Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

Part IA – Technical Proposal

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

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NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

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JMT TECHNOLOGY GROUP

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Submitted by:
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40 Wight Avenue
Hunt Valley, MD 21030

SECTION III
VENDOR INFORMATION SHEET

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

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Section III – Vendor Information Sheet

V1	Company Name	***Johnson, Mirmiran & Thompson, Inc.***	
V2	Street Address	***40 Wight Avenue***	
V3	City, State, ZIP	***Hunt Valley, Maryland 21030***	
V4	Telephone Number		
	Area Code: ***410***	Number: ***329-3100***	Extension:
V5	Facsimile Number		
	Area Code: ***410***	Number: ***472-2200***	Extension:
V6	Toll Free Number		
	Area Code:	Number:	Extension:
V7	***Contact Person for Questions / Contract Negotiations, including address if different than above***		
	Name: ***Jeanne Ruthloff***		
	Title: ***Senior Vice President, Practice Leader***		
	Address: ***40 Wight Avenue, Hunt Valley, Maryland, 21030***		
	Email Address: ***jruthloff@jmttg.com***		
V8	Telephone Number for Contact Person		
	Area Code: ***410***	Number: ***316-2298***	Extension:
V9	Facsimile Number for Contact Person		
	Area Code: ***410***	Number: ***472-0731***	Extension:
V10	***Name of Individual Authorized to Bind the Organization***		
	Name: ***John A. Moeller, PE***	Title: ***President***	
V11	Signature ***(Individual shall be legally authorized to bind the vendor per NRS 333.337)***		
	Signature:	Date: ***5/31/17***	

Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

SECTION IV
STATE DOCUMENTS

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Section IV – State Documents

The State documents section shall include the following:

A.	The signature page from all amendments signed by an individual authorized to bind the organization.
B.	Attachment A – Confidentiality and Certification of Indemnification signed by an individual authorized to bind the organization.
C.	Attachment B – Vendor Certifications signed by an individual authorized to bind the organization.
D.	Attachment J – Certification Regarding Lobbying signed by an individual authorized to bind the organization.
E.	Copies of any vendor licensing agreements and/or hardware and software maintenance agreements.
F.	Copies of applicable certifications and/or licenses.

AMMENDMENTS – Amendment 1 Signature page

Does the State require that the replacement database adhere to the same database design/schema, e.g., tables names, column names, data types and sizes, etc.?

No.

ALL ELSE REMAINS THE SAME FOR RFP 3432.

Vendor must sign and return this amendment with proposal submitted.

Vendor Name: ***Johnson, Mirmiran & Thompson, Inc.***

Authorized Signature:

Title: ***John A. Moeller, PE, President*** Date: ***5/31/17***

This document must be submitted in the "State Documents" section/tab of vendors' technical proposal.

ATTACHMENT A – CONFIDENTIALITY AND CERTIFICATION OF INDEMNIFICATION

ATTACHMENT A – CONFIDENTIALITY AND CERTIFICATION OF INDEMNIFICATION

Submitted proposals, which are marked "confidential" in their entirety, or those in which a significant portion of the submitted proposal is marked "confidential" **shall not** be accepted by the State of Nevada. Pursuant to NRS 333.333, only specific parts of the proposal may be labeled a "trade secret" as defined in NRS 600A.030(5). All proposals are confidential until the contract is awarded; at which time, both successful and unsuccessful vendors' technical and cost proposals become public information.

In accordance with the submittal instructions of this RFP, vendors are requested to submit confidential information in separate files marked "**Part IB Confidential Technical**" and "**Part III Confidential Financial**".

The State shall not be responsible for any information contained within the proposal. If vendors do not comply with the labeling and packing requirements, proposals shall be released as submitted. In the event a governing board acts as the final authority, there may be public discussion regarding the submitted proposals that shall be in an open meeting format, the proposals shall remain confidential.

By signing below, I understand it is my responsibility as the vendor to act in protection of the labeled information and agree to defend and indemnify the State of Nevada for honoring such designation. I duly realize failure to so act shall constitute a complete waiver and all submitted information shall become public information; additionally, failure to label any information that is released by the State shall constitute a complete waiver of any and all claims for damages caused by the release of the information.

This proposal contains Confidential Information, Trade Secrets and/or Proprietary information.

Please initial the appropriate response in the boxes below and provide the justification for confidential status.

Part IB – Confidential Technical Information			
YES		NO	X JAM
Justification for Confidential Status			

Part III – Confidential Financial Information			
YES	X	NO	JAM
Justification for Confidential Status			
Company Financial Information is Private			

Johnson, Mirmiran & Thompson, Inc.
Company Name

Signature

John A. Moeller, PE, President — ***5/31/17***
Print Name — Date

This document shall be submitted in Section IV of vendor's technical proposal

ATTACHMENT B – VENDOR CERTIFICATIONS

ATTACHMENT B – VENDOR CERTIFICATIONS

Vendor agrees and shall comply with the following:

(1) Any and all prices that may be charged under the terms of the contract do not and shall not violate any existing federal, State or municipal laws or regulations concerning discrimination and/or price fixing. The vendor agrees to indemnify, exonerate and hold the State harmless from liability for any such violation now and throughout the term of the contract.

(2) All proposed capabilities can be demonstrated by the vendor.

(3) The price(s) and amount of this proposal have been arrived at independently and without consultation, communication, agreement or disclosure with or to any other contractor, vendor or potential vendor.

(4) All proposal terms, including prices, shall remain in effect for a minimum of 180 days after the proposal due date. In the case of the awarded vendor, all proposal terms, including prices, shall remain in effect throughout the contract negotiation process.

(5) No attempt has been made at any time to induce any firm or person to refrain from proposing or to submit a proposal higher than this proposal, or to submit any intentionally high or noncompetitive proposal. All proposals shall be made in good faith and without collusion.

(6) All conditions and provisions of this RFP are deemed to be accepted by the vendor and incorporated by reference in the proposal, except such conditions and provisions that the vendor expressly excludes in the proposal. Any exclusion shall be in writing and included in the proposal at the time of submission.

(7) Each vendor shall disclose any existing or potential conflict of interest relative to the performance of the contractual services resulting from this RFP. Any such relationship that might be perceived or represented as a conflict shall be disclosed. By submitting a proposal in response to this RFP, vendors affirm that they have not given, nor intend to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant or any employee or representative of same, in connection with this procurement. Any attempt to intentionally or unintentionally conceal or obfuscate a conflict of interest shall automatically result in the disqualification of a vendor's proposal. An award shall not be made where a conflict of interest exists. The State shall determine whether a conflict of interest exists and whether it may reflect negatively on the State's selection of a vendor. The State reserves the right to disqualify any vendor on the grounds of actual or apparent conflict of interest.

(8) All employees assigned to the project are authorized to work in this country.

(9) The company has a written equal opportunity policy that does not discriminate in employment practices with regard to race, color, national origin, physical condition, creed, religion, age, sex, marital status, sexual orientation, developmental disability or handicap.

(10) The company has a written policy regarding compliance for maintaining a drug-free workplace.

(11) Vendor understands and acknowledges that the representations within their proposal are material and important, and shall be relied on by the State in evaluation of the proposal. Any vendor misrepresentations shall be treated as fraudulent concealment from the State of the true facts relating to the proposal.

(12) Vendor shall certify that any and all subcontractors comply with Sections 7, 8, 9, and 10, above.

(13) The proposal shall be signed by the individual(s) legally authorized to bind the vendor per NRS 333.337.

Johnson, Mirmiran & Thompson, Inc.

Vendor Company Name

Vendor Signature

John A. Moeller, PE, President — ***5/31/17***

Print Name — Date

This document shall be submitted in Section IV of vendor's technical proposal

Nevada Department of Wildlife
Business Support System — *RFP 3432* — *Page 1 of 1*

ATTACHMENT J – CERTIFICATION REGARDING LOBBYING

ATTACHMENT J – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or shall be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federally appropriated funds have been paid or shall be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, and contracts under grants, loans, and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

By: _____ *5/31/17*
Signature of Official Authorized to Sign Application — Date

For: ***Johnson, Mirmiran & Thompson, Inc.***
Vendor Name

Nevada Department of Wildlife Business Support System (RFP 3432)
Project Title

This document shall be submitted in Section IV of vendor's technical proposal

VENDOR LICENSING AGREEMENTS AND HARDWARE AND SOFTWARE MAINTENANCE AGREEMENTS

Per the State's response to Q&A question #134, JMT understands that the Contractor will retain ownership rights of the Source Code and intellectual property of the software provided that such source code is placed in escrow and the Contractor agrees to enter into a License Agreement with the State. JMT will place source code into an escrow account pursuant to the escrow requirements and convey the licenses in accordance with the RFP. JMT understands that the State will retain ownership rights of the data contained within the System and which is to be the sole property of the State.

MAINTENANCE AGREEMENT

Submitted to:
<Customer Name>

Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

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Maintenance Agreement

This Maintenance Agreement ("Agreement") is made and entered into this <nn> day of <month>, <year>, by and between <CUSTOMER NAME>, ("Customer") and Johnson, Mirmiran, and Thompson Inc. (JMT), a Corporation with its principal offices at 40 Wight Avenue, Hunt Valley, Maryland 21030 ("Service Provider").

1. PURPOSE

The purpose of this Maintenance Agreement is to formalize an agreement between JMT and <Customer Name> to deliver specific application maintenance services, at specific levels of support, and at an agreed-upon cost. This document is intended to provide details of the provision of application maintenance services to <Customer Name>.

2. MAINTENANCE AND SUPPORT SERVICES

The following services are provided in response to the need for support of the <SYSTEM NAME> by <Customer Name>.

The documentation and submission of a support request from <Customer Name> to JMT will be based on the process described in this document and based on mutual agreement with <Customer Name> and JMT.

a. Services Automatically Provided

The following services are provided in response to support requests from <Customer Name> to JMT:

1. **Support coverage –** JMT will be available for supporting <SYSTEM NAME> Monday through Friday, except JMT holidays, between the hours of 7:30 am and 5:00 pm PST.

2. **Stand-By Support (non-business hours)**
   JMT's Customer Care team will be on call after business hours.

3. **Corrective maintenance**—Defined as activities associated with root-cause analysis and bug-fix isolation and resolution:

   - **Root-cause analysis**—Analysis of the root causes of problems. Problems that cannot be resolved by the <Customer Name> will be escalated to JMT's Customer Care center. JMT will review the reported issue to determine the root cause(s). JMT will take measures to correct the sources of the problems and will prepare and distribute a problem resolution response in a timely fashion.

   - **Bug fixes**—defined as the emergency repair of any system operation that does not comply with the current signed and approved system specification. This includes system errors, "hung" or halted screens, or unexpected results within the system that render it unusable for the purpose for which it was designed.

4. **Ticket status updates**—JMT will track and resolve <SYSTEM NAME> issues. All Level 1, 2, 3, and 4 issues will be tracked using a ticketing system.

5. **Maintenance & Support Services Term –** The proposed term for this maintenance and support services agreement is for one year (12 months) starting upon the date of this executed agreement. Subsequently, <Customer Name> has the option to renew this agreement on an annual basis.

b. Requests for Support Specifically Covered

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The following services are provided under this Agreement:

1. **Levels of Support**

   The following section details each of the four Support Levels and what specific actions should be taken during each Level to document and resolve issues.

   Level 1 Process Detail

   The primary point of contact for <SYSTEM NAME> Level 1 support will be a < CUSTOMER NAME > employee or designee. This individual will collect the details of the issue and attempt to resolve it directly, based on known solutions available. If < CUSTOMER NAME > is not able to resolve the issue, < CUSTOMER NAME > will alert the JMT Customer Care center. The escalation of specific issues can occur by phone or by email.

   Level 2 Process Detail

   The JMT Customer Care Team will receive email notices and telephone calls of new issues. All issues and their resolutions will be documented in a ticketing system so a knowledge-base can be developed.

   The resolution of Level 2 issues will be covered by the JMT Applications Support Team. If the JMT Applications Support Team is not able to resolve the issue, it will be escalated to Level 3 or Level 4 support depending on the type of issue.

   Level 3 Process Detail

   The JMT IT Support Team will be available for any Level 3 support escalations. These issues will be those that are beyond the ability of Level 1 or 2 and can be addressed by the JMT IT Support Team. A ticketing system will still be used as the primary resource to track and document issues.

   If the issue cannot be addressed by Level 3 support and is not a Level 4 support issue, the issue will move into the exception escalation process and become a requirement to be evaluated for further <SYSTEM NAME> application changes to address. All issue details will be documented in the ticketing system.

   Level 4 Process Detail

   On rare occasions, < CUSTOMER NAME > may need to be contacted for any Level 4 support escalations. These issues will be those that are beyond the ability and purview of Level 1, 2, or 3 support and can only be addressed by <CUSTOMER NAME>. The primary point of contact for the Level 4 support issues will be identified by <CUSTOMER NAME>. <CUSTOMER NAME > users will still interface with the JMT Customer Care Team and a ticketing system will be used as the primary resource to track and document issues.

   If the issue cannot be addressed by Level 4, the issue will move into the exception escalation process and become a requirement to be evaluated for further <SYSTEM NAME> application changes to address. All issue details will be documented in the ticketing system.

   Exception Escalation Process Detail

   Any issue moved into this Level of Support will be evaluated for resolution through application or system changes. Like every other Level of Support, everything about the associated issue and its resolution will be documented in the ticketing system.

2. **Remote Application Support**

   Through the use of remote control technology, JMT support staff will be able to connect to a deployed <SYSTEM NAME> machine to provide remote assistance. Through the use of this tool, if necessary, with the

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user's permission, JMT or < CUSTOMER NAME > support staff can take control of the <SYSTEM NAME> machine to provide remote assistance and problem resolution. This tool only requires an Internet connection of any speed to work.

3. **Change Management**
For all programming work or database changes on the <SYSTEM NAME>, the team will follow the JMT ***Change Control Process***. New or changed processes, practices, or policies that affect the JMT Support Team and that require support team members to understand, learn, and follow will be communicated and documented in writing. This agreement will be revised and updated when processes, practices and policies change.

4. **Transition of Corrective Maintenance**
When corrective maintenance to <SYSTEM NAME> is required as a result of support requests and it is agreed the <SYSTEM NAME> is not performing in compliance with the original systems requirements and specifications, JMT will make the necessary changes in accordance with the schedule agreed upon between JMT and < CUSTOMER NAME >.

   Once the corrected software and/or database is ready to be transitioned into support, planning and coordination of the necessary activities between JMT and <CUSTOMER NAME> will be conducted.

   JMT will provide knowledge transfer from the development team to the Customer Care support team. A Support Transition Checklist will be completed by the deployment date. The Checklist will be reviewed and agreed upon by JMT and <CUSTOMER NAME>.

   All outstanding tickets shall be identified and agreement resolution targets will be established.

5. **Status Reporting**
Monthly status reports will be completed by the JMT Customer Care Team and submitted to <CUSTOMER NAME> for the <SYSTEM NAME>. Monthly status reports will be discussed with <CUSTOMER NAME> so that there is awareness of the support issues and risks.

6. **Knowledge Management**
Recording, storing, and retrieval of information to assist in the resolution of problems will be established and maintained. Issue tracking software will be used as the primary tool to capture and analyze the knowledge-base of solutions.

7. **Assistance with Application Usage**
Advice about or education on the purpose of an application, how to use applications, including completing transactions, and creating users within or for an application.

8. **Assistance with Application Environment**
Advice about how to use, maintain, and support the application environments, including application development tools, application server software, and databases.

9. **Adaptive Maintenance Initiated by JMT**
Defined as activities initiated by JMT relating to upgrades or conversions to an application due to new versions or patches of operating environment, including operating system, application server, or database software deemed necessary by JMT for the system to operate effectively. JMT will work with < CUSTOMER NAME> to establish a test environment to test and apply upgrades and patches and to assess the impact to

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production applications. For all programming work or database changes on the <SYSTEM NAME>, the team will follow a standard ***Work Order Process***.

10. **Preventative Maintenance**
For the <SYSTEM NAME>, when corrective maintenance activities are low, work will be conducted up to the level of effort identified, to analyze and take steps to prevent potential problems. Analysis of past issues and testing of code will be conducted for preventative maintenance as it is approved by <Customer Name>.

11. **Application Monitoring**
Monitoring of production applications to assess application availability.

12. **Enhancements to Production Application Software**
An enhancement is an addition to the existing production application. For all programming work or database changes on the <SYSTEM NAME>, the team will follow a standard ***Work Order Process***. JMT has allocated a Not to Exceed amount of 1,000 hours for enhancements during each maintenance year.

13. **Transition of Enhancements, New or Modified Applications Initiated by Change Control or Work Order Process**
When enhancements, new development or modifications to the <SYSTEM NAME> is ready to be transitioned into support, planning and coordination of the necessary activities between JMT and <CUSTOMER NAME> will be conducted. JMT will provide knowledge transfer from the development team to the support team. The Support Transition Checklist will be completed by the deployment date. The Checklist will be reviewed and agreed upon by JMT and <Customer Name>. All outstanding tickets documented in the issue tracking software shall be identified and agreement resolution targets will be established.

c. Services NOT Covered under the Agreement

This Agreement does not cover the following requests. However, JMT would be pleased to provide a separate statement of work in proposing services to address any of the following:

1. **On-Site Support**
If necessary or requested, JMT staff will provide on-site support at the <CUSTOMER NAME> office(s) located in <CUSTOMER LOCATION>. JMT will submit travel expenses to < CUSTOMER NAME > for reimbursement.

2. **Modifications to Original Application Specification**
Modifications to the original application specification include any functionality not specified in the current approved design specification. Changes in <CUSTOMER NAME>'s organization or business needs (such as a reorganization or change in business practice) may make the current specification obsolete. When this occurs, <Customer Name> should initiate a request for enhancement to update the system. It is highly recommended that <Customer Name> and JMT work closely together to anticipate future needs and prepare timely update of systems to accommodate <CUSTOMER NAME>'s business changes. For all programming work or database changes on the <SYSTEM NAME>, the team will follow the ***Work Order Process***.

3. **New Development**
New development includes any change in a database or application that involves functionality not within the currently signed and approved release specification, even if the new functionality would seem to be an

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improvement over the old one. For all programming work or database changes on the <SYSTEM NAME>, the team will follow the ***Work Order Process***.

4. **Procurement of New Software or Hardware**
   Procurement of new software or hardware initiated by <CUSTOMER NAME > for use by <CUSTOMER NAME >. All software or hardware required for JMT to support the <SYSTEM NAME> will be the responsibility of <CUSTOMER NAME > or can be reimbursed as a direct expense to this Agreement. For all programming work or database changes on the <SYSTEM NAME>, the team will follow the standard JMT ***Work Order Process***.

5. **Software Licensing and Ancillary Software Support**
   JMT will not provide support for software or licensing of software that is not a component of the <SYSTEM NAME>. < CUSTOMER NAME > will provide software and licensing for software that it determines is necessary.

6. **Training**
   <CUSTOMER NAME> staff will provide the training, and associated costs, for training <SYSTEM NAME> users. JMT can provide support to assist <CUSTOMER NAME> trainers to train <SYSTEM NAME> users using the ***Work Order Process***.

3. DEFINITIONS

a. Support Request

For the purposes of this agreement, a Support Request is generally defined as a request for support to fix a defect in existing application code or a request for support that involves no modifications to application code, such as a question.

b. Work Order

For the purposes of this Agreement, a Work Order is generally defined as any request to make enhancements, modifications to the functionality of an existing system or any request to add functionality to an existing system. Work order details will define the tasks, budget, schedule and deliverables related to the work to be completed. All work orders will be completed within the not to exceed limit of the agreement. A Work Order will require authorization from <Customer Name>.

c. Severity Codes

The following characteristics are used to identify the severity of a problem report:

- Business and financial exposure
- Work outage
- Number of clients affected
- Workaround
- Acceptable resolution time

It is not necessary (nor is it likely) to have perfect match of each characteristic to categorize a problem report at a particular severity level. A given problem must be judged against each of the characteristics to make an overall assessment of which severity level best describes the problem. For level 1, <Customer Name> will determine the initial severity rating for the report. JMT Level 2 and Level 3 support personnel may then negotiate with <Customer Name> to modify this severity after the report is elevated to them.

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The characteristics below do not cover Work Orders. Work Orders will carry a different set of characteristics and will be budgeted and scheduled independently. A Work Order is generally defined as any request to make enhancements, modifications to the functionality of an existing system or any request to add functionality to an existing system.

Severity 1 (Critical)	Severity 2 (High)	Severity 3 (Medium)	Severity 4 (Low)
Business and financial exposure			
The application failure creates a serious business and financial exposure.	The application failure creates a serious business and financial exposure.	The application failure creates a low business and financial exposure.	The application failure creates a minimal business and financial exposure.
Work Outage			
The application failure causes the client to be unable to work or perform some significant portion of their job.	The application failure causes the client to be unable to work or perform some significant portion of their job.	The application failure causes the client to be unable to perform *some small* portion of their job, but they are still able to complete most other tasks. May also include questions and requests for information.	The application failure causes the client to be unable to perform a *minor* portion of their job, but they are still able to complete most other tasks.
Number of Clients Affected			
The application failure affects a *large* number of clients.	The application failure affects a *large* number of clients.	The application failure affects a *small* number of clients.	The application failure may only affect one or two clients.
Workaround			
There is no acceptable workaround to the problem (i.e., the job cannot be performed in any other way).	There is an acceptable and implemented workaround to the problem (i.e., the job can be performed in some other way).	There may or may not be an acceptable workaround to the problem.	There is likely an acceptable workaround to the problem.

d. Levels of Service

The service levels offered by JMT to <Customer Name> are described below. Exceptions may apply for specific applications and will be documented in an individual application detail section within the scope of work. It is the goal of JMT to meet, and even exceed when possible, the levels of services documented. Any variation from the coverage defined below can carry a premium add-on cost to the application requesting variance.

Service Level	Severity 1	Severity 2, 3, 4
7:30 am – 5pm PST, M - F	- Requests submitted 7:30 am – 5pm PST, M-F by <CUSTOMER NAME> Level 1 support to JMT Customer Care center - Handoff to JMT's Level 2,3 support for issues identification and analysis	- Requests submitted 7:30 am – 5pm PST by <CUSTOMER NAME> Level 1 support to JMT Customer Care center - Handoff to JMT's Level 2,3 support for issues identification and analysis within coverage hours specified in this Agreement.

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	within coverage hours specified in this Agreement. - Target resolution: To be agreed upon by <Service Provider> and <CUSTOMER NAME>	Target resolution: To be agreed upon by <Service Provider> and <CUSTOMER NAME>

e. Levels of Effort

The service levels offered by JMT to <CUSTOMER NAME> are described in this Agreement. For applications considered Critical by <CUSTOMER NAME>, the level of effort will be exercised in full, either through corrective maintenance activities or through preventative maintenance activities. The level of effort for all remaining applications will only be exercised for corrective maintenance activities.

f. Application Criticality

The criticality of an application determines the support activities to be performed. The client can select a criticality level that best suits their service expectations. These levels can be best described as follows:

Level	Description
Critical	• Support activities must be performed to at least the level of effort appropriate for the application and the problem's business impact.
High	• Support activities must be performed to at least the level of effort appropriate for the application and the problem's business impact.
Medium	• Support activities can be performed as required to provide an acceptable level of service.
Low	• Support activities may be performed as required.

4. CUSTOMER'S RESPONSIBILITIES

a. Notice of Errors; Documentation of Errors

Customer shall provide prompt notice of any Errors in the Software discovered by Customer, or otherwise brought to the attention of Customer, in accordance with JMT's then current policies for reporting of Errors. Proper notice may include, without limitation, prompt telephonic and written notice to JMT of any alleged Error. If requested by JMT, Customer agrees to provide written documentation of Errors to substantiate the Errors and to assist JMT in the detection and correction of said Errors.

IN WITNESS WHEREOF, the parties have executed this Agreement by their duly authorized representatives as of the effective date written above:

JOHNSON, MIRMIRAN & THOMPSON	<Client>
By:	By:
Title:	Title:
Date:	Date:

DRAFT

COPIES OF APPLICABLE CERTIFICATIONS AND/OR LICENSES

SECRETARY OF STATE

STATE OF NEVADA

NEVADA STATE BUSINESS LICENSE

JOHNSON, MIRMIRAN & THOMPSON, INC.
Nevada Business Identification # NV20161383008

Expiration Date: June 30, 2017

Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

SECTION V
SYSTEM REQUIREMENTS

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Section V – System Requirements

3.1 VENDOR RESPONSE TO SYSTEM REQUIREMENTS

Vendors must explain in sufficient detail how they will satisfy the Nevada Department of Wildlife's project requirements described below. If subcontractors will be used for any of the tasks, vendors must indicate what tasks and the percentage of time subcontractor(s) will spend on those tasks.

JMT Technology Group Approach

JMT understands that NDOW must select a vendor that can demonstrate the capacity and capability to successfully deliver a recreational hunting and fishing license system that meets all NDOW requirements and that differentiates itself from the competition. Throughout this proposal, JMT will demonstrate why we are that vendor and why we're the best choice for NDOW.

The following provides a summation of why JMT is uniquely positioned for project success:

✓ ***We Have the Industry's Leading Technology Solution for Outdoor Licensing and Recreation***

The vendors within this industry have made progress in the past several years with respect to building more modern, technology forward electronic licensing systems however JMT's Outdoor Licensing and Recreation solution is a cut above. Our current release leverages the most current yet proven web technology and provides performance and security features that are ideally suited for today's technology climate. Our solution positions NDOW for long term success.

✓ ***Our Solution Closely Aligns with NDOW Requirements Out of the Box***

NDOW will enjoy the benefit of a proven, modern solution that satisfies the majority of the NDOW requirements out of the box and that will be tailored specifically to its needs. JMT's dedicated team will then customize it to satisfy 100% of the requirements and specifications established in the RFP. Our solution also provides additional features and functions that NDOW can leverage in pursuit of its strategic goals for the new system. The implementation of our mature solution provides NDOW a path to a robust, technologically modern solution without sacrificing schedule or scope.

✓ ***We Have Organizational and Product Objectives that are Aligned with NDOW***

Based on our interactions with the NDOW team, we recognize the opportunity for tremendous synergy. We aim to partner with forward-looking agencies that care about innovation and that are constantly looking to adapt and do things smarter and better. That's the kind of company that we are, and we're better positioned for success when partnered with like-minded clients. We believe strongly that NDOW is a great match.

✓ ***We Have a Dedicated and Experienced Project Team Ready to Go***

JMT has invested in an exceptional team to assure that we successfully live up to our commitment to deliver a high-quality product on schedule. Our team of technology professionals has successfully delivered multiple statewide outdoor licensing and recreation systems and has the experience and capability to deliver a successful solution for the Nevada Department of Wildlife.

Our team of senior-level staff includes a project manager, business analyst, and development team that will be committed to this projects success. Each member of this team has played a critical role in prior outdoor licensing and recreation solution implementations.

✓ *We Have the Processes and Tools in Place to Manage and Execute the Project*

Successfully delivering on projects of this scale requires the implementation of professional, industry standard, project management and software development practices. JMT has established a mature implementation process built on these best practices that assures efficiency, expediency, quality, and, ultimately, a successful implementation.

Our project manager and deputy project manager are certified Project Management Professionals (PMP), and JMT's project management methodology is founded on the principles, practices, and processes provided by the Project Management Institute (PMI). JMT will implement a hybrid agile development methodology as well as develop and implement a carefully crafted project plan that outlines a system implementation that ensures all core functionality is in production by the scheduled release date.

Our understanding of the fish and wildlife industry and outdoor licensing and recreation technology provides an intuitive understanding of how to structure NDOW's implementation schedule. JMT will work collaboratively with NDOW to finalize and implement this plan.

✓ *We Have a Proven Track Record of Success*

JMT Technology Group has a proven track record of success with the development, implementation, and long-term maintenance of statewide outdoor licensing and recreation solutions including the systems currently in use by the states of Maryland, West Virginia and Washington. We committed to complete the Washington implementation in under 6 months and delivered as promised.

At JMT, customer satisfaction is our number one priority. Our clients will be happy to tell you about our outstanding partnership thus far, and how we plan to continue our relationship and advance our systems to meet their expanding business needs.

We Understand Your Vision

JMT understands that the Nevada Department of Wildlife (NDOW) seeks an experienced solution provider with which it will partner to establish and maintain an easy to use, reliable, and technology-forward electronic point of sales system. Based on previous interactions with NDOW and the information set forth in the RFP, JMT also understands NDOW's vision goes beyond a simple technology refresh. JMT proposes to collaborate with NDOW to establish a next generation outdoor licensing and recreation solution that will empower the agency, through innovation and the effective application of modern technology, to expand its product and service offerings, to better engage and retain its customers, to integrate key business systems, and, ultimately, in doing so, to materially increase customer satisfaction and the overall revenue generated by the system.

We propose to leverage our proven outdoor licensing and recreation solution, with its innovative feature set and industry-leading technology platform, to establish the next generation NDOW Licensing System – a web-based customer relationship management and e-commerce platform that will provide all capabilities to support and administer hunting and fishing license sales. We propose to dedicate our top-notch team of management, technology, and industry experts to this project to ensure project success from start to finish. Finally, we propose to leverage our proven project management and software development processes to execute the project with the utmost professionalism so that NDOW has the confidence that all project objectives will be met within time, scope, and budget.

JMT also understands that the collaboration and hard work doesn't stop with the initial production release. We believe that the final measure of success for this project will be the ongoing partnership between JMT and NDOW – one that's mutually beneficial; that drives innovation and continuous improvement to the NDOW Licensing System; that increases agency revenue through strategic marketing and retention efforts; and that promotes increased participation in hunting and fishing activities in the State of Nevada.

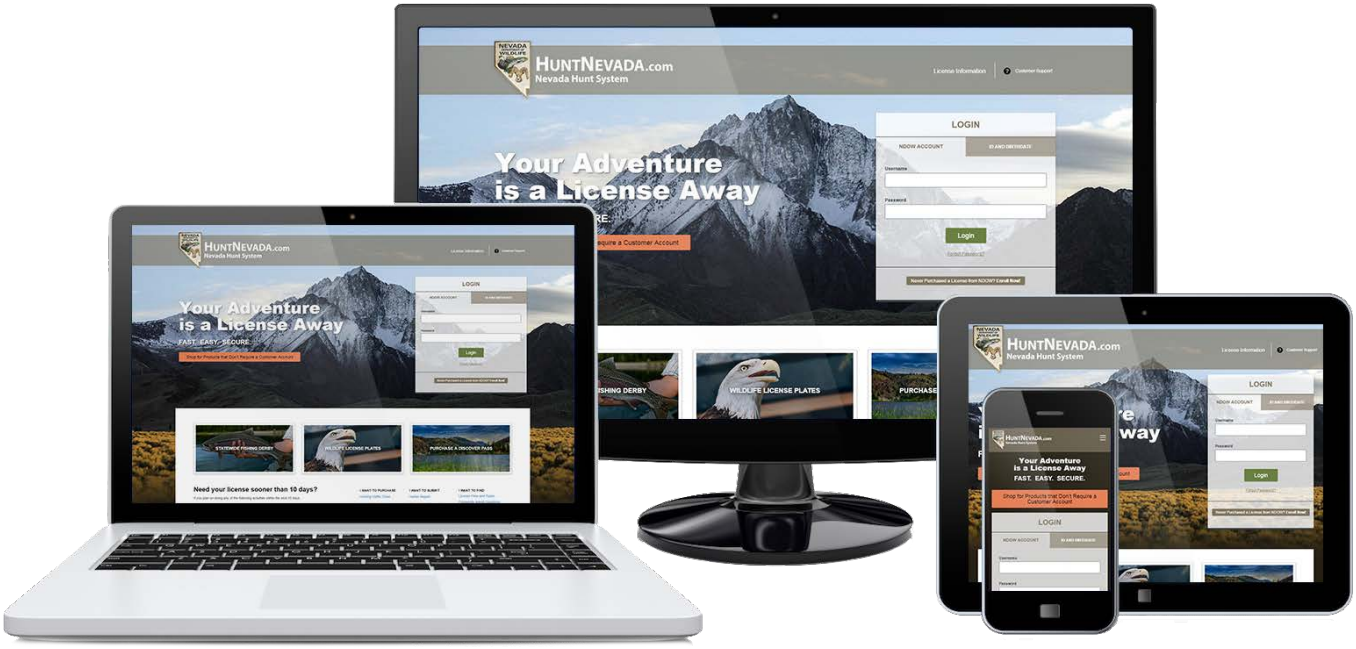
Our Commitment to the Nevada Department of Wildlife

We understand that for NDOW the stakes are very high. With licensing revenue representing a large portion operating revenue, the NDOW Licensing System is truly mission critical. This implementation and transition to a new mission critical business system requires dedication of both the vendor and NDOW staff.

Likewise, the stakes are very high for JMT. Successful projects and satisfied clients are the most important thing we can do to continue to grow this line of business. Accordingly, from a strategic perspective, JMT believes that our long-term goals are best achieved by evaluating each opportunity carefully and selectively pursuing those states with whom a partnership will result in mutual success.

Based on our interactions with the NDOW team, discussions with other industry partners and the information presented in the RFP, we believe that NDOW is an ideal partner. We aim to partner with forward-looking agencies that care about innovation, and that are constantly looking to adapt and do things smarter and better. That's the kind of company that we are, and we're better positioned for success when partnered with like-minded clients. We believe strongly that NDOW is a great match.

The JMT Technology Group Outdoor Licensing and Recreation Solution



The "next generation" features that the Nevada Department of Wildlife is looking for in its new licensing system are at the core of JMT's platform – a powerful framework for rapidly deploying intuitive, reliable, customized outdoor licensing and recreation solutions. Our platform is built on first-in-class technology and provides the modern user experience to which todays customers have become accustomed.

While not a commercial off the shelf (COTS) solution in the traditional sense, JMT's Outdoor Licensing and Recreation solution provides all of the features and functionalities that the Nevada Department of Wildlife requires to realize its vision for the new NDOW Licensing System.

The product feature infographic on the following page provides an overview of the modules and features that are available in JMT's solution that can be brought to bear for the State of Nevada. Using this framework as a foundation, JMT's Licensing Team will brand the solution to integrate with the Nevada Department of Wildlife's existing style and will configure and customize the solution to meet 100% of NDOW's requirements and specifications.

Our outdoor licensing and recreation solution, based on our proven framework, is implemented as singular, web-based, hosted solution that is designed to serve our customers through the provision of an efficient, intuitive sales experience across multiple sales channels including license dealers, internet self-service, state agency, and telephone. In addition to product sales, our solution differentiates itself through the provision of a comprehensive self-service environment from which customers can manage their account and access the services they need when they need them.

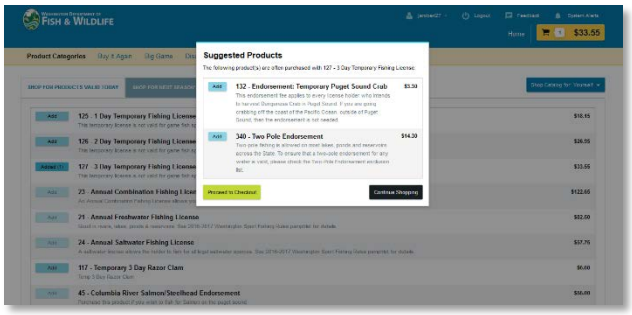
Our solution is likewise, designed to serve the needs of the licensing agency through the provision of a flexible, customizable environment within which administrators can configure and manage the system including a comprehensive product catalog, system users, license dealers, product availability, inventory, email campaigns, surveys, and other functionality.

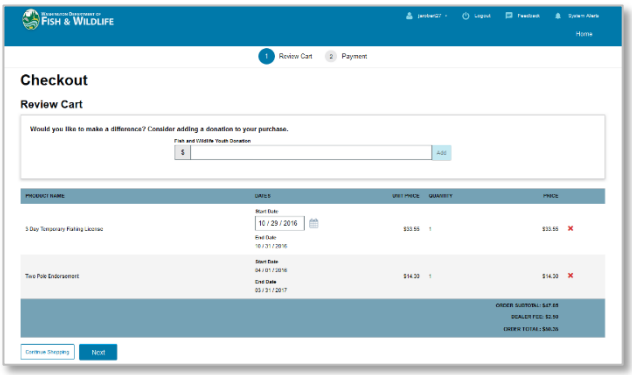
The following highlights some key features of JMT's platform and how they will contribute to NDOW's new, comprehensive, robust, outdoor licensing and recreation solution.

Intuitive, Customer-Centric Product Sales

JMT Technology Group understands that customer satisfaction is critically important to NDOW and that the new NDOW Licensing System will be the primary means by which many customers interact with NDOW. Providing a positive user experience through the provision of an intuitive and customer friendly sales process leads to higher satisfaction and therefore higher retention.

Our dedicated User Experience Team focuses their efforts on assuring that our solution offers an efficient, intuitive, and enjoyable user experience. The JMT User Experience Team approaches our product designs by considering many aspects of the users' behavior, identifying their needs coupled with the context in which they interact with the system. Working closely with the System Architect and the development team, the User Experience designers help ensure the system user interface is not only visually appealing, but performs efficiently across all device platforms. Enhancements to the product user experience are data informed, utilizing site analytics, client feedback, and customer input to make design decisions and drive enhancements.



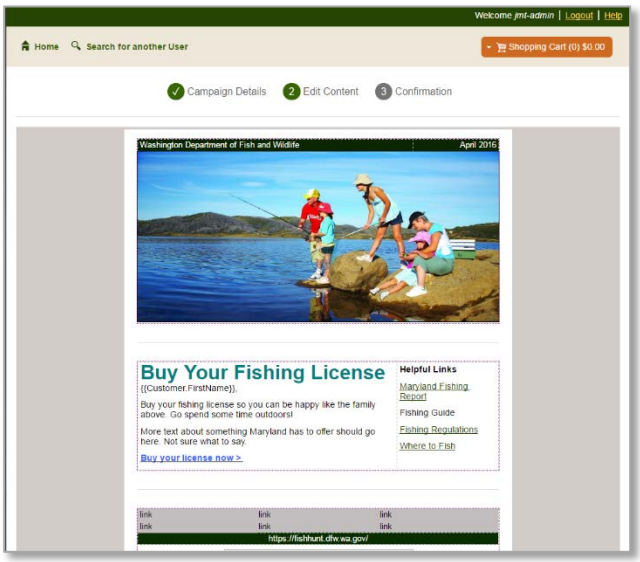


Connect with Customers

JMT's solution is designed around the core concept of facilitating a relationship between the licensing agency and its customers.
Understanding that recruitment, retention, and reactivation have become increasingly high priorities for licensing agencies, our solution seeks to effectively leverage technology to keep your brand in front of your customers, and to provide easy opportunities for them to interact with and purchase your products.

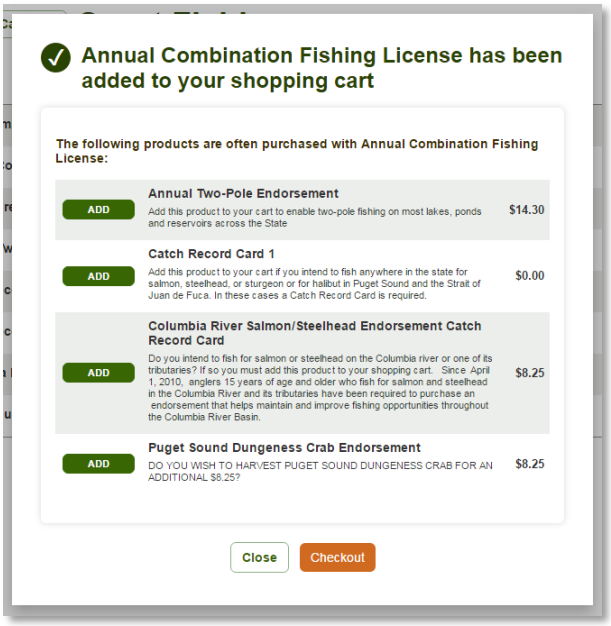
Our solution leverages the rich customer sales and demographic data to provide the licensing agency opportunities for personalization of services and recommendations that improve the customer experience.

Using our platform, licensing agencies can create modern, responsive email marketing campaigns that allow the agency to reach their customers when it matters most. This could mean emailing all customers that purchased a fishing licensing in the prior year but have yet to do so this year. A second campaign might automatically send reminder emails when an active license is about to expire and provide easy path to renewal. And a third might go out to all customers informing them of new products and services that may benefit them.



Increase Revenue

JMT understands that the revenue generated through system sales is often the primary source of revenue for wildlife agencies, which makes product features designed to increase revenue critically important. In consideration of this, our solution includes multiple features:



Cross Selling and Upselling

NDOW will have the ability to configure the system so that specific products are presented for optional purchase during the sales transaction process based on the composition of the user's shopping cart. This functionality is continually evolving with more sophisticated algorithms based on Customer Profiles with rich customer demographic and sales data.

Packaged Products

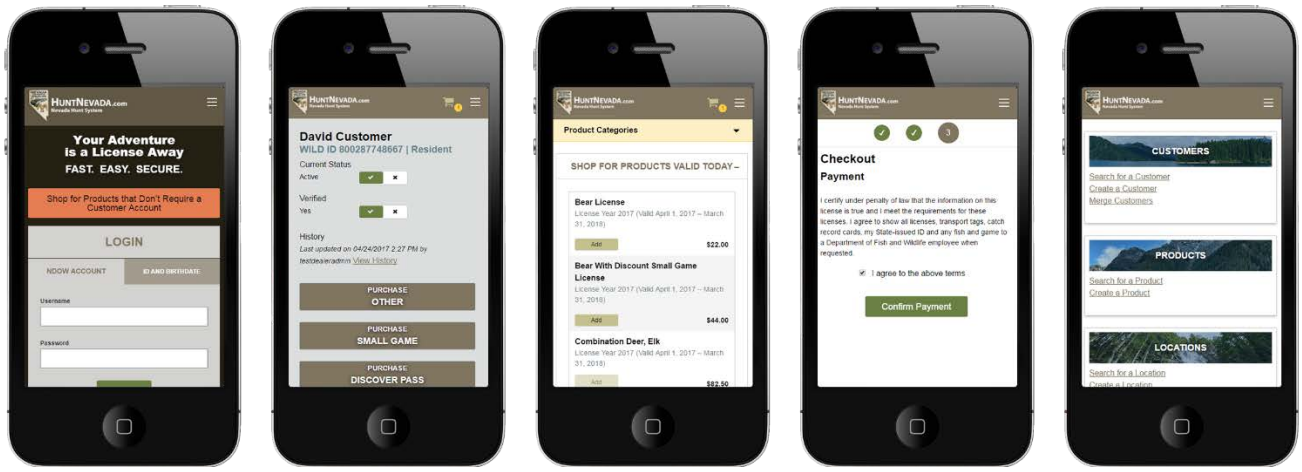
NDOW will have the ability to configure products as bundles that result in higher overall transaction values by incentivizing the purchase of multiple products which are discounted when purchased in tandem.

Product Discounts

Our platform provides NDOW the ability to create discounts that target customers with specific demographic profiles and purchase histories with the goal of incentivizing product sales. These discounts can be configured to incentivize purchases for lapsed hunters / fishers or to incentivize add-on purchases. Initial campaigns in Maryland have produced excellent results.

Support for Mobile Devices

JMT has placed significant focus on ensuring that our solution is accessible to customers via any internet connected device. We implement a responsive design approach whereby the layout of the application's screens changes dynamically based on the size and capability of the device from which it is accessed. The benefits of this approach are obvious; you develop and maintain one licensing system, and it works seamlessly across the plethora of platforms including personal computers, tablets, as well as iOS, Android, and Windows mobile devices. This approach assures that the customer will get the products and services they need when they need them and in doing so encounter a user-experience that is tailored to the device that they're using.

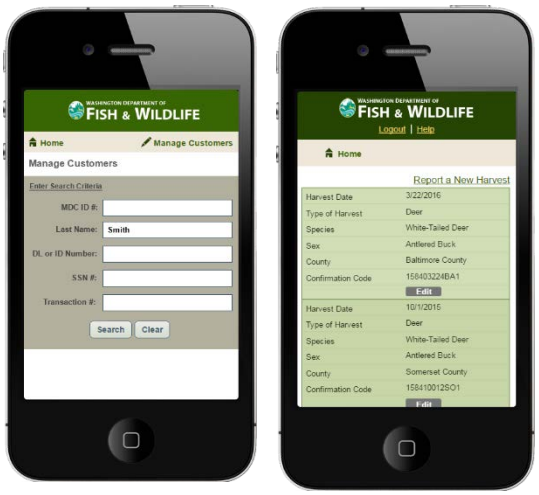


Support for Law Enforcement

JMT understands that NDOW's new NDOW Licensing System must support the needs of law enforcement to validate customer data in the field. Building upon the responsive design framework described above, JMT's solution includes a mobile friendly experience for law enforcement agents that provides the ability to quickly locate a customer in the system and access that customer's profile.

The types of information that will be accessible to law enforcement in real-time include customer:

- ***Demographic data***
- ***Details regarding any revocations or restrictions***
- ***License and permit history including current status***
- ***Harvest history and outstanding reports***

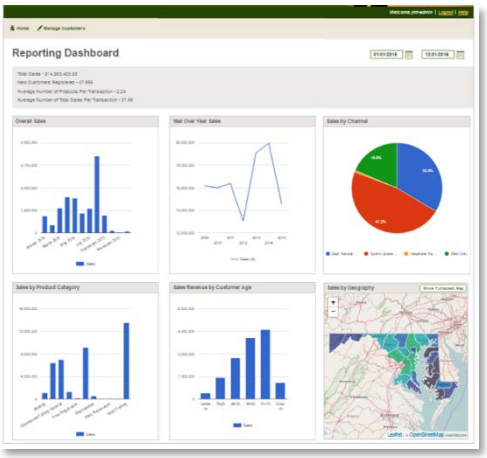


Real-Time Access to Customer and Sales Data

One of the most powerful features of a next generation licensing and recreation solution is the robust customer data that is created and maintained by the system. Access to that data provides the agency the ability to ask and answer a myriad of questions that support its efforts in the areas of marketing, licensing, finance, and conservation.

JMT's solution provides the tools in the form of tabular reports, dynamic charts and graphs, as well as interactive dashboards to gain access to that data and analyze it for valuable information.

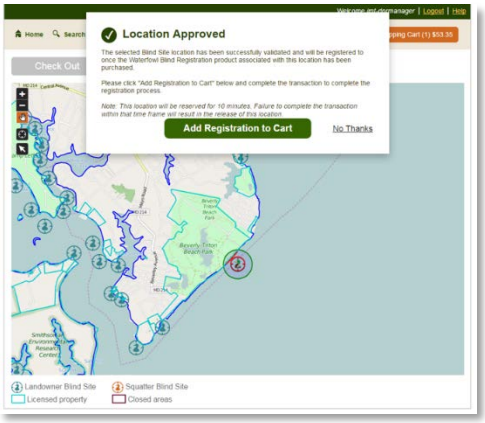
Access to data about your customers, their purchases, and their events is critical to developing a better understanding of those customers and, ultimately, to better serving their needs.



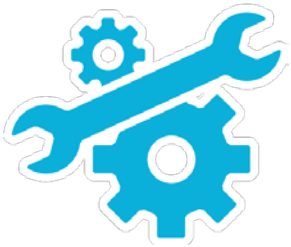
Integrated Geospatial Capabilities

An aspect of our platform that differentiates it from all other competitor products is its integrated geospatial capabilities including interactive mapping functionality with advanced spatial analysis tools. Since this technology is built into the solution, it can be leveraged in any and all instances where spatial context provides additional value or improves user experience.

In the State of Maryland, customers register for waterfowl blind locations along Maryland's shoreline. There are numerous, complex business rules that dictate valid blind site locations that are enforced using spatial analysis capabilities of our solution. The implementation of this registration process through our geospatial capabilities dramatically increases data accuracy, efficiency, and the customer experience.



Modern Technology



JMT's Licensing Team Members are outdoorsmen and technology experts. We recognize that implementing modern, yet proven technologies brings immense value to our clients and to the millions of customers that use our solution as part of their outdoor experience. Our fully web-based solution is no exception. It's built on the Microsoft .NET platform and implements current industry standard web technologies including HTML 5 and CSS3. The solution makes appropriate use of client-side JavaScript frameworks such as Angular JS to provide a modern, intuitive and responsive user experience.

Some technology highlights include:

- ***Most current Microsoft .NET web technologies ASP.NET MVC, ASP.NET Web API, and SQL Server 2014***
- ***Advanced client side technologies such as AngularJS for improved performance and overall customer experience***
- ***Leveraging open source spatial technologies, OpenLayers3 and Mongo DB***
- ***Sophisticated data access technology for built-in security and performance***

Integration with Other Business Systems via an API
A core component of our solution's architecture is the implementation of a Service Oriented Architecture. These secure, rest-based web services are exposed in the form of an application programming interface (API) which establishes a framework for interoperability with other internal and external systems. This API can be leveraged by NDOW developers to support access to the rich data store that is created and maintained by the licensing system.

3.2	COMPUTING PLATFORM
3.2.1	Vendors shall submit a list of hardware (excluding NDOW desktop hardware) that will be used to provide the services required under this RFP, and shall state whether each item will be dedicated exclusively to those services or shared by all systems with other applications. Each bidder must document how the listed hardware will be sufficient to provide all the services required under this RFP. The solution must be at minimum Tier 3 data management standard or above and preferably located in Nevada. Note that the current configuration includes various servers, network devices, data lines, phone system hardware, continuous power supplies, work stations, a postage machine, fax machines, and printers.

Production Hardware and Software
JMT proposes a fully hosted solution that will reside in the Microsoft Azure Cloud environment, providing exceptional availability, reliability and performance.

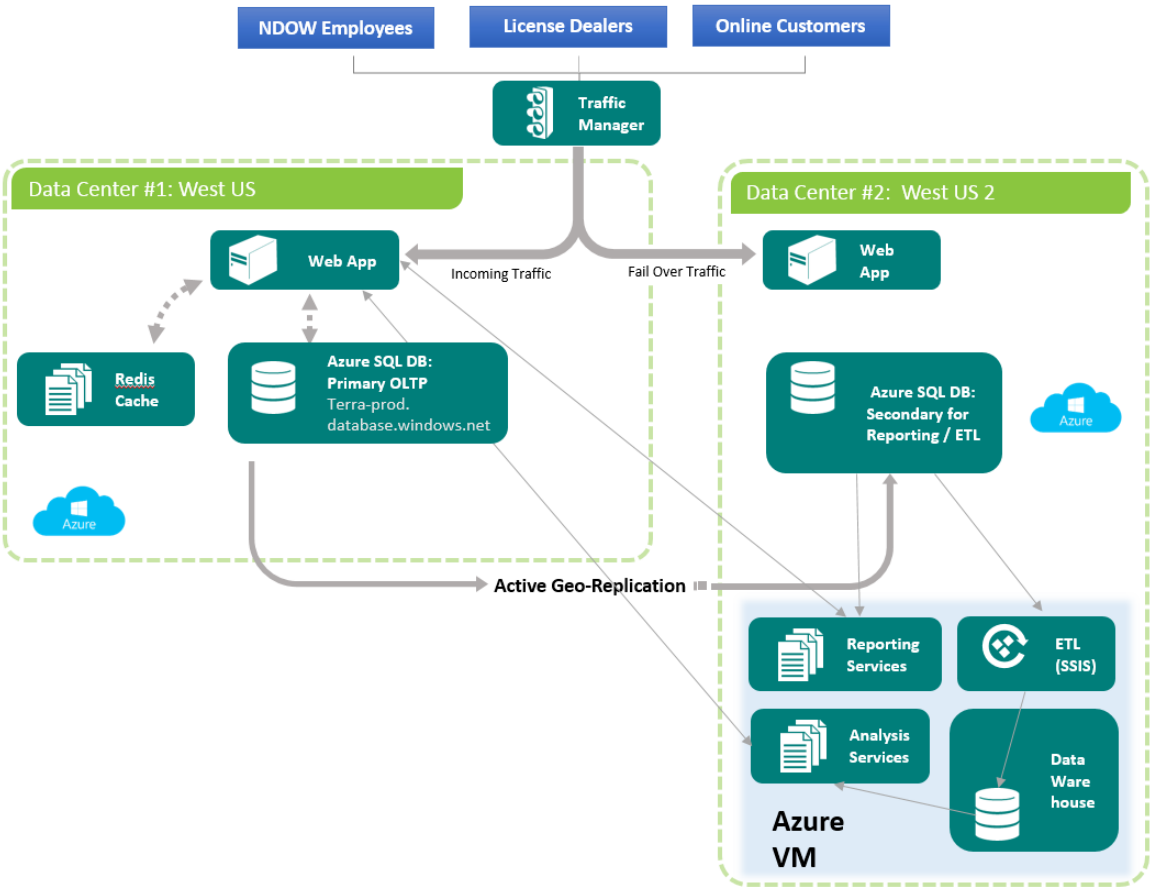
This solution includes all hardware and software required to operate the production and backup environments. Additionally, JMT will stand up a UAT (User Acceptance Testing) environment that will support collaboration between JMT and NDOW during the system development phase.

Active Geo-Replication - For data redundancy and back-up, Azure replicates the primary database to a readable secondary database housed in a separate data center (data center 2). This type of replication is known as Active Geo-Replication.

Geo-Redundancy – The application itself is also mirrored in a secondary, geo-redundant data center. If a failure were to occur to the primary application or data center, Azure's Traffic Manager will route all incoming traffic to the secondary instance of the application. This ensures that, even in a disaster recovery scenario, users would experience only a brief service interruption and no degradation in performance of the NDOW System.

Auto Scaling ***–Computing resources will automatically scale up resources to meet the demand. Scaling provides consistency in application responsiveness and performance by distributing the workload across multiple machines.***

The diagram below provides an overview of the proposed production environment and a more detailed description of each component follows.



Key Components:

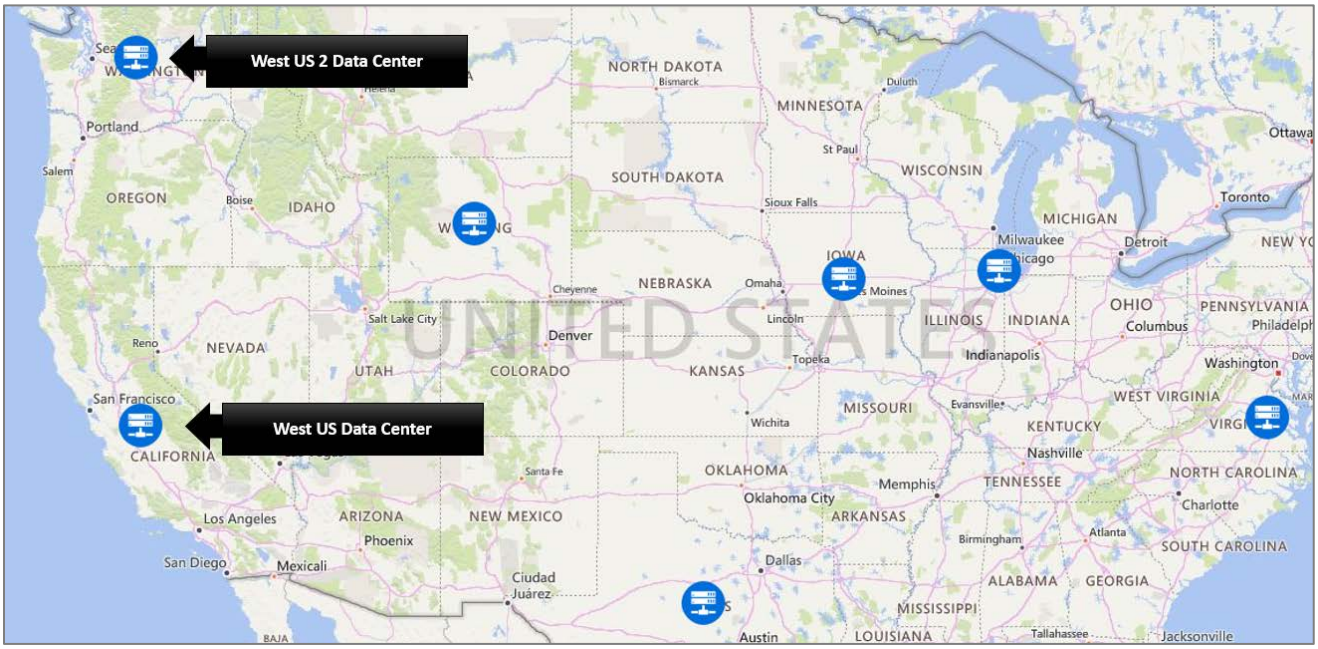
- ***Azure*** ***– Azure is Microsoft's cloud-computing platform which contains a variety of services and infrastructure offerings such as cloud services, database services, networking, mobile, computing and virtual machines. It operates out of seventeen (17) regions around the world including eight (8) in the continental United States. Azure has facilities in more countries and regions than Amazon Web Services (AWS) and Google Cloud combined. Microsoft has invested $15 billion (USD) into the infrastructure of these datacenters.***
- ***Web App*** ***– The web application consists of two main components: an AngularJS frontend and an ASP.NET WebAPI suite of web services on the backend. All communication between the client and server is delivered over HTTPS / SSL encryption. Access to the application, and the underlying data, is enforced using Microsoft's ASP.NET Identity framework. This security framework is responsible for both the authentication (can the user access the system?) and the authorization (what can the user do once authenticated) of the users.***
- ***Active Geo-Replication*** ***– For data redundancy and back-up, Azure replicates the primary database to a readable secondary database housed in a separate data center (data center 2). This type of replication is known as Active Geo-Replication. This secondary database switches over and becomes the primary database in the event of a failure such as a data center outage or a connectivity issue between the application and the primary database. In addition, the secondary database can be used for read-only activities such as reporting.***

- ***Geo-Redundancy* – The application itself is also mirrored in a secondary, geo-redundant data center. If a failure were to occur to the primary application or data center, Azure's Traffic Manager will route all incoming traffic to the secondary instance of the application. This ensures that, even in a disaster recovery scenario, users would experience only a brief service interruption and no degradation in performance of the NDOW System.**
- ***Auto Scaling* – Hosting the product in Azure allows us the ability to increase resources on the fly. For example, during peak periods throughout the year we can scale up resources to meet the demand. Scaling provides consistency in application responsiveness and performance by distributing the workload across multiple machines. Resources can be configured to change on a set schedule or by built-in mechanisms in Azure to detect high usage.**
- ***Redis Cache* – Redis Cache is a service Azure provides for caching various types of data. The solution leverages this caching service to provide speedy responses to otherwise long-running and resource intensive requests. Data that is retrieved often is stored in this cache rather than making expensive queries to the database.**
- ***Azure SQL Database* – All application data is stored in Azure's SQL Database. This component offers the same features of a standard SQL Server installation with built-in support for performance tuning and intrusion detection. The Azure SQL Database technology allows the database to grow and scale as needed; handling large spikes in utilization while not requiring resources to be added manually.**
- ***Warehouse / Reporting Services* – A SQL Server Virtual Machine will be used to house the SQL Server Reporting Services (SSRS) Database. SSRS will be used to house the report templates as well as generate reports on demand. The capabilities are also there to email automated reports on a subscription-type basis. The data warehouse will also be stored on the SQL Server Virtual Machine. The SSRS reports will have data sources connecting to both the production Azure SQL Database as well as the local data warehouse.**
- ***ETL* – A custom ETL (Extract, Translate, and Load) process will be developed to build and maintain a data warehouse for reporting processes. This ETL will pull data from the secondary data source so it does not cause any resource issues with the production database.**

Azure Data Centers

JMT proposes to establish redundant instances of the new NDOW Licensing system within Azure data centers. All infrastructure allocated for this solution will be dedicated to the NDOW Licensing System and data centers will be chosen based on proximity to the State of Nevada.

The map below shows the location of the primary data center, Azure West US Data Center, in central California and the secondary data center, Azure West US 2 Data Center, in Washington.

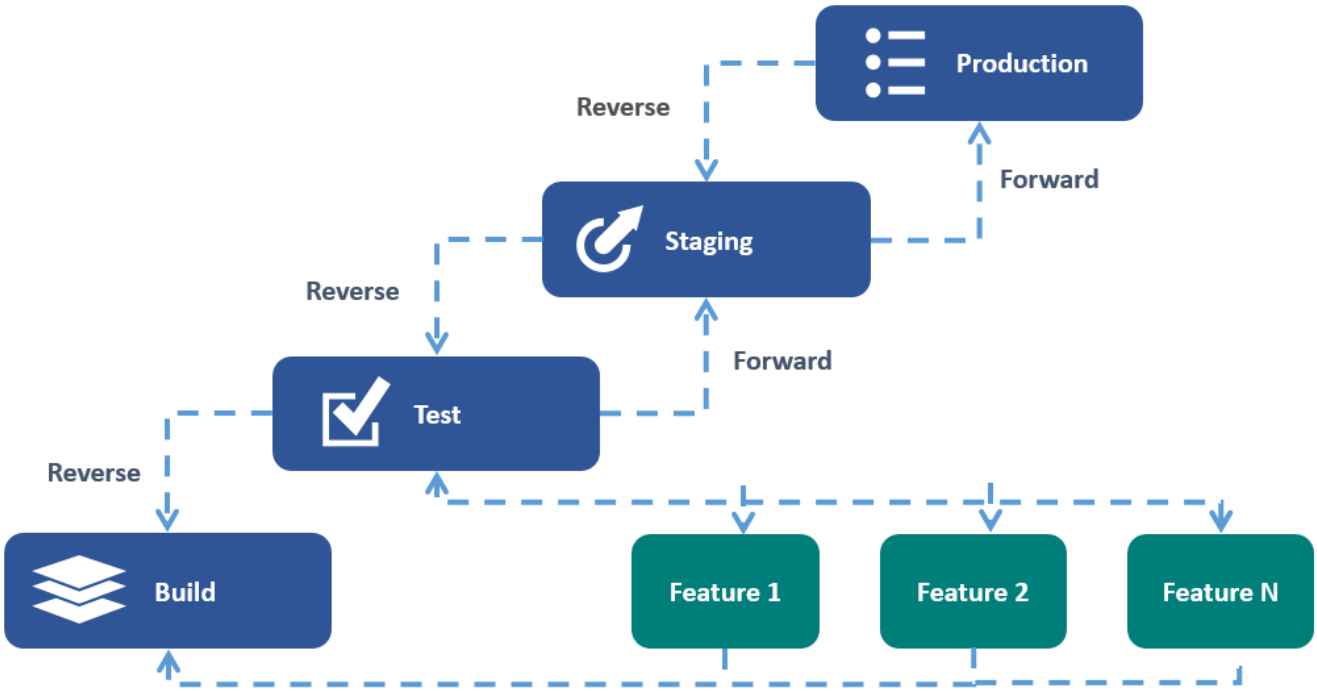


Development, Testing and User Acceptance Testing Environments

Our development and quality assurance teams use the following four environments, all deployed within their own, dedicated resource group within the Microsoft Azure environment.

- ***Build –** this is a continuous integration (CI) environment where features of the application are developed. After a feature has been developed, tested, and approved, it is promoted to the Test environment. Unit tests are run for each deployment to this environment. If the unit test fails, then the deployment is suspended until all unit tests have been fixed. This process ensures that any new code deployed to this environment meets our quality and development standards.*
- ***Test –** this is the environment that JMT's quality assurance team uses for internal quality control and quality assurance activities.*
- ***UAT –** at any given time, this environment is in one of two basic states: production mirror or staged changes. This environment will match production so we can address any critical, production level bugs before code is promoted to production. The UAT environment is also utilized heavily for regression testing and client User Acceptance Testing (UAT) prior to a production deployment.*
- ***Production –** this is the live, production environment. Changes to this environment are only made after a full regression test and client approval. JMT will not alter the state of this environment without the approval of the client.*

The following diagram depicts the progression of code changes from their development in individual features branches through the quality assurance environments and ultimately to production.



Security

JMT understands that security is one of the singular most important tenants of a successful system rollout. Security covers a broad range of topics; including physical site security, protection of personal data and information, and data security.

Azure Hosting

The Azure hosting platform, and Microsoft itself, put a strong emphasis on security and providing a secure platform for applications hosted in their cloud environment.

Outlined below are ten key security components of Azure:

- ***SSL mutual authentication for internal control traffic***
- ***Certificate and private key management***
- ***Least privilege customer software***
- ***Access control in Azure storage***
- ***Isolation of hypervisor, root OS, and guest virtual machines***
- ***Isolation of fabric controllers***
- ***Packet filtering***
- ***VLAN isolation***
- ***Deletion of data***

Azure adheres to a wide array of international and industry-specific compliance standards. These standards include ISO 27001, HIPAA, FERPA, FedRAMP, SOC 1, and SOC 2. In addition, Azure undergoes a series of third-party audits, such as by the British Standards Institute, to ensure that all security standards are met.

Physical Site Security

Physical access to the Azure Infrastructure is strictly controlled both at the perimeter and at building ingress points by professional security staff utilizing video surveillance, intrusion detection systems, and other electronic means. Authorized staff must pass two-factor authentication, a minimum of two times, to access data

center floors. All visitors and contractors are required to present identification and are signed in and continually escorted by authorized staff. Microsoft only provides data center access and information to employees and contractors who have a legitimate business need for such privileges. All physical access to data centers by employees is logged and audited routinely.The automatic fire detection system utilizes smoke detection sensors in all data center environments, mechanical and electrical infrastructure spaces, chiller rooms and generator equipment rooms. The Azure data center electrical power systems are designed to be fully redundant and maintainable without impact to operations, 24 hours a day, and seven days a week. Uninterruptible Power Supply (UPS) units provide back-up power in the event of an electrical failure for critical and essential loads in the facility. Data centers use generators to provide back-up power for the entire facility. Microsoft monitors electrical, mechanical, and life support systems and equipment so that any issues are immediately identified. Preventative maintenance is performed to maintain the continued operability of equipment.

Protection of Personal Data and Information

The protection of data is paramount to JMT and therefore security is prioritized at every layer of the system.

The NDOW Licensing System will enforce with a role-based security scheme protected by username and password. Access to the NDOW Licensing System by a customer, agent, or internal user to access the web portal, they will need to log into the system. The system will enforce common practices of security like strong passwords and frequent password changes.

All personally identifiable information (PII) or other sensitive data such as banking information will be encrypted at rest in the database. The application utilizes Password-Based Key Derivation Function 2 (PBKDF2) which is the recommended encryption algorithm for .NET by The Open Web Application Security Project (OWASP).

All data will be encrypted when transmitted electronically. All data transfers between the servers and client devices will be encrypted using the TLS 1.2 specification. To minimize the data at risk, JMT will not transmit any PII data from the servers unless the authenticated user has the proper role and permissions to view such data.

For migration of existing customer information, JMT will require that data be transferred to our facility via a secure method of transmission. The details on this transfer will be agreed upon between the two parties prior to transmission.

JMT will obfuscate sensitive data secured at JMT's development facility so in the event that a malicious attack occurs on JMT servers, no real data is compromised. Procedures are in place to take data from production, obfuscate it, and restore it back to JMT for development purposes.

Web Application Firewall

In addition to Azure's native security features, JMT will configure a third-party Web Application Firewall in front of the Microsoft Azure environment to monitor and log intrusion attempts as well as DDOS attacks, SQL injection attacks, cross-site scripting, cross-site forgery requests, and other such security threats. While on premise firewalls can quickly become outdated and require professional service hours to regularly update rules to protect against new threats thirds party services such as that provided by Cloudflare help you stay ahead of threats by automatically updating when new security vulnerabilities are released.

Network Security

The new NDOW Licensing System will implement Transport Layer Security (TLS 1.2) to encrypt data during transmission.

Availability

Azure offers a variety of services which guarantee high availability. The enterprise grade Azure Service Level Agreement (SLA) describes the uptime availability for their online services. Our platform uses a variety of services offered by Azure. The availability percentages for each are listed below:

- ***Web service: 99.95%***
- ***Database server: 99.9-99.99%***
- ***Cache service: 99.9%***

In addition to these uptime guarantees, Azure offers 24x7 tech support and health monitoring for all services.

Disaster Recovery

The Microsoft Azure platform has redundancy and disaster recovery built into the core of the services they provide. To begin with, the data is stored in SQL as a Service. SQL as a Service has recovery built in by allowing the system to be recovered from past data points up to 35 days in the past. Azure also offers disaster recovery through Active Geo-Replication. This service maintains an active secondary copy of the database in a data center at least 500 miles from the original data source. This secondary database becomes the primary database in the event of an application or data center failure. If, for some reason, the primary web application cannot communicate with the primary database, Azure will swap the secondary database with the primary to eliminate downtime. If the entire data center were to go down then the secondary database would automatically become the primary. By leveraging Azure's capabilities JMT can ensure complete recovery from a catastrophic failure at the primary data center, with no data loss, in a timeframe significantly faster than the industry standard two hours.

Point of Sale (POS) Hardware and Software

JMT's Outdoor Licensing and Recreation solution is a singular web application that fully supports the execution of point of sale transactions at agent locations through a standard web browser. As such the POS configuration requires only the ability to access the internet via a web browser and the ability to connect a variety of peripheral devices through standard USB ports. NDOW has the option of locking these configurations down so the users may only view the NDOW Licensing System website, or allowing users the ability to freely use their computers to serve multiple agency functions that are accessible through web-based platforms.

Accordingly, we recommend the low-cost configuration detailed below which provides the following benefits:

- ***The total cost per configuration is less than half that of the HP RP7 computer that other vendors recommend***
- ***It has a small footprint, taking up little space at dealers' registers***
- ***It is touch-enabled, allowing the dealer the option mouse and/or touchscreen***
- ***It provides the flexibility to operate in either a Full Service or Kiosk Mode***

Computer	*HP ProOne 400 G2*
Type: Touch Screen - All in One PC ***Specifications:*** • *CPU: Intel H110 Dual Core, 3.3 GHz* • *RAM: 4GB DDR3* • *Hard Drive: 500 GB* • *USB Ports: 6* • *Optical Drive: Yes* • *Network: 10/100/1000 Ethernet* • *Graphics Card: Supports minimum 1024x768* • *OS: Windows 7/10 Pro* • *Web Browser: IE 11* • *Keyboard: USB (Standard English)* • *Mouse: USB*	

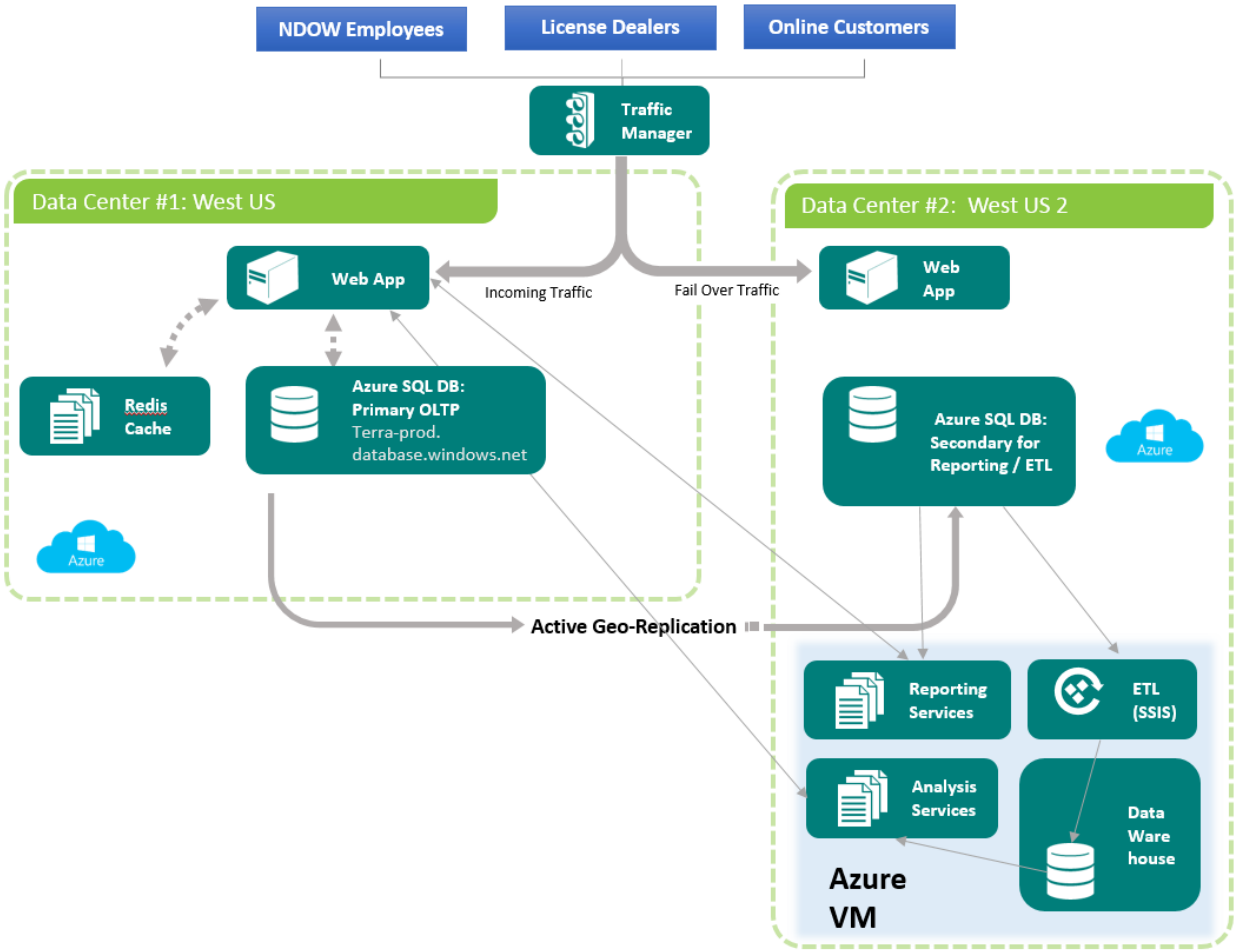
Printer	***Zebra GX420D***
Specifications: • ***Type: Black and White*** • ***Scanner: None*** • ***Print Stock: Normal to heavy weight paper*** • ***Interface: USB*** • ***Max Print Size (width): 104mm*** • ***Cutter: Yes*** • ***Duplex Printing: Not required*** • ***Duty Cycle: up to 50,000 per month***	
Numeric Keypad	***UNITECH BLACK 19 KEY USB NUMERIC KEYPAD***
Specifications: • ***Interface: USB***	
Barcode Scanner	***Motorola DS6708 Scanner***
Specifications: • ***Interface: USB***	

3.3 TECHNICAL REQUIREMENTS

3.3.1	Database Requirements
3.3.1.1	Vendors must provide a description and system, application, and process diagrams of the conceptual design or architecture of the proposed solution so it is clear how transactions from all sources will be processed simultaneously. This should include the major functions to be provided by the vendor as well as how they interact. Vendors should describe each component included in their design and indicate the location of facilities involved in the system. In addition, if the processing and/or database servers are shared with other clients, the Vendors should identify the other clients and provide data indicating how Nevada business could be impacted, and all other client's peak transaction processing dates. List and reference specific equipment, service providers, systems, and data management and application software being proposed.

JMT's outdoor licensing and recreation solutions, based on our proven framework, are implemented as singular, web-based, hosted solutions that are designed to serve customers through the provision of an efficient, intuitive sales experience across multiple sales channels including license dealers, internet self-service, state agency, and telephone.

JMT proposes a fully hosted solution that will reside in the Microsoft Azure Cloud environment, providing exceptional availability, reliability and performance. All components proposed to support NDOW's new licensing system will be dedicated to that system and isolated from the solutions of all other clients. The following depicts the architecture of the proposed solution and a description of the major components of that architecture follows:



Key Components:

- ***Azure*** ***– Azure is Microsoft's cloud-computing platform which contains a variety of services and infrastructure offerings such as cloud services, database services, networking, mobile, computing and virtual machines. It operates out of seventeen (17) regions around the world including eight (8) in the continental United States. Azure has facilities in more countries and regions than Amazon Web Services (AWS) and Google Cloud combined. Microsoft has invested $15 billion (USD) into the infrastructure of these datacenters.***

- ***Web App*** ***– The web application consists of two main components: an AngularJS frontend and an ASP.NET WebAPI suite of web services on the backend. All communication between the client and server is delivered over HTTPS / SSL encryption. Access to the application, and the underlying data, is enforced using Microsoft's ASP.NET Identity framework. This security framework is responsible for both the authentication (can the user access the system?) and the authorization (what can the user do once authenticated) of the users.***

- ***Active Geo-Replication*** ***- For data redundancy and back-up, Azure replicates the primary database to a readable secondary database housed in a separate data center (data center 2). This type of replication is known as Active Geo-Replication. This secondary database switches over and becomes the primary database in the event of a failure such as a data center outage or a connectivity issue between the application and the primary database. In addition, the secondary database can be used for read-only activities such as reporting.***

- ***Geo-Redundancy*** ***– The application itself is also mirrored in a secondary, geo-redundant data center. If a failure were to occur to the primary application or data center, Azure's Traffic Manager will route all incoming traffic to the secondary instance of the application. This ensures that, even in a disaster recovery scenario, users would experience only a brief service interruption and no degradation in performance of the NDOW System.***

- ***Auto Scaling*** ***– Hosting the product in Azure allows us the ability to increase resources on the fly. For example, during peak periods throughout the year we can scale up resources to meet the demand. Scaling provides consistency in application responsiveness and performance by distributing the workload across multiple machines. Resources can be configured to change on a set schedule or by built-in mechanisms in Azure to detect high usage.***

- ***Redis Cache*** ***– Redis Cache is a service Azure provides for caching various types of data. The solution leverages this caching service to provide speedy responses to otherwise long-running and resource intensive requests. Data that is retrieved often is stored in this cache rather than making expensive queries to the database.***

- ***Azure SQL Database*** ***– All application data is stored in Azure's SQL Database. This component offers the same features of a standard SQL Server installation with built-in support for performance tuning and intrusion detection. The Azure SQL Database technology allows the database to grow and scale as needed; handling large spikes in utilization while not requiring resources to be added manually.***

- ***Warehouse / Reporting Services*** ***– A SQL Server Virtual Machine will be used to house the SQL Server Reporting Services (SSRS) Database. SSRS will be used to house the report templates as well as generate reports on demand. The capabilities are also there to email automated reports on a subscription-type basis. The data warehouse will also be stored on the SQL Server Virtual Machine. The SSRS reports will have data sources connecting to both the production Azure SQL Database as well as the local data warehouse.***

- ***ETL*** ***– A custom ETL (Extract, Translate, and Load) process will be developed to build and maintain a data warehouse for reporting processes. This ETL will pull data from the secondary data source so it does not cause any resource issues with the production database.***

3.3.1.2	Vendors should identify how the processing and database servers (including any at subcontractor locations) will accommodate the estimated system transaction volume and the volume of users of the System Administration tools.

Architected for Performance

The Azure configuration that JMT has architected and proposes for the NDOW Licensing System is designed to ensure optimum performance under extremely high load. At the outset JMT will leverage Azure estimation tools to determine the appropriate size and number of instances for PaaS services to provide a high-level of performance based on NDOW's historic transaction volume, including peak volumes.

JMT recognizes that these systems are subject to extreme and variable spikes in demand because, as we've been told more than once, "Hunters are the biggest procrastinators in the world."

The architecture we have proposed accounts for these situations. Azure technology provides scalability to withstand increased workloads. During increased seasonal load, JMT will boost the computing resources of both the application and database to mitigate any performance impacts. Scaling these resources helps to ensure that the solution continues to be responsive under increased load.

Scaling in Azure can be accomplished in the following ways:

Scheduled: ***Resource allotment can be configured to change on a set basis such as specific date range, weekend, weekdays, etc.***

Automatic: ***Azure is intelligent enough to sense increases in resource usage on each machine. If configured, the machines will auto scale if pre-defined thresholds are exceeded. Alternatively, if usage is very low then the resources will be scaled back to meet demand.***

Manual: ***A system administrator provisions additional computing resources. While automatic scaling will be in place, there are times when scheduling the environment to scale up resources is more beneficial. For example, during periods of high usage, such as the beginning of hunting season, JMT can scale up resources to meet the expected demand. This type of operation allows the solution to proactively deal with system load as opposed to a reactive approach.***

Performance and Load Testing

JMT will use a 3rd party load testing tools, such as Visual Studio Web Performance and Load Tests, to stress test the environment. The tools can be configured to simulate any number of concurrent users and operations against the application. JMT will load test the system under increasingly heavy load to simulate high volume conditions.

JMT will provide NDOW with a load/stress test of the sales system showing the test, number of concurrent users, response time average, and error percentage. We will work with NDOW to ensure the system can handle the specified system load.

Prior to production release JMT will ensure that NDOW stakeholders have 100% confidence in the system's ability to perform under all load conditions.

3.3.1.3	The awarded vendor must import all historical data from each module into the proposed database. The database must be accessible to all users of the system with appropriate access controls. The proposed system must allow customers to continue to use their existing customer ID, allow viewing of current and previous transaction history. The awarded vendor must convert existing data to pre-populate the new system's database with 100% accuracy from the following areas:

A. Hunting and Fishing Licenses
B. Vessel Titling/Registrations
C. Conservation Education/Programs
D. Law Enforcement Citations/Revocations
E. Harvest Information Reporting
F. Application Hunt/Tags and Draw/Bonus Point/Eligibility
G. The Volunteer Program
H. Special Licenses and Permits

Migrating data from one system and data model to another is a very complex task that requires meticulous planning, execution, and validation to mitigate any data corruption and/or loss.

JMT Technology Group has significant experience with enterprise-scale data migration, validation and quality improvement efforts having successfully undertaken similar efforts for the Maryland Department of Natural Resources, the WV Division of Natural Resources, and, most recently the Washington Department of Fish and Wildlife.

Data migrated for the Maryland Department of Natural Resources includes at a high-level:

- ***Customers***
- ***Enforcement Actions***
- ***Products***
- ***Sales Transactions***
- ***License Vendors***
- ***Lottery Results***
- ***Vessels***

Data migrated for the West Virginia Division of Natural Resources includes at a high-level:

- ***Customers***
- ***Products***
- ***Sales Transactions***
- ***License Vendors***
- ***Lottery Results***

JMT has recently completed the migration of all legacy data from the Washington Department of Fish and Wildlife's WILD system including:

- ***Customers***
- ***Enforcement Actions***
- ***Products***
- ***Sales Transactions***
- ***License Vendors***
- ***Hunter Reporting Requirements***
- ***Hunter Reporting History***
- ***Surveys***

These efforts helped JMT to solidify a proven process for this extremely complex undertaking. We have the resources, the knowledge, the experience and a proven process to successfully migrate NDOW's legacy data into the new NDOW Licensing System database.

Methodology

JMT Technology Group has a proven methodology used for data migration. This methodology is described below:

1. ***Import Legacy Data into Local SQL Server Instance***
   The first step in JMT's migration process is to establish the source database in an RDBMS.

Dependent on the format in which the source data is provided, a SQL Server Integration Services (SSIS) package may be used to import the associated data into SQL Server tables or the database backup of the source DB/s may simply be restored. The source database/s will be stored on a secure machine at JMT with its disk drive encrypted using Bitlocker. JMT will supply an SFTP site for secure transfer of compressed backup files.

2. ***Design and Establish NDOW's Licensing System Schema***
   JMT will execute a structured process to design and implement a database schema for the NDOW Licensing System. JMT will evaluate the database schema of our solution against the defined functional requirements for this effort and NDOW's legacy database schemas to identify required modifications /additions to the base database schema. The objective of this process is to ensure that all legacy data that must be retained in the new NDOW database is accounted for in the new NDOW database schema and that entities exist to satisfy all functional requirements as defined in the NDOW specification.

3. ***Define and Document the Mapping Between the Legacy DB Schemas and the new NDOW Licensing System DB Schema***
   A detailed data mapping document will be developed whereby every field of every table in the legacy database schema/s is mapped to the corresponding table and field in the NDOW schema. Any legacy data fields that will not be migrated are indicated as such so that all legacy data is accounted for. Any default values that must be inserted into the new schema will be defined and documented as well.

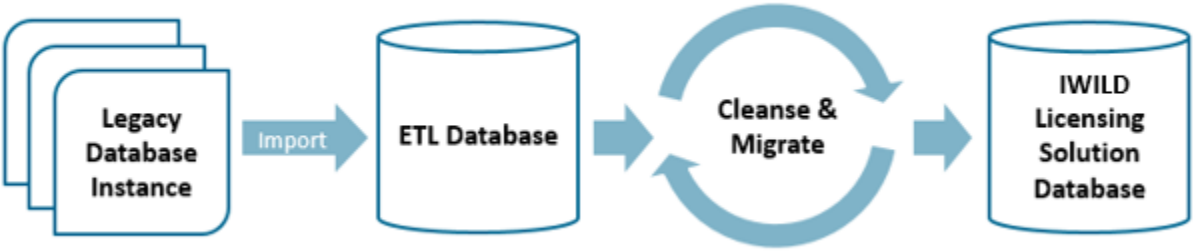
4. ***Seed Lookup Tables with Required Values from the Legacy Database***
   New NDOW Licensing System schema lookup tables will be appropriately seeded based on data from the legacy system. This supports foreign key relationships required during migration.

5. ***Develop Extract, Transform, and Load (ETL) Scripts for Cleansing and Migrating Data***
   Using the data mapping document as a blueprint, SQL Scripts will be developed to migrate data from the legacy schema to the new NDOW schema. These scripts not only perform inserts into the NDOW Licensing System tables but also cleanse and transform data as required. This may involve casting data from one field type to another, trimming white space and normalizing values. Each disparate data source will be migrated in sequential order beginning with the Licensing, Permitting, and Survey data. With that base of customers established subsequent data sources will be migrated with matching algorithms designed to avoid the creation of duplicates during the migration process.

   Depending on the quality of the legacy data a significant portion of this ETL process also involves identifying and merging duplicate customer records into a singular record. JMT has significant experience with this process and a significant tool kit having completed multiple large scale data migrations from legacy databases where customer uniqueness was not enforced. This includes the original Maryland COMPASS data migration from the legacy COIN system which was a "Store and Forward" transaction that produced significant duplicate customer records.

6. ***Validate the Migration***
   Once the data has been fully migrated numerous SQL scripts will be developed and executed to ensure the completeness and accuracy of the migration and manual Quality Assurance processes will be executed to validate the data. The migration validation process is generally a collaboration between JMT data migration staff and the state agencies DBAs.

The following diagram provides a graphical depiction of the migration process:



Data Migration Process

The process will be designed to run as many times as needed. In practice, JMT plans to have initial pass of the data migration completed early in the project (Within 4 months of kickoff) and to move this migrated data set into the UAT environment for client review. From that point JMT will execute a fresh migration each month until deployment. This process support progressively improving the data and serves as practice for the final production deployment.

Migration Execution Plan

In addition to the Data Migration plan discussed earlier that documents the mapping between the legacy and new database schemas, JMT will develop a step by step procedure for the migration that can be progressively elaborated, improved and rehearsed as subsequent migrations are run. A small example from the Washington project can be seen below.

Step	Stage	Action	Component	Who	Duration (Minute	eduled Completio	Completed on	Comments
1	Product/Location Migratio	Update Terra-Test with any schema changes in Terra-Build		Dom		11/2/2016	11/2/2016	
2	Product/Location Migratio	Restore Terra-Test to Terra-Build		Dom		11/2/2016	11/2/2016	
3	Product/Location Migratio	Put stop on data modifications for Products and Users in Terra-Staging		Everyone	0	11/8/2016	11/8/2016	
4	Product/Location Migratio	Make copy of Terra-Staging in Azure called TerraForMigration		Dom		11/8/2016	11/8/2016	
5	Product/Location Migratio	Clear out data in TerraForMigration except for Products and ASPNet Tables		Dom		11/8/2016	11/8/2016	
6	Product/Location Migratio	Drop Indexes in TerraForMigration		Dom		11/8/2016	11/8/2016	
7	Product/Location Migratio	Update schema in TerraForMigration to latest, matching Terra-Build		Dom		11/8/2016	11/8/2016	
8	Product/Location Migratio	Copy latest WA_REPL to sftp site		Grover		11/8/2016	11/8/2016	

NDOW's Role

Based on our experience it is essential that NDOW play a role in the data migration process including providing insight into the legacy data models, validating the proposed data model, supporting the development of the data mapping document and ultimately validating its correctness and completeness, and ultimately validating and accepting the fully migrated database.

3.3.2 Fulfillment: The proposed solution must be able to provide the customer a receipt or confirmation of purchase for any transactions that are fee based. The solution must include deliverable of documents (licenses, permits, vessel registrations, etc.) where applicable.

JMT's solution supports the creation of unlimited document templates that can be used to generate official documents at the culmination of a sales transaction or other system process. The new NDOW Licensing System will provide the ability to incorporate new templates, edit existing templates and the ability to associate these document templates with specific products in the system.

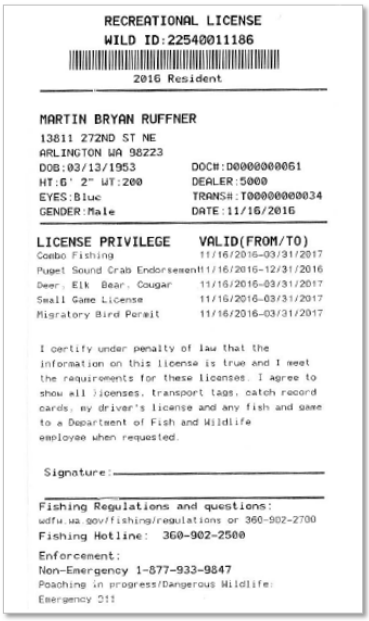
Examples of templates that exist as part of our core product include license documents, harvest cards, transport tags, Discover Pass activation labels, Designated Harvester Cards, Companion Hunting Cards, Vehicle Access Passes, Special Permits, and a variety of Receipts.

JMT will configure all document templates to match the specifications provided by NDOW including design, layout, and information presented.

Documents for Dealer Sales

The license vendor will provide the order total to the customer and collect payment into their own POS System. Once payment has been collected the license vendor will simply click Confirm Payment to finalize the sales transaction in the system and all corresponding documents including the license, receipt and any supplemental documents such as transport tags will automatically be sent to the POS Configuration's thermal printer. The license vendor will automatically be redirected to the confirmation page. In the unlikely event that one or more documents fails to print or prints incorrectly, the license vendor will be presented an opportunity to reprint documents as required.

A few examples of templates managed through our system are shown below:



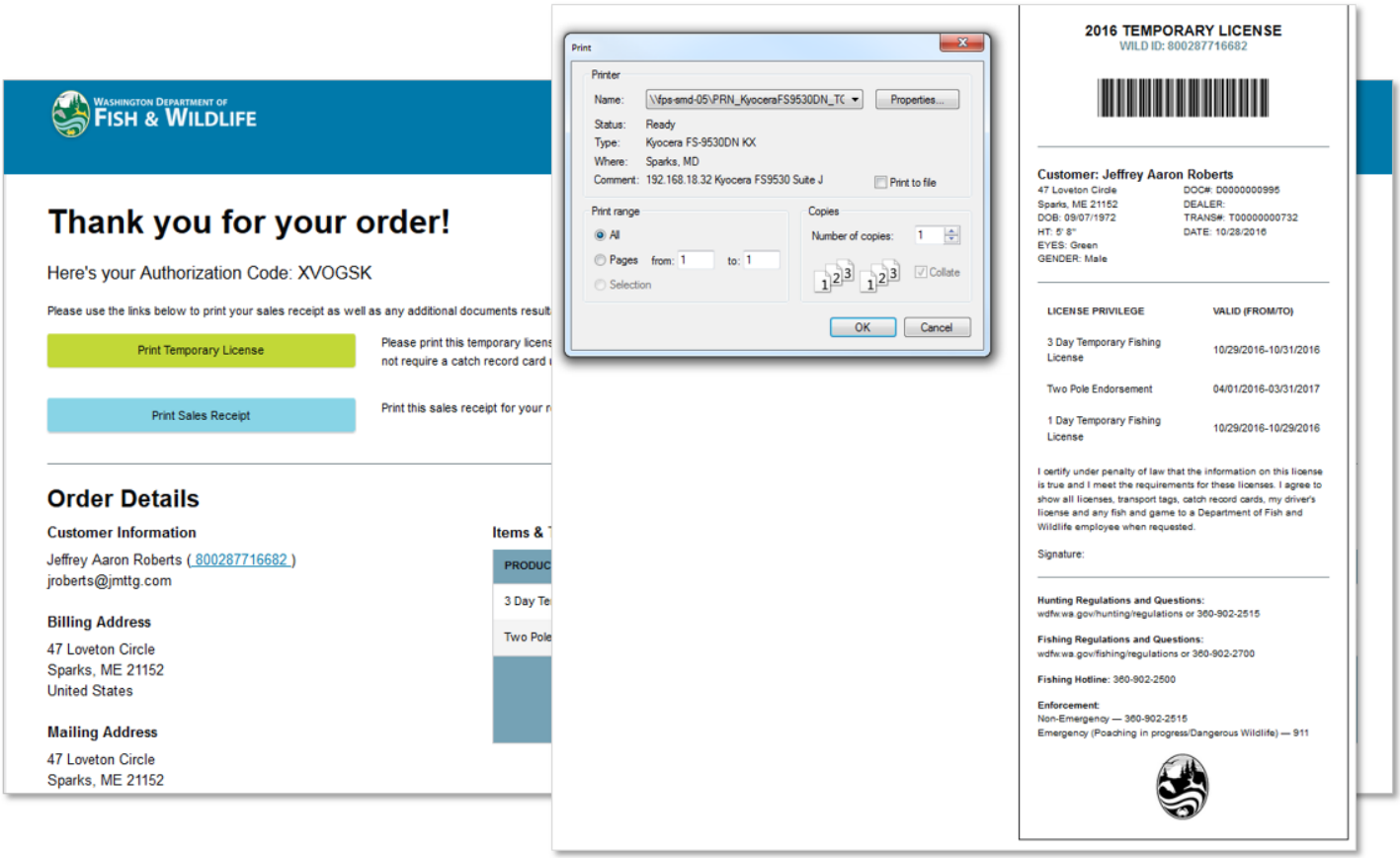
Documents for Online Sales

Once payment is successfully processed the user is directed to a confirmation screen which provides a summary of their order and access to any documents that are resultant from the transaction.

JMT's solution supports the myriad of ways that State's provide documents resultant from online sales transactions including printing permanent documents, printing temporary documents while awaiting permanent durable documents to arrive in the mail, and a combination that provides optional durable documents at a cost to the customer.

JMT's Licensing and Recreation solution also supports a variety of output formats including a PDF document

that can be printed and / or saved, a digital image that can be saved (e.g. to the photo gallery on a mobile device) and HTML format that can be printed or accessed later via a simple URL.

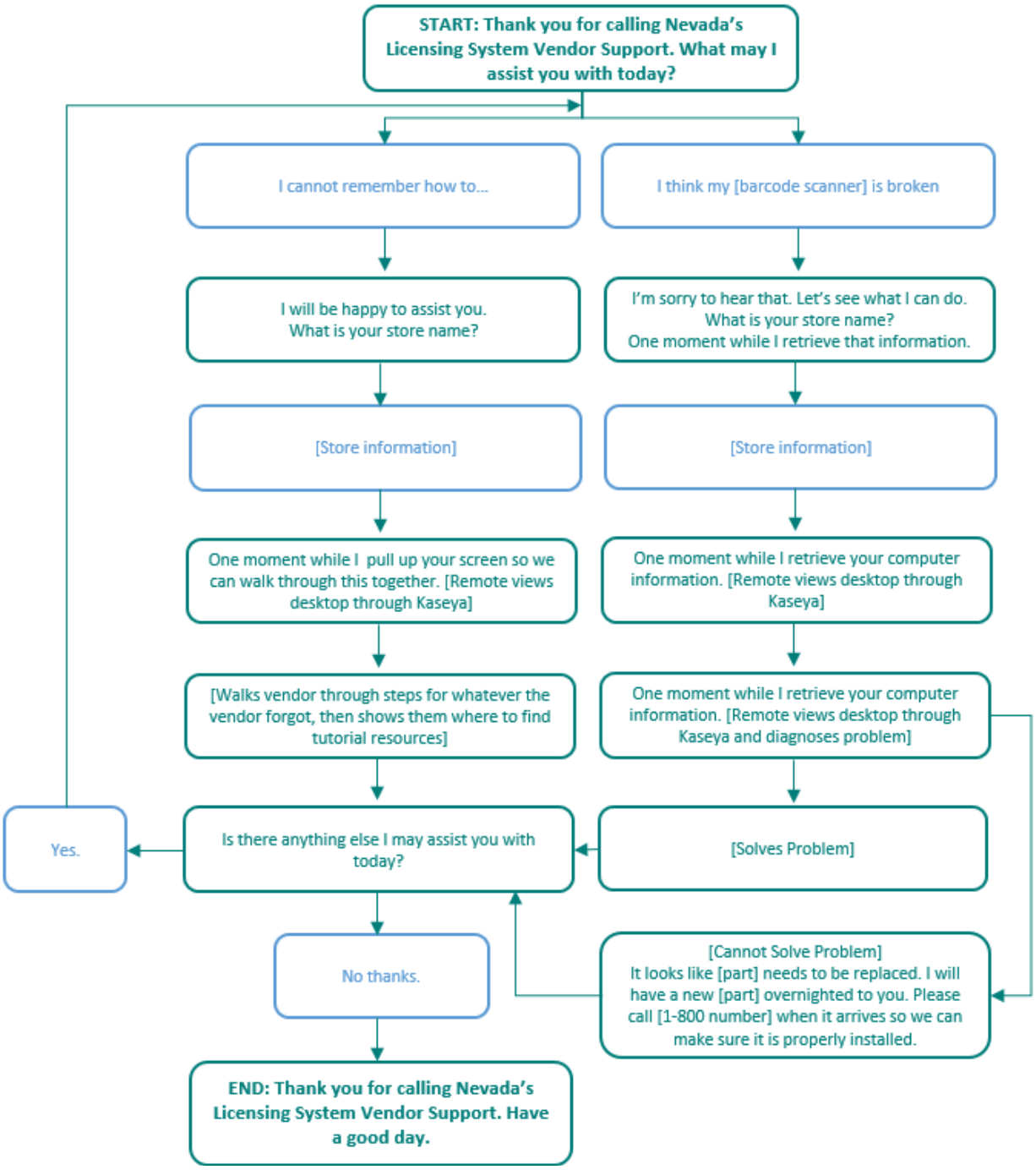


3.3.3	Support and Training: The proposed solution must include remote support for devices and agents and provide details training method for agents. The solution must meet all support and training requirements.

Support for Devices and Agents

The License Vendors will be provided with a toll-free number to contact the Help Desk if any issues or questions should arise. When the Vendor calls, they will select the License Vendor Support number. The Agent will answer the call with the proper greeting and then proceed to answer questions or assist the Vendor if necessary. The agent may receive calls ranging from the Vendor not being able to access the system to receiving error messages. The Agent will resolve each issue based on a pre-determined workflow between JMT and NDOW. The vendors will be able to contact 2-3 Help Desk agents at any given time based on coverage needs and peak seasons.

Preliminary Help Desk Flowchart



Remote Desktop Support

JMT leverages a desktop remote access software, Kaseya, to be able to view a License Vendor terminal. This allows the Help Desk to see the license vendor's desktop to have a better understanding of what is occurring. Occasionally, it is as simple as showing the vendor where they need to click for the next step, by moving their mouse to that location and walking them through the steps. This remote access functionality allows for better communication and quick diagnosis of any issues.

JMT uses Kaseya's Management Console to distribute critical updates for Windows. As updates are released,

Kaseya pushes the downloads to the local terminals. By default, they are pushed once a week from the console to all POS units at dealer locations during non-peak hours. When critical updates are released, the Help Desk pushes those manually to the POS units to ensure they are installed immediately during non-peak hours. JMT uses Kaspersky Anti-Virus suite for anti-virus, anti-malware, and anti-spyware protection. Kaspersky is pushed from Kaseya to the POS units at the dealer locations. Updates to the Kaspersky database are facilitated daily, also at non-peak hours.

License Vendor Training

JMT understands that training state agency staff, license dealers, and technical support providers is a critical component of the successful rollout of a new licensing system. The sections below detail JMT's plan for development of training curriculum, materials, and proposed delivery methods specific to dealers and NDOW clerks

License Dealer Training Curriculum

Similar to the state agency training, a training curriculum will be developed that is organized into lesson plans that focus on a specific core skill or learning objective; for example, executing a transaction or updating a customer profile. The lesson plans will be developed presentation style, will provide context and "how to" information and will heavily incorporate visual elements such as graphics, screenshots, videos and other visual tools to reinforce concepts. The above will be presented in the form of a presentation with an associated training manual that includes conceptual information as well as step-by-step instruction to support these concepts.

When the training curriculum and corresponding training manuals are complete, JMT will present this material to NDOW for review and approval.

License Dealer Training Delivery

Due to the sheer volume and geographic distribution of License Dealers, JMT proposes to deliver dealer training in the form of an online webinar. JMT will work with NDOW to determine the appropriate number of webinars to offer. Assuming 600 dealers, 2 staff per dealer to participate in a webinar training, and a recommended maximum of 60 total participants per webinar, JMT plans to schedule 20 webinars. Each webinar will provide the full dealer training and allow dealers to preregister for the training that is most convenient to their staff, and will be scheduled for a 4 hour period.

These dealer training webinars will occur, from a project schedule standpoint, after JMT has worked with dealers to assure access to the new system within the training environment. This allows dealers to complete training and then immediately begin to practice utilization of the new system in a live environment.

Any associated training materials will be available download prior to the training. If feasible, dealers may watch the training and follow along themselves in the training environment.

JMT will also make the dealer training session available in video format for permit vendors unable to attend any of the webinars and for ongoing onboarding activities. The videos will be made accessible through the customer service section of the licensing application. In addition to preparing users for transitioning to the new system, the training environment can be utilized for onboarding new dealer staff.

Here are some of the Training Topics for Dealers:

- ***Accessing system***
- ***Overview of UI***
- ***Managing Customers***
- ***Purchasing a license***
- ***Enter Lottery/Raffle***
- ***Order History – Customer, Dealer/Location***

- ***Voiding a purchase***
- ***Printing/Reprinting licenses***
- ***Invoices***
- ***Catch/Harvest Reporting***
- ***Reports***

In addition, as a business becomes a licensed dealer for NDOW, their users could be required to demonstrate their understanding of the licensing system in the training environment prior to activation of the dealer or individual dealer user in the production system. This could certainly be done by NDOW, or the JMT technical support team.

3.3.4	The proposed solution must include remote monitoring capability that can notify the contractor of existing or potential operational malfunctions. Monitoring should include, but is not limited to: issues with connectivity, display, printer, input device, or power.

JMT will implement 24x7x365 monitoring of the system with alerts configured to notify system administrators of potential issues so that they can be proactively mitigated. Monitoring will be supported through the Azure Portal and well as by Site24x7.

3.3.5	Hardware

3.3.5.1	Housing: The housing must be durable, convenient, compact and intuitive. Provide detail to the dimensions, shape and a proposed design to the device. Hardware must be intuitive current technology. Vendors must propose the solution to this. Indicate the solution's method of input (touch screen, keyboard, etc.).

The proposed hardware is durable, convenient, compact, and intuitive. Please see the below details:

Type:	***Touch Screen - All in One PC***
Make / Model:	***HP ProOne 400 G2 (Or comparable)***
CPU:	***Intel H110 Dual Core, 3.3 GHz***
RAM:	***4GB DDR3***
Hard Drive:	***500 GB***
USB Ports:	***6***
Optical Drive:	***Yes***
Network:	***10/100/1000 Ethernet***
Graphics Card:	***Supports minimum 1024x768***
OS:	***Windows 7/10 Pro***
Web Browser:	***IE 11***
Keyboard:	***USB (Standard English)***
Mouse:	***USB***

3.3.5.2	Display: Provide details to the display including size, functionality, accessibility, and durability.

20" diagonal TN WLED backlit 10-point capacitive touch LCD (1600 x 900)
Touch Screen
Dimensions: 19.55 x 13.68 x 2.31 in (496.71 x 347.5 x 58.7 mm)

3.3.5.3	Printer: Provide details to the printer required for output of materials. Include information of printer model, size, durability, functionality and ease of access (for support).

Type:	***Direct Thermal with Built in Cutter***
Make / Model:	***Zebra GX420D (Or Comparable)***
Type:	***Black and White***
Scanner:	***None***

Print Stock:	***Normal to heavy weight paper***
Interface:	***USB***
Max Print Size (width):	***104mm***
Cutter:	***Yes***
Duplex Printing:	***Not required***
Duty Cycle:	***Up to 50,000 per month***

3.3.5.4 Network Interface: Provide details to the available network interfaces. Indicate if the device is capable of dial-up or wireless network interfaces.

HP AIO model Pro 400 G2 has a gigabit ethernet connection and a built-in wireless. The machine does not have a built-in 56k connection but it will support a USB 56K card.

Note: Our Licensing and Recreation solution is a modern web application and thus a broadband connection is recommended for optimal performance.

3.3.6 Device Requirements

3.3.6.1 NDOW is interested in exploring the possibility of providing a variety of device solutions, especially mobile, to our license agents as well as our customers.

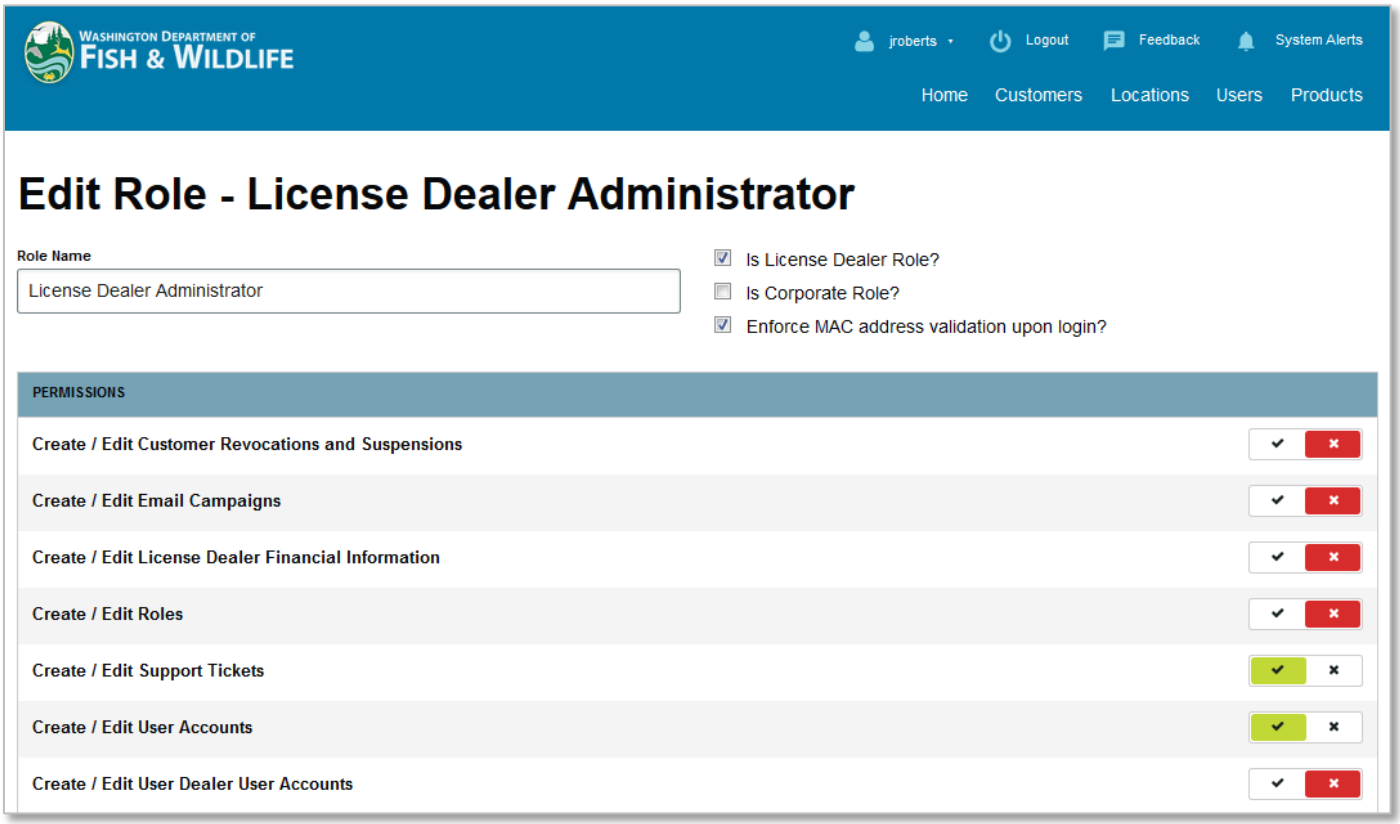
NDOW license agents will be able to access the system on a variety of devices as long as they have internet connection.

