SKILLS and PROFICIENCIES

Programming :

Program R, JavaScript, TypeScript, C#, SQL, HTML, CSS

Microsoft SQL Server, PostgreSQL, relational database design, SQL development and applied best management practices

Windows and web application development – ASP.NET, React, Angular, REST API

Integrated development environments – Visual Studio, VS Code, R Studio, SQL Server Management Studio, PgAdmin

Git version control



Arjun Dongre, Software Developer

PROFESSIONAL EXPERIENCE

- 2020-Present *Software Developer*, Western EcoSystems Technology, Inc., Cheyenne, Wyoming
- 2020 *Geospatial Data Scientist*, Allstate Insurance, Chicago, Illinois
- 2014-2020 *Software Systems Engineer*, Catawba County Government, Newton, North Carolina
- 2011-2013 *Geospatial Data Analyst*, SWCA Environmental Consultants, Sheridan, Wyoming
- 2008-2010 *Research/Teaching Assistant*, University of Wyoming, Laramie, Wyoming
- 2005-2007 *Environmental Scientist*, BioHabitats, Inc., Baltimore, Maryland

SPECIALTY AREAS

Arjun Dongre is a Software Developer with over 15 years of experience in geospatial data analysis and has over 6 years of experience in software development. Arjun is skilled at distilling complicated data to inform strategic decisions, and understanding client needs to deliver appropriate complexity of software deliverables, utilizing cost-effective methodologies.

PROFESSIONAL EXPERIENCE

Geospatial Experience

7 years of experience with ESRI Enterprise administration and development including:

- ArcServer administration
- Arc Objects development for ArcServer and ArcMap
- ESRI Javascript web map development
- Geodatabase design and administration

Software Development Experience

5 years full stack development using the following technologies:

- Back end:
 - NodeJS/Express
 - .Net Core-WebAPI
 - .Net MVC
- Front End Framework and Libraries:
 - Angular, Dojo, ESRI JS, OpenLayers, JQuery
- Databases:
 - Sql Server, Postgres/PostGIS, SGL Lite
- General Software Development:
 - Python, C#, Java, Javascript, PHP

GIS Analysis Experience

- Spatially explicit simulations
- Environmental impact analysis and mapping
- Landscape metrics analysis
- GPS field data collection management, and mapping
 - Terrasync/Pathfinder (Trimble)
 - ArcPad

Environmental Experience

- Vegetation surveys using North Carolina Vegetation Survey protocol
- Field data collection for Rosgen stream classification and design
- Ocular vegetation sampling for Wyoming Governor's Sage Grouse Habitat Management Initiative

EDUCATION

M.A.
University of Wyoming
Laramie, Wyoming
2010
Geography, Minor in Statistics

B.S.
University of North Carolina at
Chapel Hill
Chapel Hill, North Carolina
2005
Environmental Science

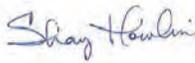
ATTACHMENT B. CONTRACT DOCUMENTS

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.

Shay Howlin, Board President/Project Manager/Senior Data Scientist
(Name, Title)
Shay Howlin, Board President/Project Manager/Senior Data Scientist
(Printed Name and Title)
415 W. 17th Street, Suite 200 Cheyenne, WY 82001
(Address)
307-721-3171/ 307-637-6981
(Phone Number) / (Fax Number)
showlin@west-inc.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.

Western EcoSystems Technology, Inc. (WEST)
(Company)

 Shay Howlin, Board President/Project Manager/Senior Data Scientist
(Authorized Signature) (Representative Name, Title)

Shay Howlin, Board President/Project Manager/Senior Data Scientist
(Printed Name and Title of Authorized Representative)

April 1, 2021
(Date)

307-721-3171/ 307-637-6981
(Phone Number) (Fax Number)

REQUEST FOR QUOTATION

West Virginia Division of Natural Resources-Wildlife Resources Section
Data Systems Assessment

- 10.1.3** Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
- 10.1.4** Failure to remedy deficient performance upon request.
- 10.2** The following remedies shall be available to Agency upon default.
 - 10.2.1** Immediate cancellation of the Contract.
 - 10.2.2** Immediate cancellation of one or more release orders issued under this Contract.
 - 10.2.3** Any other remedies available in law or equity.

11. MISCELLANEOUS:

- 11.1 Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Shay Howlin

Telephone Number: 307-721-3171

Fax Number: 307-634-6981

Email Address: showlin@west-inc.com

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Western EcoSystems Technology, Inc.

Authorized Signature: *Suzanne Santoro* Date: 4/1/2021

State of Wyoming

County of Laramie, to-wit:

Taken, subscribed, and sworn to before me this 1 day of April, 2021.

My Commission expires November 6, 2024, 2024.



NOTARY PUBLIC *C. Graham*