Our licensing and registration product is built on an N-tier architectural model designed to provide the end user with a fast, high-quality user experience irrespective of device solution. It is a web-based offering which can be accessed anywhere with an internet, WIFI, or dial up connection, on devices such as PCs, laptops, tablets, and smart phones.

3.3.6.2 The state must have the ability to control which business components each agent, location, or device is authorized to access.

Within the JMT Licensing and Recreation platform, authentication and authorization to the application is managed by ASP.NET Identity. ASP.NET Identity is Microsoft's preferred solution for application level security. The extensible and pluggable nature of the framework allows JMT to customize the solution to meet the needs of the client.

ASP.NET Identity is both a roles and claims based security solution. Role-based access control (RBAC) restricts access to areas of the application based on the user's permissions. For example, a user might have to be assigned to a role that includes the permission "Sell Privilege Level 6 Products". Roles aggregate permissions and will be created and configured in the system by NDOW Administrators.



JMT will leverage the customizable nature of this framework to implement a granular user security model, that will operate at both the individual and group level and that will satisfy NDOW requirements. The specific functional requirements for the user security model will be analyzed and documented during the requirements and design phases.

3.3.7	The awarded vendor must at a minimum provide a Point of Sale component for the automated licensing system and a browser-based solution for vessel registration.

JMT's outdoor licensing and recreation solutions, based on our proven framework, are implemented as singular, web-based, hosted solutions that are designed to serve customers through the provision of an efficient, intuitive sales experience across multiple sales channels including license dealers, internet self-service, state agency, and telephone. The Point of Sale and Vessel Management functionalities will be both be provisioned through this web-based solution.

3.3.8	The vendor's proposal must identify each hardware configuration, including the life expectancy of the proposed hardware. The licensing point of sale solution must be flexible to allow for agents to utilize their own PC solution or vendor provided hardware and software. The proposed solution shall allow agents to input data and must produce customer license documents.

JMT's JMT Outdoor Licensing and Recreation solution is a singular web application that fully supports the execution of point of sale transactions at agent locations through a standard web browser. As such the POS configuration requires only the ability to access the internet via a web browser. Additionally, a printer is obviously required that can output documents in the format required by the state.

3.3.8.1	Device Footprint - Device is expected to reside on a counter top or desktop for use in areas with limited space.

The proposed POS configuration has a slim profile.

20" diagonal TN WLED backlit 10-point capacitive touch LCD (1600 x 900)
Touch Screen display eliminates need for physical keyboard (though one is provided)
Dimensions: 19.55 x 13.68 x 2.31 in (496.71 x 347.5 x 58.7 mm)

3.3.8.2	Device and Printer Durability - Devices and printers must be able to withstand the adverse conditions and transaction volumes that may exist in the agents' place of business.

Our recommended the low-cost configuration provides the following benefits:

- ***The total cost per configuration is less than half that of the HP RP7 computer that other vendors recommend***
- ***It has a small footprint, taking up little space at dealers' registers***
- ***It is touch-enabled, allowing the dealer the option mouse and/or touchscreen***
- ***It provides the flexibility to operate in either a Full Service or Kiosk Mode***

3.3.8.3	Device and Printer Specifications - Devices and printers must meet or exceed FCC specifications for use in residential environments and be UL approved.

Hardware recommended by JMT will comply with this requirement.

3.3.9	Enhancements to Proposal for Point of Sale Equipment

3.3.9.1	Additional Equipment Options – Vendors must propose a pricing structure for equipment and support for agents wishing to acquire additional point of sale devices above and beyond NDOW's inventory. All devices must be tracked and recorded in an inventory system that NDOW has access to.

JMT will provide per / unit pricing for additional POS Configurations that will cover the full cost of deployment, configuration, and support including replacement as required.

All inventory will be tracked within the new NDOW Licensing System.

3.3.9.2	Bar Code Scanners – The solution may include a bar code scanner capable of reading the State's two-dimensional (2D) bar code driver's license and ID cards and bar codes printed on license documents. POS devices may be required to read 2D bar code licenses encoded in the American Association of Motor Vessel Administrators (AAMVA) encoding standard.

<u>NDOW License Sales Agents</u>
The proposed POS Configurations for license agents includes a Zebra DS8108 barcode scanner capable of reading the two-dimensional (2D) bar codes including those encoded in the American Association of Motor Vessel Administrators (AAMVA) encoding standard.

<u>NDOW Field Agents (Law Enforcement)</u>
For field agents such as Law Enforcement wanting a more efficient way to look up a customer's information, JMT's web-base solution integrates with 3rd party pocket barcode scanners such as Wasp Barcode Technologies' WWS100i Pocket Barcode Scanner. The device is compatible with iPhone, iPad, and Android devices and may be purchased in bulk by either NDOW or JMT to be supplied to field agents. The Pocket Barcode Scanners and the mobile/tablet devices, are not included in JMT's proposed price. If NDOW is interested in this additional hardware, JMT is able to provide a cost estimate once an estimated volume and device compatibility is confirmed.

3.3.9.3	Digitally Captured Signature Devices – the solution may include a signing device to capture the customer's signature at the point of sale. This signature image must be transmitted and related to the

individual transaction for a defined period of time.

The combination of the Point of Sale Hardware proposed and the technology platform upon which JMT's solution is founded supports the ability to capture licensee signatures of licenses buyers directly within the new system with no additional equipment required and at no additional costs to NDOW. Customer signatures can then be stored in the centralized database in conjunction with the transaction to which they are associated and, depending on the requirements of the implementation, included on output documents.

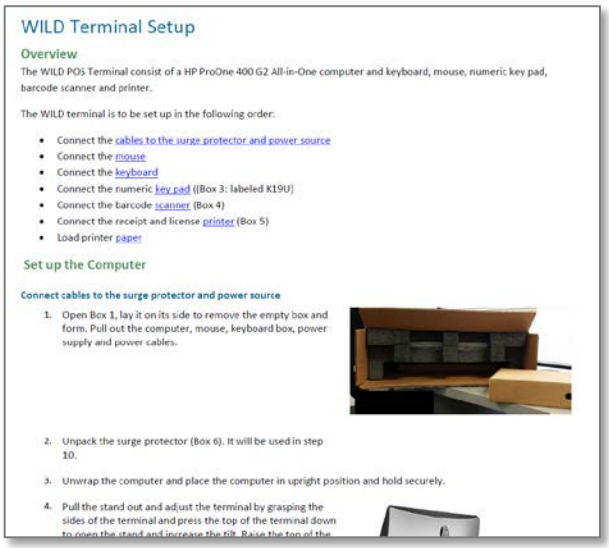
JMT has prototyped such an implementation using a JavaScript library for drawing and capturing smooth signatures on screen. It works in all modern desktop and mobile browsers and doesn't depend on any external libraries.

3.3.10 Deployment, Installation and Training for Use of Point of Sale Equipment

3.3.10.1 The awarded vendor shall provide visual aids, a quick reference guide, a video, and a user manual.

The NDOW Licensing System will include an informative, user-friendly customer support page that will provide easy access to help documentation including a user manual tailored to the logged in user's role, a quick reference guide which provides support in completing the most common workflows and an FAQ where customers can find answers to common questions.

Additionally, JMT will develop detailed installation / configuration instructions, complete with visual aids, to step the vendor through the POS device installation process.



WILD Terminal Setup

Overview

The WILD POS Terminal consist of a HP ProOne 400 G2 All-in-One computer and keyboard, mouse, numeric key pad, barcode scanner and printer.

The WILD terminal is to be set up in the following order:

- Connect the cables to the surge protector and power source
- Connect the mouse
- Connect the keyboard
- Connect the numeric key pad ((Box 3: labeled K19U)
- Connect the barcode scanner (Box 4)
- Connect the receipt and license printer (Box 5)
- Load printer paper

Set up the Computer

Connect cables to the surge protector and power source

1. Open Box 1, lay it on its side to remove the empty box and form. Pull out the computer, mouse, keyboard box, power supply and power cables.
2. Unpack the surge protector (Box 6). It will be used in step 10.
3. Unwrap the computer and place the computer in upright position and hold securely.
4. Pull the stand out and adjust the terminal by grasping the sides of the terminal and press the top of the terminal down to open the stand and increase the tilt. Raise the top of the

3.3.10.2 Vendors shall provide an installation plan that details all activities required to successfully install and operate the equipment.

JMT has developed an efficient and user friendly process for the procurement, configuration and distribution of License Vendor POS Hardware that ensures a smooth, intuitive and efficient process for all involved. It works like this:

1. ***JMT configures a single POS Hardware configuration within its lab which includes the computer and all peripherals***
2. ***The configuration process includes:***
    a. ***Configuring a License Vendor account that will run in Kiosk Mode (if Kiosk mode is preferred by NDOW)***
    b. ***Installing all drivers to support peripherals***
    c. ***Installing the thermal printer***
    d. ***Installing Kaseya Essentials agent – JMT's remote desktop support software***
    e. ***Hardening the machine***
3. ***Once fully configured this machine is ready for use by a License Vendor – it is "Plug & Play".***

4. ***JMT produces an installation document with step by step instructions complete with visuals of each step and information regarding how to contact JMT support if necessary.***
5. ***JMT uses imaging software such as Symantec Ghost to create an image which is then applied to all other POS configurations.***
6. ***JMT "kits" all components of a single configuration and in the installation instructions into a single box and uses customized box labels to clearly identify the contents of the box to the recipient.***
    a. ***If License Vendors use static IP addresses and these can be provided to JMT in advance these will be configured per machine prior to kitting.***
7. ***JMT uses address validation software to validate the shipping addresses of all license vendors.***
8. ***JMT ships POS Configurations according to a mutually agreed upon schedule.***
9. ***JMT tracks all shipments.***
10. ***License Vendors receive package well in advance of go live date and are instructed by advanced communications from NDOW that they should unpack and assemble the POS Configuration by a pre-determined date and connect the device to the internet.***
    a. ***License Vendor "assembly" literally means connecting to a power source and plugging peripherals into USB ports in the computer.***
    b. ***Internet connectivity can be through wired or wireless connection.***
11. ***Once the machine is on the internet it will automatically check in to the Kaseya server at JMT alerting us that the License Vendor has successfully installed the POS Configuration.***
12. ***At that point, the vendor is free to disassemble and store the hardware until Go Live if space is an issue.***

A. Utilize equipment validation and diagnostic tests as prescribed by vendor to verify that the equipment functions properly.

JMT will provide instructions for validation of the equipment configuration as well as support staff to help ensure all agents are ready for Go Live.

B. Automated notification of contractor of any operational problems with the equipment.

JMT will further research the feasibility of automated notifications from the POS configurations but cannot commit to providing that at this time.

3.3.11 Maintenance of Point of Sale Equipment

3.3.11.1 Contractor will render maintenance service to keep equipment in, or restore equipment to good working order (referred to as "Equipment Repair/Replacement Service" or "ERS").

The JMT team will support and perform maintenance on all POS hardware and software used to operate the licensing system. This includes routine maintenance activities such as patch management, operating system updates and maintenance of antivirus and anti-malware software. This also includes troubleshooting and resolving hardware / software issues and replacing defective equipment within the parameters of the established SLA.

3.3.12 Data Access – Replication Services

3.3.12.1 The contractor must provide secured access to a real-time copy of the production data. Vendors should identify hardware, software and connectivity proposed as well as the data replication process

	and recommend the frequency that the data replication should occur. Vendors should identify the reporting tools NDOW staff will use to perform queries and also describe the various levels of security established on the replicated server.

The System will directly interact with a Production database instance. The Production OLTP (On-line Transaction Processing) database server will utilize Microsoft Azure SQL Database. All data housed in the Production (primary) database will be replicated to a Secondary Azure SQL Database, which will be housed in a different data center than the Production instance, in real-time. This will be accomplished using Active Geo-Replication which asynchronously replicates committed transactions from the Production database to the Secondary database.

Besides offering business continuity if the Production data center experiences an outage, the Secondary database can also serve as source for reports that require the same data structure as the Production database. The Secondary database operates in snapshot isolation mode to ensure replication is not delayed by report generation executed on the Secondary. Reporting from the Secondary database eliminates additional load from intensive queries on the Production database.

In addition, the Secondary database will serve as the source for an ETL (Extract, Transform, and Load) process which will populate a Data Warehouse database. As Data Warehouses or OLAP (On-line Analytical Processing) databases utilize a different schema than their OLTP counterparts, it is necessary to transform the relational data into a dimensional model. This design consists of dimension and fact tables and is typically described as star or snowflake schema. This model is designed to support complex analytical and ad hoc reports with a rapid execution time. Since the data will come from the Secondary database, no additional load will be placed on the Production database.

In contrast to the Primary and Secondary databases, the Data Warehouse will reside on a Windows Azure Virtual Machine with an installation of SQL Server. Besides its role as a Data Warehouse, the server will also function as a SQL Server Reporting Services (SSRS) and SQL Server Analysis Services (SSAS) server. As mentioned above, the Secondary will serve as the source for reports that require the same data structure as the Production database. For multidimensional queries that require a different data model, the source will be the Data Warehouse database, which is on the same server.

Client applications will be able to connect to both the Secondary database and the Data Warehouse for the purposes of reporting and ad-hoc queries. This includes business intelligence applications such as Tableau Desktop or Microsoft's Power BI Desktop, SQL Server Management Studio for ad hoc queries, and Microsoft Report Builder for report generation. By interacting with the Secondary database and the Data Warehouse, the Production database will only be impacted by the System and not resource heavy reporting or queries.

3.3.13	Interfaces to the purposed system

3.3.13.1	State Accounting System Interface - includes creating the financial interface file on a regular (weekly) basis, and making it available to NDOW staff so it can be added into the State of Nevada accounting system.
3.3.13.2	Department of Children and Families Support Enforcement Revocations Interface – The solution will provide an interface with State Department of Welfare for inquiry purposes.
3.3.13.3	Department of Justice Link System Interface – The awarded vendor will be required to coordinate with the Department of Justice to develop a web services interface to ensure that the law enforcement Justice System is capable of querying databases hosted by the contractor. This interface will require 24 x 7 x 365 support.
3.3.13.4	Nevada Circuit Court Interface – The awarded vendor will be required to coordinate with the Nevada Office of Justice Assistance to develop a web services interface to accommodate the receipt of adjudication information from Nevada circuit courts.
3.3.13.5	Federal Duck Stamp Interfaces – The awarded vendor will be required to supply the federal Fish and Wildlife Service vendor with a file of customers who have purchased an electronic federal duck stamp.
3.3.13.6	Department of Motor Vehicles Driver's License Interface – The Department of Motor Vehicles may

	provide the awarded vendor with a link to Nevada Driver's License database proposed solution to be used to verify customer identity and residency.
3.3.13.7	Harvest Information Program (HIP) Extraction - includes creating and appending HIP survey records to the Federal HIP file, and the creation of the HIP audit report. NDOW is responsible for the actual submission of the information to USFWS.
3.3.13.8	Spillman - A computer aided dispatch (CAD) system that is specifically designed and engineered for full multi-disciplinary and multi-jurisdictional dispatching capabilities. This is what is required by Law Enforcement at NDOW.

JMT's Outdoor Licensing and Recreation solution is designed for interoperability and JMT has significant experience integrating with external systems through a variety of high and low tech mechanisms. JMT will work with NDOW to define the requirements and specification for all system integrations and will design and develop a secure and efficient means to import external data into the system on a case by case basis and to share data with external systems via secure application programming interface (API).

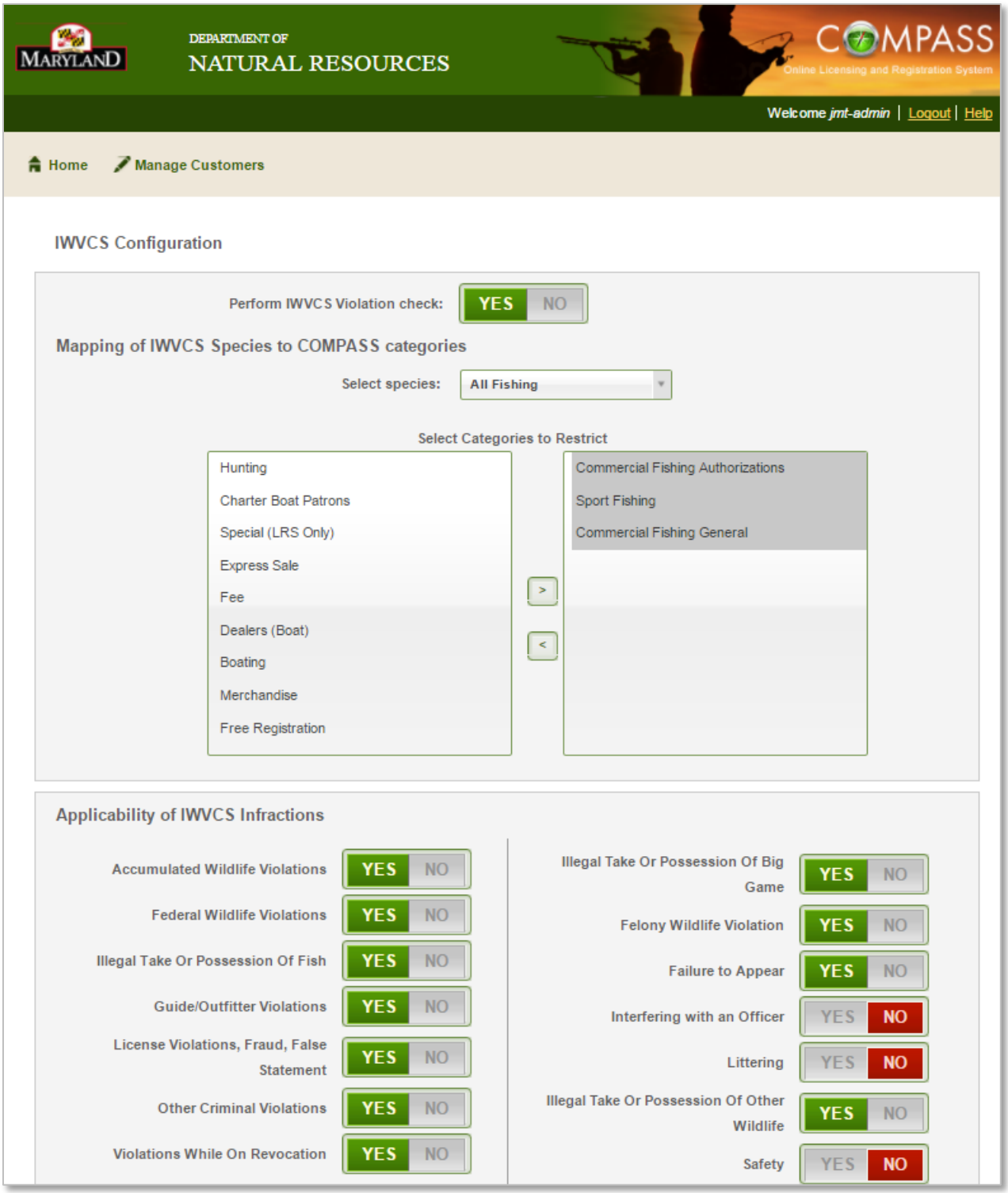
A few examples are described in more detail below:

Federal Duck Stamp Interfaces

Our solution supports an integration with the Federal Fish and Wildlife Service Vendor Amplex. All transactions for Federal Duck stamps are placed in a queue and transmitted on a nightly basis for fulfillment. Our solution then retrieves status and updates an intuitive dashboard so that system administrators can monitor the process and address any reported issues with addresses.

Interstate Wildlife Violators Compact

Our solution supports an integration with the Interstate Wildlife Violators Compact. Each time a customer account is accessed the system runs a background process which requests all violations for that customer that have been recorded in the Interstate Wildlife Violators Compact. If one or more violations is found, an enforcement action is added to the customer account based on parameters configured by systems administrators within the IWVCS control panel built into out solution.



U.S. Fish and Wildlife Service HIP Reporting

Additionally, the JMT Licensing and Recreation solution provides, as standard functionality, the ability to export HIP in a format that matches the U.S. Fish and Wildlife Service (USFWS) requirements or migratory bird (HIP) reporting.

3.3.14	Redundancy / Failover

3.3.14.1	The proposed solution must include redundancy in all major components. Adequate back-up resources are required in order to minimize any risk of system failure, lost transactions (sales revenue) or data corruption. Vendors should describe exactly what redundancy and back-up is provided with the proposed system.

The Microsoft Azure platform has redundancy and disaster recovery built into the core of the services they provide.

To begin with, the data is stored in SQL as a Service. SQL as a Service has recovery built in by allowing the system to be recovered from past data points up to 35 days in the past.

Azure also offers disaster recovery through Active Geo-Replication. This service maintains an active secondary copy of the database in a data center at least 500 miles from the original data source. This secondary database becomes the primary database in the event of an application or data center failure. If, for some reason, the primary web application cannot communicate with the primary database, Azure will swap the secondary database with the primary to elevate downtime. If the entire data center were to go down then the secondary database would automatically become the primary.

Between the SQL as a Service default recovery model and Active Geo-Replication, customer accounts as well as any other data storage is recoverable within minutes with no data loss.

3.3.15	Transaction Processing Requirements (Volume)

3.3.15.1	NDOW routinely experiences known high transaction volumes during certain seasons, potential first-come first-served permit offerings and application deadlines, and vessel registration periods. During these high-volume sales periods the system must be capable of maintaining normal business processing while at the same time accommodating the possibility of all point of sale devices plus a high volume of internet customers accessing the system and all submitting transactions simultaneously. This requirement is critical to the success of the automated system.

Architected for Performance

The Azure configuration that JMT has architected and proposed for the NDOW Licensing System is designed to ensure optimum performance under extremely high load. At the outset JMT will leverage Azure estimation tools to determine the appropriate size and number of instances for PaaS services to provide a high-level of performance based on NDOW's historic transaction volume, including peak volumes.

JMT recognizes that Licensing and Recreation systems are subject to extreme and variable spikes in demand because, as we've been told more than once, "Hunters are the biggest procrastinators in the world."

The architecture we have proposed accounts for these situations. Azure technology provides scalability to withstand increased workloads. During increased seasonal load, JMT will increase the computing resources of both the application and database to mitigate any performance impacts. Scaling these resources helps to ensure that the solution continues to be responsive under increased load.

Scaling in Azure can be accomplished in the following ways:

Scheduled: ***Resource allotment can be configured to change on a set basis such as specific date range, weekend, weekdays, etc.***

Automatic: ***Azure is intelligent enough to sense increases in resource usage on each machine. If configured, the machines will auto scale if pre-defined thresholds are exceeded. Alternatively, if usage is very low then the resources will be scaled back to meet demand.***

Manual: ***A system administrator provisions additional computing resources.***
While automatic scaling will be in place, there are times when scheduling the environment to scale up resources is more beneficial. For example, during periods of high usage, such as the beginning of hunting season, JMT can scale up resources to meet the expected demand. This type of operation allows the solution to proactively deal with system load as opposed to a reactive approach.

3.3.15.2	During customer/agent/user inquiries and transactions, the system must transmit data to the central database and receive a response from the central system within 3 seconds. The system must utilize security and validation procedures that insure only authorized access to the terminal and that only authorized terminals can access the central system.

Performance and Load Testing

JMT will use a 3rd party load testing tools, such as Visual Studio Web Performance and Load Tests, to stress test the environment. The tool can be configured to simulate any number of concurrent users and operations against the application. JMT will load test the system under increasingly heavy load to simulate top end conditions.

JMT will provide NDOW with a load/stress test of the sales system showing the test, number of concurrent users, response time average, and error percentage. We will work with NDOW to ensure the system can handle the specified system load.

Prior to production release JMT will ensure that NDOW stakeholders have 100% confidence in the system's ability to perform under all load conditions.

Security

JMT's Outdoor Licensing and Recreation solution leverages the OAuth2 security protocol and requires a valid security token with every request. In addition to the presence of a valid token, our solution validates that the user has the required permissions to perform the action, retrieve data, etc.

3.3.16	Security Administration

3.3.16.1	The awarded vendor will provide a security management plan, which will describe security management for the central database and all interfaces. NDOW requires various levels of security. The vendor must provide security management tools to enable NDOW staff to control and monitor administrative and agent access. The vendor is responsible to ensure that they and all subcontractors establish and maintain and appropriate level of security in connection with the automated system. The vendor's proposal shall describe the security controls that will be used in the performance of the services required under the RFP. The vendor will report security controls (audit) quarterly.

General Security Standards

JMT will provide a security management plan which will describe security management for the central

database and all interfaces.

The following provides a summary of security policies and procedures enforced by JMT:

<u>Perimeter Firewall</u>

- ***Both JMT and any subcontractors that host JMT developed systems have installed and currently maintain a perimeter firewall***
- ***Both JMT and any subcontractors that host JMT developed systems employ network segmentation***

<u>Vendor-supplied Defaults</u>

- ***Neither JMT nor any subcontractors that host JMT developed systems use vendor supplied default passwords for system or network components.***

<u>Protection of Stored Customer Data</u>

- ***Neither JMT nor any subcontractors that host JMT developed systems store credit cardholder data. Our policy is to use a PCI compliant third party payment processor for collection and processing of customer credit card data.***
- ***JMT and any subcontractors that host JMT developed systems use strong encryption to protect sensitive customer data at rest.***
    - ***SQL Server provides Transparent Data Encryption, where data is encrypted at the page level and protects against unauthorized access to physical media.***
    - ***Always Encrypted will be used to secure individual columns so that certain types of high-privileged, but otherwise unauthorized users cannot access sensitive data.***

<u>Encryption of data across open, public networks</u>

- ***All secure JMT-developed systems implement (Transport Layer Security) TLS to encrypt data during transmission.***

<u>Anti-Virus Software Maintenance</u>

- ***Both JMT and any subcontractors that host JMT developed systems implement and maintain the currency of Anti-Virus software on all personal computers and server infrastructure.***

<u>Develop and maintain secure systems and applications</u>

- ***JMT's application development policy includes the implementation of best practices to protect JMT-developed systems against malicious attack.***
- ***All applications are secured with industry standard username/password authentication that comply with customer mandated security protocols and procedures.***
- ***JMT utilizes role-based access control systems to control the availability of customer's personal data. Only users that have been authenticated and authorized will be able to view data in the system. No customer data will be sent to the client application (web browser or desktop form) through the encrypted data channel unless the user is authenticated and in the correct role.***

<u>Restrict access to customer data by business need-to-know</u>

- ***The PCI Standards Council defines cardholder data as including "at minimum the full primary account number (PAN). JMT does not store card holder data on its network or within the network of any of its partner hosting providers.***
- ***JMT limits access to production customer data to those that have a direct need to access said data.***

Assign a unique ID to each person with computer access

- ***All connections to data resources are accessed through Active Directory accounts; allowing only named users access to resources.***
- ***Audit logs of any data manipulation is tracked in the database.***

Restrict physical access to customer data

- ***The PCI Standards Council defines cardholder data as including "at minimum the full primary account number (PAN). JMT does not store card holder data on its network or within the network of any of its partner hosting providers.***
- ***Customer data that is transmitted from an external entity to JMT must be encrypted and transferred through a secure channel.***
- ***Sensitive file-based data remains encrypted at rest on the JMT network.***
- ***Data access is limited at JMT's facility to only users that need direct access to the data***

Track and monitor all access to network resources and customer data

- ***Server event logs monitor all internal user access to network***

Regularly test security systems and processes

- ***JMT conducts regular penetration and vulnerability audits.***

Maintain a policy that addresses information security

- ***Both JMT and any subcontractors that host JMT developed systems maintain Information Technology Security policies***

Data Encryption

The NDOW Licensing System database will implement Transparent Data Encryption (TDE) to encrypt the entirety of the Azure SQL Database and Azure SQL Data Warehouse at rest. TDE performs real-time I/O encryption and decryption of the data and log files. The encryption uses a database encryption key (DEK), which is stored in the database boot record for availability during recovery. The DEK is a symmetric key secured by using a certificate stored in the master database of the server or an asymmetric key protected by an EKM module.

Additionally, all PII data will be encrypted at rest and in transit by FIPS 140-2 approved encryption algorithms specifically AES-256 with PBKDF2 salt. Access to category 3 data is controlled using 'SQL Server Authentication'. Authorization is managed through SQL Server's database-level roles. Azure SQL Database Auditing and Threat Detection will be enabled to provide details reporting on database activity.

Web Application Firewall

In addition to the standard internal firewall, a third-party cloud performance optimization and security service will be implemented. This established provider will automatically optimize the delivery of NDOW System web pages so your visitors get the fastest page load times and best performance.

The service will also provide additional security features required to block threats and limit abusive bots and crawlers from wasting your bandwidth and server resources.

This service includes the provision of a Web Application Firewall to monitor and log intrusion attempts as well as DOS attacks, Injection attacks, SQL attacks, and other such security threats.

Features of the selected service will include:

- ***CDN***
- ***Web Application Firewall (WAF)***
- ***Mobile Optimizations***
- ***Real-time monitoring and statistics***
- ***Advanced Denial of Service Attack Mitigation***

The Web Application Firewalls allows JMT System Administrators to access and audit the logs from an administrative console that can be made available to the state of Nevada as well.

Web Application Security Testing

Prior to Go Live JMT will execute application security testing using the Arachni Web Application Security Scanner framework. Arachni is a feature-full, modular, high-performance framework aimed towards helping penetration testers and administrators evaluate the security of modern web applications. JMT will present the final report to NDOW for review and approval.

Penetration / Intrusion Detection Testing

JMT will perform an intrusion detection test annually and provide NDOW with complete documentation of the results of the test. Any defects found in the intrusion detection process must be corrected within one (1) hour following the completion of the intrusion test and reported to NDOW immediately.

3.3.16.2	The solution's administrative tools must maintain compatibility with current PC security standards and be able to meet future security standards as needed. Vendors should describe how the proposed solution would meet the high-volume use and security requirements.

NOTE: JMT interprets "PC security standards" in this requirement to mean "PCI security standards."

JMT is well versed in the compliance standards outlined by the Payment Card Industry (PCI) 3 data security standards. Prior to release of the system, JMT will work with the State of Nevada and with a PCI compliance vendor to certify that the system is PCI 3 compliant. This will include the PCI Self-Assessment and an external vulnerability scan. At the culmination of the compliance process, JMT will provide certification that the system is PCI 3 compliant.

As a means towards ensuring PCI compliance the JMT Technology group proposes an architecture, infrastructure and payment processing approach that is, itself, inherently PCI compliant.

Microsoft Azure

JMT proposes to host the NDOW Licensing System within Microsoft's Azure Cloud Environment.

The following is from Microsoft Azure's PCI-DSS documentation:

Microsoft Azure completes an annual PCI DSS assessment using an approved Qualified Security Assessor (QSA). The auditor reviews Azure's Information Security Management System, which includes validating the infrastructure, development, operations, management, support, and in-scope services. The PCI DSS designates four levels of compliance based on transaction volume. Azure is certified as compliant under PCI DSS version 3.1 at Service Provider Level 1 (the highest volume of transactions—more than 6 million a year).

Internal Processes and Procedures

JMT recognizes that maintaining PCI compliance is mandatory requirement and we take this

responsibility seriously. The NDOW System will be maintained at PCI Level 1 compliance throughout the life of the contract. This will be accomplished by adhering to PCI standards and by completion of the assessments, scans and audits required to maintain compliance.

The following provides a summary of security policies and procedures enforced by JMT:

Perimeter Firewall

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- ***Both JMT and any subcontractors that host JMT developed systems employ network segmentation.***

Vendor-supplied Defaults

- ***Neither JMT nor any subcontractors that host JMT developed systems use vendor supplied default passwords for system or network components.***

Protection of stored customer data

- ***Neither JMT nor any subcontractors that host JMT developed systems store credit cardholder data. Our policy is to use a PCI compliant third party payment processor for collection and processing of customer credit card data.***
- ***JMT and any subcontractors that host JMT developed systems use strong encryption to protect sensitive customer data at rest.***

Encryption of data across open, public networks

- ***All secure JMT-developed systems implement (Transport Layer Security) TLS to encrypt data during transmission.***

Anti-Virus Software Maintenance

- ***Both JMT and any subcontractors that host JMT developed systems implement and maintain the currency of Anti-Virus software on all personal computers and server infrastructure.***

Develop and maintain secure systems and applications

- ***JMT's application development policy includes the implementation of best practices to protect JMT-developed systems against malicious attack.***
- ***All applications are secured with industry standard username/password authentication that comply with customer mandated security protocols and procedures.***
- ***JMT utilizes role-based access control systems to control the availability of customer's personal data. Only users that have been authenticated and authorized will be able to view data in the system. No customer data will be sent to the client application (web browser or desktop form) through the encrypted data channel unless the user is authenticated and in the correct role.***

Restrict access to customer data by business need-to-know

- ***The PCI Standards Council defines cardholder data as including "at minimum the full primary account number (PAN). JMT does not store card holder data on its network or within the network of any of its partner hosting providers.***
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Assign a unique ID to each person with computer access

- ***All connections to data resources are accessed through Active Directory accounts; allowing only named users access to resources.***
- ***Audit logs of any data manipulation is tracked in the database.***

Restrict physical access to customer data

- ***The PCI Standards Council defines cardholder data as including "at minimum the full primary account number (PAN). JMT does not store card holder data on its network or within the network of any of its partner hosting providers.***
- ***Customer data that is transmitted from an external entity to JMT must be encrypted and transferred through a secure channel.***
- ***Sensitive file-based data remains encrypted at rest on the JMT network.***
- ***Data access is limited at JMTs facility to only users that need direct access to the data.***

Track and monitor all access to network resources and customer data

- ***Server event logs monitor all internal user access to network.***

Regularly test security systems and processes

- ***JMT conducts regular penetration and vulnerability audits.***

Maintain a policy that addresses information security

- ***Both JMT and any subcontractors that host JMT developed systems maintain Information Technology Security policies***

3.3.17 Reporting requirements

JMT understands that as the official record of licensing information, the NDOW Licensing System will house critical data used to fulfill NDOW's mission. As such, the new NDOW Licensing System will provide a robust reporting architecture and reporting functionality with direct access to all data collected and managed through the system.

Reporting Architecture

NDOW's System will directly interact with a Production database instance. The Production OLTP (On-line Transaction Processing) database server will utilize Microsoft Azure SQL Database. All data housed in the Production (primary) database will be replicated to a Secondary Azure SQL Database, which will be located in a different data center than the Production instance. This will be accomplished using Active Geo-Replication which asynchronously replicates committed transactions from the Production database to the Secondary database.

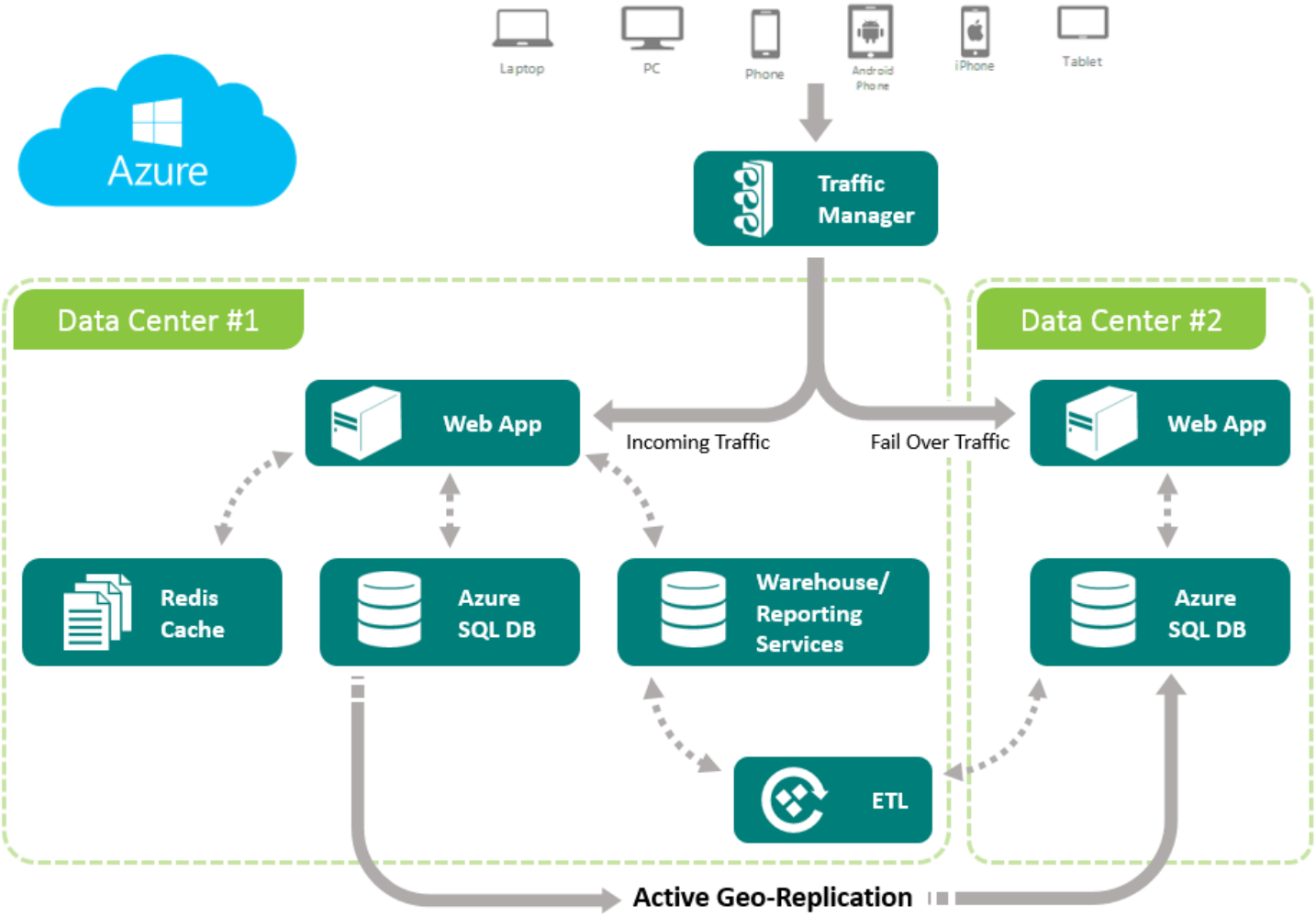
Besides offering business continuity if the Production data center experiences an outage, the Secondary database can also serve as source for reports that require the same data structure as the Production database. The Secondary database operates in snapshot isolation mode to ensure replication is not delayed by report generation executed on the Secondary. Reporting from the Secondary database eliminates additional load from intensive queries on the Production database.

In addition, the Secondary database will serve as the source for an ETL (Extract, Transform, and Load) process which will populate a Data Warehouse database. As Data Warehouses or OLAP (On-line Analytical Processing) databases utilize a different schema than their OLTP counterparts, it is necessary to transform the relational data into a dimensional model. This design consists of dimension and fact tables and is typically described as star or snowflake schema. This model is designed to support complex analytical and ad hoc reports with a rapid execution time. Since the data will come from the Secondary database, no additional load will be placed on the Production database.

In contrast to the Primary and Secondary databases, the Data Warehouse will reside on a Windows Azure Virtual Machine with an installation of SQL Server. Besides its role as a Data Warehouse, the server will also function as a SQL Server Reporting Services (SSRS) and SQL Server Analysis Services (SSAS) server. As mentioned above, the Secondary will serve as the source for reports that require the same data structure as the Production database. For multidimensional queries that require a different data model, the source will be the Data

Warehouse database, which is on the same server.

Client applications will be able to connect to both the Secondary database and the Data Warehouse for the purposes of reporting and ad-hoc queries. This includes business intelligence applications such as Tableau Desktop or Microsoft's Power BI Desktop, SQL Server Management Studio for ad hoc queries, and Microsoft Report Builder for report generation. By interacting with the Secondary database and the Data Warehouse, the Production database will only be impacted by the System and not resource heavy reporting or queries.



3.3.17.1	Automated Reporting - The awarded vendor will provide the capacity to produce automated pre-defined system reports to NDOW. These reports will be used to monitor transaction activity as well as the operation and performance of the automated system. The reports shall be available upon demand and provide information on system processing speeds, system availability, and reliability and will be used to measure compliance with performance and technical standards. All system reports must be provided in an electronic format that allows NDOW to import the data into a spreadsheet or electronic database. System performance metrics may be presented as a dashboard application to accommodate on-demand information needs.

Pre-Configured Reports

The ability to report on all system data is a standard feature of the JMT Outdoor Licensing and Recreation solution.

The new NDOW Licensing System will make accessible a suite of out of the box reports to support financial and customer management. Reports will be accessible through NDOW Licensing Application and will accept user-defined parameters. All reports will be exportable to PDF and to Microsoft Office formats.

JMT proposes to collaborate with NDOW on the requirements and design for all required reports and commits to meeting all reporting requirements outlined.

A few examples of pre-existing reports include, but are not limited to:

Summary of Receipts Report – This report displays a breakdown of all sales by location and fund source for any date to support fund allocation.

Summary of Invoice Receipts Report – This report displays the breakdown of funds for a specified Invoice into the different fund sources for the products and services rendered.

Summary of Internet Receipts Report – This report displays the breakdown of funds for a specified date range that were sold through the Internet sales configuration into the different fund sources for the products and services rendered.

Sales Detail Report – This report displays all sales at a particular location for a specified date range.

Daily Revenue Report – This report displays all product sales, in total, or by sales channel for a specified date range.

Purchase History Report – This report displays all transactions along with customer information (name, address, email address, phone) for a specified product purchased within a given data range.

Our solution also provides reports for License Dealers that support their need to balance their financial systems:

Agent Sales Closeout – This report shows all products sold by the agent within a specified date range. This report is used to support the agent close process.

Agent Invoice Sales – This report shows all products sold by the agent within a specified date range. It can be used by agents to estimate invoice amounts.

3.3.17.2	Variable Information Reporting – The awarded vendor will provide query tools that provide NDOW the capability to create user defined reports to run sales, transaction and system operation reports user-defined date periods and other reports as needed.

Ad Hoc Reporting

As was stated above, JMT commits to designing and developing all reports that are indicated as a requirement in this RFP and to exposing those reports through the new NDOW Licensing System. However, JMT recognizes that preconfigured reports are only one component of a robust reporting solution. The ability of the agency to dynamically create and share new reports as new business cases arise empowers the licensing agency to derive the greatest value from the customer sales data maintained in the system.

Accordingly, JMT will provide an environment and tool set for NDOW to create and share Ad Hoc reports.

Authorized NDOW staff will be able to author new reports using Microsoft's Report Builder application

and then publish these reports to the Reporting Server for consumption. In addition, data-driven subscriptions can be created that distribute reports to a large recipient list via email.

With the necessary credential, other client applications will be able to connect to both Secondary database; an actively geo-replicated database from production, and the Data Warehouse for the purposes of reporting and ad-hoc queries.

Tableau Desktop and Microsoft's Power BI Desktop are two examples of desktop clients that can generate reports and charts from an Azure SQL Database. These reports and charts can be published to the cloud (Tableau Online, Power BI site) for easy access from any device.

A. Administrative User Interface - The solution will provide a secure web interface to the database that will be used to access and manipulate real-time system data. All data manipulations must be logged, including the type, date, time and UserID. Describe a solution that will, at a minimum, allow NDOW staff to perform the following functions:

Customers, license vendors and NDOW employees will interact with the new NDOW Licensing System via a singular, comprehensive web application that communicates with a centralized NDOW Licensing System relational database in real-time. Likewise, sales transactions, executed through all sales channels, will be executed in real-time.

1. Manage Customer and Business Record Files - includes the ability to create, modify and combine customer and business records. Historical information on licenses, conservation/safety education, harvest, permit applications and permits, HIP surveys, vessels, citations and revocations must be available.

The management of a customer account, whether by customer self-service or by a License Vendor or NDOW employee, is a standard component of our Outdoor licensing and recreation solution.

Search for Customer

The ability for authorized NDOW staff to search for a customer account is a standard component of our Outdoor licensing and recreation solution.

An individual customer's account will be created only once in the system and from that point forward all activity (product purchases, game checks, special hunt applications etc.) will be associated with that account.

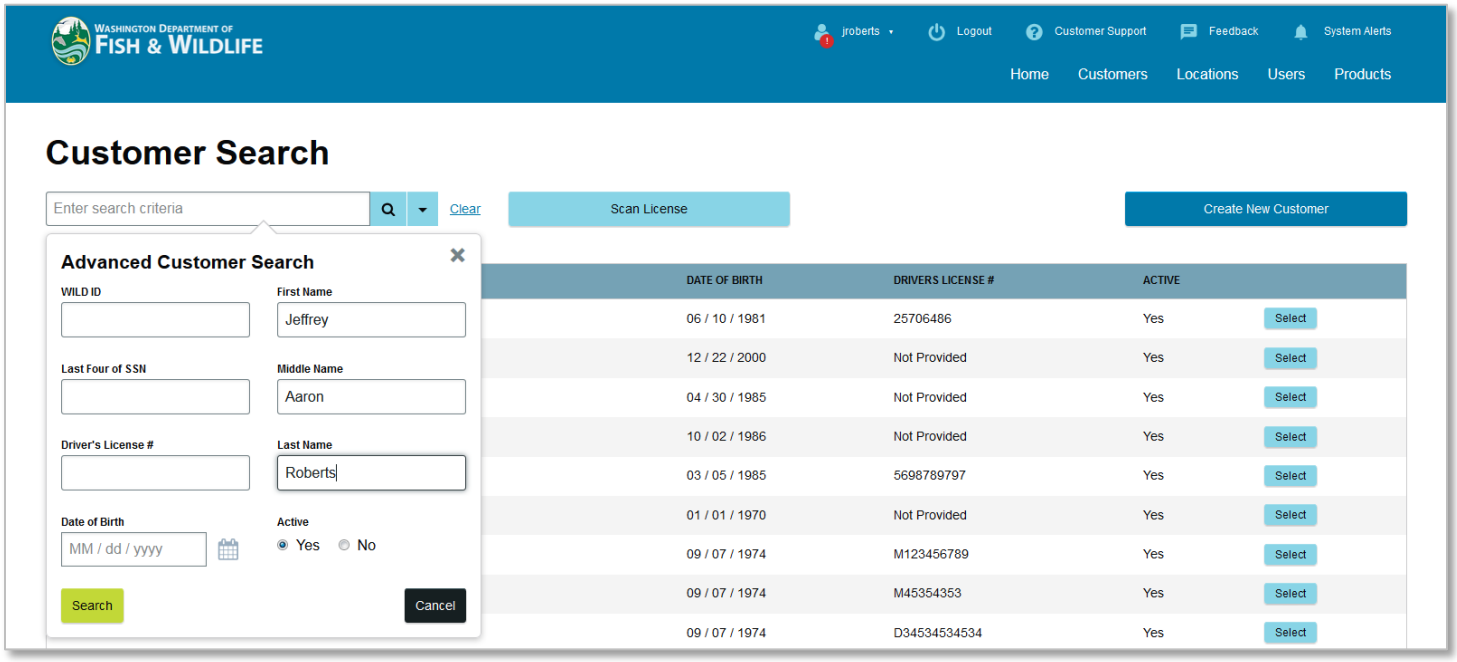
Authorized NDOW staff will be provided an easy and intuitive search screen to locate existing customers in the system and to access their account. This search will support a variety of options including unique customer Id, name, date of birth, driver's license number and more. The search is additive so that providing additional search parameters will progressively narrow down the results.

The NDOW Licensing System will also support scanning the barcode on the customer's driver's license or hunting / fishing license to automatically locate the customer in the system.

The customer search will be configured to meet NDOW's exact specifications.

Like all other internal searches both a basic search and advanced search will be exposed. The basic search allows an NDOW user to simply enter select search parameters such as first and last name or Customer ID number to execute the search. The advanced search provides additional parameter inputs and allows the user to be more granular with their search criteria.

Also, note that the search can be configured to required minimum combinations of search parameters to return results (often used for license vendors) and to all broader searches based on any input provided (often used for state agency personnel).



Edit Customer Profile

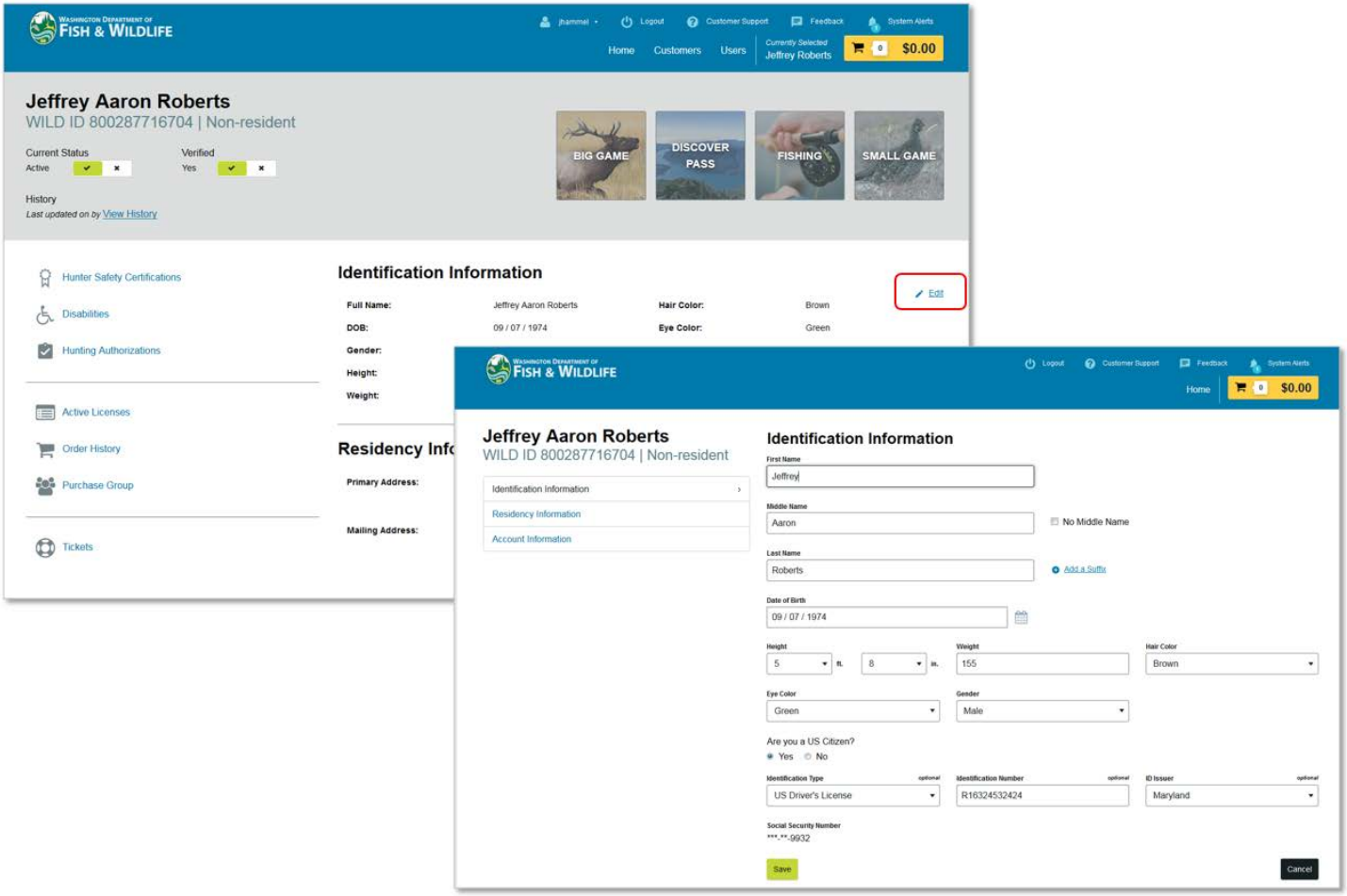
Once a License Vendor locates and selects a customer account via the search screen above the user will be directed to the Customer Home page. This screen provides an intuitive dashboard from which the user can access the functionality and data needed to complete the desired task. The first and most primary task is validating that the customer profile is current and accurate.

This screen will be configured to expose the data and functionality required to meet all NDOW requirements.

Reviewing and Updating the Customer Account

JMT understands the criticality of maintaining a current and accurate customer database. Our system makes reviewing and updating customer account information easy and intuitive for License Vendors and customers alike.

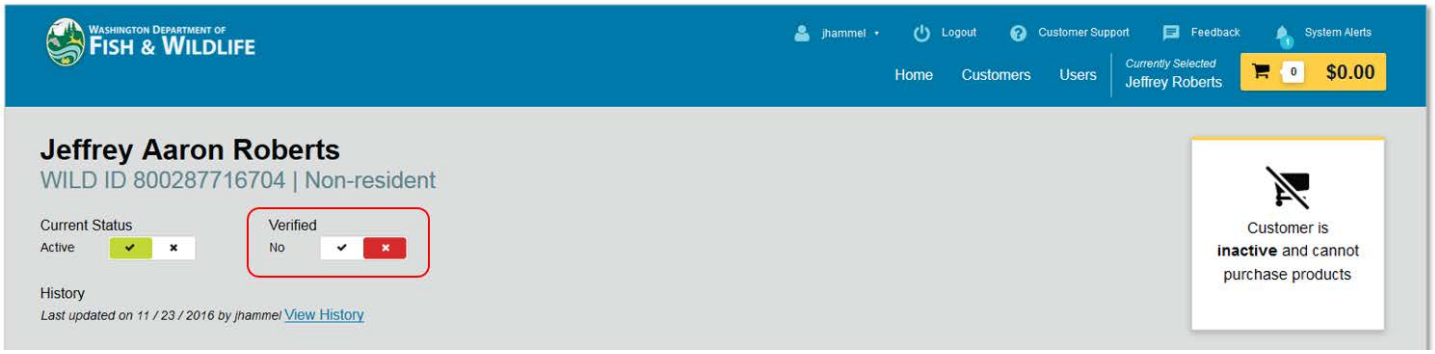
Customer demographic profile information is presented in read-only format directly on the customer home page. A user need simply click "Edit" to present an editable form into which updated information can be input and saved. Note that the customer data that is editable by a user is governed by very granular permissions and role assignments.



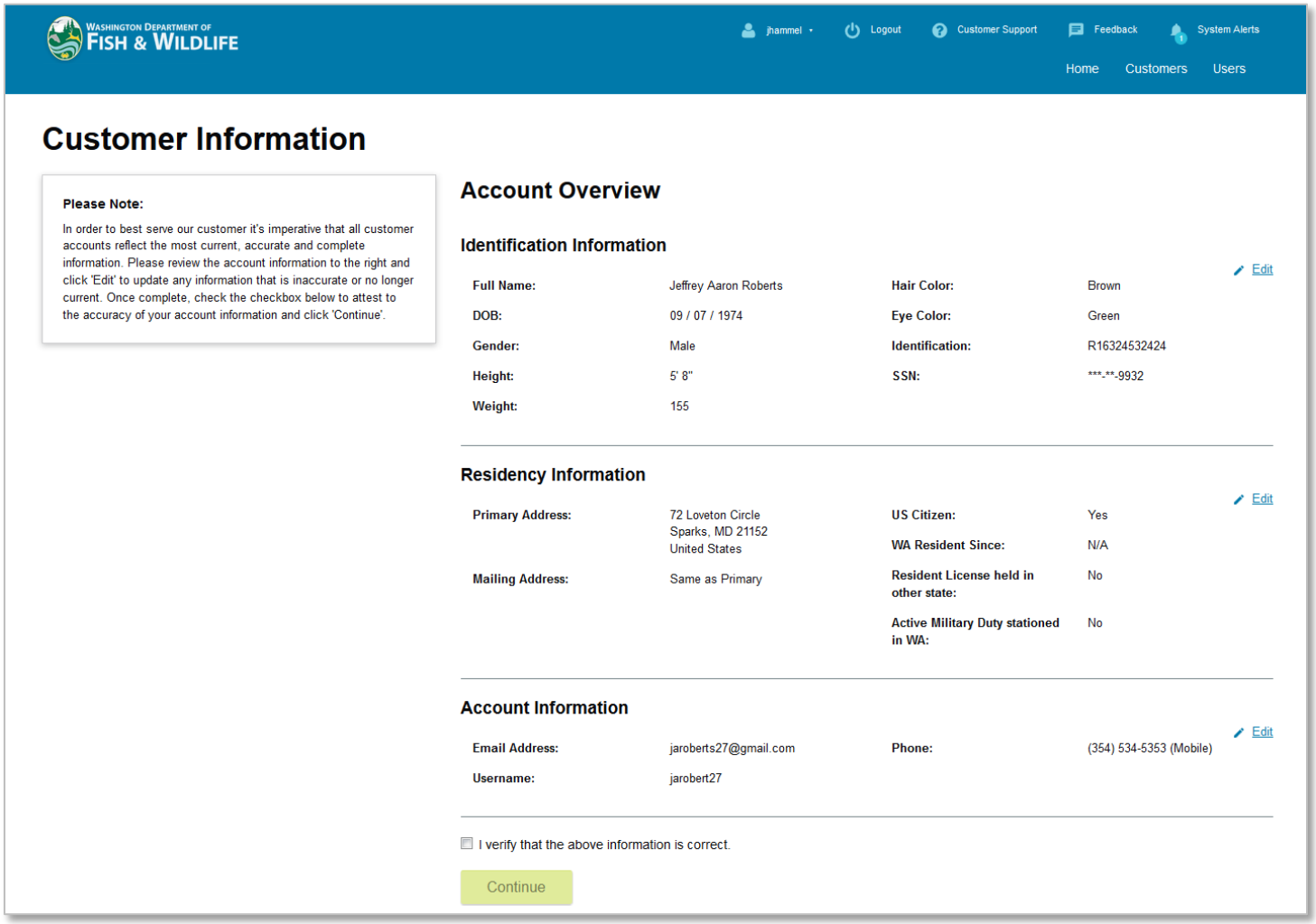
Mandatory Account Review

JMT understands the criticality of maintaining a current and accurate customer database. Because of this we have also made it possible within our system to mandate that customer account information be reviewed prior to proceeding with any additional action on the customer account.

This can be achieved manually by setting a customer's "Verified" property to "No" and can also be an automated process based on configurable verification window. For example, the system can be configured that a customer's account will automatically become "Unverified" once 1 year has elapsed since last verification.



When an unverified account is accessed, the customer or License Vendor is automatically directed to the verification screen that explains the task at hand and requires an attestation by the user that the account information is accurate before proceeding.



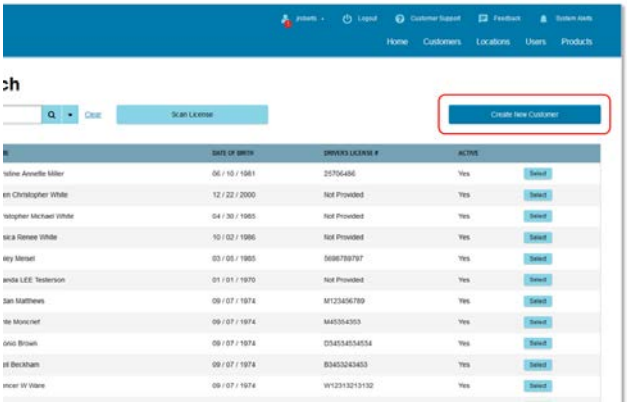
Creating a new customer

The ability of internal users to create new customers and to edit the profiles of existing customers is standard functionality of the JMT Outdoor Licensing and Recreation solution.

JMT recognizes that the customer creation process must be as efficient and intuitive as possible for license vendors and internal NDOW employees alike. For this reason, the new NDOW Licensing System will include an efficient and easy to use enrollment wizard that steps NDOW employees through the process of creating a new customer in the system.

The customer enrollment forms will be configured to match NDOW's exact specifications with regard to the data elements collected, the validation for the data elements (e.g. required fields, specific formats) and any business logic that must be in place to enforce NDOW regulations (e.g. specific identification types are only valid for certain age groups).

The following depicts the steps of the enrollment wizard and the data required for each step.

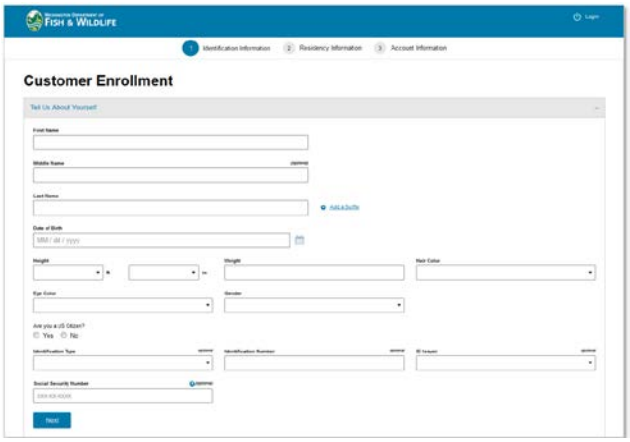


Step 1: User Chooses to Create New Account

If the user has never purchased a product through the NDOW Licensing System, they will be required to create a new account and logic prior to accessing most product catalog items.

The system is designed to support the purchase of products without logging in as well but this product catalog would typically be limited to only those products for which demographic and purchase history data is not relevant to determining product availability.

Once the user clicks the "Enroll Now" they will be redirected to the enrollment wizard.



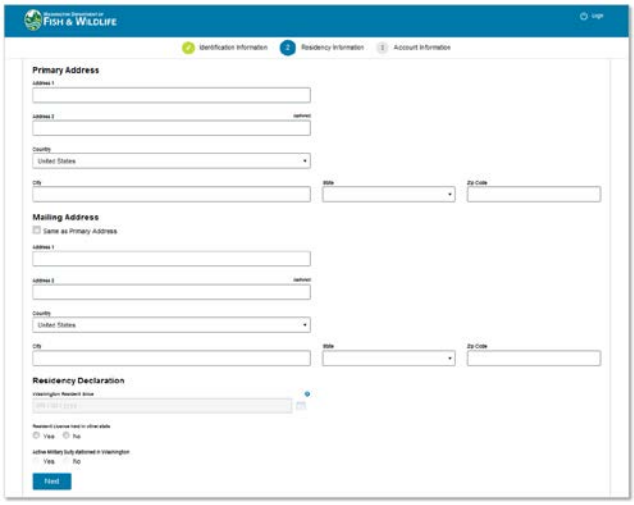
Step 2: Personal Information

Step 2 will be to collection personally identifying information including name, date of birth, tax ID (either last 4, full 9 or a hybrid) and an identification number such as Driver's licenses, State ID, or Passport.

Intuitive "Help" icons will provide tips to the customer.

Note that all personally identifying information is masked on screen, stored in the database encrypted and that business rules are enforced regarding what user roles can view and edit this data.

This form will be configured to match NDOW's exact specifications.



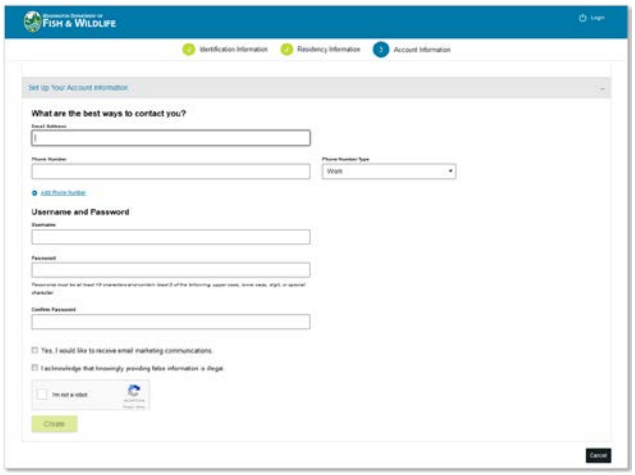
Step 3: Residency Information

During Step 3 the customer will provide address information and customer's residency will be explicitly declared or system logic will define residency based on the answer to multiple enrollment questions.

The system is designed to capture a customer's primary address and additional addresses (mailing, billing etc.) per customer requirements.

Our solution uses address lookup to auto-populate City and State based on the provided zip code.

This form will be configured to match NDOW's exact specifications.



Step 4: Account / Contact Information

The final step in the process will be to provide contact information and creating a username and password.
The user will then specify a username, password and security question / answer combination. Password must conform to configurable password composition rules.

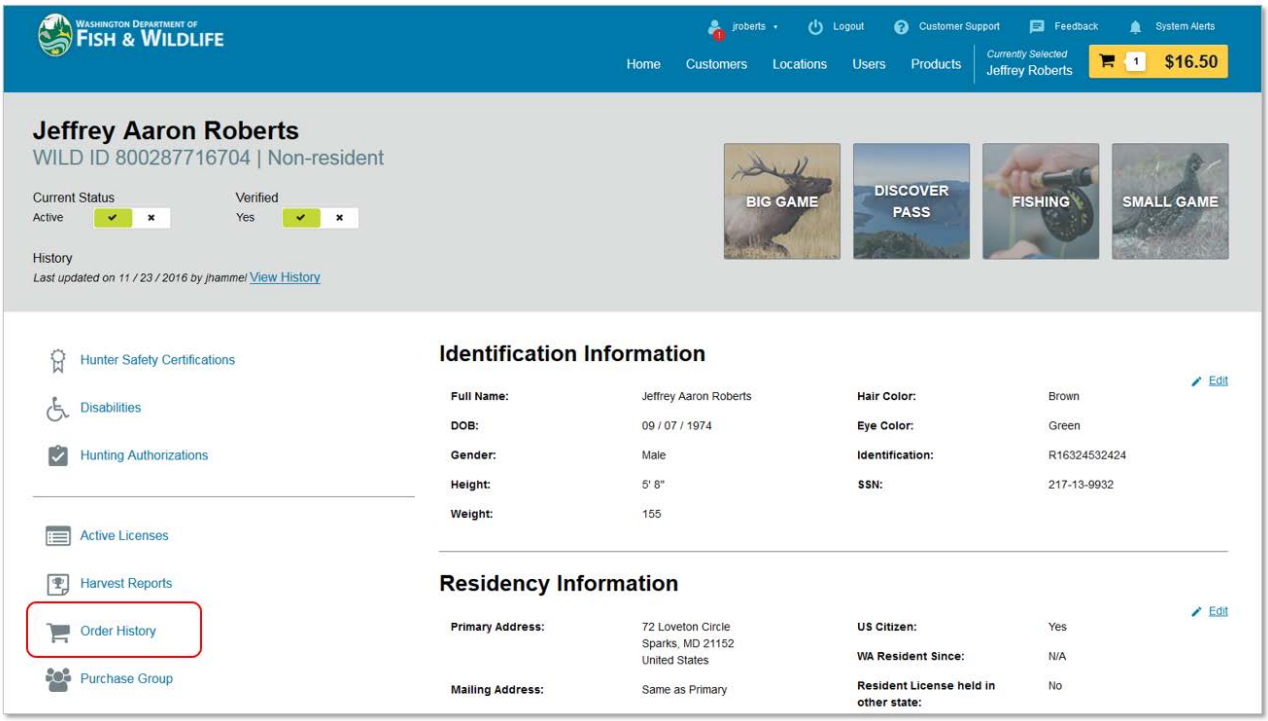
Note: when creating an account a license vendor or NDOW employee, email is optional and the username and password inputs are not present. The customer can later create a username and password for their account at their discretion.

This form can contain one to many affidavits that the customer account information provided was accurate and the customer understands any disclosures.

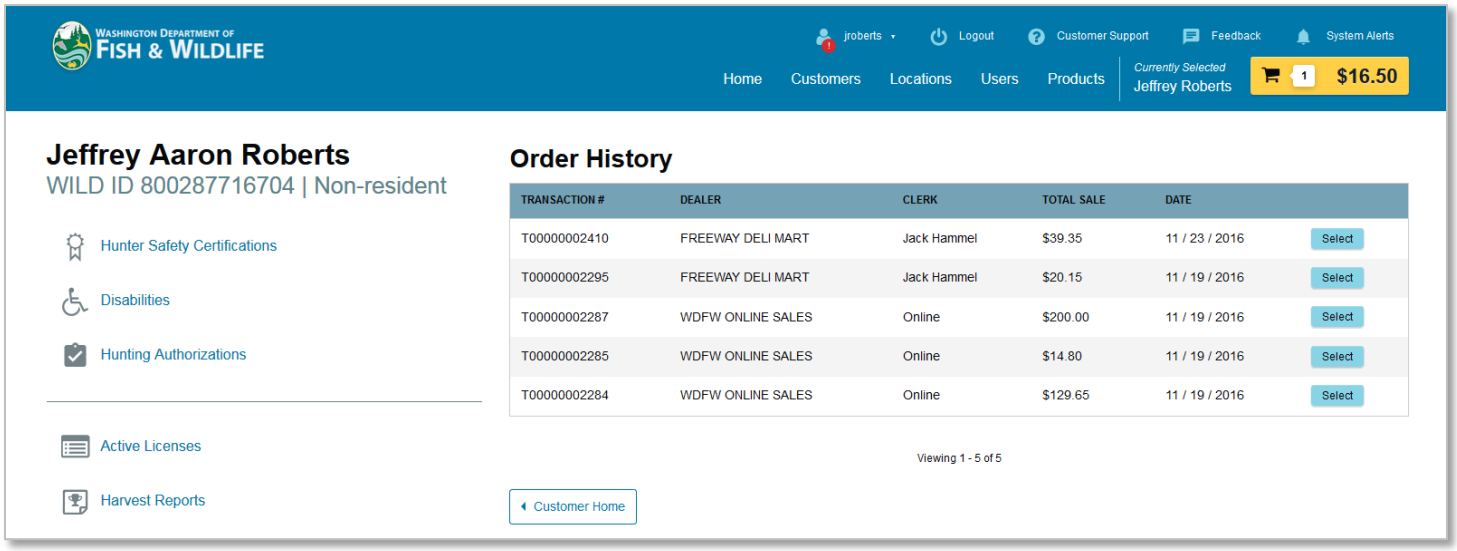
Once the user clicks "Create", the account is created in the system and the user is automatically directed to the customer's home page so that they may begin servicing the account.

Customer Sales History

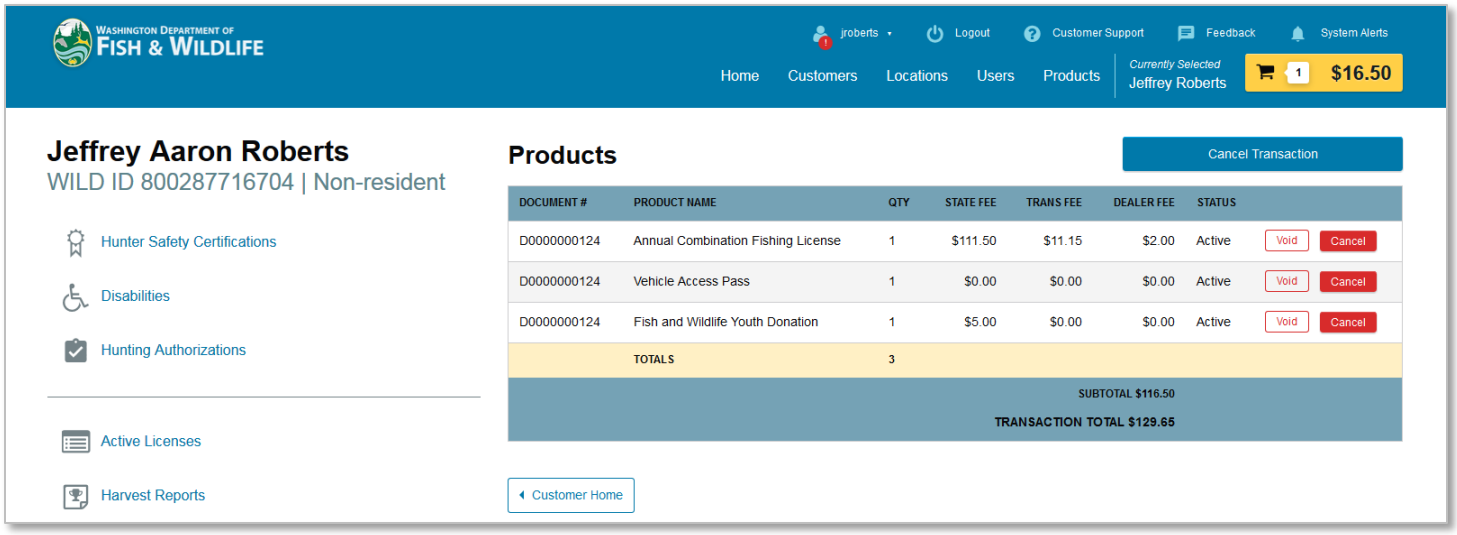
The new NDOW Licensing System will store all sales transaction data in the centralized database and will provide access to high-level and detailed level transaction data for customers as standard functionality. NDOW Administrators view a customer's sales history by license year or by all license years by searching for and selecting a customer to access their customer home page and then clicking "Order History".



This will present the user with a list of all sales transactions executed by the customers sorted descending by date time and provide a means to select any order to see the details of that transaction.

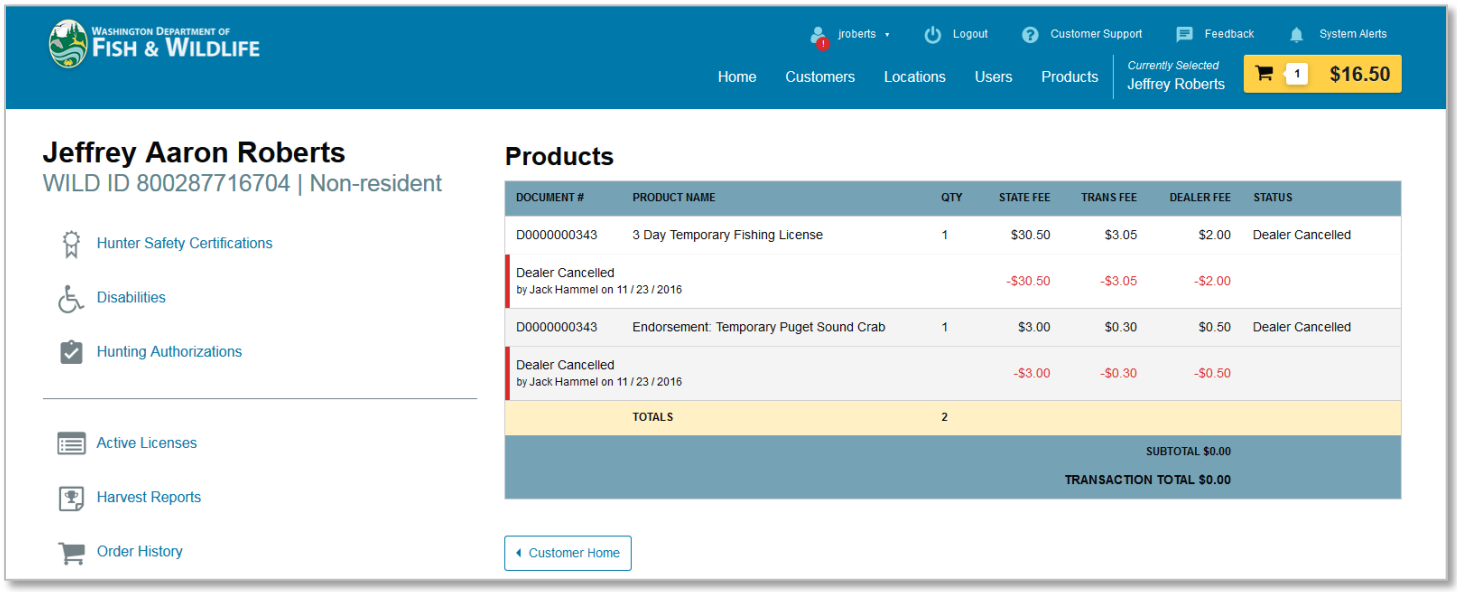


Clicking on the "Select" button will redirect the user to the detail view for the selected transaction. From this screen the user can see the individual transaction items that comprise the order as well as the payments remanded.



The sales history information presented in the order history details will be comprehensive of all aspects of the sales transaction including any actions taken post-transaction (e.g. cancelation, exchange, adjustment). Relevant controlled hunt related information will also be included.

JMT will work with NDOW during the requirements elicitation phase to define the exact composition of this screen.



Customer "Controlled Hunt" Application and Draw History

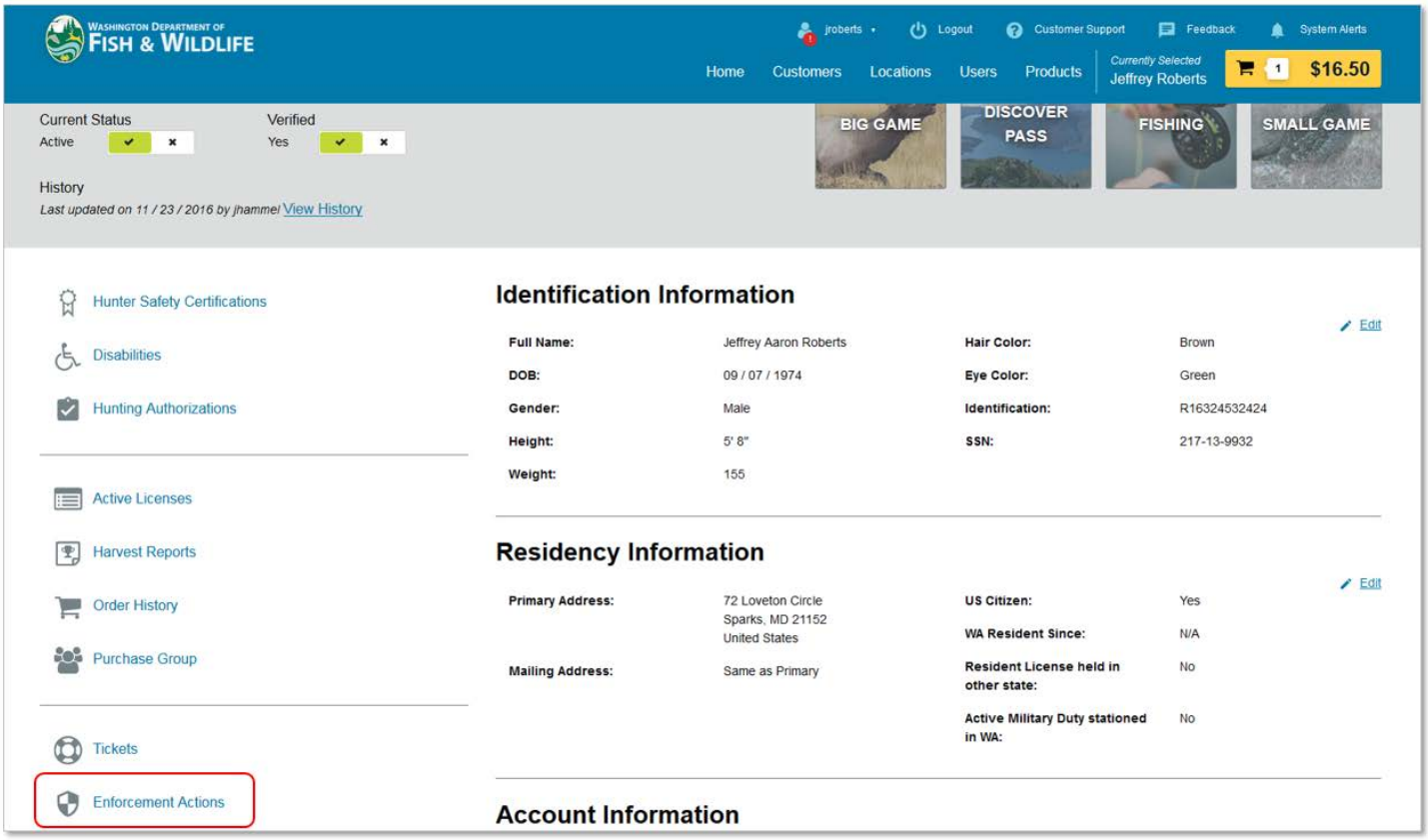
Within the JMT Outdoor Licensing and Recreation solution the customer home page provides a portal to all customer information. From the customer home page NDOW authorized users will have access to the complete controlled hunt application and draw history for a customer.

The NDOW employee will simply click "Controlled Hunt History" from the customer home page and will be directed to screen that will present a summary of all controlled hunt applications by license year. The summary will provide an overview of each application including license year, species, application number, application type, and draw status. This summary table will include a "Select" button which once clicked will redirect the user to the details of the application.

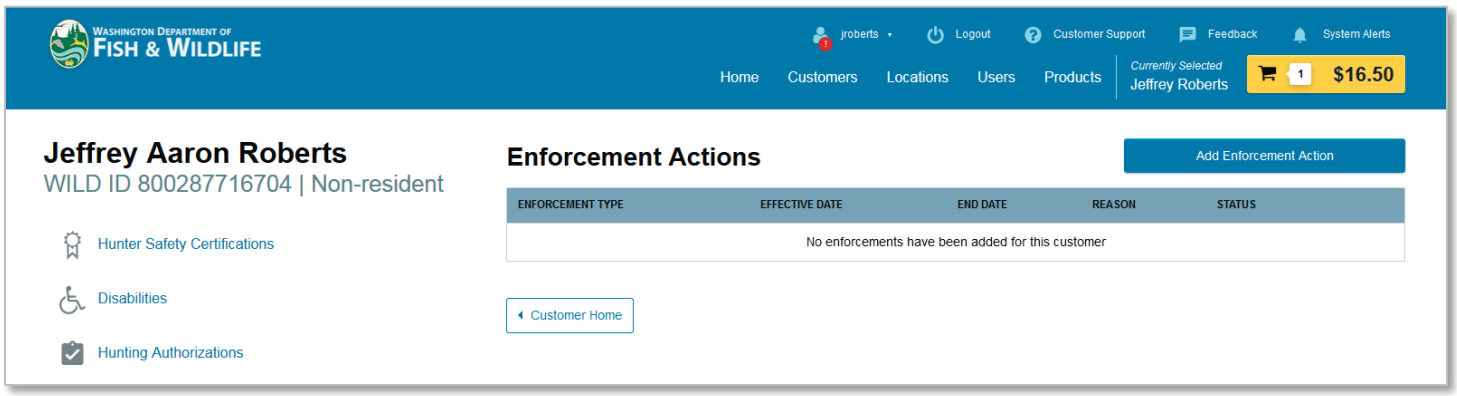
Revocations and Officer Contact

The ability of authorized users to add, edit and view enforcement actions to / on a customer's account is standard functionality within JMT's Outdoor Licensing and Recreation solution.

The new NDOW Licensing System will include a very robust set of tools for creating, managing, and enforcing customer revocations / suspensions. Authorized users will choose "Enforcement Actions" from the customer landing page and be redirected to a list of all current and historic enforcement actions.

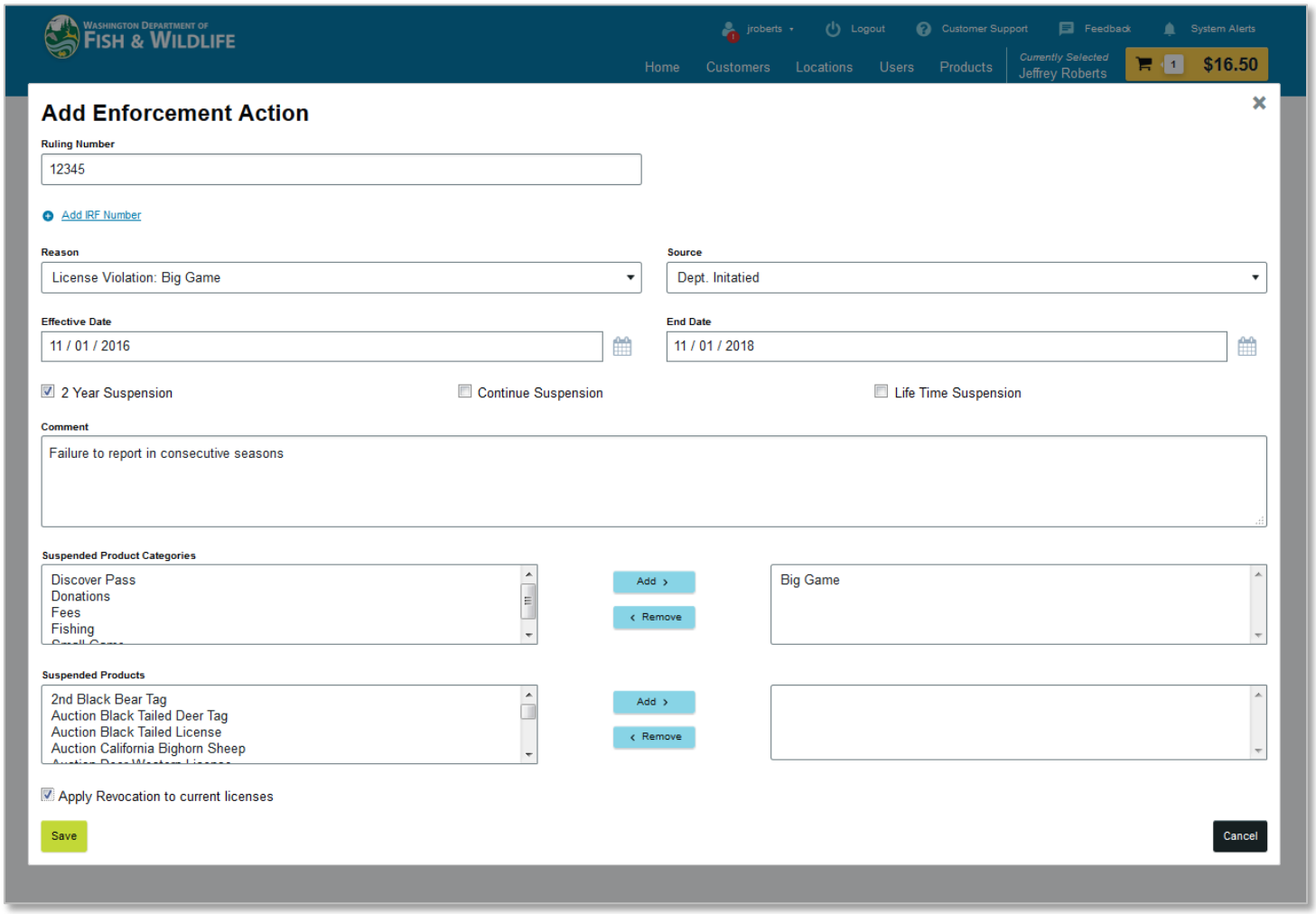


To add an enforcement, action the user need only click "Add Enforcement Action" to present the Add Enforcement Action dialog into which the user can provide all of the information required to create the new enforcement action.

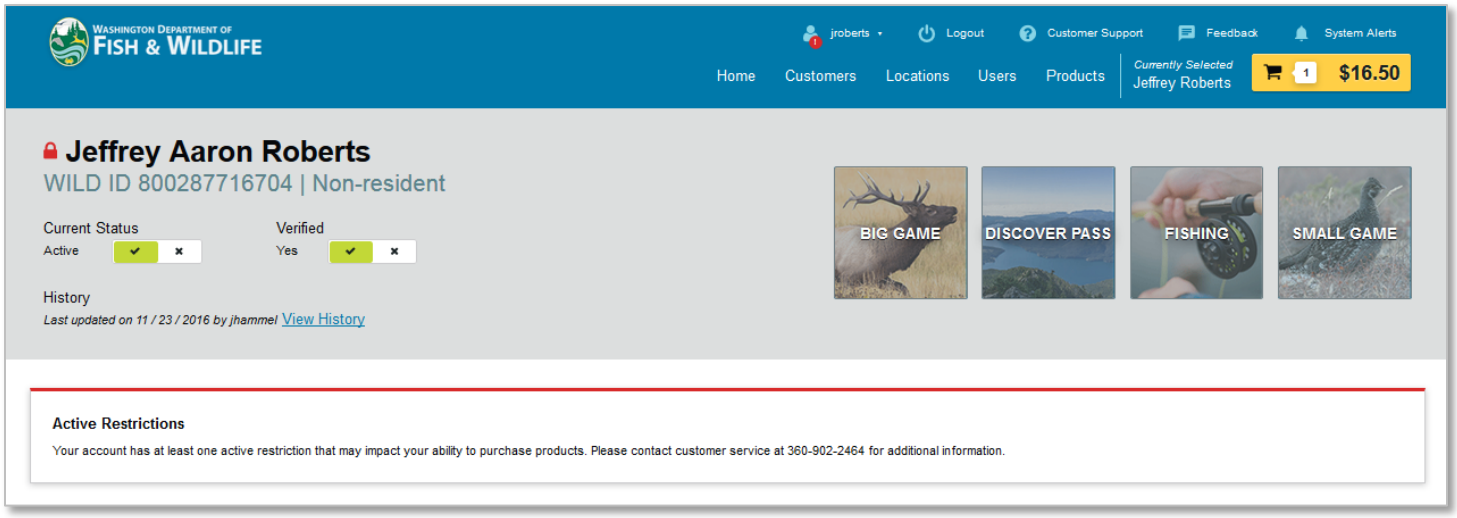


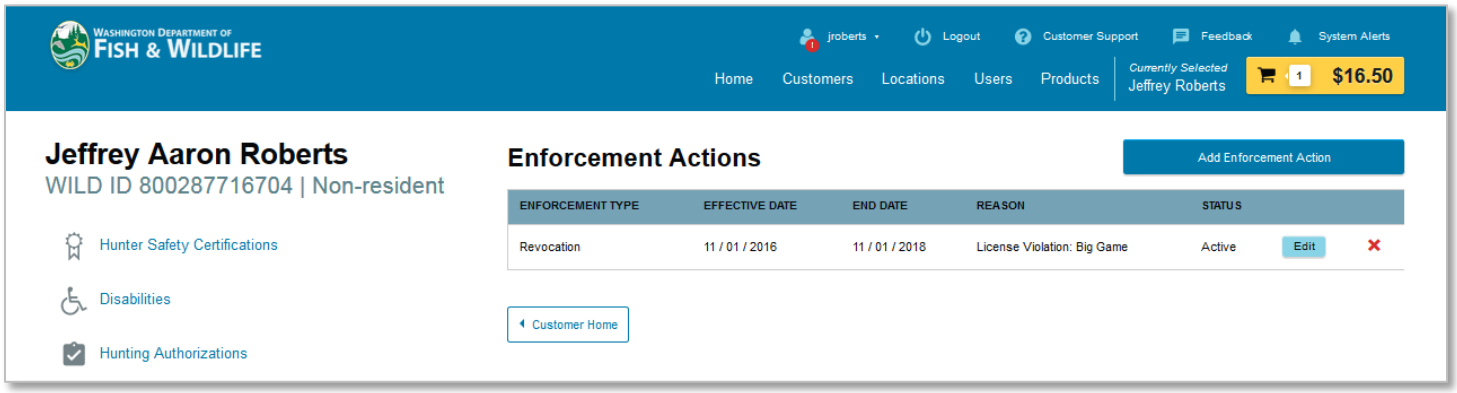
The specific information captured on this screen will be configured to match NDOW specifications. Note in the screen below that after providing reason, source and valid duration information the user is optionally able to select 1 or more product categories or one or more specific licenses against which to apply a revocation.

If the user elects not to check the "Apply Revocation" checkbox the system will create a suspension which has the effect of prohibiting the purchase of products with the selected product categories or specific the products selected. A revocation additionally updates the status of a customer's licenses which meet the specified criteria to "revoked". Revoked licenses will not print on documents, cannot be used as prerequisites, and are invalid for the duration of the enforcement actions valid dates.



If at any time an active enforcement action is present on a customer account, the customer home page will reflect this condition.



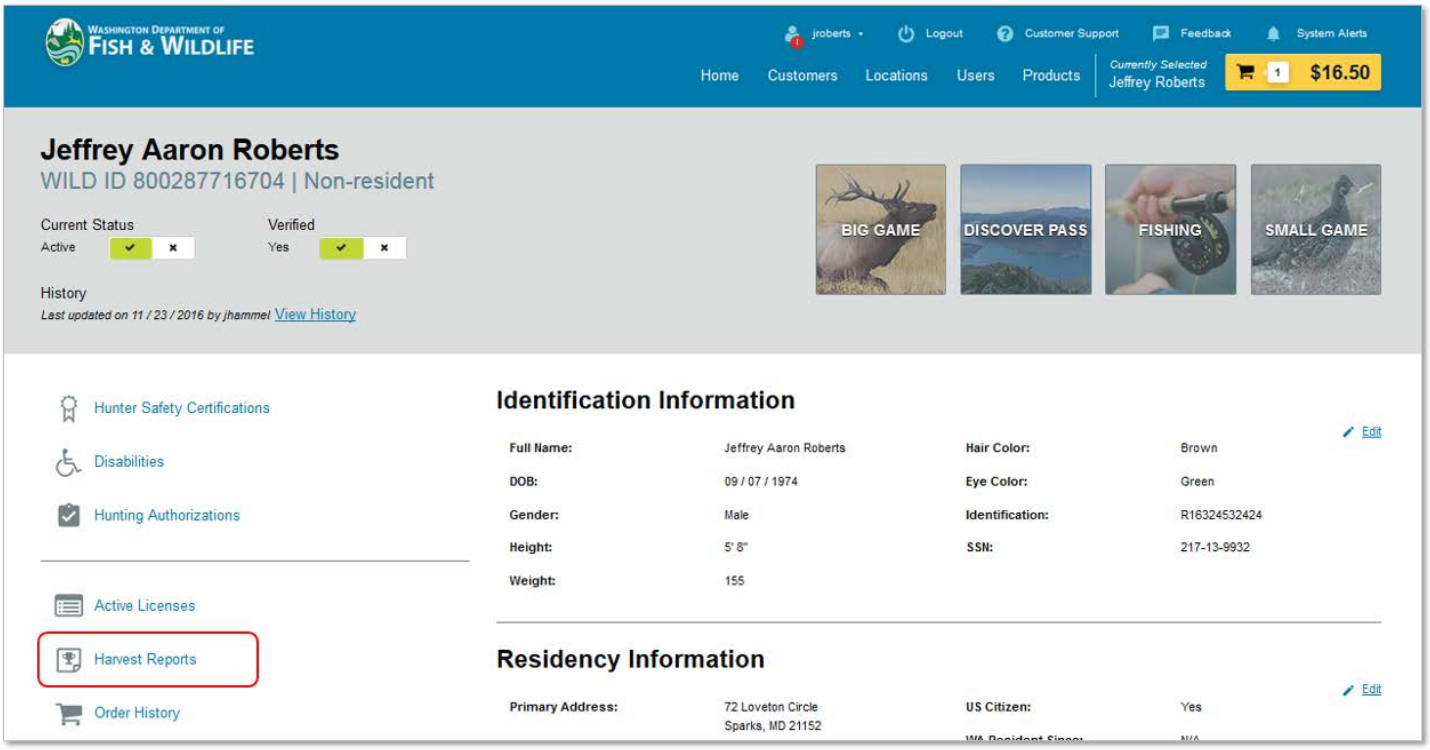


Hunter Reporting

The ability for authorized NDOW users to view an individual's current and prior year hunter reports from the customer record is standard functionality of the JMT Outdoor Licensing and Recreation solution.

Within JMT's solution the customer home page provides a portal to all customer information. From the customer home page, NDOW authorized users will have access to the complete hunter reporting history for a customer.

The NDOW employee will simply click "Hunter Reports" (Harvest Reports in the screenshot below) from the customer home page.



The NDOW user will be redirect to the Hunter Reports screen from which all current and historic hunter reporting requirements assigned to a customer can be viewed. Depending on requirements, the reports can be organized by category historic reporting requirements

can be hidden or displayed by default.

2.	Management of Agents - Enrollment of agents, updating agent information, setting agency class and type, managing equipment inventory, help desk activity (service provided by the contractor and NDOW), monitoring sales, transactions, and revenue collections and failures (ACH or Electronic Funds Transfer), and suspend, terminate, or lock out agents and/or individual users.

Within the new NDOW Licensing System NDOW Administrators will have an intuitive environment to create and manage license vendors at both the corporate and sole proprietorship levels. This includes the ability to capture and maintain descriptive, financial and contact information about the location and to control the license vendor's access to the system and the products they can offer for sale.

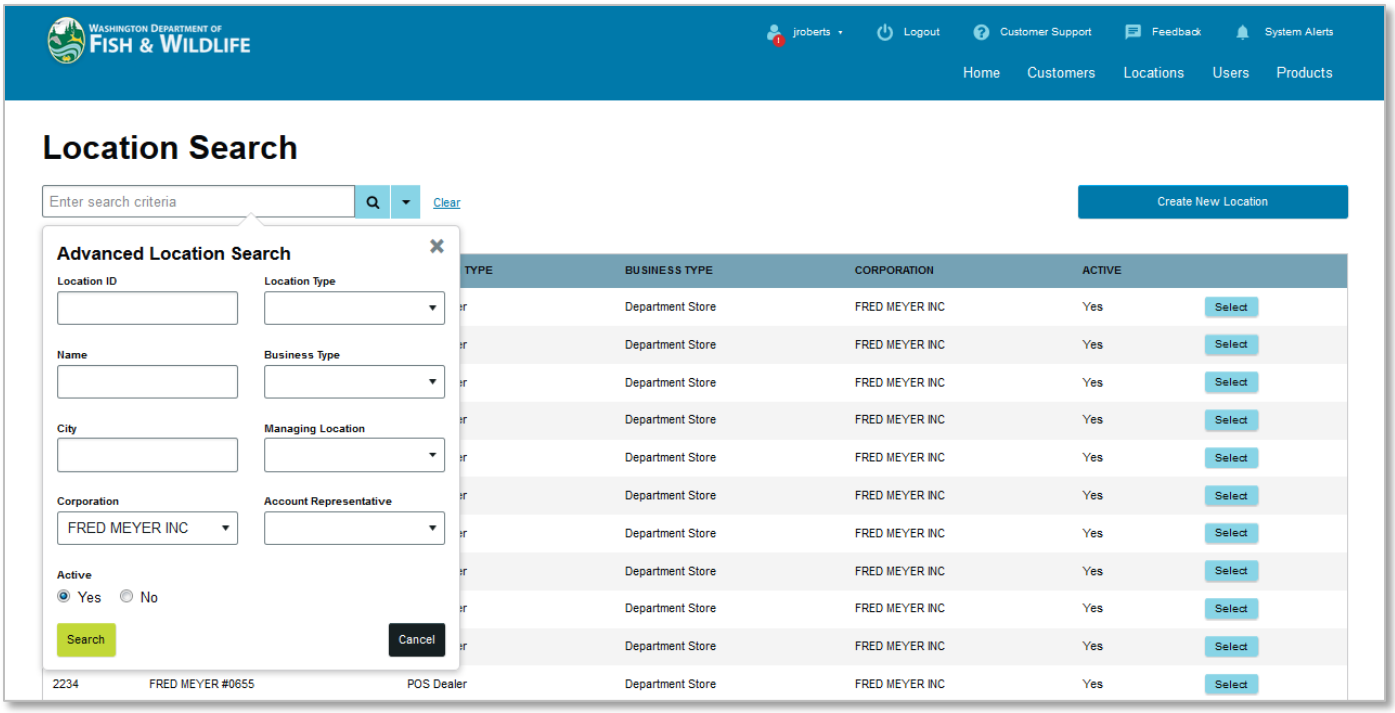
Search for Agents

The ability for NDOW to search for a license vendor is a standard component of our Outdoor licensing and recreation solution.

A license vendor account will be created only once in the system and from that point forward all activity (e.g. sales, invoices, communications) will be associated with that account.

NDOW will be provided an easy and intuitive search screen to locate license vendors in the system and to access their account. This search will support a variety of options including unique License vendor number, License vendor name, City, Region, Status, Corporation, County, Zip, and License vendor class. The search is additive so that providing additional search parameters will progressively narrow down the results.

Ultimately, the license vendor search will be configured to meet NDOW's exact specifications.



Create / Edit Agent Profile

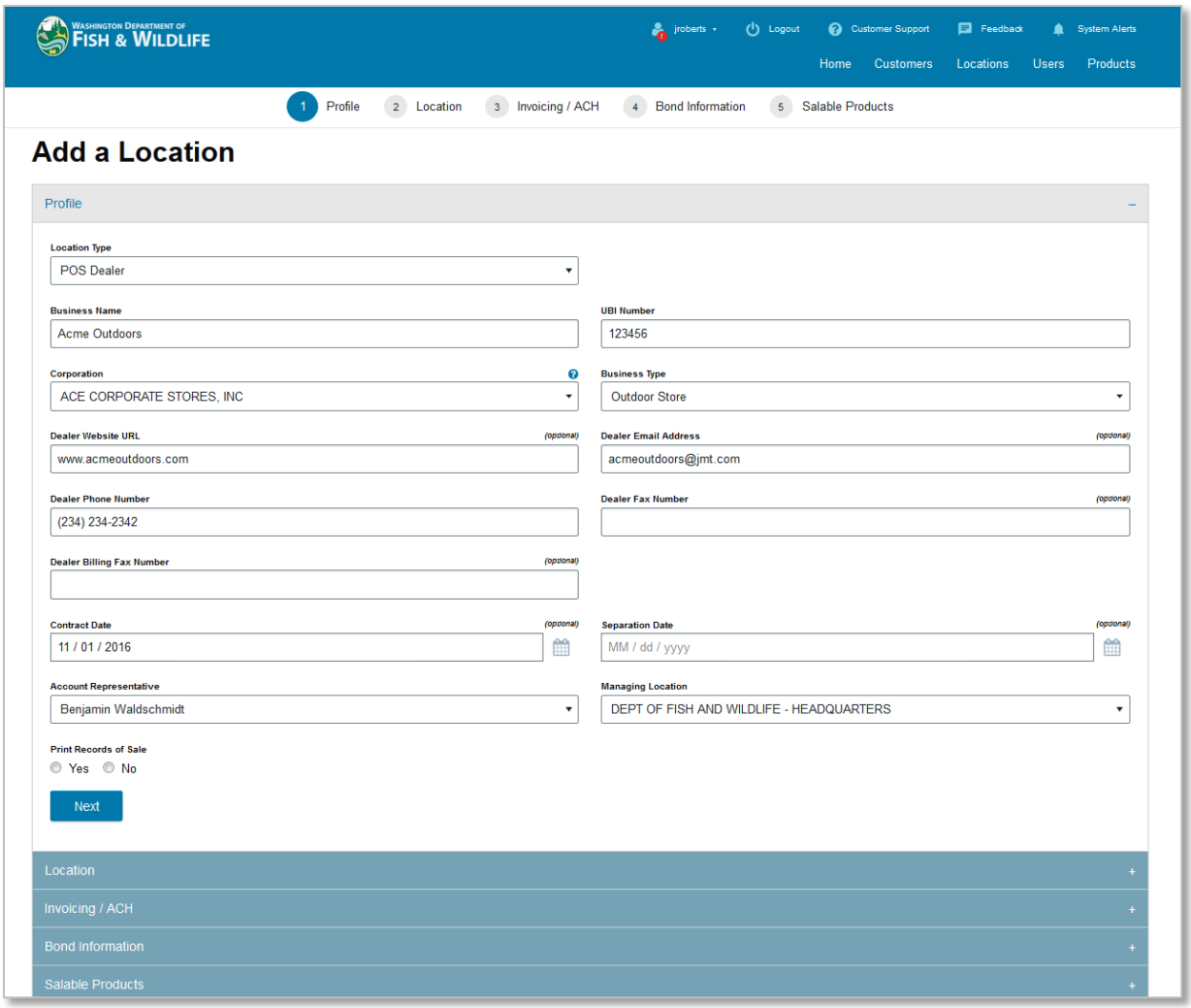
License Vendor account management is a standard component of our Outdoor licensing and recreation solution.

Within the new NDOW Licensing System NDOW Administrators will have an intuitive environment to create and manage license vendors at both the corporate and sole proprietorship levels. This includes the ability to capture and maintain descriptive, financial and contact information about the location and to control the agent's access to the system and the products they can offer for sale.

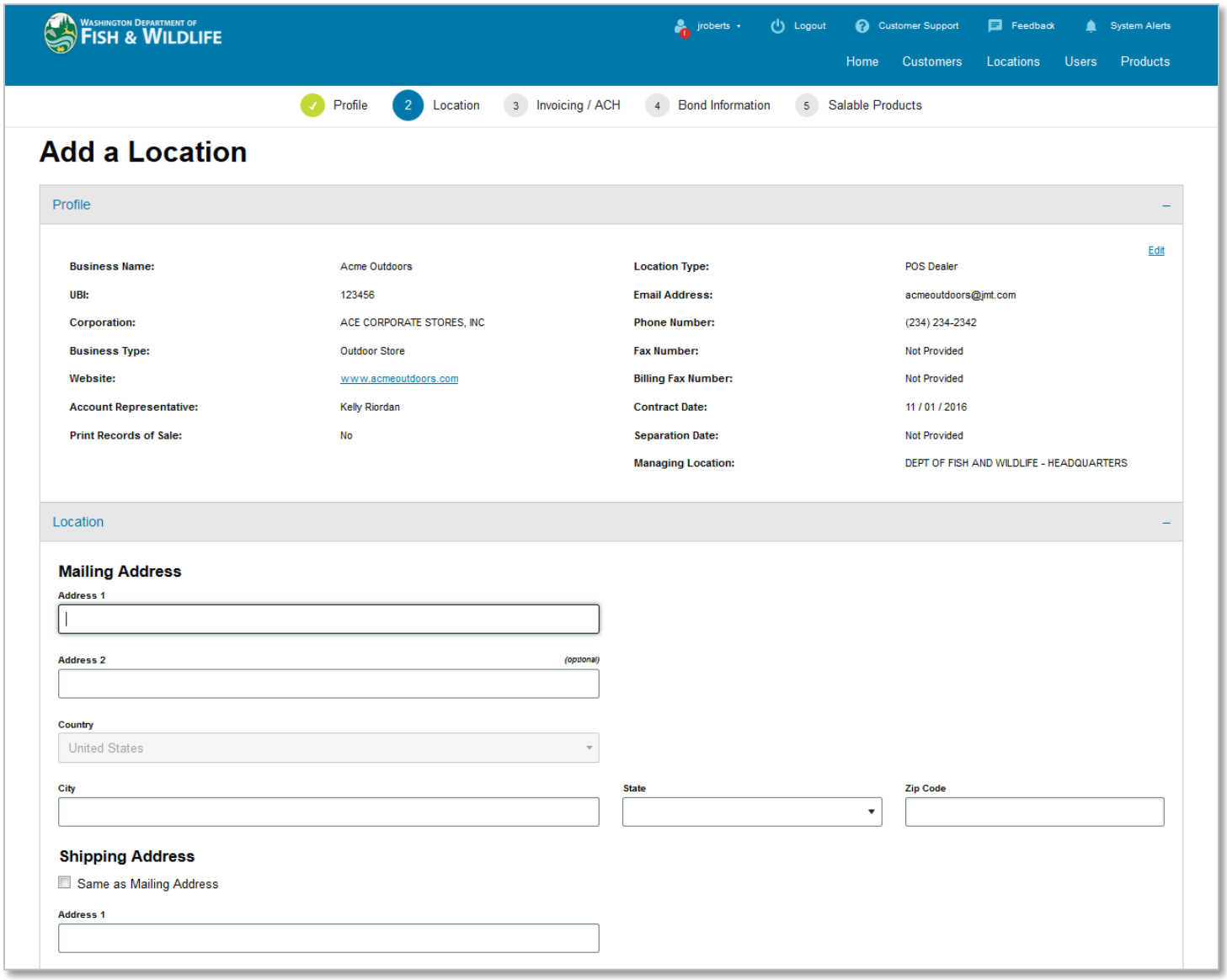
The screens below demonstrate the rich capabilities of our solution but please note that the license vendor management screens will be configured to meet NDOW's exact specifications.

Like other creation workflows, a license vendor creation wizard facilitates an intuitive creation process that steps the user through logically organized screens.

The "Profile" screen is where basic descriptive information about the license vendor is captured including name, type, contact information, and whether the license vendor is associated with a corporation.

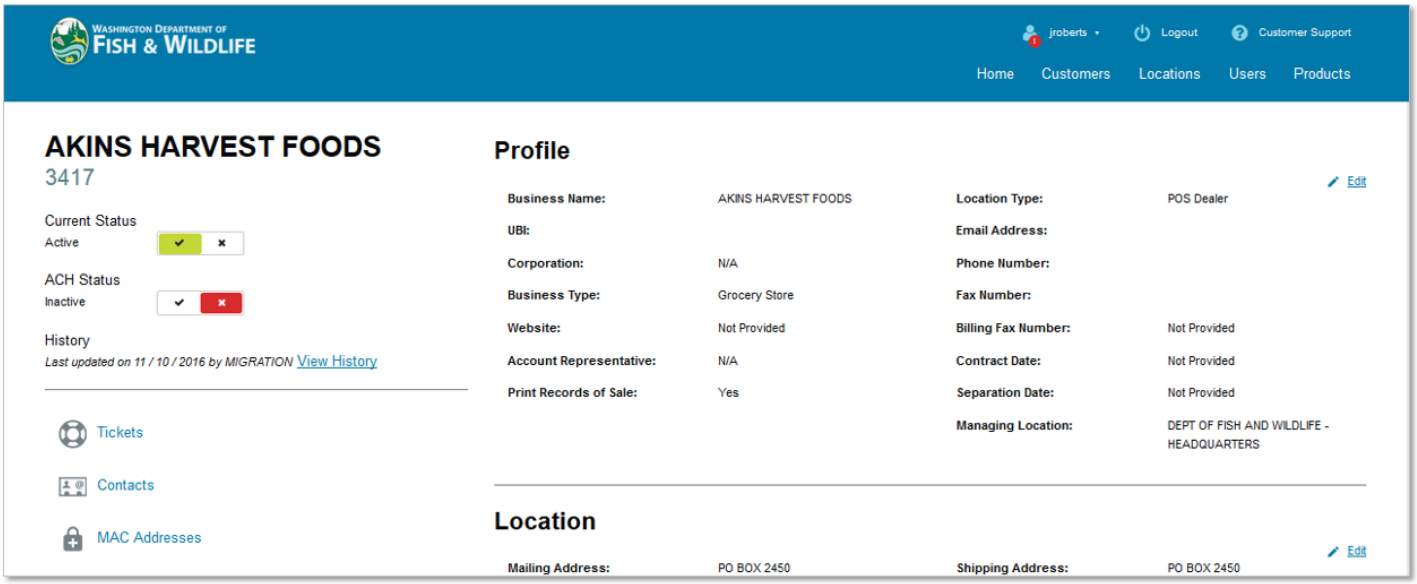


Within the location screen up to 4 addresses may be specified including Business, Mailing, Shipping and Billing. Note that the user need only click the "Same as Mailing" checkbox to apply the mailing address to all address types.

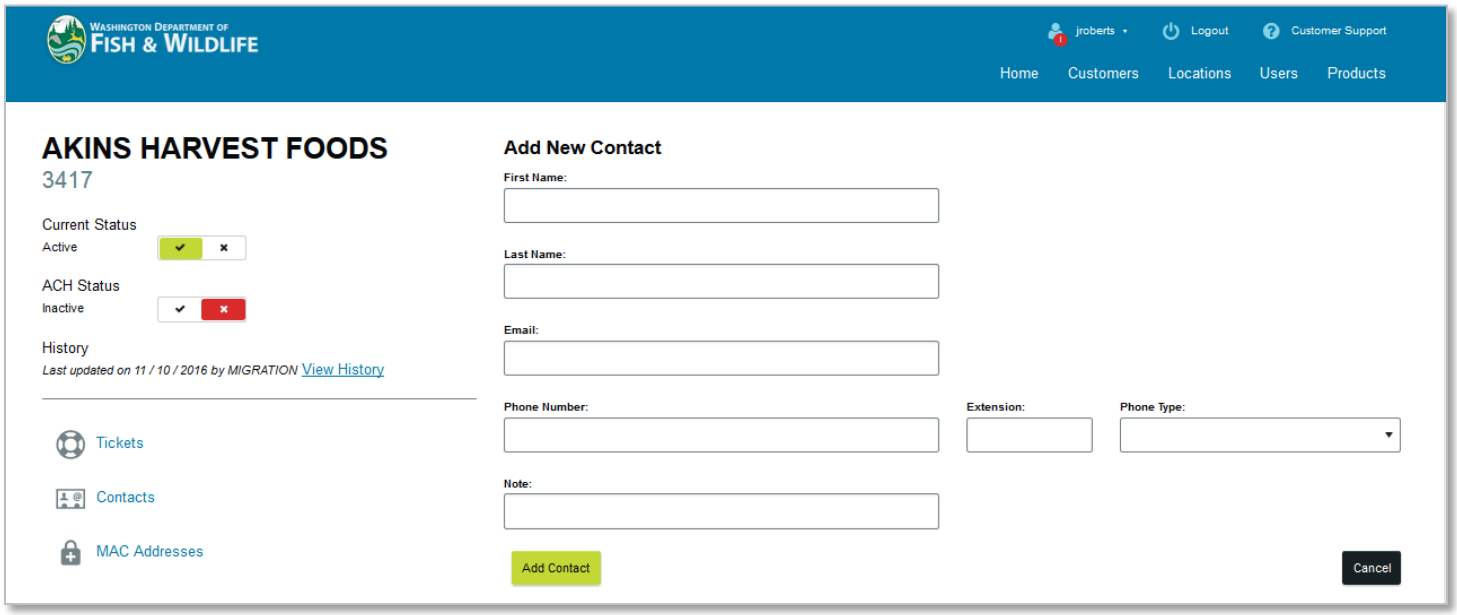


The user will proceed through the creation wizard configuring invoicing and ACH parameters and inputting the requisite banking and bond information.

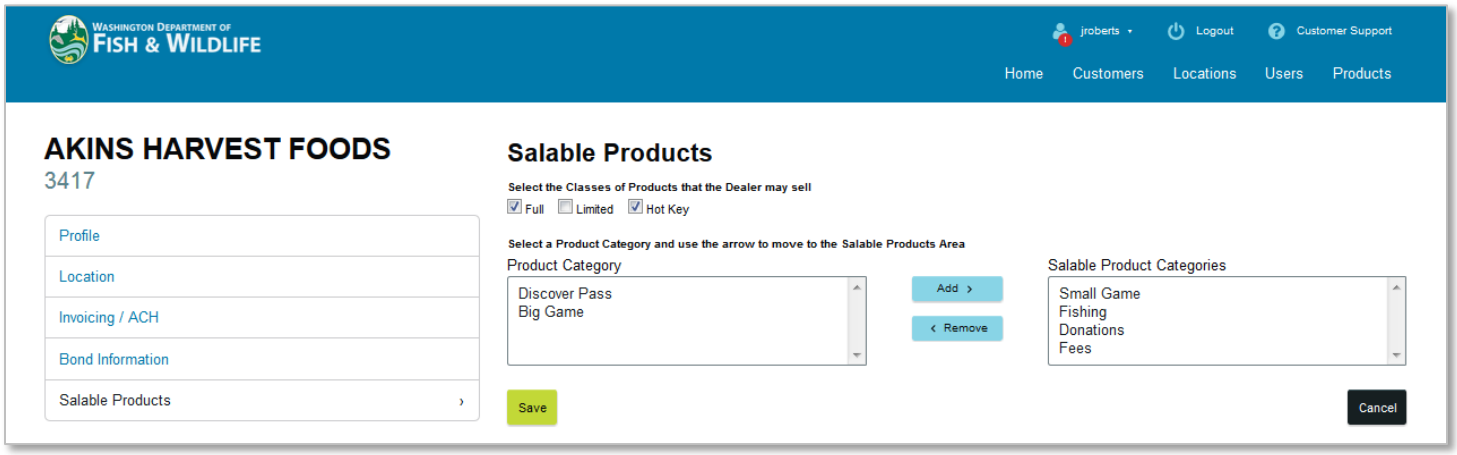
At any time, an NDOW Administrator can search for and select the location, to be redirected the license vendor account home page and to edit information as required.



In addition to editing properties of the license vendor account, this might include adding new contacts or editing existing contacts.



It may also include modifying the products that a location is able to sell.



3. Template Control – Must provide NDOW staff the ability to add and update print templates.

JMT's Outdoor Licensing and Recreation platform supports the creation of unlimited document templates that can be used to generate official documents at the culmination of a sales transaction or other system process. The new NDOW Licensing System will provide the ability to incorporate new templates, edit existing templates and the ability to associate these document templates with specific products in the system.

Templates developed as part of the initial NDOW Licensing System will include but not necessarily be limited to license documents, harvest cards, transport tags, Discover Pass activation labels, Designated Harvester Cards, Companion Hunting Cards, Vehicle Access Passes, Special Permits, and a variety of Receipts.

JMT will configure all document templates to match the specifications provided by NDOW including design, layout, and information presented and will provide a document template module for NDOW administrators to have the ability to create new templates as well as modify existing ones.

4. Print-To-Mail–The proposed solution must support direct print to mail functionality for batch processing output for NDOW or contractor use. (Letter Writer ability with approval from NDOW for all printed material).

JMT's Outdoor Licensing and Recreation solution provides direct print to mail functionality out of the box in the form of batch letter generation, based on SSRS templates, that pull customer address information from centralized database and format documents to support trifold and placement directly into window envelopes.

Our Washington implementation has chosen this approach for the notification of Controlled Hunt winners. The previous implementation involved contracting with a third part to produce and mail post cards – an approach that was less timely and significantly more expensive.

State of Washington
Department of Fish and Wildlife
Mailing Address: 600 Capitol Way N, Olympia, WA 98501-1091 • (360) 902-2200 • TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia, WA

May 26, 2017

Jeffrey A. Roberts – Resident
3243 Highline Drive
Olympia, WA 90852

SPECIAL HUNT PERMIT: This permit must be on your person while hunting.

Hunt #: 1998
Hunt Name: HE Inst Multiseason Deer
Season: April 1, 2017 - March 31, 2018
Boundary: None
Restriction: None

Species: Deer
Category: HE Inst Multi Deer
Year: 2017

Dear Hunter,

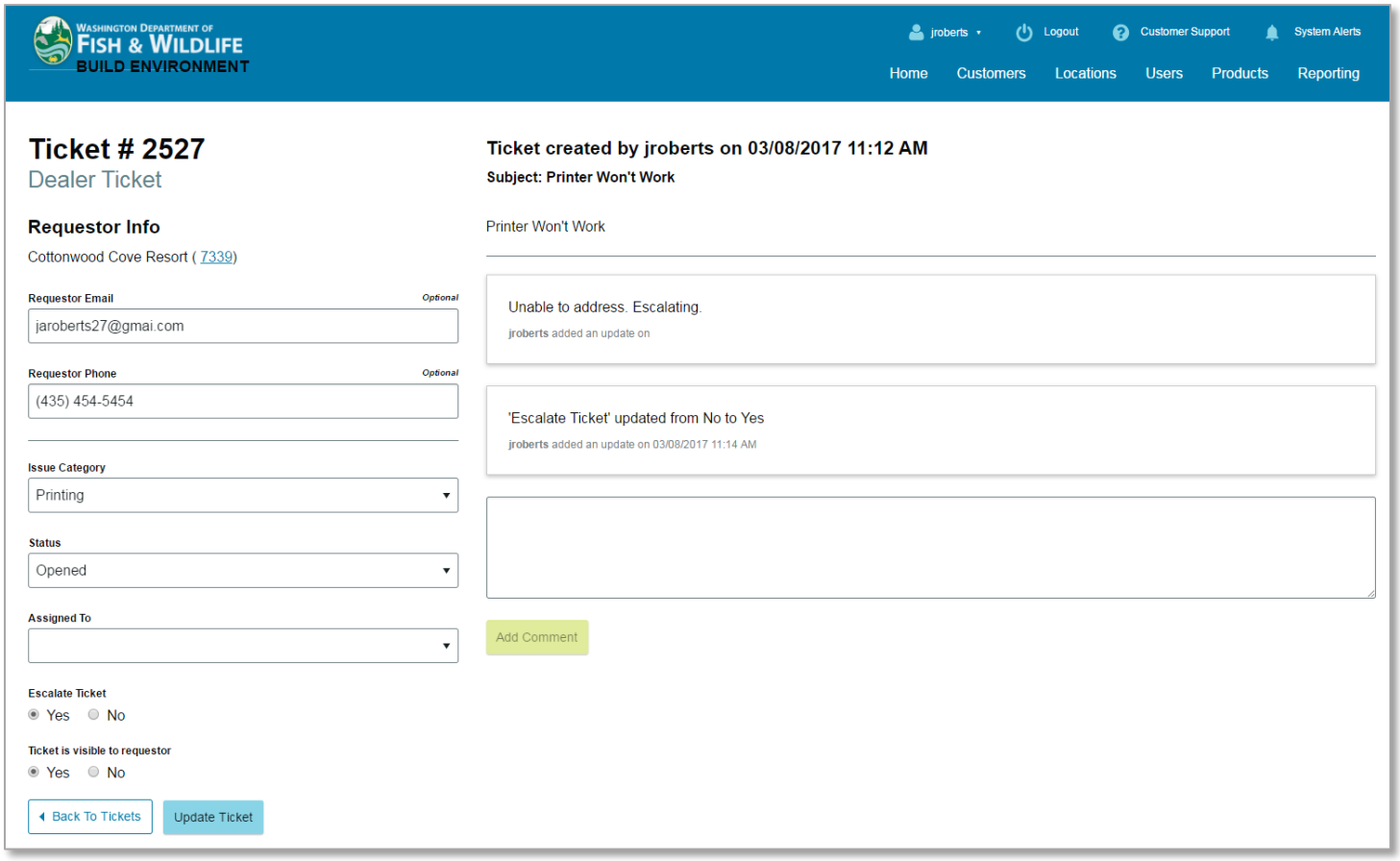
You are required to report your hunting activity for both the general season report and your special hunt opportunity by January 31, 2018, or ten days after the close of the hunting season, whichever is later. Make reports either by calling toll free (877) 945-3492 or by visiting the Internet website at https://fishhunt.dfw.wa.gov.

For questions regarding your Recreational Fishing or Hunting License please call the Washington Department of Fish and Wildlife, Recreational Customer Service Center at: (360) 902-2464, Mon.-Fri. 7:30-4:30pm.

5. Problem Management Tracking System – The solution must include a tool to track agent communications with contractor and NDOW helpdesk staff regarding hardware and software issues. The solution must provide NDOW staff with the ability to view and add comments.

JMT's Outdoor Licensing and Recreation solution includes a robust, integrated ticketing

component which provides a mechanism for help desk staff and agency users to document and track all issues reported by customers and agents. All generated tickets are linked to the customer or agents account to support reporting and analysis on trends.

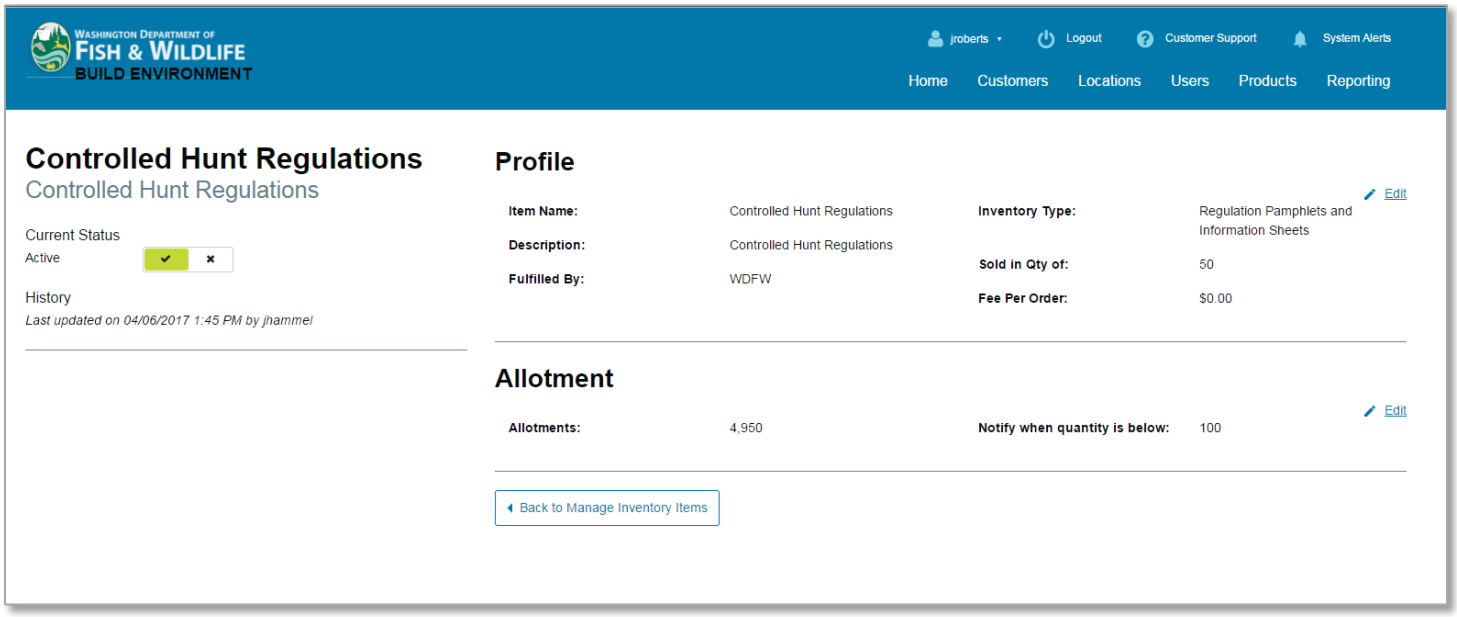


6. Manage Agent Publication & Supply Order – The contractor shall develop a publication and supply order tracking system that allows NDOW to manage receiving, distribution and tracking of publication and supply orders received from license and registration agents. NDOW must have the ability to add/modify/delete items on the registration agent supply list.

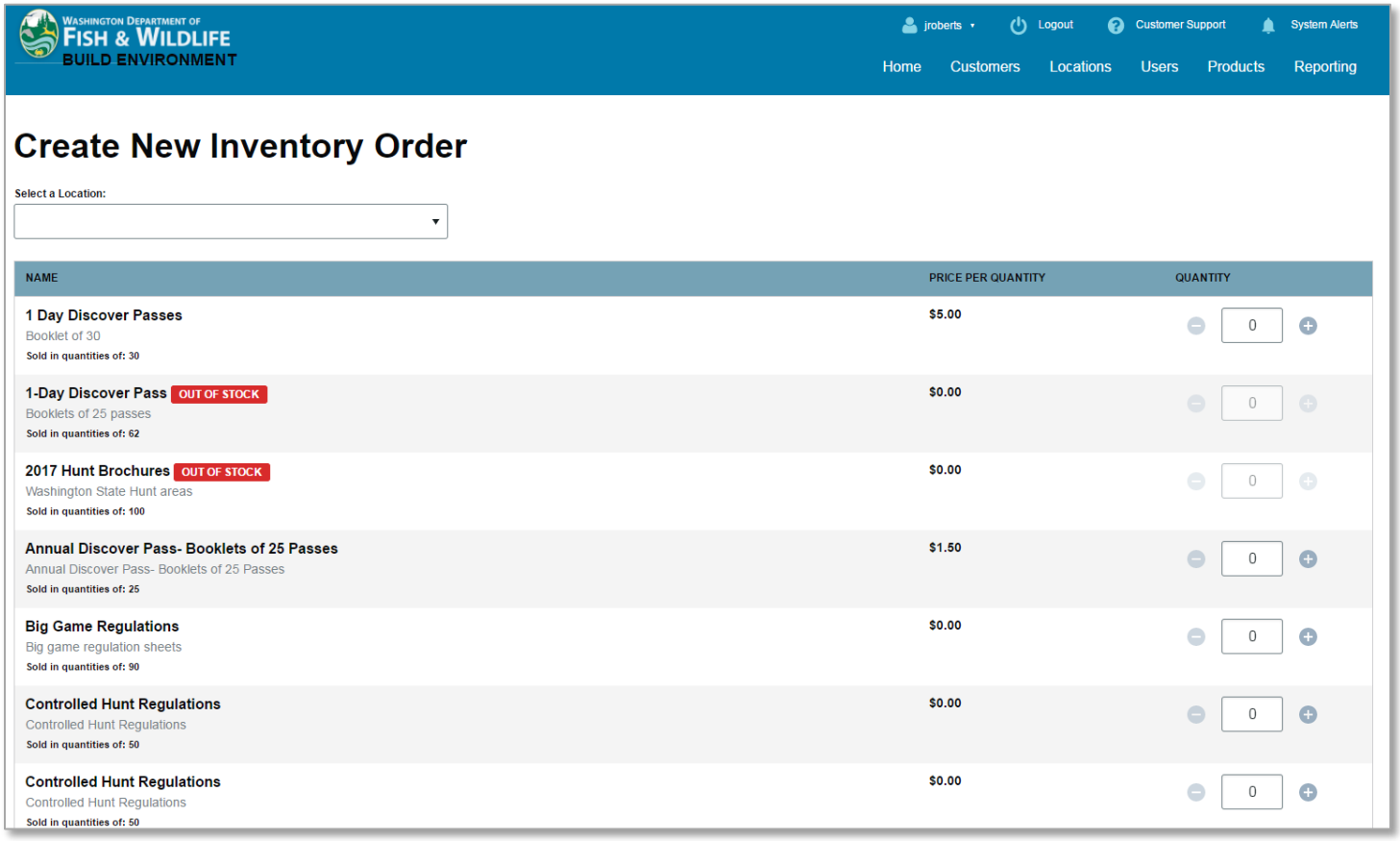
The JMT licensing and recreation solution includes a framework for license vendors to request supplies from NDOW and/or JMT, for the appropriate party to receive and fulfill that request, and for these supply orders to be tracked over their lifecycle.

Managing Inventory

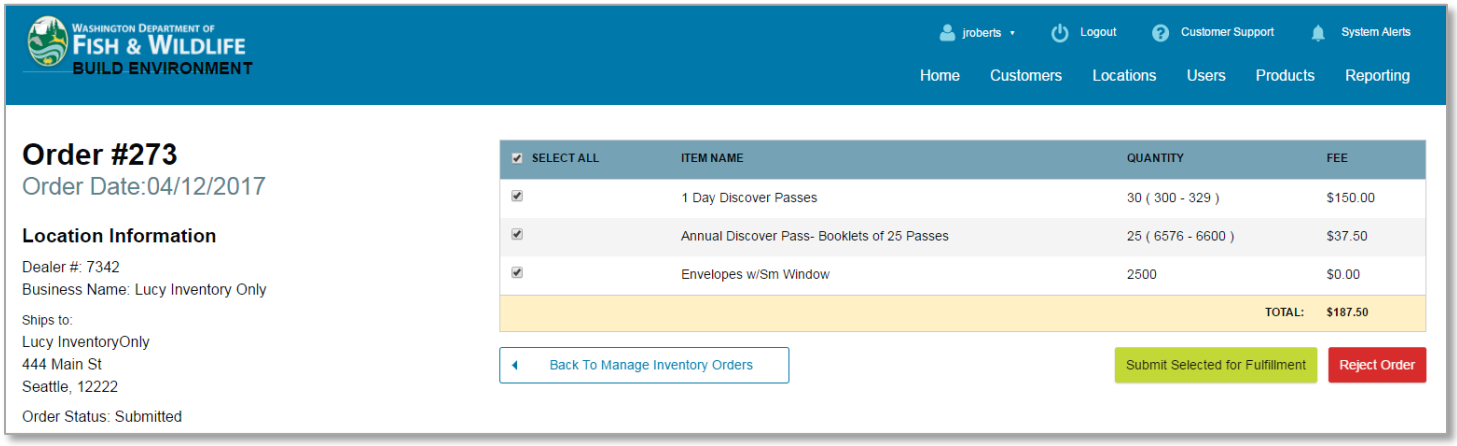
NDOW Administrators will be able to create and maintain inventory on behalf of the licensing agency including managing allocations of inventory over time.



The image below demonstrates an agent in the process of creating a supply order that once submitted will automatically route to the appropriate party (contractor or licensing agent) based on a configurable workflow.



JMT and NDOW, depending on how a given inventory item is configured, will have the responsibility of processing and fulfilling incoming supply orders based on our solutions intuitive workflow.



7. Activate/Void/Reverse/Invalidate and Refund Transactions – includes the ability to change transaction status and control whether an agent is charged for a transaction or portion of a transaction. Must allow NDOW to mark a transaction or portion of a transaction as refunded and store staff comments at the transaction level. Each system component has its own business requirements for handling transaction management.

Support for cancellations, voids and adjustments is a standard component of JMT's solution. JMT will work collaboratively with NDOW to configure this functionality within the new NDOW Licensing System in accordance with NDOW business rules. This includes but is not limited to configuring:

- ***Permissions required to process cancelations***
- ***The sales channels through which cancelations can be processed***
- ***The time constraints that surround this functionality by Sales Channel***
- ***Parent / Child relationships between licenses which impact cancelations***

Once a cancelation is processed the user will have the opportunity to print a new document that excludes items impacted by the cancelation.

JMT will configure the new NDOW Licensing System to request a reason for the cancelation and support free form text input if "Other" is selected. This information will be persisted in the licensing database and accessible to NDOW staff when reviewing the canceled order.

8. Sales prompts and surveys – Includes the ability for NDOW staff to create, edit, enable and disable prompts to be used during the sales process. These prompts will help track customer utilization and preferences and must be tracked throughout the system.

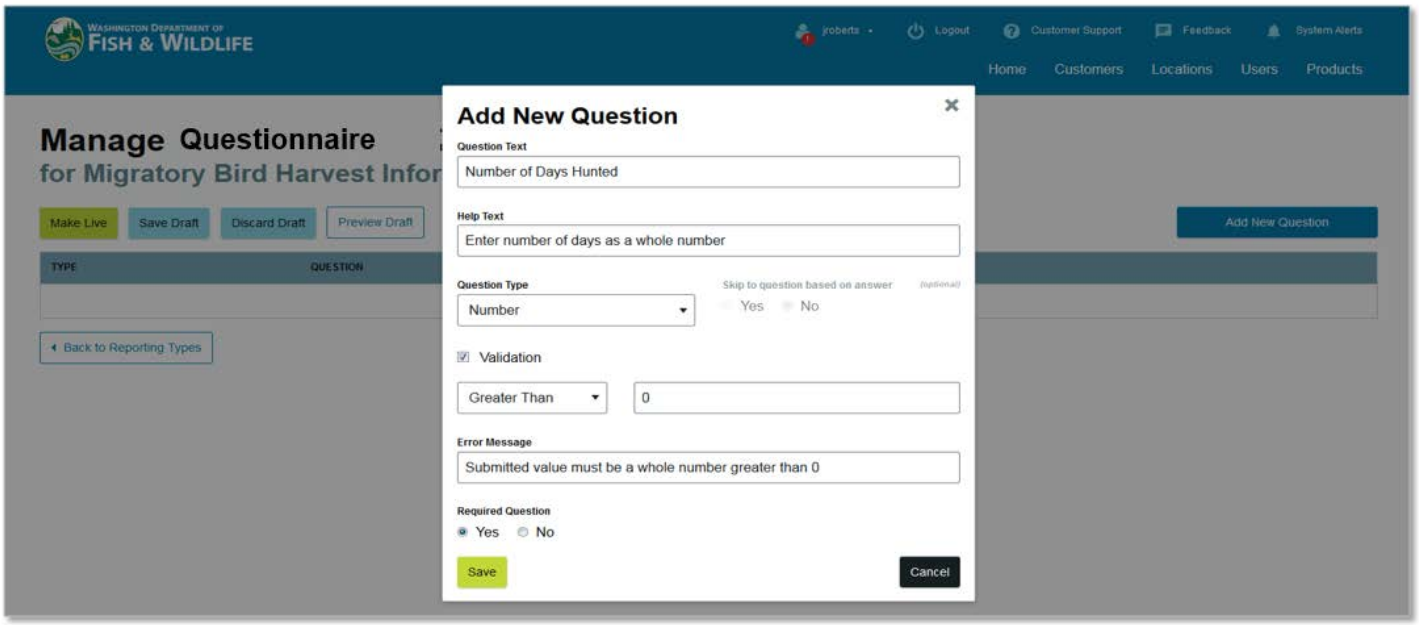
JMT's solution provides the most feature-rich survey module in the market. NDOW will have the flexibility to configure and deploy individual questions and collections of questions in the form of surveys to its customers to collect the data required to implement sales workflows, to make informed decisions and to support regulatory requirements:

The NDOW survey module will support:

- ***Sophisticated question types like drop down lists, checkboxes, date selectors in addition to standard types such as text, number, paragraph and yes/no.***
- ***The ability to configure sophisticated client-side validation.***
- ***The ability to configure help text and error messages.***
- ***The ability to embed images, video, headers, text, and HTML into surveys.***
- ***The ability to allow customers to edit surveys after completion.***
- ***The ability to present surveys upon next login.***
- ***The ability to email surveys directly to customers.***

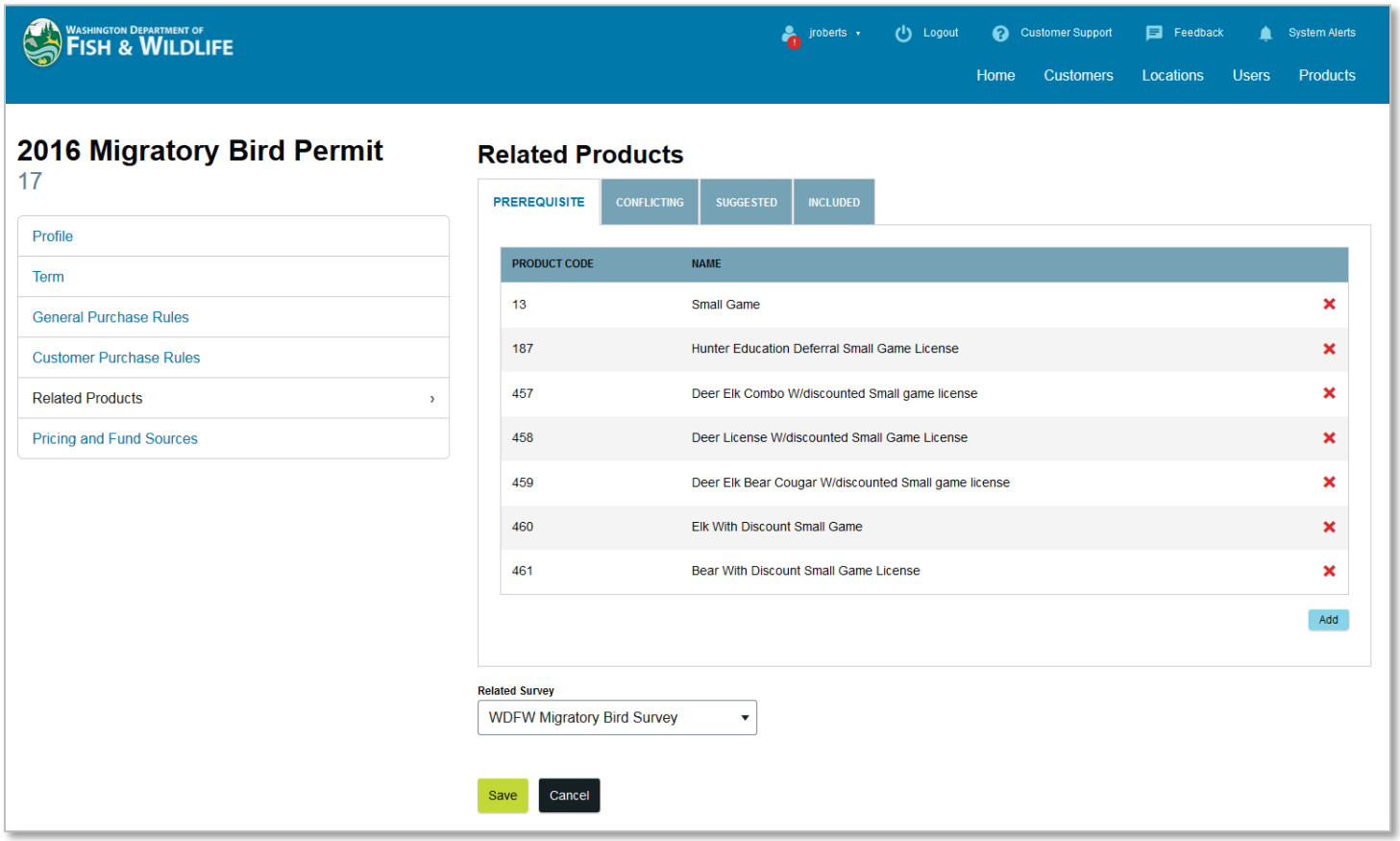
Creating the Survey

NDOW will be fully empowered, without vendor assistance, to create and add new questions and surveys to the system that are presented at the time a customer purchases a license. This includes surveys made available from within the customer's internet management portal and within Game Check.



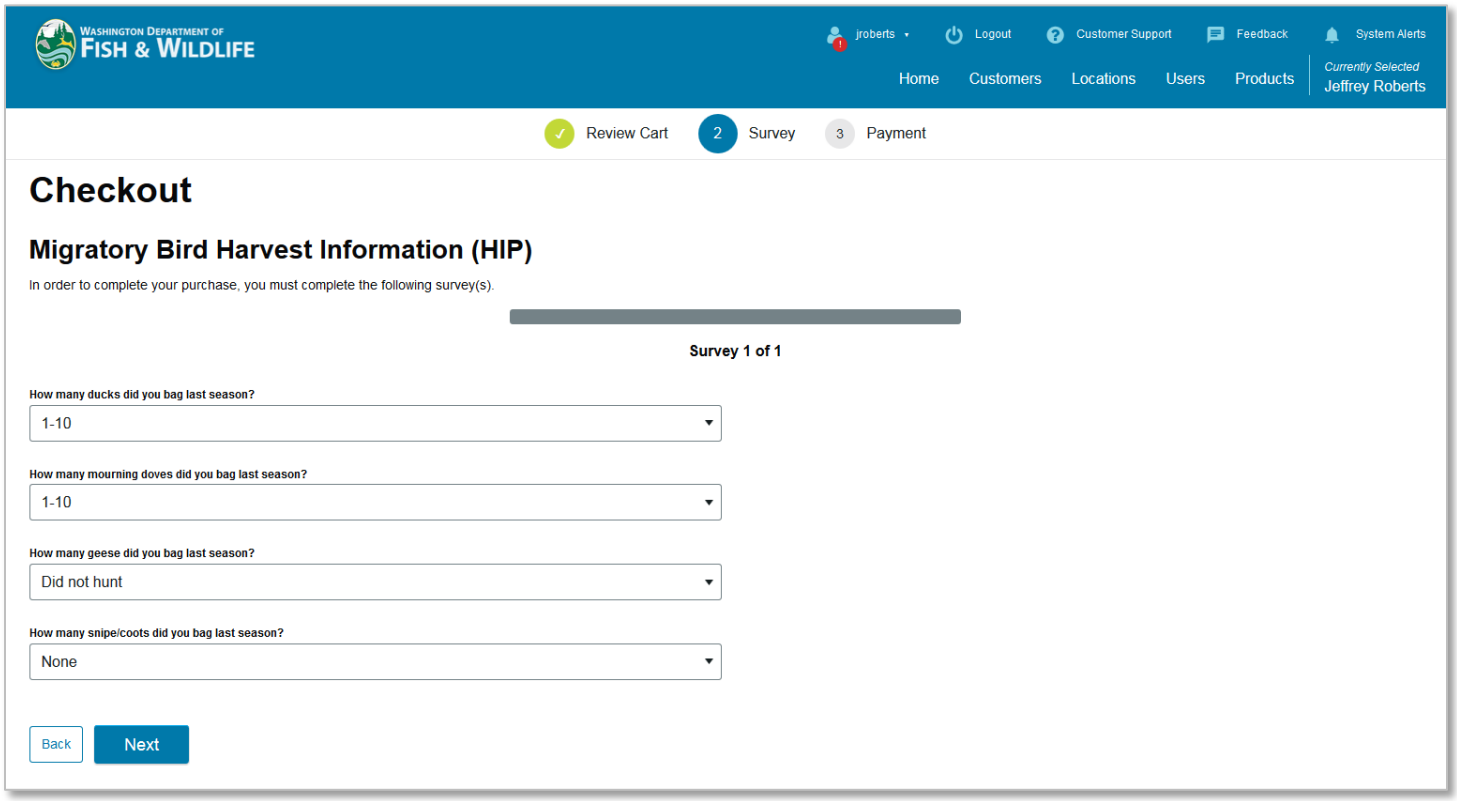
Applying the Survey to the Product

To ensure the survey is presented during the sales transaction process, an NDOW Administrator will simply associate the newly created survey with the appropriate product/s by selecting the product, choosing to edit the "Related Products" configuration, selecting the survey and saving.



Presenting the Survey

If a sales transaction is executed that includes any product with which the survey has been associated, the survey will be presented to the customer or user on behalf of the customer for completion. Surveys can be configured to present to a customer each time a product is purchased to which the survey is associated or only once per season.



3.3.18	Backup and Recovery
3.3.18.1	The system will require a degree of redundancy so that batch programs such as data backups may be performed without interruption or degradation of on-line system performance.

JMT's solution will be reside in the Microsoft Azure Cloud environment, providing exceptional availability, reliability and performance. The benefits of hosting within the Microsoft Azure environment are numerous including extremely high-availability, the ability to instantly scale resources to match variable demand, robust security, and built-in failover and redundancy.

Geo-Redundancy – The application itself is also mirrored in a secondary, geo-redundant data center. If a failure were to occur to the primary application or data center, Azure's Traffic Manager will route all incoming traffic to the secondary instance of the application. This ensures that, even in a disaster recovery scenario, users would experience only a brief service interruption and no degradation in performance of the NDOW Licensing System.

3.3.18.2	System backups must be scheduled to run automatically.

JMT's solution will be reside in the Microsoft Azure Cloud environment, providing exceptional availability, reliability and performance. The benefits of hosting within the Microsoft Azure environment are numerous including extremely high-availability, the ability to instantly scale resources to match variable demand, robust security, and built-in failover and redundancy.

<u>Active Geo-Replication</u> - For data redundancy and back-up, Azure replicates the primary database to a readable secondary database housed in a separate data center (data center 2). This type of replication is known as Active Geo-Replication.

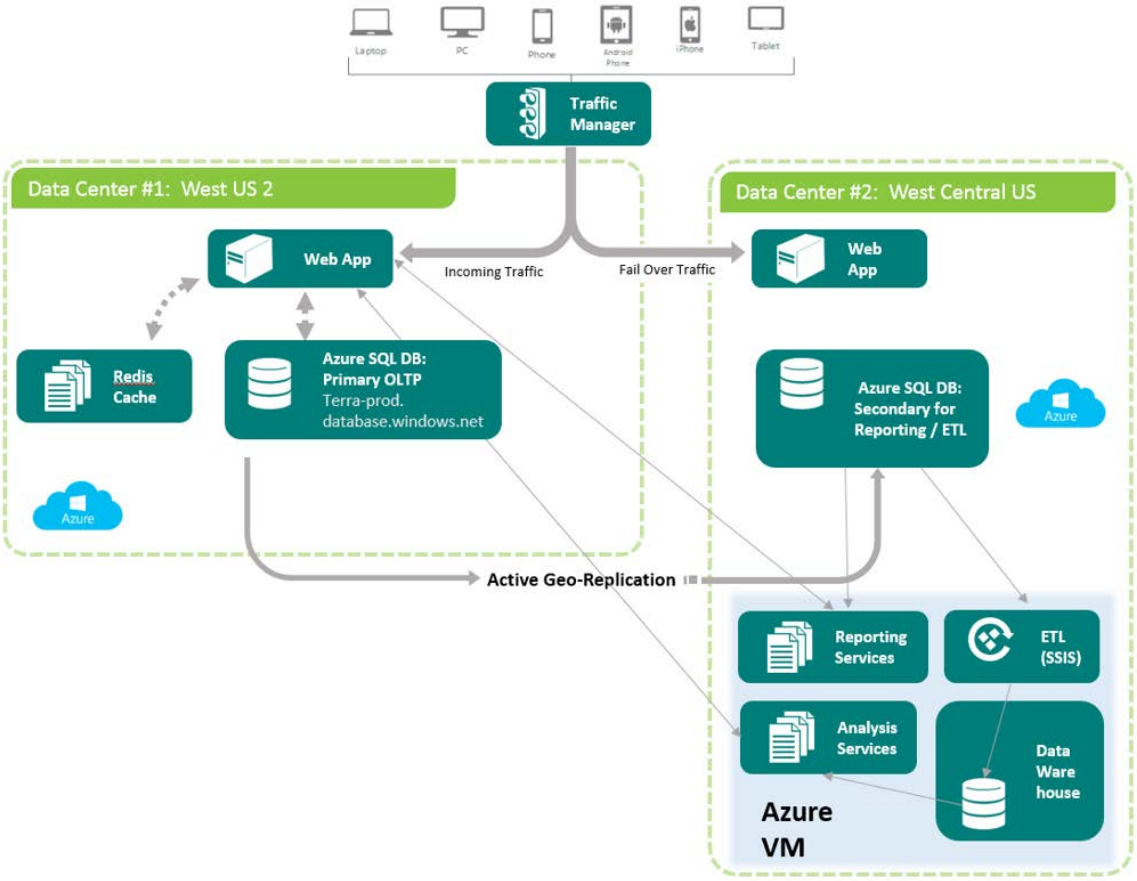
3.3.18.3	Restoration of data from backups must be a straightforward, well-documented operation that can be completed within a few hours after error detection.

The Microsoft Azure platform has redundancy and disaster recovery built into the core of the services they provide. The data is stored in SQL as a Service which allows the system to be recovered from past data points up to 35 days in the past.

Azure also offers disaster recovery through Active Geo-Replication. This service maintains an active secondary copy of the database in a data center at least 500 miles from the original data source. This secondary database becomes the primary database in the event of an application or data center failure. If, for some reason, the primary web application cannot communicate with the primary database, Azure will swap the secondary database with the primary to eliminate downtime. If the entire data center were to go down then the secondary database would automatically become the primary. By leveraging Azure's capabilities JMT can ensure complete recovery from a catastrophic failure at the primary data center, with no data loss, in a timeframe significantly faster than the industry standard two hours.

The application itself is also mirrored in a secondary, geo-redundant data center. If a failure were to occur to the primary application or data center, Azure's Traffic Manager will route all incoming traffic to the secondary instance of the application. This ensures that, even in a disaster recovery scenario, users would experience only a brief service interruption and no degradation in performance of the NDOW System.

The diagram below provides an overview of the proposed production environment depicting both the primary and secondary environments and the flow of data between these environments.



3.3.18.4	Provide a Business Continuity/Disaster Recovery Plan that must include:
	A. Activation and preparedness procedures;

B. A recovery strategy that ensures that disrupted operations will be resumed in seven calendar days or less;
C. The locations of on-site and off-site recovery operations center facilities;
D. Vendor support agreements; and
E. Any logistical information required to effectively recover from a disaster;
F. The awarded vendor must test the procedures included in the approved Business Continuity/Disaster Recovery plan at least once each calendar year during the term of the contract. The test plan will be subject to the approval of NDOW and all tests will be conducted at a time and place proposed by contractor and approved by NDOW. NDOW may, at its own expense, contract with a third party to monitor the testing and review documentation and procedures related to the plan. The results of any audits will be documented and provided to contractor and NDOW. Significant findings from any audits conducted will be addressed in a manner satisfactory to contractor and NDOW.

The JMT team has a baseline Disaster Recovery (DR) plan for the licensing solution. JMT will work with NDOW to modify and then maintain the Disaster Recovery plan throughout the life of the contact. The intent of this DR plan is to ensure continuity of business functions by and for our team and for users of the system in the event of a disaster. Once finalized, the DR plan will be treated as sensitive information and marked Confidential. Physical paper copies will be produced and stored at JMT, at the data center and at the homes of the primary and backup DR coordinators. The JMT team has authored Disaster Recovery Plans for multiple State agencies.

The Disaster Recovery Plan is broken down into the following sections:

1. ***Application Failure***
2. ***Network Outage***
3. ***Data Center Outage***

3.3.19 Business Resumption Planning

3.3.19.1 A Business Resumption Plan for the proposed system must be developed and in-place. The awarded vendor must identify and establish off-site procedures, locations and protocols addressing checkpoint and restart capabilities, retention and storage of back-up files and software, hardware backup for data entry equipment, emergency power backup and network backup for telecommunications).

A business continuity plan is important for both NDOW and JMT so that all parties understand the types of activities that must occur to maintain system availability. Every system has a different business continuity plan based on the availability needs of the system. JMT will work with NDOW to document the proper plan prior to the system going live. To ensure successful plan execution, NDOW and JMT will identify key stakeholders form each organization that will be notified and actively take part in the resolution of any business continuity issue. This team will be called the Crisis Management team.

JMT will work with NDOW to identify any potential business continuity issues that may arise and will then put plans in place to cover all possible issues. For disaster recovery, related issues, the high-level business continuity plan will look something like this:

- ***Crisis Management Team Mobilization and Command Center Set Up - The Crisis Management Team (comprised of both JMT and NDOW) will be alerted of the outage.***
- ***Notification of Business Disruption – The user community will be notified of the outage.***
- ***Damage Assessment – Assessment of data, application, and network.***
- ***Technical Recovery – Full restoration of the service.***

3.3.20 Entity Relationship Document

3.3.20.1 The awarded vendor will be required to develop and maintain an up-to-date Entity Relationship

	Document (ERD) throughout the contract term. The awarded vendor will provide the up-to-date ERD to the state upon the state's request.

JMT will implement a database design based on best practices that uses keys and constraints to ensure data integrity and that the proper relationships are established. Lookup tables will be established and implemented where possible to support standardized input values and required fields and default values will be enforced to further ensure the quality of the data store.

JMT will document the schema of this database in the form of an Entity Relationship Document.

3.3.21	Security Administration Tools

3.3.21.1	Security Administration Tools to include the ability for NDOW security managers to manage access and view logs of all users at NDOW, contractor, and subcontractor locations authorized to access the system. Logging should include authorized use, unauthorized attempts of use, and security violations.

JMT will leverage Azure's native Temporal Tables functionality. Temporal tables are a built-in feature of Azure SQL Database that support tracking the full history of changes to data within the centralized database, without the need for custom coding. Temporal Tables keep data closely related to time context so that stored facts can be interpreted as valid only within the specific period. This property of Temporal Tables allows for efficient time-based analysis and getting insights from data evolution.

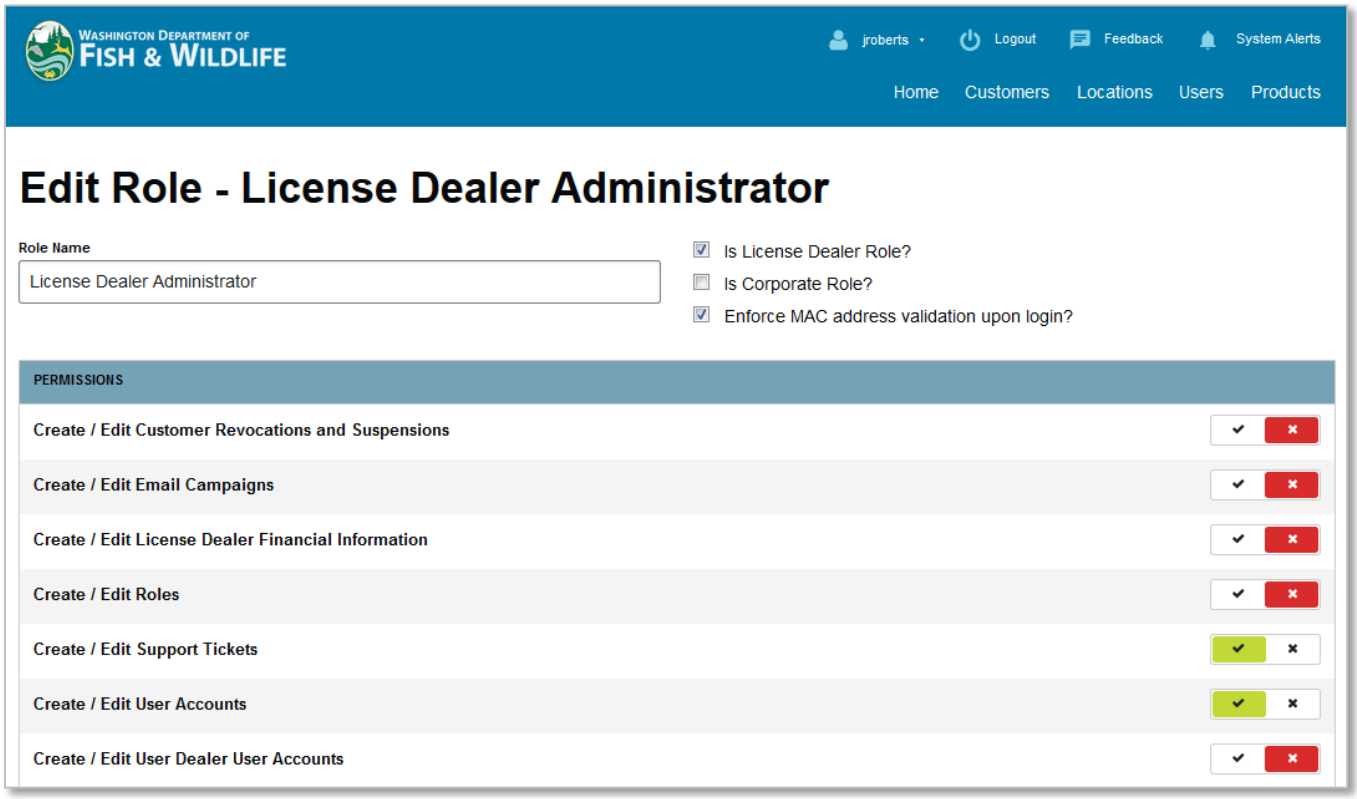
JMT will expose the changes to primary system entities to those with proper permissions through the NDOW Licensing Systems web interface.

3.3.21.2	Security Levels: The solution must allow for various levels of security for each element of the administrative user and agent interfaces. All data manipulations and administrative user and agent interfaces. All data manipulations and administrative transactions should be logged, including the type, date, time and UserID.

Role-Based Access Control

Within the JMT Licensing and Recreation platform, authentication and authorization to the application is managed by ASP.NET Identity. ASP.NET Identity is Microsoft's preferred solution for application level security. The extensible and pluggable nature of the framework allows JMT to customize the solution to meet the needs of the client.

ASP.NET Identity is both a roles and claims based security solution. Role-based access control (RBAC) restricts access to areas of the application based on the user's permissions. For example, a user might have to be assigned to a role that includes the permission "Sell Privilege Level 6 Products". Roles aggregate permissions and will be created and configured in the system by NDOW Administrators.



JMT will leverage the customizable nature of this framework to implement a granular user security model, that will operate at both the individual and group level and that will satisfy NDOW requirements. The specific functional requirements for the user security model will be analyzed and documented during the requirements and design phases.

3.3.21.3	Security Reporting Tools must include the ability for NDOW to generate reports of authorized users at each security level. Describe the proposed reporting tools NDOW staff will use to generate reports of users and their access levels.

The ability to report on all authorized users is a standard feature of the JMT Outdoor Licensing and Recreation solution.

The new NDOW Licensing System will make accessible a suite of out of the box reports to support financial management. All reports can currently be exported in either PDF or CSV formats; although the system can support a variety of other output formats. It is important to note that generating new reports is possible as the reporting engine has direct access to any data points captured by the centralized database.

JMT proposes to collaborate with NDOW on the requirements and design for any additional financial reports required to support NDOW operations.

3.3.21.4	Internal Security Measures must meet or exceed state requirements
3.3.21.5	External Security Measures must meet or exceed state requirements to ensure database and transaction integrity

JMT will work with NDOW to get an approved security model in place before go-live in order to ensure compliance with all state required IT Security standards.

3.3.22 PCI Compliance Requirement

3.3.22.1 Vendors must include in the proposal a copy of certificate of compliance meeting the Payment Card Industry Data Security Standards.

JMT recognizes that maintaining PCI compliance is mandatory requirement and we take this responsibility seriously. The new system will be maintained at PCI Level 1 compliance throughout the life of the contract. This will be accomplished by adhering to PCI standards and by completion of the assessments, scans and audits required to maintain compliance.

Certifying PCI Compliance for the new NDOW Licensing System

JMT is well versed in the compliance standards outlined by the Payment Card Industry (PCI) 3 data security standards. Prior to release of the system, JMT will work with the State of Nevada and with a third-party PCI compliance vendor to certify that the system is PCI compliant. This will include the PCI Self-Assessment and an external vulnerability scan. These steps cannot be taken until such time that the implementation phase is complete and the system resides within the production hosting infrastructure.

At the culmination of the compliance process, and prior to production release, JMT will provide certification that the system is PCI compliant.

As a means towards ensuring PCI compliance is attained, the JMT Technology group proposes an architecture, infrastructure and payment processing approach that is, itself, inherently PCI compliant.

Microsoft Azure

JMT proposes to host NDOW's new system within Microsoft's Azure Cloud Environment.

The following is from Microsoft Azure's PCI-DSS documentation:

Microsoft Azure completes an annual PCI DSS assessment using an approved Qualified Security Assessor (QSA). The auditor reviews Azure's Information Security Management System, which includes validating the infrastructure, development, operations, management, support, and in-scope services. The PCI DSS designates four levels of compliance based on transaction volume. Azure is certified as compliant under PCI DSS version 3.1 at Service Provider Level 1 (the highest volume of transactions—more than 6 million a year).

Internal Processes and Procedures

The following provides a summary of security policies and procedures enforced by JMT:

Perimeter Firewall

- ***Both JMT and any subcontractors that host JMT developed systems have installed and currently maintain a perimeter firewall.***
- ***Both JMT and any subcontractors that host JMT developed systems employ network segmentation.***

Vendor-supplied Defaults

- ***Neither JMT nor any subcontractors that host JMT developed systems use vendor supplied default passwords for system or network components.***

Protection of stored customer data

- ***Neither JMT nor any subcontractors that host JMT developed systems store credit cardholder data. Our policy is to use a PCI compliant third party payment processor for collection and processing of customer credit card data.***
- ***JMT and any subcontractors that host JMT developed systems use strong encryption to protect sensitive customer data at rest.***

Encryption of data across open, public networks

- ***All secure JMT-developed systems implement (Transport Layer Security) TLS to encrypt data during transmission.***

Anti-Virus Software Maintenance

- ***Both JMT and any subcontractors that host JMT developed systems implement and maintain the currency of Anti-Virus software on all personal computers and server infrastructure.***

Develop and maintain secure systems and applications

- ***JMT's application development policy includes the implementation of best practices to protect JMT-developed systems against malicious attack.***
- ***All applications are secured with industry standard username/password authentication that comply with customer mandated security protocols and procedures.***
- ***JMT utilizes role-based access control systems to control the availability of customer's personal data. Only users that have been authenticated and authorized will be able to view data in the system. No customer data will be sent to the client application (web browser or desktop form) through the encrypted data channel unless the user is authenticated and in the correct role.***

Restrict access to customer data by business need-to-know

- ***The PCI Standards Council defines cardholder data as including "at minimum the full primary account number (PAN). JMT does not store card holder data on its network or within the network of any of its partner hosting providers.***
- ***JMT limits access to production customer data to those that have a direct need to access said data.***

Assign a unique ID to each person with computer access

- ***All connections to data resources are accessed through Active Directory accounts; allowing only named users access to resources.***
- ***Audit logs of any data manipulation is tracked in the database.***

Restrict physical access to customer data

- ***The PCI Standards Council defines cardholder data as including "at minimum the full primary account number (PAN). JMT does not store card holder data on its network or within the network of any of its partner hosting providers.***
- ***Customer data that is transmitted from an external entity to JMT must be encrypted and transferred through a secure channel.***
- ***Sensitive file-based data remains encrypted at rest on the JMT network.***
- ***Data access is limited at JMT's facility to only users that need direct access to the data.***

Track and monitor all access to network resources and customer data

- ***Server event logs monitor all internal user access to network.***

Regularly test security systems and processes

- ***JMT conducts regular penetration and vulnerability audits.***

Maintain a policy that addresses information security

- ***Both JMT and any subcontractors that host JMT developed systems maintain Information Technology Security policies.***

3.3.23	Training Plans

3.3.23.1	To meet the training objective, the Vendor shall prepare and submit a plan to NDOW for approval at least one month prior to the start of each preoperational testing phase. The plan shall encompass the following:

A. Plans, by category, of who shall receive training, including agents, NDOW Regional Offices, NDOW information technology personnel, NDOW Financial Specialist personnel, NDOW Administration personnel, and NDOW Enforcement personnel.
B. Proposed training curriculum that identifies specific system functions and components to be covered.
C. Proposed method of delivering the training and a delivery timetable. The training of agents need not be conducted one-on-one at the agent site, but may be conducted by group/regional area.
D. Proposed plan for on-going training for new agents, new NDOW employees, system enhancements, and refresher courses.

JMT understands that training state agency staff, license dealers, and technical support providers is a critical component of the successful rollout of a new licensing system. The sections below detail JMT's plan for development of training curriculum, materials, and proposed delivery methods specific to dealers and NDOW clerks

State Agency/Clerks Curriculum

JMT will provide training to NDOW staff including clerks and proposes to organize the state agency training into lessons around specific learning objectives and system functions that will be delivered through a combination of presentation and, if feasible, hands-on exercises. JMT understands that State agency staff have varying roles and will need training on different lessons. One potential role is that of phone sales/license sales clerks.

Here are some of the Training Topics for NDOW clerks:

All users:

- ***Accessing system***
- ***Overview of UI***
- ***Managing Customers***
- ***Reports***

Clerks:

- ***Purchasing a license***
- ***Enter Lottery/Raffle***
- ***Order History – Customer, Dealer/Location***
- ***Voiding a purchase***
- ***Printing/Reprinting licenses***
- ***Catch/Harvest Reporting***

JMT will work collaboratively with the NDOW team to review curriculum and training materials and to define a schedule that maximizes efficiency and minimizes the intrusion on daily business operations. JMT recognizes that not all lessons will be relevant to all staff and as such will develop a training attendee list and schedule that considers user's roles in the system.

This means training for NDOW will be organized so users who need to learn a more limited set of

functionality will have their lessons covered earlier in the training, and those needing to learn more will continue with additional lessons. JMT will work with NDOW to determine the number of NDOW users requiring training to know if hands-on exercises are feasible.

License Dealer Training Curriculum

Similar to the state agency training, a training curriculum will be developed that is organized into lesson plans that focus on a specific core skill or learning objective; for example executing a transaction or updating a customer profile. The lesson plans will be developed presentation style, will provide context and "how to" information and will heavily incorporate visual elements such as graphics, screenshots, videos and other visual tools to reinforce concepts. The above will be presented in the form of a presentation with an associated training manual that includes conceptual information as well as step-by-step instruction to support these concepts.

When the training curriculum and corresponding training manuals are complete, JMT will present this material to NDOW for review and approval.

Here are some of the Training Topics for Dealers:

- ***Accessing system***
- ***Overview of UI***
- ***Managing Customers***
- ***Purchasing a license***
- ***Enter Lottery/Raffle***
- ***Order History – Customer, Dealer/Location***
- ***Voiding a purchase***
- ***Printing/Reprinting licenses***
- ***Invoices***
- ***Catch/Harvest Reporting***
- ***Reports***

3.3.24	Training Documentation

3.3.24.1	All training materials shall also be provided to NDOW in electronic media in an editable format. Documentation shall be updated, as needed, to reflect changes in policy, support phone numbers, and equipment. Revised materials shall be distributed to all agents. NDOW will specify quantities of documents. The contractor shall provide the following documentation to NDOW for its approval at least two weeks prior to the start of the pre-operational testing phase:
3.3.24.2	Pre-installation checklist and requirements for installing POS devices.
3.3.24.3	Step-by-step POS device training.
3.3.24.4	Device reference documentation for using all of the device's features.
3.3.24.5	Troubleshooting steps for resolution of common problems.
3.3.24.6	Procedures and instructions for working with the electronic funds transfer system.

State Agency/Clerks Training Delivery

JMT will produce a training manual that is organized around specific functions of the system. This training manual will include concept-related information as well as step-by-step instructions for executing the specific application function. Each attendee will receive a copy of this training manual as well as a Help Card that provides a quick reference for the execution of system functions. The training manual will incorporate visual aids to provide additional clarity and to reinforce concepts.

JMT proposes to provide 2 full-day, onsite classroom style training sessions to accommodate different subject material as well as the availability of state agency staff. NDOW clerks will be included in this training. The specific itinerary and schedule will be developed in coordination with NDOW. It is

anticipated that NDOW will provide facilities for these training sessions. JMT will work with NDOW to determine the number of NDOW users requiring training and availability of equipment to know if hands-on exercises are feasible.

License Dealer Training Delivery

Due to the sheer volume and geographic distribution of License Dealers, JMT proposes to deliver dealer training in the form of an online webinar. JMT will work with NDOW to determine the appropriate number of webinars to offer. Assuming 90-100 dealers, 2 to 4 staff per dealer to participate in a webinar training, and a recommended maximum of 50 total participants per webinar, JMT plans to schedule 4 webinars. Each webinar will provide the full dealer training and allow dealers to preregister for the training that is most convenient to their staff, and will be scheduled for a 4 hour period.

These dealer training webinars will occur, from a project schedule standpoint, after JMT has worked with dealers to assure access to the new system within the training environment. This allows dealers to complete training and then immediately begin to practice utilization of the new system in a live environment.

Any associated training materials will be available to download prior to the training. If feasible, dealers may watch the training and follow along themselves in the training environment.

JMT will also make the dealer training session available in video format for vendors unable to attend any of the webinars and for ongoing onboarding activities. The videos will be made accessible through the customer service section of the licensing application. In addition to preparing users for transitioning to the new system, the training environment can be utilized for onboarding new dealer staff.

3.3.25	Testing/Quality Assurance

3.3.25.1	All hardware, software, interfaces, system features and functions, materials, services, and any other subsystem provided by the contractor must be thoroughly and satisfactorily tested by the contractor prior to delivery to the State for inspection.

JMT will develop a Quality Management Plan that identifies the quality standards that are relevant to the NDOW Licensing System project and how the team will satisfy them. This Quality Plan is intended to document the expectations of quality for NDOW Licensing System Development deliverables and the processes, techniques, and materials by which these expectations will be met or exceeded.

The Quality Plan encompasses two major processes:

Quality Assurance
Quality assurance activities focus on the processes used to manage and deliver the solution and can be performed by an IT manager, business sponsor, or third-party reviewer.

Quality Control
Quality control activities are performed continually throughout a project to verify that project management and project deliverables are of high quality.

To read more about JMT's Quality Assurance / Quality Control Plan, please see "5.8 Quality Assurance" in "Company Background and References."

3.3.25.2	Test plans, procedures, and subsequent test reports for all components will be delivered to NDOW for review, comment, and approval prior to the commencement of the testing phase. At the completion

	of the testing for each component, the contractor will provide a test report for NDOW review and approval.

JMT will develop and deliver a Master Test Plan that will map directly to the approved Functional Requirements and the Requirements Traceability Matrix and will provide a baseline against which all functionality will be tested and validated.

The test lead will oversee the work of the test team to methodically test each feature against approved requirements. Test results will be tracked through Microsoft's Team Foundation Server.

3.3.25.3	NDOW shall have a period of inspection and testing, as determined by NDOW, before NDOW will certify each deliverable acceptable and ready to be put into production. The period of time will vary depending on the service or product being tested. Inspection and testing periods for initial system design will be negotiated during final system design based on the awarded vendor's proposed solution. Inspection and testing periods for any future system changed will be negotiated as part of the change management process. If any deliverable does not meet the requirements of the contract NDOW will notify the awarded vendor via email of noted system deficiencies.

JMT Technology Group understands that client User Acceptance Testing (UAT) is a critical component of the implementation and rollout phase of this project as it provides the final validation that the system is not only defect free but that it was designed and developed to efficiently execute the real world business processes that it enables.

UAT will be executed by the NDOW project team with the integrated system running on production hardware. User Acceptance Testing will be designed to verify the system is free of defect and validate that it meets the established requirements through the execution of real-world test-cases and validating the application against the Functional Requirements Document and the Requirements Traceability Matrix.

JMT will be onsite during User Acceptance Testing to provide support to testers and to work collaboratively through the user acceptance testing process.

3.3.25.4	The Contractor is responsible for developing and implementing a Test Plan that will be used by the Contractor to certify that any product developed meets the standards established in the State's Order. Upon completion of the Contractor testing, the Contractor will certify in writing to the State that the product has been successfully tested and ready for the State to begin testing. With Contractor's assistance, the State shall begin performance testing within ten (10) days of receipt of such notification. The tests will determine whether the following acceptance criteria are met:
	A. Operates in conformance with Contractor's technical specifications and functional descriptions; B. Meets the specifications and performs the functions as contained in the State's solicitation document and/or the State's order; C. Is capable of running on a repetitive basis on a variety of actual live data, as supplied by the State, without failure; D. Is capable of meeting the performance expectation as expressed in the State's solicitation document and/or the State's order; and E. Does not require modifications to other operational systems and does not cause performance degradation of other systems operating on the State's computing system and network. F. The State shall give notice to the Contractor as to the actual date when the testing period will begin. If problems are encountered during the testing period, the Contractor shall immediately take the necessary steps to ensure the proper performance. If the product meets the State's acceptance test, the State will certify in writing that the product is ready for installation. G. The State shall promptly notify Contractor of the results of any inspection or acceptance test it performs. If an acceptance test produces unsatisfactory results, the State shall specifically identify what acceptance criteria could not be satisfied and the particular methodology that was used to reach this conclusion.

JMT will develop and deliver a Master Test Plan that will map directly to the approved Functional Requirements and the Requirements Traceability Matrix and will provide a baseline against which all functionality will be tested and validated.

The test lead will oversee the work of the test team to methodically test each feature against approved requirements. Test results will be tracked through Microsoft's Team Foundation Server.

The following describes the phases / components of JMT Testing:

Developer Testing (unit testing)

During the development phase for each component of this system, developers will develop and conduct unit tests on individual modules before integrating them into the system. This ensures that these modules are free of defects. Issues that are discovered will be documented in Team Foundation Server, where they are tracked throughout their life-cycle. Unit Testing is a component of our "Definition of Done" and no feature will move forward in the quality assurance process until unit tests have been developed and executed successfully.

Functional Testing

Functional Testing is comprised of System Testing, Sprint Review, and Integration Testing:

System Testing

The quality assurance team will test each completed ticket that is marked as ready for test. Development staff may find defects in the system during the creation phases, but true system testing requires a shift from the mindset of making the system work to making it break. JMT non-development staff will be responsible for testing the system to identify any defects or usability issues.

The quality assurance team will create test cases based on the acceptance criteria that are detailed in the ticket. Failed test-cases are reported to the development team for debugging and resolution and the process iterates until such time that the application passes all test-cases.

Sprint Review

As JMT implements an agile scrum process an additional quality assurance step is included where by the development team presents completed and tested features for real-time review and testing by the product owner which in this case is the project manager.

During sprint review the product owner will test each completed ticket against the acceptance criteria with the developers present. Any issues will be documented and corrected and the corresponding ticket will move back to the beginning of the testing process.

Integration Testing

Integration testing is executed in the staging environment once all new features / bug fixes have passed functional testing and have been marked as "Done" by the product owner. JMT will merge the new code into the staging branch of the source code so that the new features / bug fixes are integrated with code that represents a mirror of production.

The purpose of integration testing is to validate that new modules integrate properly with existing modules. The quality assurance team will test and validate the integration points between modules to ensure that no defects present. Any defects will be routed back through the development process for resolution.

Performance Testing

With the system deployed in the staging environment, JMT will conduct performance testing. These tests, documented in the Performance and Acceptance Plan, will be used to validate the performance of the web application against the service level requirements. Performance will be assessed using custom scripts developed with the Load Impact performance testing cloud service. JMT can work with NDOW to generate user scripts that represent typical user work flows and simulate the execution of these workflows for concurrent users. JMT will provide the results of the performance and acceptance validation testing to NDOW in the form of a report.

Regression Testing

Regression testing is executed in the staging environment once all new features / bug fixes have passed functional testing and have been marked as "Done" by the product owner. JMT will merge the new code into the staging branch of the source code so that the new features / bug fixes are integrated with code that represents a mirror of production.

The purpose of regression testing is to ensure that no component of the system has been inadvertently impacted by the new code. The quality assurance team will methodically check all functions of the system, across roles, with an extensive focus on the customers and transactions.

User Acceptance Testing

JMT Technology Group understands that User Acceptance Testing (UAT) is a critical component of the implementation and rollout phase of this project as it provides the final validation that the system is not only defect free but that it was designed and developed to efficiently execute the real world business processes that it enables.

UAT will be executed by the NDOW project team with the integrated system running on production hardware. User Acceptance Testing will be designed to verify the system is free of defect and validate that it meets the established requirements through the execution of real-world test-cases and validating the application against the Functional Requirements Document and the Requirements Traceability Matrix.

JMT will be onsite during User Acceptance Testing to provide support to testers and to work collaboratively through the user acceptance testing process.

Usability Testing

The easiest way to lose a customer is by providing an inefficient and / or frustrating purchasing experience. This fact is amplified by the raised expectations regarding user experience that are inherent in today's technology climate. With an exponentially increasing percentage of commerce conducted online on both desktop and mobile devices, the bar has been raised and the licensing system must not fall short of those expectations. Our team constantly works in conjunction with current Natural Resource agency clients to gain valuable usability data to optimize the sales experience wherever possible.

From the application perspective, we have taken a number of measures to evaluate the sales the process in the context of the customer, retail sales, and system administration. We approach the enhancement of the user experience as an ongoing initiative.

3.4 FUNCTIONAL REQUIREMENTS

3.4.1	NDOW Customer Identification Numbers

3.4.1.1	The proposed solution must include the use of already-assigned customer numbers for the 883,572 clients (214,129 records of individual vessels) currently in the NWDS database and AHS database, many of which are shared, creating a single point of record.

JMT will, during the legacy data migration, retain the unique identifiers of primary entities such as customers, vessels, and agents.

3.4.1.2	For new customers, the system shall create a unique identification (ID) number for each customer.

JMT's solution supports NDOW's need to track customer transactions and related data through a single unique Customer Identifier that is generated upon account creation. A unique Customer ID will likewise be created for all customer records migrated from the legacy system, or at NDOW's discretion, legacy customer IDs may be carried over into the new System.

The customer's ID will uniquely identify them in the system and will be used as a foreign key in the system's centralized relational database to join the myriad of records that, put together, comprise the customer account.

3.4.1.3	Another unique identifier, such as social security number, shall be used to create new customers and as a means of verifying existing customers

The new NDOW System's intuitive customer account creation process will prevent the creation of duplicate accounts for a single customer by disallowing users to create a new customer record with personal data that is found in an existing customer record. This may include data such as Tax ID, driver's license number or even some combination of likely unique data such as last name and date of birth. The specific business rules that define "uniqueness" will be implemented in collaboration with NDOW.

3.4.1.4	The Customer ID shall be printed on all licenses in text and may be in a machine-readable format, such as a 2-D bar code.

JMT's licensing and recreation solution provides the ability to include a barcode on documents for system traceability and ease of lookup. These barcodes can be configured to contain a variety of information such as a customer ID or a transaction number.

3.4.1.5	Customers who do not have a previously assigned customer ID number will be required to provide their social security number and proper identification in order to be assigned a new number.

The new NDOW System's intuitive customer account creation process will prevent the creation of duplicate accounts for a single customer by disallowing users to create a new customer record with personal data that is found in an existing customer record. This may include data such as Tax ID, driver's license number or even some combination of likely unique data such as last name and date of birth. The specific business rules that define "uniqueness" will be implemented in collaboration with NDOW.

3.4.2	NDOW Business Identification Numbers

3.4.2.1	The proposed solution must include the use of Business Identification numbers for entities.
3.4.2.2	For new businesses, the system shall create a unique identification (entity ID) number for each business.

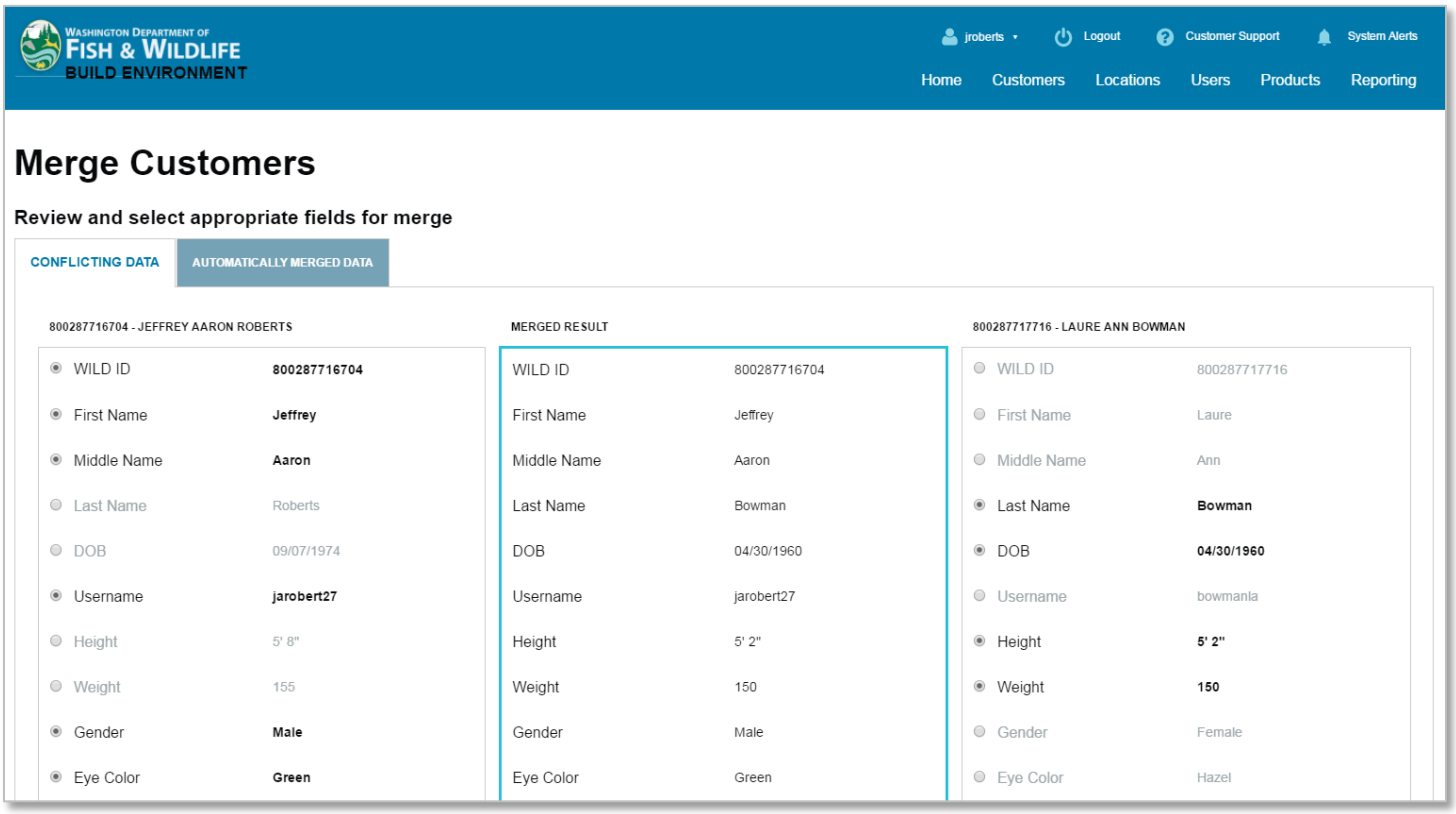
3.4.2.3	The Business ID number shall be used as the primary identifier to verify business information and to associate transactions with the business.
3.4.2.4	The Business ID shall be printed on all licenses/permits in text and may be in a machine-readable format.
3.4.2.5	Businesses that do not have a previously assigned ID number will, in most, but not all cases, be required to provide their FEIN in order to be assigned a new number.
3.4.2.6	The system must be able to differentiate between a business entity and an individual in order to offer the appropriate types of licenses/permits.

JMT's Outdoor Licensing and Recreation solution supports the concept of business customers which are like standard customers but for which custom profile information can be captured and managed and custom business rules can be enforced.

Each business will be assigned a unique business identification number which will be the primary identifier for these entities throughout the system.

3.4.3	Customer Merge
3.4.3.1	The system must provide a mechanism that allows staff to combine customer records and all their associated history in the various business areas when it is identified that a customer has multiple customer ID's.

The ability to merge customer records is a standard component of JMT's licensing and recreation solution and will therefore be a component of the new NDOW. A full audit history of both customer records in maintained in the system to support un-merge in the case of an errant merge.



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The ability to merge business customer records is a standard component of JMT's licensing and recreation solution and will therefore be a component of the new NDOW. A full audit history of both business records are maintained in the system to support un-merge in the case of an errant merge.

3.4.5	Customer/Business Identification
3.4.5.1	Customer/business information must be captured at the beginning of each transaction. The transaction must initiate an inquiry of the central database to search for the customer or business. For customers or businesses that are already in the database, the system should access the existing information and return it in the response. In cases where the customer/business is not on file or the demographic information is incorrect, the system must allow for adding or changing information.

The management of a customer account, whether by customer self-service or by a License Vendor or NDOW employee, is a standard component of our Outdoor licensing and recreation solution.

Search for Customer

The ability for authorized NDOW staff to search for a customer account is a standard component of our Outdoor licensing and recreation solution.

An individual customer's account will be created only once in the system and from that point forward all activity (product purchases, game checks, special hunt applications etc.) will be associated with that account.

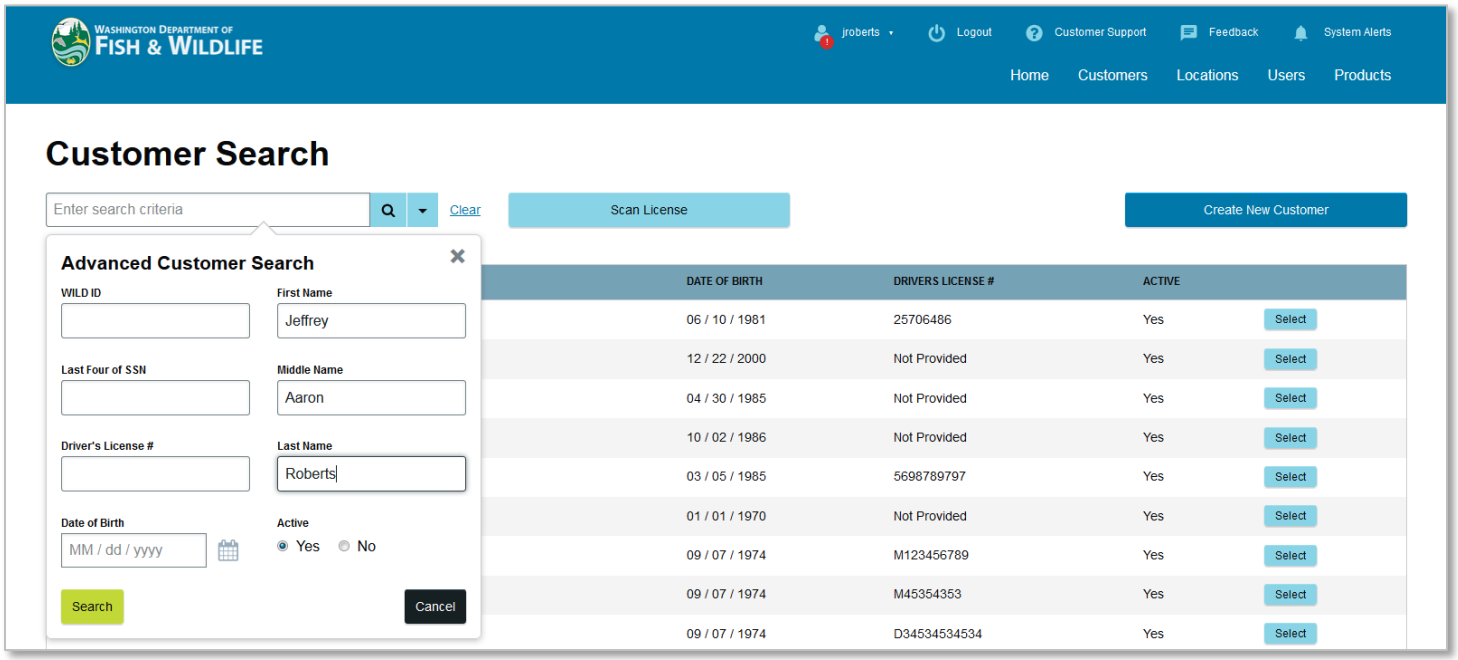
Authorized NDOW staff will be provided an easy and intuitive search screen to locate existing customers in the system and to access their account. This search will support a variety of options including unique customer Id, name, date of birth, driver's license number and more. The search is additive so that providing additional search parameters will progressively narrow down the results.

The NDOW Licensing System will also support scanning the barcode on the customer's driver's license or hunting / fishing license to automatically locate the customer in the system.

The customer search will be configured to meet NDOW's exact specifications.

Like all other internal searches both a basic search and advanced search will be exposed. The basic search allows an NDOW user to simply enter select search parameters such as first and last name or sportsman ID number to execute the search. The advanced search provides additional parameter inputs and allows the user to be more granular with their search criteria.

Also, note that the search can be configured to required minimum combinations of search parameters to return results (often used for license vendors) and to all broader searches based on any input provided (often used for state agency personnel).



Edit Customer Profile

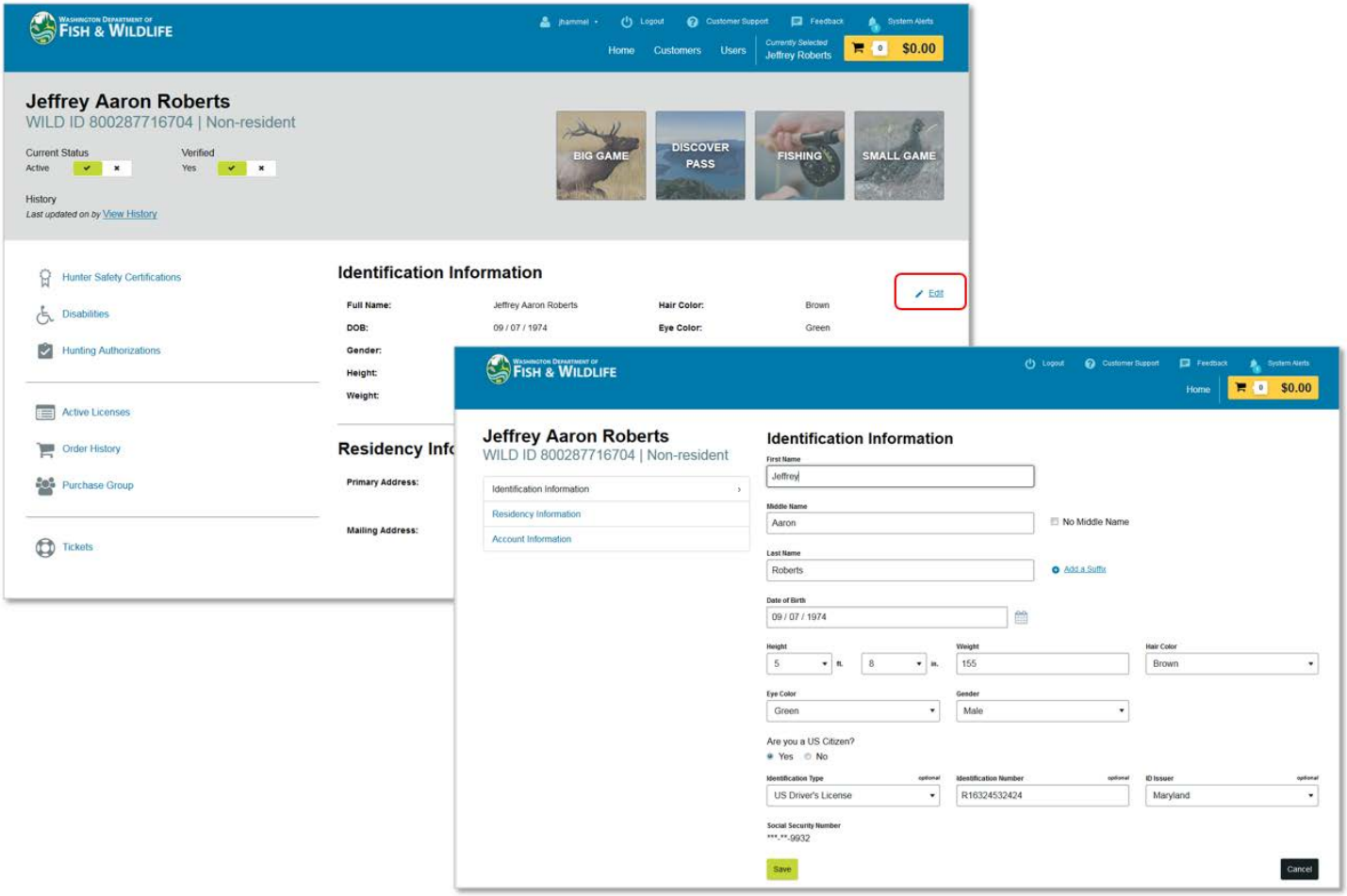
Once a License Vendor locates and selects a customer account via the search screen above the user will be directed to the Customer Home page. This screen provides an intuitive dashboard from which the user can access the functionality and data needed to complete the desired task. The first and most primary task is validating that the customer profile is current and accurate.

This screen will be configured to expose the data and functionality required to meet all NDOW requirements.

Reviewing and Updating the Customer Account

JMT understands the criticality of maintaining a current and accurate customer database. Our system makes reviewing and updating customer account information easy and intuitive for License Vendors and customers alike.

Customer demographic profile information is presented in read-only format directly on the customer home page. A user need simply click "Edit" to present an editable form into which updated information can be input and saved. Note that the customer data that is editable by a user is governed by very granular permissions and role assignments.



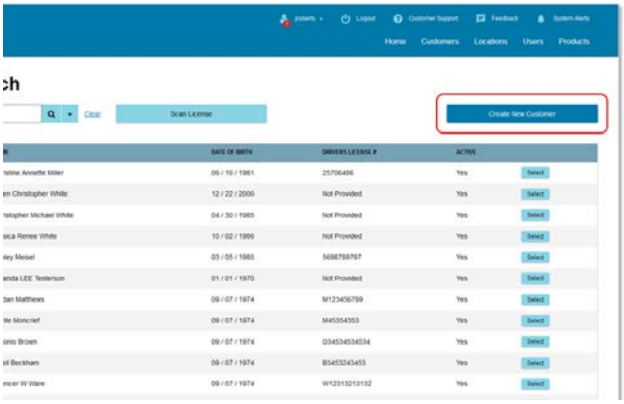
Creating a new customer

The ability of internal users to create new customers and to edit the profiles of existing customers is standard functionality of the JMT Outdoor Licensing and Recreation solution.

JMT recognizes that the customer creation process must be as efficient and intuitive as possible for license vendors and internal NDOW employees alike. For this reason, the new NDOW Licensing System will include an efficient and easy to use enrollment wizard that steps NDOW employees through the process of creating a new customer in the system.

The customer enrollment forms will be configured to match NDOW's exact specifications with regard to the data elements collected, the validation for the data elements (e.g. required fields, specific formats) and any business logic that must be in place to enforce NDOW regulations (e.g. specific identification types are only valid for certain age groups).

The following depicts the steps of the enrollment wizard and the data required for each step.

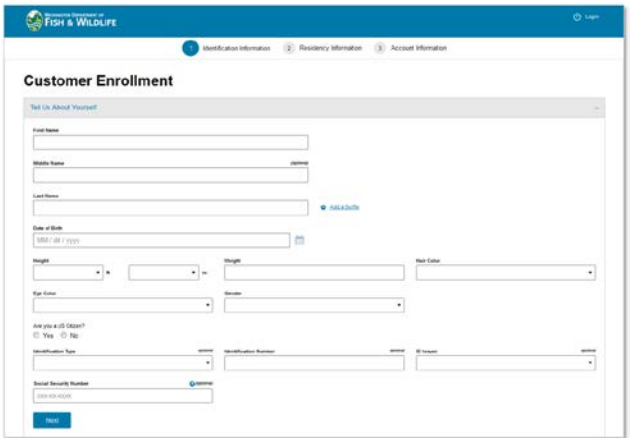


Step 1: User Chooses to Create New Account

If the user has never purchased a product through the NDOW Licensing System, they will be required to create a new account and logic prior to accessing most product catalog items.

The system is designed to support the purchase of products without logging in as well but this product catalog would typically be limited to only those products for which demographic and purchase history data is not relevant to determining product availability.

Once the user clicks the "Enroll Now" they will be redirected to the enrollment wizard.



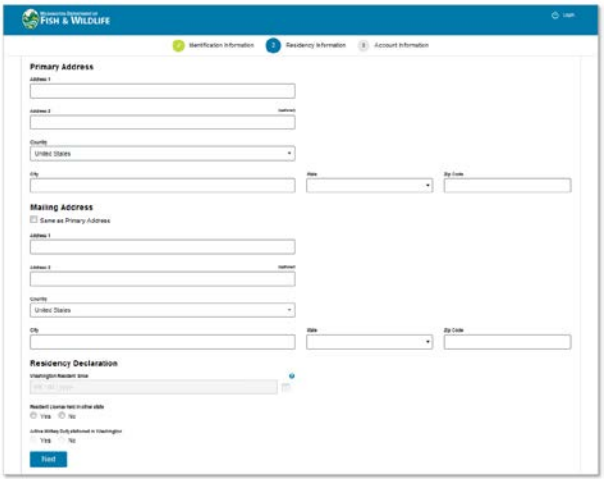
Step 2: Personal Information

Step 2 will be to collection personally identifying information including name, date of birth, tax ID (either last 4, full 9 or a hybrid) and an identification number such as Driver's licenses, State ID, or Passport.

Intuitive "Help" icons will provide tips to the customer.

Note that all personally identifying information is masked on screen, stored in the database encrypted and that business rules are enforced regarding what user roles can view and edit this data.

This form will be configured to match NDOW's exact specifications.



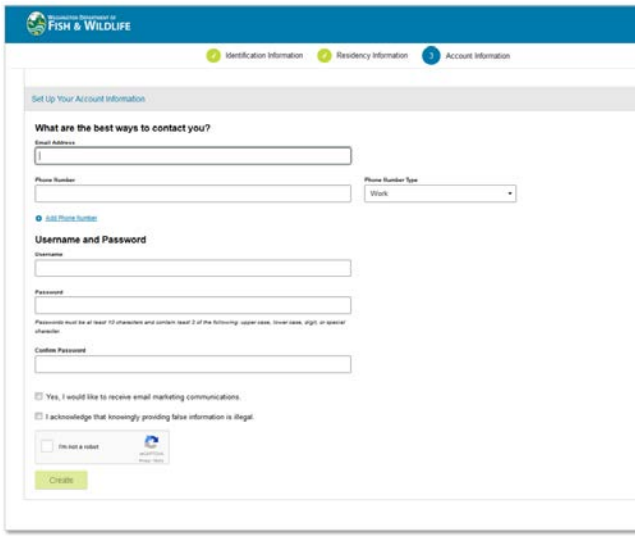
Step 3: Residency Information

During Step 3 the customer will provide address information and customer's residency will be explicitly declared or system logic will define residency based on the answer to multiple enrollment questions.

The system is designed to capture a customer's primary address and additional addresses (mailing, billing etc.) per customer requirements.

Our solution uses address lookup to auto-populate City and State based on the provided zip code.

This form will be configured to match NDOW's exact specifications.



Step 4: Account / Contact Information

The final step in the process will be to provide contact information and creating a username and password. The user will then specify a username, password and security question / answer combination. Password must conform to configurable password composition rules.

Note: when creating an account a license vendor or NDOW employee, email is optional and the username and password inputs are not present. The customer can later create a username and password for their account at their discretion.

This form can contain one to many affidavits that the customer account information provided was accurate and the customer understands any disclosures.

Once the user clicks "Create", the account is created in the system and the user is automatically directed to the customer's home page so that they may begin servicing the account.

3.4.6	Business/Agent Communications

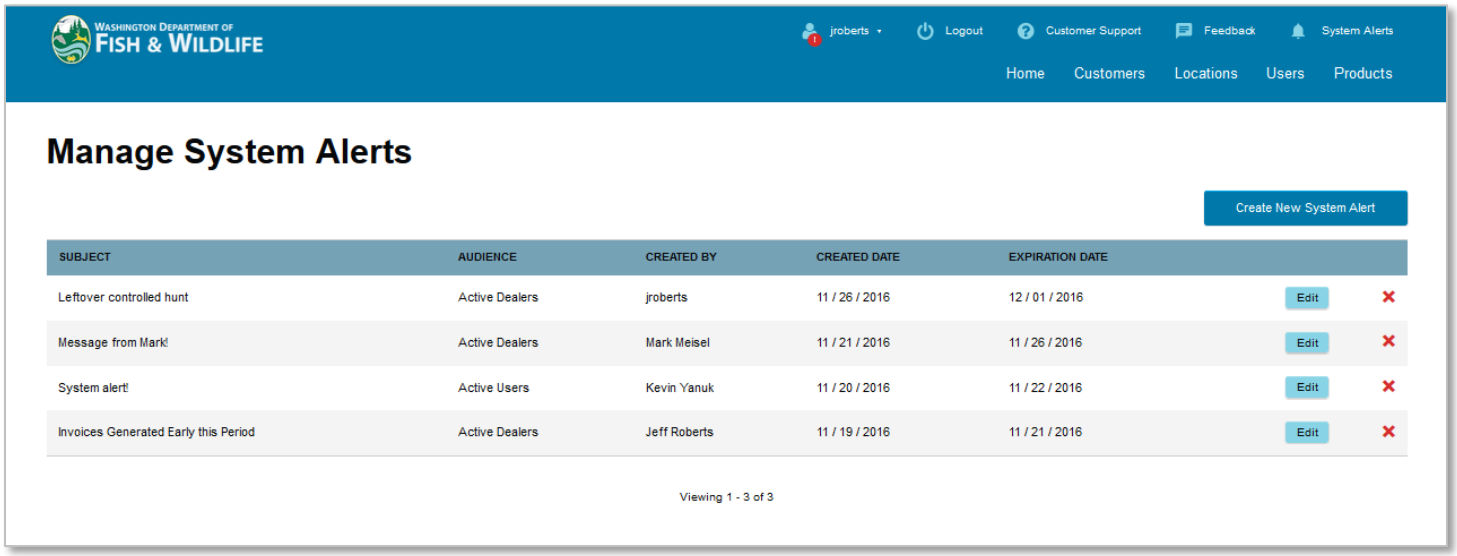
3.4.6.1	The proposed solution must allow for 2-way electronic communications between NDOW and its agent network using the automated system. The solution must allow NDOW to send messages to any single user at an agent location, any single agent, group of agents or all agents. Agents must be able to print messages and manage messages by User/Clerk ID to provide a mechanism to ensure that all users have viewed a given message. NDOW must be able to define the length of time the message will remain available for viewing. Describe any innovative way NDOW (and the awarded Vendor) can best communicate with the agent network on a day-to-day and periodic basis. Describe the process from message development to delivery; be sure to include any limitations to message size and frequency of use.

The ability to send Broadcast Messages / System Alerts as well as Direct Messages to license vendors is standard functionality within the JMT Outdoor Licensing and Recreation solution.

NDOW Administrators will have the ability to generate intra-application notifications that present to all license vendors or a subset of license vendors on the license vendor home page. These notifications can be configured to include a start and end date so that they automatically disappear once they are no longer relevant.

Broadcast Messages / System Alerts

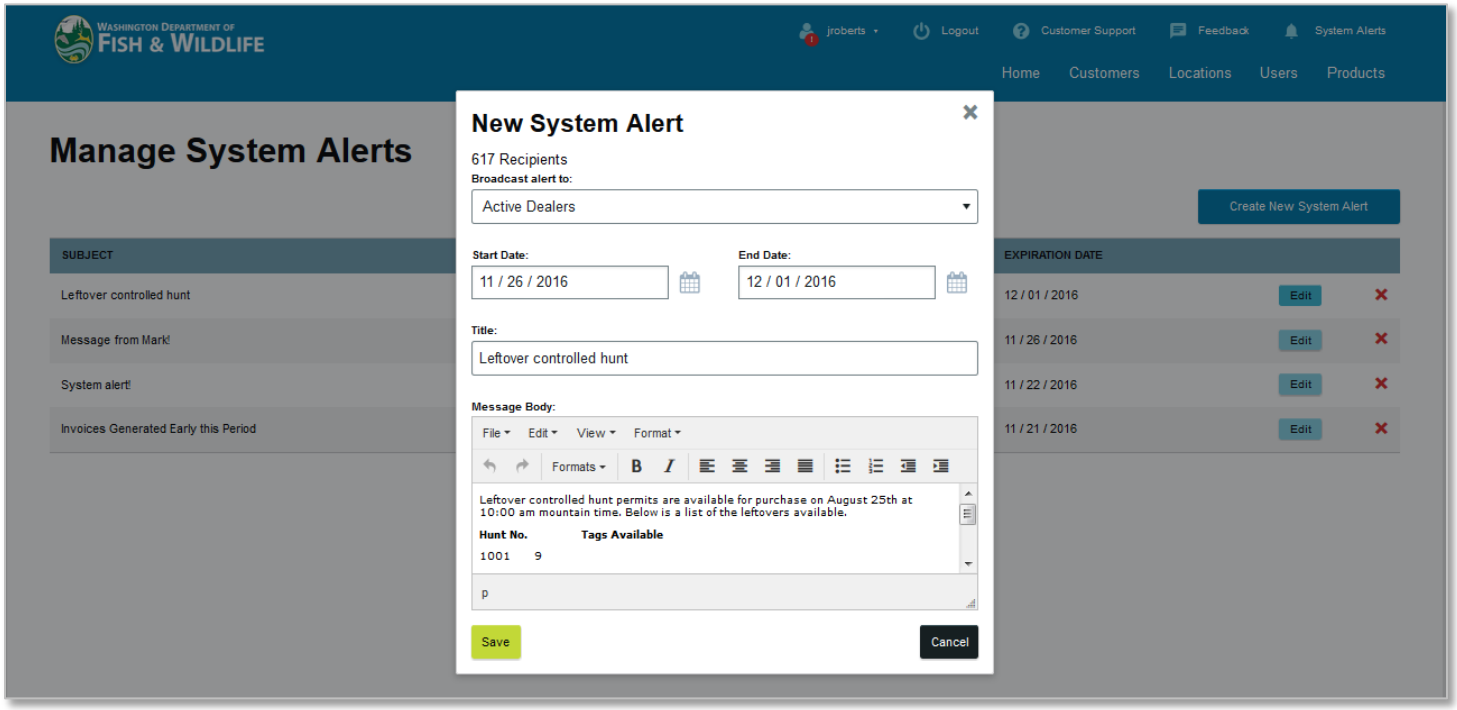
A broadcast message is one that is sent to a group of users. The screen shots below depict the Administrative console for managing existing system alerts as well as the "Create New System Alert" modal.



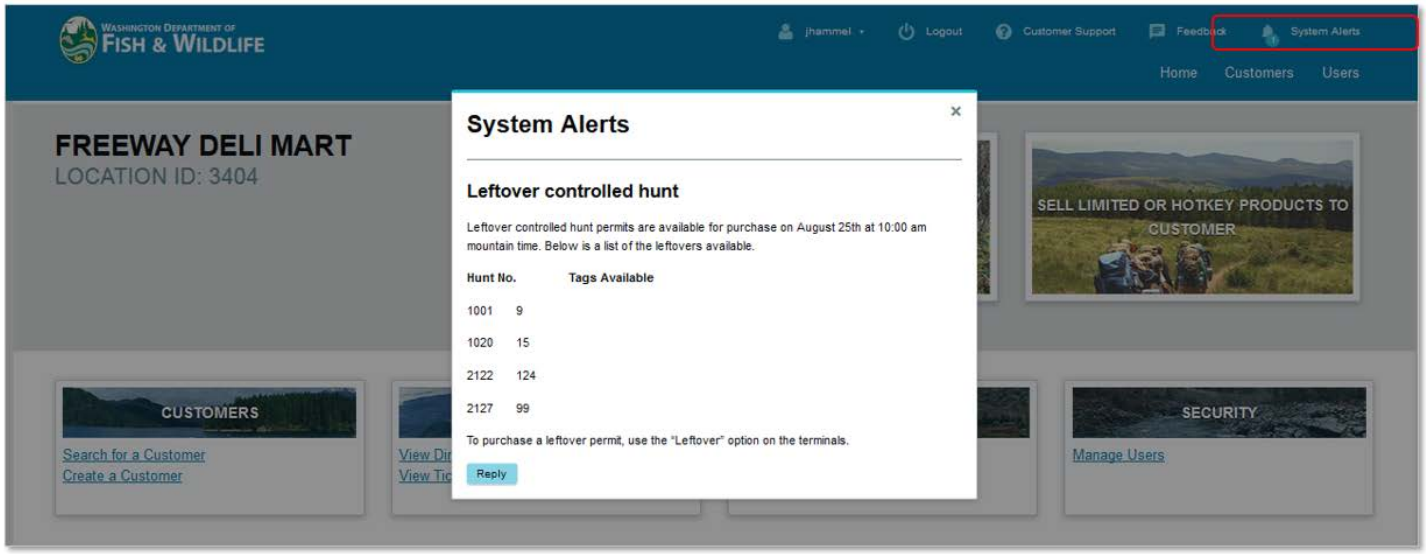
By default, broadcast messages can be sent system wide, only to customers, only to license vendors or only to a subset of the total license vendors. Additionally, when the target audience is license vendors, messages can be limited to managers only.

All broadcast messages require the input of a start and end date.

JMT solution's messaging capability includes a powerful web-based HTML editor that provides significant flexibility with respect to message formatting.



Agents will be alerted to the presence of new system alerts upon login and all messages will be available to the selected license vendors and users, unless the individual user deletes the message from their personal user profile, until the expiration date.

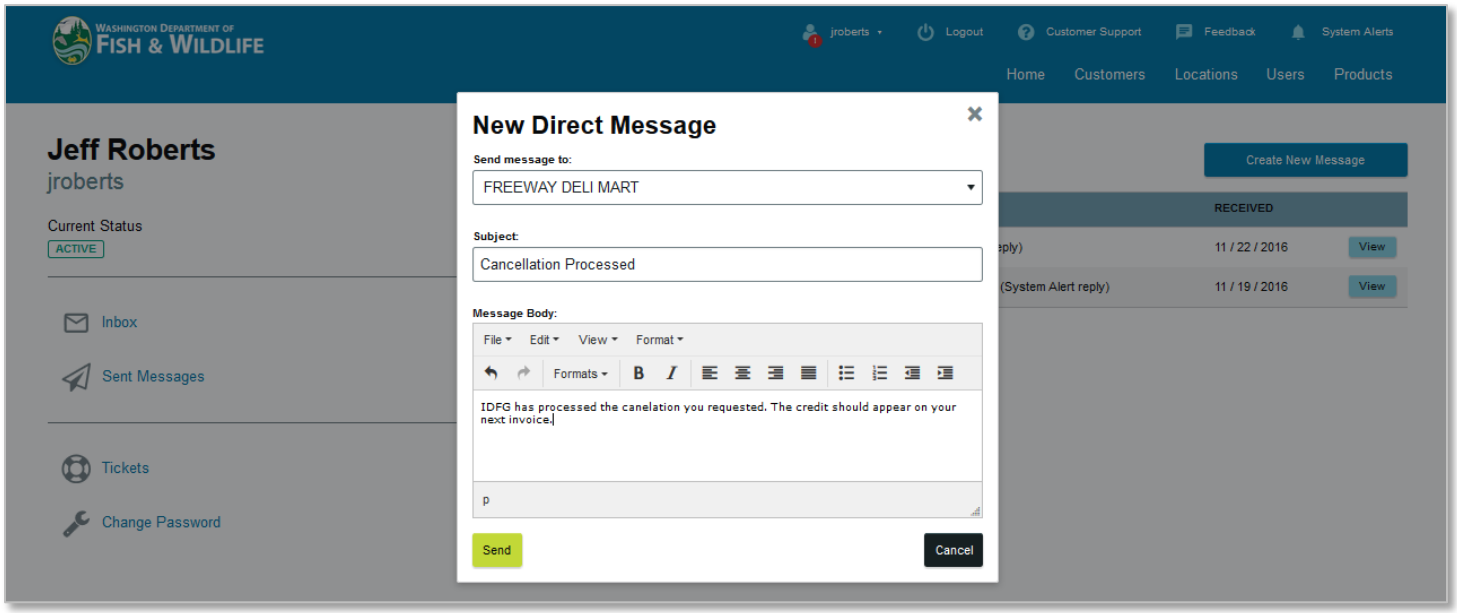


The new NDOW Licensing System will have the functionality for dealers to print the messages sent by NDOW directly from the message window and our solution supports a license vendor's ability to reply directly to broadcast messages as well.

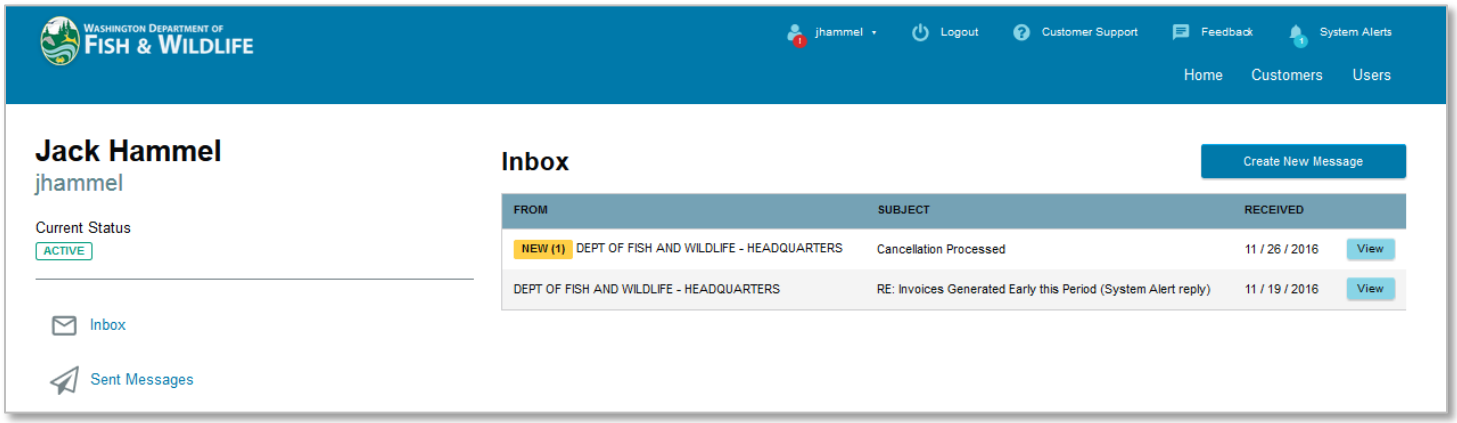
Direct Messaging

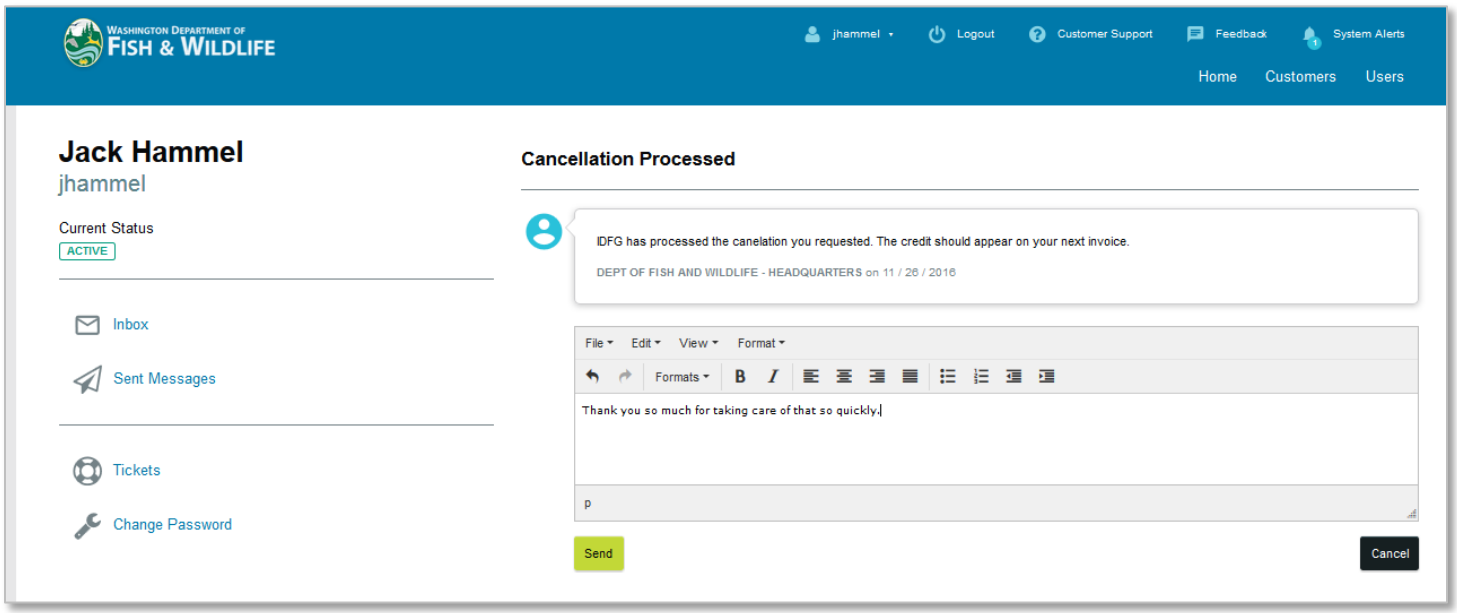
The JMT Outdoor Licensing and Recreation solution also supports direct, one to one, communications between NDOW and its license vendors. This format of communication is akin to a lightweight email client whereby threads are maintained between NDOW and the license vendor.

In this example, NDOW wants to notify Freeway Deli Mart that a cancellation that was requested after the dealer cancelation window closed has been processed.



Freeway Deli Mart managers can then view the message in their inbox and reply.





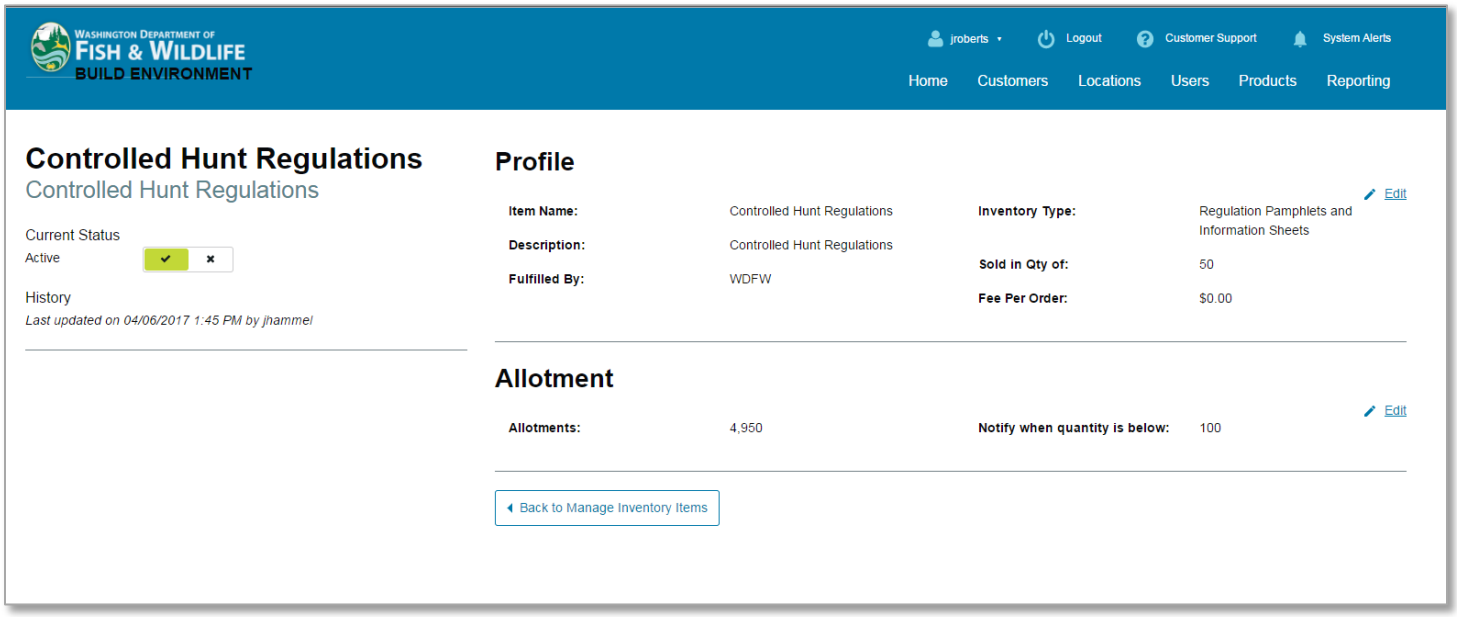
3.4.7	Order Agent Materials

3.4.7.1	Agents must have a method of ordering agent materials, for example: decals, paper supplies, publications, regulations, training materials, etc.

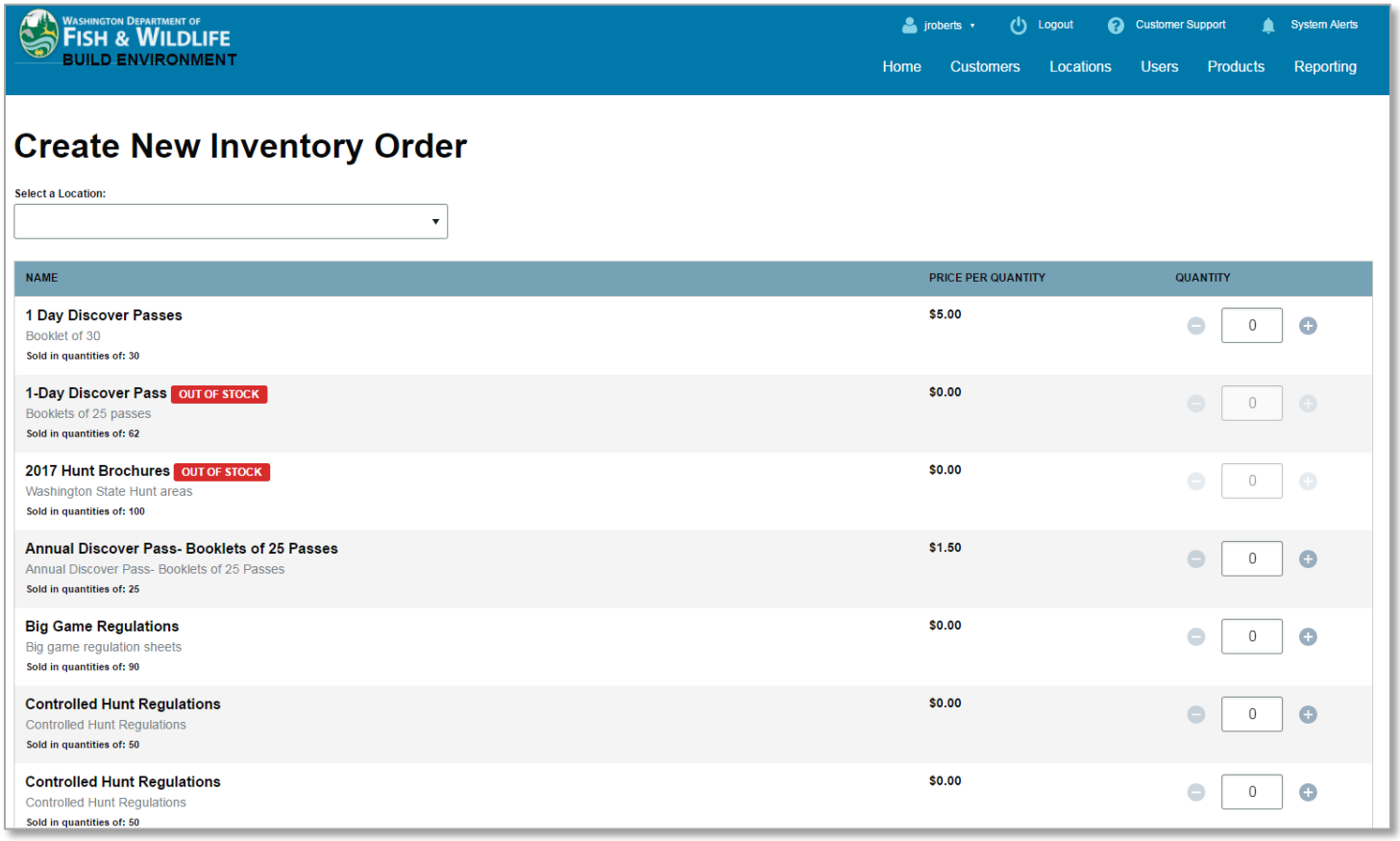
JMT's solution includes a framework for license vendors to request supplies from the licensing entity and / or vendor, for the appropriate party to receive and fulfill that request, and for these supply orders to be tracked over their lifecycle.

<u>Managing Inventory</u>

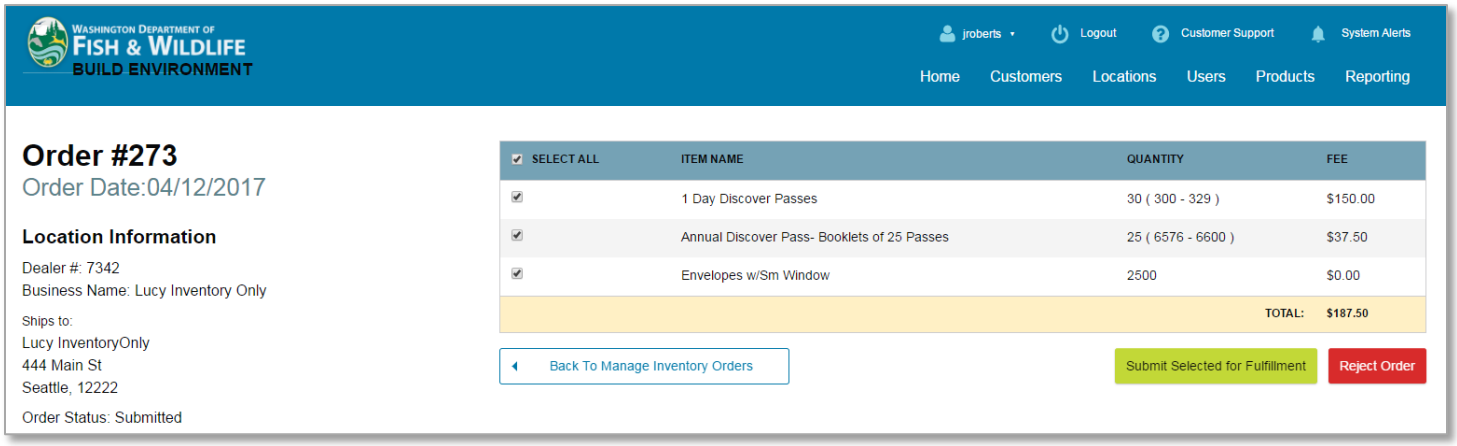
NDOW Administrators will be able to create and maintain inventory on behalf of the licensing agency including managing allocations of inventory over time.



The image below demonstrates an agent in the process of creating a supply order that once submitted will automatically route to the appropriate party (contractor or licensing agent) based on a configurable workflow.



The contactor and NDOW, depending on how a given inventory item is configured, with have the responsibility of processing and fulfilling incoming supply orders based on our solutions intuitive workflow.

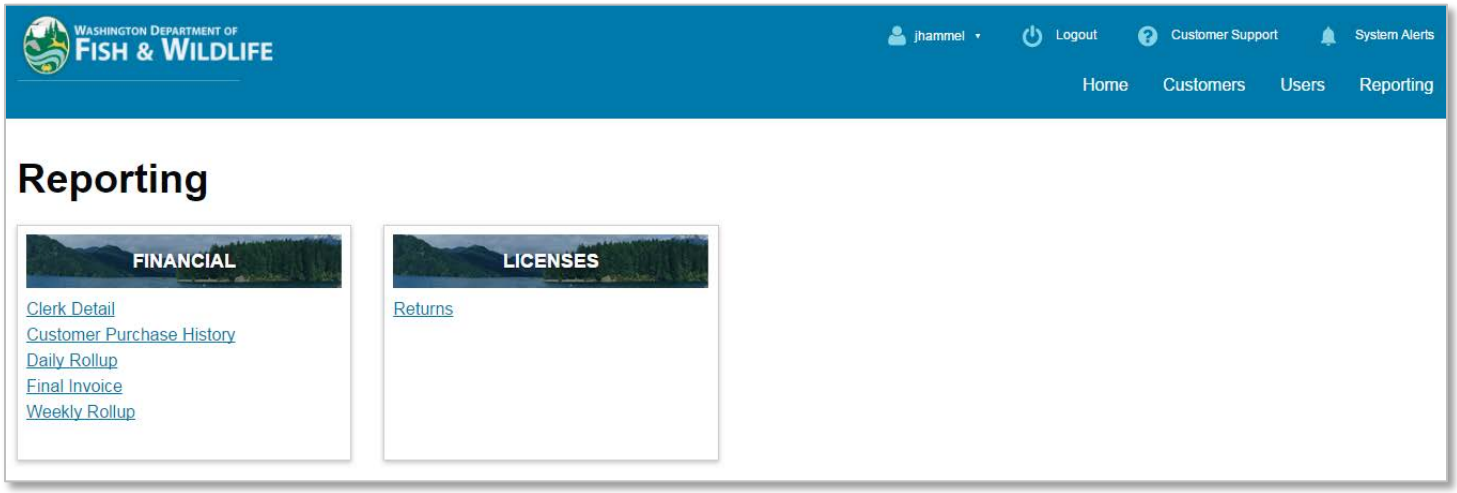


3.4.8 Agent Accounting Reports

3.4.8.1	The proposed solution(s) must provide agents with the capability to produce and print current and historical sales, transaction, and accounting reports broken down by day, terminal, userID/clerk, and ACH period.

JMT's solution comes with many essential reports out of the box, including a full suite of financial reports, standard management reports, demographic reports, game check reports and Federal HIP reports, but as part this proposal JMT recommends a dedicated component of the Requirements Elicitation process focused on NDOW's reporting needs.

These reports can be designed to include a wide range of input parameters which allows the end user to produce a report that is customized to their specific need. Our solution then exposes the ability to generate these reports through an intuitive reporting dashboard that employs user-friendly inputs such as drop-down lists, calendar controls, and check boxes. It produces output in PDF, Excel, CSV formats and supports the printing of reports, by agents, directly to the POS configuration's thermal printer.



3.4.9	User ID's and User Reports

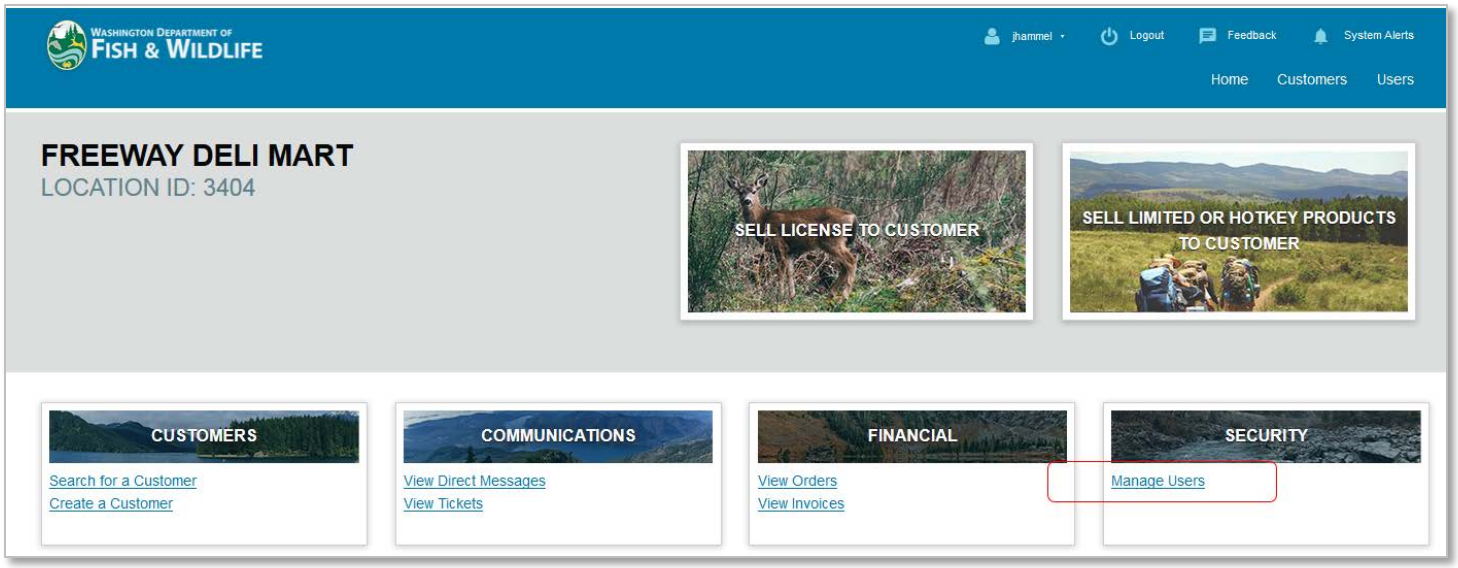
3.4.9.1	The proposed solution must have the capability for multiple users to be set up for logging transactions by user. The system must allow for users and supervisors to be given different security levels and associated privileges. The system must allow for UserID to be enabled or disabled at each location, as well as establishing a timeout period for each location. The proposed solution must provide the ability for agent locations and NDOW to manage UserID security. The vendor and NDOW must have the ability to print reports based on UserID.

License Vendors with the appropriate permission are empowered to manage the users associated with their location through an intuitive administrative tool.

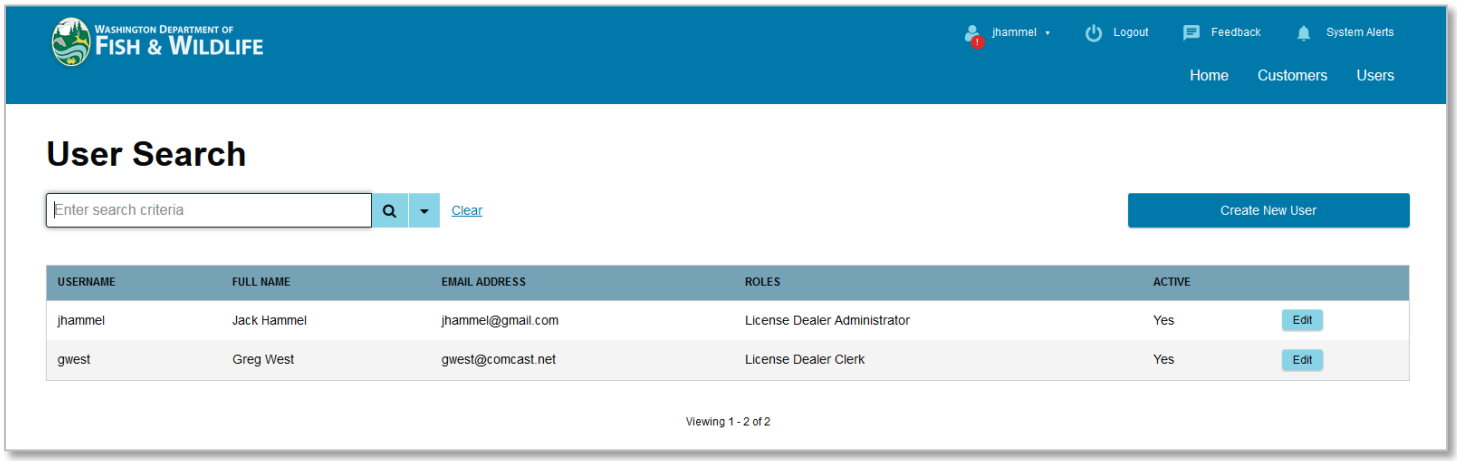
The first component of this capability is that all internal users (non-customers) within the new NDOW Licensing System will be associated with a location (e.g. NDOW Headquarters or Walmart) upon creation. This business rule supports the ability to delegate certain administrative functions to License Vendor Administrator while constraining scope of these capabilities to their designated location.

Typically, an agency will configure at least 2 license vendor roles in the system: License Vendor Administrator and License Vendor Clerk. The License Vendor Administrator may be granted the permission to manage the users associated with their location and to create new users associated with their location.

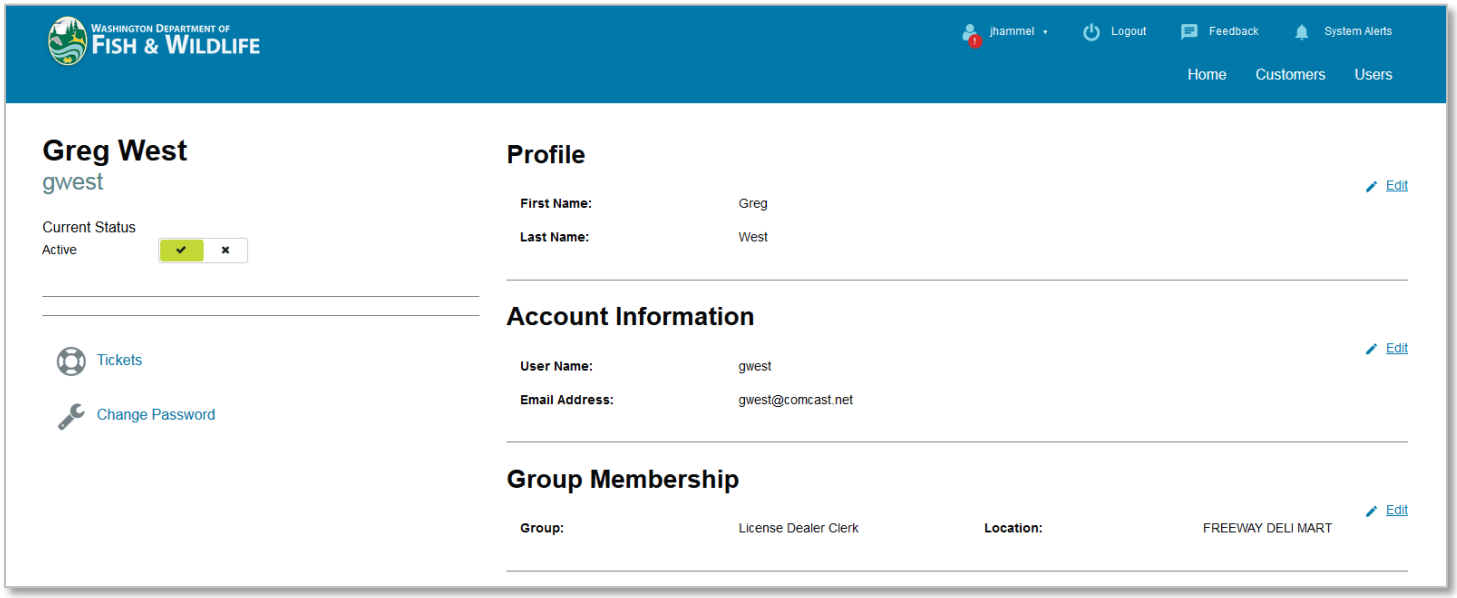
This process is quite simple. The user will login into the system and click "Manage Users"



From the User Search screen the license vendor will see a list of all current users associated with their location and choose to select an existing user to edit or to create a new user. The Create New wizard will allow the assignment of "License Vendor" roles only and will automatically associate the new user to the current location.



Clicking Edit for any user will direct the License Vendor to the account for overview of that user and will provide the ability to edit any aspect of the profile except for the location. This includes the ability to activate and deactivate the user as well as to reset their password.

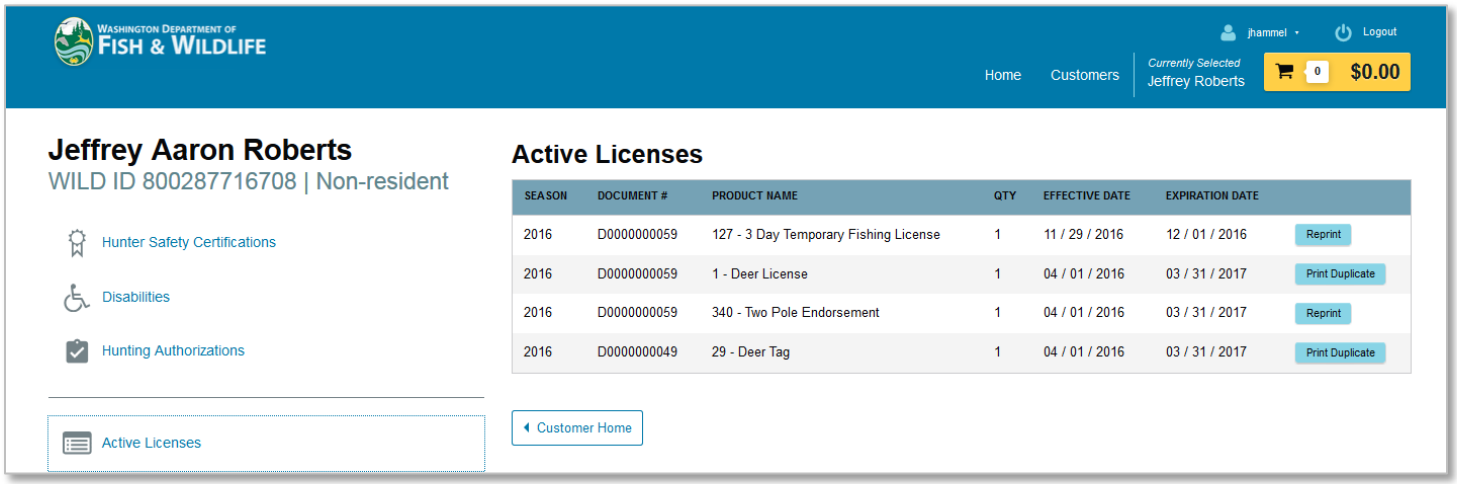


3.4.10	Transaction Reprint
3.4.10.1	The proposed solution must be capable of reprinting the most recent transaction within a designated timeframe. The system must provide a mechanism for NDOW to track the number of times a document is reprinted.

JMT's solution supports duplicating and reprinting license documents as standard functionality and provides the system administrator significant configurability regarding the business rules that govern these functionalities including time constraints, sales channels, and associated fees.

Within our platform the term "Reprint" is used to denote the ability of a license vendor to reprint a document immediately after sale if that document failed to print because of a technical issue with the thermal printer. This functionality is time constrained, by default to the 30 minutes immediately following a transaction. Reprints require the user to provide a reason for the reprint.

Within our platform the term "Duplicate" is used to denote the ability of a license vendor or agency staff member to provide an authorized replacement/duplicate of a license document that was lost, stolen or mutilated. Typically, duplicates require a fee be paid by the customer and this fee as well the determination of whether a given product may be duplicated and how many times is configurable on a product by product basis. All duplicate documents clearly state "Duplicate" when printed.



3.4.11	Technical System Support Help Desk
3.4.11.1	The awarded vendor must provide a technical help desk to support NDOW staff with all aspects and components of the complete automated business system. Help desk services must be adequately staffed with knowledgeable personnel that can provide prompt and accurate information to address problems with the complete automated business system. Help desk services must be available from 7:30 a.m. to 5:00 p.m. Monday through Friday, Pacific Time, as part of the vendors' proposals. The awarded vendor must provide standby services during all other hours, including weekends, and especially during peak season activity.
3.4.12	Internet Customer Help Desk Support
3.4.12.1	The awarded vendor must provide help desk services to support internet sales customers who have questions or experience difficulties using the Internet-based sales site. The internet support help desk must be staffed with personnel knowledgeable about the Internet sales site use and operations. Help desk personnel must be able to provide prompt and accurate information to address system problems and customer questions. Help desk services must be available with increased coverage during seasonal peak times. Help desk personnel are not required to respond to any regulatory questions or interpret laws or policies. The awarded vendor's solution must also include a system to respond to questions asked via electronic mail. The time to respond to these inquiries should not exceed 48 hours from the time the electronic mail message was sent by the customer.
3.4.13	Agent Help Desk
3.4.13.1	The awarded vendor must provide support to license agents and NDOW staff who use the automated licensing system.

Support for NDOW Staff, License Agents, and Devices

The overall success and stability of NDOW's new system is in large part determined by the confidence and satisfaction of the end users, including NDOW staff and the license agent community. JMT understands the importance of proper training and responsive, intelligent technical support. Our primary objective, beyond meeting system requirements with a seamless transition, is to provide superior support service that internal staff and the dealer community are excited about the new system.

As part of this effort, JMT will be providing agent help desk through the JMT Customer Care Team and JMT's

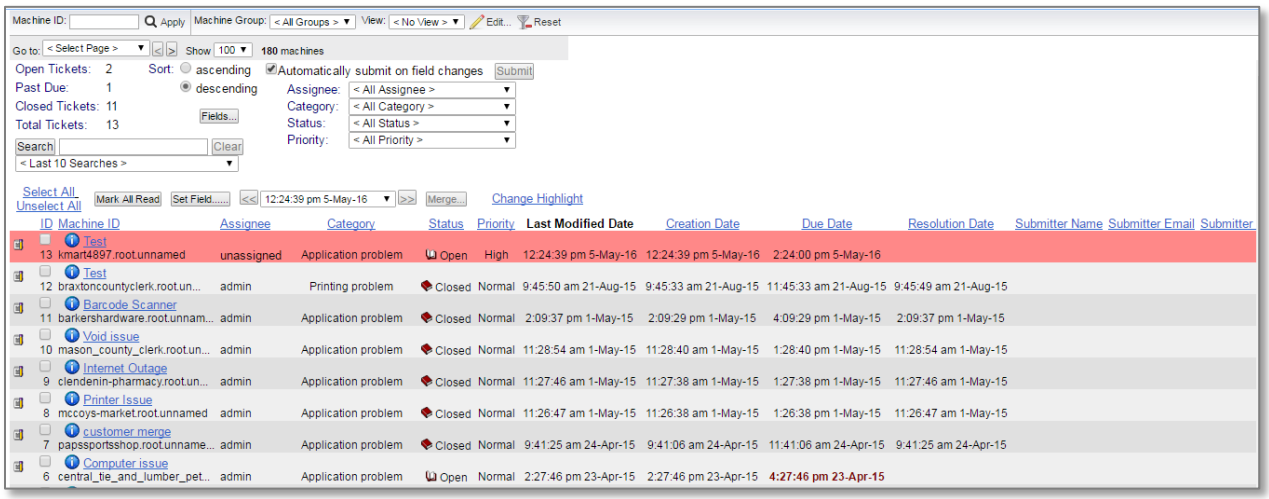
trusted partner, Vitalyst. The dealer community will be able to call the hotline to resolve issues such as barcode scanner not working, licenses not printing correctly, user forgot password, and various other issues.

JMT has utilized Vitalyst for our West Virginia and Washington implementations, and they have consistently delivered superior customer service with incredible internal communication. Vitalyst provides:

- ***A unique ability to instantly scale the number of available experts to meet unanticipated peaks in call volume***
- ***A central point of contact for Tier 2 support and system-related issues***
- ***U.S.-based, English speaking advisors***
- ***A multichannel, multilingual offering with a strong online presence through ticket log and track, chat and self-assistance services***

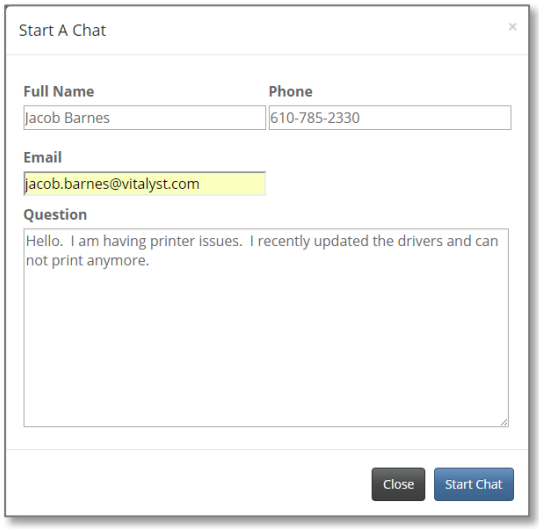
<u>Remote Desktop Support</u>
The system to be used to facilitate technical support will be Kaseya VSA Professional. Kaseya brings ticketing, monitoring, and remote management into a single console for ease of use. Kaseya encompasses the ability to log and track tickets, remote control of machines at all locations, anti-virus/anti-spyware protection, patch management, and many other features. Kaseya also can securely access and remotely control computers at near instantaneous connect times with extraordinary reliability, even over high latency networks.

Remote Access Example

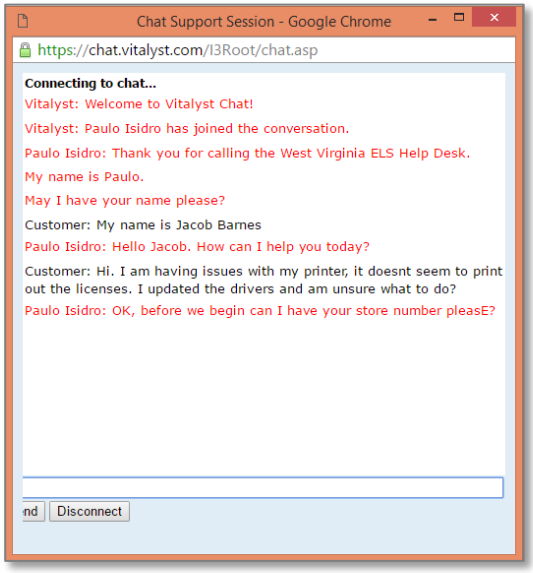


Kaseya Ticketing Dashboard Example

In addition to primary phone support, Vitalyst also offers chat as an additional access method to contact a Productivity Consultant. Chat allows our Productivity Consultants to instant message with a customer over an encrypted internet connection. Features of Chat are:

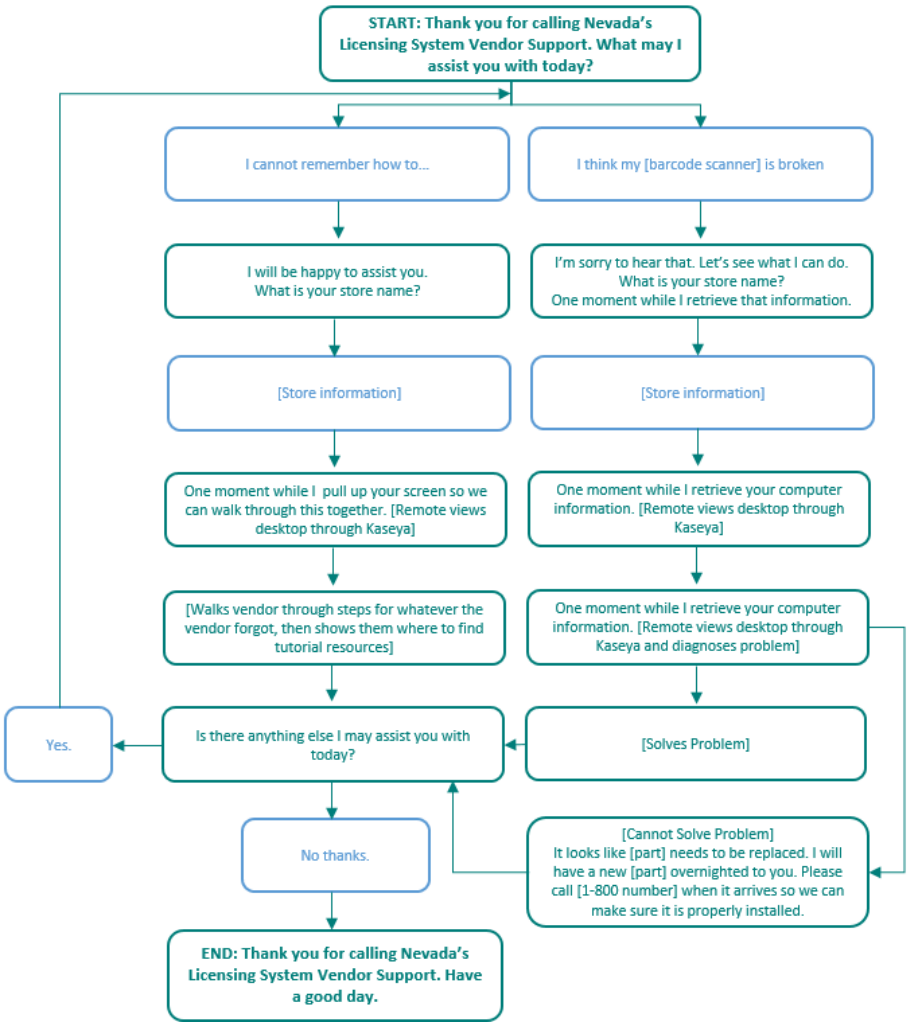


- ***Customers are able to start a Chat session in just a few simple steps; a session cannot be started without an end-user's knowledge and participation. The end-user can cancel a session at any time.***
- ***Chat does not require any pre-installed software on client systems. Chat works in conjunction with a web browser and standard SSL Internet access. Chat does not require the user to have admin rights on the computer to run.***
- ***The Chat session uses a low-bandwidth connection.***
- ***Chat session traffic is protected by 256-bit AES SSL encryption to ensure that the entire data stream is fully secure.***
- ***Chat does not compromise the firewall. No ports need to be opened; no firewall reconfiguration is needed.***



<u>Preliminary Help Desk Flowchart</u>

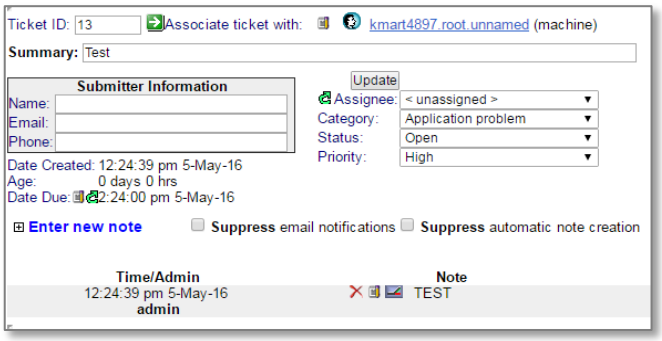
The License Vendors will be provided with a toll-free number to contact the Help Desk if any issues or questions should arise. When the Vendor calls, they will select the License Vendor Support number. The Agent will answer the call with the proper greeting and then proceed to answer questions or assist the Vendor if necessary. The agent may receive calls ranging from the Vendor not being able to access the system to receiving error messages. The Agent will resolve each issue based on a pre-determined workflow between JMT and NDOW. The vendors will be able to contact 2-3 Help Desk agents at any given time based on coverage needs and peak seasons.



3.4.13.2	The awarded vendor must provide monthly documentation of the number of calls taken as well as the minimum, maximum, and average answer time, time in queue, problem description, resolution description, and resolution time.

Kaseya VSA Professional Ticketing system will be used to record all agent help desk communications. Kaseya records the logged in user making the communication note, records the date and time of entry, allows for text entry of the communication, and can record communication type, and status.

Kaseya provides a ticketing solution that is very easy to configure to capture any other information NDOW would want to gather on a call. JMT will work with NDOW to ensure the ticketing system is adjusted to capture all information needed.



Example of issue ticket that will be configured to NDOW's needs

JMT will provide monthly documentation of the number of calls taken as well as the minimum, maximum, and average answer time, time in queue, problem category, resolution description, and resolution time.

3.4.13.3	The proposed system must provide NDOW with real-time reporting capabilities for revenues as well as user defined querying capability. All revenue data should be available as variable user defined reporting in CSV or other required report format.

Pre-Configured Reports

The ability to report on all system data is a standard feature of the JMT Outdoor Licensing and Recreation solution.

The new NDOW Licensing System will make accessible a suite of out of the box reports to support financial and customer management. Reports will be accessible through NDOW Licensing Application and will accept user-defined parameters. All reports will be exportable to PDF and to Microsoft Office formats.

JMT proposes to collaborate with NDOW on the requirements and design for all required reports and commits to meeting all reporting requirements outlined.

A few examples of pre-existing reports include, but are not limited to:

Summary of Receipts Report – This report displays a breakdown of all sales by location and fund source for any date to support fund allocation.

Summary of Invoice Receipts Report – This report displays the breakdown of funds for a specified Invoice into the different fund sources for the products and services rendered.

Summary of Internet Receipts Report – This report displays the breakdown of funds for a specified date range that were sold through the Internet sales configuration into the different fund sources for the products and services rendered.

Sales Detail Report – This report displays all sales at a particular location for a specified date range.

Daily Revenue Report – This report displays all product sales, in total, or by sales channel for a specified date range.

Purchase History Report – This report displays all transactions along with customer information (name, address, email address, phone) for a specified product purchased within a given data range.

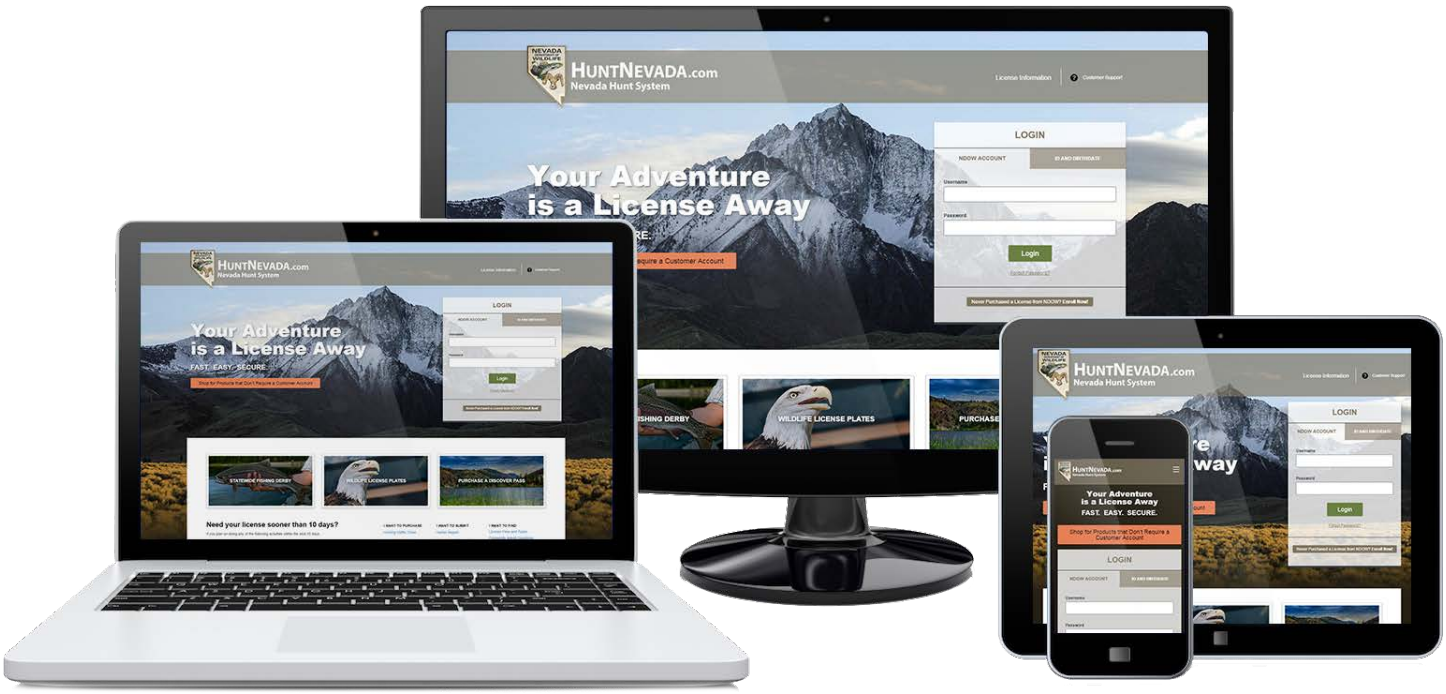
Our solution also provides reports for License Dealers that support their need to balance their financial systems:

Agent Sales Closeout – This report shows all products sold by the agent within a specified date range. This report is used to support the agent close process.

Agent Invoice Sales – This report shows all products sold by the agent within a specified date range. It can be used by agents to estimate invoice amounts.

3.4.14	Internet Self Service Transactions

3.4.14.1	Vendors must propose and provide programming and host services for a public-facing web site that allows customers to access all of their business and transaction history housed in the automated business system.



The "next generation" features that the Nevada Department of Wildlife is looking for in its new licensing system are at the core of our platform – a powerful framework for rapidly deploying intuitive, reliable, customized outdoor licensing and recreation solutions. Our platform is built on first-in-class technology and provides the modern user experience to which todays customers have become accustomed.

Outdoor licensing and recreation solutions, based on our proven framework, are implemented as singular, web-based, hosted solutions that are designed to serve customers through the provision of an efficient, intuitive sales experience across multiple sales channels including license dealers, internet self-service, state agency, and telephone.

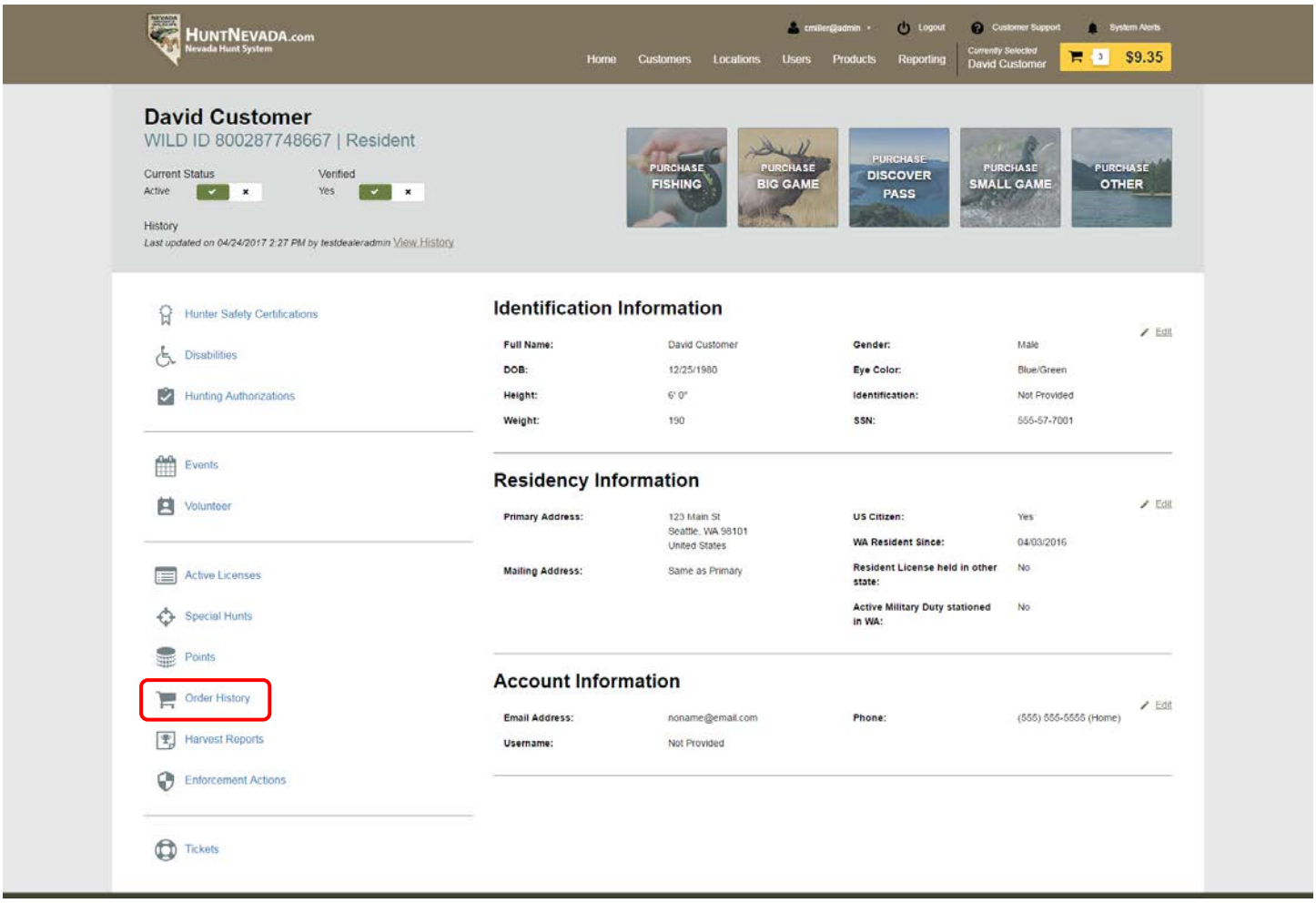
In addition to product sales, our solution differentiates itself through the provision of a comprehensive self-service environment from which customers can manage their account and access the NDOW services they need when they need them.

Customer Sales History

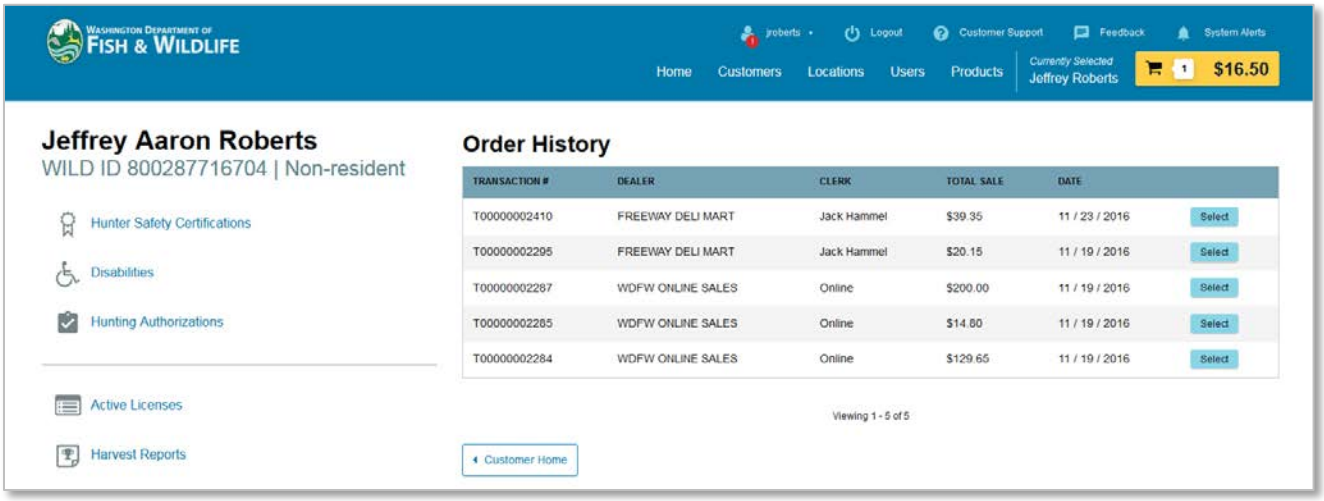
The new NDOW Licensing System will store all sales transaction data in the centralized database and will provide access to high-level and detailed level transaction data for customers as standard functionality.

Upon logging in Customers will be immediately directed to their customer home page. The customer home page is the one stop shop for the customer to access their data and functionality within the NDOW Licensing System and will be configured to expose the data and functionality required to meet NDOW requirements.

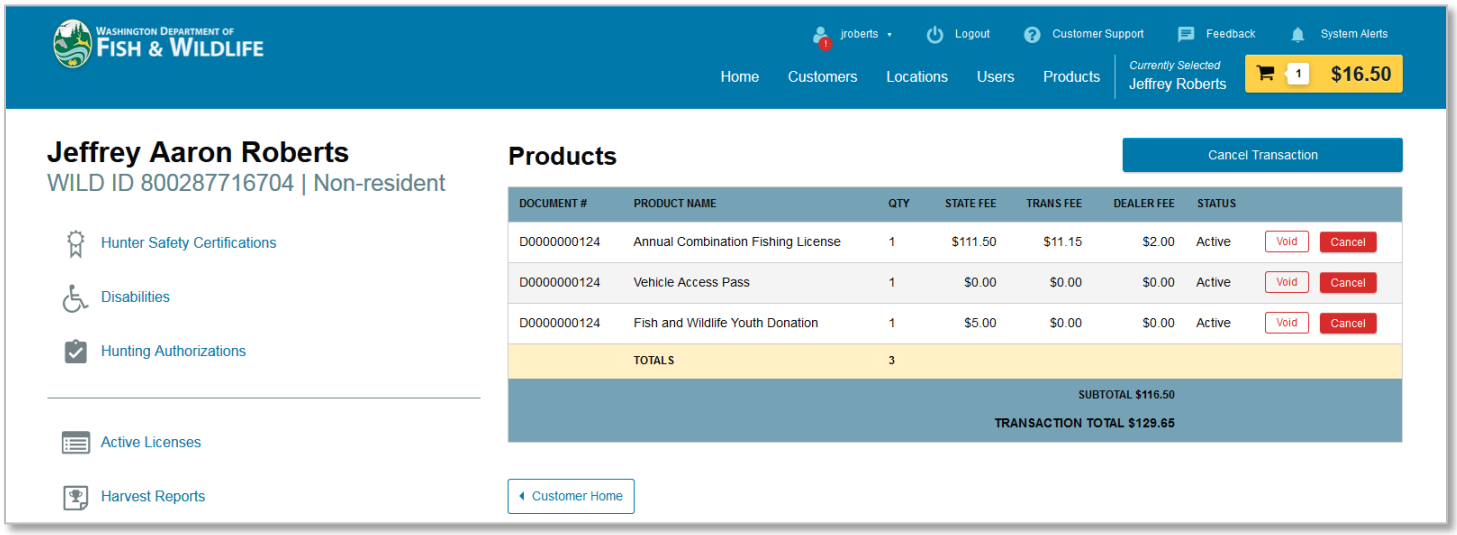
Customers will be able to view their sales history by license year or by all license years by logging into their account and then clicking "Order History".



This will present the customer with a list of all sales transactions executed by the customer sorted descending by date time and provide a means to select any order to see the details of that transaction.

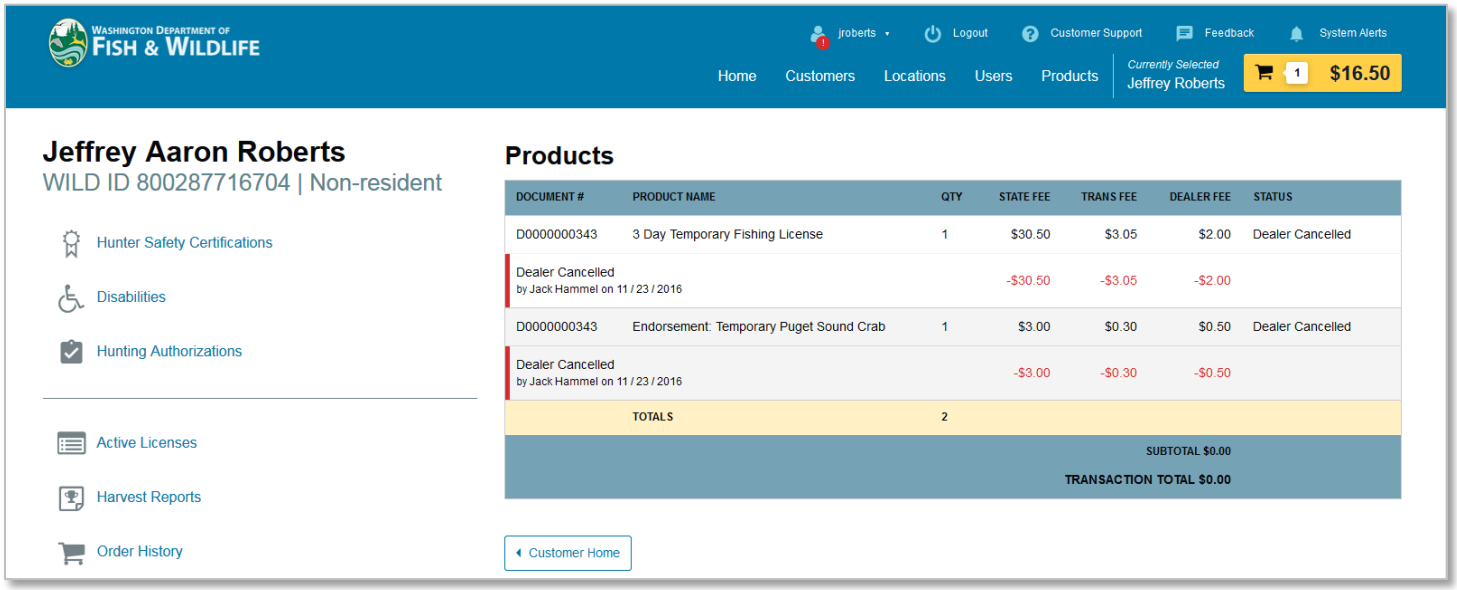


Clicking on the "Select" button will redirect the customer to the detail view for the selected transaction. From this screen, the customer can see the individual transaction items that comprise the order as well as the payments remanded.



The sales history information presented in the order history details will be comprehensive of all aspects of the sales transaction including any actions taken post-transaction (e.g. cancelation, exchange, adjustment). Relevant controlled hunt related information will also be included.

JMT will work with NDOW during the requirements elicitation phase to define the exact composition of this screen.



3.4.14.2	The web site must be fully compatible and seamlessly integrated with the license issuance, vessel titling and registration, conservation education/programs, law enforcement/revocations, harvest information program, application hunt, volunteer programs and NDOW' web site.

The new NDOW Licensing System will be implemented as <u>singular, web-based solution</u> that is designed to serve customers through the provision of an efficient, intuitive sales experience across a variety of sales channels including Point of Sale, Internet self-service, licensing agency and telephone sales.

A primary focus of our solution is bringing all aspects of the customer's interactions with NDOW into a single, integrated account that is exposed through an intuitive, unified user-interface.

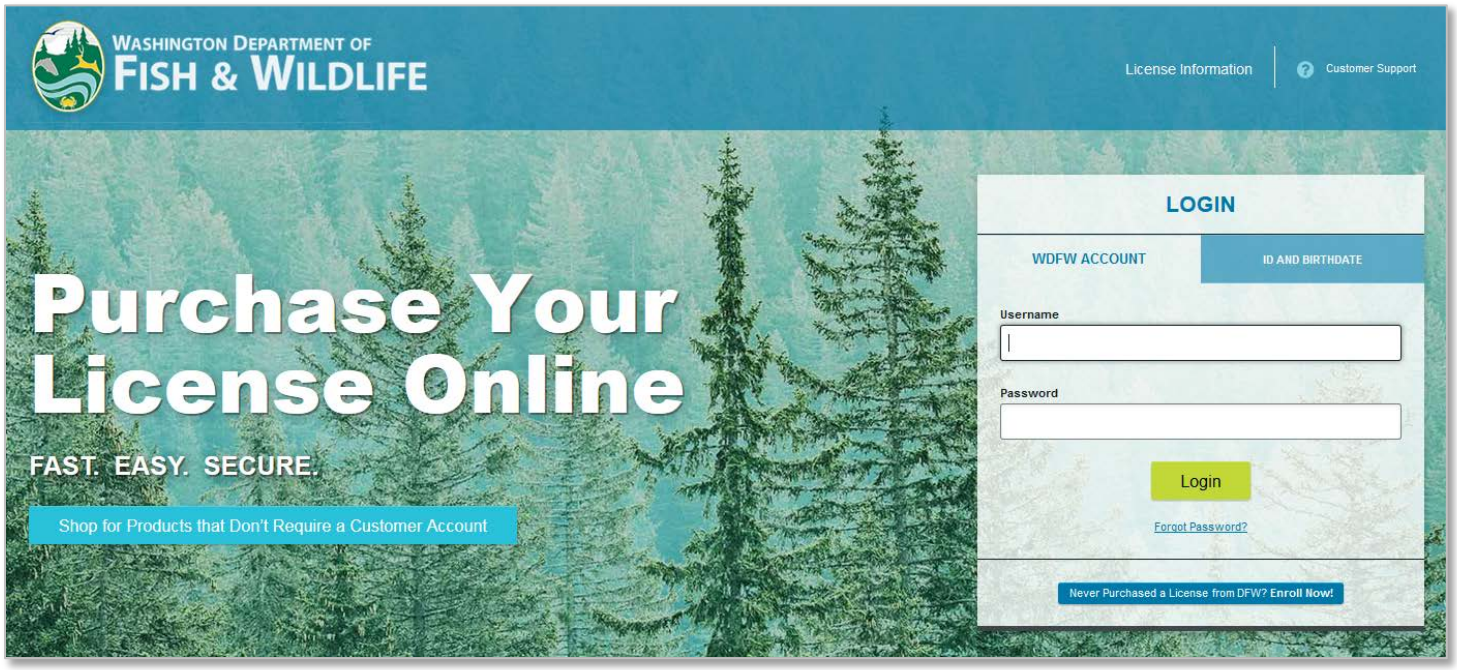
3.4.14.3	The web host must communicate with the system host to validate the customer's identification to gain access prior to all transactions.

JMT places a premium on security with an emphasis on the security of NDOW's customer's personally identifiable information. Because of this our Outdoor Licensing and Recreation solution has adopted a modified, more secure approach to customer authentication that combines modern best practices in security with the methods used in traditional Licensing systems.

In short, we believe that allowing a person to access a customer's account using information that they may be able to gain access to (e.g. Driver's License number, last name and DOB) presents a security risk that is unacceptable given the very real threat of identity theft that exists today.

Here's how our process works:

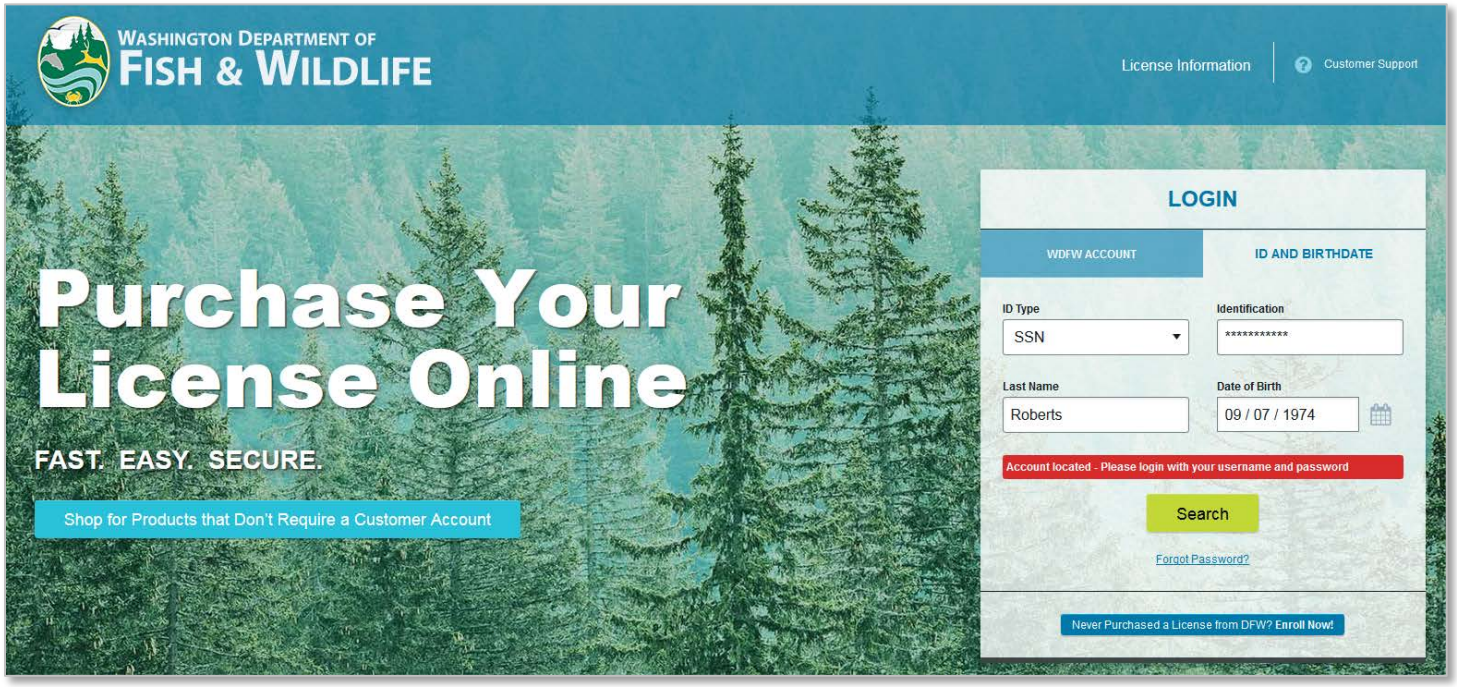
By default, the system request that all users, including customers, login using a username and strong password. If a customer self-enrolls, they will be asked to create this username and password during self-enrollment and an email will be required to support "Forgot Password" functionality.



Our system does support the more typical "Search" whereby the customer is asked to enter a unique ID (Sportsman ID, Driver's License Number, NDOW License Number, Social security Number), last name and DOB however once the customer is located using this method, one of two things occurs:

<u>Customer Account is Located for Which Username and Password Exist</u>

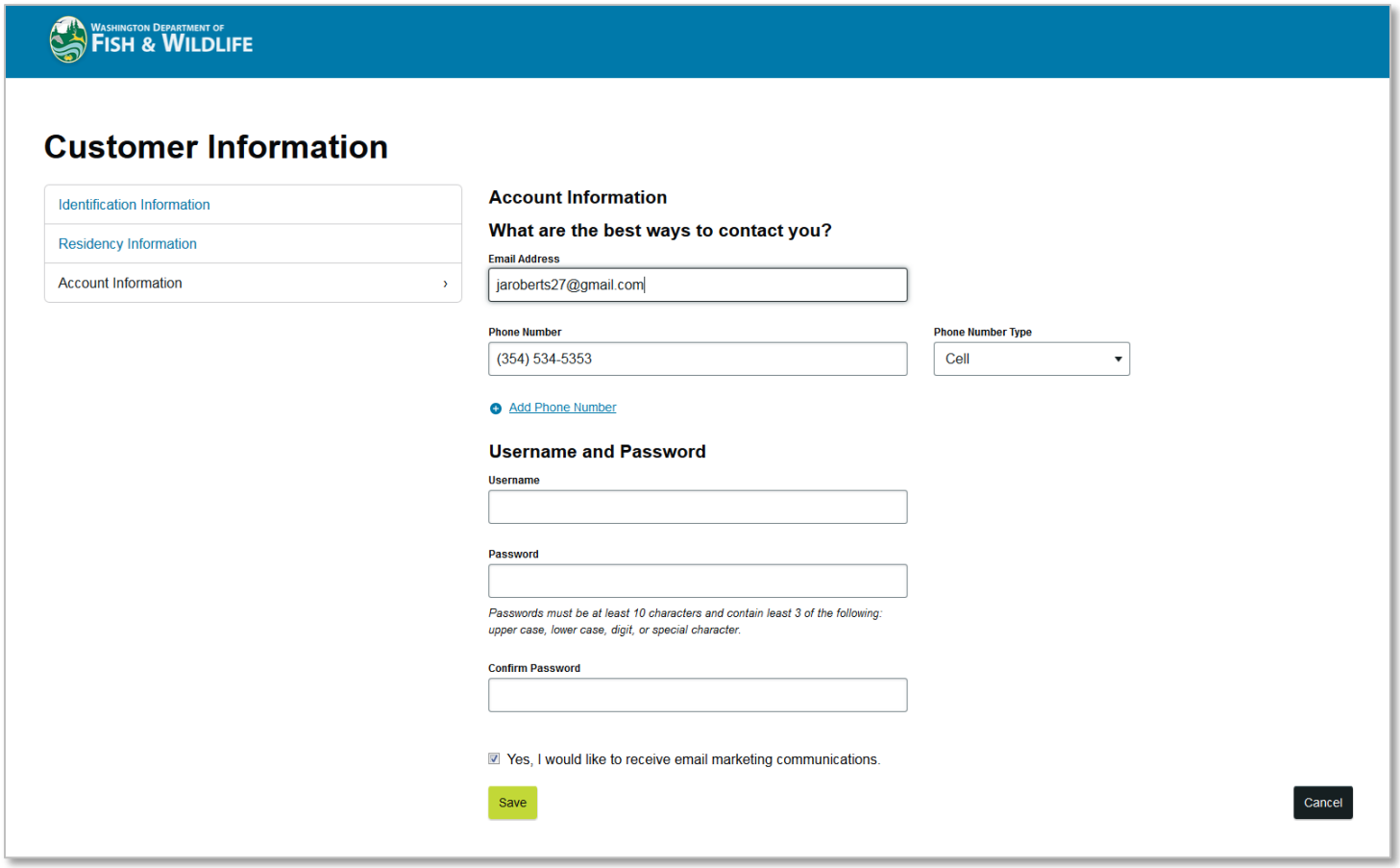
If an account is located for which a username and password exist, the customer will be asked to login with those credentials. If they have forgotten those credentials they can be retrieved.



<u>Customer Account is Located for Which Username and Password Do Not Exist</u>

Accounts created by a License Vendor or migrated from the legacy system will not have a username and password associated with them and therefore the user must be allowed to access their account via the personally identifiable information. If an account is located for which a username and password does not exist, the customer will be asked, however, to create the username and password and to provide an email if one is not associated.

An optional security measure may be included whereby the customer must provide a document or transaction number from a previous purchase to move forward. This option can be enabled on a subset of migrated accounts if there is any concern that the personally identifiable information needed to access a customer account has potentially been compromised.



3.4.14.4 The proposed solution must allow customers to update personal information, purchase licenses and approvals (auto renew), reprint unexpired licenses/receipts, register and renew vessels, submit application data, view tag and permit drawing results, register for conservation education/safety classes, view previous course completions, enroll in events and submit harvest data via the Internet.

The new NDOW Licensing System will be implemented as <u>singular, web-based solution</u> that is designed to serve customers through the provision of an efficient, intuitive sales experience across a variety of sales channels including Point of Sale, Internet self-service, licensing agency and telephone sales.

A primary focus of our solution is bringing all aspects of the customer's interactions with NDOW into a single, integrated account that is exposed through an intuitive, unified user-interface.

This includes but is not limited to:

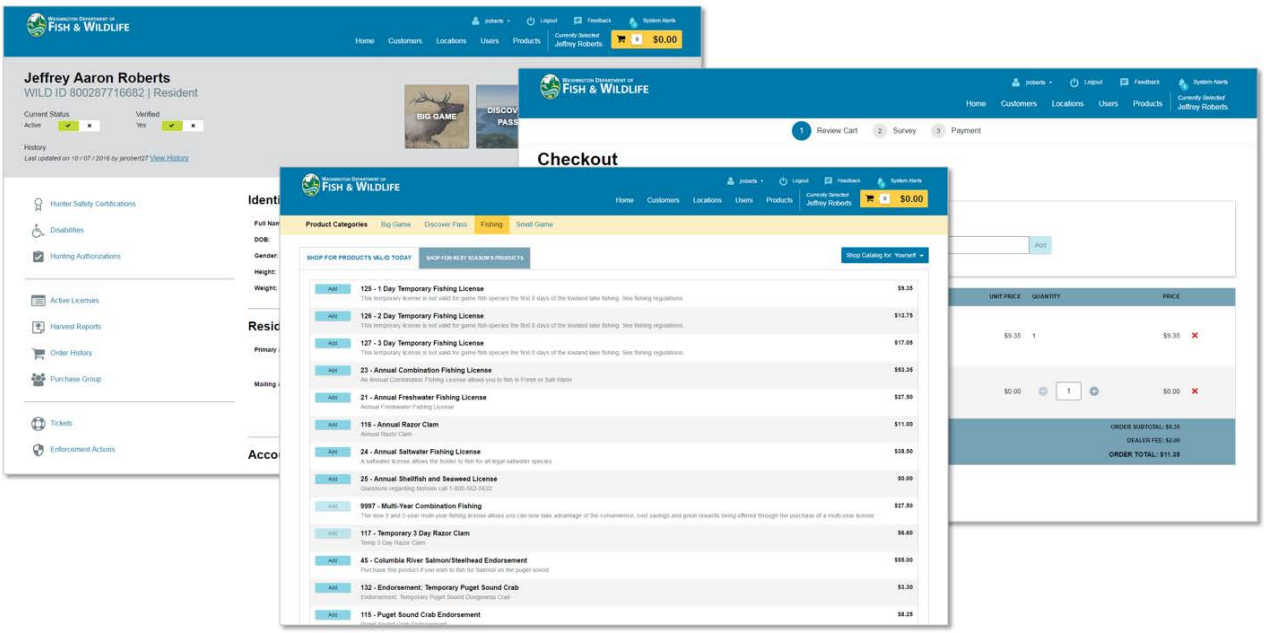
- ***Profile / Demographics***
- ***Sales History***
- ***Active Licenses***
- ***Hunter Safety Certifications***
- ***Controlled Hunts***
- ***Harvest / Hunter Reports***
- ***Vessels***
- ***Conservation education/programs***
- ***Volunteer Programs***
- ***Support Tickets***

Intuitive, Customer-Centric Product Sales

JMT Technology Group understands that customer satisfaction is critically important to NDOW and that the new NDOW Licensing System will be the primary means by which many customers interact with NDOW. Providing a positive user experience through the provision of an intuitive and customer friendly sales process leads to higher levels of customer satisfaction and retention.

With the above in mind, our dedicated User Experience team has focused its efforts on redesigning the sales process to eliminate all unnecessary inputs, screens and mouse-clicks to ensure that the number of steps required to complete a purchase are minimized. Likewise, this team has worked to provide an intuitive, aesthetically pleasing site design that guides the user through the sales process in a manner that is aligned with other mainstream Ecommerce applications.

It is also important to reiterate that JMT's Outdoor Licensing and Registration solution is singular, enterprise web application that is designed to provide a consistent user experience across all sales channels. There are variations to accommodate different payment processes, for example, but the workflow is very homogenous.

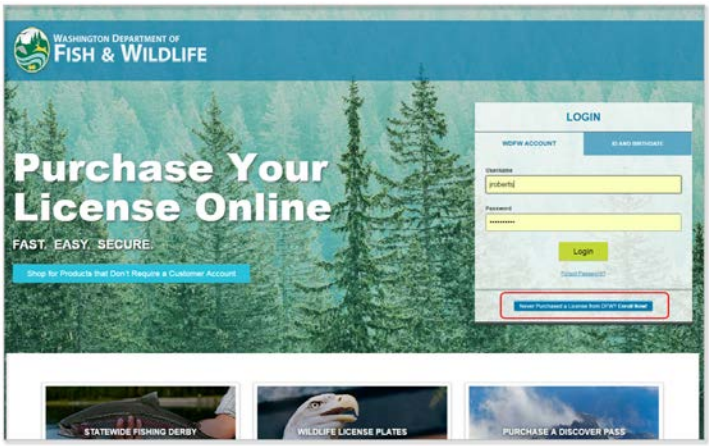


The following provides an overview of the customer sales process through the customer self-service (online) sales channel:

Step 1: Create an Account

All new customers will be required to create NDOW Licensing System account if no existing record match is found in the database. JMT recognizes that this process must be as efficient and intuitive as possible for agents and customers alike. For this reason, the new NDOW Licensing System will include an efficient and easy to use enrollment wizard that steps the customers, license dealers, or NDOW employees through the process of creating a new customer in the system. The customer enrollment forms will be configured to match NDOW's exact specifications with regard to the data elements collected, the validation for the data elements (e.g. required fields, specific formats) and any business logic that must be in place to enforce NDOW regulations (e.g. specific identification types are only valid for certain age groups).

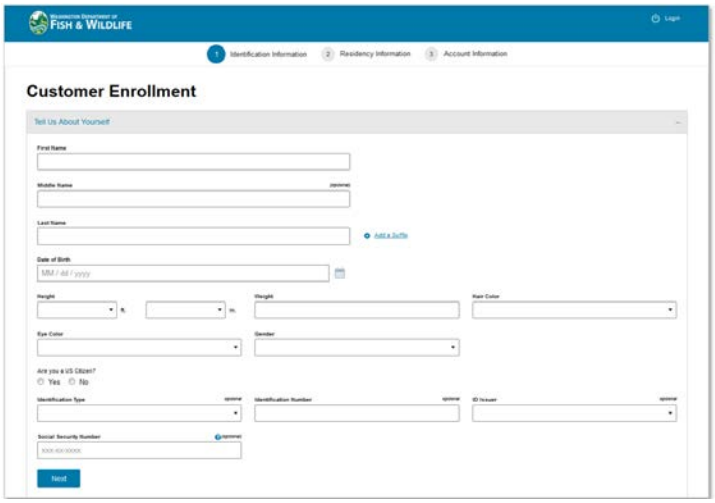
The following images depict the steps of the enrollment wizard and the data required for each step.



Step 1: User Chooses to Create New Account
If the user has never purchased a product through the NDOW Licensing System, they will be required to create a new account and logic prior to accessing most product catalog items.

The system is designed to support the purchase of products without logging in as well but this product catalog would typically be limited to only those products for which demographic and purchase history data is not relevant to determining product availability.

Once the user clicks the "Enroll Now" they will be redirected to the enrollment wizard.



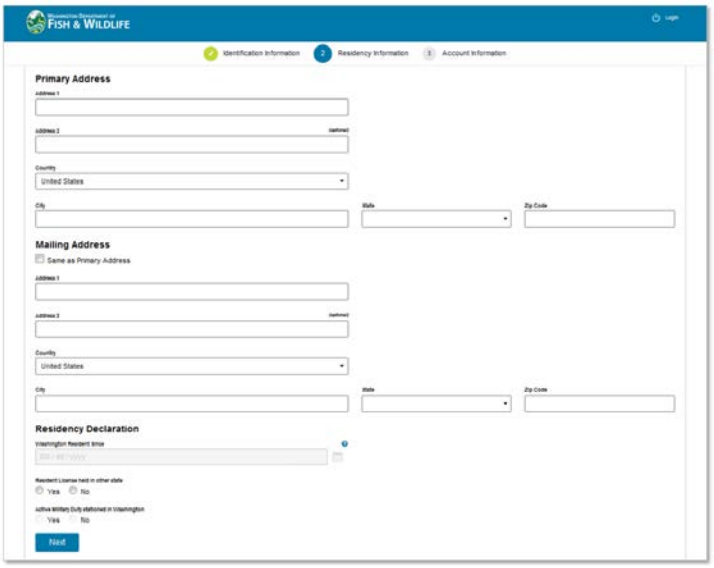
Step 2: Personal Information

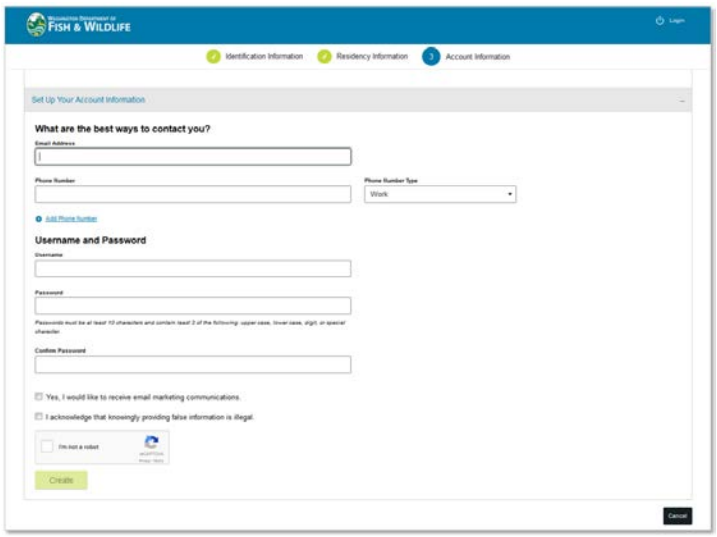
Step 2 will be to collection personally identifying information including name, date of birth, tax ID (either last 4, full 9 or a hybrid) and an identification number such as Driver's licenses, State ID, or Passport.

Intuitive "Help" icons will provide tips to the customer.

Note that all personally identifying information is masked on screen, stored in the database encrypted and that business rules are enforced regarding what user roles can view and edit this data.

This form will be configured to match NDOW's exact specifications.





Step 3: Residency Information

During Step 3 the customer will provide address information and customer's residency will be explicitly declared or system logic will define residency based on the answer to multiple enrollment questions.

The system is designed to capture a customer's primary address and additional addresses (mailing, billing etc.) per customer requirements.

Our solution uses address lookup to auto-populate City and State based on the provided zip code.

This form will be configured to match NDOW's exact specifications.

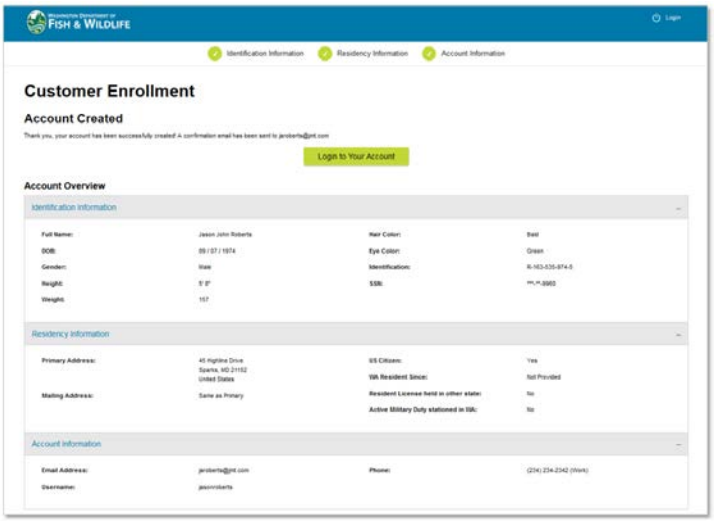
Step 4: Account / Contact Information

The final step in the process will be to provide contact information and creating a username and password.
The user will then specify a username, password and security question / answer combination. Password must conform to configurable password composition rules.

Note: When creating an account as an agent or NDOW employee the creation of a username and password is an optional step.

This form can contain one to many affidavits that the customer account information provided was accurate and the customer understands any disclosures.

Also note that this page implements non-intrusive "Captcha" technology to enhance security through the prevention of malicious automated registrations.
This form will be configured to match NDOW's exact specifications.



Step 5: Confirmation

At the culmination of the account creation process a NDOW Licensing SystemID will automatically be generated and the customer will be directed to a summary screen.

An email confirming their new account will be sent to the customer if an email was provided during account creation.

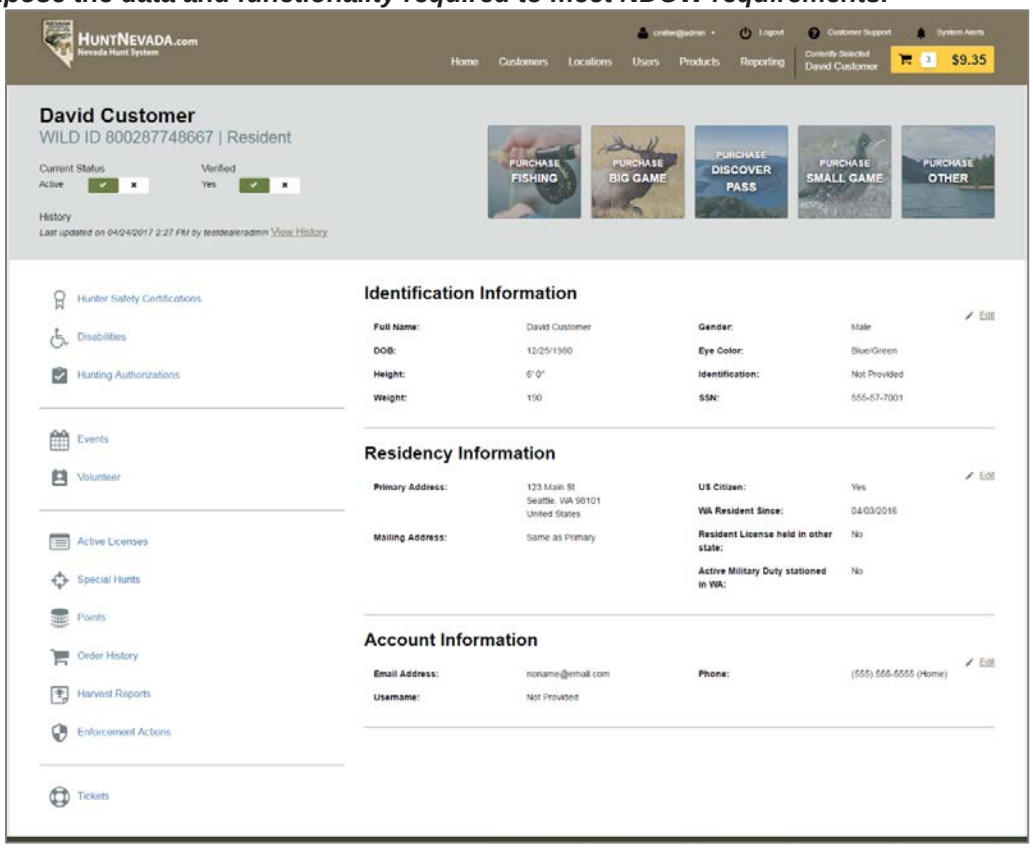
The customer will be redirected to the login screen.

When an agent or NDOW employee creates an account they will automatically redirected to the new customer's home page so that they may proceed with the sales process.

Step 2: Login to NDOW Licensing System

When a new or returning customer logs into the NDOW Licensing System they will be immediately directed to their Customer Landing page. This screen provides an intuitive dashboard from which the customer can access the functionality and data needed to complete the desired task. This might be purchasing a new product, editing some aspect of their customer profile or reporting harvest information.

The customer landing page is a self-service launching point for the NDOW Licensing System and will be configured to expose the data and functionality required to meet NDOW requirements.



Step 3: Access the Product Catalog

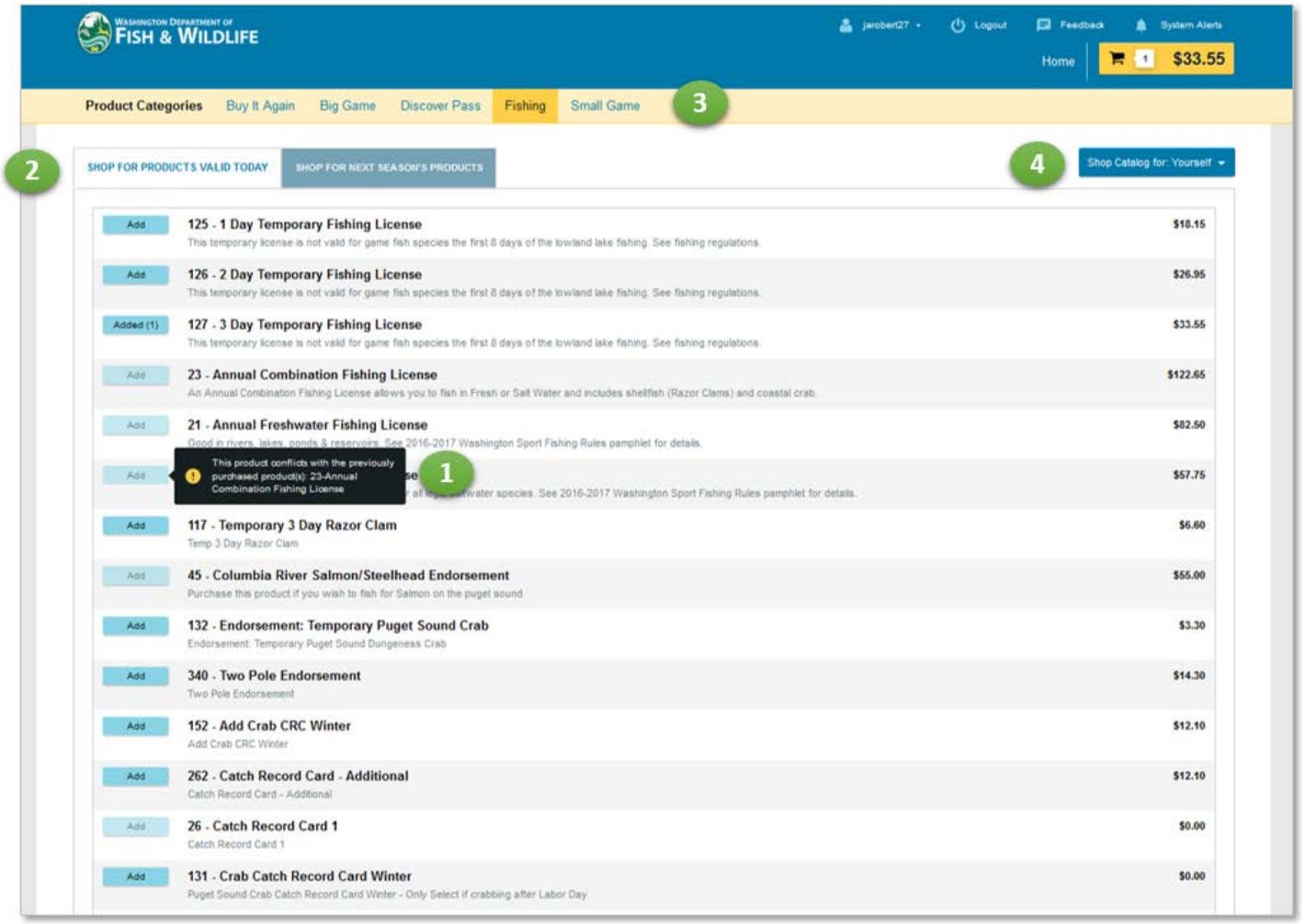
From the customer landing page, the customer will simply select a product category (e.g. Fishing) and will be redirected the intuitive product catalog.

JMT's solution enforces a robust set of business rules during each sales transaction. These rules are defined by the NDOW Administrator during product configuration and are enforced during the sales transaction.

The new NDOW Licensing System will implement an "Intelligent Product Catalog" that will match a product's configurable product purchasing rules to the customer's profile and purchase history to allow or disallow the purchase of products as well as to enforce other purchasing rules such as prerequisite products.

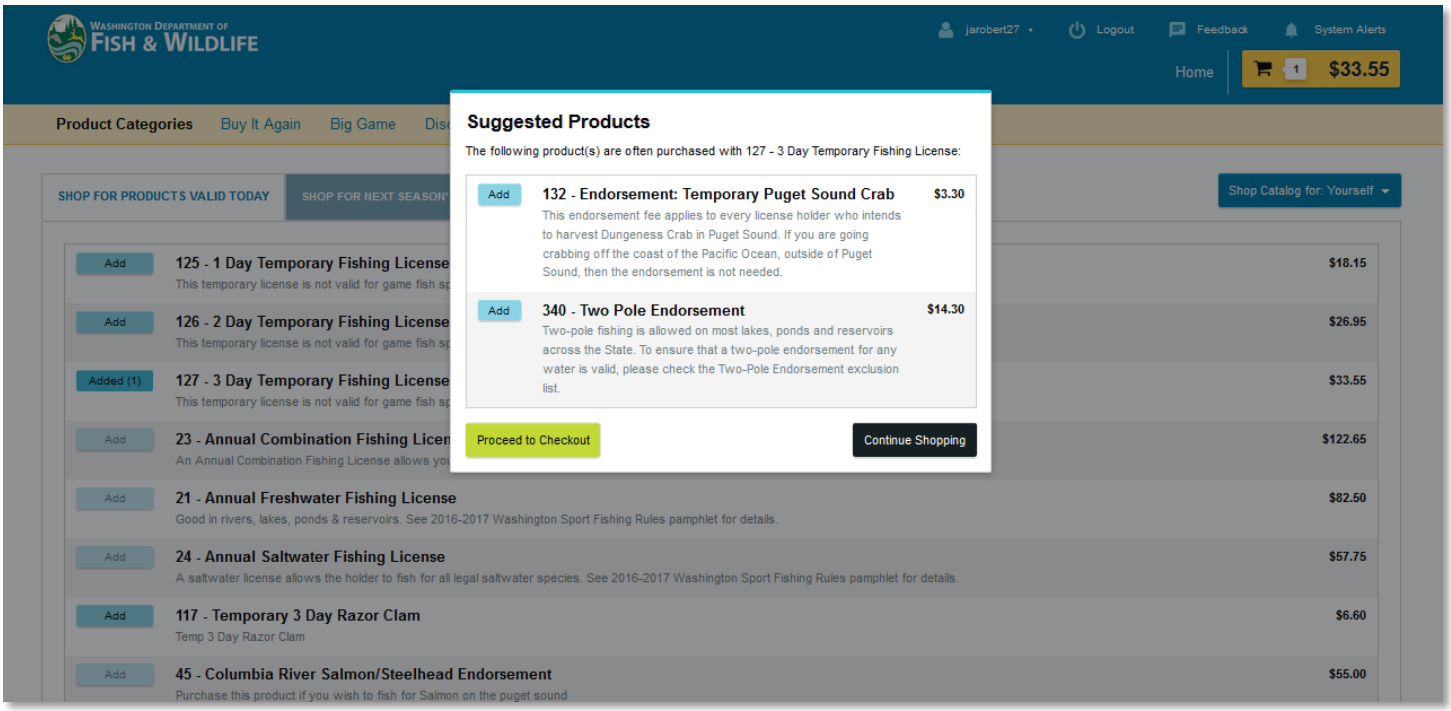
A quick overview of our product catalog's intuitive features:

1. ***Informative messages let customers know the reason that a given product cannot be purchased.***
2. ***An easy to understand tabbed interface supports product sales for overlapping seasons.***
3. ***The customer can easily navigate between product catalog categories.***
4. ***Our solution supports shopping for yourself as well as others in your "purchase group" such as a family member.***



Step 3: Select Products to Purchase and Add to Cart

The customer need only click "Add" to select the products to purchase and add those products to their shopping cart. NDOW will can configure "Up Sells" and "Cross Sells" that simultaneously assist the customer in getting the products they need or may want and help to drive sales revenue. This is demonstrated by the "Suggested Products" modal below which presents when choosing to add the 3 Day Temporary Fishing product to the shopping cart.

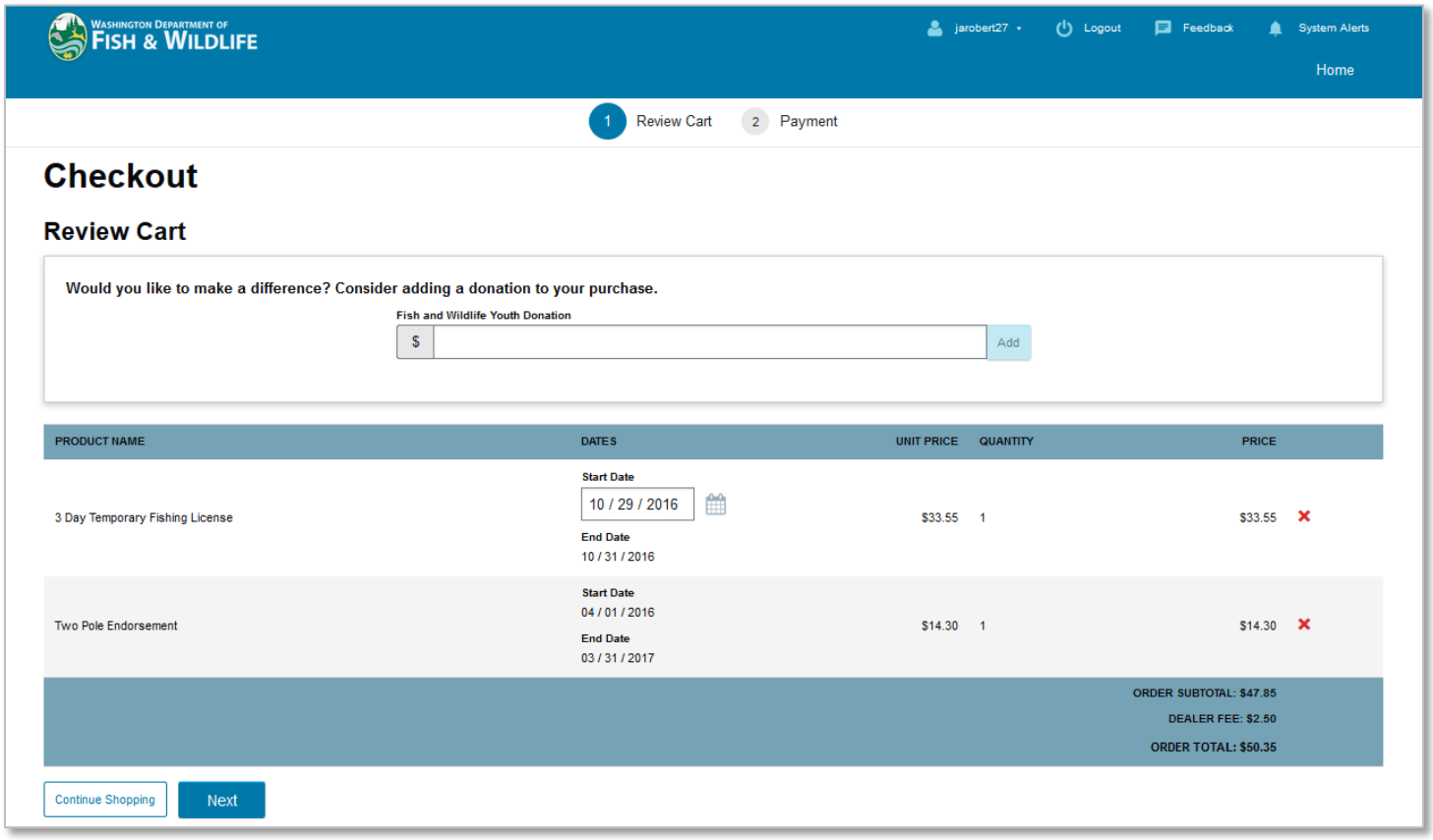


Step 4: Proceed to Checkout and Review Cart

The customer will click "Proceed to Checkout" from a modal window such as the one above or by clicking on the shopping cart icon in the banner.

The customer will then review their shopping, make any adjustments (e.g. remove an unwanted product, increment the quantity on a product) and provide the effective date for any variable start date products.

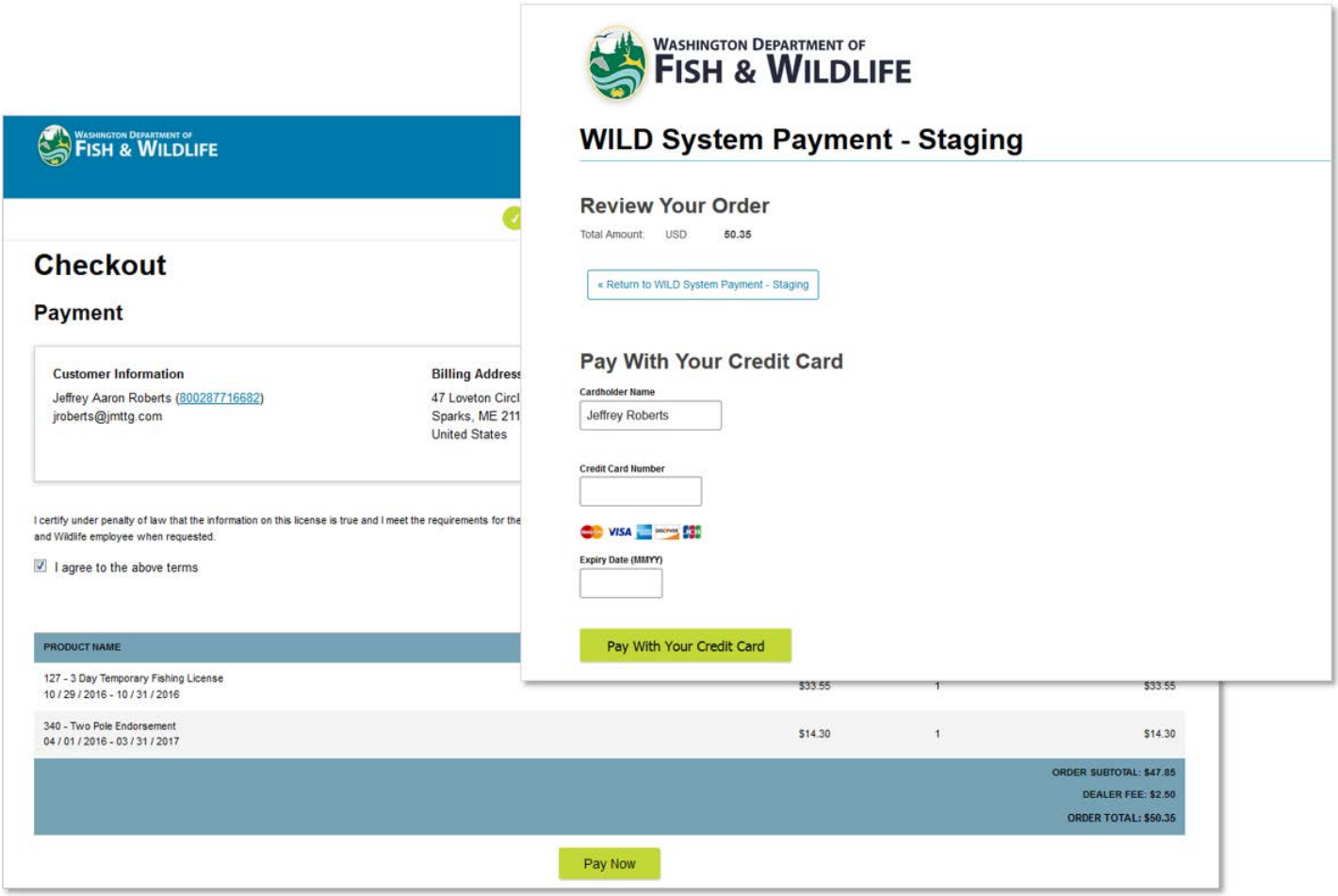
Once complete the customer will click "Next" to proceed to the payment screen.



Step 5: Provide Payment

The customer will review their addresses, agree to any required attestations and click "Pay Now" to input their credit card information and complete the transaction.

The JMT Outdoor Licensing and Recreation solution is designed to integrate with a variety of different payment processors and payment processing methods. This includes integrated payment gateways as well as hosted payment gateways.



Step 5: Print Documents and Receipt

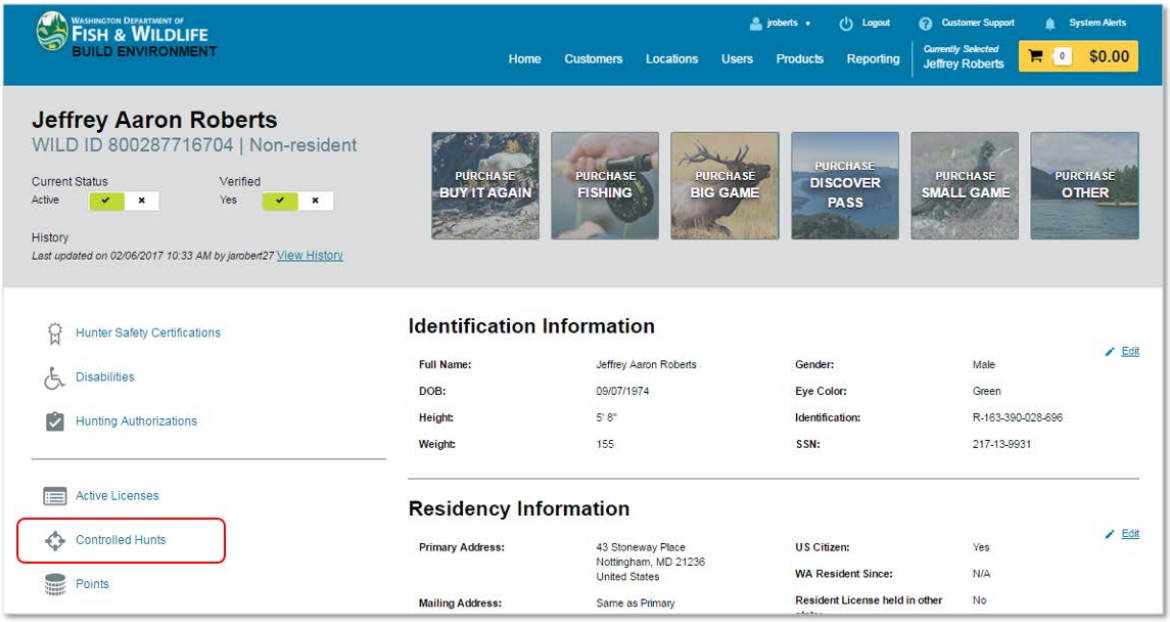
Once payment is successfully processed the user is directed to a confirmation screen which provides a summary of their order and access to any documents that are resultant from the transaction.

JMT's Licensing and Recreation solution supports the myriad of ways that State's provide documents resultant from online sales transactions including printing permanent documents, printing temporary documents while awaiting permanent durable documents to arrive in the mail, and a combination that provides optional durable documents at a cost to the customer.

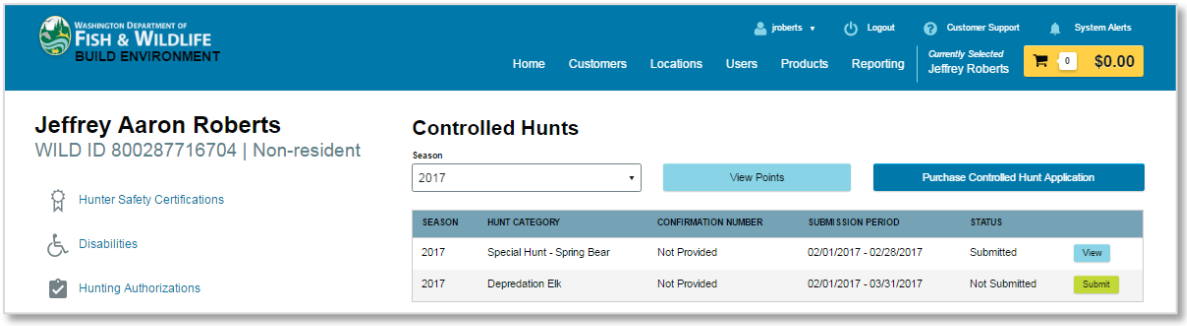
JMT's Licensing and Recreation solution also supports a variety of output formats including a PDF document that can be printed and / or saved, a digital image that can be saved (e.g. to the photo gallery on a mobile device) and HTML format that can printed or accessed later via a simple URL.

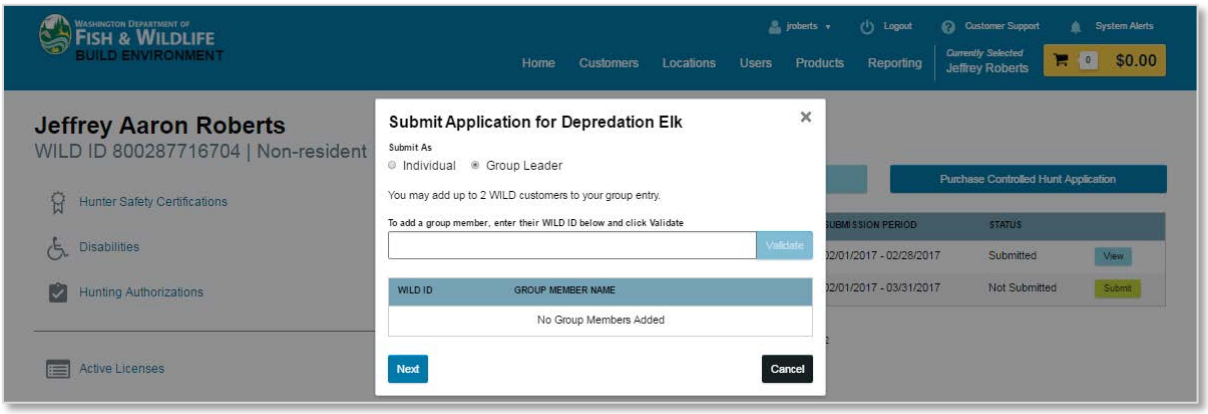
Controlled Hunt Submission

Customers will be empowered to view and submit their controlled hunt applications through the internet self-service site.



NDOW can configure the depredation to require actual submission of the application by the customer (in the event of, for example, group submissions or if hunt choice selection is required) or to have an application submission automatically submitted upon purchase.





3.4.14.5	The system must include intuitive navigation tools providing customers with quick access to their customer account (a single point of record) including services offered and their transaction history in all business areas.

JMT Technology Group understands that customer satisfaction is critically important to NDOW and that the new NDOW Licensing System will be the primary means by which many customers interact with NDOW. Providing a positive user experience through the provision of an intuitive and customer friendly sales process leads to higher levels of customer satisfaction and therefore customers that are more likely to return.

With the above in mind, our dedicated User Experience team has focused its efforts on redesigning the sales process within our solution to eliminate all unnecessary inputs, screens and mouse-clicks to ensure that the number of steps required to complete a purchase are minimized. Likewise, this team has worked to provide an intuitive, aesthetically pleasing site design that guides the user through the sales process in a manner that is aligned with other mainstream Ecommerce applications.

3.4.15 Revenue Processing & Accounting

The new NDOW Licensing System will have industry-standard financial controls built into the core of the system and within all financial components including licensing agent configuration, sales transactions, customer credits/debits, licensing agent credits/debits, ACH, and invoicing. All financial data is stored, tracked, and reported on following Generally Accepted Accounting Principles (GAAP). Reports are generated via SQL Server Reporting Services which is the main interface to the financial data. All financial reports are designed, developed and tested for accuracy prior to release.

3.4.15.1	License agents collect proceeds from sales and deposit these funds into a bank account. The solution should display the functionality to establish Automated Clearinghouse (ACH) services with the State's working bank to perform a transfer of funds from the accounts through an electronic funds transfer process (EFT) or ACH on a predetermined, weekly basis.

Generating license vendor invoices and sweeping agents on a configurable schedule is a standard component of the JMT Licensing and Recreation solution.

The new NDOW Licensing System will leverage Automated Clearing House (ACH) processes to collect license vendor funds owned to NDOW for license sales. It is anticipated that the State of Nevada Banking entity will execute the actual electronic fund transfers and the tools for configuring the ACH process, generating the ACH file (NACHA record) and securely delivering the ACH file will be provided through the new NDOW Licensing System's administrative interface.

The first step in the EFT process is the generation of an invoice which itemizes that license vendor's sales for the invoicing period and provides a total amount owned to NDOW and the date of the sweep that will collect those funds via the ACH process.

There are two ways that invoicing frequency can be configured on a license vendor by license vendor basis:

<u>Start Date and Frequency</u> – With this method the NDOW Administrator will define the date on which the first invoicing period will begin and an interval, in days, until which the next invoice should be generated. Thus, begins a fully automated process whereby a new invoice is generated after each interval. This method is more conducive to a very regular invoicing schedule.

***Next Invoice Date*– With this method the NDOW Administrator will define the date on which the next invoice should be generated and if left uninterrupted the process will similarly run in an automated fashion with the next invoice date automatically to the same day of the subsequent week or month once the invoice has been generated. This method allows the administrator to be more dynamic with regard to when invoices are generated on an agent by agent basis and it allows an on-demand invoice to be generated at any point in the cycle.**

Regardless of the selected method, each day, at a configurable time, the new NDOW Licensing System's task manager will determine if any invoices need to be generated. An invoice will be comprised of any sales and credits/debits (manual adjustments made by agency staff) that have not been invoiced. Once the invoice is generated, the sales and credits/debits will be marked as invoiced with the new invoice ID. In this way the system will know precisely the composition of every invoice.

Each invoice will include a pre-calculated sweep date based on a configurable sweep day and time (e.g. 1:00 am PST every Wednesday) and an email will be generated and sent to the retail vendor or corporation. This email will contain the sweep amount and the sweep date. A pdf version of the invoice will be attached to the email for reference.

The new NDOW Licensing System automated task manager will check once per day for invoices that need to be swept. For any scheduled sweeps a NACHA record will be generated and sent via secure FTP to the state agency or banking institution for processing.

Note that based on the above the invoicing the subsequent sweep schedule will be completely controlled by the administrator of the system whether it be a monthly, weekly or daily schedule.

The system will support automated and manual status updates, post-sweep, as well as automated and manual actions. Actions taken after a failed ACH may include the assignment of a fee and/or suspension of a license vendor's access to the system.

The history of invoices, sweeps, and the status of sweeps are made available to the properly permissioned users through the web application and can also be emailed upon a status change if required.

At the culmination of each cycle a variety of reports are available to properly allocate funds transferred from agent accounts the appropriate accounting funds.

3.4.15.2	Financial information on transactions, payments, refunds, etc. shall be available in a user defined reporting tool as part of the solution.

The ability to report on all financial data is a standard feature of the JMT Outdoor Licensing and Recreation solution.

The new NDOW Licensing System will make accessible a suite of out of the box reports to support financial management. All reports can currently be exported in either PDF or CSV formats; although the system can support a variety of other output formats. It is important to note that generating new reports is possible as the reporting engine has direct access to any data points captured by the centralized database.

JMT proposes to collaborate with NDOW on the requirements and design for any additional financial reports required to support NDOW operations.

Examples of pre-existing reports that support financial activities include, but are not limited to:

Summary of Receipts Report* – This report displays a breakdown of all sales by location and fund source for any date to support fund allocation.

***Summary of Invoice Receipts Report* – This report displays the breakdown of funds for a specified Invoice into the different fund sources for the products and services rendered.**

***Summary of Internet Receipts Report* – This report displays the breakdown of funds for a specified date range that were sold through the Internet sales configuration into the different fund sources for the products and services rendered.**

***Sales Detail Report* – This report displays all sales at a location for a specified date range.**

***Daily Revenue Report* – This report displays all product sales, in total, or by sales channel for a specified date range.**

***Purchase History Report –* This report displays all transactions along with customer information (name, address, email address, phone) for a specified product purchased within a given data range.**

Our solution also provides reports for License Dealers that support their need to balance their financial systems including but not limited to:

***License Vendor Sales Closeout* – This report shows all products sold by the license vendor within a specified date range. This report is used to support the license vendor close process.**

***License Vendor Invoice Sales* – This report shows all products sold by the license vendor within a specified date range. It can be used by license vendors to estimate invoice amounts.**

3.4.15.3	The system must automatically electronically transfer monies to the State's bank on a schedule approved by NDOW.

Per the response to 3.4.15.1, NDOW will have full control over the date and time of the ACH fund transfers.

3.4.15.4	Each transaction shall include: the amount, the user ID of the person who created the transaction, the date and time the transaction was created, the location from which it was created and a batch number used for tracking which transactions have been transmitted to the State of Nevada accounting system. In addition, the system shall also be capable of tracking changes to transactions including the nature of the change, the UserID of the person making the change, and the date and time of the change.

Facilitating and tracking sales is a primary function of our solution. The backend is a robust SQL Server database within which all system data is stored and maintained. JMT has taken great care to design and refine a database schema, based on best practices, that ensures the integrity of the data within the system and that supports all critical system functions including financial accounting which adheres to Generally Accepted Accounting Principles.

The following tables provide a high-level overview of how the system tracks sales for a license dealer. Please note that for the purposes of this proposal only a small subset of the total data captured for these entities is exposed.

Sales Locations are automatically assigned a unique identifier in the system upon creation. This unique identifier is used throughout the database as a foreign key to the dealer table. See the below sample dealer data:

Location ID	Business Name	Corporate ID	Type
4	Dick's Sporting Goods #1	32	License Dealer

7	*Dick's Sporting Goods #2*	*32*	*License Dealer*
174	*Long Mountain General Store*		*License Dealer*

When a transaction is executed the ID of the sales location is stored in the location ID column of the transaction table. Also stored is the unique user ID of the user from that location that executed the transaction and a plethora of other data about the sale.

Transaction Id	Location ID	Customer Id	User Id	Sales Channel Id	QTY	Total Sale	Finalized Date
118934	4	98293	36AD06B4-3E2D	2	2	$11.00	12/2/14 3:39 AM
118938	174	98294	3067740A-EAEC	1	3	$8.00	12/2/14 10:29 AM
118941	7	98254	56828155-1589	2	2	$11.00	12/2/14 5:09 PM
118944	174	13421	3067740A-EAEC	1	2	$12.00	12/3/14 3:15 PM

For each sales transaction (above) there will exist one or more sales transaction items which represent the individual products and fees that comprise the overall transaction. These are linked to the transaction via the sales transaction id.

Item Id	Transaction Id	Product Id	Product Code	Product Name	Number Of Units	Unit Price
11906	118934	904	N	Resident Antlerless Deer-Firearm Season	1	$10.00
11906	118934	858	PC01	Commission for Privilege	1	$1.00
11907	118938	903	LL	Non-Resident One Day Fishing	1	$3.00
11907	118938	903	LL	Non-Resident One Day Fishing	1	$3.00
11907	118938	860	GEIF01	Electronic Issuance Fee	1	$2.00
11908	118941	909	DS	Resident-Bear Damage	1	$10.00
11908	118941	858	PC01	Commission for Privilege	1	$1.00
11911	118944	904	N	Resident Antlerless Deer-Firearm Season	1	$10.00
11911	118944	860	GEIF01	Electronic Issuance Fee	1	$2.00

This relational model is implemented throughout the system and provides a mechanism to track the details of every transaction, not only to the license dealer that executed the transaction, but to the specific user at that the license dealer, and the specific device to from which that user executed the transaction. This model will scale infinitely.

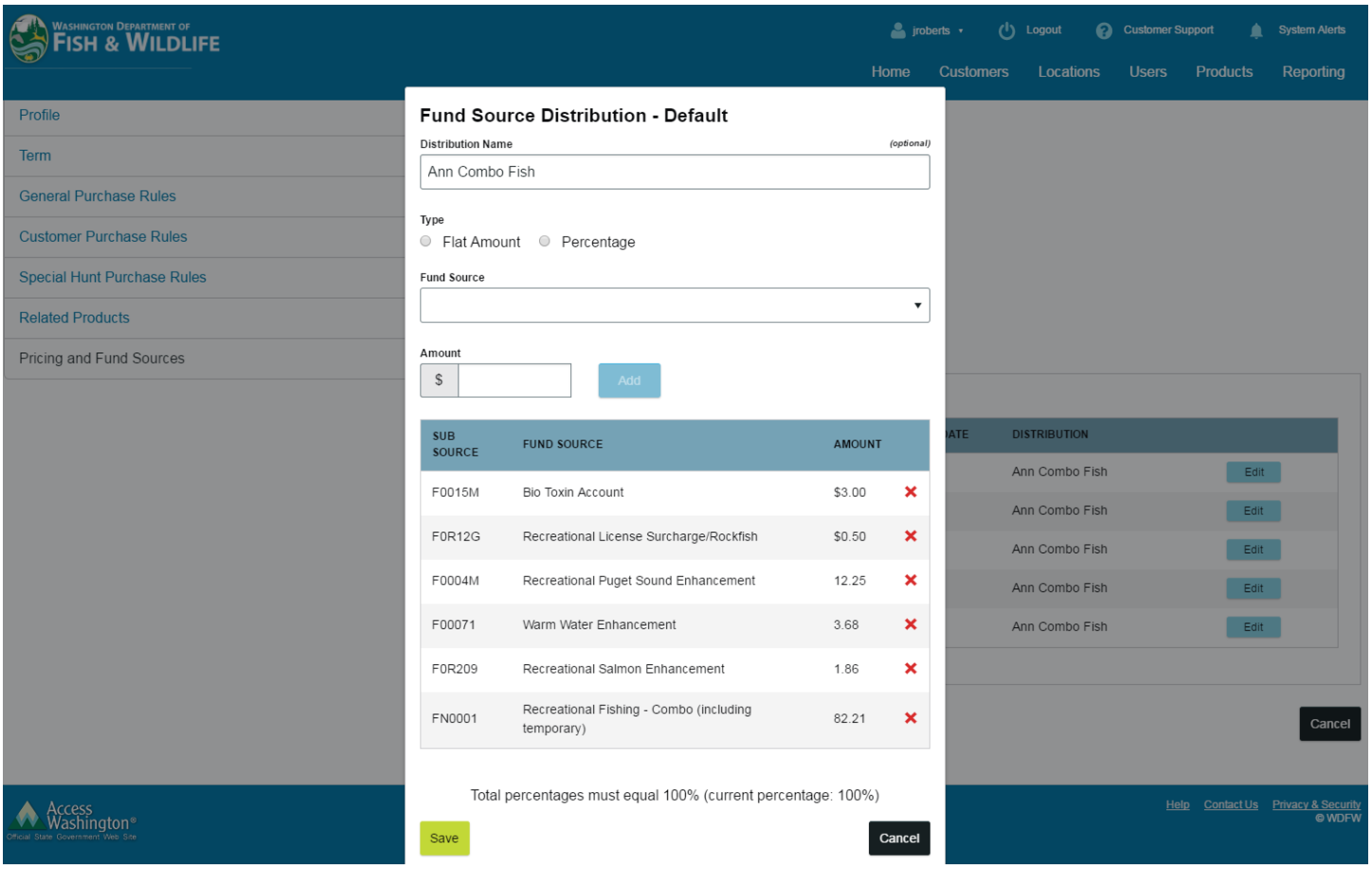
3.4.15.5 The revenue from certain types of sales must be deposited into a dedicated fund (or multiple funds). Internal NDOW revenue codes are associated with certain types of licenses and registrations. The system must provide NDOW sufficient information with each transfer of funds to identify: the number of items, amount of fees collected for specified revenue accounts or funds, and amounts retained by agents. The revenue information must meet the State's financial deposit requirements and must be summarized by fund. Financial information shall be accessible in detail and on a consolidated basis, for the entire state, by license or approval type, by revenue source code, by fiscal period or any combination of the above.

The solution implemented will use a cash basis accounting system. This means that income is not applied to accounts until it is received and expenses are not recorded until paid out.

All financial transactions (sales and voids), fees, credits/debits, and all other processes that have financial ramifications are tracked through products. There will be a variety of product types configured to meet NDOW specifications including licenses, fees, credits, debits, etc. Each product will be configured through the Administrative interface to be associated with one or more income accounts or fund sources. The allocation to a fund source may be by percentage, by fixed amount, or a combination of both. For instance, one license costing $50 can be set-up so that 25% ($12.50) goes to one fund source, 25% ($12.50) goes to another fund source, and the balance of 50% ($25.00) goes to yet another fund

source.

Reports will be developed in accordance with NDOW requirements and made accessible through the application, which provide the detailed breakdown of incoming revenue to specific accounting funds based on the products sold.

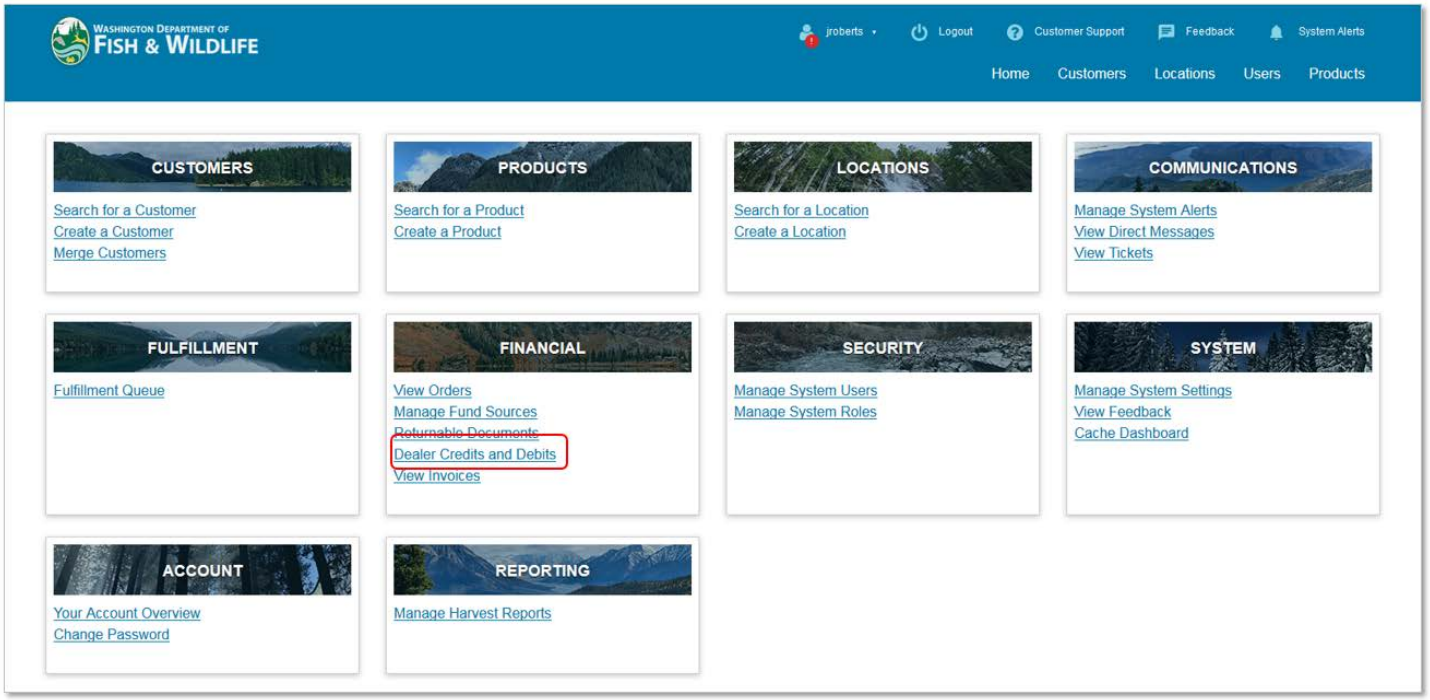


3.4.15.6	The awarded vendor's solution must provide NDOW with the ability to make adjustments to agent account balances and track such adjustments.

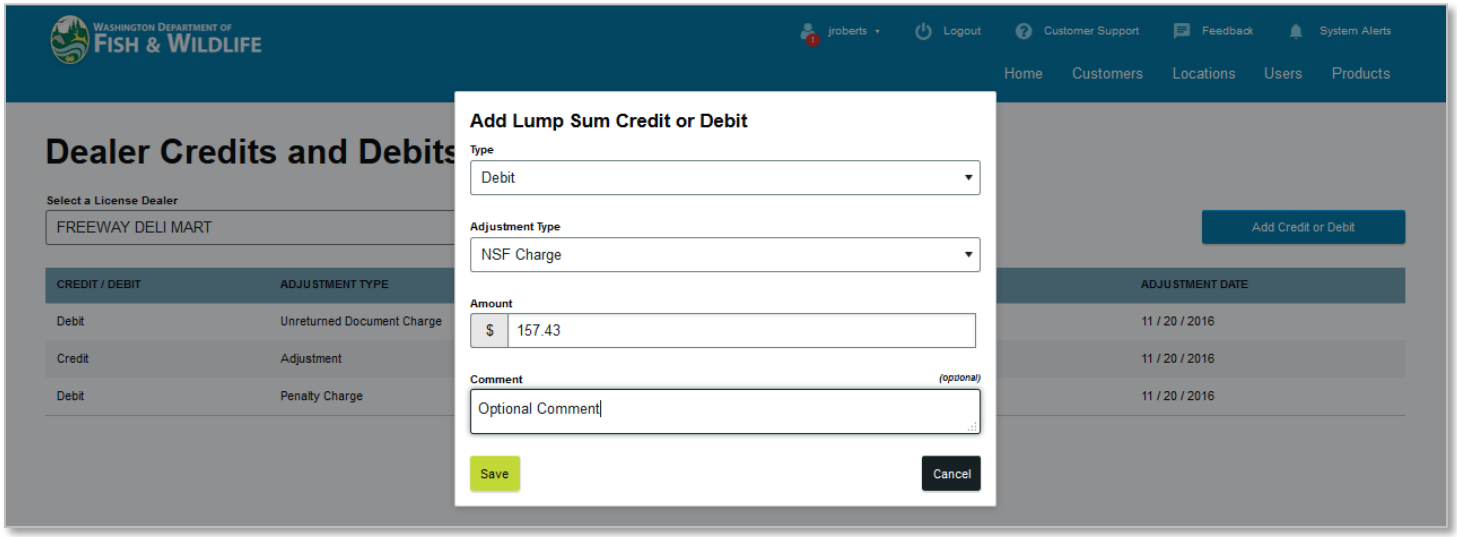
JMT's solution supports, as standard functionality, the automated and manual application of credits and debits to license vendors accounts and the incorporation of these credits and debits into the invoicing / ACH process.

Examples of automated credits and debits include state cancelations of license vendor sales transactions and penalties assessed for non-sufficient funds during the ACH process.

To manually assess a credit or debit, the NDOW Administrator will click "Dealer Credits and Debits" from the internal home page and select a license vendor from the drop-down list.



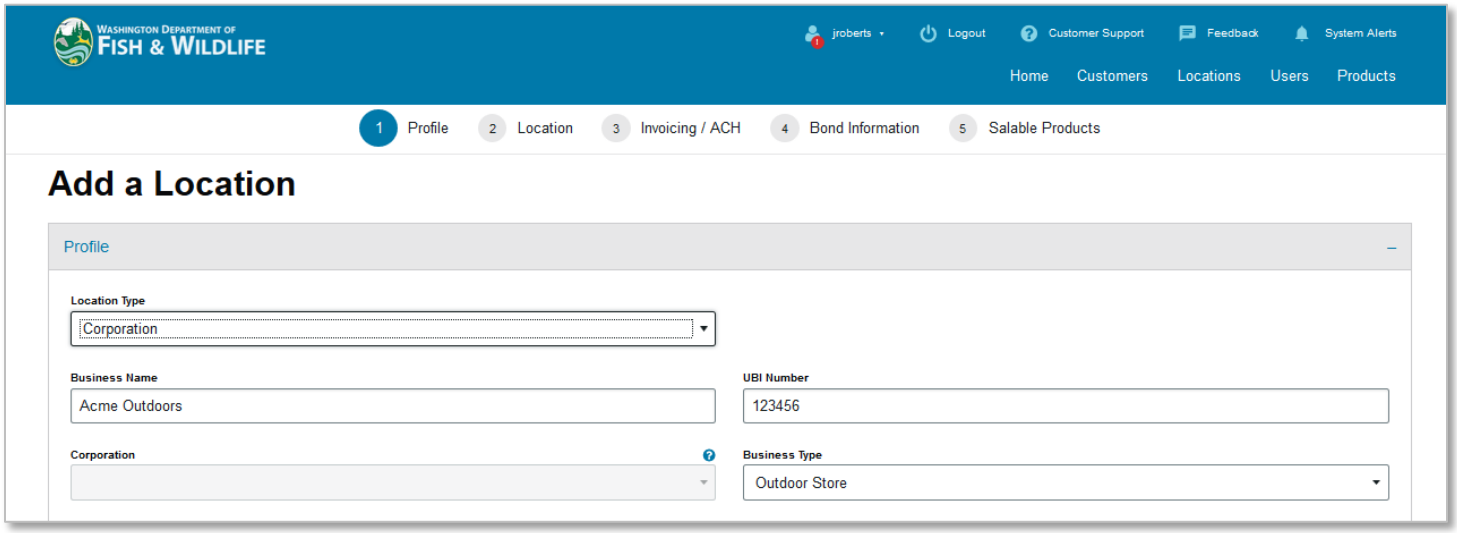
The NDOW Administrator will click "Add Credit or Debit" and enter all required information.



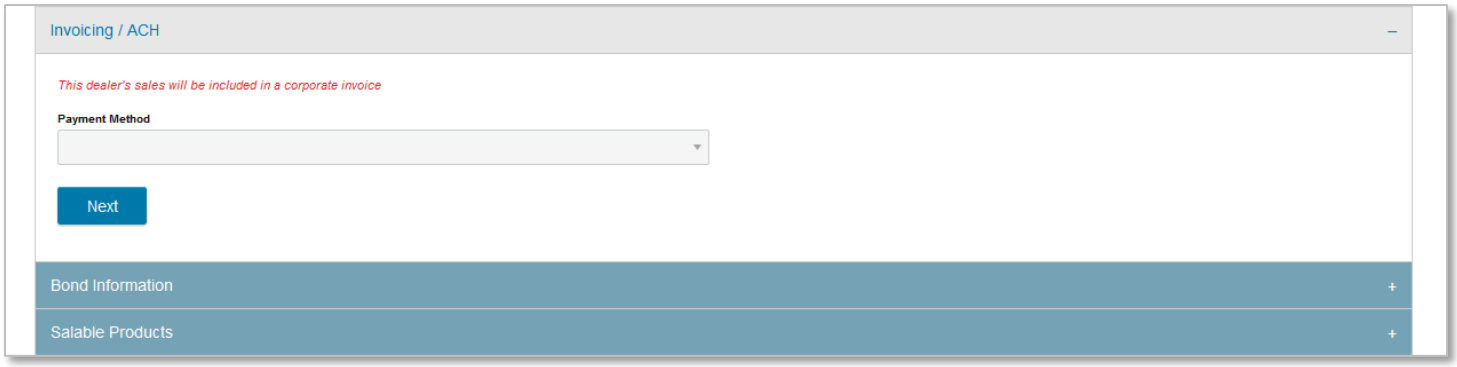
3.4.15.7	Agents that are affiliated through corporate chains must be identifiable as such; however the solution must be flexible to allow a central corporate account or individual accounts for the corporation. Records must be easily identified in order to be accumulated by chain/corporate affiliation. Corporate headquarters that request centralized processing must be provided a means of accessing weekly transfer of funds, which includes site-specific information in a usable, timely format at no additional cost. Vendors must describe how this requirement will be met.

The ability for authorized NDOW users to create and manage corporations, to associate license vendors with a parent corporation, and to invoice at the corporate level is standard functionality of the JMT's solution.

Note in the screen below that the NDOW Administrator can define the "Type" of location as "Corporation" when creating a new corporation in the system or when creating a license vendor can optionally indicate a corporate association.



Note also that when a license vendor is configured with a corporate association and the invoicing is configured to take place at the corporate level that this will be reflected within the license vendor's "Invoicing / ACH" attributes.



JMT's solution supports the creation and configuration of a "corporate" role that when assigned allows the assignee to login to the system and access information at the corporate level including weekly invoices.

3.4.15.8	The awarded vendor must work closely with NDOW, banking institutions, the State's bank, and the State Treasurer's Office to establish policies for handling electronic transfer of funds failures.

JMT will work closely with NDOW, banking institutions, the State's bank, and the State Treasurer's Office to establish policies for handling electronic transfer of funds failures.

3.4.15.9	The awarded vendor must develop an interface per NDOW specifications that will report remittance dollars in a format that is compatible with the State's accounting system.

JMT will develop an interface per NDOW specifications that will report remittance dollars in a format that

is compatible with the State's accounting system.

3.4.15.10	The system shall allow accurate methods of accounting based on user defined parameters.

The new NDOW Licensing System will have industry standard financial controls built into the core of the system and within all financial components including licensing agent configuration, sales transactions, customer credits/debits, licensing agent credits/debits, ACH, and invoicing. All financial data is stored, tracked, and reported on following Generally Accepted Accounting Principles (GAAP). Reports are generated via SQL Server Reporting Services; which is the main interface to the financial data. All financial reports are designed, developed and tested for accuracy prior to release.

3.4.15.11	Describe the system's ability to provide user defined reporting on financial information, including reports and query capabilities.

The ability to report on all system data is a standard feature of the JMT's solution.

The new NDOW Licensing System will make accessible a suite of out of the box reports to support financial and customer management. Reports will be accessible through NDOW Licensing Application and will accept user-defined parameters. All reports will be exportable to PDF and to Microsoft Office formats.

JMT proposes to collaborate with NDOW on the requirements and design for all required reports and commits to meeting all reporting requirements outlined

A few examples of pre-existing reports include, but are not limited to:

Summary of Receipts Report – This report displays a breakdown of all sales by location and fund source for any date to support fund allocation.

Summary of Invoice Receipts Report – This report displays the breakdown of funds for a specified Invoice into the different fund sources for the products and services rendered.

Summary of Internet Receipts Report – This report displays the breakdown of funds for a specified date range that were sold through the Internet sales configuration into the different fund sources for the products and services rendered.

Sales Detail Report – This report displays all sales at a particular location for a specified date range.

Daily Revenue Report – This report displays all product sales, in total, or by sales channel for a specified date range.

Purchase History Report – This report displays all transactions along with customer information (name, address, email address, phone) for a specified product purchased within a given data range.

Our solution also provides reports for License Dealers that support their need to balance their financial systems:

Agent Sales Closeout – This report shows all products sold by the agent within a specified date range. This report is used to support the agent close process.

Agent Invoice Sales – This report shows all products sold by the agent within a specified date range. It can be used by agents to estimate invoice amounts.

3.4.16	System Administration Tools/User Interface

3.4.16.1	The awarded vendor must provide a web interface which allows designated internal and external users access to specific functions and data of the proposed system. NDOW will identify approximately 2,700 users who require access to the system (for example, NDOW staff, license agents, safety instructors, law enforcement officers, etc.). The administrative tool will provide a secure web interface that will be used to access and manipulate real-time data. The web must provide reporting regarding hits to all options of customer marketing and other options to ensure NDOW's ability to retain and recruit customers interested in Wildlife.

The new NDOW Licensing System will provide a management tool that is comprised of a suite of administration and configuration tools and that empowers NDOW users to make the day to day operational changes that are critical to the operation of the licensing system.

<u>The control center will provide Administrative control of:</u>

<u>NDOW Licensing System Configuration</u>
The JMT Outdoor Licensing and Recreation platform provides significant configuration capabilities with most system configuration parameters accessible to NDOW administrators through the web-based user interface.

<u>Product Configuration</u>
Administrators can create and update products in the system including configuring all properties that control the availability of products for purchase by individual customers, product pricing, and the relationship to other products in the system.

<u>User Account Management</u>
Administrators can create, update and delete user accounts including the assignment of user roles and permissions. The administration of users under their purview can be delegated to Corporate and Dealer administrators

<u>Customer Account Management</u>
Administrators can create and update customers including all aspects of customer account management

<u>License Dealer Account Management</u>
Administrators can create and update license vendors in the system including but not limited to financial information, the types of products and services the agent can offer for sale, inventory allotments and users.

<u>Survey and Harvest Report Creation</u>
Administrators can create, edit and deploy dynamic input forms complete with sophisticated question types, client-side input validation, and configurable workflows and deploy these forms as surveys and harvest reports.

<u>Controlled Hunt Category and Hunt Choices</u>
Administrators can create and manage special permit hunt categories and special permit hunt choices. They will also can manage the permit applications submitted by customers and the execution of drawings.

<u>Communications with License Dealers and Licensing Staff</u>
Administrators can send out directed communications to internal users in the form of application notifications and emails.

<u>Email Marketing Campaigns</u>
Administrators can create email templates and email marketing campaigns.

<u>Inventory Creation and Allocation</u>
Administrators can create and update inventory items in the system and the allocation of inventory items

to license dealers.

3.4.16.2	Vendors should describe how the proposed solution would meet the high-volume use and security requirements.

Architected for Performance

The Azure configuration that JMT has architected and proposed for the NDOW Licensing System is designed to ensure optimum performance under extremely high load. At the outset JMT will leverage Azure estimation tools to determine the appropriate size and number of instances for PaaS services to provide a high-level of performance based on NDOW's historic transaction volume, including peak volumes.

JMT recognizes that Licensing and Recreation systems are subject to extreme and variable spikes in demand because, as we've been told more than once, "Hunters are the biggest procrastinators in the world."

The architecture we have proposed accounts for these situations. Azure technology provides scalability to withstand increased workloads. During increased seasonal load, JMT will increase the computing resources of both the application and database to mitigate any performance impacts. Scaling these resources helps to ensure that the solution continues to be responsive under increased load.

Scaling in Azure can be accomplished in the following ways:

Scheduled: ***Resource allotment can be configured to change on a set basis such as specific date range, weekend, weekdays, etc.***

Automatic: ***Azure is intelligent enough to sense increases in resource usage on each machine. If configured, the machines will auto scale if pre-defined thresholds are exceeded. Alternatively, if usage is very low then the resources will be scaled back to meet demand.***

Manual: ***A system administrator provisions additional computing resources.***
While automatic scaling will be in place, there are times when scheduling the environment to scale up resources is more beneficial. For example, during periods of high usage, such as the beginning of hunting season, JMT can scale up resources to meet the expected demand. This type of operation allows the solution to proactively deal with system load as opposed to a reactive approach.

Performance and Load Testing

JMT will use a 3rd party load testing tools, such as Visual Studio Web Performance and Load Tests, to stress test the environment. The tool can be configured to simulate any number of concurrent users and operations against the application. JMT will load test the system under increasingly heavy load to simulate top end conditions.

JMT will provide NDOW with a load/stress test of the sales system showing the test, number of concurrent users, response time average, and error percentage. We will work with NDOW to ensure the system can handle the specified system load.

Prior to production release JMT will ensure that NDOW stakeholders have 100% confidence in the system's ability to perform under all load conditions.

Security

JMT understands that security is one of the singular most important tenants of a successful system

rollout. Security covers a broad range of topics; including physical site security, protection of personal data and information, and data security.

<u>Azure Hosting</u>

The Azure hosting platform, and Microsoft itself, put a strong emphasis on security and providing a secure platform for applications hosted in their cloud environment.

Outlined below are ten key security components of Azure:

- ***SSL mutual authentication for internal control traffic***
- ***Certificate and private key management***
- ***Least privilege customer software***
- ***Access control in Azure storage***
- ***Isolation of hypervisor, root OS, and guest virtual machines***
- ***Isolation of fabric controllers***
- ***Packet filtering***
- ***VLAN isolation***
- ***Deletion of data***
- ***Azure adheres to a wide array of international and industry-specific compliance standards. These standards include ISO 27001, HIPAA, FERPA, FedRAMP, SOC 1, and SOC 2. In addition, Azure undergoes a series of third-party audits, such as by the British Standards Institute, to ensure that all security standards are met.***

<u>Physical Site Security</u>

Physical access to the Azure Infrastructure is strictly controlled both at the perimeter and at building ingress points by professional security staff utilizing video surveillance, intrusion detection systems, and other electronic means. Authorized staff must pass two-factor authentication, a minimum of two times, to access data center floors. All visitors and contractors are required to present identification and are signed in and continually escorted by authorized staff. Microsoft only provides data center access and information to employees and contractors who have a legitimate business need for such privileges. All physical access to data centers by employees is logged and audited routinely. The automatic fire detection system utilizes smoke detection sensors in all data center environments, mechanical and electrical infrastructure spaces, chiller rooms and generator equipment rooms. The Azure data center electrical power systems are designed to be fully redundant and maintainable without impact to operations, 24 hours a day, and seven days a week. Uninterruptible Power Supply (UPS) units provide back-up power in the event of an electrical failure for critical and essential loads in the facility. Data centers use generators to provide back-up power for the entire facility. Microsoft monitors electrical, mechanical, and life support systems and equipment so that any issues are immediately identified. Preventative maintenance is performed to maintain the continued operability of equipment.

<u>Protection of Personal Data and Information</u>

The protection of data is paramount to JMT and therefore security is prioritized at every layer of the system.

The NDOW Licensing Systemapplication will enforce with a role-based security scheme protected by username and password. Access to the NDOW Licensing System by a customer, agent, or internal user to access the web portal, they will need to log into the system. The system will enforce common practices of security like strong passwords and frequent password changes.

All personally identifiable information (PII) or other sensitive data such as banking information will be encrypted at rest in the database. The application utilizes Password-Based Key Derivation Function 2 (PBKDF2) which is the recommended encryption algorithm for .NET by The Open Web Application Security Project (OWASP).

All data will be encrypted when transmitted electronically. All data transfers between the servers and client devices will be encrypted using the TLS 1.2 specification. To minimize the data at risk, JMT will not transmit any PII data from the servers unless the authenticated user has the proper role and permissions to view such data.

For migration of existing customer information, JMT will require that data be transferred to our facility via a secure method of transmission. The details on this transfer will be agreed upon between the two parties prior to transmission.

JMT will obfuscate sensitive data secured at JMT's development facility so in the event that a malicious attack occurs on JMT servers, no real data is compromised. Procedures are in place to take data from production, obfuscate it, and restore it back to JMT for development purposes.

Web Application Firewall

In addition to Azure's native security features, JMT will configure a third-party Web Application Firewall in front of the Microsoft Azure environment to monitor and log intrusion attempts as well as DDOS attacks, SQL injection attacks, cross-site scripting, cross-site forgery requests, and other such security threats. While on premise firewalls can quickly become outdated and require professional service hours to regularly update rules to protect against new threats thirds party services such as that provided by Cloudflare help you stay ahead of threats by automatically updating when new security vulnerabilities are released.

Network Security

The new NDOW Licensing System will implement Transport Layer Security (TLS 1.2) to encrypt data during transmission.

3.4.17	Point of Sale Requirements
3.4.17.1	The awarded vendor must provide a Point of Sale component for the automated licensing system. System design and presentation of screens that will be viewed by our agents and customers will be approved by NDOW. Project interval and deliverable acceptance must be included in the project plan for design and development of the new site. Acceptance on each interval and screen will be required prior to any deployment. System functionality shall include, but not be limited to, the following:

JMT's JMT Outdoor Licensing and Recreation solution is a singular web application that fully supports the execution of point of sale transactions at agent locations through a standard web browser. As such the POS configuration requires only the ability to access the internet via a web browser and the ability to connect a variety of peripheral devices through standard USB ports.

Low Cost, Highly-Effective POS Configuration

License Vendors will access the system via a web-browser on the all-in-one touch screen devices specified above. The devices will be configured to run in "Kiosk" mode which means that the license vendor clerks using them will have access only to the browser running the NDOW Licensing application in full screen mode. No other programs will be accessible to the users nor will they be able to access other web sites. This is accomplished using an innovative application of Windows 10 Assigned Access functionality.

Efficient, Intuitive Sales Tool for License Agents

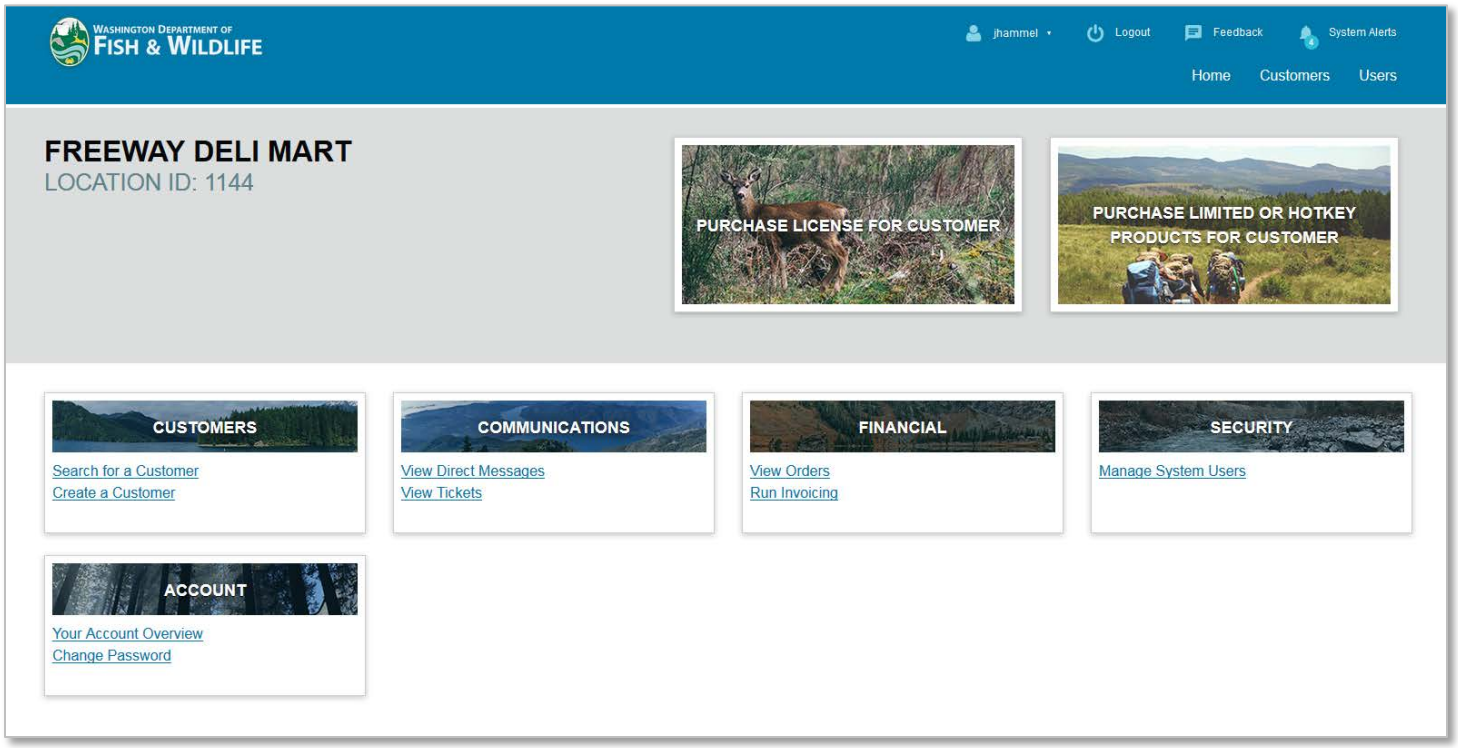
JMT understands that License Vendors often find themselves with long lines of customers to serve, especially during busy seasons and for specific time-sensitive sales events, and that a positive sales experience for customers reflects positively on the vendors and NDOW alike. For this reason, JMT has focused intently on ensuring our product provides an efficient, intuitive sales tool for License Vendors.

License Vendor – Typical Purchase Transaction

The following describes the typical License Vendor sales process.

Step 1: Login to System

The License Vendor will login to the NDOW Licensing System to access the landing page for their location. The functionality exposed through the license vendor landing page will be variable based on the permissions / group membership of the user logging in. Typically, the system is configured to include, at minimum, a License Vendor Admin and License Vendor Clerk group but other License Vendors accounts can be configured in the system; for example, a role for invoice management.



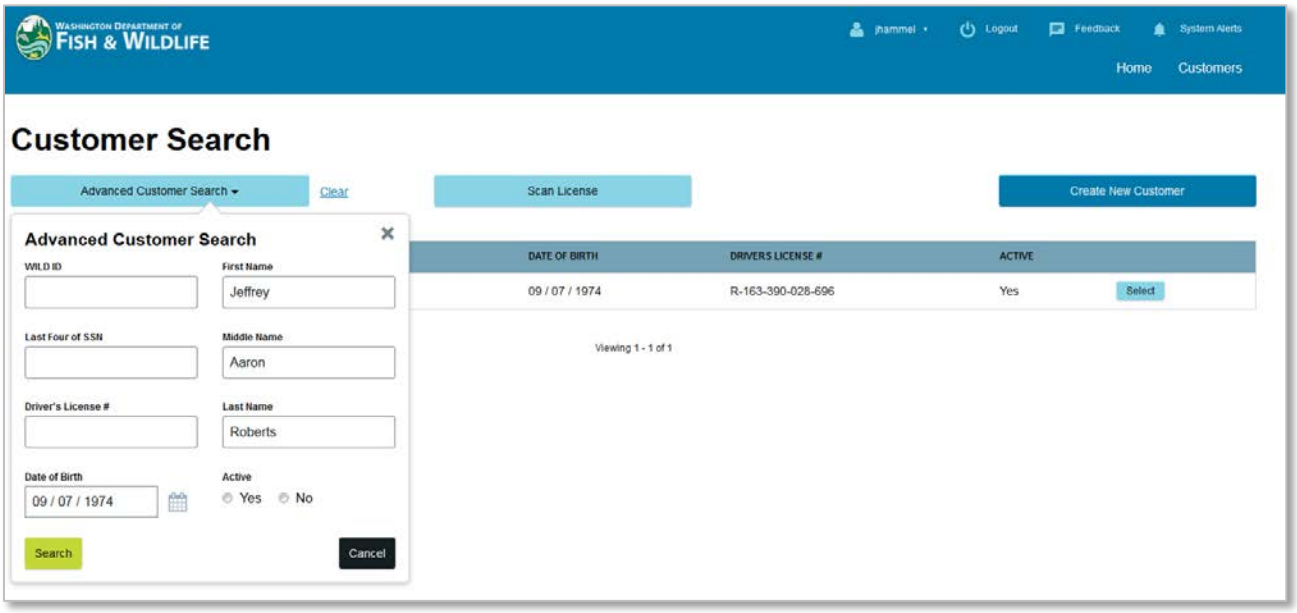
<u>Step 2: Locate Customer in System or Create New Customer</u>

The ability for a License Vendor to search for a customer account is a standard component of our Outdoor licensing and recreation solution.

An individual customer's account will be created only once in the system and from that point forward all activity (product purchases, game checks, special hunt applications etc.) will be associated with that account. Licenses vendors will be provided an easy and intuitive search screen to locate existing customers in the system and to access their account. This search will support a variety of options including unique customer Id, name, date of birth, driver's license number and more. The search is additive so that providing additional search parameters will progressively narrow down the results.

The NDOW Licensing System will also support scanning the barcode on the customer's driver's license or hunting / fishing license to automatically locate the customer in the system. The customer search will be configured to meet NDOW's exact specifications.

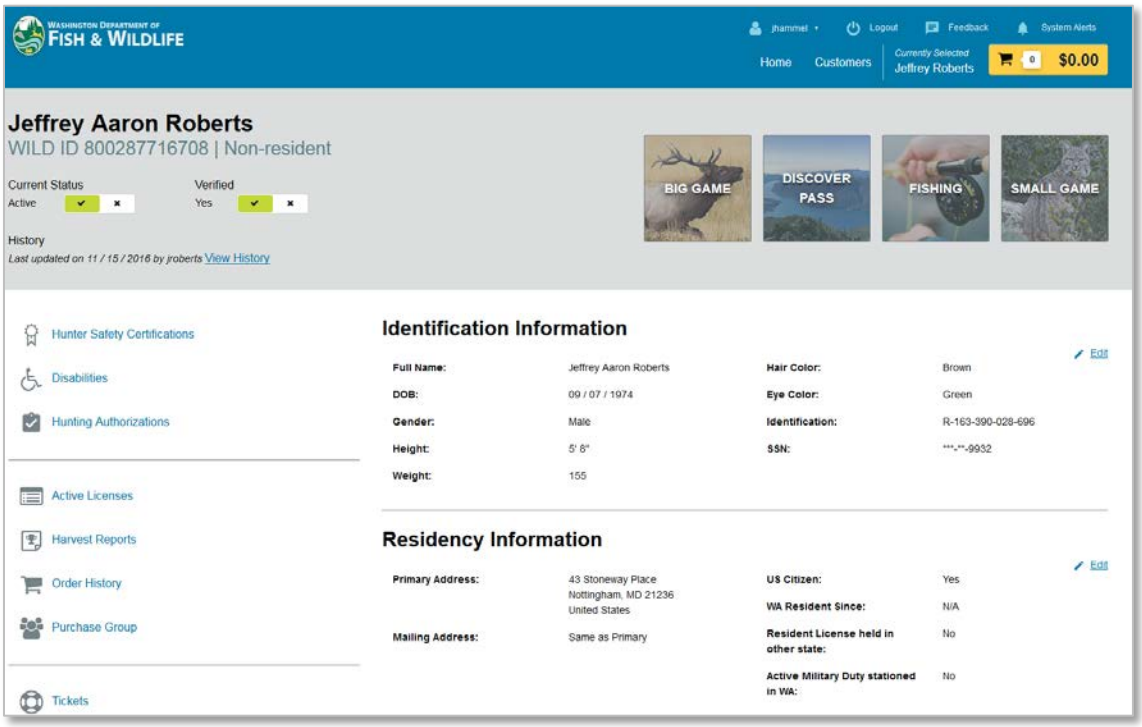
If a customer cannot be located through the customer search the license vendor will choose to 'Create New Customer' and will be stepped through the intuitive customer creation wizard which guides the license vendor through the collection of the information required by NDOW to create a new customer. A significant portion of this information can be automatically populated by scanning the customer's driver's license.



Step 3: Access Customer Home Page

Once a customer is located and selected or created in the system, the license vendor is directed to that customer's customer home page. This screen provides an intuitive dashboard from which the license vendor can access the functionality and data needed to service customers. This might be selling a product, editing some aspect of the customer's profile or reporting harvest information.

The customer home page is the launching point for license vendor customer service in the NDOW Licensing System and will be configured to expose the data and functionality required to meet NDOW requirements.



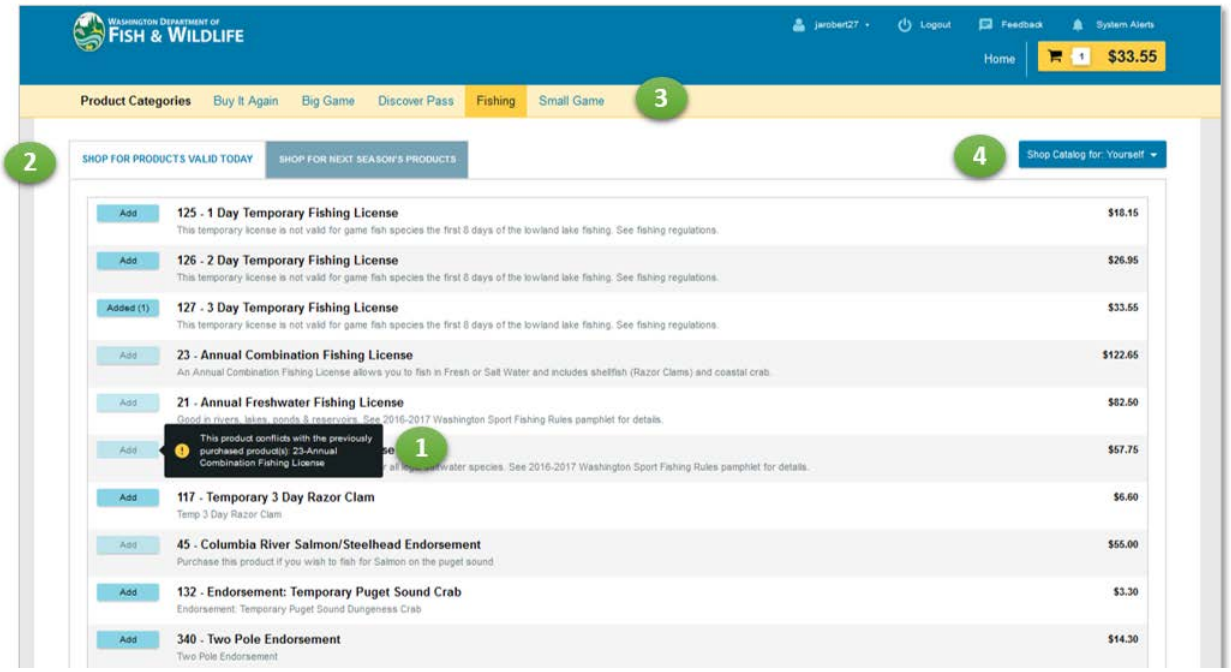
Step 4: Access the Product Catalog and Select Products to Add to the Customer's Shopping Cart

From the customer landing page, the license vendor will simply select a product category (e.g. Fishing) and will be redirected the intuitive product catalog. JMT's Outdoor Licensing and Recreation platform enforces a robust set of business rules during each sales transaction. These rules are defined by the Administrator during product configuration and are enforced during the sales transaction.

The new NDOW Licensing System will implement an "Intelligent Product Catalog" that will match a product's configurable product purchasing rules to the customer's profile and purchase history to allow or disallow the purchase of products as well as to enforce other purchasing rules such as prerequisite products.

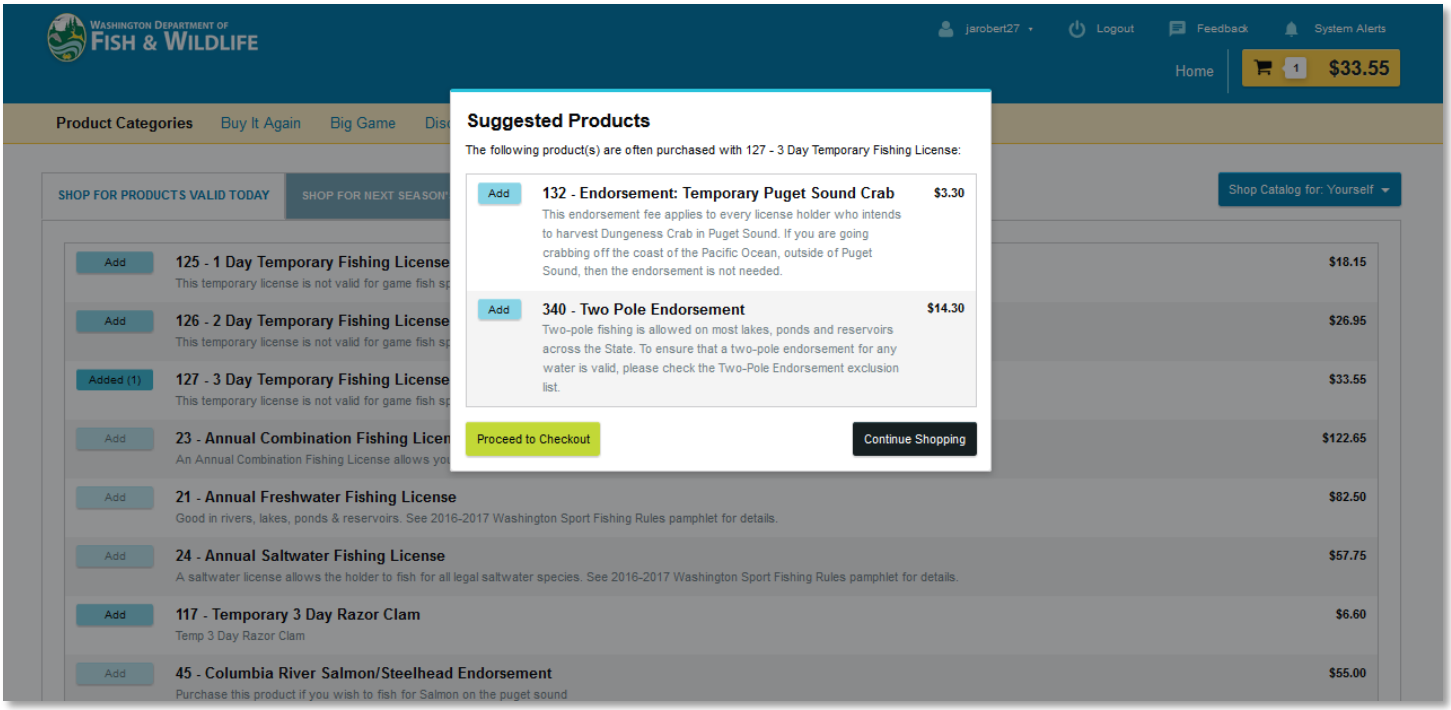
A quick overview of our product catalog's intuitive features:

1. ***Informative messages let license vendors know the reason that a given product cannot be purchased.***
2. ***An easy to understand tabbed interface supports product sales for overlapping seasons.***
3. ***The license vendor can easily navigate between product catalog categories.***
4. ***Our solution supports shopping for a customer as well as others in their "purchase group" such as a family member.***



Step 5: Select Products to Purchase and Add to Cart

The license vendor need only click "Add" to select the products to purchase and add those products to their shopping cart. NDOW can configure "Up Sells" and "Cross Sells" that simultaneously assist the license vendor in selling the products the customer needs or may want and help to drive sales revenue. This is demonstrated by the "Suggested Products" modal below which presents when choosing to add the 3 Day Temporary Fishing product to the shopping cart.

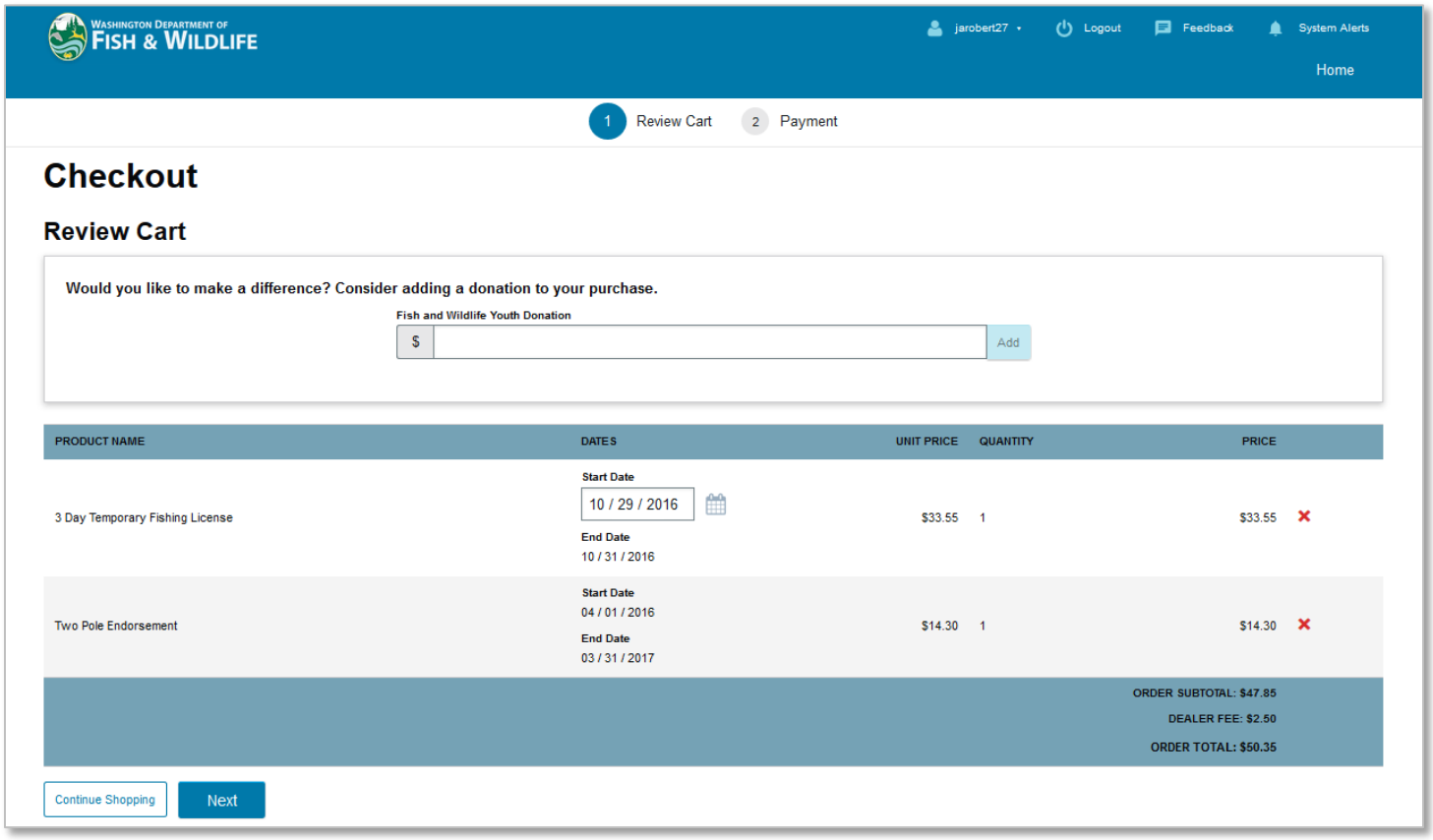


<u>Step 6: Proceed to Checkout and Review Cart</u>

The license vendor will click "Proceed to Checkout" from a modal window such as the one above or by clicking on the shopping cart icon in the banner.

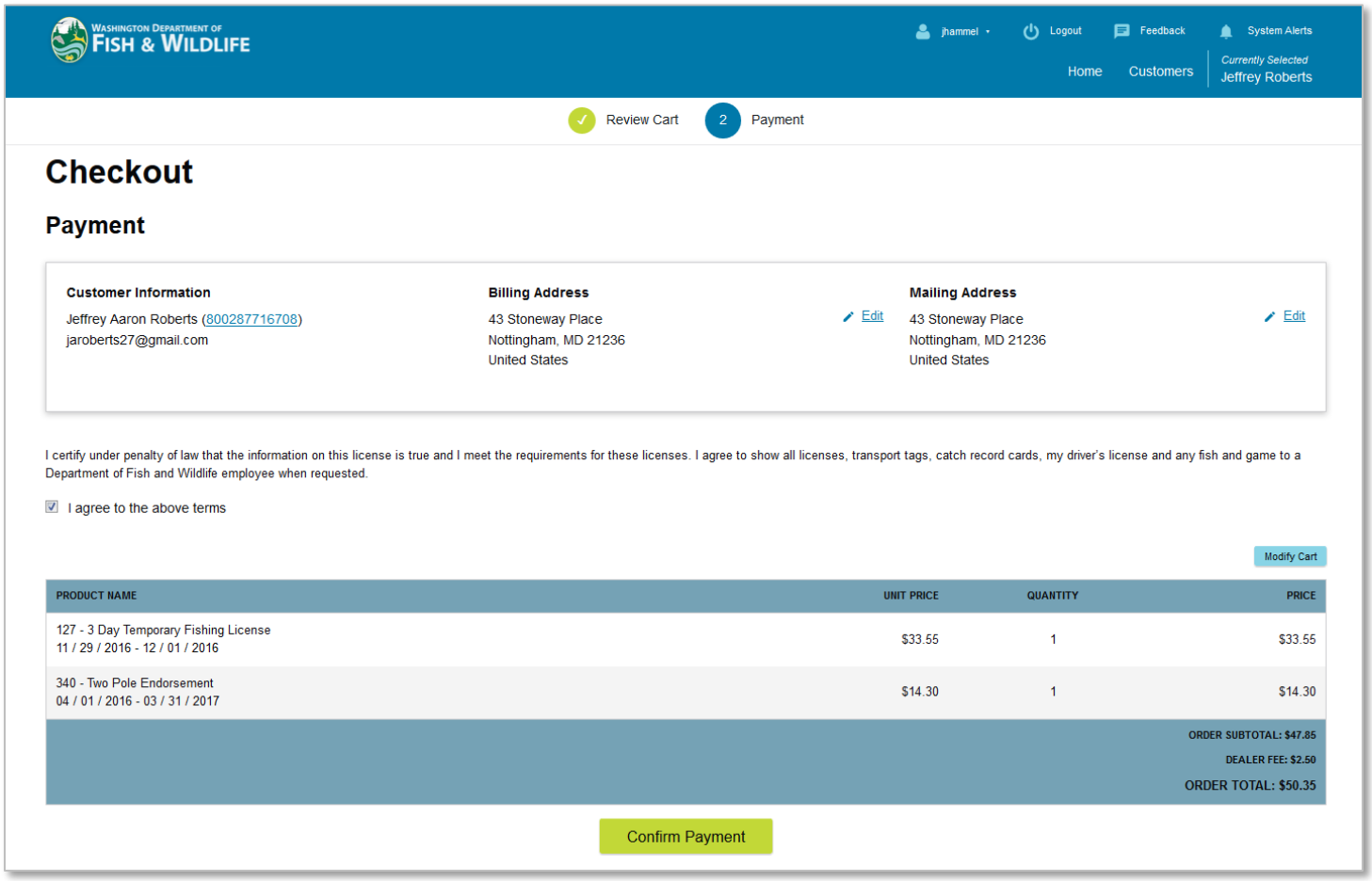
The license vendor will then review the shopping with the customer, make any adjustments (e.g. remove an unwanted product, increment the quantity on a product) and request the effective date for any variable start date products.

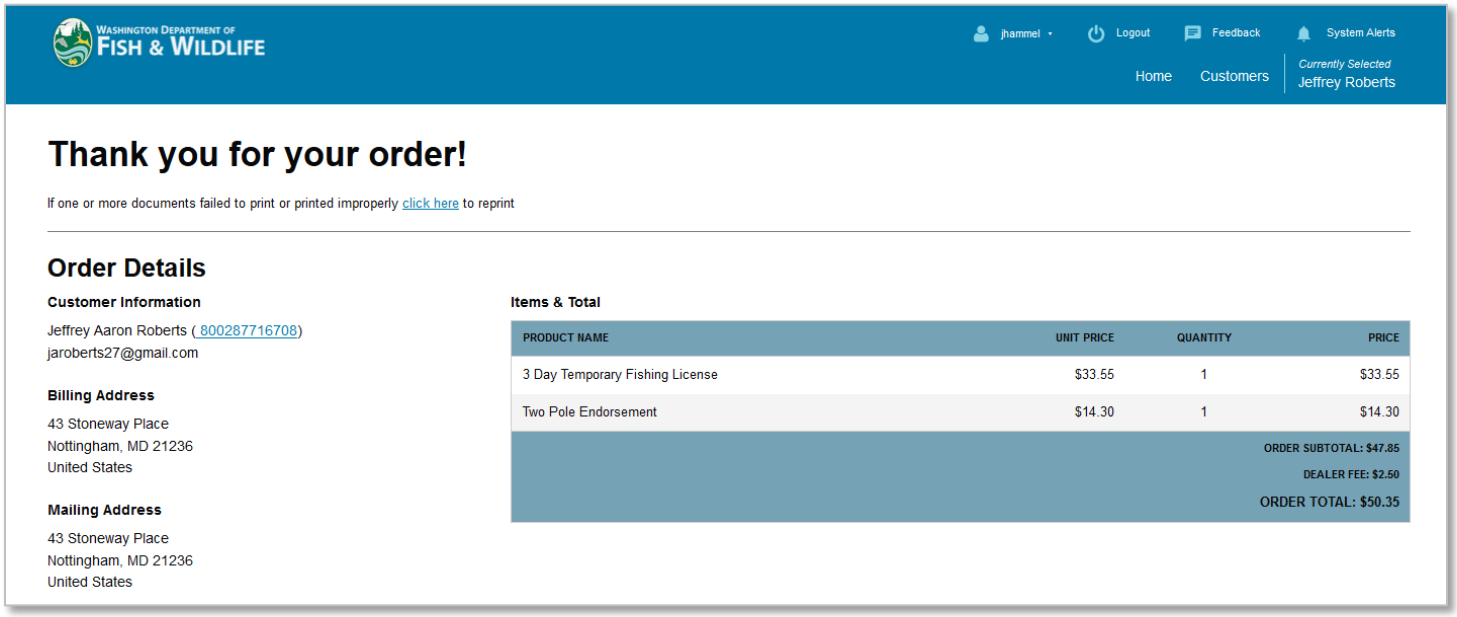
Once complete the license vendor will click "Next" to proceed to the payment screen.



Step 7: Confirm Payment Received and Print Documents

The license vendor will provide the order total to the customer and collect payment into their own POS System. Once payment has been collected the license vendor will simply click Confirm Payment to finalize the sales transaction in the system and all corresponding documents including the license, receipt and any supplemental documents such as transport tags will automatically be sent to the POS Configuration's thermal printer. The license vendor will automatically be redirected to the confirmation page. In the unlikely event that one or more documents fails to print or prints incorrectly, the license vendor will be presented an opportunity to reprint documents as required.


Washington Department of Fish & Wildlife
jhammel
Logout
Feedback
System Alerts
Home
Customers
Currently Selected
Jeffrey Roberts
Review Cart
2 Payment
Checkout
Payment
Customer Information
Jeffrey Aaron Roberts (800287716708)
jaroberts27@gmail.com
Billing Address
43 Stoneway Place
Nottingham, MD 21236
United States
Edit
Mailing Address
43 Stoneway Place
Nottingham, MD 21236
United States
Edit
I certify under penalty of law that the information on this license is true and I meet the requirements for these licenses. I agree to show all licenses, transport tags, catch record cards, my driver's license and any fish and game to a Department of Fish and Wildlife employee when requested.
I agree to the above terms
Modify Cart
PRODUCT NAME
UNIT PRICE
QUANTITY
PRICE
127 - 3 Day Temporary Fishing License
11 / 29 / 2016 - 12 / 01 / 2016
$33.55
1
$33.55
340 - Two Pole Endorsement
04 / 01 / 2016 - 03 / 31 / 2017
$14.30
1
$14.30
ORDER SUBTOTAL: $47.85
DEALER FEE: $2.50
ORDER TOTAL: $50.35
Confirm Payment


Washington Department of Fish & Wildlife
jhammel
Logout
Feedback
System Alerts
Home
Customers
Currently Selected
Jeffrey Roberts
Thank you for your order!
If one or more documents failed to print or printed improperly click here to reprint
Order Details
Customer Information
Jeffrey Aaron Roberts (800287716708)
jaroberts27@gmail.com
Billing Address
43 Stoneway Place
Nottingham, MD 21236
United States
Mailing Address
43 Stoneway Place
Nottingham, MD 21236
United States
Items & Total
PRODUCT NAME
UNIT PRICE
QUANTITY
PRICE
3 Day Temporary Fishing License
$33.55
1
$33.55
Two Pole Endorsement
$14.30
1
$14.30
ORDER SUBTOTAL: $47.85
DEALER FEE: $2.50
ORDER TOTAL: $50.35

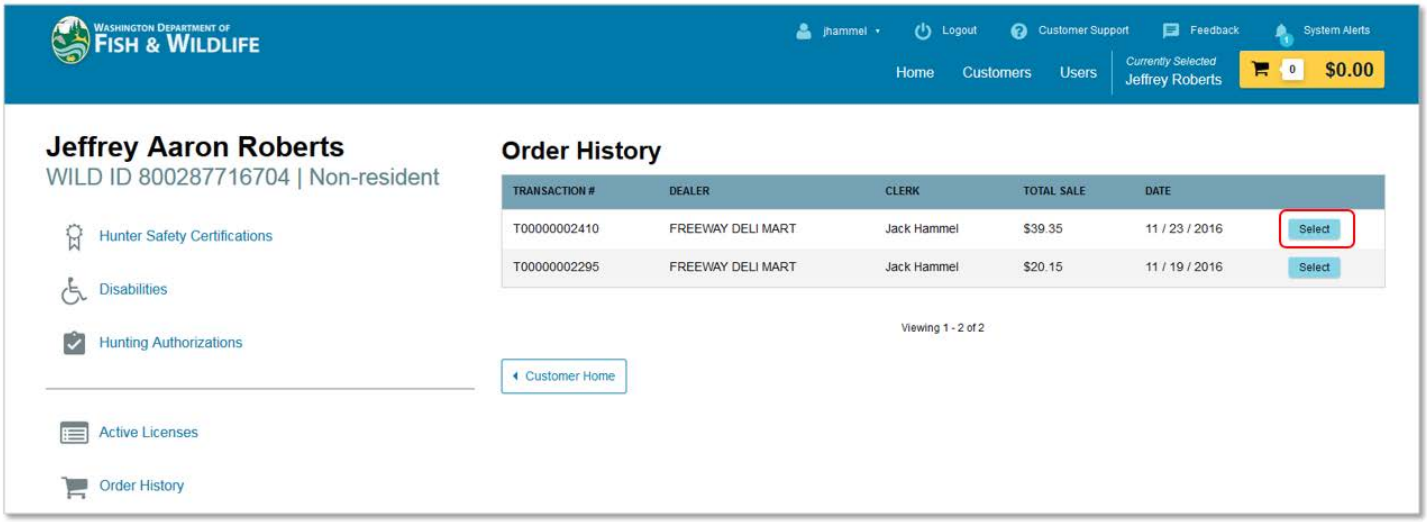
A.	Void Completed Sales – The system must provide capability to void sales. NDOW staff must be able to void a portion of a sale while agents will be limited to voiding a complete sale. The system must also support a programmable time limit for entering a void transaction at POS. The system must provide NDOW the capability to change the time limit allowed for a POS void. Only users with the appropriate level of security may void a transaction or portion of a transaction.

Support for cancellations / voids is a standard component of JMT's solution.

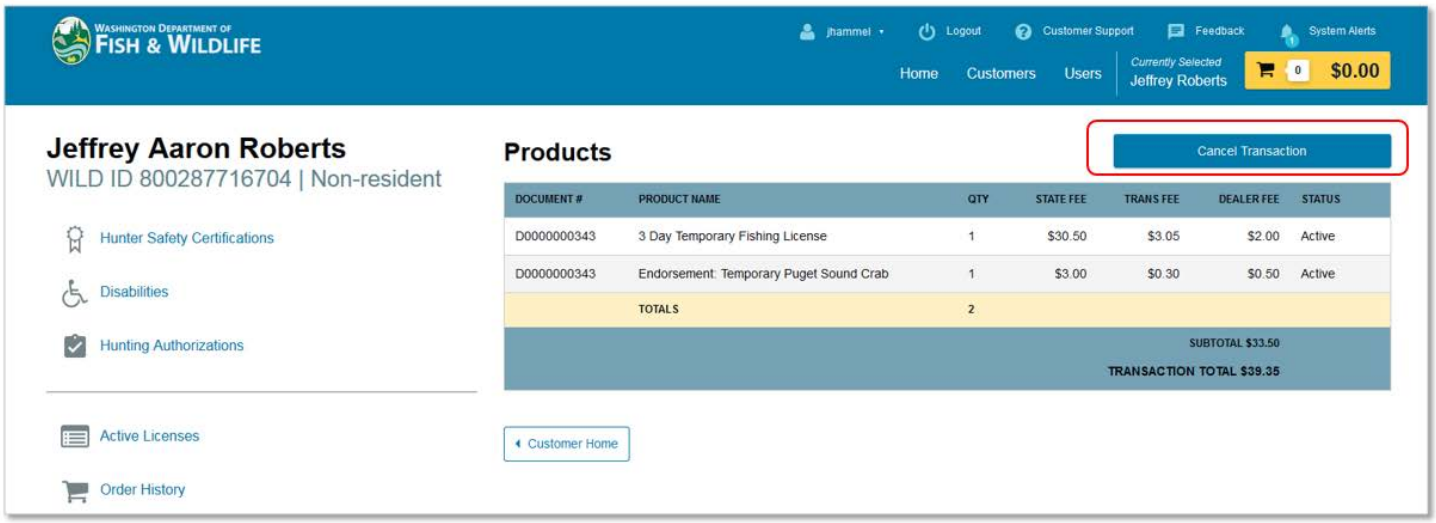
JMT will work collaboratively with NDOW to configure this functionality within the new NDOW Licensing System in accordance with NDOW business rules. This includes configuring the time constraints that surround this functionality as well as configuring permissions that support NDOW business process.

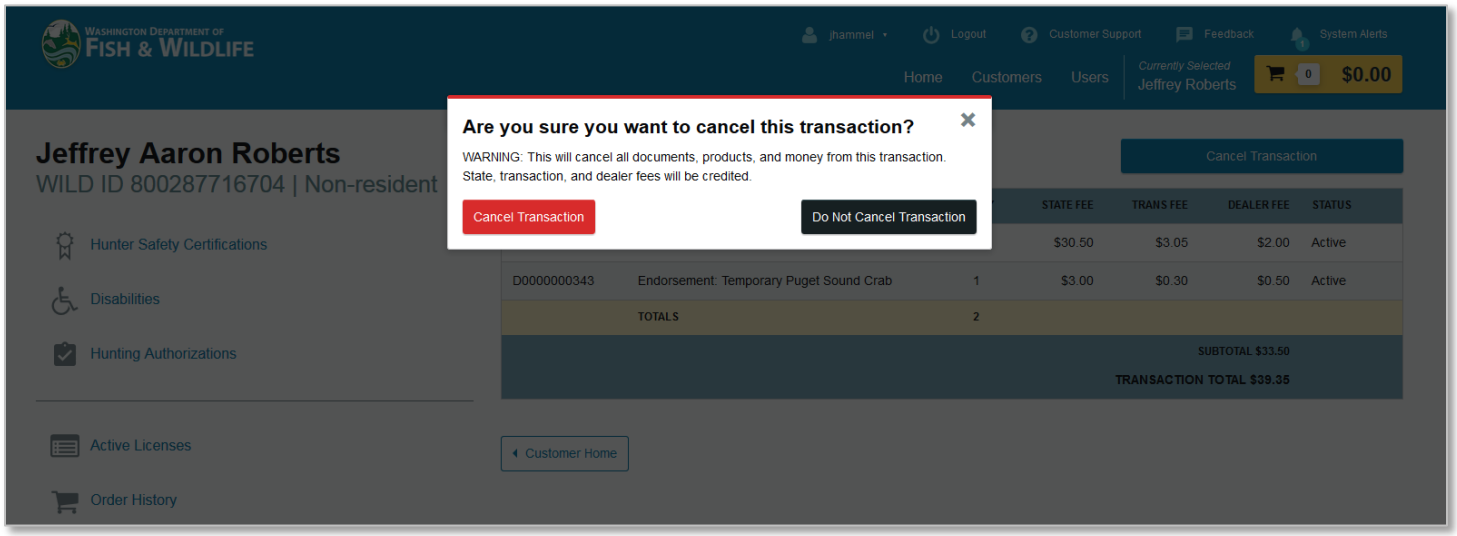
Our solution make executing a cancelation an easy an intuitive task for License Vendors and internal NDOW employees.

A License Vendor needs simply access the order they wish to cancel by selecting "View Orders" from the Customer Home Page and selecting the specific transaction.

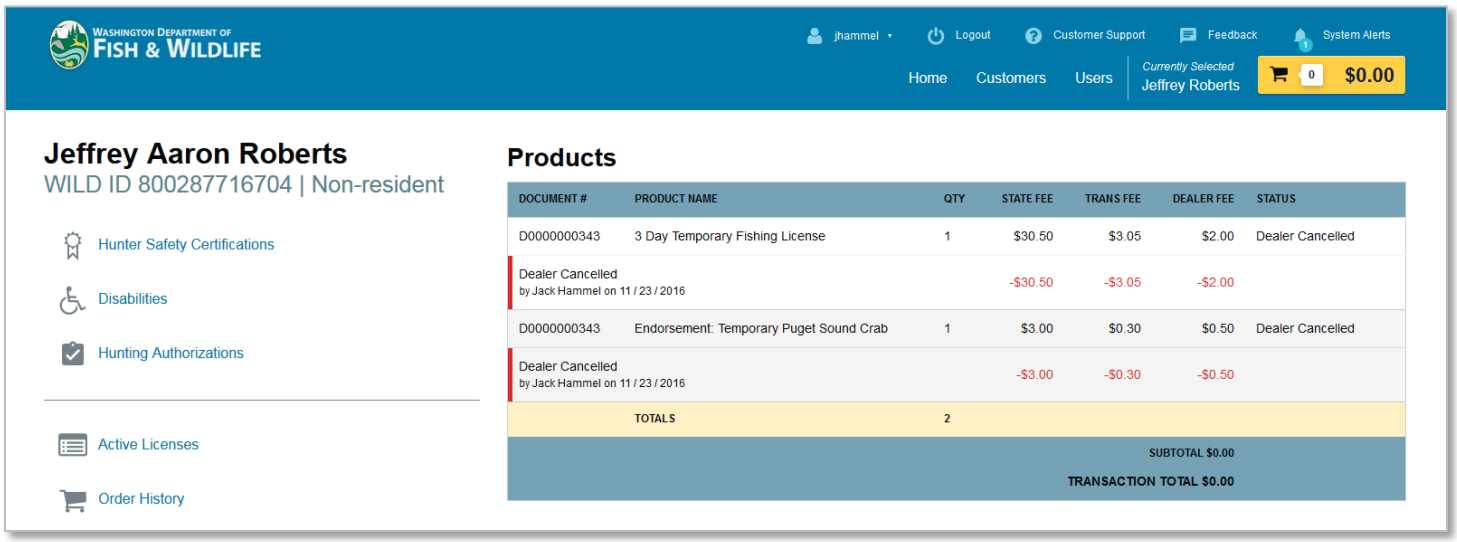


Once the License Vendor confirms they have the correct transaction they simply click the "Cancel Transaction" button and confirm their desire to process the cancelation.





The transaction will now be reflected as canceled with metadata regarding by whom and on what date the transaction was canceled presented in the transaction detail view.



B.	Administrative Transaction Issuance & Reprint – The system must include functionality that allows the department to administratively post a transaction to an agent account. NDOW staff must have the ability to enable a license to be reprinted at any specified sales location.

The new NDOW solution will support the administrative capability to assign a transaction / product to a customer account for reprint at a specified sales location.

C.	Customer Purchase Alternatives - The proposed solution must provide the agent the option of viewing a price comparison of chosen licenses versus combination license alternatives.

The new NDOW solution will support the analysis of product choices against available alternatives and make recommendations as to more cost-effective (not necessarily cheaper) options based on this analysis.

D.	Screen Content Control - The proposed solution must provide NDOW with the ability to control screen text and graphics/maps.

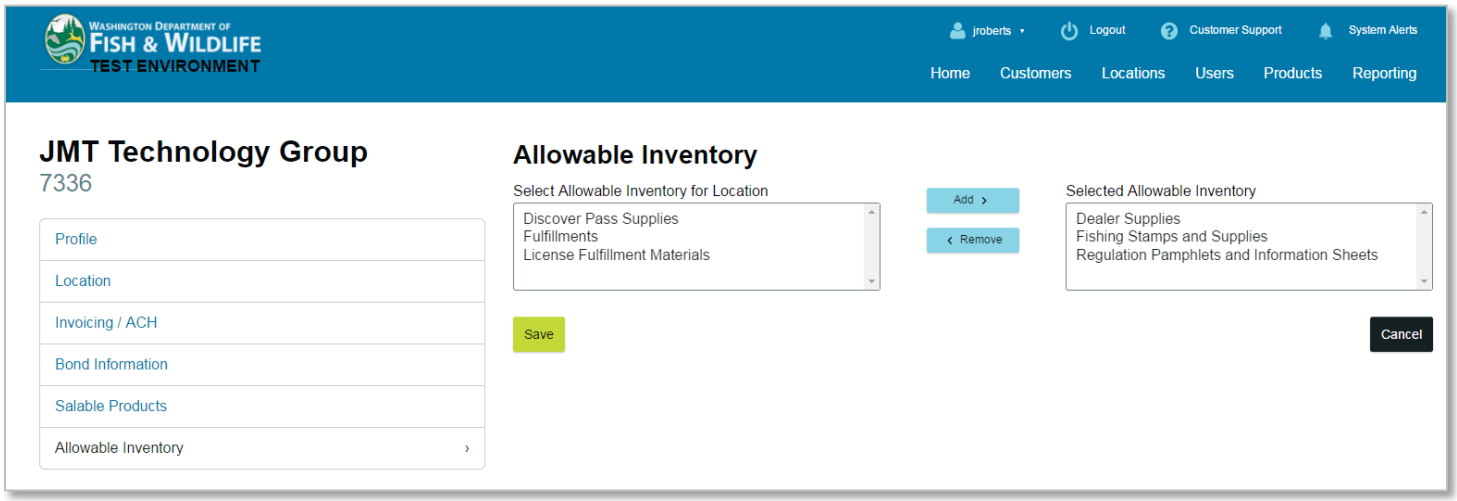
JMT's solution offers agencies tools to communicate with and market to their customer base. Our solution will offer the ability to modify the customer facing homepage, dashboard pages and product areas to display promotional messaging, and discounts to customers to promote sales and well as to provide information to customers that will assist with their user experience.

Additionally, JMT's solution provides the ability manage all aspects of products within the NDOW catalog. Product information, pricing, promotions and packages can all be configured within the product catalog administrative interface. Our solution will also provide a customizable area of the solution web site to support publishing and editing public facing content by NDOW such as an FAQ page, instructional content and statistical information.

3.4.17.2	NDOW must have the ability to add/modify/delete items on the agent supply list.

JMT interprets this requirement to be regarding agent supply ordering (e.g. hunting regulations brochures).

NDOW Administrators will be able to control the types of inventory that can be ordered by any given agent location. This is configured individually on each location as follows:



A. Activate/Void/Reverse/Invalidate and Refund Transactions – includes the ability to change transaction status and control whether or not an agent is charged for a transaction or portion of a transaction. Must allow NDOW to mark a transaction or portion of a transaction as refunded and store staff comments at the transaction level. Each system component has its own business requirements for handling transaction management.

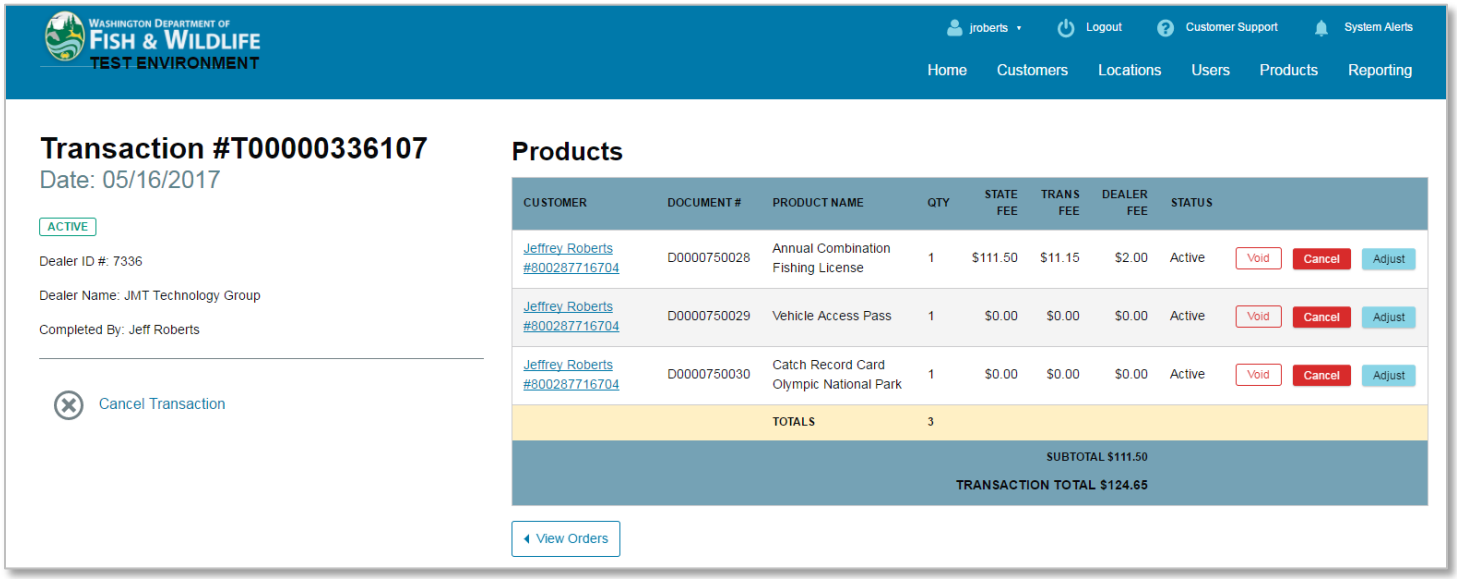
Support for cancellations is a standard component of the JMT Licensing and Recreation solution. JMT will work collaboratively with NDOW to configure this functionality within the new NDOW Licensing System in accordance with NDOW business rules. This includes but is not limited to configuring:

- ***Permissions required to process cancelations***
- ***The sales channels through which cancelations can be processed***
- ***The time constraints that surround this functionality by Sales Channel***
- ***Parent / Child relationships between licenses which impact cancelations***

Based on the defined business rules, NDOW staff will have the ability to modify the status of any sales transaction including controlling whether an agent is charged for a transaction or portion of a transaction.

Note that in the screen below, the NDOW Administrator is empowered to:

- ***Cancel the entire transaction***
- ***Cancel an individual item***
- ***Void an item***
- ***Adjust an Item***



B. Sales prompts and surveys – Includes the ability for NDOW staff to create, edit, enable and disable prompts to be used during the sales process. Surveys may collect a customer's response and store it in the survey table. Prompts would be messages to the customer/agent based on the customer purchase.

JMT's solution provides the most feature-rich survey module in this market. NDOW will have the flexibility to configure and deploy individual questions and collections of questions in the form of surveys to its customers to collect the data required to implement sales workflows, to

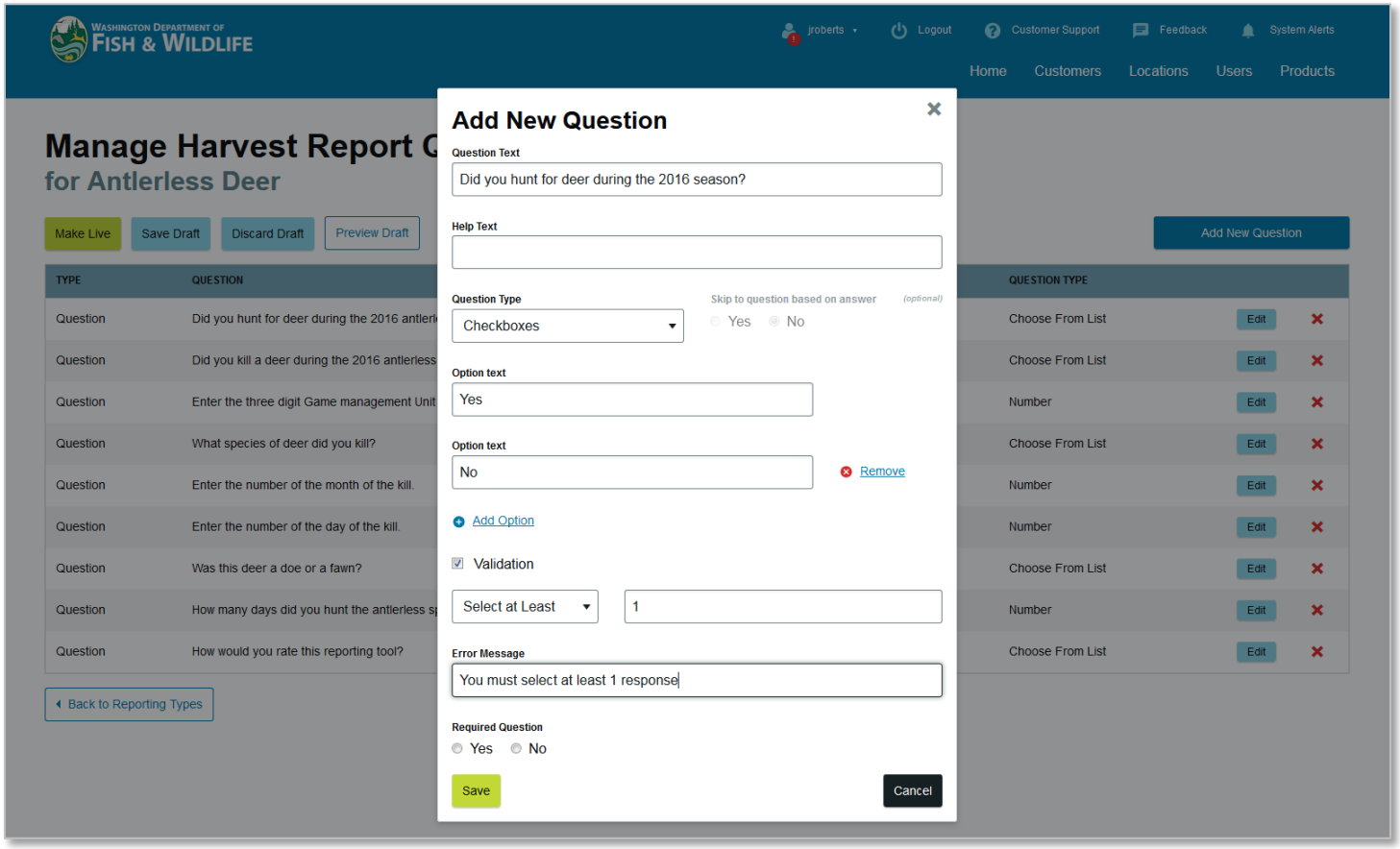
make informed decisions and to support regulatory requirements:

The NDOW survey module will support:

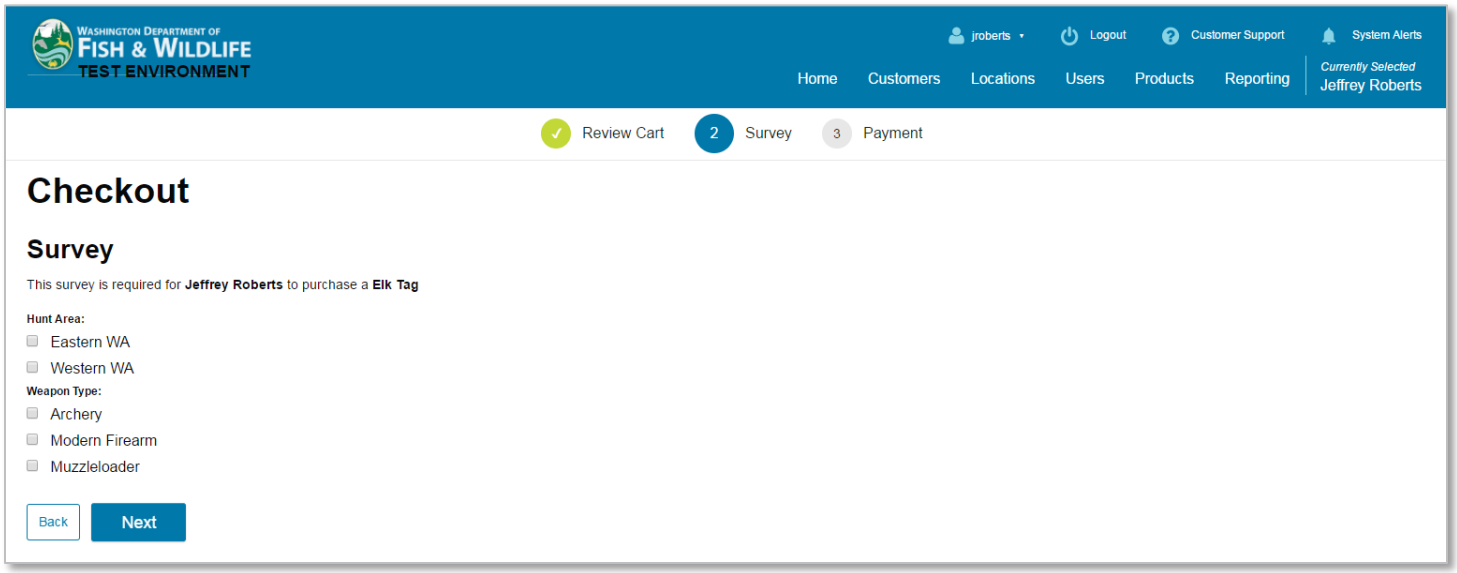
- ***Sophisticated question types like drop down list, checkboxes, date selectors in addition to standard types such as text, number, paragraph and yes / no.***
- ***The ability to configure sophisticated client-side validation***
- ***The ability to configure help text and error messages***
- ***The ability to embed images, video, headers, text, and HTML into surveys***
- ***The ability to allow customers to edit surveys after completion***
- ***The ability to present surveys upon next login***
- ***The ability to email surveys directly to customers***

NDOW will be fully empowered, without vendor assistance, to create and add new questions and surveys to the system that are presented at the time a customer purchases a license. This includes surveys made available from within the customer's internet management portal and within Game Check.

The following screen depicts the create new survey > create new survey question screen.



The following screen depicts a survey presented during a sales transaction:



C.	Administrative Transaction Issuance & Reprint – The system must include functionality that allows the department to administratively post a transaction to an agent account. NDOW staff must have the ability to enable a license to be reprinted at any specified sales location.

The new NDOW solution will support the administrative capability to assign a transaction / product to a customer account for reprint at a specified sales location.

D.	Screen Content Control - The proposed solution must provide NDOW with the ability to control screen text and graphics/maps.

JMT's solution offers agencies tools to communicate with and market to their customer base. Our solution will offer the ability to modify the customer facing homepage, dashboard pages and product areas to display promotional messaging, and discounts to customers to promote sales and well as to provide information to customers that will assist with their user experience.

Additionally, JMT's solution provides the ability manage all aspects of products within the NDOW catalog. Product information, pricing, promotions and packages can all be configured within the product catalog administrative interface. Our solution will also provide a customizable area of the solution web site to support publishing and editing public facing content by NDOW such as an FAQ page, instructional content and statistical information.

E.	Maintain phone logs within specific client's records documenting at a minimum, the date, the name of caller and the nature of the call. Copies of all correspondence and backup materials shall be provided to NDOW.

JMT's solution includes a robust, integrated ticketing component which provides a mechanism for help desk staff and agency users to document and track all issues reported by customers and agents. All generated tickets are linked to the customer or agents account to support reporting and analysis on trends.

Please see additional information in Section "3.4.12 Internet Customer Help Desk Support."

F. Respond in writing in a professional and timely manner to all correspondence by email, regarding the Application Hunt process.

JMT will provide professional help desk services with an email channel and will establish standard of conduct regarding response time and email professionalism. All response time rules will be documented in the agreed upon SLA.

G. Respond to inquiries originated by the NDOW liaison and other NDOW employees authorized to obtain hunt related information.

JMT will provide professional help desk services with an email channel and will establish standard of conduct regarding response time and email professionalism. All response time rules will be documented in the agreed upon SLA.

3.4.18 Audit, Accountability and Internal Controls

3.4.18.1 Successful vendor shall provide for generally accepted accounting principles and procedures which ensure that a sound system of internal controls is in effect. These controls should include but are not limited to:

The new NDOW Licensing System will have industry standard financial controls built into the core of the system and within all financial components including licensing agent configuration, sales transactions, customer credits/debits, licensing agent credits/debits, ACH, and invoicing. All financial data is stored, tracked, and reported on following Generally Accepted Accounting Principles (GAAP). Reports are generated via SQL Server Reporting Services; which is the main interface to the financial data. All financial reports are designed, developed and tested for accuracy prior to release.

A. Documentation of Internal Controls - The internal control system will be documented, readily available for examination and, as a minimum, will include the firm's internal control objectives, techniques, and accountability;

JMT agrees that internal control system will be documented, readily available for examination by NDOW project stakeholders upon request.

B. Recording of Transactions - All transactions will be promptly recorded and properly classified. This record will provide a clear audit trail from initiation to conclusion;

Facilitating and tracking sales is a primary function of our solution. The backend is a robust SQL Server database within which all system data is stored and maintained. JMT has taken great care to design and refine a database schema, based on best practices, that ensures the integrity of the data within the system and that supports all critical system functions including financial accounting which adheres to Generally Accepted Accounting Principles.

The following tables provide a high-level overview of how the system tracks sales for a license dealer. Please note that for the purposes of this proposal only a small subset of the total data captured for these entities is exposed.

Sales Locations are automatically assigned a unique identifier in the system upon creation. This unique identifier is used throughout the database as a foreign key to the dealer table. See the below sample dealer data:

Location ID	Business Name	Corporate ID	Type
4	Dick's Sporting Goods #1	32	License Dealer
7	Dick's Sporting Goods #2	32	License Dealer
174	Long Mountain General Store		License Dealer

When a transaction is executed the ID of the sales location is stored in the location ID column of the transaction table. Also stored is the unique user ID of the user from that location that executed the transaction and a plethora of other data about the sale.

Transaction Id	Location ID	Customer Id	User Id	Sales Channel Id	QTY	Total Sale	Finalized Date
118934	4	98293	36AD06B4-3E2D	2	2	$11.00	12/2/14 3:39 AM
118938	174	98294	3067740A-EAEC	1	3	$8.00	12/2/14 10:29 AM
118941	7	98254	56828155-1589	2	2	$11.00	12/2/14 5:09 PM
118944	174	13421	3067740A-EAEC	1	2	$12.00	12/3/14 3:15 PM

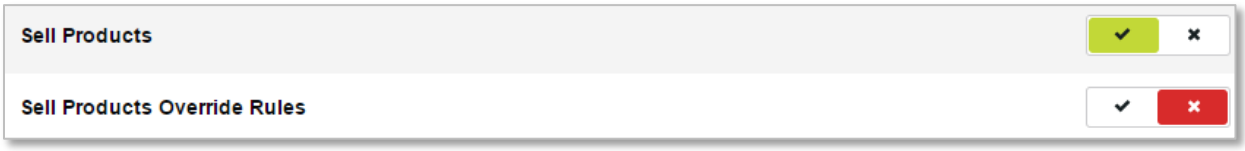
For each sales transaction (above) there will exist one or more sales transaction items which represent the individual products and fees that comprise the overall transaction. These are linked to the transaction via the sales transaction id.

Transaction Item Id	Transaction Id	Product Id	Product Code	Product Name	Number Of Units	Unit Price
11906	118934	904	N	Resident Antlerless Deer-Firearm Season	1	$10.00
11906	118934	858	PC01	Commission for Privilege	1	$1.00
11907	118938	903	LL	Non-Resident One Day Fishing	1	$3.00
11907	118938	903	LL	Non-Resident One Day Fishing	1	$3.00
11907	118938	860	GEIF01	Electronic Issuance Fee	1	$2.00
11908	118941	909	DS	Resident-Bear Damage	1	$10.00
11908	118941	858	PC01	Commission for Privilege	1	$1.00
11911	118944	904	N	Resident Antlerless Deer-Firearm Season	1	$10.00
11911	118944	860	GEIF01	Electronic Issuance Fee	1	$2.00

This relational model is implemented throughout the system and provides a mechanism to track the details of every transaction, not only to the license dealer that executed the transaction, but to the specific user at that the license dealer, and the specific device to from which that user executed the transaction. This model will scale infinitely.

C. Execution of Transactions - Transactions will be executed only by those authorized individuals specifically designated to do so;

JMT's Licensing and Recreation solution employs a role-based access control security model whereby roles are comprised of 1 to many granular permissions. Only users assigned a role which includes one of the following permissions will be able to execute a transaction within the system:



D. Separation of Duties - Key duties and responsibilities in authorizing, processing, recording, and reviewing transactions will be separated among individuals; i.e., one individual will not control all aspects of a transaction or activity;

JMT's Licensing and Recreation solution employs a role-based access control security model

whereby roles are comprised of 1 to many granular permissions. Separate permissions exist for different aspects of sales transaction management which supports the concept of separation of duties.

E. Supervision - Continuous supervision by qualified individuals will be provided to ensure internal control objectives are being satisfied; and

All JMT staff and subcontractors will be supervised by qualified individuals to ensure internal control objectives are being satisfied.

F. Access to and Accountability for Resources - Access to resources and records will be limited to only authorized persons and accountability for resources will be maintained and assigned.

JMT's policy is to limit access to resources (e.g. production data, production infrastructure) to those that have a direct need to access said data. Additionally, all access to these resources is logged.

3.4.19 Conflict of Interest

3.4.19.1 To ensure that there is no conflict of interest and instill hunter confidence in the contractor, NDOW requires that the contractor have a company policy which disqualifies the contractor, his staff, employees and their immediate families from participating in this process on which are administered by the contractor. Immediate families are defined as the employee, their spouse and dependent children.

Upon contract award, JMT will develop and implement a company-wide policy that prohibits JMT staff from participating in any NDOW controlled hunt process administered by JMT.

3.4.20 Commission Meetings

3.4.20.1 The awarded vendor must attend three meetings (Season setting in January, Quota setting in May, Big Game Draw Summary Report in September) and upon request, a designated representative shall attend other Commission meetings (minimum of 7 per year) and must be able to address inquiries.

JMT agrees that knowledgeable, professional staff will available to attend said meetings upon request by NDOW.

3.4.21 Functional areas of the current system requirements

3.4.21.1 This customer centric business system integrates multiple related NDOW business functions into a single database, including:

A. Hunting and Fishing Licenses
B. Vessel Titling/Registrations
C. Conservation Education/Programs
D. Law Enforcement Citations/Revocations
E. Harvest Information Program
F. Application Hunt
G. The Volunteer Program

Our vision for a modern Outdoor Licensing and Recreation solution is one where customers interact with the licensing agency via a singular, comprehensive web application that maintains a singular, unique customer profile for each customer over time. All functional areas listed above will be integrated into and accessible from the intuitive customer portal and all related data (e.g. sales, demographics, licenses, citations, surveys, event participation etc.) will be associated with the unique customer profile.

Our product embodies this vision and, because of this, provides a more efficient, positive user experience for the customer while simultaneously creating a wealth of invaluable data that can be leveraged for effective retention, recruitment, and reactivation efforts.

3.4.22 Hunting and Fishing Licenses

Licensing Volume			
	2014	2015	2016
Fishing licenses	96,578	89,036	78,092
Hunting licenses	40,184	41,356	42,868
Special licenses	1,334	1,294	1,509
Trapping	1,625	1,402	1,036
Combo licenses	32,057	31,805	31,130
Group Fishing	524	701	722
BobCat Seals	4,623	3,488	2,223
Stamps	162,762	152,310	149,640

3.4.22.1 NDOW is interested in pursuing possibilities of a reduction in paper deliverables for a licensing solution. Vendors must provide details on how the overall proposed system will lead NDOW through a staged transition from the current processes to a completely paperless system. Considerations in proposals should include:

JMT recognizes the advantages of reducing paper from both an environmental and cost perspective. Our fully web-based solution supports digital licensing out-of-the-box, providing NDOW with a variety of options to reduce paper deliverables with the end goal of a completely paperless system. We also understand that the outdoor general public are used to receiving licensing documents in a particular manner, and that a staged transition will allow NDOW the opportunity to gradually introduce the paperless concept to its customers.

In addition to providing paperless-related services, JMT's strategy, marketing, and customer engagement consultants will work with NDOW to develop a paperless transition plan including scheduled announcements, vendor communications, system updates, and customer feedback surveys.

A. Customer ID Card: a card-type licensing system that would require the bearer to carry during license-required activities.

Imitating the concept of grocery store loyalty programs, NDOW may leverage a customer's ID to create individual small plastic cards with a hole in it to be added to a keychain. The card

would have the NDOW logo on one side, and the customer's ID and barcode on the other. These keychain cards may serve several purposes:

- ***Send in the mail after customer enrollment as a thank you with additional brand exposure***
- ***Law enforcement could scan this to find their licenses***
- ***Will allow for easy customer lookup to save time and reduce potential duplication***
- ***Can be used to track event attendance and give out prizes/discounts based on engagement***

JMT can leverage its existing document fulfillment module to serve this process. If NDOW wanted to procure, print, and mail the ID Plastic Keychains in-house, there would be of no extra cost during implementation.

If JMT were to produce and mail customer ID Plastic Keychains to each new customer added to the system, there would be added cost for the materials, labor, and shipping which is roughly $1.50 per keychain fulfilled. NDOW may decide to pay this cost directly, or require customers to pay the additional fee at the time of checkout.

B. Law Enforcement: method for NDOW Law Enforcement to validate customer licensing status in the field.

JMT understands that NDOW's new NDOW licensing system must support the need of law enforcement to validate customer data in the field. Building upon the responsive design framework described above, the system proposed for NDOW will include a mobile friendly experience for law enforcement agents that includes the ability to quickly locate a customer in the system and access that customer's profile.

The types of information that will be accessible to law enforcement in real-time include customer:

- ***Demographic data***
- ***Details regarding any revocations or restrictions***
- ***License and permit history including current status***
- ***Harvest history and outstanding reports***

In addition, JMT is in the process of refining an offline sync functionality for Law Enforcement to validate customer licensing status while unable to connect to the internet. As soon as the officer re-enters an area with service, the data automatically updates and merges with any changes that were made since previously connected.

C. Real-time Licensing: method for customer to purchase licensing privileges from any proposed sales outlet or by mobile phone and be immediately able to use privilege.

Customers, license vendors and NDOW employees will interact with the new NDOW system via a singular, comprehensive web application that communicates with a centralized system relational database in real-time. Likewise, sales transactions, executed through all sales channels, will be executed in real-time.

Our solution supports the generation a license document or temporary license document in HTML, PDF, or Image format at the culmination of an online / mobile

transaction. Depending on the format chosen the license document can be made available in digital format via the user's mobile device in different managers.

This enables customers to immediately use their privilege provided NDOW regulations do not require customers that purchase their license online wait until the physical document arrives in the mail. Even in that case temporary licenses (10 day), for example, support immediate use.

Format	*Pros*	*Cons*
HTML	• ***Easily accessed via mobile browser*** • ***Can be printed at home*** • ***Link in confirmation email redirects to digital license at any time in the future (unless it's a temporary license)***	***Accessing digital license requires cellular or internet connection***
Image	• ***Easily accessed via mobile browser*** • ***Can be printed at home*** • ***Link in confirmation email redirects to digital license at any time in the future (unless it's a temporary license)*** • ***Can be saved quickly to mobile phone's photo library***	***Saved license images won't be updated as new licenses are purchased over time***
PDF	• ***Easily accessed via mobile browser*** • ***Can be printed at home*** • ***Link in confirmation email redirects to digital license at any time in the future (unless it's a temporary license)*** • ***Can be saved to mobile device but may require a non-native app to do so***	***Saved license images won't be updated as new licenses are purchased over time*** ***Saving to mobile device not as straightforward***

D. Bar Code Scanners – The solution may include a bar code scanner capable of reading the State's two-dimensional (2D) bar code driver's license and ID cards and bar codes printed on license documents. POS devices will be required to read 2D bar code licenses encoded in the American Association of Motor Vessel Administrators (AAMVA) encoding standard.

<u>NDOW License Sales Agents</u>
The proposed POS Configurations for license agents includes a Zebra DS8108 barcode scanner capable of reading the two-dimensional (2D) bar codes including those encoded in the American Association of Motor Vessel Administrators (AAMVA) encoding standard.

<u>NDOW Field Agents (Law Enforcement)</u>
For field agents such as Law Enforcement wanting a more efficient way to look up a customer's information, JMT's web-base solution integrates with 3rd party pocket barcode scanners such as Wasp Barcode Technologies' WWS100i Pocket Barcode Scanner. The device is compatible with iPhone, iPad, and Android devices and may be purchased in bulk by either NDOW or JMT to be supplied to field agents. The Pocket Barcode Scanners and the mobile/tablet devices, are not included in JMT's proposed price. If NDOW is interested in this additional hardware, JMT is able to provide a cost estimate once an

estimated volume and device compatibility is confirmed.

E. Digitally Captured Signature Devices – the solution may include a signing device to capture the customer's signature at the point of sale. This signature image must be transmitted and related to the individual transaction for a defined period of time.

The combination of the Point of Sale Hardware proposed and the technology platform upon which JMT's solution is founded supports the ability to capture licensee signatures of licenses buyers directly within the new system with no additional equipment required and at no additional costs to NDOW. Customer signatures can then be stored in the centralized database in conjunction with the transaction to which they are associated and, depending on the requirements of the implementation, included on output documents.

JMT has prototyped such an implementation using a JavaScript library for drawing and capturing smooth signatures on screen. It works in all modern desktop and mobile browsers and doesn't depend on any external libraries.

F. Additional Equipment Options – Vendors must propose a pricing structure for equipment and support for agents wishing to acquire additional point of sale devices above and beyond NDOW's inventory. All devices must be tracked and recorded in an inventory system that provides NDOW access.

As explained in the Cost proposal, JMT's pricing structure includes equipment and support for an estimated amount of license agents. JMT is able to provide additional equipment at a per configuration price. All devices are tracked and recorded in JMT's solution where NDOW Administrators have access.

3.4.23 Vessel Titling/ Registrations

Current Active Registrations			
	2014	2015	2016
Vessels Registrations	45,149	42,645	43,771
Vessel titles	8,291	7,439	7,924
AIS	47,166	45,899	49,051

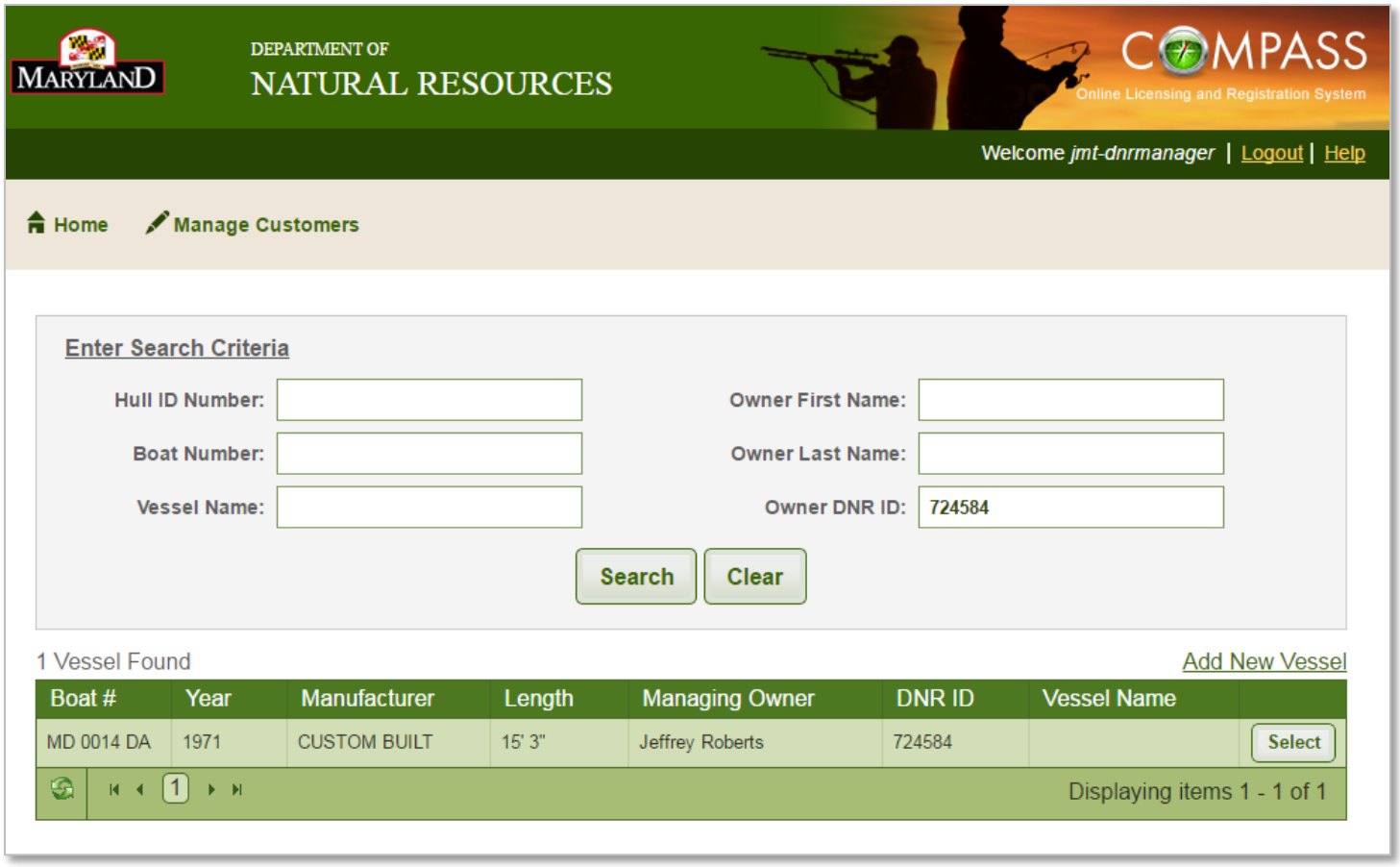
3.4.23.1 NRS 488 requires NDOW to administer a program to register and title vessels (boats, AIS) operated in Nevada. The proposed solution must allow customers and NDOW customer service counter to register and renew vessels and update personal information.

The ability to facilitate all aspects of vessel registration and titling is standard functionality of JMT's solution. JMT will work with NDOW to understand and document Nevada's specific requirements, rules, and regulations with respect to vessel registration and titling and will customize and configure our solution's Vessels Module to meet those requirements.

Some highlights of our solution are as follows:

Quickly search for vessels using a range of parameters

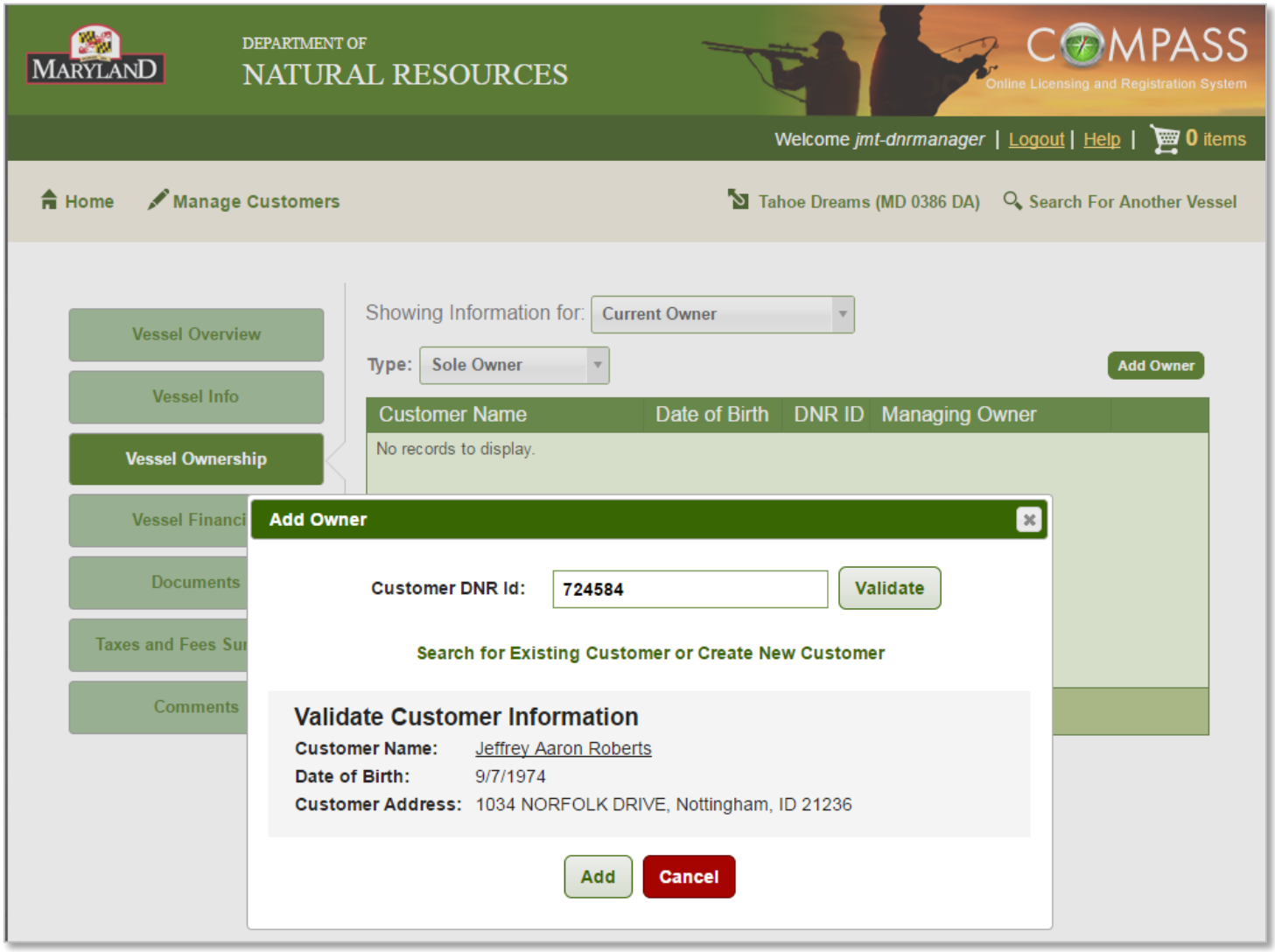
An intuitive search functional makes it easy for end-users to quickly locate a vessel in the system.



Vessel Creation Wizard

If the vessel is not found in the system, this screen provides quick access to the create new vessel wizard which steps the user through the creation of a vessel including vessel information, ownership information and financial information and ultimately calculates and collects taxes and fees prior to issuing the registration and title.

Note in the screenshot below that adding an owner requires that the end user enter a valid customer ID. This is because the vessel module is tightly integrated into the overall licensing system and thus will associate the vessel with the unique customer account.



Intuitive Vessel Overview Page

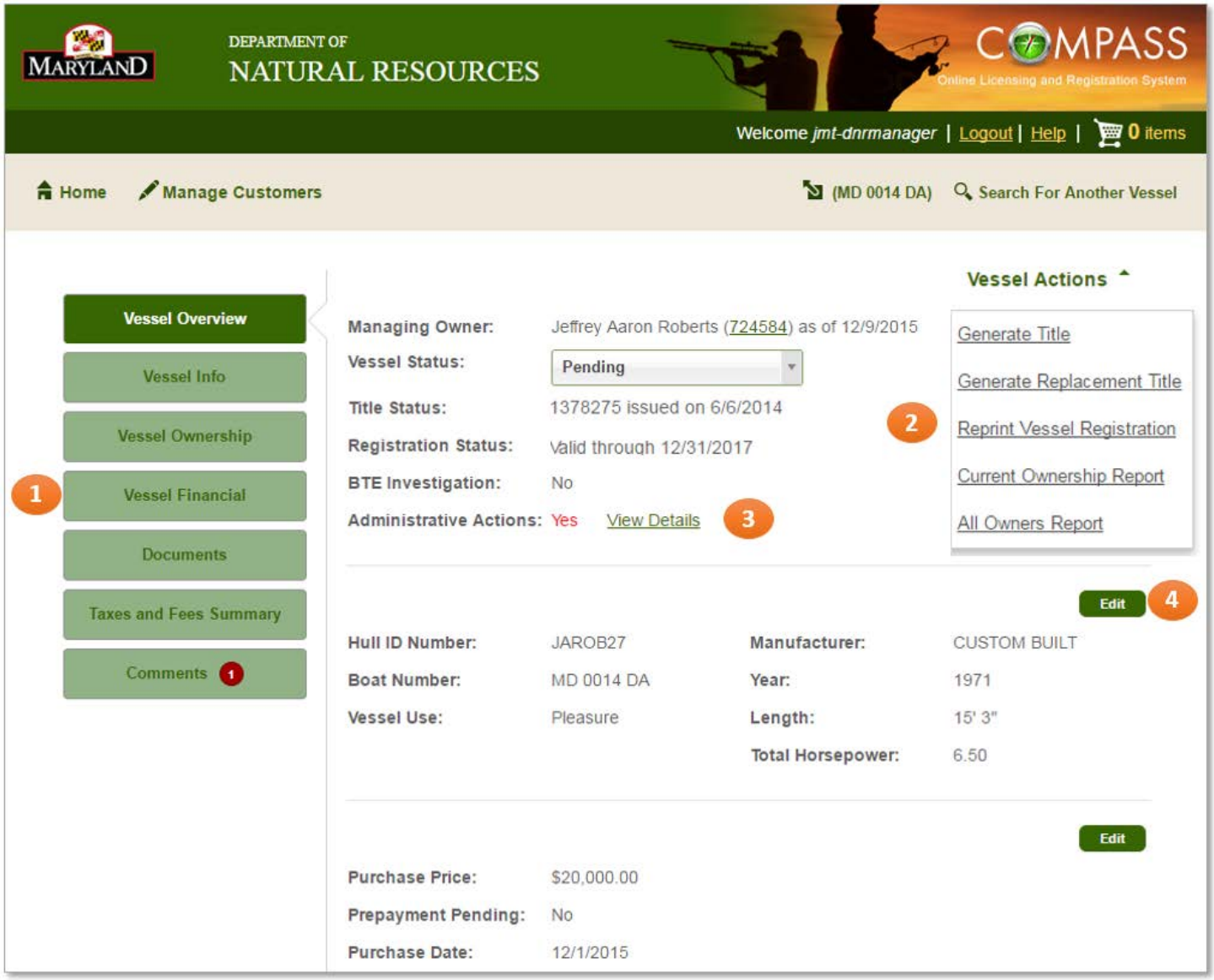
An intuitive Vessel Landing Page provides efficient access to information about a vessel and provides access to the primary functionality including titling, ownership transfers, and reporting. Some key components of the Vessel Landing Page:

1. ***Access to Related Data - Easy to use vertical navigation links direct the user to secondary pages with detailed, categorized information about ownership, financial details, related documents, fees and owed and paid.***

2. ***Vessel Action Menu – Provides access to commonly needed functionality such as tile and registration generation, registration renewal, and reporting.***

3. ***Links to Customer Enforcement Information – Enforcement data associated with the vessel owner/s is integrated to alert end users to its existence.***

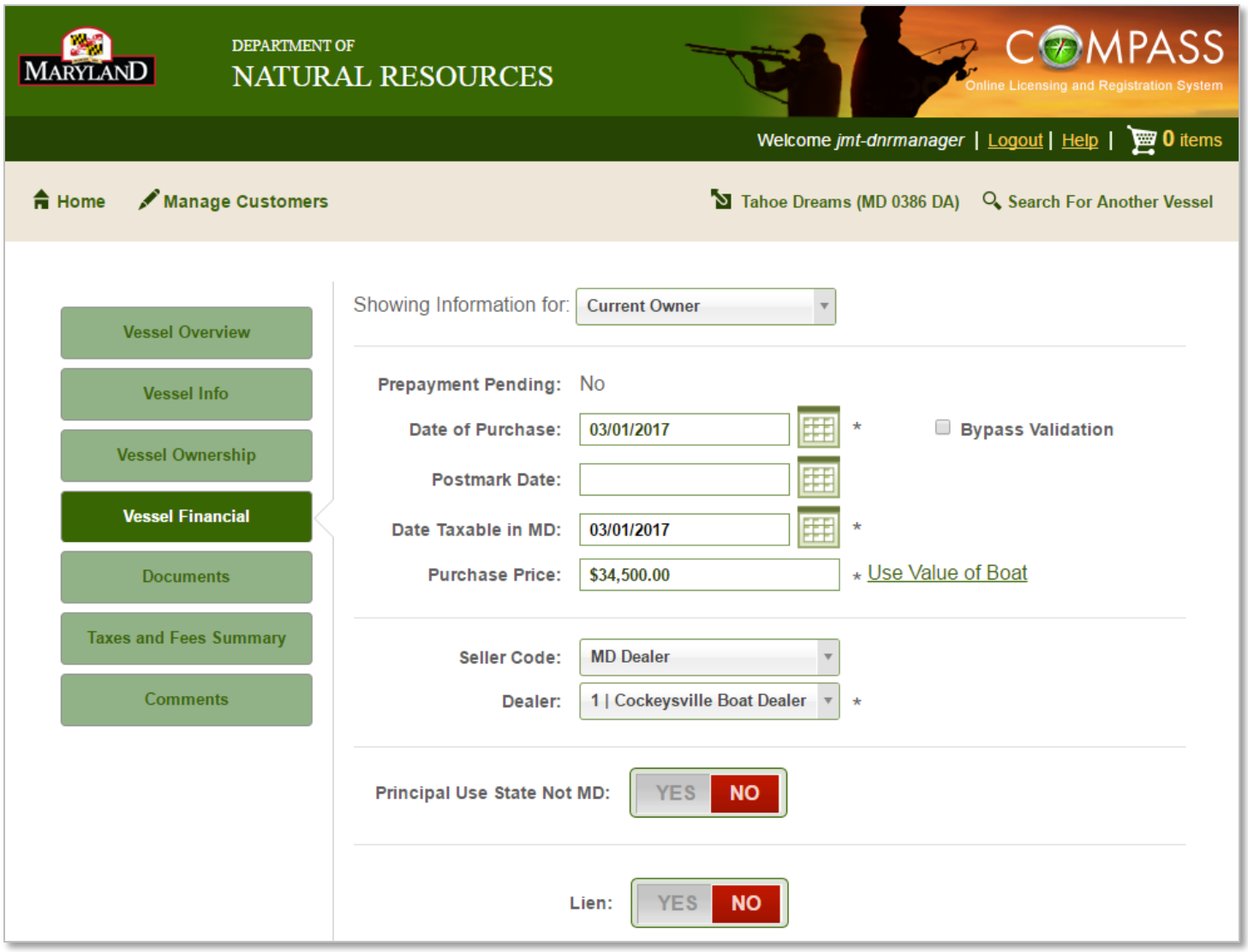
4. ***Quick Edit – End uses can quickly edit vessel profile information before executing the renewal.***



Automated Calculation of Fees

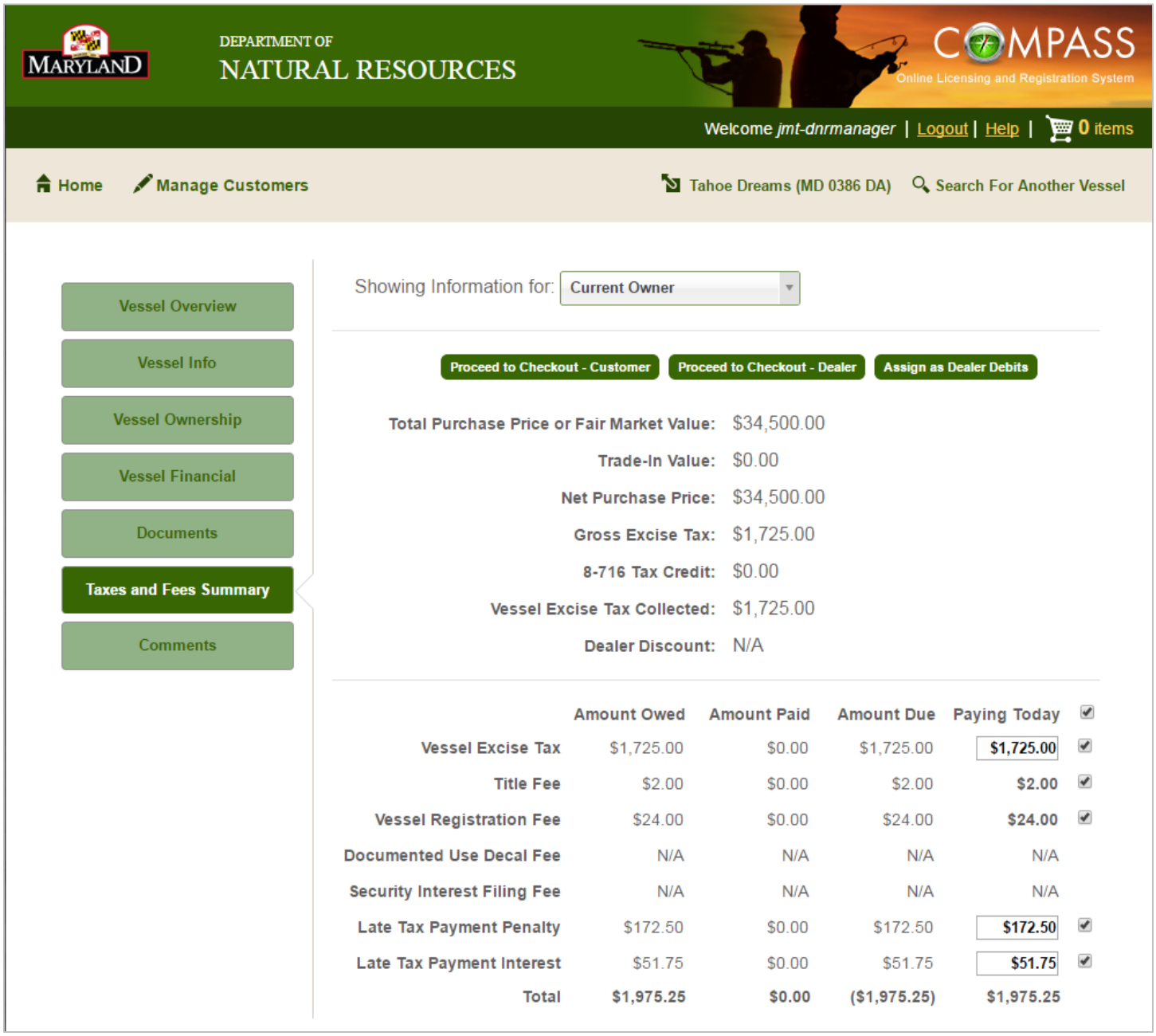
Our Outdoor Licensing and Recreation Solution's Vessels Module includes a robust accounting component which automatically calculates taxes and fees in accordance with state laws and regulations.

The system captures all relevant financial information when a new vessel record is created or ownership is transferred.



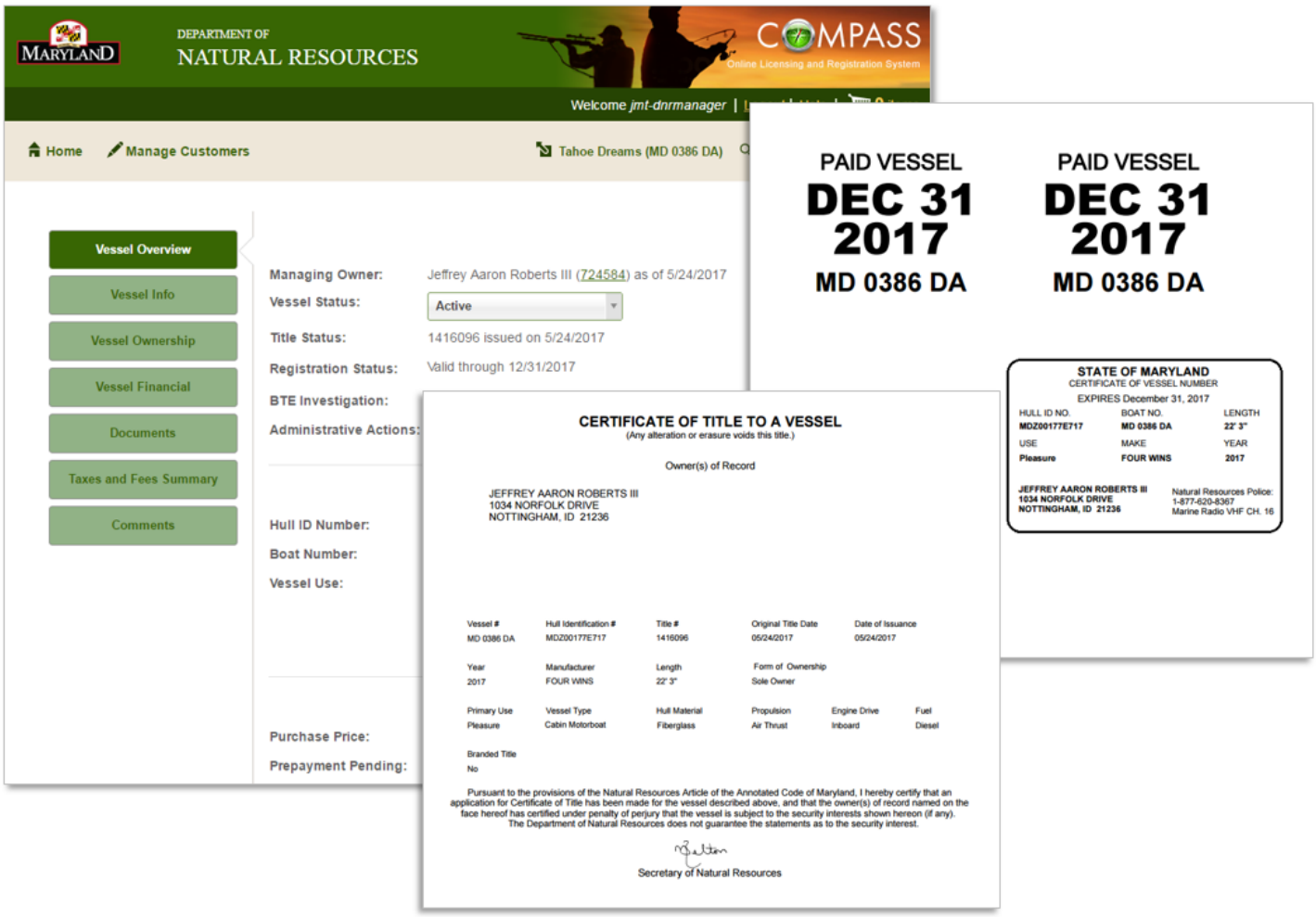
Using the recorded financial information, the Vessel Module automatically calculates taxes and fees in accordance with state laws and regulations and provides multiple mechanisms to settle those fees including:

- ***Executing a sales transaction on behalf of the customer***
- ***Executing a sales transaction on behalf of a boat dealer (an "agent" within the licensing system)***
- ***Assigning the fees as debits against the boat dealer***


MARYLAND
DEPARTMENT OF
NATURAL RESOURCES
COMPASS
Online Licensing and Registration System
Welcome jmt-dnrmanager | Logout | Help | 0 items
Home
Manage Customers
Tahoe Dreams (MD 0386 DA)
Search For Another Vessel
Vessel Overview
Vessel Info
Vessel Ownership
Vessel Financial
Documents
Taxes and Fees Summary
Comments
Showing Information for: Current Owner
Proceed to Checkout - Customer
Proceed to Checkout - Dealer
Assign as Dealer Debits
Total Purchase Price or Fair Market Value: $34,500.00
Trade-In Value: $0.00
Net Purchase Price: $34,500.00
Gross Excise Tax: $1,725.00
8-716 Tax Credit: $0.00
Vessel Excise Tax Collected: $1,725.00
Dealer Discount: N/A
Amount Owed
Amount Paid
Amount Due
Paying Today
Vessel Excise Tax $1,725.00 $0.00 $1,725.00 $1,725.00
Title Fee $2.00 $0.00 $2.00 $2.00
Vessel Registration Fee $24.00 $0.00 $24.00 $24.00
Documented Use Decal Fee N/A N/A N/A N/A
Security Interest Filing Fee N/A N/A N/A N/A
Late Tax Payment Penalty $172.50 $0.00 $172.50 $172.50
Late Tax Payment Interest $51.75 $0.00 $51.75 $51.75
Total $1,975.25 $0.00 ($1,975.25) $1,975.25

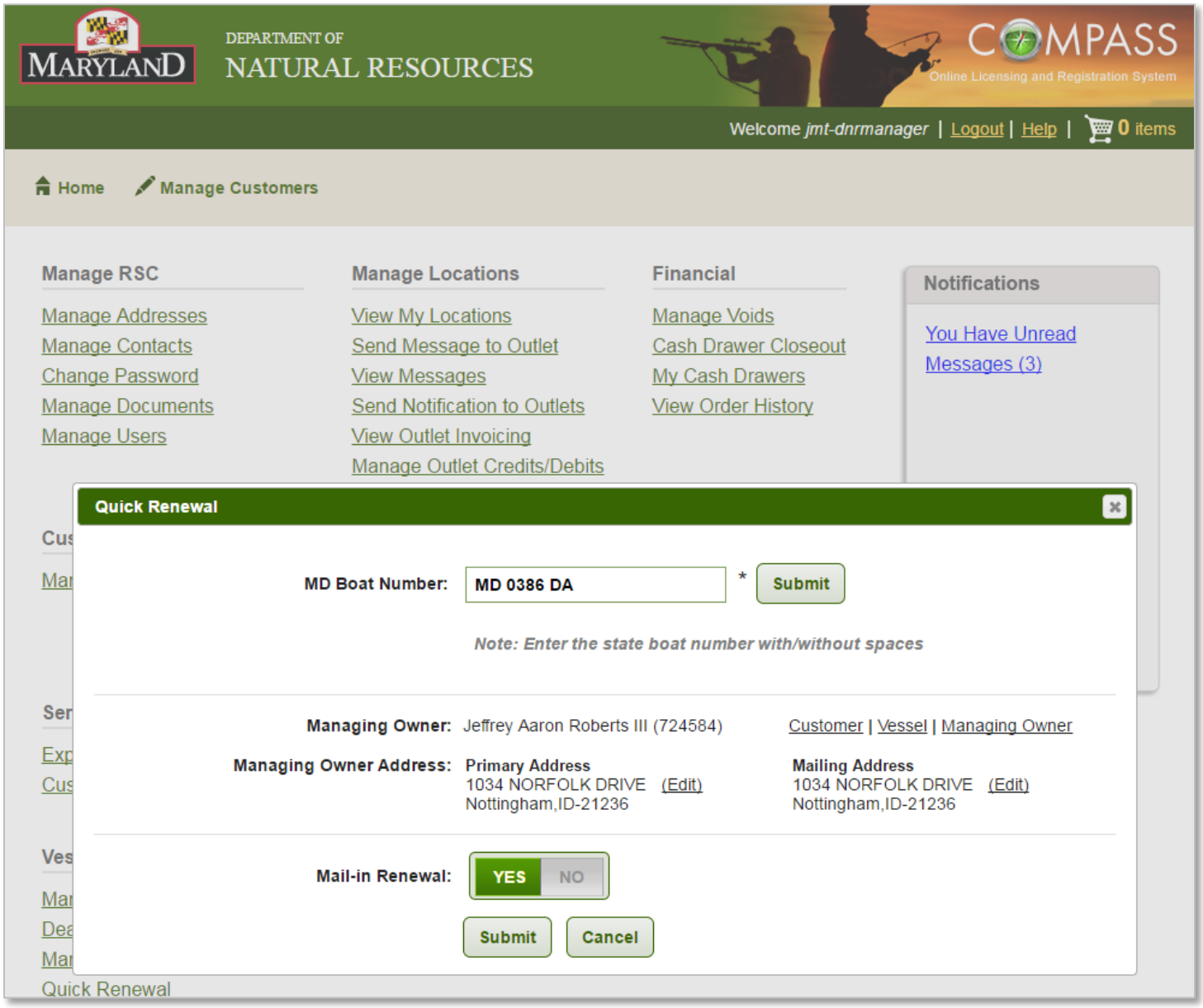
Issuance of Official Documents

Our Outdoor Licensing and Recreation Solution's Vessels Module is capable, out of the box, of issuing vessel registrations and titles once all business rules are satisfied – primarily that all fees are paid.



Quick Renewal

Our solution's Vessels Module supports a "Quick Renewal" process which facilitates an extremely efficient processing of mail in renewals. Users simply enter a boat number, confirm on screen information, and are directed to the payment confirmation screen to print documents.



3.4.24	Conservation Education/Programs

3.4.24.1	Vendors must propose and provide programming and host services for a complete system to manage the conservation education, hunter education, boating, and education programs. The system must include web interfaces that allow customers, students, instructors, and NDOW staff. Web interfaces will provide access to various components of the system allowing users to schedule classes, enroll in classes, enroll instructors, manage instructors, manage class registration and fees, document student progress and course completion, and update personal information via the Internet.

JMT Technology Group's base solution has all the components necessary to develop NDOW's desired Conservation Educations/Programs functionality: the ability to create new users and assign to groups, establish/manage business rules around an item/event, and allow the purchase/sign-up associated with that item/event. These basic workflows are the core elements that JMT's solution is based upon and will be easily leveraged to develop NDOW's ideal processes.

The below describes JMT's recommended implementation. However, JMT will work closely with NDOW during the Business Requirements Phase of system implementation to finalize user groups, functionality, and workflow details. Our goal is to 100% satisfy NDOW's conversation education/program and volunteer requirements, and will adjust the below plan to meet those needs.

All users, customers, students, instructors, volunteers, and NDOW staff alike will be associated with a user account and have access to various functionality based upon their user group settings established by NDOW Administrators.

JMT will migrate NDOW's existing user data to the new system so that users that are already associated with customer, student, instructor, volunteer, and NDOW staff information and capabilities will be able to access and perform similar functions in the new NDOW system.

Customers, students, instructors, and volunteers all begin at the same base level: public customers. With one login, users will have the ability to:

- ***purchase a license/product;***
- ***look up events in his/her area based on various search criteria (to either be a student or volunteer);***
- ***register for a class/event that may or may not require NDOW approval;***
- ***apply to be an instructor;***
- ***apply to be a volunteer (either for generic approval or for a specific event on the events calendar);***
- ***view hunter education certification information and reprint documents; and***
- ***communicate with the instructor for a class/event that they have already registered.***

Once a user applies to be an instructor, NDOW will be notified of the request and asked to approve/deny the user. If approved, the user will have the additional ability to:

- ***update instructor information;***
- ***sign up to be an instructor for specific classes (NDOW must then approve);***
- ***edit limited event information for the class(es) that he/she is approved to teach;***
- ***email their event attendees;***
- ***print certifications prior to event so he/she just has to date/sign after class and hand them their certification papers;***
- ***enroll new customers in the system on their behalf (a person shows up at an event and does not have a DNR ID, so the instructor creates their account and then enrolls them in the event);***
- ***document student progress including marking attendees as "Passed" in the system which automatically generates their Hunter Ed certification number;***
- ***place a supplies order through a fulfillment queue; and***
- ***communicate directly to NDOW.***

Once a user applies to be a volunteer, NDOW will be notified of the request and asked to approve/deny the user. If approved, the user will have the additional ability to:

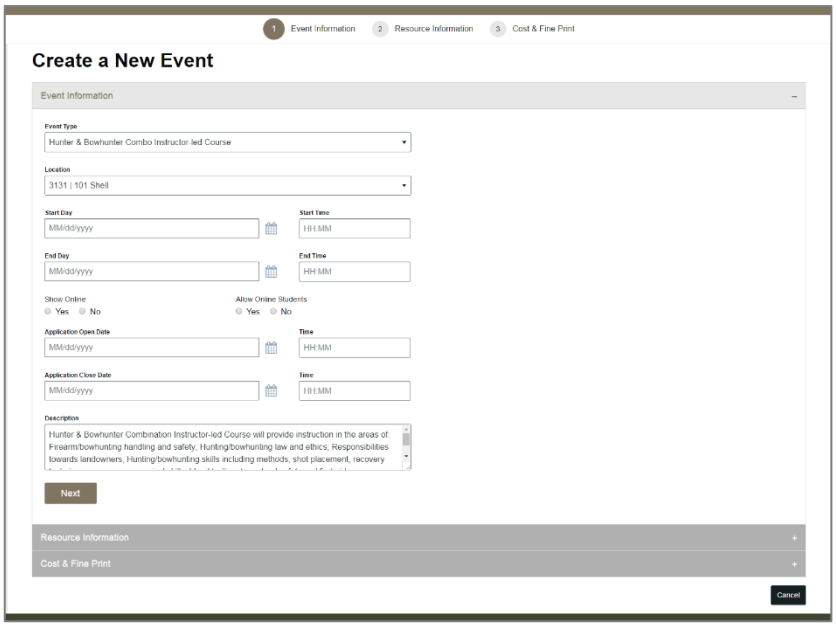
- ***update volunteer information;***
- ***look up events based on various criteria that specifically need volunteers;***
- ***apply to be a volunteer or join the waiting list for a particular event (NDOW must then approve is approval for the event is required by NDOW); and***
- ***view a list of events they registered for, actually attended, duties performed, and total hours.***

NDOW staff will be able to manage all the above including (but not limited to) the ability to:

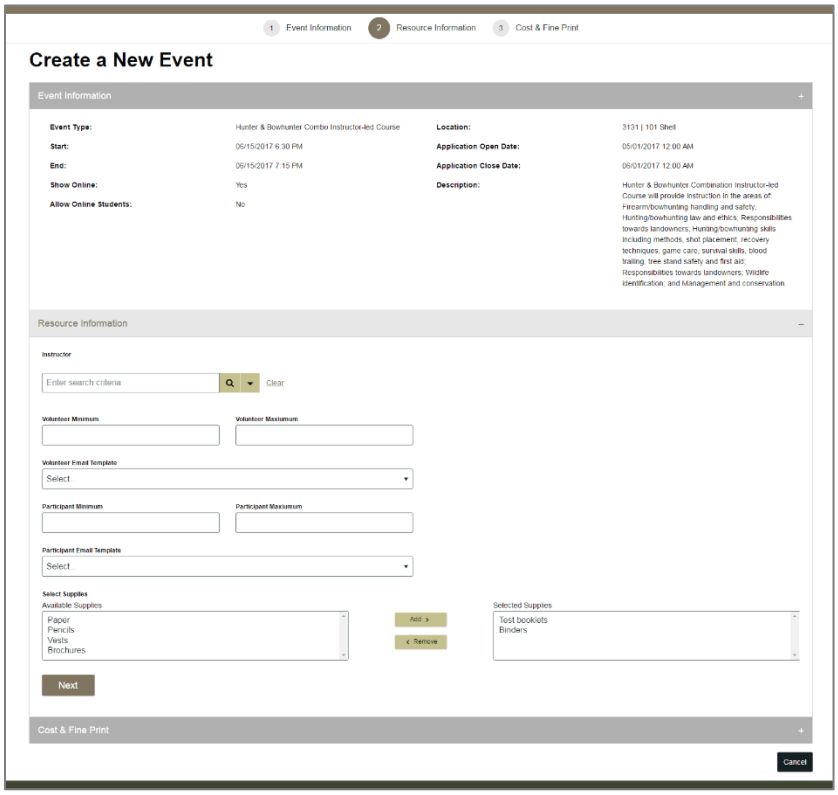
- ***create new events and their business rules including associated fees, scheduling, location, instructors/volunteers;***
- ***register/approve customers to attend events/programs;***
- ***approve instructors/volunteers for specific or all event/program categories;***
- ***edit any events/instructors/attendees;***
- ***view a fulfillment module to see what must be mailed out to instructors/volunteers (hunter ed pamphlets); and***
- ***communicate directly with a specific instructor, all instructors/volunteers associated with an event/program, or all instructors/volunteers in the system.***

NDOW Creating an Event:

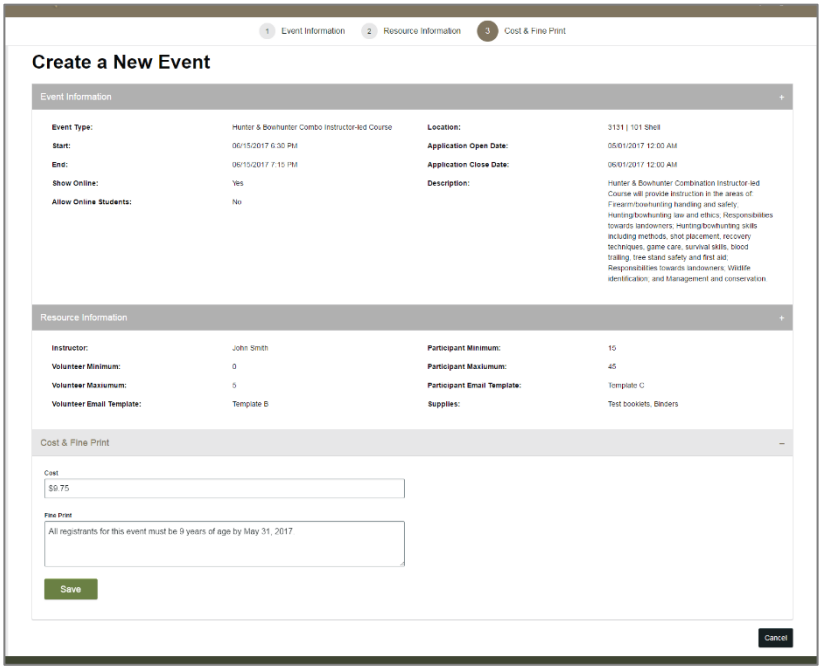
1. ***Event Information***
   - ***Event Type (Select from dropdown)***
   - ***Location***
   - ***Schedule***
   - ***Show Online?***
   - ***Allow Online Students?***
   - ***Application Open Date/Time***
   - ***Application Closed Date/Time***
   - ***Description (auto-fills based on Event Types selected above, but may be edited)***



2. ***Resource Information***
   - ***Instructor(s)***
     - ***(Find Customer with Instructor privileges to associate)***
     - ***Contact Name/Email/Phone/Bio appears***
   - ***Volunteer(s)***
     - ***Volunteer Minimum (numerical field)***
     - ***Volunteer Maximum (numerical field)***
     - ***Volunteer Email (dropdown, selecting which email template they receive upon registering)***
   - ***Participants***
     - ***Participant Minimum (numerical field)***
     - ***Participant Maximum (numerical field)***
     - ***Participant Email (dropdown, selecting which email template they receive upon registering)***
   - ***Supplies***
     - ***Select multiple from dropdown (this will add to the fulfillment queue once event is approved, for someone to mail out packets to instructor)***



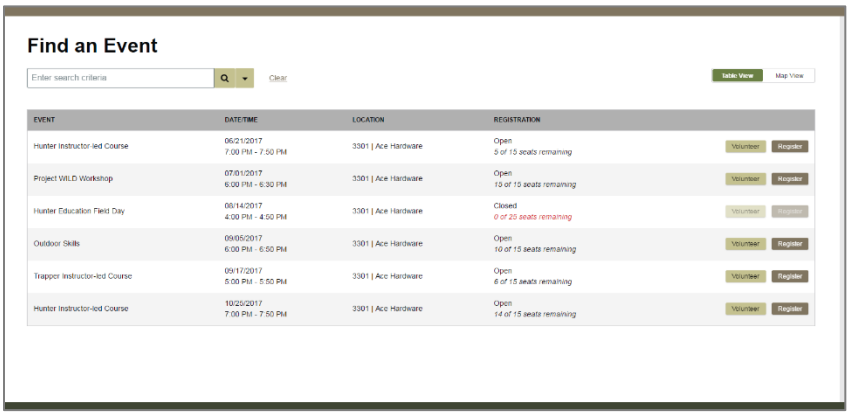
3. ***Cost & Fine Print***
   - ***Cost (auto-populates based on event type, but may be edited)***
   - ***Fine Print (auto-populates based on event type, but may be edited)***
     - ***Hunter Education Certification Cards***
     - ***Age Requirements***
     - ***Special Accommodations***

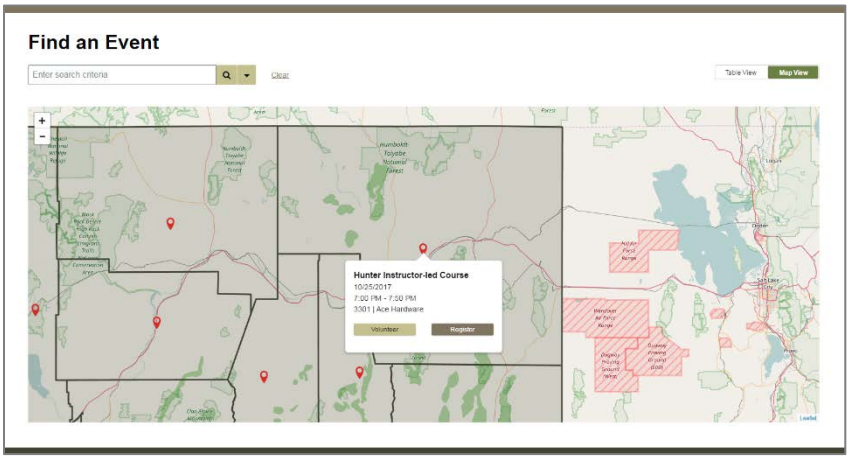


Customers Registering for an Event

1. *Find an Event*

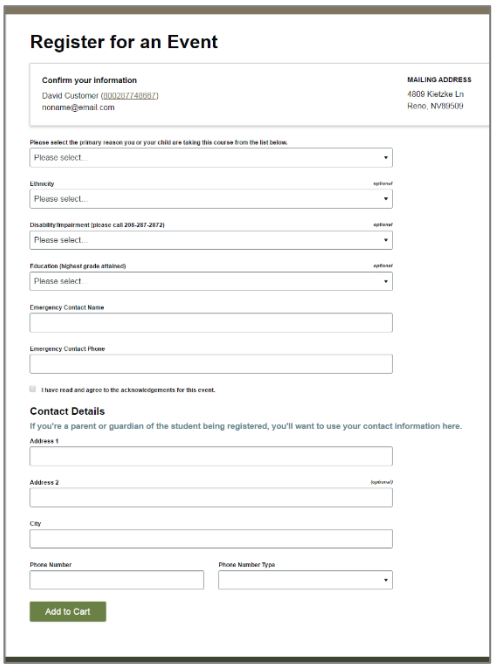
- ***List/Table View***
  - ***Date / Time***
  - ***Event Name / description***
  - ***Location***
  - ***Registration Open/Closed (x of x seats remaining)***
- ***Map View***
  - ***Map with icons***
  - ***Event name, date, location, registration open***
  - ***Date range (will filter out events that are not within the range)***
  - ***Event Type (dropdown - will filter out events that are not that type)***
- ***Click "Register" button***



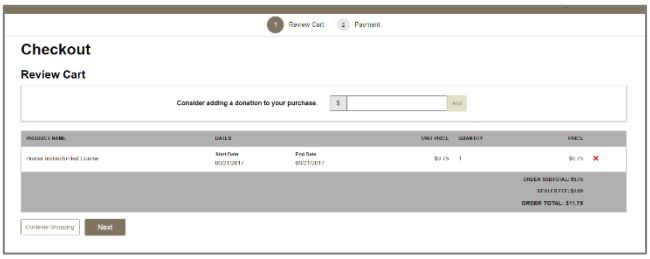


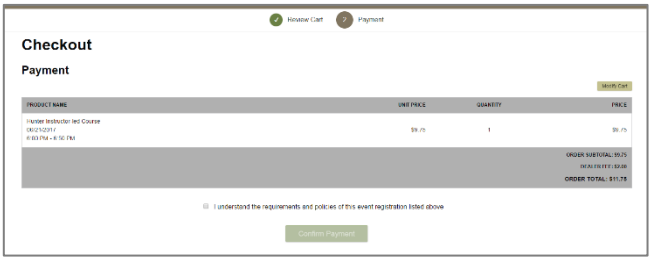
2. *Register for an Event*

- ***Confirm customer information***
- ***Primary reason***
- ***Ethnicity (optional)***
- ***Disability/Impairment (optional)***
- ***Education (optional)***
- ***Emergency Contact Name/Phone***
- ***I have read and agree to the acknowledgements for this event. (checkbox)***
- ***Contact Details***
- ***Email Address***
- ***Phone Number***
- ***Add to Cart***



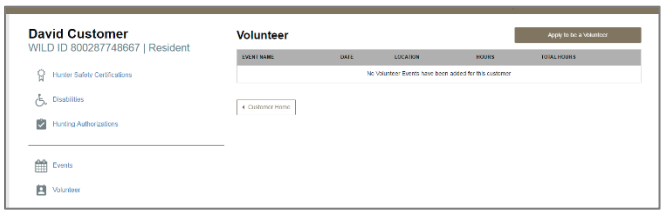
3. **Pay Event Fees, if applicable**
   - ***Review Cart***
   - ***Fees & Billing***
   - ***Fees***
   - ***Payment Info***
   - ***Billing Name and Address***
   - ***Attestation***
   - ***Complete Order***



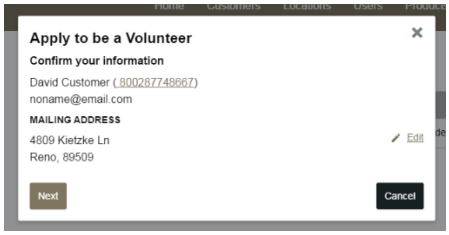


Customers Applying to be a Volunteer

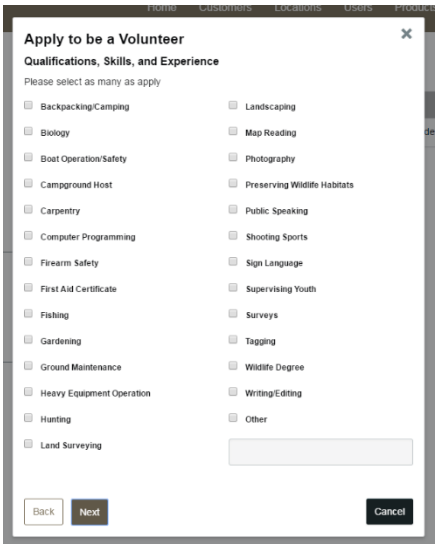
1. ***View "Volunteer" screen***
   - ***Click "Apply to be a Volunteer" Button***



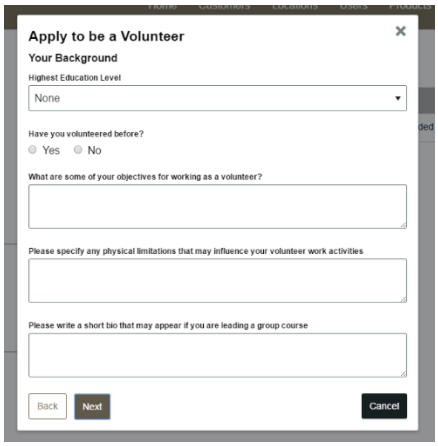
2. ***Confirm Customer Information***
   - ***Name, ID, email***
   - ***Mailing Address***



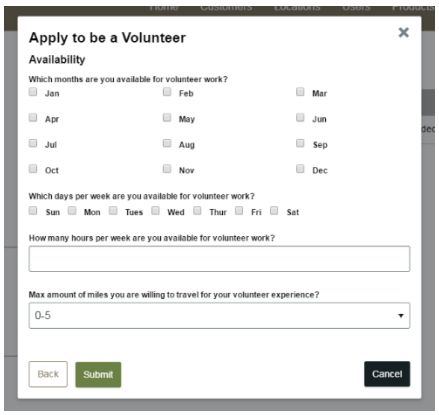
3. ***Qualifications, Skills, and Experience***
   - ***(Select Multiple From List)***



4. ***Your Background***
   - ***Education***
   - ***Volunteered Before?***
   - ***Objectives***
   - ***Physical Limitations***
   - ***Short Bio***

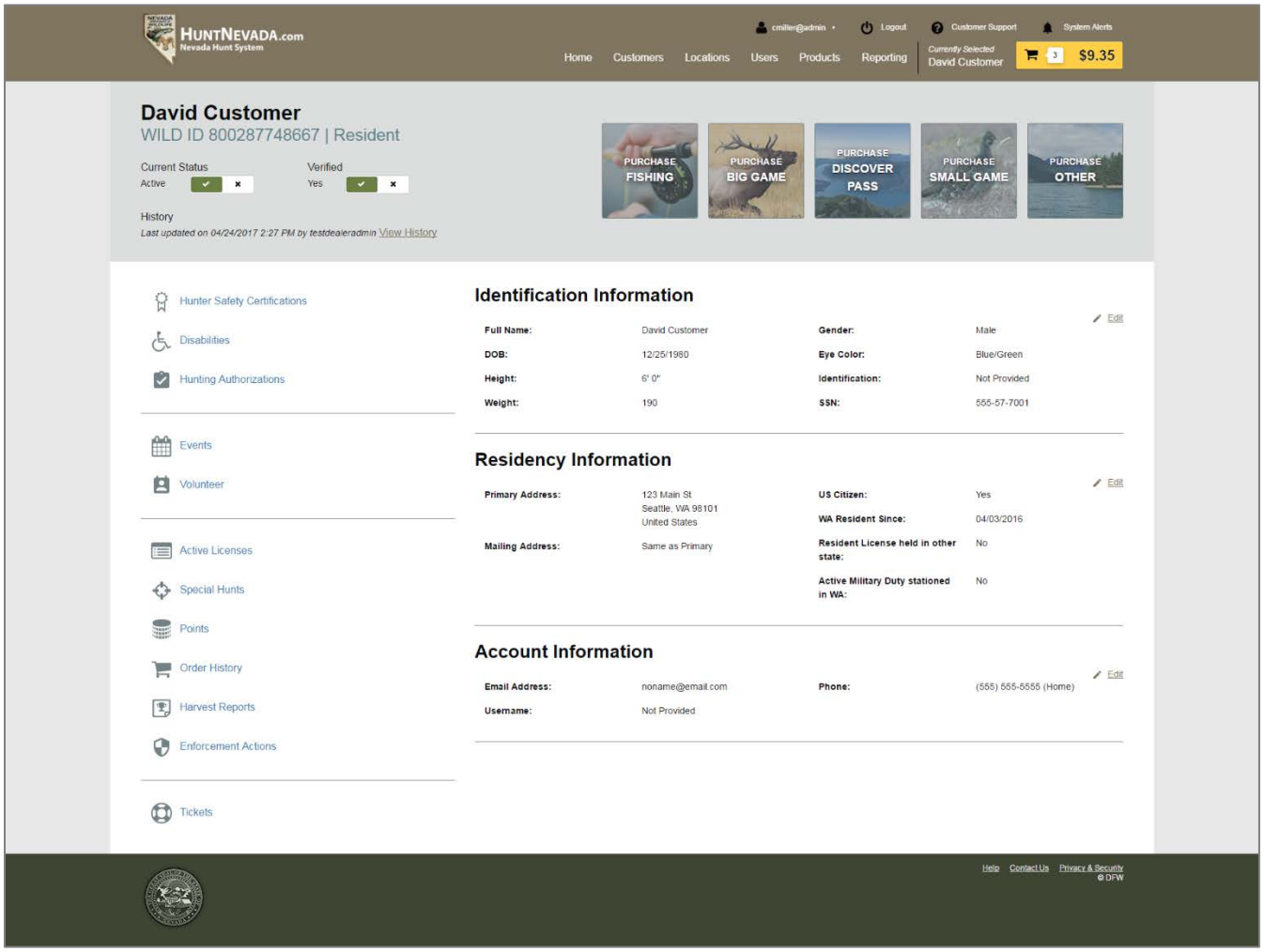


5. ***Availability***
   - ***Months Available***
   - ***Days per Week Available***
   - ***Hours per Week***
   - ***Max Miles to Travel (dropdown)***
   - ***Submit***



The system must include navigation tools providing customers with quick access to their customer account including services offered and their safety education history.

From the customer dashboard, users have easy access to their information including purchasing products, sales history, citations, registering for events, safety education history, surveys, etc.



3.4.24.2	The system must be fully compatible and seamlessly integrated with the vessel registration, licensing, species harvest registration, and NDOW's web site. The design and presentation of pages that will be viewed by our customers will be approved by the Department. The web host must communicate with the license system host to verify the customer's identification and gain authorization prior to all transactions.

NDOW's new licensing system will incorporate all functionality associated with Conservation Education/Programs. This approach is superior for several reasons:

- ***As holds true for the entire solution, NDOW's agency branding will be consistently applied and approved by the Department.***
- ***There will be no disparate site requiring compatibility/integration with the licensing system because all functionality will be seamlessly incorporated into one solution.***
- ***There will be an inherently higher conversion rate from education student to licensing customer because all users will have one login which removes the additional steps involved for sales checkout completion.***

3.4.24.3	Provide NDOW with analytics and intuitive tools to event manage and measure success and opportunity to enable recruitment, retention and reactivation.

NDOW will have access and intuitive tools for all data collected through the new system, including event-

related information. NDOW staff associated with the "NDOW Conservation Education/Program" user group will see upon login a dashboard that includes quick links to useful tools and relevant analytics measuring recruitment, retention, and reactivation goals. High level analytics may include: the following, per week/month/year

- ***Basic Events***
  - ***Total events***
  - ***Total event attendees***
  - ***Total event volunteers***
- ***Recruitment***
  - ***Total new users***
  - ***Conversion percentage from new user to first time customer***
- ***Retention***
  - ***Percentage of users with hunter ed certification that possess a current basic license***
  - ***Percentage of users that have a current license***
- ***Reactivation***
  - ***Total number of users that do not have a currently-active license***
  - ***Total number of users that have purchased a license for the first time in 3 years***

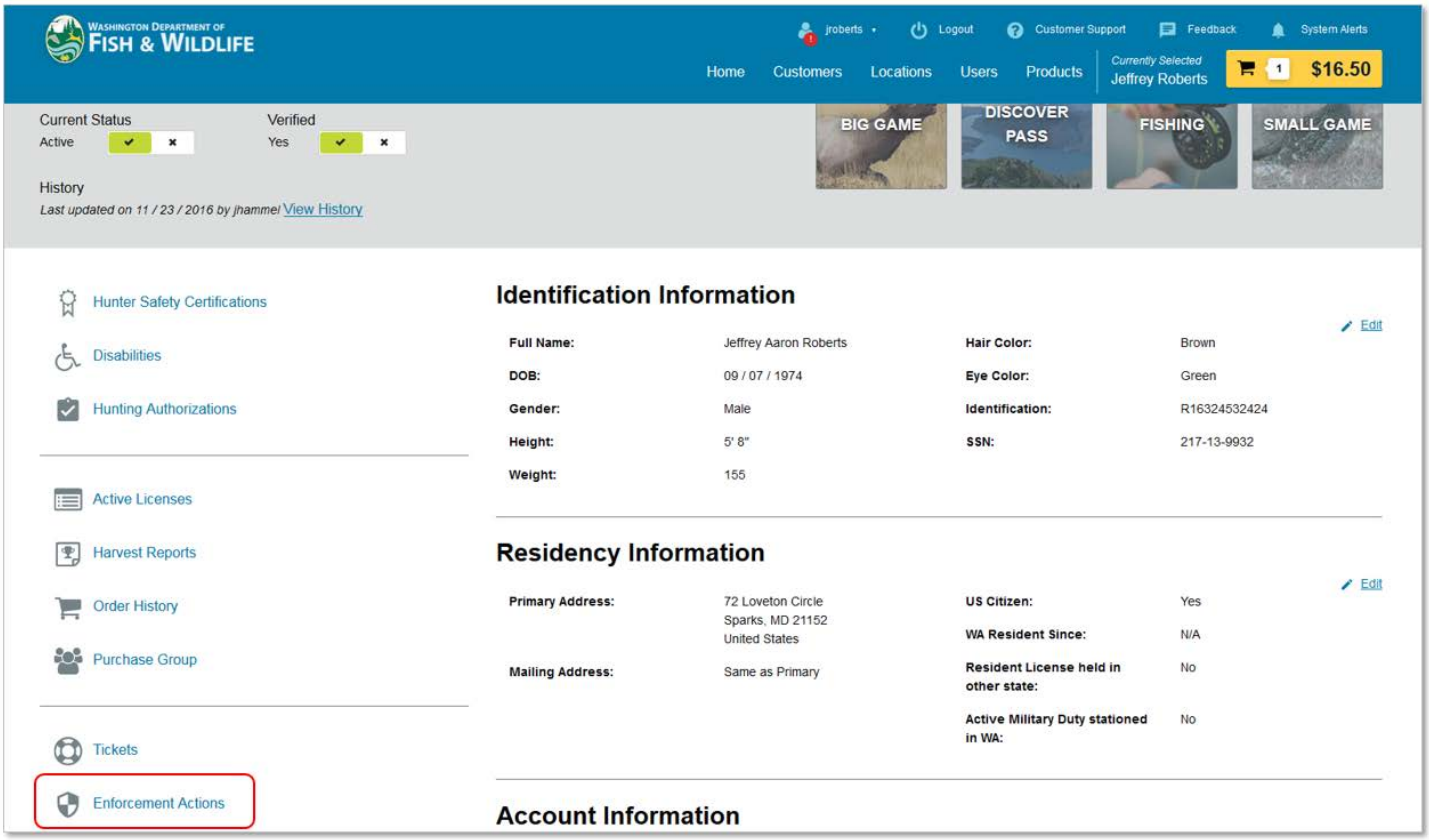
3.4.25	Law Enforcement/Revocations
3.4.25.1	The awarded vendor must provide programming and host services for a system to manage NDOW citations and the interfaces to receive data from various business partners. The system must provide database management tools to manage citation data, control access to the system and to generate reports. The system must interface with the Nevada Department of Justice system, Nevada Justice Information System, Nevada Circuit Courts, Department of Children & Families, and the Interstate Wildlife Violator Compact.

JMT understands the criticality of integrating law enforcement data into the NDOW Licensing System and will work with NDOW to document the specific functional requirements for this system. This includes the ability to create, manage, and enforce enforcement data within the Licensing System and also the integrations with external systems that provide information to the licensing system or receive data from the licensing system.

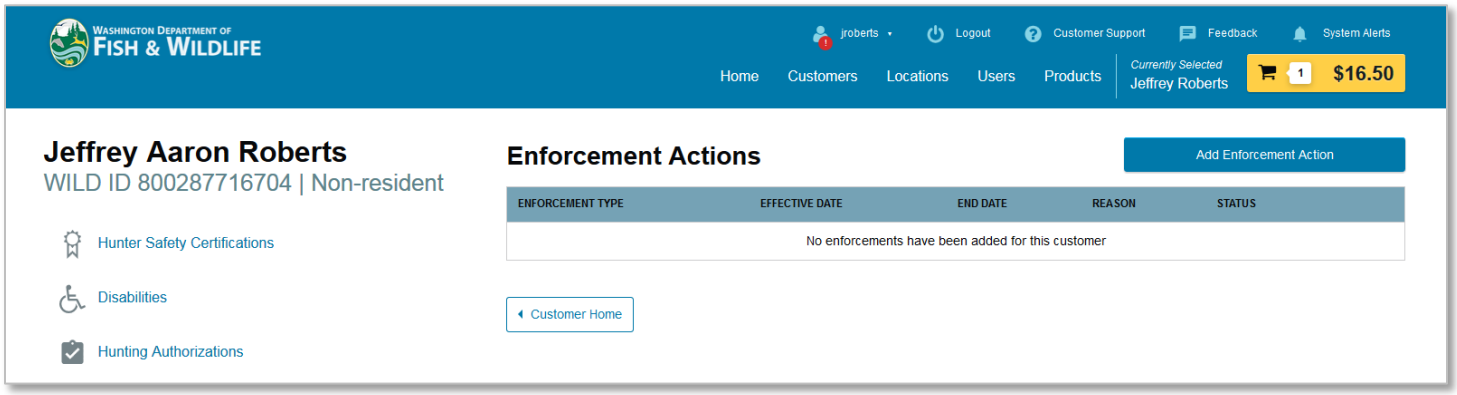
JMT has extensive experience with such integrations having integrated licensing systems with the Interstate Wildlife Violator Compact and well as other state specific entities for the purpose of enforcement data sharing.

The foundation framework for the integration of enforcement actions with the customer account within the licensing system is standard functionality within JMT's Outdoor Licensing and Recreation solution. This includes the ability of authorized users to add, edit and view enforcement actions to / on a customer's account and to enforce business rules within the system (e.g. revocation of a license or prohibiting purchase of a license) based on these actions.

The new NDOW Licensing System will include a very robust set of tools for creating, managing, and enforcing customer revocations / suspensions. Authorized users will choose "Enforcement Actions" from the customer landing page and be redirected to a list of all current and historic enforcement actions.

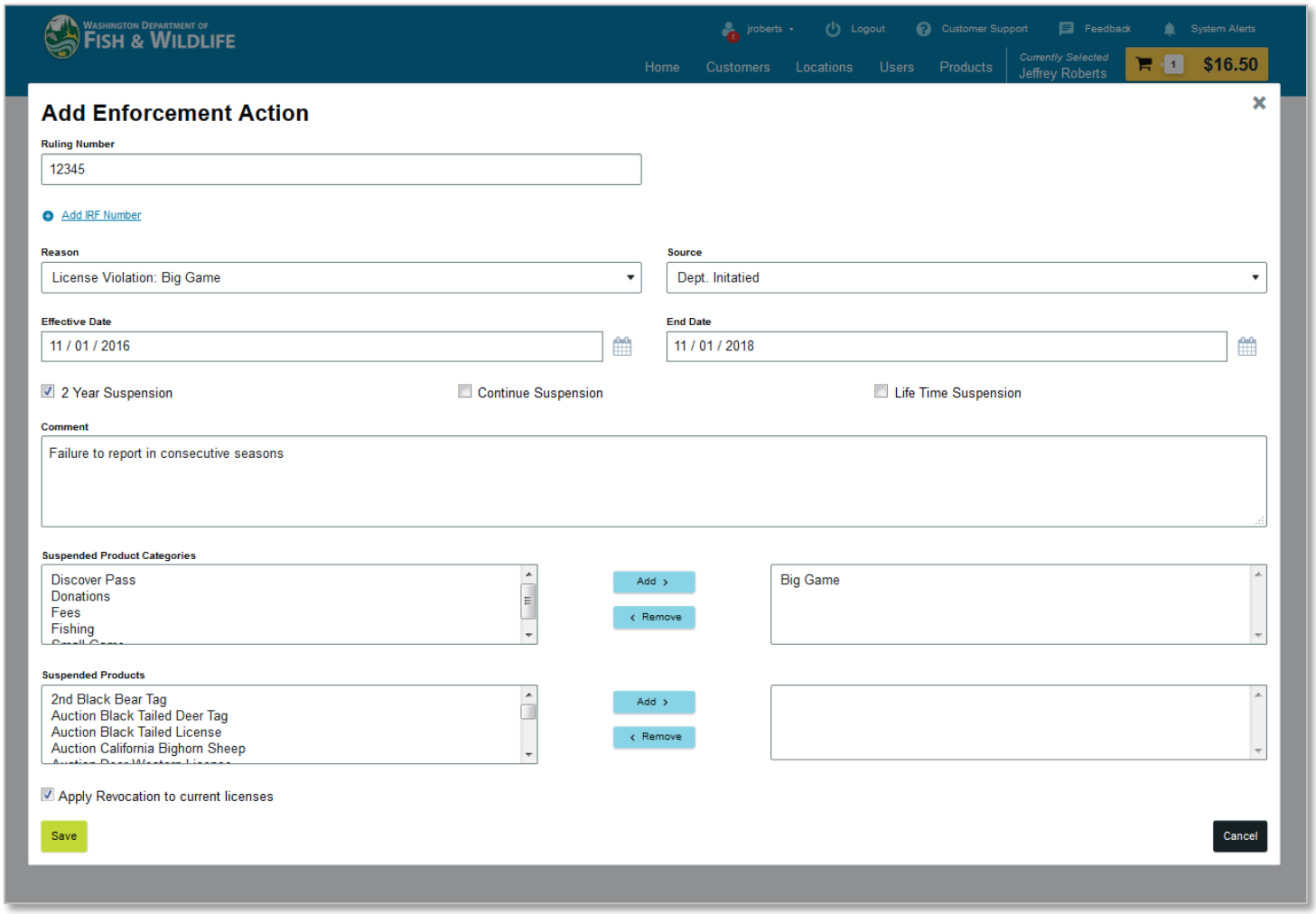


To add an enforcement, action the user need only click "Add Enforcement Action" to present the Add Enforcement Action dialog into which the user can provide all of the information required to create the new enforcement action.

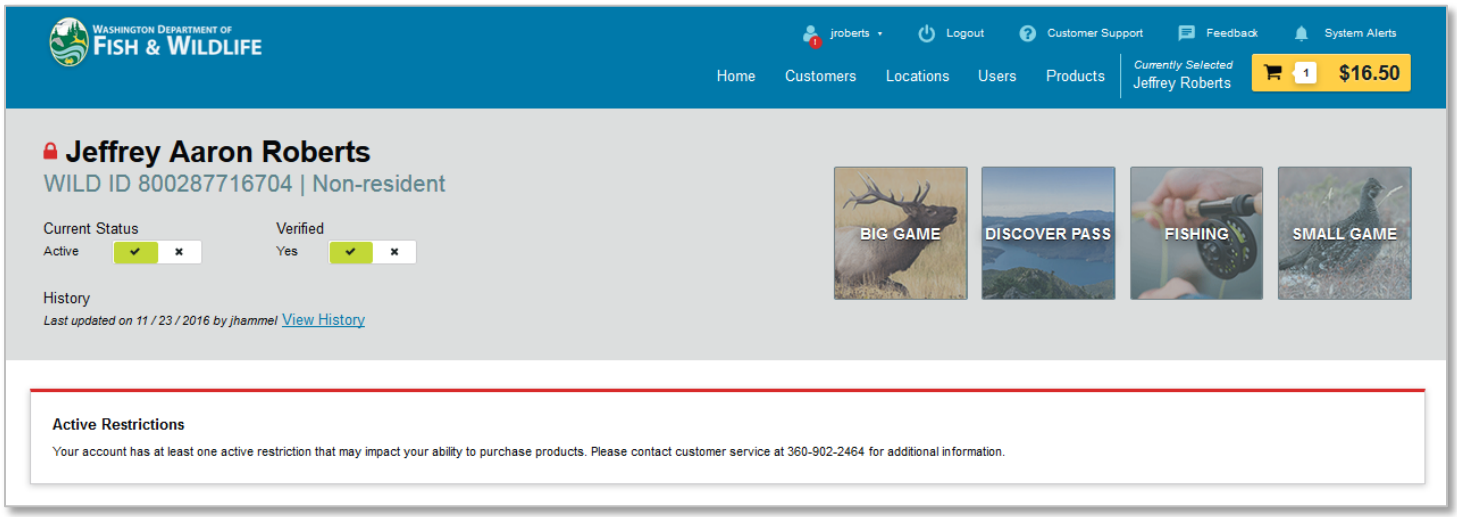


The specific information captured on this screen will be configured to match NDOW specifications. Note in the screen below that after providing reason, source and valid duration information the user is optionally able to select 1 or more product categories or one or more specific licenses against which to apply a revocation.

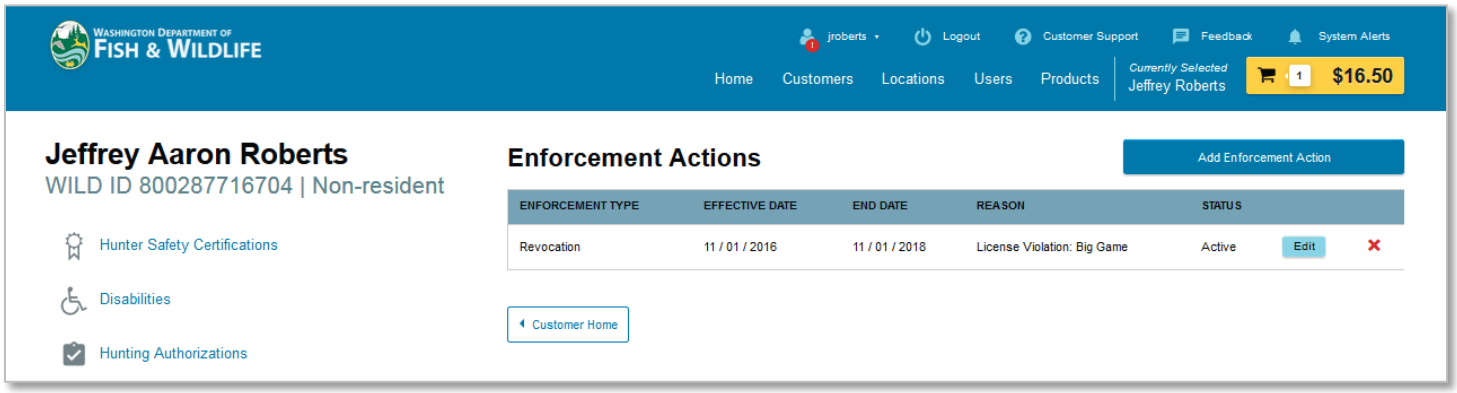
If the user elects not to check the "Apply Revocation" checkbox the system will create a suspension which has the effect of prohibiting the purchase of products with the selected product categories or specific the products selected. A revocation additionally updates the status of a customer's licenses which meet the specified criteria to "revoked". Revoked licenses will not print on documents, cannot be used as prerequisites, and are invalid for the duration of the enforcement actions valid dates.



If at any time an active enforcement action is present on a customer account, the customer home page will reflect this condition.



Authorized users will choose "Enforcement Actions" from the customer landing page and be redirected to a list of all current and historic enforcement actions. The user will select "Edit" for the enforcement action they wish to edit and will be presented with the enforcement actions in an editable form.



3.4.25.2	The system must be fully compatible and seamlessly integrated with the licensing, vessel registration, conservation education/safety, and species harvest registration system. The design and presentation of pages that will be viewed by users will be approved by the Department. The web host must communicate with the citation database to verify the customer's eligibility to purchase prior to all licensing transactions.

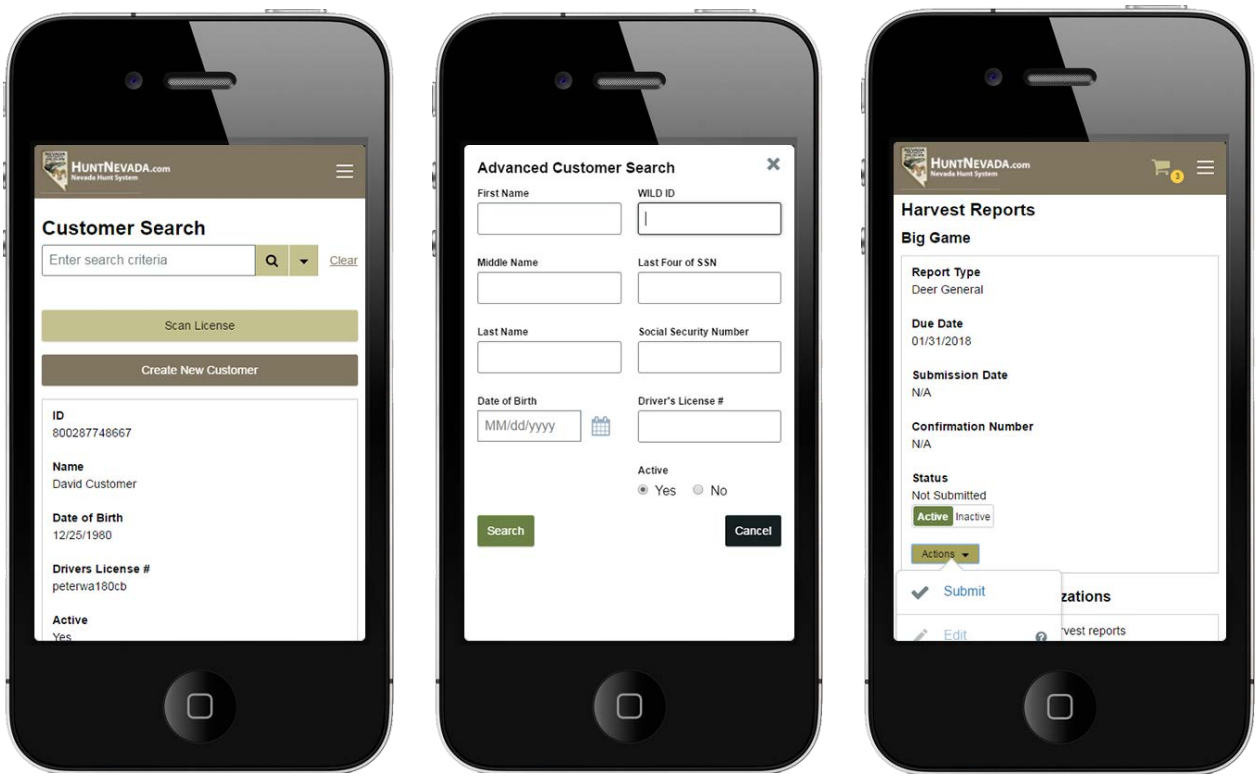
Our vision for a modern Outdoor Licensing and Recreation solution is one where customers interact with the licensing agency via a singular, comprehensive web application that maintains a singular, unique customer profile for each customer over time. All functional areas listed above will be integrated into and accessible from the intuitive customer portal and all related data (e.g. sales, demographics, licenses, citations, surveys, event participation etc.) will be associated with the unique customer profile.

Our product embodies this vision and, because of this, provides a more efficient, positive user experience for the customer while simultaneously creating a wealth of invaluable data that can be leveraged for effective retention, recruitment, and reactivation efforts.

This concept extends to enforcement actions which once applies to a customer account can results in restriction of a customer's account capabilities across all modules.

3.4.25.3	Describe a proposed mobile intuitive application for field personnel. This will include the ability to manage the control tables necessary to operate the mobile app. Control tables are housed in the citation database and exported for transmission to mobile application with interface ability.

JMT proposes to include, as a component of our overall NDOW Licensing System solution, a powerful and intuitive mobile law enforcement solution that will empower law enforcement staff to access real-time to near real-time data from the centralized licensing system and will <u>work seamlessly when outside of cellular and internet range.</u>



Proposed Features

The following are the highlights of the proposed new NDOW Mobile Law Enforcement Solution:

Real Time Connectivity to the NDOW Licensing System

The NDOW Mobile Law Enforcement app will run in online or offline mode. When connected to a cellular or wireless network (online mode) the application will communicate in real-time with the centralized licensing system. This means that law enforcement users will have access to the most current customer data including demographic information, license history, purchase history, citations, enforcement actions. It also means that citations and other enforcement data created via the mobile app will appear on the customer account in real-time.

Off-Line Access to Customer Profile Data

When the app is in out of network range, it will run in offline mode. While in offline mode end users will still be able to view, create and modify data, with any changes saved to a local store. When the app is back online, it will automatically synchronize local changes with the centralized database.

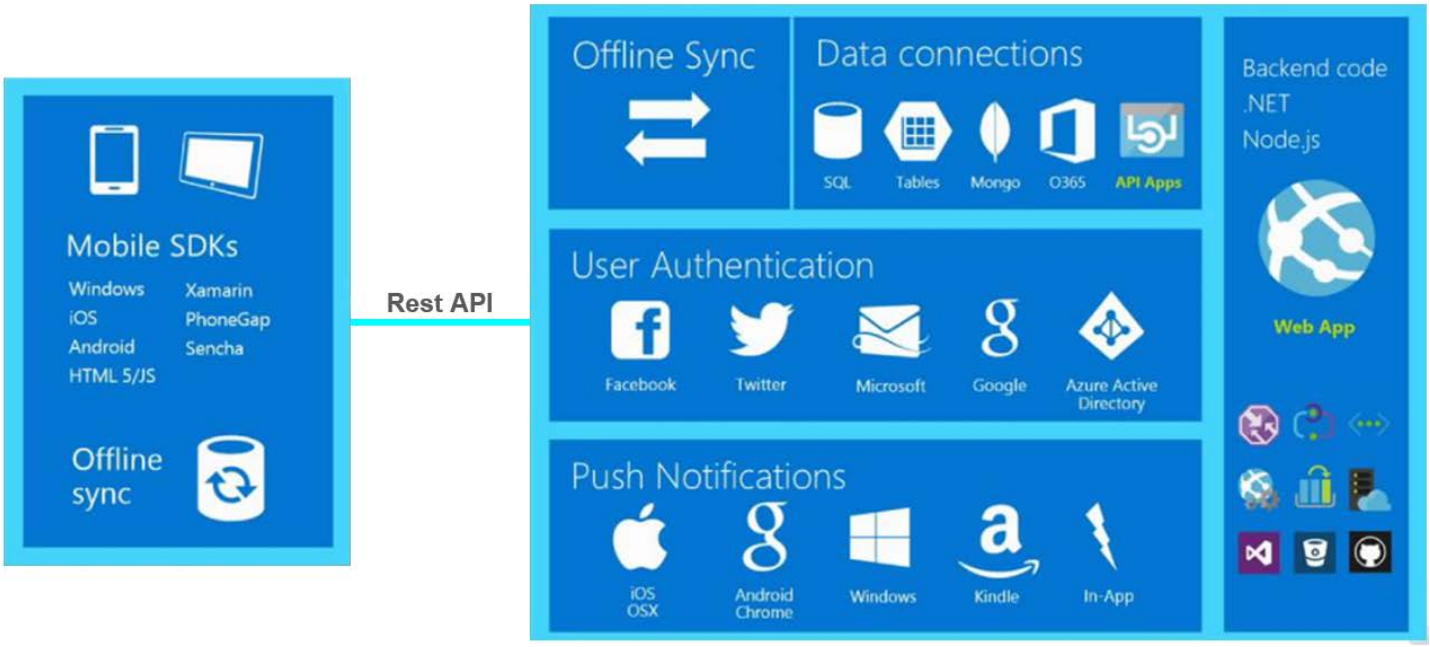
Barcode Scanning

The NDOW Mobile Law Enforcement app will support the scanning of barcodes on driver's licenses and printed on license documents to facilitate quick, efficient, and accurate customer account lookup. Additional "Pocket Barcode Scanner" hardware is required.

Technology

This solution is made possible by Microsoft Azure's "App Services with Offline Data Sync" technology.

- ***Azure App Services offers the ability to perform an offline data sync***
- ***Works with mobile platforms such as iOS, Android and Windows***
- ***Offline sync will allow officers to view customer related data while not connected to a network***
- ***Data will re-sync when the device re-establishes a network connection***
- ***Azure App Service SDK can push notifications to registered devices***



3.4.26 Harvest Information Program			
	2014	2015	2016
HIP	9,779	8,763	8,971

3.4.26.1	Vendors must propose and provide programming and host services for a complete system to manage wildlife harvest information. The proposed solution must offer the customer the internet based reporting system to report their harvest to NDOW.

JMT's Outdoor Licensing and Recreation solution provides a Harvest Reporting module. NDOW will have the flexibility to build, configure and deploy web-based Harvest Reporting surveys to its customers. This includes:

- ***An intuitive administrative interface for creating harvest reports and all associated attributes (e.g. reporting start and end dates)***
- ***The ability to create the actual Harvest Report Questionnaire including all associated questions and validations.***
- ***The ability to configure products so that reporting requirements are automatically assigned upon purchase.***
- ***The ability for customers to access Harvest Report Questionnaires from their customer account home page and efficiently submit their information.***
- ***The ability to automatically assign penalties based on failure to submit.***

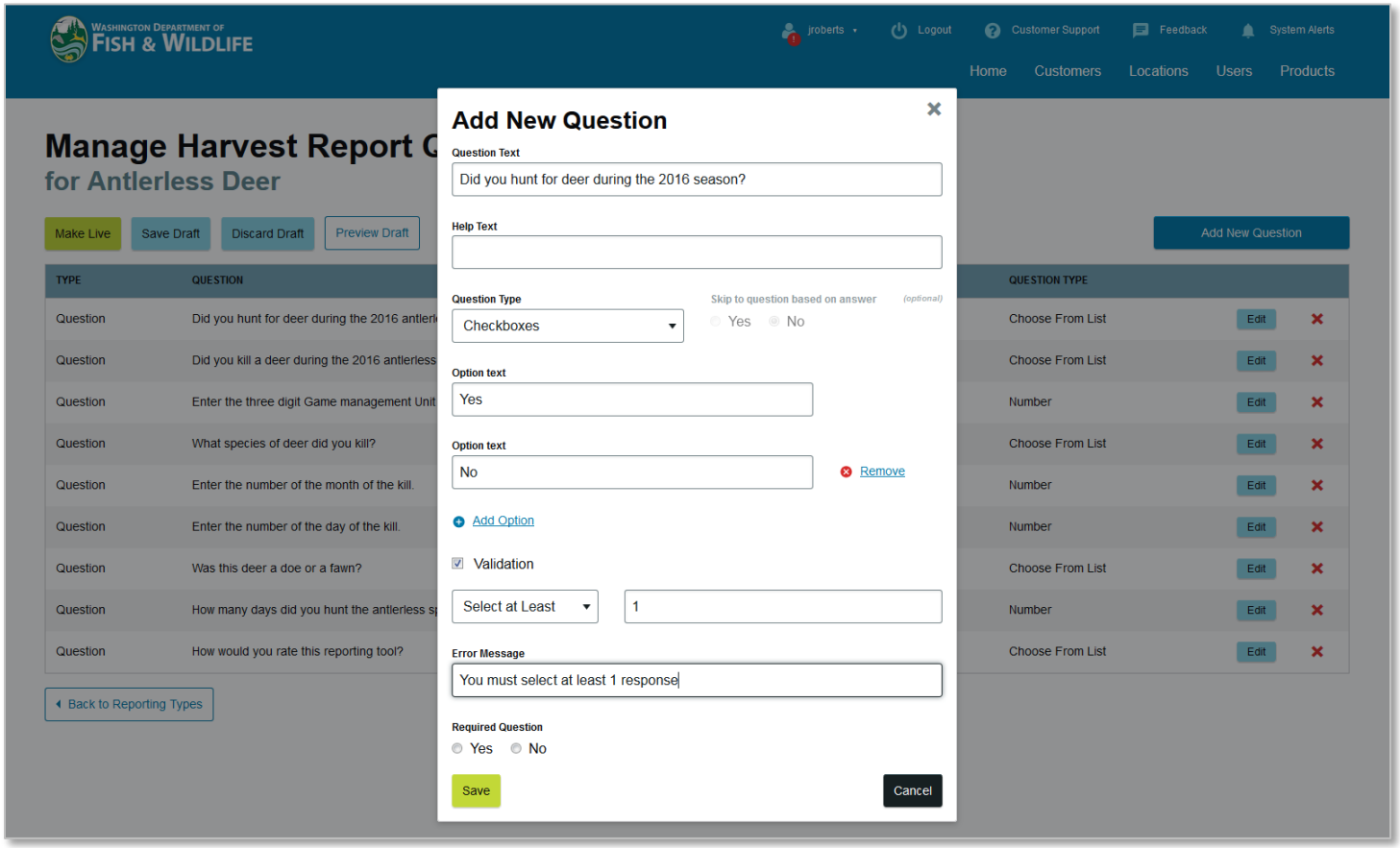
Creating a Harvest Report Questionnaire

The NDOW module will support:

- ***Sophisticated question types like drop down list, checkboxes, date selectors in addition to standard types such as text, number, paragraph and yes / no.***
- ***The ability to configure sophisticated client-side validation.***
- ***The ability to configure help text and error messages.***
- ***The ability to embed images, video, headers, text, and HTML into surveys.***

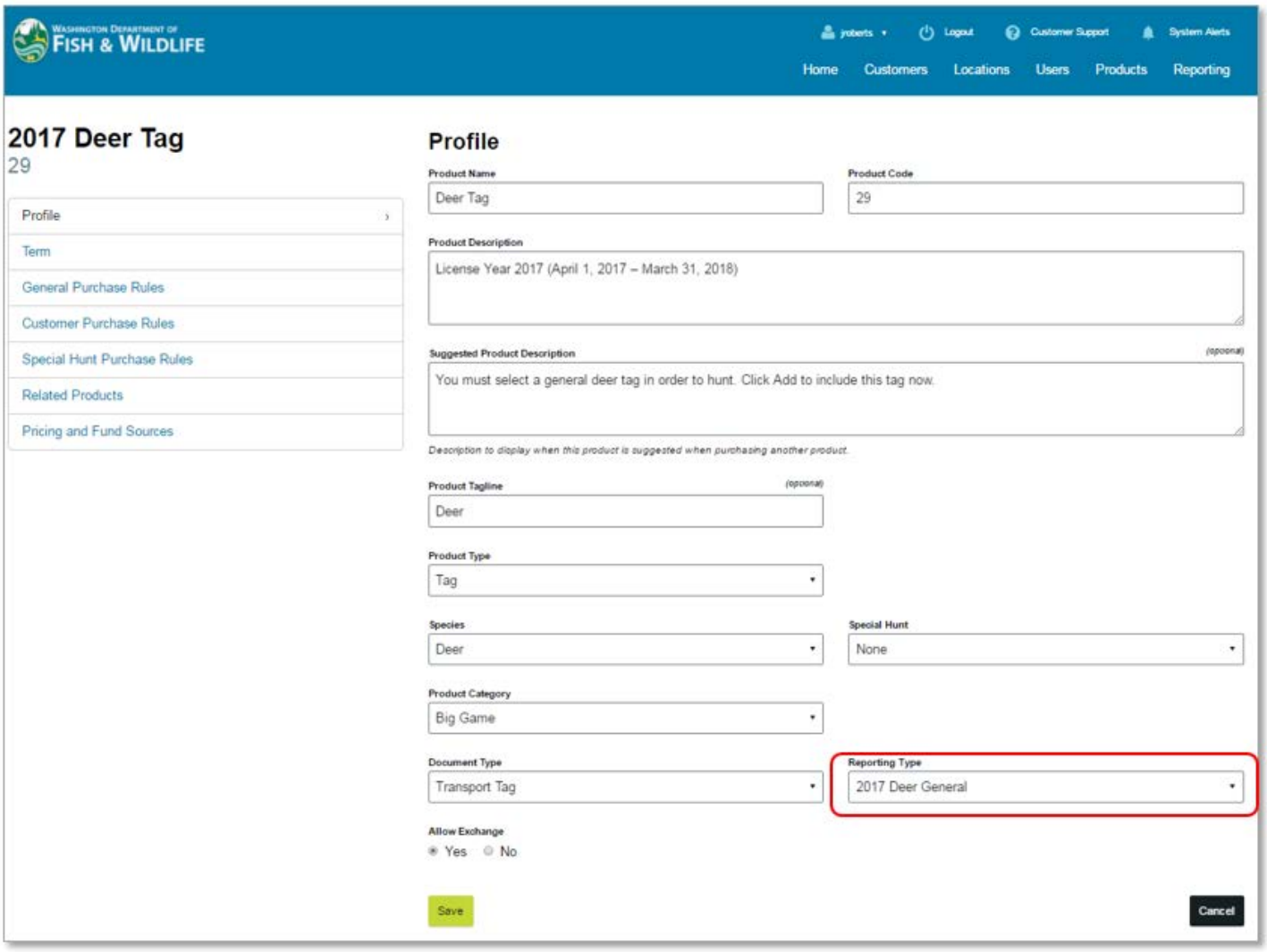
NDOW will be fully empowered, without vendor assistance, to create new Harvest Report Questionnaires. These

questionnaires are created in "Draft" format so they can be fully created, previewed, and approved prior to "publishing" to the customer-facing licensing system.



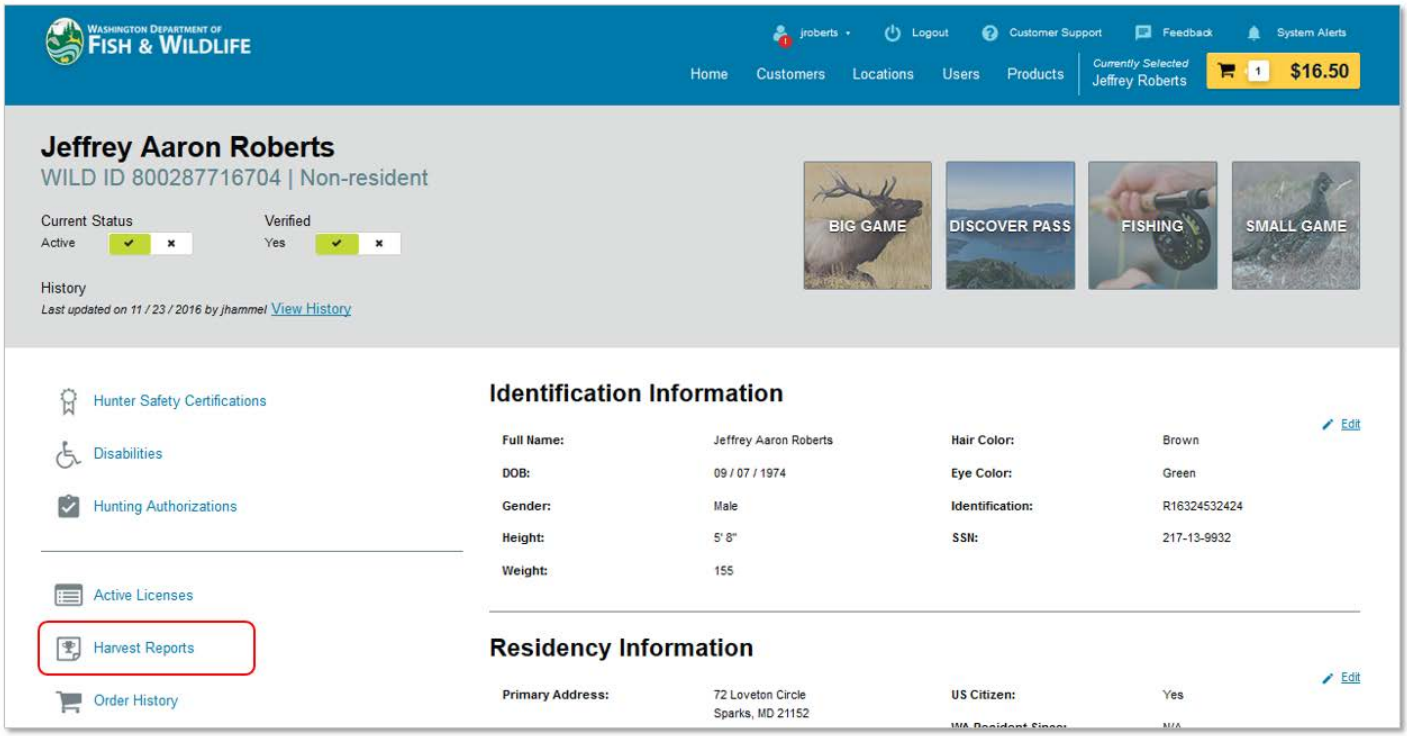
Configuring Products

The product configuration functionality of JMT's solution supports the association of a Harvest Report Questionnaire to a given product. When this association is made, the system will automatically assign the reporting requirement to the customer. This is an optional configuration and JMT will work with NDOW to implement this functionally in a manner consistent with NDOW business rules.

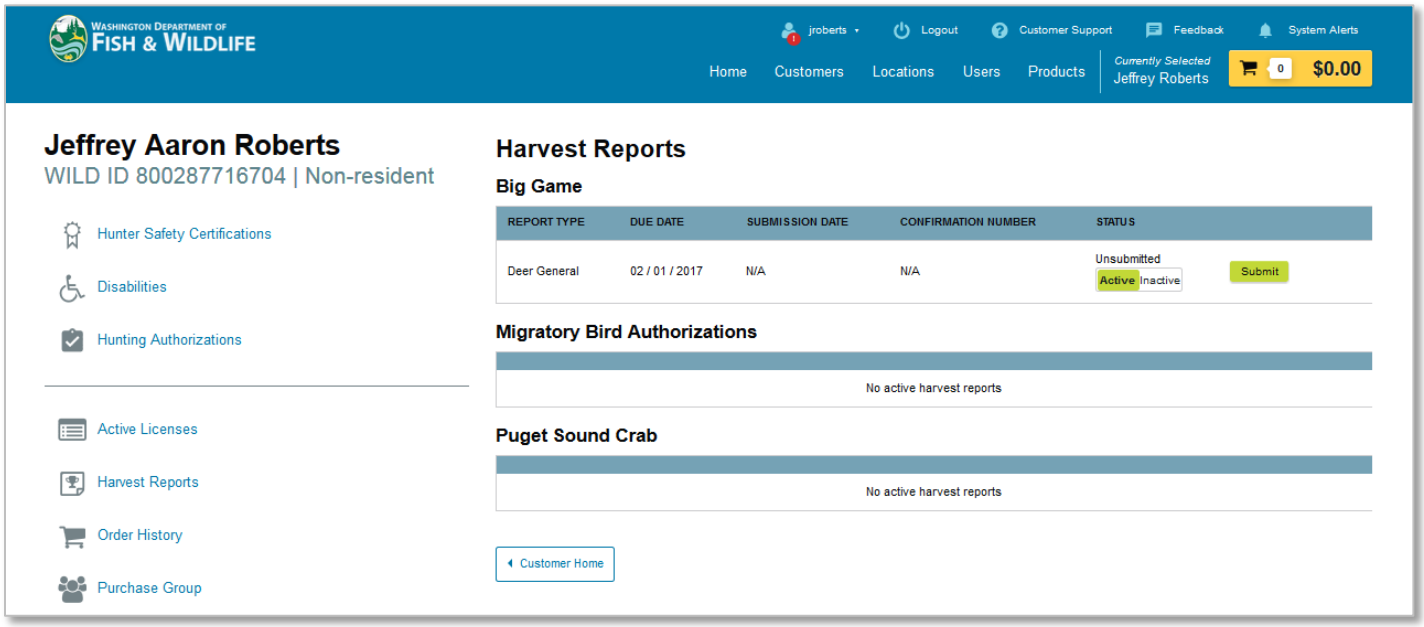

Washington Department of
Fish & Wildlife
jroberts
Logout
Customer Support
System Alerts
Home
Customers
Locations
Users
Products
Reporting
2017 Deer Tag
29
Profile
Term
General Purchase Rules
Customer Purchase Rules
Special Hunt Purchase Rules
Related Products
Pricing and Fund Sources
Profile
Product Name
Deer Tag
Product Code
29
Product Description
License Year 2017 (April 1, 2017 – March 31, 2018)
Suggested Product Description
(optional)
You must select a general deer tag in order to hunt. Click Add to include this tag now.
Description to display when this product is suggested when purchasing another product.
Product Tagline
(optional)
Deer
Product Type
Tag
Species
Deer
Special Hunt
None
Product Category
Big Game
Document Type
Transport Tag
Reporting Type
2017 Deer General
Allow Exchange
Yes
No
Save
Cancel

Customer Submission of Harvest Reports

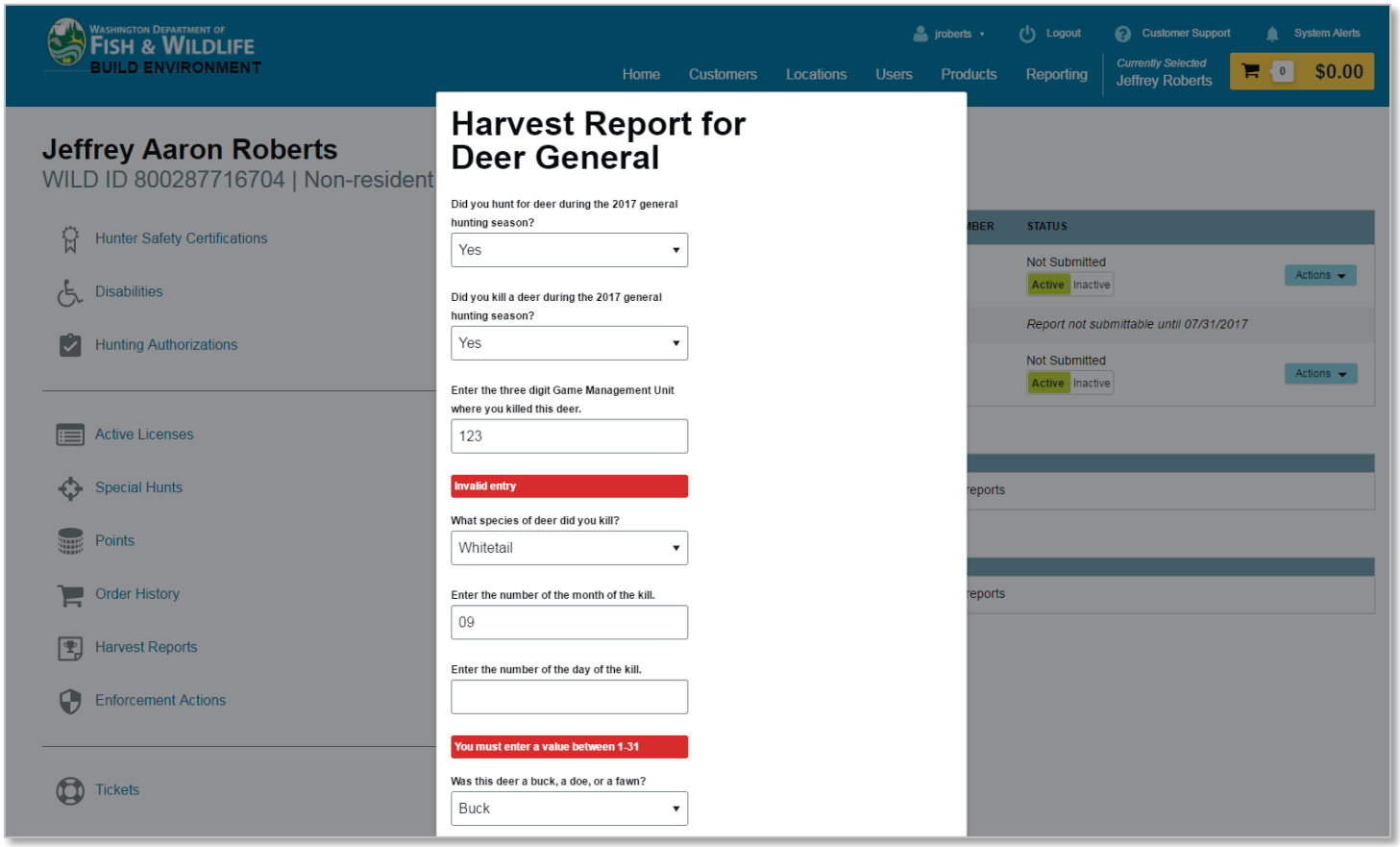
The customer home page provides a portal to all customer information. From the customer home page, customers will have access to their complete harvest reporting history as well as harvest reports due of the current season. The customer will simply login and click "Harvest Reports" from the customer home page.



The customer will be redirected to the Harvest Reports screen from which all current and historic harvest reporting requirements assigned to the customer can be viewed. Depending on requirements, the reports can be organized by category. Historic reporting requirements can be hidden or displayed by default.



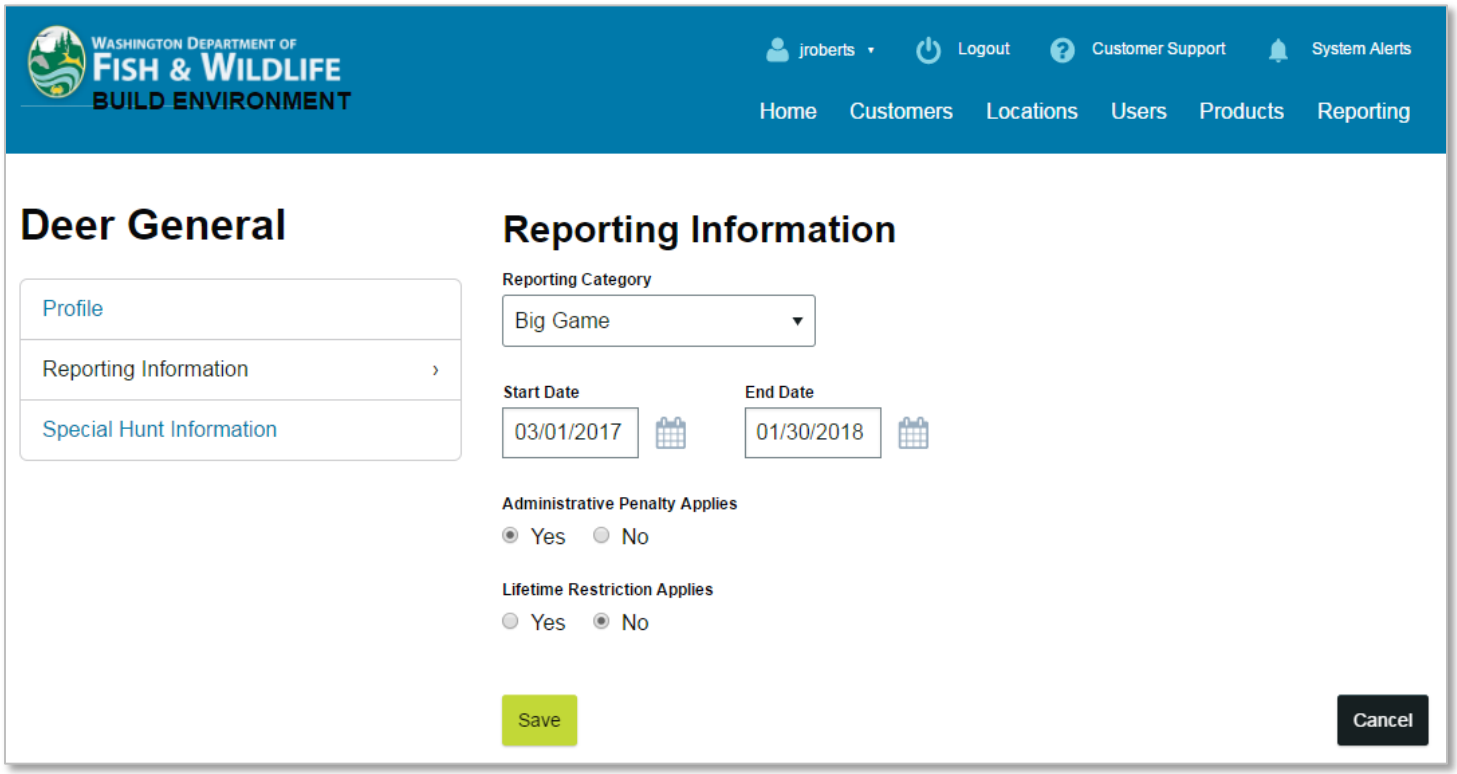
The user then only need click "Submit" to be presented with the questionnaire, complete the information, and complete the submittal. All configured business logic and data validations will be enforced in the online questionnaire.



3.4.26.2	The system must provide management tools allowing NDOW staff to control access to the system, track entries, view and update harvest information, and produce reports.

NDOW will have the flexibility to build, configure and deploy web-based Harvest Reporting surveys to its customers as well as to control access, track customer submissions, and view update harvest information.

- ***An intuitive administrative interface for creating harvest reports and all associated attributes (e.g. reporting start and end dates).***
- ***The ability to create the actual Harvest Report Questionnaire including all associated questions and validations.***
- ***The ability to configure products so that reporting requirements are automatically assigned upon purchase.***
- ***The ability for customers to access Harvest Report Questionnaires from their customer account home page and efficiently submit their information.***
- ***The ability to automatically assign penalties based on failure to submit.***
- ***The ability to view and edit customers submitted harvest reports.***
- ***The ability to submit reports on behalf of customers.***
- ***The ability to waive customer reporting requirements.***



3.4.27	The Nevada Department of Wildlife's big game application and draw is a major source of revenue for the agency. The awarded vendor will design a user friendly, intuitive application process. Clients will have access to view their prior hunt records, bonus points for each species and eligibility by species. All drawings will be conducted using a random number generator as defined in NRS 501 thru 505, https://www.leg.state.nv.us/nrs/index. A seamless draw will be conducted across all species, all weapon classes, and clients can have up to 5 choices per hunt category. In addition to the big game hunts, the system also handles draws for nonresident guided deer, turkey, and swan hunts, and tracks manual entry and issuance of tags by NDOW for landowner damage compensation, elk incentive, private lands elk, bid/auction, small emergency depredations, replacement tags and duplicates.

The new NDOW system will include a robust Controlled Hunts module that empowers IDFG to create and configure new Controlled Hunts at any time and without any intervention from the vendor. This includes the ability to:

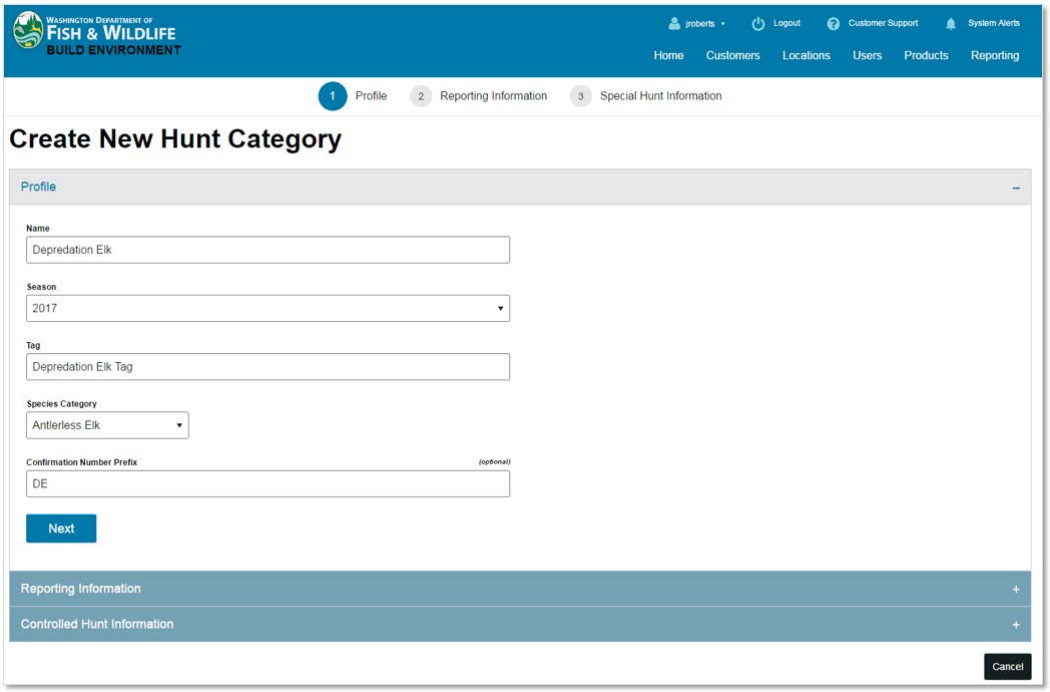
1. ***Create the Controlled Hunt***
2. ***Create and Configure 1 to many Hunt Choices***
3. ***Create and configure products required to enter the Hunt***
4. ***Create and configure products that are purchase-able after a Hunt win***

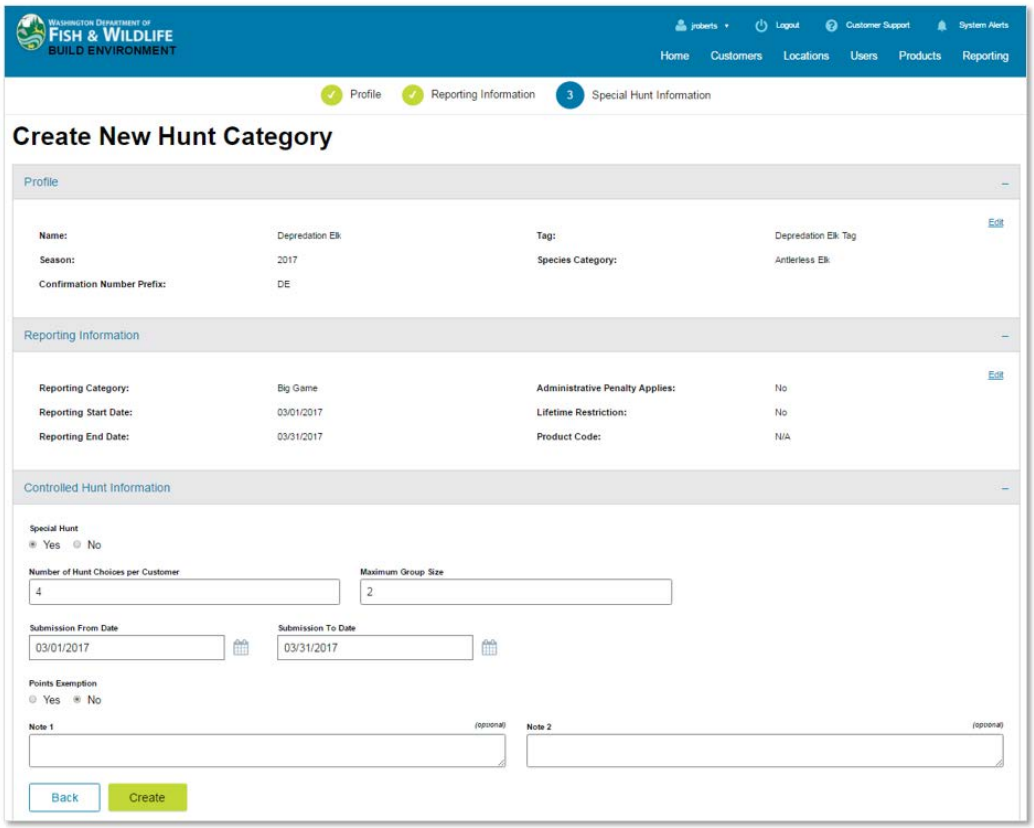
JMT has implemented similar functionality for Maryland, West Virginia, and Washington. NDOW will benefit from JMT's fully developed and tested, state-of-the-art technology, which will be easily configured to provide a solution that is tailored 100% to NDOW's requirements.

The screenshots below demonstrate these capabilities at a high level. As always, this functionality will be configured / customized to completely satisfy NDOW requirements and to enable all NDOW business processes.

1. Create and Configure a Controlled/Depredation Hunt:

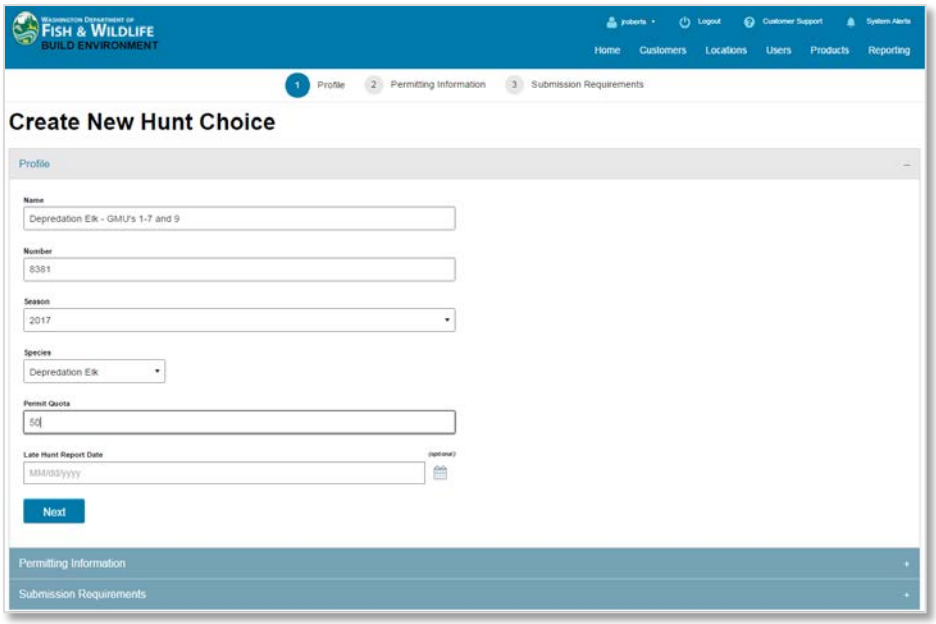
NDOW will configure a new hunt specifying the various attributes including general profile information, information regarding reporting requirements and finally the parameters that control customer entry into the draw.





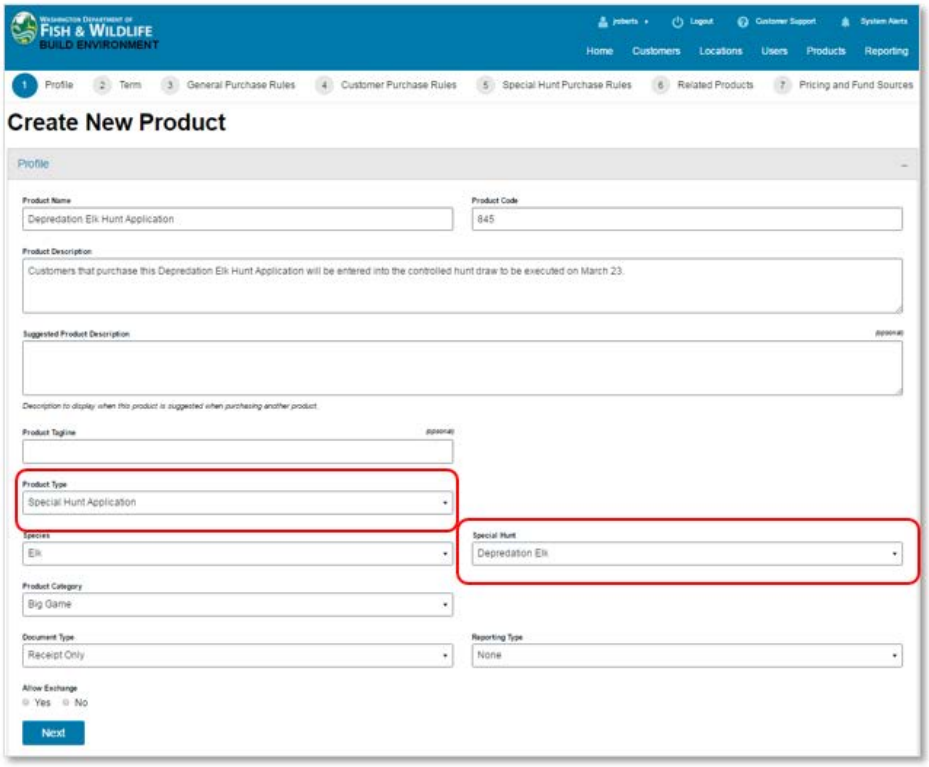
2. Create and Configure a Controlled/Depredation Hunt:

NDOW will configure one to many Hunt Choices to be associated with the Hunt. These hunt choices often correspond to specific Game Management Units (GMUs) but can also include specific weapon requirements. It's at the Hunt Choice level that NDOW will define the quota for the hunt.

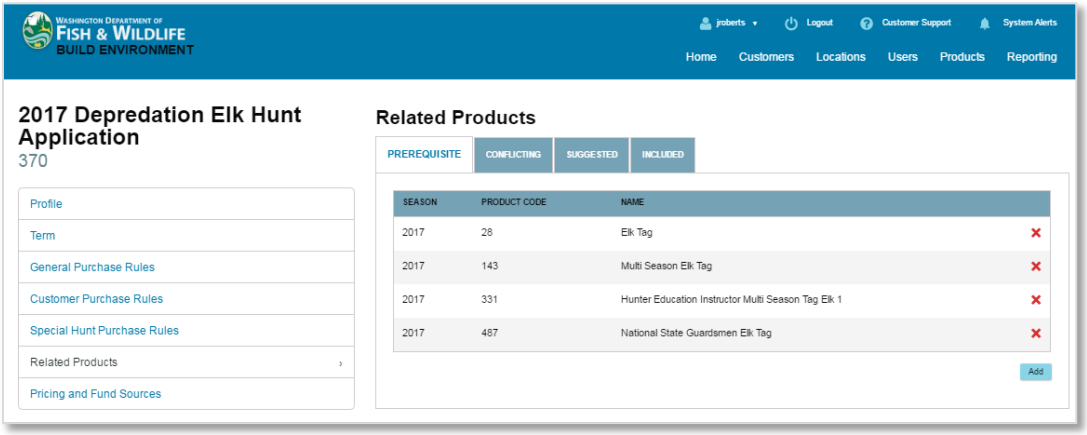


3. Create and configure products required to enter the Hunt

NDOW will have the ability to create and configure products that when purchased, automatically enter the customer into the controlled hunt draw or that when purchased, provide the customer the opportunity to submit for the controlled hunt draw. This is as simple as setting the product type to a controlled/depredation hunt application and configuring an association between the product and the hunt as shown below.



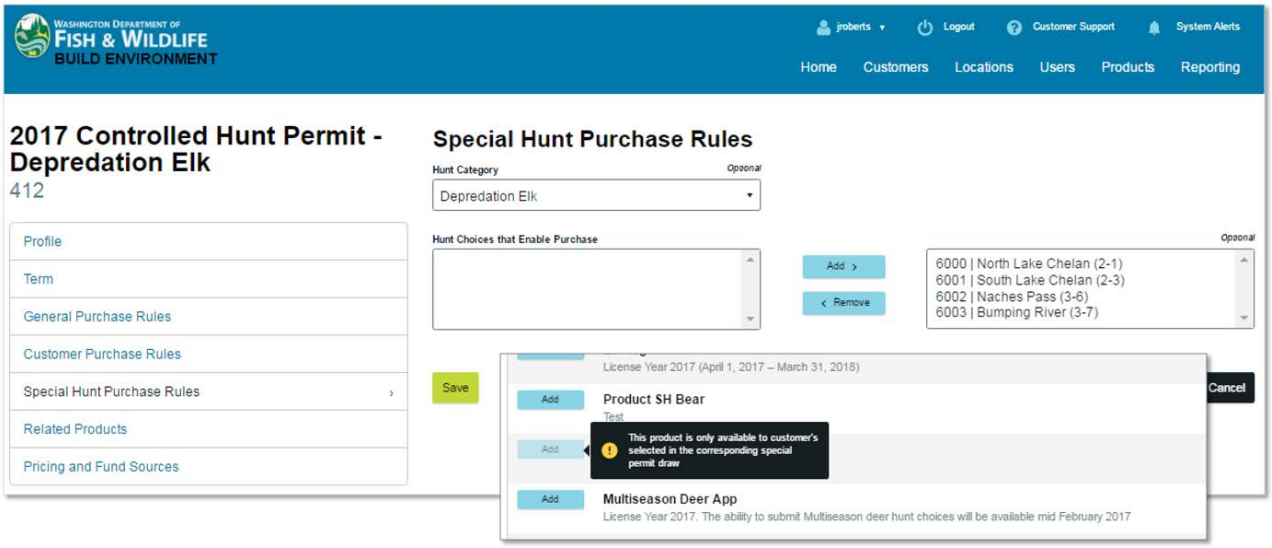
As the application is configured as a product in the system, NDOW will have an opportunity to configure any additional business rules necessary to implement the depredation hunt per regulation. For instance, the "Related Products" section may be used to add one to many prerequisite products; products that must be purchased prior to or in conjunction with the application.



4. Create and configure products that are purchase-able after a Hunt Win

JMT Technology Group recognizes that Licensing Agencies require flexibility when configuring Hunts as different hunts are established to meet different objectives and are subject to a variety of different regulations which govern their execution. Our solution strives to provide the flexibility to meet the totality of an agency's needs.

Towards that end, NDOW will have the flexibility to establish "Post Draw Products" in the new NDOW system. Post Draw Products are defined as products that can only be purchased by customers that have been selected for specific hunts. Configuring post draw products is as easy as selecting a product and identifying 1 or more hunt choices that a customer must win to purchase.

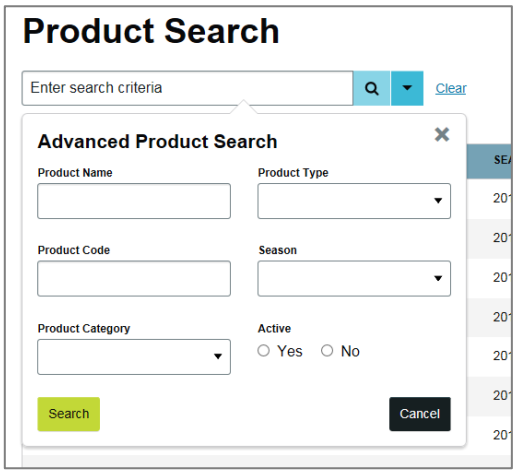


Controlled Hunt Search Options

NDOW will have the ability to search for a specific controlled hunt.

The advanced search will have a similar user experience to that of searching for a product, and it will contain the following search fields:

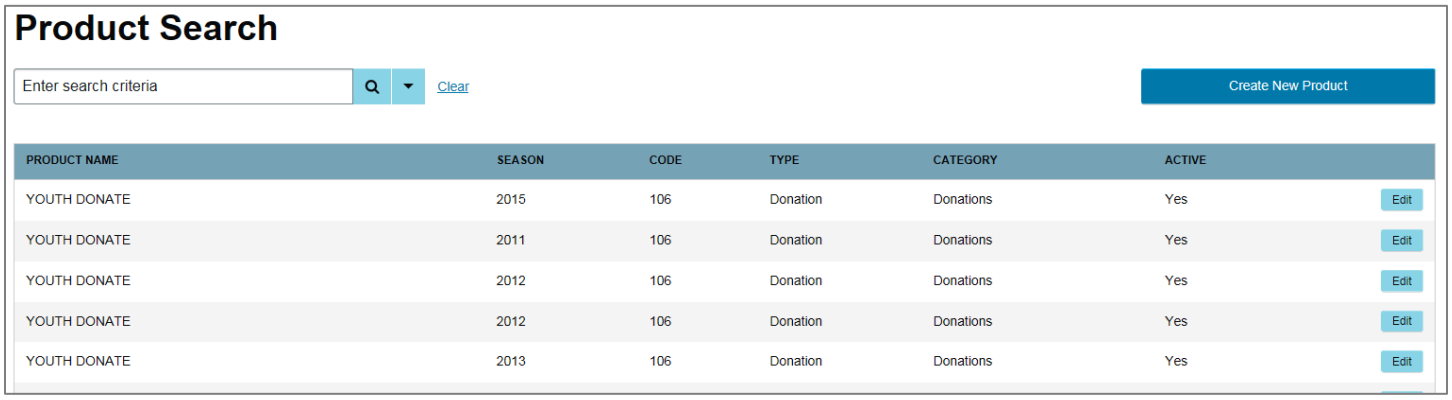
- ***License year***
- ***Hunt number***
- ***Species***
- ***Hunt type***
- ***Hunt area***
- ***Status***



Search Results

The search results page will also have a similar user experience to that of a product search results page, and will bring back the following fields:

- ***Hunt Number***
- ***License year***
- ***Species***
- ***Hunt area***
- ***Status***



Leftover Controlled Hunts

The new NDOW system will support the automated generation of "leftover hunts" by evaluating the number of customer's that have purchased the purchase record / permit for the hunt and those in the winners stable that are still able to purchase the permit against the maximum number of tags available for the hunt. The difference will be the number of leftover tags that can be sold. Authorized users will be able to select a controlled hunt, review and potentially edit the number of available tags, and designate the hunt as available as leftover. Those tags will then be available for sale via the product catalog.

Manual Entry and Issuance of Tags

JMT's solution will allow for authorized NDOW users to manually enter and issue tags for landowner damage compensation, elk incentive, private lands elk, bid/auction, small emergency depredations, replacement tags and duplicates.

Winners Search

The new NDOW system will support authorized user's ability to search the controlled hunts winner table. JMT will configure the controlled hunt winners search according the specifications defined during the requirements

elicitation phase.

Add/Edit customers to the controlled hunt winner table

The new NDOW system will support authorized user's ability to add customers to the controlled hunts winner table and to edit the status of customers within the controlled hunt winners table. JMT will configure this functionality in accordance with the specifications defined during the requirements elicitation phase.

Waiting Period Rules

The new NDOW system will support authorized user's ability to Add/Edit controlled hunt application waiting period rules including those imposed on customer's that win specific hunts and those that successfully harvest an animal for specific controlled hunts.

3.4.27.1	Bonus Point Program. The bonus point program provides additional random draw numbers that enhance an applicant's opportunity to draw a tag. To participate in the bonus point program a client must purchase a hunting or combination hunting fishing license prior to or during the draw application process. The client must not get a refund on the hunting license. If they receive a refund on a hunting license they will not earn any bonus points on unsuccessful applications that year.

A.	Random Number Generation is the generation of a sequence of numbers that cannot be reasonably predicted. Regulation requires that the random draw numbers be generated by an algorithm using a number established by the hours, minutes, seconds, and hundredths of a second set forth by the computer clock at the start of the draw. These random draw numbers are assigned randomly across all species applications in the draw.

Random Draw Methodology

The new NDOW system's controlled draw hunt selection algorithm will use a random number generator as defined in Nevada's State Legislature NRS 501 thru 505.

B.	Bonus points are "squared" to arrive at the bonus number of draw numbers for the application. If the client or party has 5 bonus points, these would be "squared" and the application would receive 1 point for the application and 25 points for the bonus points or a total of 26 draw numbers.

JMT will follow NDOW's bonus point structure as stated above.

C.	Applications are associated with a "Party" record to ensure that party applications are grouped together. Random numbers that are generated are assigned to the associated Party record for each application that was submitted. If four applicants apply together in a single party application, then their four applications are all linked to the "Party Master" record for that group or party, and the random numbers are assigned to the common "Party Master" record. In this way, everyone in the party has the same random numbers for their common application.

JMT's group or "party" controlled hunt application approach will abide by NDOW's above business processes.

D.	If a client does not apply for a tag or a bonus point for a species category for 2 consecutive years or if the client obtains a tag in a species category in the main big game tag draw or a remaining tag draw the bonus points will revert to zero. Hunters who obtain remaining tags do not lose bonus points if the tag is obtained in a remaining tag first come first serve draw.

JMT's existing controlled hunt bonus point structure already accounts for NDOW's above-stated business rule.

E.	A client may apply for just a bonus point for a species category as an option if they know they would not want to obtain a tag that year.

JMT's existing controlled hunt bonus point structure already accounts for NDOW's above-stated business rule.

F.	Bonus Point Use. When an applicant with more than one bonus point applies the lowest of those draw numbers is used for the drawing.

JMT's existing controlled hunt draw algorithm already accounts for NDOW's above-stated business rule.

G.	Bonus Points and Group Applications. Mule deer, antlerless elk and pronghorn horns shorter than ears hunts are the only hunts where group applications for the same hunt and hunter choices are allowed. On group applications, the bonus points for the group is the quotient of the total number of bonus points held by the group, divided by the number of members in the group, rounded to the nearest whole number. If the group is unsuccessful in drawing tags, each member accrues a bonus point on their individual record for that species category.

JMT's controlled hunt application approach will abide by NDOW's above business processes.

H.	Bonus Point Transferability. Bonus points cannot be transferred to another person or species category on their own record, Once a junior hunter becomes ineligible for the junior hunt by reaching 5 years of application for the hunt or maximum age, any bonus points on record may be transferred automatically to the antlered deer category.

JMT's controlled hunt application approach will abide by NDOW's above business processes.

3.4.27.2	Hunter Eligibility by Hunt. There are several types of eligibility for an applicant. There is eligibility that involving waiting periods after a tag is drawn dependent upon harvest of an animal or not. For example, antlered elk has a waiting period of 7 years. The client is ineligible to apply for a tag for antlered elk (all weapon classes except depredation hunts) regardless of whether they take an animal. The can apply in the 8th year. However, this is a new rule and there are clients that must be grandfathered in under the old rules. They had a 5 year wait if there was no take in 2016 or earlier. These clients will not be extended to the 7 year wait. And in 2016 or earlier those that harvested had a 10 year wait. Dependent upon when they drew the tag the may have become eligible in 2017. Antelope had a similar change to a standardized 3 year wait regardless of harvest starting in 2017. All subspecies of big horn sheep and mountain goat have a 10 year wait. Black bear has 5 year wait if harvest and apply the next year if no harvest eligiblity. Mule deer, antlerless elk, spike elk and horns shorter than ears antelope a client can apply each year. This type of eligibility is in NAC.

The new NDOW system will support authorized user's ability to Add/Edit controlled hunt application waiting period rules including accommodations for those grandfathered in under the old rules.

This functionality is part is a standard part of our solution but JMT anticipates that it will be extended / enhanced to match NDOW requirements.

3.4.27.3	Another type of eligibility is application eligibility where on an annual basis, in February, the Commission can determine what a client can apply for as a species in a draw application period. For example currently applicants have to choose to apply for either antlered mule deer or antlerless mule deer in a draw period they cannot apply for both. For elk they can apply for both antlered elk and antlerless elk and several different hunts for each. For example (Antlered elk (4151, 4161,

	4156), antlered elk depredation (4102) and antlerless elk (4181, 4111, 4176), antlerless elk management hunt (4481, 4476, 4411) and antlerless depredation (4107). However the regulation stipulates they can only obtain 1 antlered elk tag and 1 antlerless elk tag. Big horn sheep this year allows for the client to apply for both ewe and ram tags in the same subspecies for the first time, but they cannot draw both. Antelope is like mule deer where the client has to choose from the horns longer than ears hunt (buck) or the horns shorter than ears hunt.

JMT's sophisticated Controlled Hunt Configuration Module allows NDOW to adjust business rules to accommodate the above application eligibility requirements.

3.4.27.4	Hunts are assigned a four-digit number and are then grouped into categories that are assigned an alpha designator. General information about the hunt such as hunt category, weapon class, hunt description, species, residency requirements, eligibility rules, etc. are included with the hunt master. In addition, the hunt master has several related files.

JMT will work with NDOW during the Business Requirements phase of system implementation to confirm proper numbering algorithms are in place.

3.4.27.5	The related hunts file shows all hunts that must be considered when determining client eligibility for a hunt, i.e., successful harvest for one hunt number may prohibit a client from applying for a different hunt number in subsequent years.

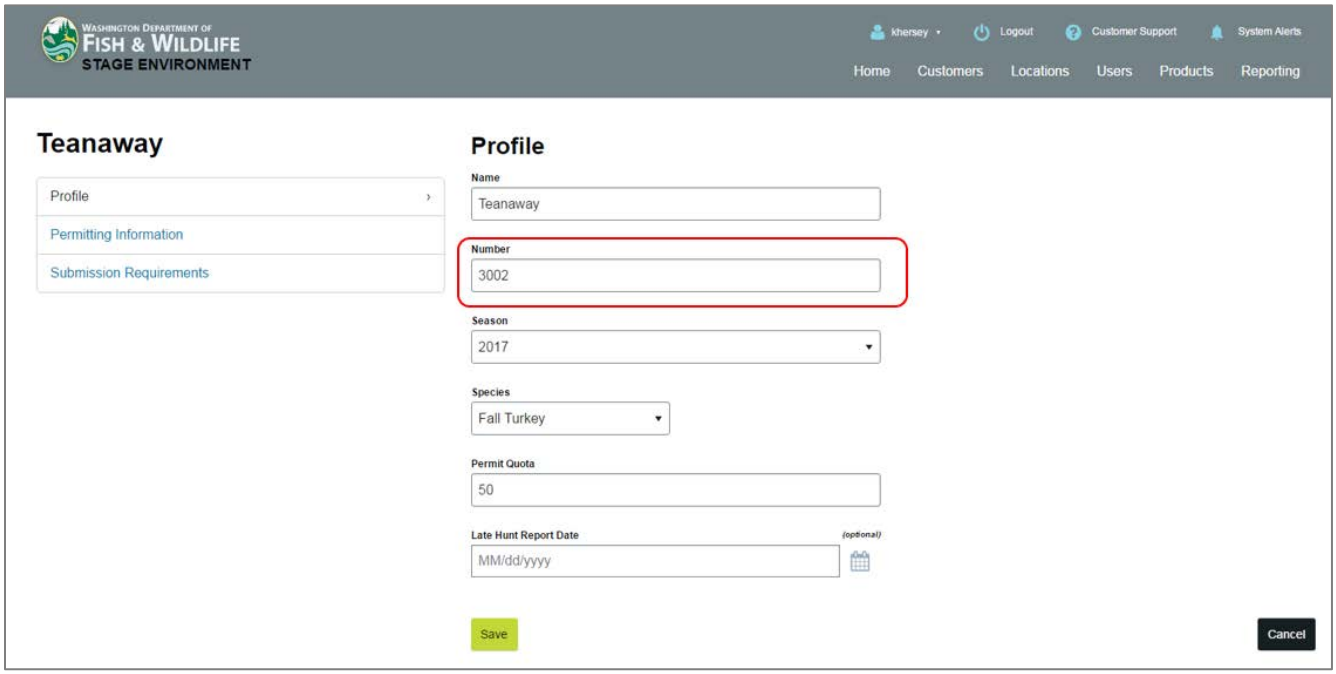
JMT will follow all hunts files rules and regulations.

3.4.27.6	Hunt fees are made up of several components. All hunts (possible exception of PIW) have an application fee, a predator management fee and a tag fee. Some hunts may have additional fees. The fee structure associated with a hunt is defined in the Hunt Fees table.

NDOW will have the ability to configure associated pricing per hunt via JMT's Controlled Hunt Configuration Module.

3.4.27.7	Hunter choice numbers are set up for each hunt to define the individual geographic units and seasons for which the hunter may apply. One or more unit numbers are associated with a hunter choice number. For a hunt, a unit group, season, and quota are all associated at the hunter choice level.

NDOW will have the ability to enter hunter choice numbers in the configuration module to match the above business rules.



3.4.27.8	Applications are assigned a key that is made up of several fields. They key includes the year, draw number designation, application number, hunt number or alpha designation and man number.

Each application is automatically assigned an application ID. JMT will adjust the auto-numbering to include the year, draw number designation, application number, hunt number or alpha designation, and man number.

3.4.27.9	Log files are used to record information regarding access to specific functions within the system and changes that were made to specific data. Various audit reports can be requested to document changes. Audit reports can also be used to ensure security has not been compromised or to diagnose system problems.

JMT's solution tracks and maintains a full audit log of any data manipulation to ensure security has not been compromised or to diagnose system problems.

3.4.27.10	Season Setting. In late January, the Commission approves the hunts, unit groups and seasons for big game. March, they approve migratory bird seasons a bag limit and swan draw requirements.

A. June is upland game and the seasons, unit groups and quotas for wild turkey.
B. Once these determinations are made they are provided to the Administrator who will update the hunt master and hunter choices files to reflect the decisions. Hunter choice and season information is critical for application processing. Therefore, the information is reviewed and approved by both NDOW and the Administrator to ensure accuracy.
C. Additionally, during the season setting process, the Commission approves application regulations. This includes the methods and rules for applying, the deadlines for accepting applications, and the dates that the draw results will be available to the public. These dates are public information and are part of regulation. Therefore, the application processing schedule established by the Administrator must ensure that all deadlines are met.

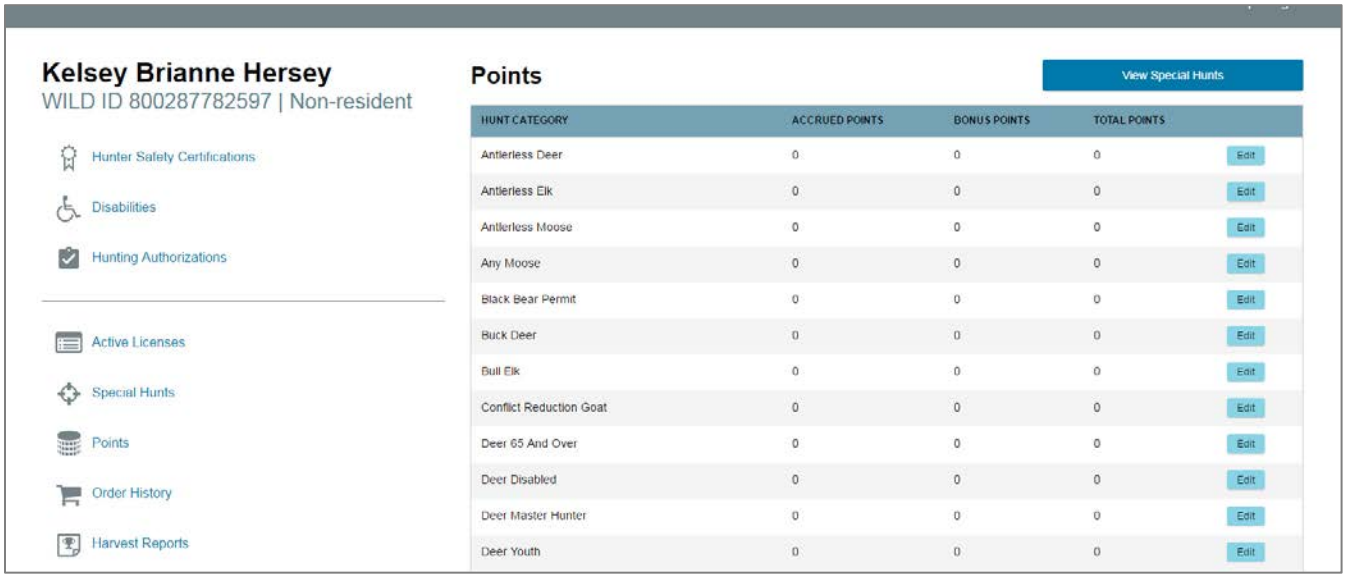
NDOW will have access to create, edit, or remove any and all hunts and hunt choices in the new NDOW system. This information may be exposed to a specific user group that NDOW would like to give access to in order to review and approve the proper schedule and business rules are applied for application processing.

3.4.27.11	Quota Setting. For big game the quota setting occurs during a separate Commission meeting in early to mid-May and after the deadline for applications. The Commission determines quotas and this information is provided to the Administrator for entry into the system by the Administrator. The quota is entered for each hunter choice number of each hunt. Since the quota number is critical to the draw process, the figures are reviewed and approved by both the Administrator and NDOW to ensure accuracy.

NDOW will have access to set the quote limit for each hunter choice in the system.

3.4.27.12	Internet Application. The Internet application, once a client logs in, provides fields for the client information which can be completed or updated if they are already a client. The application also displays the client's bonus points for each species category, and species eligibility information if they are in a waiting period for a species as part of the online application process. The web application is user interactive and has the regulatory requirements programmed into the functionality to prevent applicants from making errors.

Once the customer logs in, or a license dealer / NDOW staff locates the customer's account, the customer homepage is displayed. From here, the user may update his/her information, view bonus points, view species eligibility, and several other features directly from the homepage.



Similar to the business logic behind the product catalog, if the user were to apply for an additional controlled hunt, only those available to that customer based on the NDOW-determined business rules will display. This prevents applicants from applying for a controlled hunt that he/she is ineligible.

3.4.27.13	The Administrator has a test online application website that they utilized for QA activity. The Administrator tests the functionality prior to turning over to NDOW. NDOW can access and test online application process and rules from the client perspective prior to being made available to the public to ensure that all the requirements are in place.

After a drawing is complete, NDOW will have the ability to review and validate drawing results prior to the drawing being considered complete and, if deemed necessary, execute a subsequent drawing from the pool of unselected applicants. The information is not made available to the public prior to NDOW's confirmation to ensure that all the requirements are in place.

3.4.27.14	Restricted Nonresident Guided Deer Hunt. In January NDOW provides the Administrator a list of the currently licensed master guides for mule deer. This information includes their master guide license and demographics and valid unit groups which they are licensed. This information is entered by the Administrator and approved by NDOW. The seasons and quotas are approved by the Commission during the big game process in January. These approved hunter choices are provided to the Administrator for entry into the system and reviewed and approved by NDOW before the application period begins. The timeframe is short and occurs the week after the commission meeting. The online application period begins that following Friday.

As a result of NDOW's AHS and NWDS being consolidated into one solution, there will be no need for an Administrator to enter the list of currently licensed master guides for mule deer. This information will already be captured in the system and associated with each customer's profile.

NDOW will have the ability to enter/edit hunter choices into the system in order to be properly reviewed and approved prior to application acceptance.

3.4.27.15	Restricted Nonresident Guided Hunt Online Internet Application. The master guide with a pin number provided by the Administrator can apply for their clients. The program presents the master guide with the applicant demographic information if they are already a client or presents the blank fields if they are new. This data can be entered or updated by correcting the information in the field. The master guide can select up to five hunter choice numbers which correspond to the geographic areas and seasons where they are licensed to hunt from drop down boxes provided onscreen. At the end of the transaction the client will be sent an email confirmation and/or print the confirmation at that time. The confirmation notice includes a confirmation number that the client can utilize to review their transaction later. If a client applies and then wants to make a change or withdraw it completely the client can withdraw the application in question and resubmit within the deadline for the application period. The client if they miss the regular application deadline may for 7 days after that deadline apply only for bonus points. After those deadlines, a person may request to withdraw an application by submitting a request in writing up until 5 days after the application deadline.

Master guides will be authorized to apply on behalf of their clients by entering the Customer ID and associated information. Once the customer is found, the mast guide will be authorized to make adjustments to the customer profile on his/her behalf. If the customer does not yet exist in the system, the master guide will be able to create a new customer account following the same process as a license dealer.

Once the customer is selected, the guide will be authorized to complete the controlled hunt application process, including payment of associated fees. Once the transaction is completed, a purchase confirmation email will be sent to the end-customer that will include the transaction confirmation number and what was purchased.

If the customer would like to make a change or withdraw completely, the user must simply log into their account, navigate to the Controlled Hunt Module, and adjust their submission prior to the application deadline.

3.4.27.16	To accomplish party applications for deer online the master guide may add another applicant. Once a hunter is added, then marking the box next to each hunter in the list will indicate they are to be in the party. Once the party box is marked those applicants in a party will be submitted for the same hunt and hunter choice numbers selected. During the drawing, all the party members will either be successful or unsuccessful as a group.

Master guide will have the ability to assign multiple customer to one party, just like a customer would be able to do on his/her own.

3.4.27.17	During the draw, the program will test for open quota in each area beginning with the first choice until successful or until all choices listed have been unsuccessful. Master guides can only have 30 successful clients once that cap is reached all other clients are unsuccessful. The Restricted Nonresident Guided Hunt also has a maximum of 400 tags that can be issued. If that cap is reached any remaining applications will become unsuccessful.

JMT's algorithm will include a max of 30 successful clients per master guide. Once that cap is reached, all other clients will be unsuccessful. Each Restricted Nonresident Guided Hunt will have a max of 400 tags that can be issued, and if reached, all remaining applications will be unsuccessful.

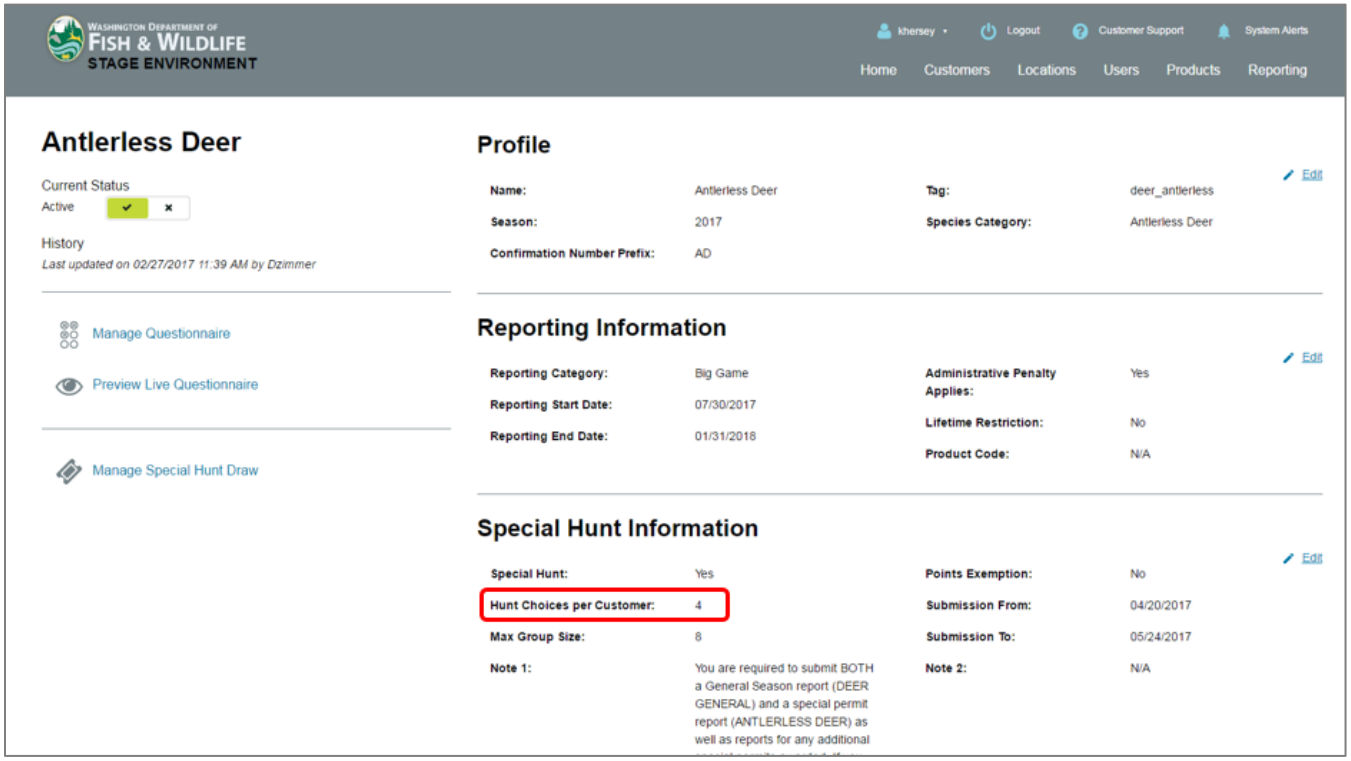
A.	Currently clients that participate in the Restricted Nonresident Guided Deer draw are ineligible to apply for mule deer in the big game tag main draw.

JMT's Controlled Hunt Configuration Module will accommodate the above business rule.

3.4.27.18	Big Game Application. In the application process a client can apply for all species categories if they are eligible. When the client logs in, the program presents the client their demographic information. This data can be updated by correcting the information in the field(s). The applicant can have multiple hunt categories in one online transaction. The applicant has the option of selecting a hunt category and up to five hunter choice numbers corresponding to the unit groups and season where they wish to hunt. Or they can apply for bonus points only for the category.

Once the customer logs in, or a license dealer / NDOW staff locates the customer's account, the customer homepage is displayed. From here, the user may update his/her information, view bonus points, view species eligibility, and apply for several hunt categories in one transaction. Once an application is added to the shopping cart, the customer has the option to "Continue Shopping" or "Checkout."

In the Hunt Category Configuration page, NDOW has the ability to configure how many hunt choices a customer can select per hunt category. Each hunt choice corresponds to the unit group and season.



A.	At the end of the transaction the client(s) can be sent an email or text confirmation. The confirmation notice includes a confirmation number that the client can utilize to review their transaction later. If a client applies and then wants to make a change or withdraw it completely the client can withdraw the application in question and resubmit within the deadline for the application period. The client, if they miss the regular application deadline, may for 7 days after that deadline apply only for bonus points. After those deadlines, a person may request to withdraw an application up 5 days after the application deadline.

At the culmination of the transaction, NDOW's system will automatically send a confirmation email to the email associated with the customer's profile. The email will include purchased product information such as Controlled Hunt Confirmation Number.

B.	The online site allows the operator to add additional hunters during the transaction. This could be utilized for group applications or convenience of one or multiple transactions for multiple clients.

The ability to submit individual or group applications is a standard component of JMT's Licensing and Recreation solution. This includes both the user interface as well the execution algorithm.

NDOW System customers submitting a special hunt permit applications will be able to choose an application type of Individual, Group Leader, or Group Member. The latter 2 will only be available options if the special permit category supports a maximum group number greater than 1.

C.	Second Draw online internet application-in the online application process a client can apply for any leftover tags from the Big Game Main Draw (follows the same process as the main draw.)

The new NDOW system will support the automated generation of "leftover hunts" by evaluating the number of customer's that have purchased the purchase record / permit for the hunt and those in the winners stable that are still able to purchase the permit against the maximum number of tags available for the hunt. The difference will be the number of leftover tags that can be sold.

Authorized users will be able to select a controlled hunt, review and potentially edit the number of available tags, and designate the hunt as available as leftover. Those tags will then follow the same process as the main draw.

D.	Following the second draw, any remaining quotas for deer, antelope, elk, mountain goat and any sub species of bighorn sheep will be available through a first come first serve basis.
E.	Applications are entered and edited in the same manner as for the first and second draw. Once entered, all applications will receive a tag until the available quota goes to zero for that hunt and hunter choice.
F.	A cut-off date is established by the Commission for the sale of remaining tags. No more tags can be sold after that date, even if quota is remaining. Any permits remaining after the first draw for swan are in a first come first serve process. Clients may obtain a second swan permit during that process and are limited to 2. However, for swan there is no cut-off date for the issuance of the permits. Permits are sold until the end of the swan season.

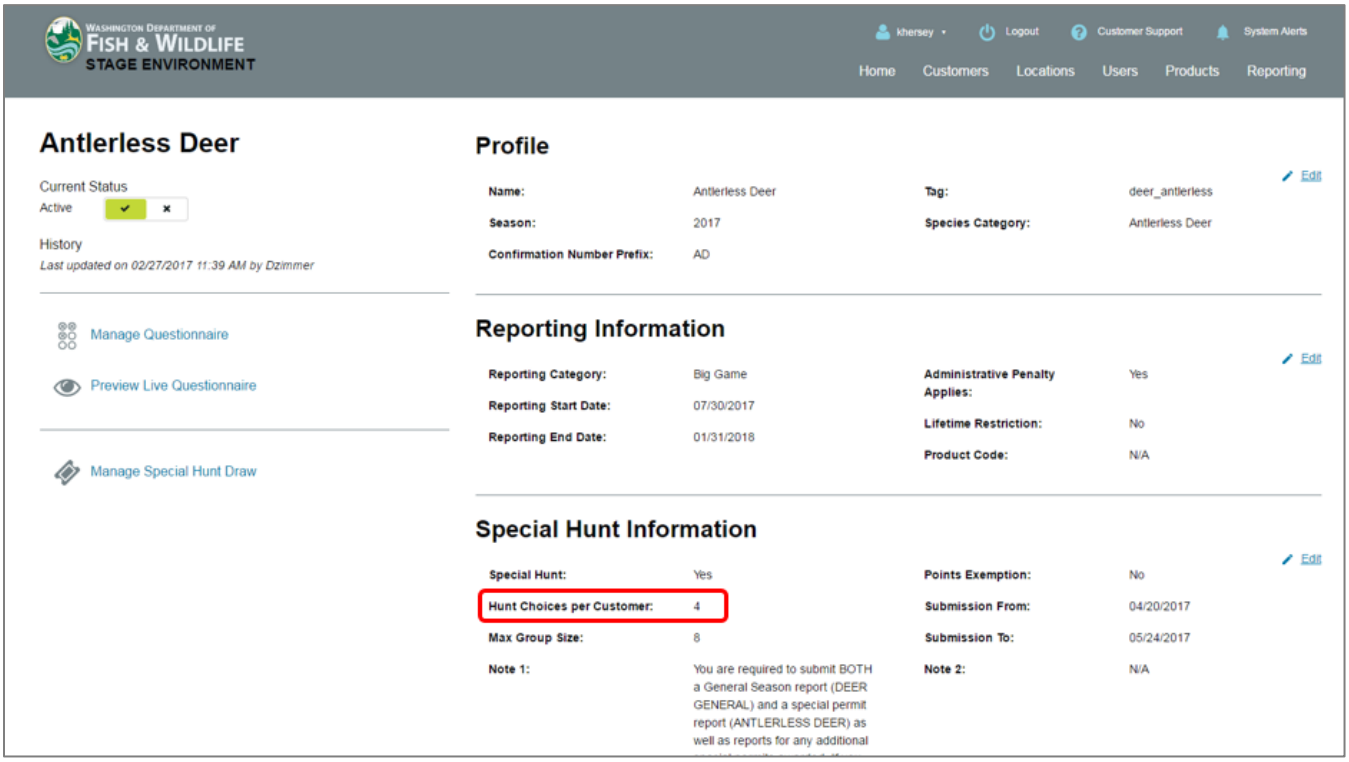
The leftovers from the second draw will be available in the product catalog at a first-come, first-serve basis. NDOW may set a product expiration for each leftover tag category in the product

configuration module. Prior to purchase confirmation, the customer must enter the same information as requested in the first and second draw.

3.4.27.19	Turkey Online Internet Application. When the client logs in, the program presents the hunter their demographic information. This data can be updated by correcting the information in the field(s). The applicant has the option of selecting up to five hunter choice numbers which correspond to the geographic areas and seasons where they wish to hunt from drop down boxes provided onscreen. Parties are not allowed in turkey hunts. Historically there has been a spring draw and a fall draw that is operated by the Administrator. A client cannot have more than one turkey tag in a calendar year. At the end of the transaction the client can be sent an email confirmation and/or print the confirmation at that time. The confirmation notice includes a confirmation number that the client can utilize to review their transaction later. If a client applies and then wants to make a change or withdraw it completely the client can withdraw the application in question and resubmit within the deadline for the application period. The client if they miss the regular application deadline may for 7 days after that deadline apply only for bonus points. After those deadlines, a person may request to withdraw an application by submitting a request in writing up until 5 days before the draw.

Once the customer logs in, or a license dealer / NDOW staff locates the customer's account, the customer homepage is displayed. From here, the user may update his/her information, view bonus points, view species eligibility, and apply for several hunt categories in one transaction. Once an application is added to the shopping cart, the customer has the option to "Continue Shopping" or "Checkout."

In the Hunt Category Configuration page, NDOW has the ability to configure how many hunt choices a customer can select per hunt category. Each hunt choice corresponds to the unit group and season.



At the culmination of the transaction, NDOW's system will automatically send a confirmation email to the email associated with the customer's profile. The email will include purchased product information such as Controlled Hunt Confirmation Number.

If the customer would like to make a change or withdraw completely, the user must simply log into their account, navigate to the Controlled Hunt Module, and adjust their submission prior to the application deadline.

A. The Administrator processes the private lands applications as first come first serve applications until 7 days before the close of the season.

Private land applications may be processed through the system just like any other controlled hunt type.

B. Any remaining tags for First come first serve Turkey will be available on the online application.

The Turkey leftovers will be available in the product catalog at a first-come, first-serve basis. NDOW may set a product expiration for each leftover tag category in the product configuration module.

3.4.27.20 Additional Purchases Online. The online tag application process provides NDOW the opportunity to sell licenses as required for the bonus point program. To provide one stop shopping for NDOW clients the online application site also sells mountain lion tags.

All tag applications are processed through the same web-based system. Once an application is added to the customer's shopping cart, the customer has the option to "Continue Shopping" or "Checkout." If they choose "Continue Shopping" they may add another tag application to their cart as long as it does not conflict with NDOW's tag business rules.

3.4.27.21 Additional Big Game Tag Opportunities. The online tag application process has additional big game tag applications and draws that occur at the same time. These are Silver State Tags and Partnership in Wildlife tag draws which are specialty tag hunts which allow successful hunters to hunt statewide if they are successful in obtaining a tag through the draw process.

Silver State Tags and Partnership in Wildlife tags may be processed through the system just like any other controlled hunt type.

3.4.27.22 Silver State Tags. Clients that are in waiting periods for certain species are eligible to apply for Silver State tag hunts. These applications are online available online and the client can apply for these tags during a transaction for big game. The hunts, unit group, seasons and quotas are all set up during the big game process for that application period.

A. If the client is eligible for Silver State hunt and big game they can apply for both. However, when the draw is initiated if the client draws the Silver state tag their big game application automatically becomes ineligible and the client will be awarded a bonus point for that application.

The Silver State Tag draw can configured to include the above-stated business rules.

3.4.27.23 Partnership in Wildlife (PIW). A $10 fee to participate in the PIW this draw is collected for the draw occurs as participation is unknown until the results of big game application for the species is determined. There is current draft regulation that may amend PIW to be drawn prior to the main draw.

The Partnership in Wildlife draw can be configured to include the above-stated business rules.

3.4.27.24 Management Hunts. Currently NDOW only has antlerless elk management hunts. These hunts and tags are available during the application process for big game. The management hunt was

	developed by NDOW to address elk population problems in specific unit groups but not add more hunters in the field. Where these hunts are approved, the client will have an opportunity to apply for a deer tag and the management elk hunt for same unit group and season for each hunt. The applicant is provided an opportunity opt in on the management hunt if they select a hunter choice for deer where a management hunt for the elk has been approved. These are also called combination hunts. In group applications, not everyone has to opt in on the management hunt.
	A. During the draw on a group hunt there must be sufficient quota for the base hunt for the group to be successful. And management hunt quota is allocated until exhausted.

The Antlerless Elk Management Hunts draw can be configured to include the above-state business rules.

3.4.27.25	Law Enforcement. The program completes a lookup of Nevada hunting privilege revocations and Interstate Wildlife Violator Compact of which NDOW is a member. Online applicants will be provided a message that they are not eligible.
	A. If the client is on the list for a revocation in another state or Nevada and the record has been ratified or accepted by Nevada the client will be prohibited from obtaining a tag until the revocation has expired.

JMT has extensive experience with such integrations having integrated licensing systems with the Interstate Wildlife Violator Compact and well as other state specific entities for the purpose of enforcement data sharing. NDOW's System will integrate with the Conpact and not allow a customer to apply for a controlled hunt for which his/her license has be revoked.

3.4.27.26	Quota Verification. As stated in an earlier section the Hunt Season and Quota report on quota is checked to make sure that all hunts appear in the table and that all quotas have been entered correctly. This report is reviewed and approved by both the Administrator and NDOW

Quote information is stored on each Hunt Category's landing page and is available to NDOW staff to review, edit, and approve.

3.4.27.27	Bonus Point Check. Random checks of the bonus points are made to be sure that points have been updated with the results of the last draw.

JMT welcomes NDOW' random check of the bonus points to ensure that points have been updated with the results of the last draw.

3.4.27.28	Tag Reconciliation. Once the reports are verified, an option is taken to prepare the files for processing credit cards for tags and license sales, tag and license printing, results letters and emails. Tag and licenses are printed in pre–sorted zip code order to take advantage of reduced postal rates. Tags are mailed out along any inserts as approved by NDOW.

JMT will collaborate with NDOW to determine the best process for tag reconciliation. JMT suggests automatic emails notifying applicants that the winners have been posted, and allowing successful customer to then complete their checkout if further payment is required and download digital copies of their tags. This automatic, digital saves time, money, and reduces the opportunity for human error.

3.4.27.29	The exception is bear tags. Clients receive their bear tags during an indoctrination class rather than receiving them through the mail. For that reason, in drawings where bear tags are part of the quota, the season report has an Orientation field selected. This allows for these tags to be held and printed separately and turned over to NDOW. A report is developed and serves as documentation of the tags that were turned over to NDOW.

For bear tags, customers will be emailed that the results have been posted. Customers may then log in to see if they were successful. If they were, they are then eligible to sign up for an indoctrination class through the Event Manager if multiple dates/times are available.

3.4.27.30	Results. All applicants receive an email and or a letter if requested, summarizing their draw results and contributions. These will include line items such as donations to Operation Game Thief or Predator Management. The emails or letters will be proofed by the Department prior to being sent.

JMT suggests sending out an automatic email, but not stating in the email if the customer has won or loss. This allows NDOW the short time window to retract the draw if an error is found at a later date.

3.4.27.31	Stand Alone licenses. Currently Residents and Nonresidents can purchase their license during the online in the application process. During the online application process a client can opt to either buy the license now or only if successful. If they buy it during the application process, at the end of the transaction the client can either print the license at home, save it to the desktop or have it fulfilled. If they opted to purchase only if successful and are successful the license will be mailed. The printing of the licenses for those that chose to have it fulfilled will occur throughout the application period and must be mailed within 5-7days of purchase.

Customer will have the option to purchase the license in advance of the draw results, or wait until after the results are published.

If they chose to purchase in advance, they will be directed to the checkout page to complete their transaction. At the culmination of the purchase, customers will have the option to print at home, save it to the desktop, or have it fulfilled.

If they choose to purchase after the results are published and are successful, the customer must log back into the system and complete the transaction if fees are to be collected.

3.4.27.32	Draw Conclusion. Immediately following the conclusion of the draw, an electronic copy will be captured on a portable hard drive, sealed in an envelope and placed in a Bank Vault. A series of reports must be run after draw processing is complete. At a minimum the following draw reports will be generated:
	A. Draw Number at A Glance Report B. Tag Sold Remaining Tag C. Successful List D. Unsuccessful List E. Withdraw List

JMT will design and develop a suite of reports to support the controlled hunt process. Requirements for these reports will be defined during the requirements elicitation phase of the project.

3.4.27.33	48 hour Draw Results. Within 48 hours of the draw the initial draw results must be posted on the website. This listing includes a successful, unsuccessful, and withdraw list. It also has a successful list that is alphabetical by hunt and hunter choice.
	A. Due to the number of clients that apply the online lookup must be user friendly. The successful, unsuccessful, and withdraw lists are alphabetical. B. These online lists are public information and only display the First Name, Last Name, City and successful hunt and unit short description due to privacy concerns.

JMT will publish the initial draw results within 48 hours in a user friendly, searchable table format. The lists will include columns for Last Name, First Name, City, Hunt/Unit, and Status (successful, unsuccessful or withdrawn).

3.4.27.34	Post Drawing Reports. Following the second draw the Statewide Warden List is provided to the Law Enforcement Division for distribution to the wardens.

JMT will design and develop a suite of reports to support the controlled hunt process. Requirements for

these reports will be defined during the requirements elicitation phase of the project.

3.4.27.35	Bonus Point Update. The final step in the draw process is to update bonus points. Applications are evaluated based upon successful or unsuccessful status. Points are awarded only to unsuccessful applicants. For successful applicants, the bonus points are set back to zero for the hunt(s) for which they were successful.

Bonus points will be automatically updated upon publication of the draw results.

3.4.27.36	Remaining Tags. If quota is remaining for any hunt after the second draw for the big game hunt, remaining tags will be issued in a first come first serve process online. The Commission will select an initial date as the first date upon which applications may be accepted for the remaining tags.

Remaining tags will be available in the product catalog at a first-come, first-serve basis. NDOW may set a product begin and expiration for each leftover tag category in the product configuration module.

3.4.27.37	Other Reports. The Reports and Labels Menu provides the ability to print a wide variety of standard reports. Types of standard reports include:
	A. Print of the Application Master File B. A variety of cash control and finance reports C. A series of client disqualification reports D. Print of the Client Master File E. Quota Reports F. Bonus Point Analysis G. Error Statistics H. Analysis of Hunter Choices and party size I. Client Profile reports – redacted and open J. Client Application detail reports - redacted and open K. Client Return Card detail reports - redacted and open

JMT will design and develop a suite of reports to support the controlled hunt process. Requirements for these reports will be defined during the requirements elicitation phase of the project.

3.4.27.38	Returned Tags. Regulation allows for tags to be returned up to 1 business day prior to the opening day of the season. A tag may be returned if the client or a member of the family within the third degree of consanguinity dies, has a medical reason or is in the Armed Forces of the United States and has been transferred. In these cases of a return, the fees are refunded, the application status is changed to unsuccessful, eligibility and bonus points are restored. If the tag is returned prior to 14 days of the opening day of the season an alternate tag is issued. Depending on the timing the refund could occur as a credit to the credit card or there may be a refund check issued if the credit cannot be made. Both the tag refund and the issuance of an alternate tag are reported on the Bi-weekly Revenue and Disbursement report.
	A. Clients can also return a tag for any reason up to one business day prior to the season opening. In these cases, the client will not receive a refund but will have their application marked unsuccessful, have their bonus points and eligibility restored and earn a bonus point for the application status change. Alternate tags are issued if they are returned up to 14 days before the opening day of the season.
3.4.27.39	Alternative Tags. At the time of application, a client can select an option to be an alternate for that species if a tag is returned on their first hunter choice number. An alternate list is generated after the draw and it will list those applicants that were unsuccessful in drawing a tag in draw number order. When a tag is returned in the required time frame it can be issued to an alternate if there is one available for that hunter choice.
	A. The Alternate tag process in the system automatically charges the clients account and issues the alternate tag.

B. An exception to this process is for the Restricted Nonresident Guided hunt. If the tag that is being returned is for this hunt the Administrator has review alternate master guide eligibility prior to issuing the tag. If the Master Guide has reached his 30 client maximum for the guided hunt the Administrator must go on to the next alternate.
C. Alternate tags that are issued and reported.

JMT's solution takes into consideration all of the complexities involved in unwinding sales transactions after cancelation. This includes but is not limited to managing and tracking returned tags. JMT will work collaboratively with NDOW to define, in detail, the void / cancelation workflow including the tangential actions that must take place to fully reverse the sales transactions and offer the tag to an alternative customer.

3.4.27.40 Third Party Errors. Neither the Administrator nor NDOW is responsible for third-party errors. However, Nevada Administrative Code allows for consideration to the client for specific circumstances where it can be verified in writing by the bank or postal service, that their error was the sole cause for the application to reject. If the error is identified prior to the draw, the application will be corrected to show that it is "OK" to proceed through the draw. If the error is discovered after the draw, after receipt of proper documentation from the bank or postal service, the applicant will receive a bonus point.

JMT's solution allows NDOW the ability to edit an application on behalf of a customer in the event of a third-party error.

3.4.27.41 Monies from any tags, licenses or refunds issued as part of this section are reported.

All monies from tags, licenses or refunds issued are reported.

3.4.27.42 Duplicate Tags. In the event of lost or stolen tags, duplicates can be obtained through the NDOW regional offices. The client signs an affidavit and the tag is processed by NDOW staff. A copy of the affidavit is forwarded to the NDOW headquarters office to be filed. Each NDOW office can print duplicate tags directly from the live file. After the tag is printed the pseudo number and actual tag number reconciled by the NDOW staff.

A. Through access via the Internet NDOW can login remotely to the system. NDOW staff can locate the application and tag record and print the duplicate at their location for the client.

NDOW is authorized replace/duplicate a tag that was lost, stolen or mutilated. Typically, duplicates require a fee be paid by the customer and this fee as well as the determination of whether a given product may be duplicated and how many times is configurable on a product by product basis. All duplicate documents clearly state "Duplicate" when printed.

3.4.27.43 Manual Tags. Manual tags are issued by NDOW for landowner damage compensation, elk incentive, private land elk, small emergency depredation, Heritage tag hunts. These tags are processed individually using the "Manual/Duplicate Tags" option of the NDOW Processing menu.

JMT's solution will allow for authorized NDOW users to manually enter and issue tags for landowner damage compensation, elk incentive, private lands elk, bid/auction, small emergency depredations, and Heritage tag hunts.

3.4.27.44 Military Deferred Tags. Military deferred tags are for those active military that receive notification they are being deployed or mobilized after receiving the tag. Regulation allows for them to return the tag and opt to defer the tag up to two years for the same hunt and unit group. Applicant must provide proper documentation.

NDOW staff will have the ability to accept returned tags from Military personnel, and defer the tag for up

to two years for the same hunt and unit group.

3.4.27.45	Saleable Lists. Much of the information in the system is public information and can be made available to clients for a reasonable fee. Formats for delivery of the information include lists, labels, diskettes or other electronic media. The file must have a flag to exclude clients who have requested not to be on the lists. Requests are processed by the Administrator who keeps the fees collected for the work performed.

A report may be generated to list public client information that excludes clients who have requested not to be on the lists.

3.4.27.46	Volunteer Program

A. Wildlife volunteers are involved in every division of the agency. There are 8,011 volunteers in the current system. The projects include jobs such as stocking, fish sampling, nesting surveys, check station assistance, interpretation, seed collection, and guzzler projects.
B. The Nevada Department of Wildlife Volunteer Program is administered by the Nevada Department of Wildlife, Conservation Education Division Bureau. Volunteer members work with regular full-time Division staff members such as wildlife and fisheries biologists, wildlife installation specialists, interpreters and other staff.
C. The system must be able to enable volunteers to utilize the online system to track hours, recruitment, application on boarding process, and volunteer duties performed.
D. For new volunteers, the system shall create a unique identification (ID) number for each volunteer. The Volunteer ID number shall be used as the primary identifier to associate volunteers to the event. The Volunteer ID number may also be associated to the Customer ID number that belongs to that volunteer.

JMT understands NDOW's need to include volunteer management as a core component of its future licensing system. We appreciate your community's involvement in activities such as stocking, sampling, surveying, check station assistance, interpretation, and various projects across the state. Our goal is provide NDOW with a solution that incorporates and expedites its volunteer processes in order to enable NDOW and its volunteers to spend less time worrying about administrative functions, and more time accomplishing agency initiatives.

We have digested and understand NDOW's objectives at a high level based upon the provided information, and are confident that our solution will successfully and succinctly accomplish these needs through slight alteration to our base solution.

As previously explained in the Conservation Education/Program section of our response, all users, customers, students, instructors, volunteers, and NDOW staff alike will be associated with a user account and have access to various functionality based upon their user group settings established by NDOW Administrators.

Once a user applies to be a volunteer, NDOW will be notified of the request and asked to approve/deny the user. If approved, the user will have the additional ability to:

- ***update volunteer information;***
- ***look up events based on various criteria that specifically need volunteers;***
- ***apply to be a volunteer or join the waiting list for a particular event (NDOW must then approve is approval for the event is required by NDOW); and***
- ***view a list of events they registered for, actually attended, duties performed, and total hours.***

NDOW staff will be able to manage all the above including (but not limited to) the ability to:

- ***create new events and their business rules including associated fees, scheduling, location, instructors/volunteers;***
- ***register/approve customers to attend events/programs;***
- ***approve instructors/volunteers for specific or all event/program categories;***

- ***edit any events/instructors/attendees;***
- ***view a fulfillment module to see what must be mailed out to instructors/volunteers (hunter ed pamphlets); and***
- ***communicate directly with a specific instructor, all instructors/volunteers associated with an event/program, or all instructors/volunteers in the system.***

E. The proposed solution must include event ID numbers for the event records currently in the volunteer database. For new events, the system shall create a unique identification (ID) number. The Event ID number shall be used as the primary identifier to associate events to volunteers.

Similar to a new product being created in the system, each new event created by NDOW staff, regardless if an educational program or volunteer opportunity, will be automatically assigned an event ID number. All existing event ID numbers will be migrated over to the new system.

F. The system must compute the proper event fees for each type of event. See attachment of stored procedure on how those events are accounted for to enable reporting to the correct Federal agency for funding.

Similar to the product configuration module, NDOW staff will have the ability to adjust event fees and their associated funding sources directly in the pricing tab.

G. The system must manage and track participants in volunteer events and generate reports as needed.

NDOW's new system will manage and track participants in volunteer events. Participants will have the ability to view a list of events they registered for, actually attended, duties performed, and total hours. NDOW staff will be able to view analytics around events and volunteer volumes as well as pull reports on specific events, or all events within a specific time period.

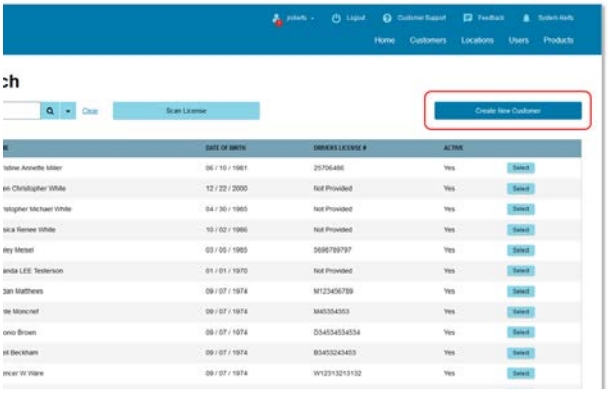
H. The system must provide a mechanism to track volunteer years of service, events, and service awards received.

NDOW's new system will track all aspects of volunteer data. For example, if a user first volunteered for an event in January 2001 that was recorded in the legacy Volunteer Management System, the new system will display the user's "Volunteer Years of Service" as 16. A list of all event details and service awards will be associated with the user's account.

I. Customer Interface. Describe the complete process flow that a customer would go through to perform the following:

1. Customer ID Location/Creation – Customers wishing to enroll in an event must have a method to locate an existing customer ID or create a new ID which links to other aspects of the system.

In order for a customer to enroll in an event, they must have a valid Customer ID. This is the same process as signing into the system to purchase a new license, sign up for an educational program, or submit a harvest report. The process is as follows:

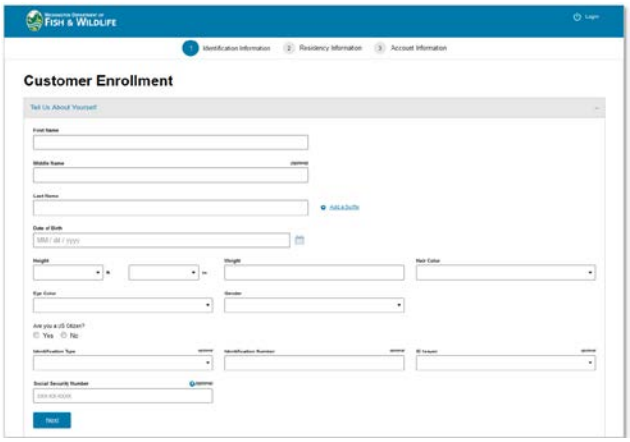


Step 1: User Chooses to Create New Account

If the user has never purchased a product through the NDOW Licensing System, they will be required to create a new account and logic prior to accessing most product catalog items.

The system is designed to support the purchase of products without logging in as well but this product catalog would typically be limited to only those products for which demographic and purchase history data is not relevant to determining product availability.

Once the user clicks the "Enroll Now" they will be redirected to the enrollment wizard.



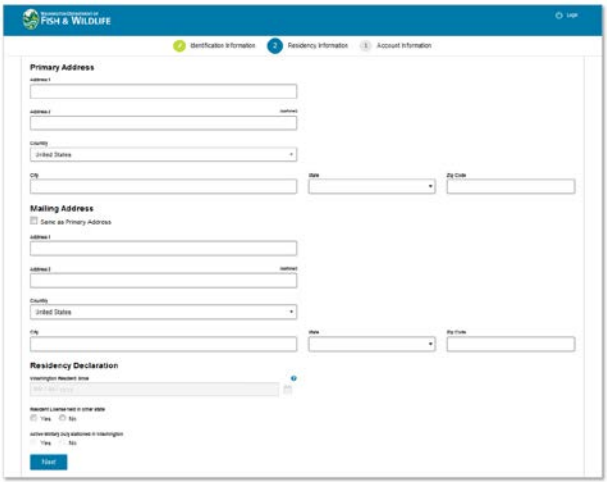
Step 2: Personal Information

Step 2 will be to collection personally identifying information including name, date of birth, tax ID (either last 4, full 9 or a hybrid) and an identification number such as Driver's licenses, State ID, or Passport.

Intuitive "Help" icons will provide tips to the customer.

Note that all personally identifying information is masked on screen, stored in the database encrypted and that business rules are enforced regarding what user roles can view and edit this data.

This form will be configured to match NDOW's exact specifications.



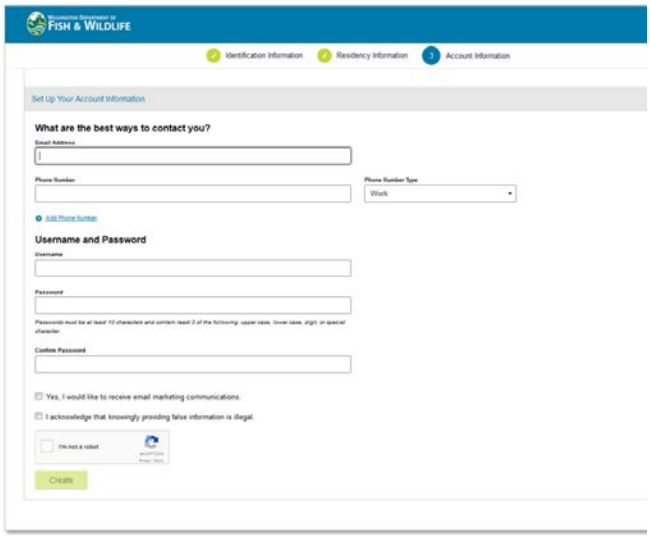
Step 3: Residency Information

During Step 3 the customer will provide address information and customer's residency will be explicitly declared or system logic will define residency based on the answer to multiple enrollment questions.

The system is designed to capture a customer's primary address and additional addresses (mailing, billing etc.) per customer requirements.

Our solution uses address lookup to auto-populate City and State based on the provided zip code.

This form will be configured to match NDOW's exact specifications.



Step 4: Account / Contact Information

The final step in the process will be to provide contact information and creating a username and password. The user will then specify a username, password and security question / answer combination. Password must conform to configurable password composition rules.

Note: when creating an account a license vendor or NDOW employee, email is optional and the username and password inputs are not present. The customer can later create a username and password for their account at their discretion.

This form can contain one to many affidavits that the customer account information provided was accurate and the customer understands any disclosures.

Once the user clicks "Create", the account is created in the system and the user is automatically directed to the customer's home page so that they may begin servicing the account.

2. Locate and Register for an event - The secure public facing web interface must allow customers/volunteers to view event offerings, register for event and update personal information.

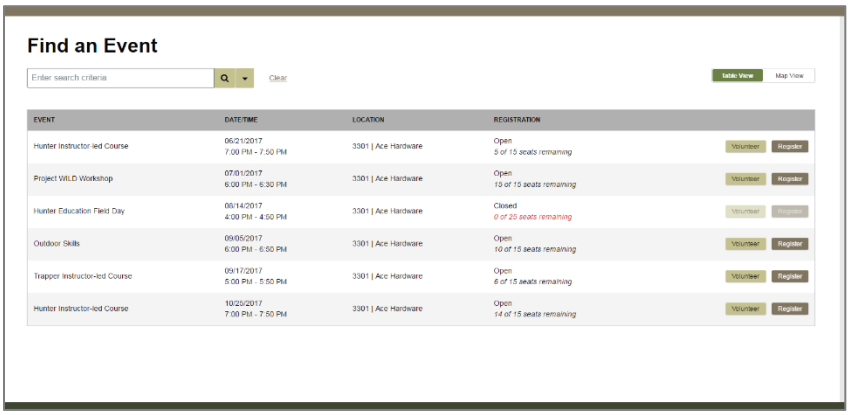
Once logged in, the user can navigate to the events module by clicking on the icon in the left column called "Events."

From here, the user may search for an event based on a variety of search criteria including:

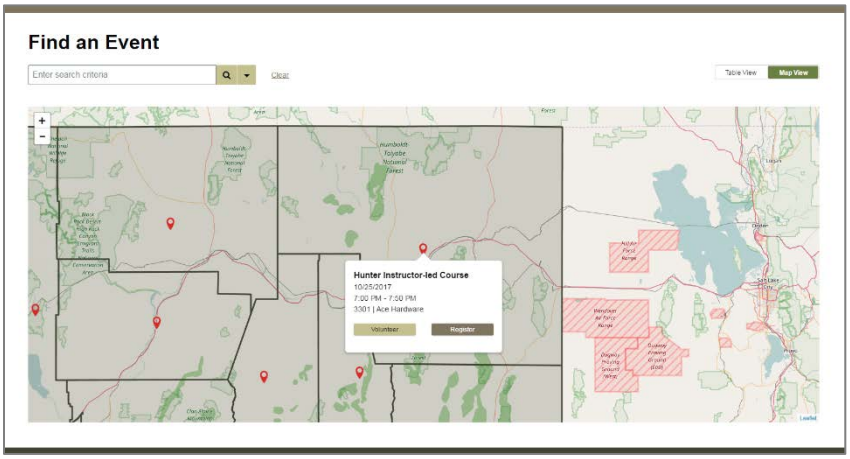
- ***Events Near Me (Zip Code or Map)***
- ***Date Range***
- ***Event Category***
- ***Available/Open Events Only***

Customers Registering for an Event

1. ***Find an Event***
   - ***List/Table View***
     - ***Date / Time***
     - ***Event Name / description***
     - ***Location***
     - ***Registration Open/Closed (x of x seats remaining)***
   - ***Map View***
     - ***Map with icons***
     - ***Event name, date, location, registration open***

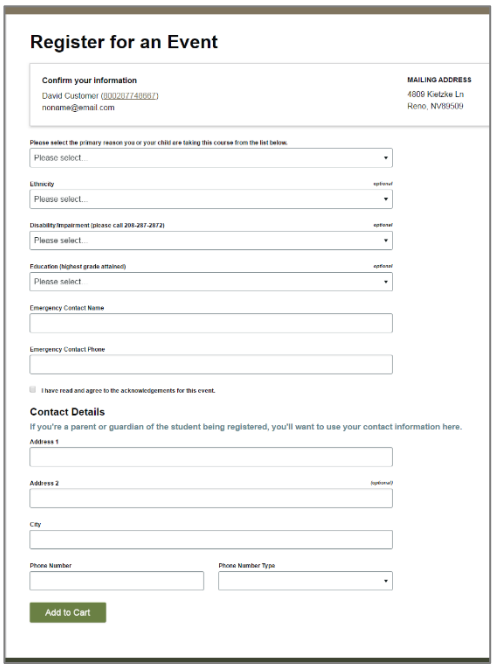


- ***Date range (will filter out events that are not within the range)***
- ***Event Type (dropdown - will filter out events that are not that type)***
- ***Click "Register" button***



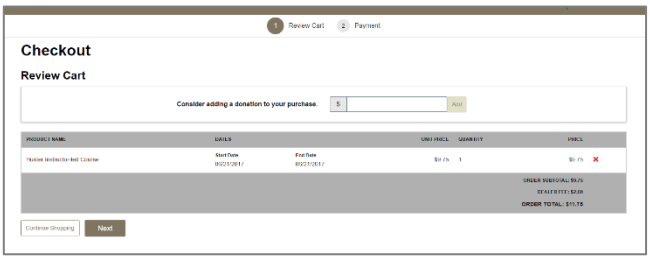
2. *Register for an Event*

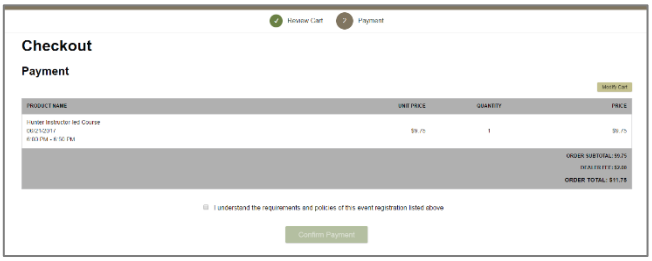
- ***Confirm customer information***
- ***Primary reason***
- ***Ethnicity (optional)***
- ***Disability/Impairment (optional)***
- ***Education (optional)***
- ***Emergency Contact Name/Phone***
- ***I have read and agree to the acknowledgements for this event. (checkbox)***
- ***Contact Details***
- ***Email Address***
- ***Phone Number***
- ***Add to Cart***



3. *Pay Event Fees, if applicable*

- ***Review Cart***
- ***Fees & Billing***
- ***Fees***
- ***Payment Info***
- ***Billing Name and Address***
- ***Attestation***
- ***Complete Order***





3. Enrollment Receipt – The system must produce a receipt upon completion (email confirmation) of enrollment in an event. There must be a means of reprinting this document for a designated timeframe.

At the culmination of event registration, the user will receive a system-generated email to confirm enrollment. This email includes information such as customer name, customer ID, event title, date, location, and instructor. The email template may be edited from the Email management within the system.

J. NDOW Staff Interface & Administrative Tools

4. The Vendor will provide a secure web interface to the volunteer database that will be used to access and manipulate real-time system data. All data manipulations must be logged, including the type, date, time and UserID. Describe a solution that will, at a minimum, allow NDOW to perform the following functions:

a. Management of Volunteers – Includes recruitment, onboarding, enrollment of volunteers, updating information, monitoring event activity, managing specific event types for mail out and contact information (based on volunteer applicant's interests) and the ability to suspend, terminate, or lock out a volunteer.
b. Administrative Event Management – includes the ability to view volunteer transactions and change the status of an event or volunteer.
c. Management of Event Types and Volunteer Interests – Must provide a tool to manage event types with volunteer interests.

NDOW staff will have access to tools in the system designed to assist NDOW with recruitment, onboarding, enrollment of volunteers, updating information, monitoring event activity, managing specific event types for mail out and contact information (based on volunteer applicant's interests) and the ability to suspend, terminate, or lock out a volunteer.

<u>Recruitment</u> – Once NDOW staff create an event in the system, they may leverage the email module to create an event recruitment email to notify everyone within a X-mile radius of the event location of the upcoming event.

<u>Onboarding & Enrollment</u> – Volunteers have the option to enroll to become a volunteer directly through their customer dashboard in the system, or NDOW staff may enroll them on their behalf. First, the customer must have an account. If one does not exist, it must be created first. From the customer homepage, the user will click "Volunteer" in the left navigation. If the user is not already a volunteer, the only functionality displayed will be to "Enroll As a NDOW Volunteer" and "Search for an Event." Users may search for volunteer events but when they go to click "Volunteer for Event" the subsequent screens will begin with the full volunteer enrollment before confirming their interest in a specific event. They will only be registered to volunteer for the specific event if they are approved as a volunteer by NDOW staff. The allows NDOW to better screen candidates who want to volunteer to confirm they are qualified to perform the necessary tasks.

The "Enroll As a NDOW Volunteer" wizard will include the following:

- ***Confirm customer information***
- ***Qualifications/Experience/Skills***
- ***Education***
- ***Availability***

Once the form is complete, it is sent to NDOW staff to approve. NDOW staff may approve the volunteer for all types of volunteer opportunities, or specific event types such as "Only Check Station Assistance."

The volunteer user may then see in all event listings with a "Volunteer" button enabled next to each event which they qualify.

<u>Updating Information</u> – At any time, volunteers (or NDOW on behalf of volunteers) may edit their profile and resubmit for NDOW approval to be added for additional even types as needed.

<u>Monitoring Event Activity</u> – NDOW staff will have a high-level analytics dashboard to monitor overall event activity, as well as the ability to locate a specific event and edit any of the available fields. This includes changing a date, removing/adding volunteer(s), canceling the event, sending out an event reminder, and adjusting hours per volunteer post-event.

<u>Volunteer Management</u> – NDOW Administrators will have rights to edit, suspend, terminate, or lock out all users in the system, including volunteers. This includes the ability to remove a volunteer from an event, prevent the volunteer for signing up for future events, and removing volunteer rights from a user's account.

d. Merge Instructor Records – The system must provide a mechanism that allows staff to combine volunteer records and all associated history contained within the record when it is identified that a volunteer has multiple ID's.

Merging user data in the system is an existing functionality in JMT's solution. NDOW's user merge module will include the merging of all volunteer and instructor related data.

K. Describe any additional system functionality the vendor can provide in the event management component and marketing information to Nevada customers with excellence. (May provide NDOW with post-event analytics to measure success and opportunity to enable recruitment, retention and reactivation).

NDOW will have access and intuitive tools for all data collected through the new system, including event-related information. NDOW staff associated with the "NDOW Conservation Education/Program" user group will see upon login a dashboard that includes quick links to useful tools and relevant analytics measuring recruitment, retention, and reactivation goals. High level analytics may include: the following, per week/month/year

- ***Basic Events***
  - ***Total events***
  - ***Total event attendees***
  - ***Total event volunteers***
- ***Recruitment***
  - ***Total new users***
  - ***Conversion percentage from new user to first time customer***
- ***Retention***
  - ***Percentage of users with hunter ed certification that possess a current basic license***
  - ***Percentage of users that have a current license***
- ***Reactivation***
  - ***Total number of users that do not have a currently-active license***
  - ***Total number of users that have purchased a license for the first time in 3 years***

3.5 SECURITY STANDARDS

3.5.1	System shall meet State security standards for transmission of personal information as outlined in NRS 205.4742 and NRS 603A.

The hosting architecture proposed by JMT for the system includes a layered approached to security.

Application Security

The web application is architected and developed with technologies and best practices designed to protect against malicious activity.

The application will be tested using the industry leading Arachni Web Application Security Scanner framework. This testing will ensure protection against all OWASP Top 10 vulnerabilities including:

- ***Injection***
- ***Broken authentication and session management***
- ***Cross-site scripting (XSS)***
- ***Insecure direct object references***
- ***Security misconfiguration***
- ***Sensitive data exposure***
- ***Missing function-level access control***
- ***Cross-Site Request Forgery (CSRF)***
- ***Using components with known vulnerabilities***
- ***Un-validated redirects and forwards***

Network Security

The system will implement the latest Transport Layer Security (TLS) to encrypt data during transmission.

Azure Security Framework

The following, from Microsoft's documentation, discusses security within the Azure Platform as a Service environment:

Secure strategy

An "assume breach" strategy enables Microsoft to harden its business products and cloud services and stay ahead of emerging threats by assuming that attackers have already exploited vulnerabilities or gained privileged access. A dedicated "red team" of security experts simulates real-world attacks at the network, platform, and application layers, challenging Microsoft Azure and Microsoft Office 365 to continually improve the ways they detect, protect against, and recover from security breaches.

Secure operations

Operational Security Assurance (OSA) makes Microsoft business cloud services more resilient to attack by decreasing the amount of time needed to prevent, detect, and respond to real and potential Internet-based security threats. It ensures that operational activities follow rigorous security guidelines and validates that these guidelines are followed. When issues arise, a feedback loop helps ensure that future revisions of OSA support mitigations that address them.

Secure networks

Microsoft network infrastructure helps block undesirable traffic to and within Microsoft datacenters, using such technologies as firewalls, partitioned local area networks (LANs), and the physical separation of back-end

servers from public-facing interfaces. Virtual networks, Network Security Groups (NSGs), ExpressRoute, and forced tunneling are some of the technologies that help connect services and clients and connect on-premises datacenters to the Microsoft business cloud. Windows Server 2016 includes enhanced network security features such as Shielded VMs, the host-based datacenter firewall, and enhancements to IP address management (IPAM).

Threat management

Microsoft uses intrusion detection, distributed denial-of-service (DDoS) attack prevention, penetration testing, data analytics, and machine learning to constantly strengthen its defense and reduce risks. Antimalware protection is built into Microsoft business software and cloud services to protect both your on-premises systems and your virtual machines in the cloud.

Cloudflare Advanced Web Application Firewall

In addition to Azure's native security features, JMT will configure a third-party Web Application Firewall in front of the Microsoft Azure environment to monitor and log intrusion attempts as well as DDOS attacks, SQL injection attacks, cross-site scripting, cross-site forgery requests, and other such security threats.

While on premise firewalls can quickly become outdated and require professional service hours to regularly update rules to protect against new threats thirds party services such as that provided by Cloudflare help you stay ahead of threats by automatically updating when new security vulnerabilities are released.

Monitoring and Threat Detection

As a final tool, JMT will implement robust monitoring through the Azure Security Alerts Center. The security alerts provide details on malicious activity by type. From the Security Alert Center, JMT can filter, research and respond to malicious activity. This level of reporting/logging/alerting is also made available by the Web Application Firewall provider. Additionally, SQL Database Auditing and Threat Detection will be used to track access to the database tier.

JMT understands the current security issues that have plagued so many IT systems. We understand that the best way to protect the data is to not transmit it at all. This is not always possible, so we utilize industry-standard best practices for securing personal information during transmission as well as at rest.

Role-Based Access Controls

The system will enforce a role-based security scheme protected by username and password. Once logged in, the user will have permissions based on the groups they are authorized to be in. The system will enforce common practices of security like strong passwords and frequent password changes. JMT does not transmit personal data from the server to the client unless the client is logged in and has the proper authorization through the role-based security system.

Encryption at Rest

All personally identifiable information (PII) or other sensitive data such as banking information will be encrypted at rest in the database. The application utilizes Password-Based Key Derivation Function 2 (PBKDF2) which is the recommended encryption algorithm for .NET by The Open Web Application Security Project (OWASP). The database also utilizes Transparent Data Encryption (TDE) at the file storage level so that any attempts to access the database at the file storage level will not expose PII data.

Encryption in Transit

All data will be encrypted when transmitted electronically. All data transfers between the servers and client devices will be encrypted using the latest TLS specification. To minimize the data at risk, JMT will not transmit any PII data from the servers unless the authenticated user has the proper role and permissions to view such

data.

For migration of existing customer information, JMT will require that data be transferred to our facility via a secure method of transmission. The details on this transfer will be agreed upon between the two parties prior to transmission.

3.5.2	Protection of sensitive information shall include the following:
	3.5.2.1 Sensitive information in existing legacy applications shall encrypt data as is practical.
	3.5.2.2 Confidential personal data shall be encrypted.
	3.5.2.3 Any electronic transmission of personal information shall comply with NRS 603A.215 (2 & 3).
	3.5.2.4 Sensitive data shall be encrypted in all newly developed applications.

While JMT was not involved in the development of NDOW's existing legacy applications, having access to the data and applications as part of this system development is imperative. Therefore, JMT will put into place best practices to limit the amount of exposure that developers, testers, non-development staff, and non-JMT staff have to the legacy applications. JMT will verify that proper security credentials are made available to only those who need them. The data will be treated as part of the new system and will therefore have Transparent Data Encryption where possible.

All personally identifiable information (PII) or other sensitive data such as banking information will be encrypted at rest in the database. The application utilizes Password-Based Key Derivation Function 2 (PBKDF2) which is the recommended encryption algorithm for .NET by The Open Web Application Security Project (OWASP). The database also utilizes Transparent Data Encryption (TDE) at the file storage level so that any attempts to access the database at the file storage level will not expose PII data.

All data will be encrypted when transmitted electronically. All data transfers between the servers and client devices will be encrypted using the latest TLS specification. To minimize the data at risk, JMT will not transmit any PII data from the servers unless the authenticated user has the proper role and permissions to view such data.

3.5.3	All information technology services and systems developed or acquired by agencies shall have documented security specifications that include an analysis of security risks and recommended controls (including access control systems and contingency plans).
3.5.4	Security requirements shall be developed at the same time system planners define the requirements of the system. Requirements shall permit updating security requirements as new threats/vulnerabilities are identified and/or new technologies implemented.
3.5.5	Security requirements and evaluation/test procedures shall be included in all solicitation documents and/or acquisition specifications.

As part of the design process, JMT develops an extensive System Design Document that outlines all aspects of the system. One of the key components of this document is the security protocols, standards, and operating procedures that will be utilized for system development, testing, and deployment. Once the preliminary System Design Document is complete, the system architect presents the design to the JMT Technical Advisory Committee to seek approval for the design. During this review, other architects and system engineers review the design and verify it meets industry standard security protocols.

The finalized System Design Document will be presented to NDOW for approval. Once approved, the design document will be updated throughout the development, testing, and deployment of the system.

3.5.6	Systems developed by either internal State or contracted system developers shall not include back doors, or other code that would cause or allow unauthorized access or manipulation of code or data.

JMT strictly adheres to the policies and standards put into place for the system. Therefore, all users have to first be authenticated with username/password and then authorized through the use of role-based security. JMT does not create any super user accounts that bypass any kinds of security in the system. This also includes system access via non-user access such as database connections and web service access. No database access or web service calls are available without the proper authentication.

3.5.7	Security specifications shall be developed by the system developer for approval by the agency owning the system at appropriate points of the system development or acquisition cycle.
3.5.8	All system development projects shall include a documented change control and approval process and shall address the security implications of all changes recommended and approved to a particular service or system. The responsible agency shall authorize all changes.

As part of the design process, JMT develops an extensive System Design Document that outlines all aspects of the system. Once of the key components of this document is the security protocols, standards, and operating procedures that will be utilized for system development, testing, and deployment. Once the preliminary System Design Document is complete, the system architect presents the design to the JMT Technical Advisory Committee to seek approval for the design. During this review, other architects and system engineers review the design and verify it meets industry standard security protocols.

The finalized System Design Document will be presented to NDOW for approval. Once approved, the design document will be updated throughout the development, testing, and deployment of the system.

As part of the change control policy, JMT will update the System Design Document if a change request affects any aspect of the document. Any changes will then be submitted for approval prior to any changes to the system.

3.5.9	Application systems and information that become obsolete and no longer used shall be disposed of by appropriate procedures. The application and associated information shall be preserved, discarded, or destroyed in accordance with Electronic Record and Record Management requirements defined in NRS and NAC 239, Records Management.

JMT will properly dispose of any applications and associated information/data when they become obsolete or are no longer used. Disposition will include the physical files as well as the documentation (physical and electronic) of the system.

3.5.10	Software development projects shall comply with State Information Security Consolidated Policy 100, Section 4.7, Software Development and Maintenance and State Standard 131, “Security for System Development”.
3.5.10.1	Separate development, test and production environments shall be established on State systems.
3.5.10.2	Processes shall be documented and implemented to control the transfer of software from a development environment to a production environment. New hardware / software is not introduced into a production environment until it is fully tested and accepted by the State.
3.5.10.3	Development of software and tools shall be maintained on computer systems isolated from a production environment.
3.5.10.4	Access to compilers, editors and other system utilities shall be removed from production systems.
3.5.10.5	Controls shall be established to issue short-term access to development staff to correct problems with production systems allowing only necessary access.
3.5.10.6	Security requirements and controls shall be identified, incorporated in and verified throughout the planning, development, and testing phases of all software development projects. Security staff shall

	be included in all phases of the System Development Lifecycle (SDLC) from the requirement definitions phase through implementation phase.

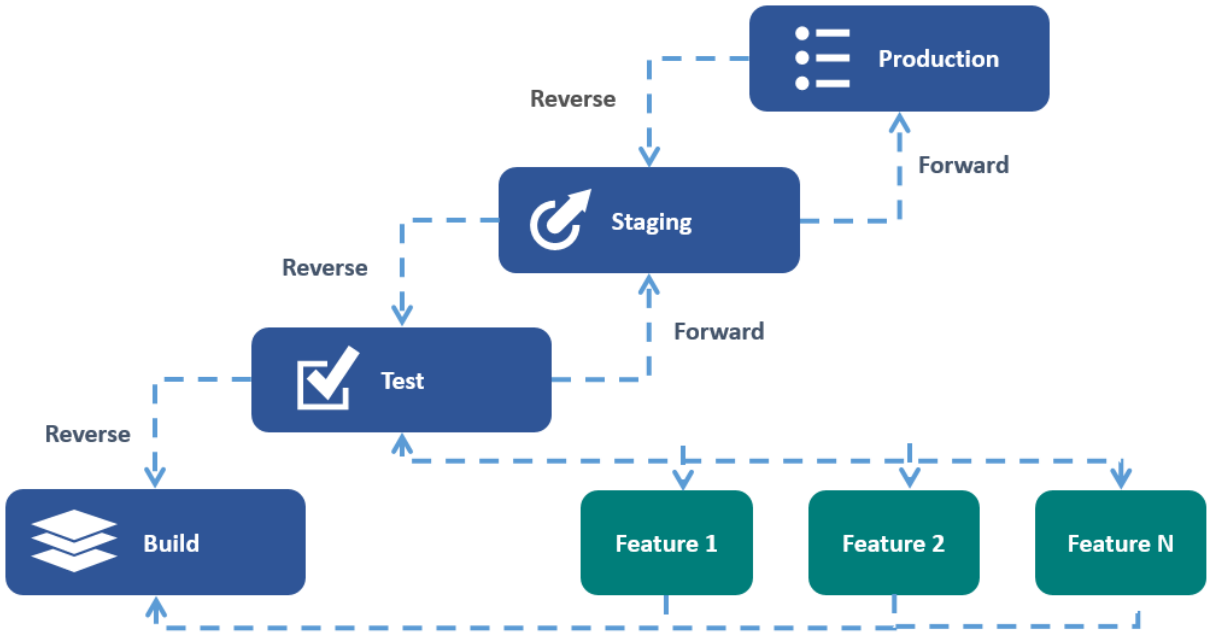
JMT supports four different environments for the development, testing, staging, and deployment of a system.

- ***Build – this is a continuous integration (CI) environment where features of the application are developed. After a feature has been developed, tested, and approved, it is promoted to the Test environment. Unit tests are run for each deployment to this environment. If the unit test fails, then the deployment is suspended until all unit tests have been fixed. This process ensures that any new code deployed to this environment meets our quality and development standards.***

- ***Test – this is the environment that our quality assurance team uses for testing. When they are not testing individual features, they are testing the system as a whole in this environment.***

- ***Staging – at any given time, this environment is in one of two basic states: production mirror or staged changes. This environment will match production so we can address any critical, production level bugs before it is promoted to production. The staging environment is also utilized heavily for regression testing and user acceptance testing (UAT) prior to a production deployment. It is from this environment that IDFG will have access to the new WILD system beginning in June of 2017***

- ***Production – this is the live, production environment. Changes to this environment are only made after a full regression test and client approval. JMT will not alter the state of this environment without the approval of the client.***



The staging and productions environments are always kept free from compilers, editors, and other system utilities. These types of software packages can possibly affect performance, interfere with processes, or introduce security risks to the overall system. In addition to protecting the production environment from these software packages, the production environment is also locked down from non-production support staff in order to control the amount of users who have access to systems and tools that could affect the performance, interfere with processes, or introduce security risks.

The following diagram depicts the progression of code changes from their development in individual features branches through the quality assurance environments and ultimately to production. The same progression exists for non-code changes such as introducing new hardware, new Azure services, and 3rd party integrations.

JMT works closely with our clients' security team from the beginning of the project until the end. This process begins in the requirements phase where security requirements are identified that outline the security of the environments as well as the security of the applications and databases.

Once requirements are established and the system moves to the design phase, JMT will outline the security details of the system in the System Design Document. Once of the key components of this document is the security protocols, standards, and operating procedures that will be utilized for system development, testing, and deployment. Once the preliminary System Design Document is complete, the system architect presents the design to the JMT Technical Advisory Committee to seek approval for the design. During this review, other architects and system engineers review the design and verify it meets industry standard security protocols. The finalized System Design Document will be presented to the security team for approval.

During the development phase, JMT will start introducing the different environments; build, test, stage and then production. As each of these environments are built and configured, JMT will work with the security team to verify that the environment meets the system design documentation along with other security protocols dictated by the State.

Finally, as the system is moved into production, JMT will work the security team to test the production system and produce reports on security risks as new security risks are identified. It is important to note that changes to the system can affect security over time. Therefore, it is imperative for JMT and security team to work together to continually monitor and scan the production systems for security risks.

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SECTION VI
SCOPE OF WORK

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Section VI – Scope of Work

4.4 PLANNING AND ADMINISTRATION

4.4.1 Objective
The objective of this task is to ensure that adequate planning and project management are dedicated to this project.
4.4.2 Activities
The awarded vendor shall:

4.4.2.1 Work with the State to provide a detailed project plan with fixed deadlines to include, but not be limited to:

Project schedule including tasks, activities, activity duration, sequencing and dependencies;

A preliminary project plan has been drafted and included in this submission. This project schedule will be reviewed, approved by NDOW and baselined during the project planning phase.

Project work plan for each deliverable, including a work breakdown structure;
Completion date of each task;
Project milestones;
Entrance and exit criteria for specific project milestones; and
Project organization including a resource plan defining roles and responsibilities for the awarded vendor, subcontractors (if applicable) and State.

A preliminary project plan has been drafted and included in the "Preliminary Project Plan" component of this submission. This project schedule will be reviewed and baselined during the project planning phase. This project schedule has the same level of detail (or more) than the work breakdown structure. The project schedule is drafted in Microsoft Project and includes start and end dates, project milestones, supporting tasks for milestones and resource allocations. In addition to this, a project resource or staffing plan has been drafted and included in this proposal. It will be updated during the project planning phase in order to include specific client constraints and schedule events.

4.4.2.2 Attend and participate in all project related meetings requested by the State at a location to be determined by the State. Attendance may be in person or via teleconferencing, as mutually agreed to by the project team. These meetings shall follow an agenda mutually developed by the awarded vendor and the State. The awarded vendor shall prepare materials or briefings for these meetings as requested by the State. Minutes shall be taken and distributed by State staff within five (5) working days after the meeting. Minutes may be distributed via facsimile or email.
The agenda may include, but not be limited to:

A. Review and approval of previous meeting minutes;
Contractor project status;
State project status;
Contract status and issues, including resolutions;
Quality Assurance status;
New action items;
Outstanding action items, including resolutions;
Setting of next meeting date; and
Other business.

Onsite Presence

JMT understands that an onsite presence is critical throughout the project in order to foster efficient and effective collaboration between JMT and NDOW. This includes an onsite kickoff meeting, multiple days of onsite requirements elicitation sessions and at least 4 "Design Review" meetings at the culmination of each development iteration whereby JMT will present a progressively more complete version of the new NDOW System. The final design review will be a functionally complete initial release of the system.

The following table outlines onsite activities throughout the initial deployment phase.

Activity	Start	Finish	Number of Days
Project Kickoff Meeting at NDOW	*9/20/2017*	*9/20/2017*	*1*
Requirements Sessions 1	*9/20/2017*	*9/22/2017*	*3*
Requirements Sessions 2	*11/8/2017*	*11/10/2017*	*3*
Requirements Sessions 3	*1/15/2017*	*1/17/2017*	*3*
Iteration 1 – Design Review Meeting	*1/29/2018*	*1/30/2018*	*2*
Iteration 2 – Design Review Meeting	*3/26/2018*	*3/27/2018*	*2*
Iteration 3 – Design Review Meeting	*5/15/2018*	*5/16/2018*	*3*
Complete Initial System – Design Review Meeting	*7/17/2018*	*7/20/2018*	*4*
User Acceptance Testing	*7/23/2018*	*7/27/2018*	*5*
NDOW Training	*9/4/2018*	*9/7/2018*	*4*
Go Live	*9/27/2018*	*10/1/2018*	*4*

Progress Meetings

JMT understands that collaboration between JMT and NDOW as well as the continuous monitoring of project baselines and project risk is critical to project success. JMT will conduct weekly progress meetings that will have the following basic agenda:

- ***Review the Project Status Report – The project status report will detail work completed, work scheduled but not completed, the following period's planned activities, and any issues.***
- ***Review the Project Issue Log – The project issue log will serve as a running list for outstanding issues that require resolution and will document the current status of each issue and any action items for JMT and/or NDOW.***
- ***Review the Project Schedule – The project schedule will be reviewed against the baseline and any variance discussed.***
- ***Review the Project Risk Register – The project risk register will be reviewed and existing known risks evaluated for changes in likelihood or impact and new risks discussed.***

JMT and NDOW will work together to ensure project success by using this approach which includes detailed planning followed by a collaborative evaluation of project progress against this plan.

4.4.2.3 Provide written semi-monthly project status reports delivered to State project management by the third (3rd) working day following the end of each reporting period. The format shall be approved by the State prior to issuance of the first semi-monthly project status report. The first semi-monthly report covers the reporting period from the 1st through the 15th of each month; and the second semi-monthly report covers the reporting period from the 16th through the end of the month. The status reports shall include, but not be limited to the following:

A. Overall completion status of the project in terms of the State approved project work plan and deliverable schedule;
Accomplishments during the period, including State staff/stakeholders interviewed, meetings held, Joint Application Development (JAD) sessions and conclusions/decisions determined;
Problems encountered and proposed/actual resolutions;
What is to be accomplished during the next reporting period;
Issues that need to be addressed, including contractual;
Quality Assurance status;
Updated MS Project time line showing percentage completed, tasks assigned, completed and remaining;
Identification of schedule slippage and strategy for resolution;
Contractor staff assigned and their location/schedule;
State resources required for activities during the next time period; and
Resource allocation percentages including planned versus actual by project milestone.

JMT project managers produce detailed progress reports as part of JMT's standard project management practice. For this project, the JMT project manager will provide progress reports on a bi-monthly basis and which will include at minimum:

- ***Overall completion status of the project with respect to base-lined project schedule***
- ***Tasks completed during the reporting period***
- ***Problems encountered and proposed/actual resolutions;***
- ***Tasks to be accomplished during the next reporting period;***
- ***Issues that need to be addressed, including contractual;***
- ***Quality Assurance status;***
- ***Updated MS Project time line showing percentage completed, tasks assigned, completed and remaining;***
- ***Identification of schedule slippage and strategy for resolution;***
- ***Contractor staff assigned and their location/schedule;***
- ***State resources required for activities during the next time period; and***
- ***Resource allocation percentages including planned versus actual by project milestone.***

4.4.2.4 Develop a comprehensive approach for handling communications with both internal and external audiences. Effective communication is critical to the development of productive relationships with concerned stakeholders. The communication plan shall include, but not be limited to: a plan for generation, documentation, storage, transmission and disposal of all project information.

Communication is critical to the success of any project, large or small. JMT maintains a customer-focused business model, which means JMT's Project Manager and technical support staff will listen to NDOW's needs and develop solutions that meet the objectives of the organization.

In cooperation with NDOW, JMT will develop a Communication Plan for communicating with NDOW staff. The Communication Plan will define the timeliness of communication response between JMT and NDOW. The plan will also define the methodology for tracking action items and other issues, the methodology for tracking progress and the methodology for conducting meetings. Additionally, the Communications Plan will include

methodologies for establishing and maintaining a partnership with the NDOW management and users, including techniques for obtaining and fostering senior level executive commitment.

4.4.2.5 Develop a risk management plan to ensure that risks are identified, planned for, analyzed, communicated and acted upon effectively.

JMT Technology Group's Risk Management Process aims to identify the risks associated with each aspect of this project and the actions JMT will employ to avoid, transfer, or mitigate those risks.

Risk Management Methodology

Our Risk Management methodology is straightforward and includes the following steps:

- ***Risk Identification - The majority of risks are known by project team personnel and it is the project manager's job to surface these risks at every stage of the project. This accomplished through explicit risk identification sessions as well as through the establishment of an environment where risk communication is encouraged and expected. Throughout project execution, morning Scrum meetings will serve as an opportunity for developers and other team members to provide insight into project risk and the Project Manager will actively engage the team to identify issues that may potentially serve as risk to project success.***
- ***Risk Analysis - Risks must be analyzed with regard to likelihood of occurrence and impact on the project if not mitigated. This analysis provides the required inputs for risk planning.***
- ***Risk Planning - Given an understanding of the likelihood and impact the Project Manager will develop a plan for addressing each risk and assign a priority. The plan will include identifying the cues that risk is occurring and the specific actions to take: mitigate the impact by developing a contingency plan, avoid the risk by making a change to a project component, or accept the risk and take no further action.***
- ***Risk Tracking - When the planning phase is complete and all currently known risks have been documented with corresponding plan information, each risk is assigned a status and metrics are developed to help track that status. This process is continual through the project life-cycle.***
- ***Risk Control - When a risk action's triggering event occurs the Project Manager must take the appropriate action to control the risk according to the defined plan.***

  In addition, the Project Manager will review the Risk Register on a weekly basis to assess the status of each currently identified risk and to add new risks.
- ***Risk Communication - Without effective communication no risk management plan can be successful. This includes communication among the project team and NDOW and also escalation within the organization.***

4.4.2.6 Develop a quality assurance plan including, but not limited to, the methodology for maintaining quality of the code, workmanship, project schedules and subcontractor(s) activities.

The Quality Management Plan identifies the quality standards that are relevant to the NDOW System project and how the team will satisfy them. JMT will develop a quality management plan that guides the quality processes of this project.

A preliminary plan is found below.

Quality Management Method

This Quality Plan is intended to document the expectations of quality for NDOWSystem Development deliverables and the processes, techniques, and materials by which these expectations will be met or exceeded.

The Quality Plan encompasses two major processes:

Quality assurance

Quality assurance activities focus on the processes used to manage and deliver the solution and can be performed by an IT manager, business sponsor, or third-party reviewer.

Quality control

Quality control activities are performed continually throughout a project to verify that project management and project deliverables are of high quality.

Quality Standards

The following quality standards are applicable to the quality management activities of this project:

- ***NDOW System Development Standards – at the outset of this project, prior to the commencement of system development, multiple standard documents will be developed to ensure that System Development follows a consistent process founded in best practices. The purpose of these documents is to maintain quality and consistency throughout each release of the NDOW System.***

  The following documents will be developed / enforced:

  - ***JMT LRS Coding Standards – Document that describes best practices for LRS developers.***
  - ***Visual Studio Solution Structure Standard – Governs the structure by which the Visual Studio solutions are structured and the methods.***
  - ***NDOW System Database Design Standards – Governs the design of the database entities with regard to structure and nomenclature.***
  - ***NDOW System Design Specification***
  - ***Nevada State's System Development Life Cycle (SDLC) methodology***

Quality Management Tools

The following quality tools are applicable to the quality management activities of this project:

- ***Master Test Plan – The Master Test Plan will map directly to the approved Functional Requirements and the Requirements Traceability Matrix and will provide a baseline against all functionality that will be tested and validated. The test lead will oversee the work of the test team to methodically test each feature against approved requirements. Test results will be tracked through Microsoft's Team Foundation Server.***
- ***Team Foundation Server – Microsoft's Team Foundation Server will be implemented for source code control, work item assignment and tracking, bug and issue assignment, and project management oversight. In a multi-developer environment a software package such as Team Foundation Server is a critical element of the overall Quality Plan.***
- ***StyleCop – StyleCop ensures the quality and consistency of application code as it enforces syntax adherence to standards. Developers will not be able to check their code into the source code repository until such time that their code builds without errors. StyleCop is designed to cause build errors if syntax rules are violated.***
- ***Visual Studio Code Analysis Tools and NDOW System Rule Set – As StyleCop enforces syntax rules, the code analysis tool will enforce optimization rules to ensure code is structured for maximum performance.***

Quality Management Roles and Responsibilities

The following roles and responsibilities have been identified for execution of this quality plan:

Role	*Quality Assurance Responsibilities*
JMT Project Manager	***Lead preparation of Quality Plan*** ***Ensure conformance to Quality Plan*** ***Continually evaluate quality assurance activities based on quality control results*** ***Review quality control procedures and test plans*** ***Oversee the quality of final deliverables***
Development Team Lead	***Direct system design activities*** ***Ensure adherence to best practices in database and applications development*** ***Conduct process and code reviews*** ***Support test plan creation and execution***
Quality Assurance Team Lead	***Direct testing activities*** ***Ensure testing adherence to Quality Control Plan*** ***Coordinate with Development Lead with regard to timing of testing activities*** ***Ensure tests are comprehensive and complete*** ***Oversee development of test cases*** ***Oversee execution of test cases***
Business Analyst / Test Team	***Develop use-case diagrams and support requirements analysis and documentation*** ***Design and implement quality assurance activities*** ***Design, document and execute test plans***
Application Developers	***Adhere to approved system design*** ***Develop code in accordance with defined standards and best practices*** ***Execute unit tests*** ***Support test plan creation and execution***
Database Developers	***Adhere to approved system design*** ***Develop code in accordance with defined standards and best practices*** ***Execute unit tests*** ***Support test plan creation and execution***

Quality Control

Quality control refers to the activities used to verify that deliverables fulfill quality requirements.

This project includes the following quality control activities:

- ***<u>Unit Testing</u> will be performed during the development phase for each component of this system. Developers will develop and conduct unit tests on individual modules before integrating them into the***

system. This ensures that these modules are free of defects. Issues that are discovered will be documented in Team Foundation Server, where they are tracked throughout their life-cycle.

- ***Integration testing will be performed against completed features. This process begins with the creation of a comprehensive Test Plan from the use-cases documented in the System Requirements Specification. This plan will consist of test-cases, each of which is executed by test staff, and documented in our issue tracking software. Failed test-cases are reported to the development team for debugging and resolution. This process iterates until such time that the application passes all test-cases.***
- ***System Testing will commence when JMT has fully integrated a new module into the NDOWSystem and the module has been verified as free of defect and validated against the requirements. System Testing is conducted on the integrated system to ensure that all components communicate and interoperate in accordance with the defined requirements. A test plan will be developed and executed with issues logged and tracked in the issues tracking software. Again, the debugging and resolution process will iterate until the system passes all test-cases.***
- ***Performance Testing will be conducted to validate the performance of the web application against the service level requirements. Performance will be assessed using a tool such as the Microsoft Web Capacity Analysis Tool (WCAT). Using this tool JMT can generate user scripts that represent typical user work flows and simulate the execution of these workflows for concurrent users. JMT will provide the results of the performance and acceptance validation testing in the form of a report.***

Quality Assurance

Quality assurance refers to the processes used to create the deliverables that ensure quality requirements are fulfilled.

This project includes the following quality assurance activities in the project work plan:

- ***Automated Build Processes with Continuous Integration***
- ***Creation of Detailed System Designs – The development, documentation, and review of detailed system designs according to industry best practices; assuring quality in design prior to the commencement of coding.***
- ***Implementation of "Code Analysis" capabilities in Visual Studio - Code Analysis will be run by TFS Team Build and any violations will cause the build to fail. Developers are expected to always execute Code Analysis rules against their local code before checking into TFS.***
- ***Implementation of StyleCop - StyleCop analyzes C# source code to enforce a set of style and consistency rules. StyleCop will be configured to show violations as build errors so that all violations must be addressed prior to checking into TFS.***
- ***Process Reviews – The Development Lead routinely reviews developer process to ensure conformance with best practices in coding structure and adherence to the detailed system designs established during planning.***
- ***Code Reviews / Standards - Application code is periodically reviewed during the development process to ensure adherence to the documented coding standard.***
- ***Source Code Control – All source code is stored in a source code management system to provide multi-member teams, code management throughout the development lifecycle.***
- ***Code Documentation – Code is adequately documented***

4.4.2.7	Develop a Change Management Plan and Control Procedures and present it to the State for acceptance. This plan shall be used by the vendor and the State in the design, specification, construction, implementation and support of the system.

The scope of work for this implementation, largely defined by the RFP document, will be mutually agreed upon during the initiation phase of the project, and while the specific requirements and implementation details necessary to complete the scope will be defined in greater detail, the scope of the project will remain unchanged. It provides the baseline against which we can collaboratively perform scope change management throughout the project.

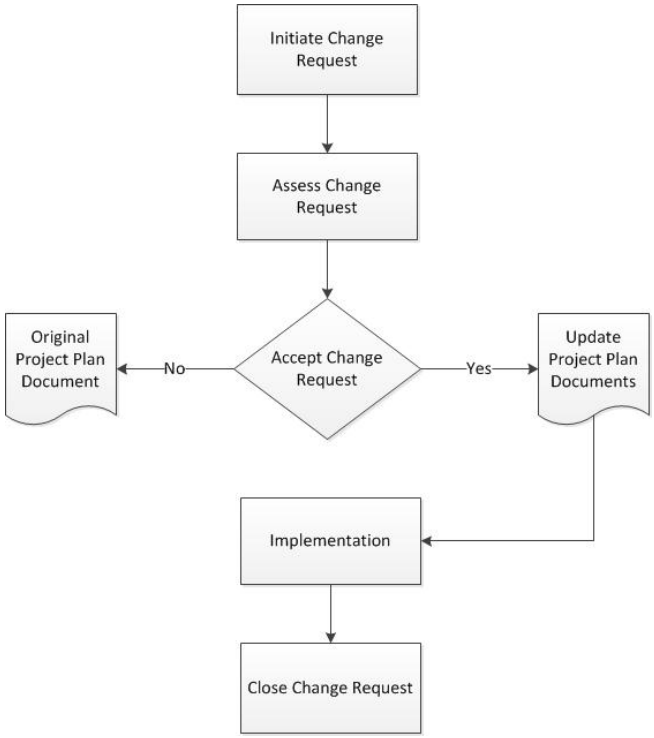
To be clear - JMT understands the need to be flexible and collaborative with regard to the implementation of the system. Scope change is introduced when wholly new features or functionality are introduced over the course of the project. The lack of a formal change control plank, in this scenario, introduces project risk.

Also note that this change management process applies to the implementation phase. JMT has included in its proposal 1000 developer hours annually for system enhancements that should negate the need for change orders during the Operations and Maintenance phase of the project.

JMT's approach to Change Management will be guided by a structured set of events including:

- ***Initiation the Change Request by NDOW***
- ***Assessment of the Change Request by the JMT Project Manager and NDOW Project Manager***
- ***Approve or Disapprove the Change Request by NDOW***
- ***Update Project Baselines as Needed***
- ***Implement the Change***
- ***Close the Change Request***

The following diagram represents the flow of change management events:



All project changes must enter the Change Management cycle in the format of a Change Request. Legitimate changes to the product/project may stem from:

- ***Responses to problems internal to the project.***
- ***Externally imposed requirements.***
- ***Change in business requirements or strategy.***
- ***Proactive changes to improve performance or benefit.***

The following describes in detail each event in the Change Management Process:

Initiate the Change Request - Either NDOW's PM communicates the details of the change to JMT's PM or JMT's PM identifies a potential change through normal project activities and raises this issue with NDOW's PM. This constitutes the initial informal change communication. At this point, the Project Managers decided whether or not to proceed with the preparation of a Change Request.

Once the details of the change have been recorded on a Change Request form, it is logged in the Project's Change Log within the Project Portal.

Assess Change Request - The Change Request is escalated to the core project team for evaluation.

The CR is assessed for its impact on the project plan (resources, costs and schedule) by the Project Manager and Project Team. A separate timeline is built for later incorporation into the master plan, if and when the CR is approved. The Project Manager completes a brief Business Case with the assistance of the Project Team. The Project Manager will also identify potential alternatives to achieve the same objectives and consider whether deferring the change is a valid option.

Examples of fundamental questions that should be asked and answered during the assessment include:

- ***Is the change unavoidable? (E.g. legislative requirements change).***
- ***Does the change directly increase the project's ability to meet its fundamental objectives?***
- ***Are there significant technical challenges?***
- ***Does the change introduce substantial new risk to the project?***

Approve/Reject Change Request - The results of the CR assessment are presented to the NDOW Project Manager. Based on the value judgment passed on the CR, it is accepted or rejected. If accepted, sign-off represents a new agreement on the updated Project Plan. The new timeline, Scope, costs and schedule are baselined.

Implement Change - The new work required by the change is undertaken and completed according to the new Project Plan. Success criteria or testing for the change are applied to the CR work. Completion is assessed at the appropriate milestone.

Close Change Request - Following successful implementation and testing of the CR work, Change Management Log is updated to reflect closure to this Change Request.

4.4.2.8	Develop a Knowledge Transfer Plan, present the plan to the State, execute the plan and obtain State acceptance before and after the plan is executed. The plan shall include sufficient time and resources to accomplish a full transfer of knowledge to assure that the State can operate the system independently and obtain timely and effective support from the vendor.

JMT understands that training / transferring knowledge to state agency staff, license dealers, and technical support providers is a critical component of the successful rollout of a new licensing system. The sections below detail JMT's plan for development of training curriculum, materials, and proposed delivery methods.

State Agency Curriculum

JMT will provide training to NDOW staff and proposes to organize the state agency training into lessons around specific learning objectives and system functions that will be delivered through a combination of presentation and, if feasible, hands-on exercises. JMT understands that State agency staff have varying roles and will need training on different lessons. Potential roles include:

- ***license sales clerks***
- ***Game management***

- ***NDOW law enforcement***
- ***NDOW managers***
- ***System administration***

Here are some of the Training Topics for NDOW staff:

All users:

- ***Accessing system***
- ***Overview of UI***
- ***Managing Customers***
- ***Reports***

Phone sales/Clerks:

- ***Purchasing a license***
- ***Enter Lottery/Raffle***
- ***Order History – Customer, Dealer/Location***
- ***Voiding a purchase***
- ***Printing/Reprinting licenses***
- ***Catch/Harvest Reporting***

Law enforcement:

- ***Order History – Customer***
- ***Catch/Harvest Reporting***
- ***Revocations***

Management/Administrators:

- ***Invoices***
- ***Managing License Dealer***
- ***Managing NDOW Locations***
- ***Managing Products***
- ***Managing Lotteries/Raffles***
- ***Manage Surveys***
- ***Managing/Fulfilling Inventory***
- ***Managing Users***
- ***Managing Revocations***
- ***Managing Communications***
- ***Financial – Cash drawer, Reporting***

JMT will work collaboratively with the NDOW team to review curriculum and training materials and to define a schedule that maximizes efficiency and minimizes the intrusion on daily business operations. JMT recognizes that not all lessons will be relevant to all staff and as such will develop a training attendee list and schedule that considers user's roles in the system.

This means training for NDOW will be organized so users who need to learn a more limited set of functionality will have their lessons covered earlier in the training, and those needing to learn more will continue with additional lessons. JMT will work with NDOW to determine the number of NDOW users requiring training to know if hands-on exercises are feasible.

State Agency Training Delivery

JMT will produce a training manual that is organized around specific functions of the system. This training manual will include concept-related information as well as step-by-step instructions for executing the specific application function. Each attendee will receive a copy of this training manual as well as a Help Card that provides a quick reference for the execution of system functions. The training manual will incorporate visual aids to provide additional clarity and to reinforce concepts.

JMT proposes to provide 3 full-day, onsite classroom style training sessions to accommodate different subject material as well as the availability of state agency staff. The specific itinerary and schedule will be developed in coordination with NDOW. It is anticipated that NDOW will provide facilities for these training sessions. JMT will work with NDOW to determine the number of NDOW users requiring training and availability of equipment to know if hands-on exercises are feasible.

Technical Support Training

In addition to training NDOW staff on use of the new licensing system, the staff providing support will need additional training to cover anticipated technical support issues.

Technical support will be primarily to assist customers and dealers. A training curriculum will be developed that is organized into lesson plans that focus on a specific core skill or learning objective for technical support; for example resetting user's passwords, testing barcode scanners, printing/reprinting licenses, or updating customer's profiles. The lesson plans will be developed presentation style, will provide context and "how to" information and will heavily incorporate visual elements such as graphics, screenshots, videos and other visual tools to reinforce concepts. The training will be a presentation with an associated training manual that includes conceptual information as well as step-by-step instructions to support these concepts.

In addition to learning how to address technical support issues with the licensing software, the technical support staff will also be trained on how to use Kaseya VSA to more easily support the clients. This portion of the training will assist technical support staff in everyday management of creating and modifying tickets to record their communication with the customer and dealers, as well as remote control for troubleshooting hardware and software, and other important uses of Kaseya.

A trouble-shooting guide will be developed in addition to the training/user guide for use by technical support staff.

Technical Support staff training will be provided in the form of an online webinar. JMT will work with NDOW to determine the appropriate number of webinars to offer based on the number of NDOW Call Center, Tier 1 and Tier 2 support staff. JMT recommends a maximum of 60 total participants per webinar. Each webinar will allow participants to preregister for the training and download any training materials prior to the training webinar.

These technical support training webinars will occur, from a project schedule standpoint, after dealer training has been delivered and the staging environment is available so support staff can immediately begin to practice utilization of the new system in a live environment.

Any associated training materials will be available to download prior to the training. If feasible, dealers having large monitors or dual monitors can watch the training and follow along in the staging environment.

JMT will also make the technical support training session available in video format for support staff unable to attend any of the webinars and for ongoing onboarding activities.

<u>License Dealer Training Curriculum</u>

Similar to the state agency training, a training curriculum will be developed that is organized into lesson plans that focus on a specific core skill or learning objective; for example executing a transaction or updating a customer profile. The lesson plans will be developed presentation style, will provide context and "how to" information and will heavily incorporate visual elements such as graphics, screenshots, videos and other visual tools to reinforce concepts. The training will be a presentation with an associated training manual that includes conceptual information as well as step-by-step instructions to support these concepts.

When the training curriculum and corresponding training manuals are complete, JMT will present this material to NDOW for review and approval.

<u>License Agent Training Delivery</u>

JMT proposes to deliver dealer training in the form of an online webinars. JMT will work with NDOW to determine the appropriate number of webinars to offer. Each webinar will provide the full dealer training and allow dealers to preregister for the training that is most convenient to their staff, and will be scheduled for a 4 hour period.

These dealer training webinars will occur, from a project schedule standpoint, after JMT has worked with dealers to assure access to the new system within the staging environment. This allows dealers to complete training and then immediately begin to practice utilization of the new system in a live environment.

Any associated training materials will be available to download prior to the training. If feasible, dealers having large monitors or dual monitors can watch the training and follow along in the staging environment.

JMT will also make the dealer training session available in video format for permit vendors unable to attend any of the webinars and for ongoing onboarding activities. The videos will be made accessible through the customer service section of the licensing application. In addition to preparing users for transitioning to the new system, the staging environment can be utilized for onboarding new dealer staff.

In addition, as a business becomes a licensed dealer for NDOW, their users could be required to demonstrate their understanding of the licensing system in the staging environment prior to activation of the dealer or individual dealer user in the production system. This could certainly be done by NDOW, or the JMT technical support team.

4.4.2.9	The State shall perform a Post Implementation Evaluation Review (PIER) approximately six (6) months after full implementation and State acceptance of all deliverables. The awarded vendor's Project Manager shall be required to participate on site for a period of not to exceed three (3) days.

The JMT project manager will be onsite to participate in the Post Implementation Evaluation Review (PIER) approximately six (6) months after full implementation and State acceptance of all deliverables

4.5 CALENDAR OF ACTIVITIES

4.5.1 Objective

The objective of this task is to inform vendors of the calendar of events so that vendors may accurately plan implementation.

4.5.2 Activities

NDOW and the awarded vendor shall:

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.1	December 1, 2017	NDOW/Contractor	Start revising post card for Spring Turkey. Approximately 1500 postcards mailed.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates.***
4.5.2.2	December 1, 2017	NDOW/Contractor	Vessel Registration Renewal notices out. Approximately 53,000 notices mailed.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.3	December 15, 2017	NDOW/Contractor	Vessel Registration and Title Module go live	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.4	December 15, 2017	Contractor	Update Hunter Choice and Season tables for Spring Public Lands Turkey in the Hunt Master File according to Commission regulation.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.5	December 17, 2017	NDOW	Review Hunter Choice and Season tables for Spring Public Lands Turkey.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.6	January 5, 2018	NDOW/Contractor	Test online application site for Spring Turkey.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.7	January 15, 2018	NDOW/Contractor	Provide lists of licensed master guides and valid units to Administrator	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.8	January 15, 2018	Contractor	Mail post cards Spring Turkey.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.9	January 15, 2018	Contractor	Final courtesy big game harvest questionnaire reminder letters mailed. Approximately 7,000 letters mailed.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.10	January 19, 2018	Contractor	Spring Turkey application period begins. Look up for Turkey Nonreturn of Turkey harvest questionnaire.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.11	January 19 2018	NDOW/ Contractor	License sales begin during Spring Turkey Application process. Soft opening of 365 license sales on application site only.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.12	January 25 to February 14, 2018	NDOW/ Contractor	Test Internet online application process for Restricted Nonresident Guided Hunt on the test site.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.13	January 26 and 27, 2018	Informational	Commission Meeting Big Game Season setting January 26-27 Carson City, Nevada Involves regulations that affect upcoming draws.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.14	January 30, 2018	NDOW/ Contractor	Forward final Hunter Choice, Unit Group and season information to the Administrator for update of the Hunt Master File for Restricted Nonresident Guided Deer Hunt draw.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.15	January 31, 2018	Contractor	Final big game harvest questionnaire deadline.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.16	February 5, 2018	Contractor	Big Game Non-return of harvest questionnaire Administrative Penalty Fee Letters mailed. Approximately 2553 letters mailed.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.17	February 5 to April 16, 2018	Contractor	Receive non-return penalty payments online. Online payment deadline same as main draw deadline	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.18	February 7, 2018	NDOW/ Contractor	Forwards the Hunter Choice, Unit group and season information to the Administrator for update of the Hunt Master File for the Big Game Main Draw.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.19	February 9, 2018	Contractor	Mail Master Guide online application packets to the guides. Approximately 89 packets mailed (subject to change due to new methodology).	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.20	February 10 to March 1, 2018	NDOW/ Contractor	Review, update and approve the Hunt Master file season table for the Main Draw.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.21	February 13, 2018	Contractor	11 pm application deadline for 2018 Spring Public Lands Turkey	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.22	February 20, 2018	Contractor	11 pm Bonus Point application deadline for 2018 Spring Public Lands Turkey	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.23	February 28, 2018	Contractor	Spring Turkey drawing.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.24	March 1, 2018	NDOW/ Contractor /POS	365 License Start date – all sales venues	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.25	March 1, 2018	NDOW/ Contractor /POS	IWVCS Interface	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.26	March 1, 2018	NDOW/ Contractor /POS	Hunter Education Module Interface	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.27	March 1, 2018 thru March 16, 2018	NDOW/Contractor	Test Internet online application process for the Big Game drawing.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.28	March 2, 2018	Contractor	Spring Turkey Online results.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.29	March 9, 2018	Contractor	Spring Turkey Tag and results letters/emails out.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.30	March 9, 2018	Contractor	Spring Turkey FCFS Application period opens	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.31	March 9, 2018	Contractor	Restricted Nonresident Guided application deadline 11 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.32	March 14, 2018	Contractor	Big Game application reminder post card mailed. Approximately 64,000 post cards mailed.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.33	March 16, 2018	Contractor	Restricted Nonresident Guided online Bonus point only and application withdraw deadline 11 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.34	March 19, 2018	Contractor	Big Game application period begins. Look up for Big Game Nonreturn of harvest questionnaire.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.35	March 21, 2018	Contractor	Restricted Nonresident Guided draw.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.36	March 23, 2018	Contractor	48-hour release of Restricted Nonresident Guided Drawing results to the website.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.37	March 16 and March 17, 2018	Informational	Commission Meeting - Laughlin, Nevada Migratory Bird and Swan Season setting.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.38	April 16, 2018	Contractor	Big Game application deadline 11 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.39	April 18, 2018	NDOW/ Contractor	Send out Furbearing Harvest Questionnaires to all Trapping license holders	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.40	April 23, 2018	Contractor	Big Game bonus point only application deadline 11 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.41	May 11 thru May 12, 2018	Informational	Commission Meeting - Carson City, Nevada – Quota Setting.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.42	May 15, 2018	NDOW/ Contractor	Forwards the quota information to the Administrator to update the Hunt Master File.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.43	May 16, 2018	Contractor	Updates Hunt Master file season table with the quota information provided by NDOW	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.44	May 16 thru May 18, 2018	NDOW/ Contractor	Reconcile monies PRE DRAW with NDOW Fiscal Services prior to draw.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.45	May 17 thru May 18, 2018	NDOW/ Contractor	Reviews and approves the quota information in the Hunt Master file season table.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.46	May 23, 2018	NDOW/ Contractor	Main draw occurs. Public attendance with members of the County Advisory Boards and Commissioners.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.47	May 24 thru May 29, 2018	NDOW/ Contractor	Review remaining tag information with NDOW for posting on NDOW website.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.48	May 23 to June 21	Contractor	Process saleable list requests.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.49	May 25, 2018	Contractor	Big Game Draw 48 hour draw results posting by 5 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.50	May 28 to June 8, 2018	NDOW/ Contractor	Review and approve Season Table for second draw. Review/test online application process for second draw.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.51	May 31, 2018	NDOW/ Contractor	Deadline for Furbearing Harvest Questionnaires	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.52	May 31, 2018	NDOW/ Contractor	Trapping License holders that did not return questionnaire trapping license privileges are suspended and ineligible to purchase next year trapping licenses. Unless they pay a $50 admin fee. Trapping license valid period is July 1 – June 30. Approximately 200 noncompliant trapping license holders.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.53	June 8, 2018	NDOW/ Contractor	Big Game draw final results release date.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.54	June 8, 2018	NDOW/ Contractor	Application process available for second draw for remaining big game tags.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.55	June 8 thru August 31, 2018	Contractor	Process hunting license refund requests. Refunds generated are reported on the bi-weekly revenue and disbursement. Approximately 20 refunds	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.56	June 8, 2018 to January 2019	Contractor	Process tag refund requests and issue to alternate tags if possible. Monies associated with tags refunded and alternates tags issued are reported on the biweekly revenue and disbursement.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.57	June 22 to June 23, 2018	Informational	Commission Meeting – Lovelock, NV – Upland Game Setting – Includes Wild Turkey	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.58	June 25, 2018	Contractor	Second Draw deadline 11 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.59	July 3, 2018	NDOW	Start processing duplicate tag requests at regional offices. Reconcile tags at the time of issuance.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.60	July 2, 2018	Contractor	Second Draw bonus point only deadline 11 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.61	July 13, 2018	Contractor	Big Game Second Draw 48 hour draw results posting by 5 p.m.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.62	July 13, 2018	NDOW/ Contractor	Review and approve Big Game season report for First Come First Serve Draw	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.63	July 13 to July 18, 2018	NDOW	Review, test and approve Big Game First Come First Serve application site	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.64	July 20 to July 24, 2018	NDOW	Provide season, hunter choice for Swan. Test online application site for Swan Draw	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.65	July 21, 2018	Contractor	Big Game remaining Tags final results.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.66	July 28, 2018	Contractor	Start accepting remaining tag applications for the big game First Come First Serve online process.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.67	July 28, 2018	Contractor	Online site for Swan becomes available.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.68	August 10 thru August 11, 2018	Informational	Commission Meeting – Lincoln County, NV -	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.69	July 28 thru November 30, 2018	Contractor	Process applications for big game remaining tags daily.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.70	Aug 1, 2018 to January 31, 2019	Contractor	Process big game harvest questionnaires as they are received	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.71	Sept 6, 2018	Contractor	Swan draw.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.72	Sept 8, 2018, 2018	Contractor	Swan 48-hour release date.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Activity Number	Date	Responsible Party	Calendar Event	Vendor Response
4.5.2.73	Sept 15, 2018	Contractor	Swan final release date.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.74	September 24 to January 2019	Contractor	Process swan applications received through First Come First Serve until the close of the season in January.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***
4.5.2.75	September 21 and 22, 2018	Contractor	Commission Meeting – Las Vegas, NV. Vendor presentation of draw report and statistics.	***JMT takes note of this event. These will be addressed in JMT's Implementation schedule, which contain the master implementation dates***

Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

SECTION VII
COMPANY BACKGROUND & REFERENCES

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Section VII – Company Background and References

5.1 VENDOR INFORMATION

5.1.1 Vendors shall provide a company profile in the table format below.

Question	Response
Company name:	***Johnson, Mirmiran & Thompson, Inc.***
Ownership (sole proprietor, partnership, etc.):	***Corporation C***
State of incorporation:	***Maryland***
Date of incorporation:	***1972***
# of years in business:	***45***
List of top officers:	***John A. Moeller, PE, President; Rick Smulovitz, Chief Financial Officer; Daniel Cheng, Secretary***
Location of company headquarters:	***40 Wight Avenue Hunt Valley, MD 21030***
Location(s) of the office that shall provide the services described in this RFP:	***40 Wight Avenue Hunt Valley, MD 21030***
Number of employees locally with the expertise to support the requirements identified in this RFP:	***JMT has no resources located in Nevada, however we are prepared to bring in necessary resources on-site based on the proposed scope and approach.***
Number of employees nationally with the expertise to support the requirements in this RFP:	***JMT Technology Group has 80 employees with various technology backgrounds, including 20 employees with outdoor licensing and registration solution expertise to support this project.***
Location(s) from which employees shall be assigned for this project:	***Hunt Valley, Maryland New Milford, Connecticut Philadelphia, Pennsylvania***

5.1.2 Please be advised, pursuant to NRS 80.010, a corporation organized pursuant to the laws of another state shall register with the State of Nevada, Secretary of State's Office as a foreign corporation before a contract can be executed between the State of Nevada and the awarded vendor, unless specifically exempted by NRS 80.015.

5.1.3 The selected vendor, prior to doing business in the State of Nevada, shall be appropriately licensed by the State of Nevada, Secretary of State's Office pursuant to NRS76. Information regarding the Nevada Business License can be located at http://nvsos.gov.

Question	Response
Nevada Business License Number:	***E0291522016-5***
Legal Entity Name:	***Johnson, Mirmiran & Thompson, Inc.***

Is "Legal Entity Name" the same name as vendor is doing business as?

Yes		No	X

If "No", provide explanation.

Johnson, Mirmiran & Thompson, Inc. is doing business as JMT Technology Group which is a subsection of Johnson, Mirmiran & Thompson, Inc.

5.1.4 Vendors are cautioned that some services may contain licensing requirement(s). Vendors shall be proactive in verification of these requirements prior to proposal submittal. Proposals that do not contain the requisite licensure may be deemed non-responsive.

JMT understands the above.

5.1.5 Has the vendor ever been engaged under contract by any State of Nevada agency?

Yes		No	**X**

If "Yes", complete the following table for each State agency for whom the work was performed. Table can be duplicated for each contract being identified.

Question	Response
Name of State agency:	
State agency contact name:	
Dates when services were performed:	
Type of duties performed:	
Total dollar value of the contract:	

5.1.6 Are you now or have you been within the last two (2) years an employee of the State of Nevada, or any of its agencies, departments, or divisions?

Yes		No	**X**

If "Yes", please explain when the employee is planning to render services, while on annual leave, compensatory time, or on their own time?

If you employ (a) any person who is a current employee of an agency of the State of Nevada, or (b) any person who has been an employee of an agency of the State of Nevada within the past two (2) years, and if such person shall be performing or producing the services which you shall be contracted to provide under this contract, you shall disclose the identity of each such person in your response to this RFP, and specify the services that each person shall be expected to perform.

5.1.7	Disclosure of any significant prior or ongoing contract failures, contract breaches, civil or criminal litigation in which the vendor has been alleged to be liable or held liable in a matter involving a contract with the State of Nevada or any other governmental entity. Any pending claim or litigation occurring within the past six (6) years which may adversely affect the vendor's ability to perform or fulfill its obligations if a contract is awarded as a result of this RFP shall also be disclosed.

Does any of the above apply to your company?

Yes		No	**X**

Although prior litigation will not affect JMT's ability to perform or fulfill its obligations if a contract is awarded, we have included a Summary of Litigation, Judgments, Settlements, and Claims pertaining to the last five years. See Section X – Other Informational Material.

If "Yes", please provide the following information. Table can be duplicated for each issue being identified.

Question	Response	
Date of alleged contract failure or breach:		
Parties involved:		
Description of the contract failure, contract breach, litigation, or investigation, including the products or services involved:		
Amount in controversy:		
Resolution or current status of the dispute:		
If the matter has resulted in a court case:	Court	Case Number
Status of the litigation:		

5.1.8	Vendors shall review and provide if awarded a contract the insurance requirements as specified in ***Attachment D, Insurance Schedule for RFP 3432.***

JMT has reviewed the specified insurance requirements and will provide the necessary documentation upon contract award.

5.1.9	Company background/history and why vendor is qualified to provide the services described in this RFP. Limit response to no more than five (5) pages.

Founded in 1971, Johnson, Mirmiran & Thompson, Inc (JMT), is a 100% employee-owned firm that provides a full range of multi-disciplined consulting services to public agencies and private clients throughout the United States. Our staff of more than 1,400 professionals – engineers, architects, landscape architects, planners, environmental scientists, surveyors, construction and program managers, inspectors, designers, CADD technicians, and GIS and information technology specialists – is dedicated to the highest-quality project performance.

The company was founded primarily to perform engineering services in support of land development projects. Over time, JMT extensively diversified both our service offerings and our client base. This diversification of markets and services has resulted in considerable geographic expansion from our original office in Silver Spring, Maryland, to strategically located offices across the United States.

JMT has been providing technology services to government agency clients for over 30 years. We began by providing geospatial services to federal clients in 1987, and in 1997 we began to diversify our services and client base to State, County and Municipal government agencies where we felt we could make the most impact on our communities and the environment. In 2010, JMT officially branded the JMT Technology Group as a dedicated line of business offering innovative, web, desktop, and mobile technology services, solutions and products in the Natural Resources, Public Safety, Transportation, Utilities, Government and Commercial markets. This combination of technology and subject matter expertise coupled with our unparalleled commitment to customer service is why JMT has one of the highest customer and employee retention rates in our industry.

Why JMT Technology Group?

JMT Technology Group is extremely excited about the opportunity to work with the Nevada Department of Wildlife. To successfully implement a new and innovative Electronic Licensing System, needs a skilled, professional technology services provider. Your system must be built on modern technology and designed to grow with your organization as your future needs evolve. JMT Technology Group has a long history of serving clients like with a combination of the industry and technical necessary to implement the industry's leading-technology outdoors licensing and recreation solutions.

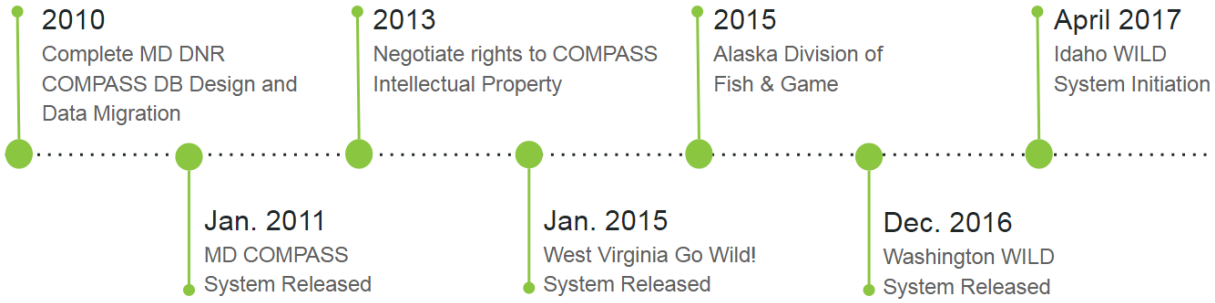
JMT has an experienced team of project managers, business analysts, architects, developers, user experience designers, quality assurance professionals, and customer service personnel that are experts in their field and that have been through multiple licensing system implementations. JMT employs a project management methodology that is founded on the principles, practices, and processes provided by the Project Management Institute (PMI). We implement a hybrid, agile development methodology, including daily scrums and regimented progress updates with our clients. Our wide array of technology service offerings strategically aligns with needs now and into the future.

<u>Our service offerings include:</u>

- ***Project Management***
- ***Business Analysis***
- ***Needs Assessments & Strategic Planning***
- ***System Design and Architecture***
- ***Data Migration and Database Design***
- ***Applications Development***
- ***System Integrations***
- ***Interactive & Multimedia Design***
- ***Technical Writing & Training Programs***
- ***Marketing & Public Involvement***
- ***IT Design, Implementation, & Administration***
- ***Call Center, Help Desk, & IVR Services***
- ***Fulfillment***
- ***Geographic Information Systems (GIS)***

5.1.10 Provide a brief description of the length of time vendor has been providing services described in this RFP to the public and/or private sector.

JMT Technology Group's Outdoor Licensing and Recreation Team was formed out of the direct need of our client, Maryland Department of Natural Resources (Maryland DNR). We understood Maryland DNR's long term goals of developing a modern and customer-focused licensing and recreation solution. We started by providing professional technical services for Maryland DNR's legacy licensing database migration. We were then selected to design, develop and implement their new solution, COMPASS, and continue to maintain and expand their solution today.



After COMPASS was implemented, JMT was awarded the contract to extend and configure that same solution for the West Virginia DNR, and we successfully deployed our solution on January 1, 2015. With two systems in Operations and Maintenance, JMT worked with Alaska DFG to leverage their existing online store and adapt it for in-store vendor use. In June 2016, JMT was awarded the contract to implement a new licensing system for Washington Department of Fish and Wildlife by the end of 2016. JMT has hit all production goals and the system is soaring. In April 2016, JMT was awarded the contract to implement Idaho's new licensing system which will be live by March 2018. JMT is currently providing Operations and Maintenance services to Maryland, West Virginia, and Washington.

5.1.11 Financial information and documentation to be included in accordance with ***Section 11.5, Part III – Confidential Financial Information.***

5.1.11.1 Dun and Bradstreet Number

See Section 11.5, Part III – Confidential Financial Information.

5.1.11.2 Federal Tax Identification Number

See Section 11.5, Part III – Confidential Financial Information.

5.1.11.3 The last two (2) years and current year interim:

A. Profit and Loss Statement

See Section 11.5, Part III – Confidential Financial Information.

B. Balance Statement

See Section 11.5, Part III – Confidential Financial Information.

5.2 SUBCONTRACTOR INFORMATION

Subcontractors are defined as a third party, not directly employed by the contractor, who shall provide services identified in this RFP. This does not include third parties who provide support or incidental services to the contractor.

5.2.1 Does this proposal include the use of subcontractors?

Yes		No	X

If "Yes", vendor shall:

5.2.1.1 Identify specific subcontractors and the specific requirements of this RFP for which each proposed subcontractor shall perform services.

5.2.1.2 If any tasks are to be completed by subcontractor(s), vendors shall:

A. Describe how the work of any subcontractor(s) shall be supervised, channels of communication shall be maintained and compliance with contract terms assured; and

B. Describe your previous experience with subcontractor(s).

5.2.1.3 Provide the same information for any proposed subcontractors as requested in ***Section 5.1, Vendor Information***

5.2.1.4 Business references as specified in ***Section 5.3, Business References*** shall be provided for any proposed subcontractors.

5.2.1.5 Provide the same information for any proposed subcontractor staff as specified in ***Section 5.4, Vendor Staff Skills and Experience Required***.

5.2.1.6 Staff resumes for any proposed subcontractors as specified in ***Section 5.5, Vendor Staff Resumes.***

5.2.1.7 Vendor shall not allow any subcontractor to commence work until all insurance required of the subcontractor is provided to the vendor.

5.2.1.8 Vendor shall notify the using agency of the intended use of any subcontractors not identified within their original proposal and provide the information originally requested in the RFP in ***Section 5.2, Subcontractor Information***. The vendor shall receive agency approval prior to subcontractor commencing work.

5.2.1.9	All subcontractor employees assigned to the project shall be authorized to work in this country.

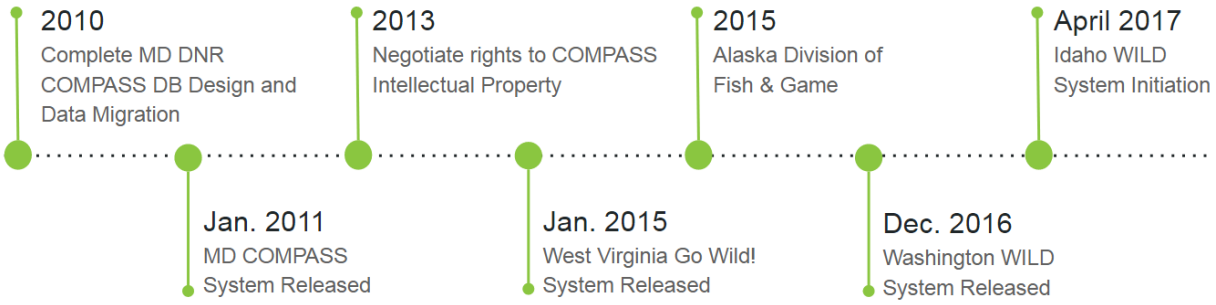
5.3 BUSINESS REFERENCES

5.3.1	Vendors shall provide a minimum of five (5) business references from similar projects performed for private and/or public sector clients within the last five (5) years.
5.3.2	Business references shall show a proven ability of:

5.3.2.1	Developing, designing, implementing and/or transferring a large-scale application with public and/or private sectors;
5.3.2.2	Developing and executing a comprehensive application test plan;
5.3.2.3	Developing and implementing a comprehensive training plan;
5.3.2.4	Experience with comprehensive project management;
5.3.2.5	Experience with cultural change management;
5.3.2.6	Experience with managing subcontractors; and
5.3.2.7	Development and execution of a comprehensive project management plan.

Project Examples

JMT Technology Group has worked with several state natural resource agencies to develop and support their outdoor licensing and recreation solutions. We are proud to have exceeded client expectations on all projects, and receive high recommendations from every client. Please see the following project examples, and read the correlating client-submitted questionnaires.



Maryland Department of Natural Resources

In 2011, The Maryland Department of Natural Resources (DNR) selected the JMT Technology Group to design, develop, deploy, and support Maryland's Outdoor Licensing and Recreation solution, COMPASS, a web-based licensing and recreation solution for purchasing hunting and fishing licenses, commercial licensing, vessel registration and titling, registering off-road vehicles, reporting harvest information and more.

Maryland was looking for a customer-centric, technology forward solution that would embody its vision for a comprehensive Customer Service and Product Delivery platform. More than just a modernized replacement of DNR's legacy COIN application, COMPASS was developed as a scalable, flexible platform upon which DNR can continue to grow its product offerings and customer services. It captures the high-quality data that is a critical component of holistic resource management. COMPASS was designed to serve the needs of DNR in 2011 and into the future.

JMT delivered on the vision it proposed, executing the complex system development effort on a compressed schedule, migrating hundreds of thousands of customers and sales transactions from the legacy mainframe-based database, supporting documentation and training efforts, and establishing a secure and reliable hosting environment.

JMT's ability to successfully deliver a custom developed, fully featured License and Recreation solution within nine months of commencing development was a testament to its strong project management practices, the effectiveness of its proven, structured iterative development approach, and the maturity of its software development environment and processes. In addition to promoting the development of efficient, reliable and robust code consistent with industry standards and best practices, JMT's software development approach directly engaged DNR stakeholders throughout the process to ensure that all aspects of the ultimate solution were aligned with DNR expectations.

The next generation COMPASS Outdoor Licensing and Recreation solution was successfully released into production in early 2012 and remains in use for online customers, by the COMPASS telephone sales team, at all seven of DNR's regional service centers, and at hundreds of Sports License Agent locations throughout Maryland.

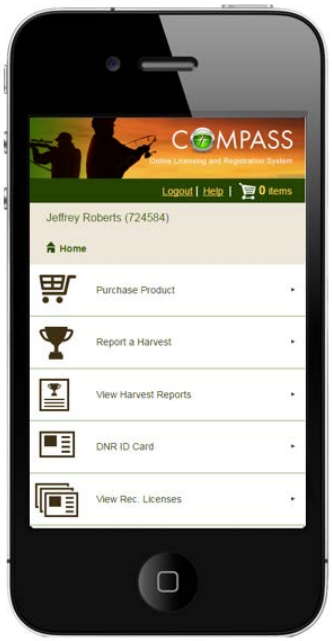
COMPASS – Maryland's Next Generation Outdoor Licensing and Recreation Solution

COMPASS was delivered on the vision established by the Maryland Department of Natural Resources and JMT Technology Group. It established a singular, modern platform for customer service and product sales / delivery across all sales channels including customer self-service, telephone sales, DNR locations, and Agents. It established a highly configurable environment that empowered DNR staff to manage and administer the system from their desktops. It established a technology platform that encapsulated the scalability to handle increased demand the flexibility to accommodate new features as requirements evolved. In short, COMPASS is a tailored solution designed and developed to meet the Maryland Department of Natural Resources' needs now and into the

future.

Intuitive Product Sales

A fundamental business objective of COMPASS was to improve customer service through the provision of an intuitive, self-service sales environment through which customers can purchase the products they need when they need them via a variety of computing devices. JMT successfully delivered on this objective by providing an environment through which customers could self-register for accounts, manage their accounts over time as information changed, and purchase products through a product catalog that enforced Maryland's Hunting and Fishing regulations.

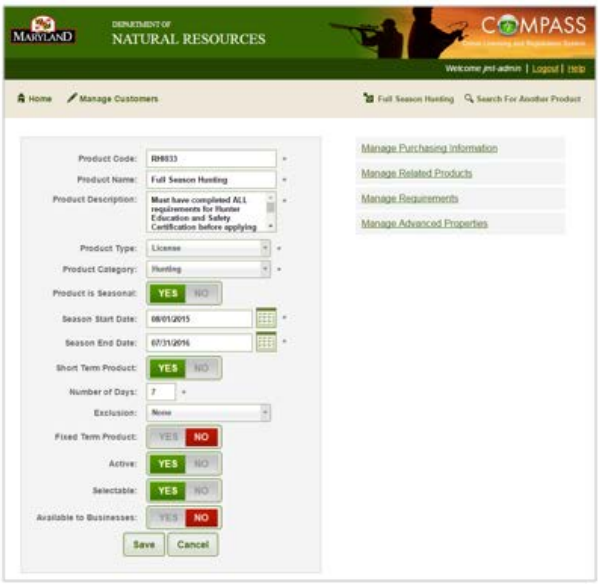


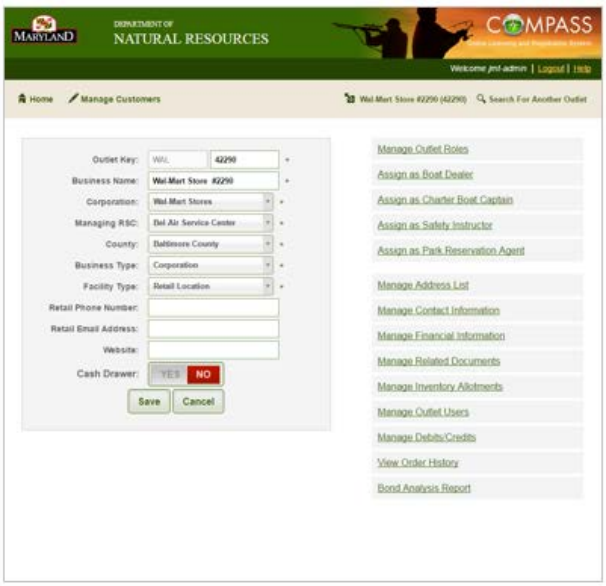
JMT implemented a responsive design framework to ensure COMPASS worked just as well on tablets and mobile phones as it did on personal computers. Customers were now empowered to create an account, purchase the license they needed, and subsequently report their successful harvest all on their mobile phones. Opening new sales channels and providing customers great convenience contributes directly to the generation of revenue through the system.

Since COMPASS' production release JMT has used user feedback and user testing to enhance the user interface with the objective of optimizing user experience.

Empowering DNR to Manage the Licensing System

A second fundamental business objective of COMPASS was to empower DNR to manage all aspects of the system including customers, internal system users, license agents and the product catalog. JMT provided an intuitive and powerful suite of "back office" functionality that allows DNR to manage nearly all aspects of COMPASS without JMT involvement and without the need for code changes. This includes creating users with specific roles that dictate their system permissions, creating new agents and managing agent accounts over time, and, of course, managing all aspects of the product catalog including the presentation of products in the product catalog and all business rules that control the "purchasability" of products.





COMPASS Operations & Maintenance

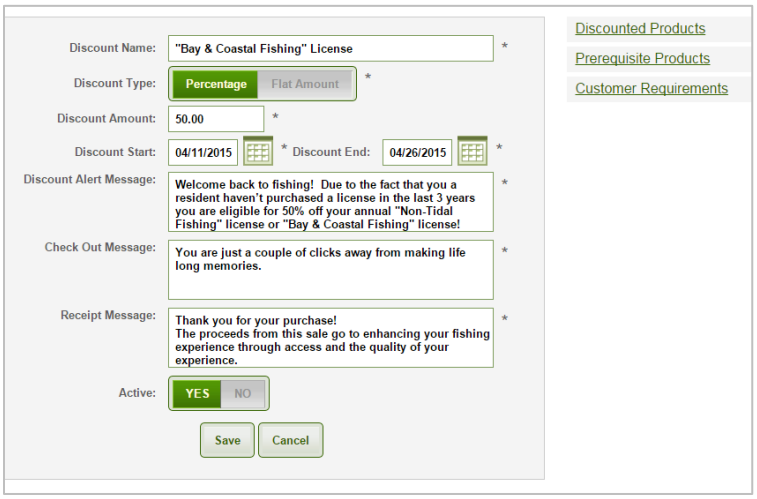
JMT has been responsible for COMPASS operations and maintenance for more than 4 years, beginning with its original product release and continuing through today. All option years on the original contract were executed and JMT successfully won the contract for these services when procurement rules dictated it be subjected to competitive bid. Operations and Maintenance includes the ongoing provision of secure, reliable system hosting, day to day management of the COMPASS application and database, provision of a replicated database environment to support DNR's internal data analysis needs, as well as ongoing enhancements.

Operations and Maintenance also includes planning for and establishing the infrastructure to ensure continuity of operations in the event of a natural or human-caused disaster. JMT understands that availability is paramount and has maintained availability of the COMPASS system at 99.982% since production release. Towards that end, the JMT team established a "warm site" within Microsoft's Azure cloud computing platform. The warm site, established at Microsoft's Eastern United States datacenter, has an identical architecture to that of the production system. JMT established database replication from the production database to the warm site database that ensures that the warm site database is never more than 15 minutes less current then the primary database and updated its production release utility to ensure that code and schema changes are in sync with production at all times.

COMPASS V2 – Ongoing System Enhancements

Version 1 of COMPASS established the core capabilities of DNR's modernized outdoor licensing and registration system and a platform for future growth. In keeping with DNR's original plan to develop and release COMPASS in subsequent stages that progressively elaborate the capabilities and functionality of the system, COMPASS V2 represents the next logical step in the progression of COMPASS to a full service outdoor licensing and registration system for DNR. This includes enhancement to the system as well as new modules for boating and commercial fishing; features that will expand the value of COMPASS to DNR and its customers alike.

With the knowledge that COMPASS would be enhanced and extended, JMT architected COMPASS to support extensibility. To efficiently develop the COMPASS V2 functionality, JMT built upon its foundation, leveraging the existing modular framework's building blocks, the service oriented architecture, and established user interface patterns to integrate the new functionality into the system. The foundation for COMPASS V2 development was established by the architecture conceived for COMPASS V1.



Product Discounts

The Products Discount functionality allows an Administrator to create a new discount, specifying a name, discount amount, valid date range, and various

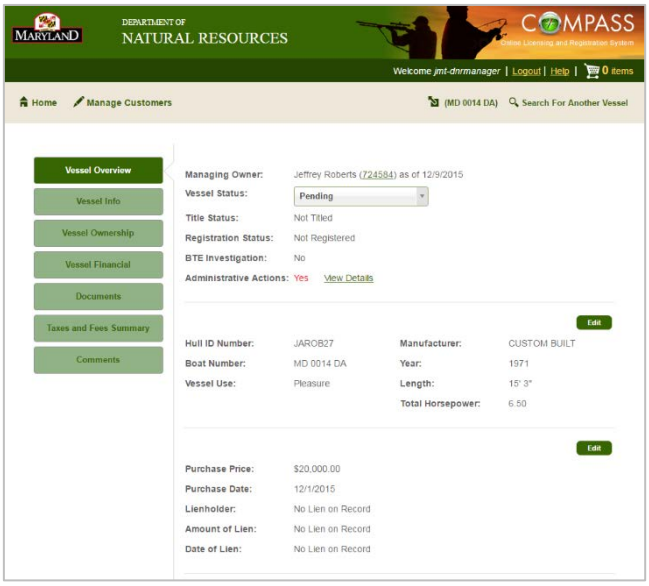
customer messages. The Administrator then identifies the product(s) to be discounted and the characteristics of the customers required for eligibility. These characteristics are a combination of purchase history (e.g. customer purchased Non-Tidal Fishing license this year or customer purchased Non-Tidal Fishing license last year but not this year) and personal information (e.g. customer lives in Baltimore County). All customers that meet the eligibility criteria are automatically notified of the availability of the discount and will have the discount visibly applied on the product listing. This is an example of how we use rich customer data to incentivize a purchase and drive revenue.

Waterfowl Blind Registrations

The waterfowl blind registration module facilitates the selection and registration of off-shore blind site locations by waterfowl blind lottery winners. This functionality revolutionized COMPASS through its interactive mapping-based implementation. The integration of open-sourced web-based GIS technology into COMPASS has opened the door to leveraging spatial capabilities in other areas of the solution.

Commercial Fishing

The COMPASS commercial fishing module was developed to support the Maryland DNR's Fisheries unit. The commercial fishing functionality includes the purchase, renewal, and transfer of commercial fishing authorizations which differ from recreational licenses in that, once attained, a commercial fishing authorization remains uniquely tied to the customer until it is relinquished. These licenses are also more strictly controlled with respect to overall availability and thus require the need for waitlist functionality as well as a robust system to support temporary and permanent transfer.

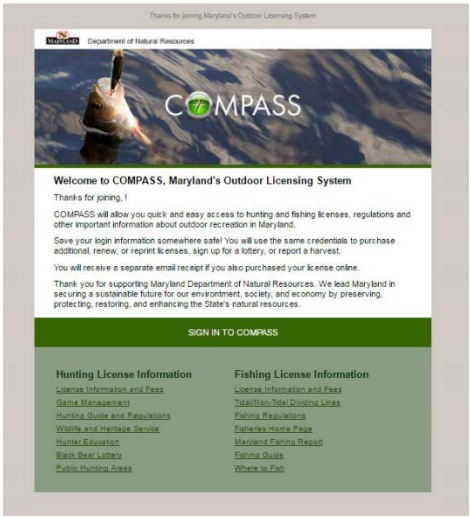


Vessels

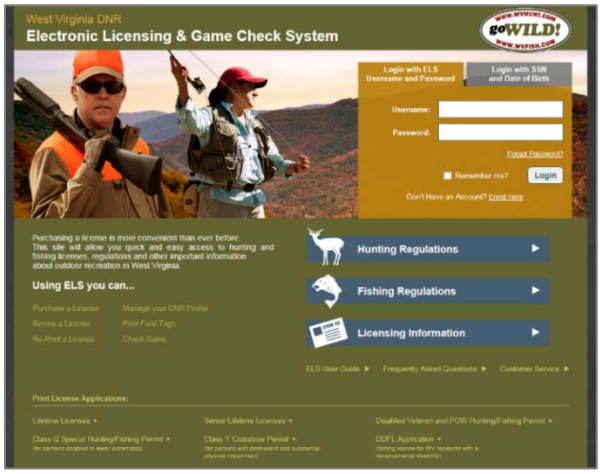
On December 1, 2015, JMT released a full featured boating module into production within the COMPASS system. It supports the registration and titling of vessels through COMPASS in an efficient and intuitive manner. The process includes the assessment of fees for registration, titling, decals, and any excise taxes, documented use, penalty and interest, and security of interest filing fees. The boating module also supports the needs of the Boat Tax Enforcement group at DNR in their efforts to build cases against boaters not adhering to Maryland Laws.

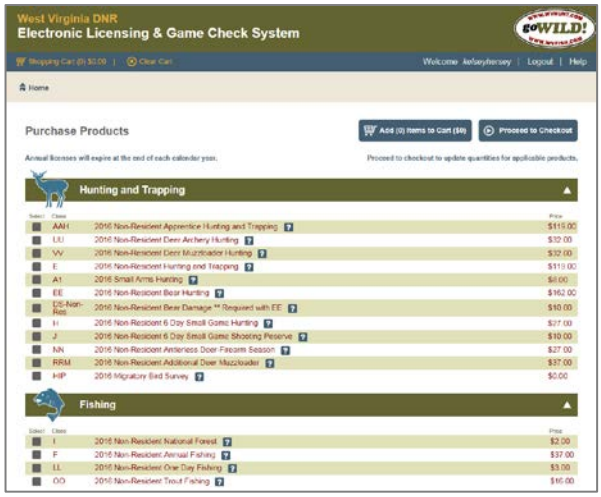
Email Marketing

JMT developed a comprehensive targeted email module for COMPASS that will allow DNR administrators to create modern, responsive email marketing
campaigns. It facilitates the sending of emails to targeted customer groups using pre-built templates. DNR will use this module for action-based automatic emails such as registration confirmation, expiring licenses, hunter education certification, and sales promotions.



West Virginia Division of Natural Resources





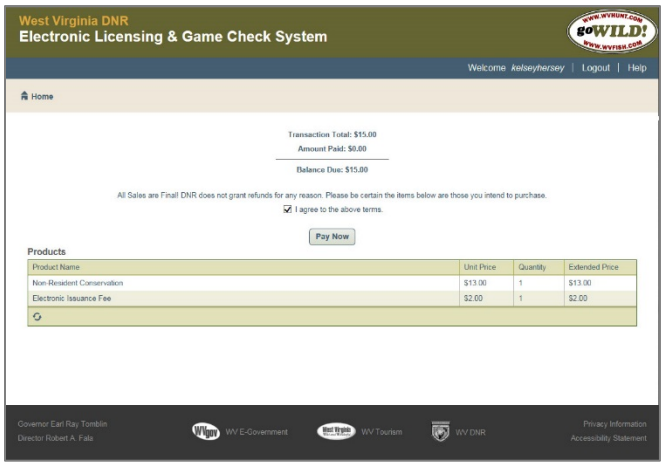
In 2014, the West Virginia Division of Natural Resources selected the JMT Technology Group to develop, implement and support West Virginia's new Outdoor Licensing and Game Checking System, Go Wild!

West Virginia's objective was to replace their legacy system, a combination of paper-based and online sales, with a next generation license system that would consolidate customer demographic and sales data into a singular, integrated web-based solution. Towards this end they were focused on identifying a partner that had a proven, established Licensing and Recreation solution but that would also deliver a system that was 100% customized to sell licenses according to their unique laws and regulations. After careful evaluation of all vendors, the JMT Technology Group was selected as that partner.

JMT began the execution of this complex, multi-faceted project in early 2014, and successfully led West Virginia stakeholders through project implementation culminating with an on-schedule deployment of the ELS into production on January 1, 2015. The first transactions were executed through the new Go Wild system minutes after the New Year arrived.

The West Virginia Electronic Licensing System allows sportspersons the opportunity to purchase annual and lifetime hunting and fishing licenses via the internet, at DNR, or via one of West Virginia's more than 225 point of sale agents. The ELS includes a robust Quota Hunt / Lottery capability and successful hunters have the ability to check their game at an agent location, over the internet, or by telephone via an Interactive Voice Response (IVR).

Project Scope



<u>System Development and Implementation</u>
The WV ELS was built on top of JMT's outdoor licensing and registration solution and customized to fit DNR's business needs. The JMT Technology Group executed the full system development lifecycle including requirements, design, development, user acceptance testing, and deployment.

<u>Data Migration</u>
JMT migrated customer demographic and sales data from the legacy database using its proven data migration and cleaning approach. This included developing a data migration plan which mapped the legacy schema to the new ELS schema and developing ETL (extract transform and load) scripts to migrate the data using an automated

process. Once migrated extensive validation procedures were executed to ensure the completeness and accuracy of the new dataset.

End-User Training
JMT staff were responsible for delivering end user training to all WV Administrative staff and retail agents. Training was delivered as in person classroom style training. JMT established a training instance that is a mirror of the production ELS. Students which completed training were given a login to this training environment to allow them an opportunity to reinforce their skills prior to production release.

POS Hardware Configuration and Deployment
The JMT team procured, configured and deployed all POS agent hardware and software required to support the ELS through the agent sales channel. This involved onsite visitation of all agent locations by JMT staff to complete the initial installation and to ensure that each agent was ready to sell licenses on day 1.

Interactive Voice Response
The JMT Technology Group solution provides integrated interactive voice response services to WV hunters wishing to report their harvest via telephone. The IVR is integrated with the Electronic Licensing solution via an application programming interface (API) so that all data reported via the IVR is stored in a consolidated dataset with data reported online or at agent locations.

Help Desk
The JMT Technology Group provides Tier 2 help desk services for customers and Tier 1 help desk services for WV staff and WV agents. This includes supporting any issues with hardware operation or configuration and the replacement of defective POS hardware within 24 hours.

Operations and Maintenance
JMT has been providing ongoing operations and maintenance support for the ELS since 1/1/2015 and will continue to provide these services including system hosting, help desk, and application maintenance through the year 2020. Operations and maintenance also include new development and systems enhancements as requested by WV DNR.

Client Contact
Michael Ingram
Michael.A.Ingram@wv.gov
(304) 558-2758

Washington Department of Fish and Wildlife

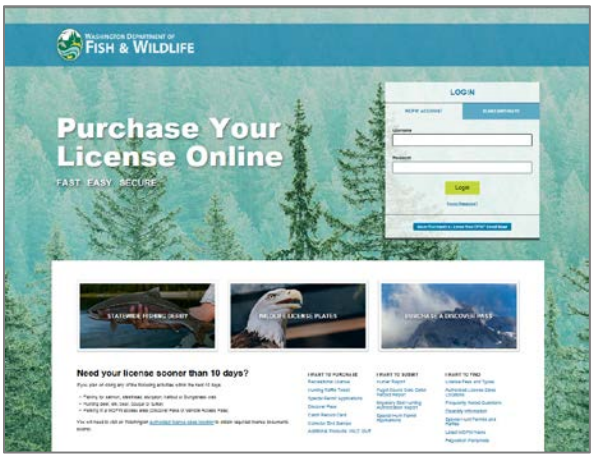
JMT Technology Group implemented Washington's new WILD Outdoor Licensing and Recreation solution that will generate over $55 million in revenue each year. The first release including hunting/fishing license sales, lottery, hunter education integration, customer and vendor communications, and business intelligence dashboards was live within six months by December 2016.

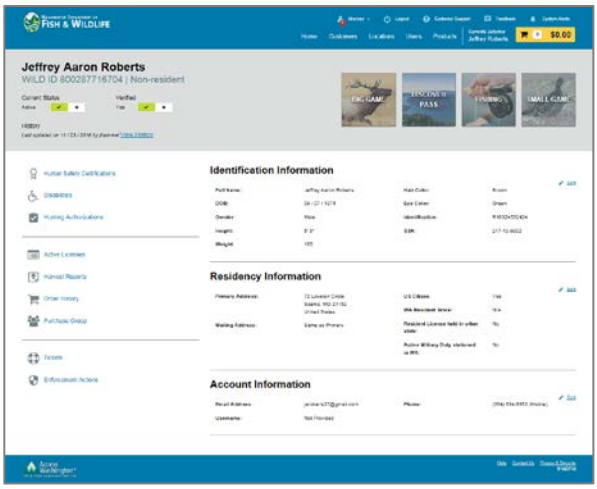
Delivering Success

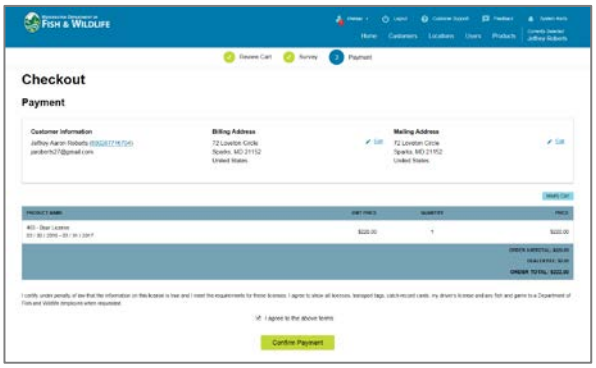
JMT's ability to successfully deliver a fully featured License and Recreation solution that met all of Washington's expectations was a testament to its established platform, strong project management practices, and the effectiveness of its proven, structured iterative development approach. This project approach is the model for JMT's Licensing and Recreation product deployment project, beginning with a comprehensive elicitation and analysis of the State's unique business and functional requirements. A design phase followed this whereby all system integrations and other unique architectural elements were planned and documented. System development / customization commenced using an agile development philosophy that ensured client stakeholders were continuously engaged and then transitioned to a multiphase client acceptance period whereby the system was validated as ready for production release.

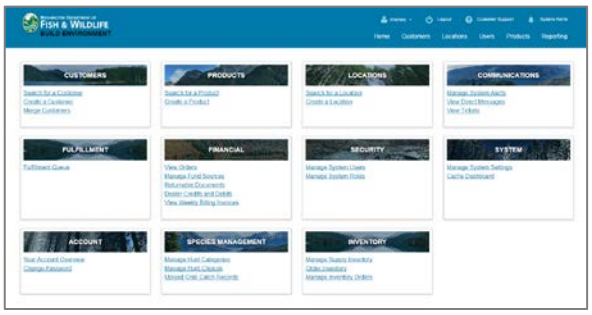
Project Scope

- ***Implementation of a Dynamic, Web-based Outdoor Licensing and Recreation Solutions customized to meet WDFW's requirements***
- ***Mobile Optimized Internet Sales***
- ***Professional Project Management***
- ***System Architecture and Software Design***
- ***Data Migration from legacy solution***
- ***POS Hardware Configuration, Deployment, and Support***
- ***Secure System Hosting***
- ***User Training for WDFW, Help Desk, and Dealers/Vendors***
- ***Live Call Center License Vendor Support***
- ***Role-Based Access Controls for WDFW, License Vendors, and the Public***

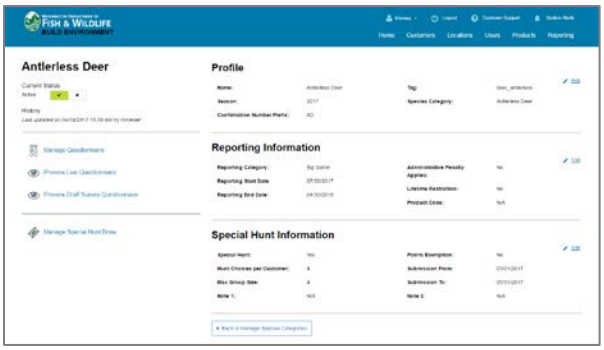


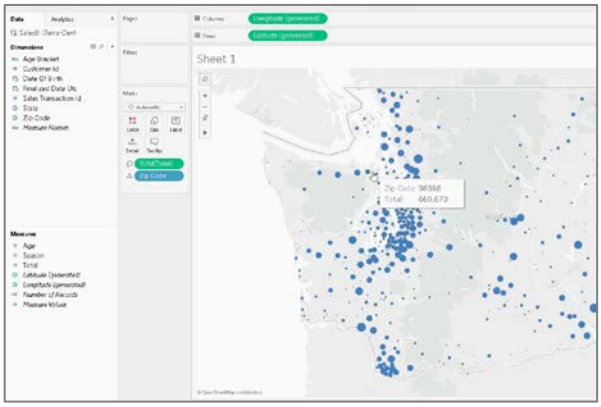






- ***Product Management Module that allows for Adjustment of Sales Rules***
- ***Vendor/Dealer Management Module that allows for Additions/Corrections/Accounting***
- ***Customer Management Module that allows for Additions/Corrections/Revocations***
- ***Document Management that allows for adjusting licensing formats***
- ***Fulfillment Modules used to batch print mailable licenses with corresponding customer address tri-folds***
- ***Inventory Management to track supplies, request additional materials, and manage orders***
- ***Financial Management to adjust fund sources, returnable documents, dealer credits/debits, and billing invoices***
- ***Controlled Hunt Draws to manage hunt categories and choices***
- ***Harvest Reporting Module***
- ***Law Enforcement Mobile Access and Lookup***
- ***Customer Relationship Management***
- ***Hunter Education Integration***
- ***Reporting/Statistical Analysis***
- ***HTML Content Management***
- ***Multi-Layer Cyber Security***
- ***Operations and Maintenance***





Positive Feedback

We have received high reviews on the successful project from both internal WDFW stakeholders and the general public:

"We had a check-in with the Technology Services Board. One of the CEOs on the board mentioned that he felt in May that there would be no way that we would be on track at this check-in and was shocked and happy for us on the progress we have made. You are a big part of this and I wanted to make sure I shared this with you and say thank you for all the work that you and your team have put forth through this effort. Great times ahead!"
- Evan Yett, WILD Replacement Project Manager

"I want to add my thanks to you and your team for all the hard work you folks have done to this point. You and your team certainly have impressed this high level-Governor appointed board.
Thank you."
- Peter Vernie, Licensing Divisional Manager

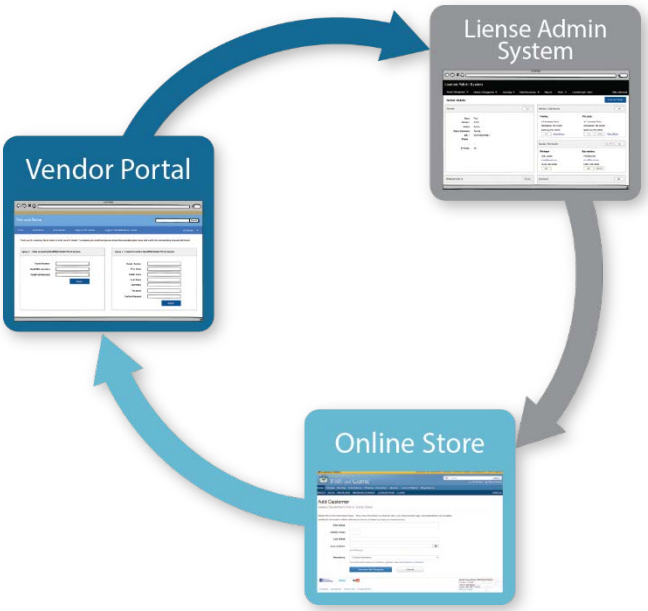
Client Contact

Evan Yett
evan.yett@dfw.wa.gov
(360) 902-2324

Alaska Department of Fish and Game

JMT worked with RDI, a small business in Alaska, and ADF&G on a License Modernization project for the In-Store Electronic License System initiative. JMT provided consulting/domain expertise, system architecture and design consulting, system development, application development, and user experience recommendations.

JMT was involved in building an online point of sales system to be used by in-store license vendors to log in, manage employees, report sales, and transfer license related revenue. This system meshes with ADF&G's existing system and provide a lightweight user interface capable of selling licenses to customers quickly and efficiently. It utilizes Microsoft's SQL Server 2012 R2 as the back-end database. The system was built on Microsoft's MVC 5.0 framework with C# .NET utilizing a layered architecture with separation of concern. Reports were created in SQL Service Reporting Services.



5.3.3	Vendors shall submit ***Attachment E, Reference Questionnaire*** to their business references.
5.3.4	It is the vendor's responsibility to ensure that completed forms are received by the Purchasing Division on or before the deadline as specified in ***Section 9, RFP Timeline*** for inclusion in the evaluation process. Reference Questionnaires not received, or not complete, may adversely affect the vendor's score in the evaluation process.
5.3.5	The State reserves the right to contact and verify any and all references listed regarding the quality and degree of satisfaction for such performance.

JMT Technology Group has sent out Attachment E, Reference Questionnaires to our business references.

5.4 VENDOR STAFF SKILLS AND EXPERIENCE REQUIRED

The vendor shall provide qualified personnel to perform the work necessary to accomplish the tasks defined in Section 4, Scope of Work. The State shall approve all awarded vendor resources. The State reserves the right to require the removal of any member of the awarded vendor's staff from the project.

5.4.1 Project Manager Qualifications
The Project Manager assigned by the awarded vendor to the engagement shall have:

5.4.1.1	A minimum of four (4) years of project management experience, within the last ten (10) years, in government or the private sector;
5.4.1.2	A minimum of three (3) years of experience, within the last ten (10) years, managing systems architecture and development projects;
5.4.1.3	A minimum of two (2) years of experience with systems analysis and design;
5.4.1.4	A minimum of two (2) years of experience with systems development and implementation;
5.4.1.5	Completed at least one (1) project within the past three (3) years that involved designing business processes and procedures and developing new systems to support the new business processes; and
5.4.1.6	Completed at least one (1) project within the past three (3) years that involved communication and coordination of activities with external stakeholders.

Jeff Roberts, PMP
jroberts@jmttg.com
(410) 316-2304

Jeff Roberts, PMP, Vice President, Project Manager - Mr. Roberts brings over 19 years of progressive experience to this contract, including his role as the Project Manager for Maryland, West Virginia, and Washington's licensing systems. Mr. Roberts has proven experience providing the following services:

- ***Developing project plans and schedules for successful implementation***
- ***Ensuring successful and seamless communication with clients***
- ***Ensuring sufficient staffing levels for project workload***
- ***Ensuring work assigned is performed according to approved requirements and design***
- ***Reporting progress of the execution of tasks and deliverables to client's Project Manager***
- ***Escalating risks and issues to be addressed by the client's Project Manager***

Jeff Roberts surpasses project manager qualifications as specified below:

- ***19 years of project management experience within the government sector;***
- ***9 years of experience, within the last 10 years, managing systems architecture and development projects;***
- ***9 years of experience with systems analysis and design;***
- ***9 years of experience with systems development and implementation;***
- ***Completed 3 projects within the past 3 years that involved designing business processes and procedures and developing new systems to support the new business processes; and***
- ***Completed 3 projects within the past 3 years that involved communication and coordination of activities with external stakeholders.***

5.4.2 Technical Lead Qualifications
The technical lead assigned by the awarded vendor shall have:

5.4.2.1	A minimum of four (4) years of experience in systems development, design and programming of automated systems;

5.4.2.2	A minimum of four (4) years of experience developing systems using a relational database;
5.4.2.3	A minimum of two (2) years of experience developing Internet applications;
5.4.2.4	A minimum of two (2) years of experience managing systems architecture and systems development projects; and
5.4.2.5	Completed at least (1) project within the past three (3) years that involved conducting a pilot implementation and determining the readiness of the system production.

***Mark Meisel, Associate, Technical Lead* - Mr. Meisel brings over 12 years of technical experience to this contract, including his role as the Technical Lead for West Virginia and Washington's licensing systems. Mr. Meisel has proven experience providing the following services:**

- ***Provides technical oversight to all team members***
- ***Oversees system architectural and infrastructure related tasks***
- ***Defines system specifications in alignment with established performance requirements***

Mark Meisel surpasses technical lead qualifications as specified below:

- ***10 years of experience in systems development, design and programming of automated systems;***
- ***10 years of experience developing systems using a relational database;***
- ***10 years of experience developing Internet applications;***
- ***5 years of experience managing systems architecture and systems development projects; and***
- ***Completed 2 projects within the past 3 years that involved conducting a pilot implementation and determining the readiness of the system production.***

5.4.3	Implementation Lead Qualifications
The implementation lead assigned by the awarded vendor shall have:	
5.4.3.1	A minimum of three (3) years of experience managing the implementation of new business processes and procedures and new automated systems to support the new business processes;
5.4.3.2	A minimum of two (2) years of experience managing the implementation of Internet applications;
5.4.3.3	Completed at least one (1) project within the past three (3) years that involved the procurement, receipt and make ready of computer equipment and software; and
5.4.3.4	Completed at least one (1) project within the past three (3) years that involved a phased implementation where systems activities were coordinated between the old and new system environments.

***Jon Harrison, Vice President, Implementation Lead* - Mr. Meisel brings over 17 years of technical experience to this contract, including his role as the Implementation Lead for Maryland, West Virginia, and Washington's licensing systems. Mr. Harrison has proven experience providing the following services:**

- ***Provides implementation oversight to all team members***
- ***Provides day to day management of technical and support staff***
- ***Works collaboratively with Project Manager to evaluate project health and risk and to establish corrective actions where required***

Jon Harrison surpasses technical lead qualifications as specified below:

- ***9 years of experience managing the implementation of new business processes and procedures and new automated systems to support the new business processes;***
- ***9 years of experience managing the implementation of Internet applications;***
- ***Completed 2 projects within the past 3 years that involved the procurement, receipt and make ready of computer equipment and software; and***
- ***Completed 2 projects within the past 3 years that involved a phased implementation where systems activities were coordinated between the old and new system environments.***

5.4.4 Individual Team Member Qualifications
Each member of the awarded vendor's project team shall meet at least one (1) of the qualifications below. In addition, the aggregation of the individual qualifications of the team members shall cumulatively meet all of the following requirements. These requirements are:

JMT Technology Group has an experienced team of project managers, business analysts, architects, developers, user experience designers, quality assurance professionals, and customer service personnel that are experts in their field and that have been through multiple licensing system implementations. Please see the included resumes for additional information regarding each of the below team members.

5.4.4.1 Two (2) years of experience within the last five (5) years analyzing and modeling business processes;

Lucy Gorsky, Business Analyst, has 9 years of experience analyzing and modeling business processes, including the past 5 consecutive years.

Laure Bowman, Systems Analyst & Trainer, has 5 years of consecutive experience analyzing and modeling business processes.

5.4.4.2 Two (2) years of experience within the last five (5) years designing online interfaces using the tools proposed for this project;

Christine Miller, User Experience Designer, has 15 years of consecutive experience designing online interfaces using the tools proposed for this project.

5.4.4.3 Three (3) years of experience within the last five (5) years developing systems using the relational database proposed for this project;

Dominic Cilento, Database Manager, has 8 total years of experience developing systems using relational databases, including the past 5 years using the specific relational database proposed for this project.

Jon Lauer, Applications Developer, has 7 consecutive years of experience developing systems using relational databases, including the past 5 years using the specific relational database proposed for this project.

Kevin Yanuk, Applications Developer, has 7 total years developing systems using relational

databases, including the past 3 years using the specific relational database proposed for this project.

Mark Meisel, Technical Lead, has 8 consecutive years of experience developing systems using relational databases, including the past 3 years using the specific relational database proposed for this project.

5.4.4.4	Three (3) years of experience within the last five (5) years developing system to system interfaces;

Jon Lauer, Applications Developer, has 7 consecutive years of experience developing system to system interfaces.

Mark Meisel, Technical Lead, has 8 consecutive years of experience developing system to system interfaces.

5.4.4.5	Three (3) years of experience within the last five years developing secure Internet applications using the tools proposed for this project; and

Jon Lauer, Applications Developer, has 7 consecutive years of experience developing secure Internet applications, including the past 5 years using the tools proposed for this project.

Kevin Yanuk, Applications Developer, has 5 total years of experience developing secure Internet applications, including the past 3 years using the tools proposed for this project.

Mark Meisel, Technical Lead, has 5 consecutive years of experience developing secure Internet applications using the tools proposed for this project.

5.4.4.6	Completed at least one (1) project within the past three (3) years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems.

Laure Bowman, Systems Analyst & Trainer, has completed 2 projects within the past 3 years that involved development of course outlines and materials and organizing and conducting classes to support the implementation of new business processes and systems.

5.5 VENDOR STAFF RESUMES

A resume shall be completed for each proposed individual on the State format provided in Attachment H, Proposed Staff Resume, including identification of key personnel per ***Section 13.3.19, Key Personnel***.

See Attachment H for our response to the Proposed Staff Resume requirement.

5.6 PRELIMINARY PROJECT PLAN

5.6.1 Vendors shall submit a preliminary project plan as part of the proposal.

See Section IX for our response to Preliminary Project Plan requirement.

5.7 PROJECT MANAGEMENT

Vendors shall describe the project management methodology and processes utilized for:

5.7.1 Project integration to ensure that the various elements of the project are properly coordinated;

JMT assigns a project manager to the project who has the ultimate responsibility for the project execution. The project manager coordinates the work and assigns work parcels. This allows the work to be executed according to an overall strategy. All project work is also planned in one comprehensive Microsoft project schedule. This allows the project team to plan work of all work parcels in one coherent whole, and track and report on progress as is moves through its timeline.

5.7.2 Project scope to ensure that the project includes all the work required and only the work required to complete the project successfully;

The following sections of the Scope Management Plan describe how requirements will be defined and how the project scope will be controlled and verified.

Requirements Definition

Accurate, complete, and unambiguous requirements definition is a critical component to the success of this project and as such will be initiated immediately after the Planning Phase is complete. JMT intends to execute the following simple but effective process:

Define Business Objectives – JMT will work with NDOW stakeholders to define and document the business objectives that this project is designed to satisfy. Ultimately all functional requirements should map directly to at least one business objective.

Documentation Review – This process entails the identification and analysis of available documentation on business processes, legacy software, database schemas, preliminary functional requirements and other documents as identified.

Stakeholder Interviews - The JMT Technology Group team will work with the NDOW Project Manager to schedule group meetings and/or individual interviews with NDOW stakeholders with the purpose of eliciting and validating requirements from the participants. Using the agreed upon business objectives and the requirements documented in the RFP as a framework, the specific capabilities of the system will be defined and documented. The subject matter to be discussed and/or the questions to be asked will be provided to the participants in advance so that they may properly prepare for the meetings.

Topics to be covered during these meetings may include:

- ***The various user groups that will access the system***
- ***The business processes that the applications will support***
- ***The Specific functionality required for all modules of the applications***
- ***Output / Reporting Requirements***

In addition, the JMT Technology Group will coordinate with the appropriate IT staff to elicit non-functional technical requirements. Topics may include:

- ***Hardware and Software requirements.***

- ***Security requirements.***
- ***Performance requirements and metrics.***
- ***Existing data maintenance and quality control requirements.***

Requirements Analysis – When all documentation has been reviewed and stakeholder interviews have been completed requirements will be organized and analyzed to ensure they are clear, complete, consistent and unambiguous. Requirements will likewise be assigned a priority.

Follow up communications and potentially meetings will be executed with stakeholders to attain any final clarifications.

Requirements Documentation – Requirements will be documented in the Functional and Systems Requirements Document. JMT will work with the NDOW Project Manager to determine the best methodology and format for recording functional requirements. It is anticipated that the format will take the form of natural language User Stories or Use Cases.

Scope Verification

The JMT Technology Group will perform the below-mentioned activities to ensure that the deliverables meet the defined scope of the project:

- ***Testing (unit, system, integration, regression, performance, UAT)***
- ***Maintenance of and validation against Requirements Traceability Matrix***
- ***Internal quality and deliverable reviews***
- ***Adherence to NDOW Deliverable Acceptance process***

Scope Control

The JMT Technology group will rigorously monitor the scope of the project by adhering to the scope as defined by the RFP and the deliverables throughout the project's lifecycle. During the Initiation Phase, the scope of the project will be covered in detail during the project kickoff meeting to ensure that all project stakeholders are in alignment with the defined boundaries. In the Project Planning phase, where detailed requirements are defined, these requirements will be evaluated against the scope boundaries, with requirements deemed out of scope, documented as potential future enhancements.

Should tasks or functionality be identified that are deemed out of scope, but that NDOW chooses to pursue as part of this project, these items will be subject to the pre-defined Change Management Process which is elaborated in the Change Management Plan section of this document.

5.7.3	Time management to ensure timely completion of the project. Include defining activities, estimating activity duration, developing and controlling the project schedule;

Schedule Management

The Project Schedule will be created using Microsoft Project starting with the deliverables identified in the RFP and the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages which must be performed to complete each deliverable. Activity sequencing will be used to determine the order of work packages and assign relationships between project activities. Activity duration estimating will be used to calculate the number of work units required to complete work packages. Resource estimation will be used to assign resources to work packages to complete schedule development.

The following table illustrates how the various aspects of Schedule Management will be addressed.

Activity	Tools and Techniques
The baseline schedule	***Microsoft Project 2013***
Tools the Project Manager will use to manage the project schedule	***Microsoft Project 2013***
How project progress and schedule performance will be tracked and reported	• ***MS Project for tracking*** • ***Earned Value Analysis for Variance Analysis***
Who will be accountable for reporting and maintaining the schedule	***and JMT Project Managers***
Metrics to indicate schedule performance overall, at the milestone level, and at the task level	• ***% Complete for any task/milestone*** • ***Baseline view to Actual Start and Actual Finish dates*** • ***Schedule Variance Analysis as required***
Methods for communicating schedule performance to the Project Sponsor and Executive Sponsor	***Described in the Communication Management Plan***
The schedule change process, including the process for approving schedule changes	***Described in the Communication Management Plan***
How the baseline schedule will be updated to correct for interim schedule delays and/or to adjust to changing project conditions	***Microsoft Project 2013***
Key milestones or known schedule limitations	***These are defined as part of the project schedule***

5.7.4 Management of contractor and/or subcontractor issues and resolution process;

JMT Technology group has extensive experience in working with subconsultant and contractor teams. Sub-contractor agreements are set up when such teams begin work on a specific project. These agreements are comprehensive and they handle issues such as general conduct, rates, payments, termination details and a detailed outline of the expected work, hours, deliverables and quality. Should issues arise with subcontractor teams JMT has cause to take action based on the subcontracts. Subcontractor management falls under the general responsibilities of the JMT project manager.

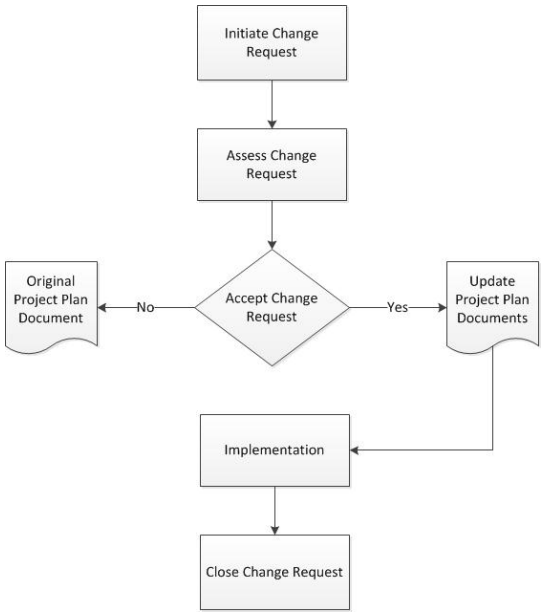
5.7.5 Responding to and covering requested changes in the project time frames;

Change Control Plan

The scope of work for this implementation, largely defined by the RFP document, will be mutually agreed upon during the initiation phase of the project, and while the specific requirements and implementation details necessary to complete the scope will be defined in greater detail, the scope of the project will remain unchanged. It provides the baseline against which we can collaboratively perform scope change management throughout the project.

To be clear - JMT understands the need to be flexible and collaborative about the implementation of the system. Scope change is introduced when wholly new features or functionality are introduced over the course of the project. The lack of a formal change control plank, in this scenario, introduces project risk.
JMT's approach to Change Management will be guided by a structured set of events including:

- ***Initiation the Change Request by***
- ***Assessment of the Change Request by the JMT Project Manager and NDOW Project Manager***
- ***Approve or Disapprove the Change Request by***
- ***Update Project Baselines as Needed***
- ***Implement the Change***
- ***Close the Change Request***



The diagram to the right represents the flow of change management events.

All project changes must enter the Change Management cycle in the format of a Change Request. Legitimate changes to the product/project may stem from:

Responses to problems internal to the project.
Externally imposed requirements.
Change in business requirements or strategy.
Proactive changes to improve performance or benefit.

The following describes in detail each event in the Change Management Process:

<u>Initiate the Change Request</u> - Either 's PM communicates the details of the change to JMT's PM or JMT's PM identifies a potential change through normal project activities and raises this issue with 's PM. This constitutes the initial informal change communication. At this point, the Project Managers decided whether to proceed with the preparation of a Change Request.
Once the details of the change have been recorded on a Change Request form, it is logged in the Project's Change Log within the Project Portal.

<u>Assess Change Request</u> - The Change Request is escalated to the core project team for evaluation.
The CR is assessed for its impact on the project plan (resources, costs and schedule) by the Project Manager and Project Team. A separate timeline is built for later incorporation into the master plan, when the CR is approved. The Project Manager completes a brief Business Case with the assistance of the Project Team. The Project Manager will also identify potential alternatives to achieve the same objectives and consider whether deferring the change is a valid option.
Examples of fundamental questions that should be asked and answered during the assessment include:

- ***Is the change unavoidable? (E.g. legislative requirements change).***
- ***Does the change directly increase the project's ability to meet its fundamental objectives?***
- ***Are there significant technical challenges?***
- ***Does the change introduce substantial new risk to the project?***

<u>Approve/Reject Change Request</u> - The results of the CR assessment are presented to the Project Manager. Based on the value judgment passed on the CR, it is accepted or rejected. If accepted, sign-off represents a new agreement on the updated Project Plan. The new timeline, Scope, costs and schedule are baselined.

Implement Change ***- The new work required by the change is undertaken and completed according to the new Project Plan. Success criteria or testing for the change are applied to the CR work. Completion is assessed at the appropriate milestone.***

Close Change Request ***- Following successful implementation and testing of the CR work, Change Management Log is updated to reflect closure to this Change Request.***

5.7.6 Responding to State generated issues;

JMT's Issue Resolution Process has 3 Primary Components:

- ***An Issue Log***
  This is typically a simple spreadsheet that is used to document, categorize and prioritize all issues as they arise. The issue log is also used to document ongoing status updates as the issue moves through its lifecycle to resolution.
- ***Communication***
  In addition to documenting the issue communication is required to bring the issue to resolution. JMT includes review of the issue log as a standard component of every progress meeting. At this time, each open issue is reviewed and any action items required to move the issue to resolution are identified and documented. Follow up communication in the form of phone calls, meetings or emails may also be required.
- ***Escalation Procedures***
  If the Project Team and Client are unable to resolve a given issue it may need to be escalated to higher levels. Pre-defined escalation procedures will be established so that this avenue is available in the unlikely scenario that it's needed.

Issue Log

The Issue log will include:

- ***Issue ID***
- ***Issue Description***
- ***Date of Raising the Issue***
- ***Name of the Person Raising the Issue***
- ***Category, if any defined of the issue***
- ***Description of the Resolution Offered and steps taken***
- ***Date on which the Resolution is Provided***
- ***Status of the Issue (either Open or Closed)***
  - ***Date on which it is Closed***

Issue Communication

JMT intends to conduct bi weekly progress meetings. Review of the issue log, a discussion of any open issues, and a discussion of any new issues will be a standard component of every progress meeting. Either JMT or NDOW may raise an issue. The critical component of the process is that there is a means to document issues and move them to resolution.

Escalation Procedures

The project management plan will define escalation procedures and contacts for both NDOW and JMT. This is a critical component of the overall communication plan as it provides a vehicle to surmount issues and decrease project risk.

- ***The escalation chain at NDOW shall be defined during project initiation.***
- ***The escalation chain at JMT shall be the JMT Project Manager and JMT Technology Group Practice Leader.***

5.7.7	Cost management to ensure that the project is completed within the approved budget. Include resource planning, cost estimating, cost budgeting and cost control;

Cost Management Plan

A truly successful project depends on the successful interaction and integration of all Project management functions. Cost management, time (schedule) management, and scope management are three areas in JMT's project management approach that are closely integrated to ensure successful project applications.

JMT Technology Group has implemented a web-based software solution for monitoring cost performance on projects at a granular level. The baseline budget is entered at the task level and integrated directly with the employee timesheet system so that the Project Manager has real-time access to data on actual versus planned costs.

The following sections of the Cost Management Plan describe the planned processes for managing and controlling costs throughout the project's life cycle.

Resource Planning

Resource planning will be undertaken as part of the project initiation phase. Using the project's scope, labor estimates and high-level project scheduling goals as inputs, JMT Technology Group will identify the types and quantities of project resources required and the points along the project's timeline at which they will be required. The Project Resource plan will be monitored and updated in accordance with the monitoring and maintenance of the Project Scope and Schedule.

Cost Estimating

JMT Technology Group employs a bottom up estimating technique as follows:

1. ***Identify all Project Deliverables.***
2. ***Develop a Work Breakdown Structure (WBS) whereby all each deliverable is methodically decomposed into the progressively smaller tasks required to produce that deliverable. Tasks will be decomposed until such time that our subject matter experts can accurately estimate their duration.***
3. ***Assign durations to each task.***
4. ***Identify Project Resource categories that will be required to complete all tasks***
5. ***Assign an average rate to each resource category.***
6. ***Multiply total hours for each category by the average rate and sum to get arrive at a Total Cost.***

Modifications to the project budget as approved at contract execution will be the direct result of a project scope change that has been executed through the formal change management procedures outlined in the Change Management Plan section of this document.

Cost Monitoring and Controlling

JMT will use Earned Value Analysis to evaluate project performance throughout the life of the contract. Earned Value Management provides an extremely effective means of analyzing the cost performance by monitoring against baselines and identifying variance. Earned Value Analysis is the most accurate and effective means of evaluating project performance because it requires that the project manager integrate project scope, cost and schedule in the analysis.

JMT will proactively monitor the following Earned Value metrics with respect to cost performance:

- ***Budgeted Cost of Work Performed (BCWP)***
- ***Actual Cost of Work Performed (ACWP)***

Based on these values the JMT project manager will evaluate cost performance as follows:

- ***Cost Variance = Earned Value – Actual Cost***
- ***Cost Performance Index = (Earned Value) / (Actual Cost)***

Used in conjunction with continuous risk monitoring processes, this cost monitoring process facilities a proactive approach to identifying and mitigating cost variances. If an actual or potential variance is detected a variety of actions may be taken to avoid or mitigate the impact of the variance including:

- ***Ensure current work is being conducted within the bounds of the approved scope of work and address any deviation through the approved change management plan.***
- ***Evaluate staff understanding of tasks and requirements and impart clarity where it is lacking.***
- ***Ensure staff has adequate skills and training.***
- ***Reassign staff as required.***

Documenting and Reporting Changes in Cost

Change orders affect project costs. When documenting a project change order, JMT will include the costs associated with the change order. The change order, once approved by the project manager, will be appended to the project scope and project costs. A new and updated project cost baseline will be prepared and issued.

Payment Terms for Change Orders

Payment terms for change orders will be negotiated on a case by case basis. For change orders that increase the project scope, the payment terms will depend on the content of the change order. Factors that may influence this are:

- ***The nature of the change and the nature the costs that will be incurred by JMT.***
- ***Change orders that consist of man-hours alone will be payable on an as-incurred basis congruent with the other project milestones.***
- ***Change orders that may require an upfront outlay for JMT such as hardware procurement or the procurement of software licenses may need different payment terms. These terms will be negotiated as a part of the change order process.***
- ***Change orders that may require an upfront outlay for JMT such as hardware procurement or the procurement of software licenses may need different payment terms. These terms will be negotiated as a part of the change order process.***

5.7.8	Resource management to ensure the most effective use of people involved in the project including subcontractors;

Building a cohesive Project Team that provides adequate coverage for all required project roles is critical to the project success. Equally important is to clearly define and communicate each team member's role and the responsibilities that are inherent in that role.

Resources are assigned to the project during the proposal phase. This ensures that the JMT team has sufficient capacity to embark on the projects we are interested to pursue. The JMT Technology group uses a central resource planning tool to ensure adequate resource planning and availability for all present and future work. Resources are typically reviewed bi- weekly and resource assignments are planned, either in accordance with active project schedules or on a three-month rolling basis, whichever is more suitable.

During the planning phase of the project, the resource or staffing plan is finalized. This plan describes the role of each project team member in detail. This ensures the JMT team members as well as the client team understands the roles, responsibilities and functions of the team.

The following are typical descriptions for some team roles and responsibilities for the project. These will be expanded post project kick off and finalized during the project planning phase.

Requirements	
Role	***Responsibility***
JMT Project Manager	• ***Perform day-to-day management of the project.*** • ***Identify issues and risks and recommend possible issue and risk mitigation strategies associated with the project.*** • ***Act as a facilitator between NDOW and the JMT team.*** • ***Be responsible, with support from the NDOW project manager, for ensuring that work performed under is within scope, consistent with requirements, and delivered on time and on budget.*** • ***Identify critical paths, tasks and dates.*** • ***Provide solutions to improve efficiency (e.g., reduce costs while maintaining or improving performance levels).*** • ***Monitor issues and provide resolutions for up-to-date status reports.*** • ***Maintain and update the MS Project schedule.*** • ***Oversee and assist with the development of all documentation.*** • ***Work with NDOW Project Manager in scheduling all meetings between the JMT team and NDOW Stakeholders*** • ***Ensure effective communications with NDOW Project Manager*** • ***Manage JMT's staff*** • ***Work with NDOW Project Manager to resolve all issues and change requests***
JMT Business Analyst	• ***Has a clear understanding of the project scope and schedule to help in scope management, and to avoid scope creep and gold plating.*** • ***Reviews all documentation sent by the client in preparation for requirements elicitation sessions.*** • ***Drafts questions for the requirements elicitation sessions.*** • ***Attends requirements elicitation sessions as assigned and either facilitate or scribe as required.*** • ***Ensures all information gathered is posted on the JMT SharePoint site.*** • ***Draft business process models.*** • ***Draft requirements.*** • ***Reviews requirements documentation with client and implement all changes as required.*** • ***Translates technical information into clear, readable documents to be used by technical and non-technical personnel.*** • ***Ensures adherence to schedule by completing deliverables on time and proactively addresses any schedule issues with the project manager.***
Systems Analyst	• ***Analyzes the client legacy systems from data and access provided by client.*** • ***Provides support to business analysts on the current business systems of the client.*** • ***Participates in requirements gathering and documentation efforts.*** • ***Participates in requirements validation and quality assurance.*** • ***Runs requirement sessions with client IT teams.*** • ***Drafts data requirements.*** • ***Supports application design efforts.*** • ***Clarifies requirements to the applications development and testing teams during project execution.*** • ***Reports progress of the execution of tasks to the Project Manager.*** • ***Escalates risks and issues to be addressed by the Project Manager.***
Implementation Lead	• ***Assist with the analysis and validation of project requirements.*** • ***Defines development process, methodology and best practices.*** • ***Defines system design strategies and patterns as it pertains to requirements.*** • ***Defines and enforces technical standards, including coding standards, tools, and platforms as it pertains to requirements.*** • ***Guide database and application design requirements.*** • ***Report progress of the execution of tasks proactively to the Project Manager.*** • ***Escalate risks and issues to be addressed by the Project Manager.***

Other team role details to be finalized during the project planning phase.

Project Staffing Estimates

A detailed work break down structure (WBS) was prepared as a part of the cost and effort estimates for the project. This includes the estimated hours for all staff members for each WBS item.

5.7.9 Communications management to ensure effective information generation, documentation, storage, transmission and disposal of project information; and

Communication Plan

This communications plan defines the communication activities that will take place throughout the duration of the NDOW IWILD System implementation. Its purpose is to define a framework for communications to ensure that all project stakeholders receive the information they need in a timely manner.
This document identifies:

- ***What communications activities will take place***
- ***Who should receive these communications***
- ***The purpose of these communications***
- ***The frequency that the communications occur***
- ***By what means the communications will occur***

General Communication Protocols

During the creation of this Communications Plan, the following assumptions have been made:

- ***JMT's Project Manager and the NDOW Project Manager will be included on all correspondence between NDOW and JMT stakeholders.***
- ***Except where expressly approved by the NDOW Project Manager all communications to the NDOW team members will be through the NDOW Project Manager.***
- ***All documents requiring dissemination to project teams will be available on the Project Portal.***
- ***JMT is committed to maintaining records of all project communications.***
- ***The escalation chain at NDOW shall be defined.***
- ***The escalation chain at JMT shall be the JMT Project Manager and JMT Technology Group Practice Lead.***

Communications Management

The following table describes the communication activities required to distribute the right information to the right stakeholders at the right time.

What	Who	Why	When	How
Kick-Off Meeting	Representative members of both JMT and NDOW Project Teams	Communicate project plan and team roles/responsibilities. Align stakeholders with regards to project objectives and key success factors. Encourage communication among stakeholders.	Upon receipt of NTP	Face to Face or Web Ex.
Project Management Plan	JMT Project Manager	Document how JMT will plan, execute, monitor, control, and close the NDOW project. Provide updates to the plan as it changes over time.	At start of project; Provide updates as plan baseline is modified.	Post to project website. An email or electronic alert will be sent to the NDOW PM of updates.

What	Who	Why	When	How
Project Schedule	*JMT Project Manager*	*Document the timeline for accomplishing the various tasks required to successfully complete the NDOW project.* *Document completed tasks.* *Provide updates to the schedule as it changes over time.*	*At start of project and updates on Friday of each week during the duration of the project and at other times as needed.*	*Post to project website. An email or electronic alert will be sent to the NDOW PM of updates.*
Change Control Log	*JMT Project Manager*	*Document change requests (CRs) to include an assessment of the CR and whether the CR is accepted or rejected. If a CR is accepted, document how the change was implemented and date of closure.*	*As needed*	*Post to project website.*
Issues Log	*JMT Project Team*	*Document issues which require resolution*	*Throughout Project Life-Cycle*	*Post to Project Website*
Requirements Gathering Sessions	*Appropriate NDOW and JMT project team members*	*Elicit, Review, validate, and elaborate functional requirements*	*Scheduled throughout system development phase*	*Face to Face for initial requirements meetings*
Design Review Meetings	*Appropriate NDOW and JMT project team members*	*Demonstrate the features and functions completed during iteration.*	*Culmination of each iteration*	*Face to Face Meetings*
Internal Scrum Meetings	*PM and Development Team*	*Gauge progress against planned tasks and to discuss issues*	*Daily*	*Face to Face and Web Meetings*
Internal Team Meetings	*Individual meetings for sub-teams, technical team, and functional teams as appropriate.*	*Collaboration on development issues, coordination etc.*	*As needed*	*Face to Face and Web Meetings*
Project Meetings	*Vendor and NDOW Project Managers*	*Collaboration on project issues, review project status, risk, issues and discuss mitigation and corrective actions.*	*Weekly*	*Teleconference*
External Project Meetings	*Appropriate NDOW and vendor project team members*	*Facilitate collaboration between JMT and NDOW to meet project goals*	*As needed*	*Face to Face and Web Meetings*
Project Deliverable Documents	*Project Manager will serve as conduit to NDOW team members*	*Satisfaction of project deliverables*	*As completed*	*Distribute electronically.* *Post to project website.*
Progress Reporting (Subcontractors to Prime PM)	*Prime Project Manager*	*Update PM on status of project including:* *Key deliverables produced to date.* *Milestones that have been completed to date* *Milestones that are coming up* *Key project risks, issues and changes*	*Monthly preceding invoice*	*Distribute electronically.* *.*
Progress Reporting (Prime PM to NDOW PM)	*Project Manager*	*Update NDOW PM on status of project including:* *Key deliverables produced to date.*	*Monthly preceding invoice*	*Distribute electronically.*

What	Who	Why	When	How
		Milestones that have been completed to date Milestones that are coming up Key project risks, issues and changes		Post to project website.
Meeting Minutes	All Stakeholders	Ensure all stakeholders agree with the PMs understanding of the outcomes of the meeting and any action items assigned to them	Within 5 business days of meeting execution	Distribute electronically. Post to project website.
Post Project Review	Project Manager and Key Stakeholders	Identify improvement plans, lessons learned, what worked and what could have gone better. Review accomplishments.	End of Project	Face to Face Meeting Project Manager will produce report and distribute electronically.
Other	To be determined by project team	General Communications	As Needed	Email, impromptu meetings

Project Website

A Project Website will be established with the JMT Project Center SharePoint environment.
This website will serve as a resource to facilitate collaboration and as a repository for project documents and other artifacts.

Roles and Responsibilities

The JMT Project Manager will be responsible for ensuring effective project communications by:

- ***Planning and organizing the communications activities.***
- ***Identifying detailed content, audience, timing and format of each communications message.***
- ***Delivering communications to the NDOW Project Manager.***
- ***Provide meeting minutes within three business days of a meeting (includes meetings that occur over the telephone or web).***

The NDOW Project Manager will be responsible for ensuring effective project communications by:

- ***Reviewing and approving all communications messages.***
- ***Disseminating communications to additional NDOW team members as needed.***
- ***Identifying appropriate NDOW staff to attend specific project meetings.***

Documents

The following documents will be used to assist with managing communications within this project:

- ***A weekly Project Status Report will be used to regularly communicate the status of the project***
- ***Meeting minutes will be provided following each call or meeting via the Project Website.***
- ***The PMP will be updated after each project phase.***
- ***The schedule will be updated to reflect completed tasks; at a minimum, the schedule will be updated weekly and after each project phase.***
- ***The Change Control log will be updated as change requests are received.***

5.7.10 Risk management to ensure that risks are identified, planned for, analyzed, communicated and acted upon effectively.

Risk Management Plan

JMT Technology Group's Risk Management Process aims to identify the risks associated with each aspect of this project and the actions JMT will employ to avoid, transfer, or mitigate those risks.

Risk Management Methodology

Our Risk Management methodology is straightforward and includes the following steps:

- ***Risk Identification - Most risks are known by project team personnel and it is the project manager's job to surface these risks at every stage of the project. This is accomplished through explicit risk identification sessions as well as through the establishment of an environment where risk communication is encouraged and expected. Throughout project execution, morning meetings will serve as an opportunity for developers and other team members to provide insight into project risk and the Project Manager will actively engage the team to identify issues that may potentially serve as risk to project success.***

- ***Risk Analysis - Risks must be analyzed with regard to likelihood of occurrence and impact on the project if not mitigated. This analysis provides the required inputs for risk planning.***

- ***Risk Planning - Given an understanding of the likelihood and impact the Project Manager will develop a plan for addressing each risk and assign a priority. The plan will include identifying the cues that risk is occurring and the specific actions to take, mitigate the impact by developing a contingency plan, avoid the risk by making a change to a project component, or accept the risk and take no further action.***

- ***Risk Tracking - When the planning phase is complete and all currently known risks have been documented with corresponding plan information, each risk is assigned a status and metrics are developed to help track that status. This process is continual through the project life-cycle.***

- ***Risk Control - When a risk action's triggering event occurs the Project Manager must take the appropriate action to control the risk according to the defined plan.***

- ***In addition, the Project Manager will review the Risk Register on a weekly basis to assess the status of each currently identified risk and to add new risks.***

- ***Risk Communication - Without effective communication no risk management plan can be successful. This includes communication among the project team and NDOW and escalation within the organization.***

Risk Register

A Risk Register will be used to facilitate the process and to serve as the project artifact for the documentation and management of project risks.

The table below depicts a potential Risk Register for the new IWILD System.

Category	Description	Likelihood	Impact	Plan
Schedule	The compressed schedule is the greatest risk to this project as it eliminates the "Slack" that would ideally present to absorb unplanned variance.	Low	High	The JMT Team will implement a project work plan that leverages the project management principle of fast tracking so that critical path tasks commence in parallel immediately upon project initiation. The fulfillment of project scope will be phased to the extent possible so that NDOW and JMT can focus the system functionality required to support the initial deployment of the system prior to the end of the calendar year.
Schedule	resources will not be available as required causing a negative impact to the schedule	Low	Medium	JMT Technology Group Project Manager will develop a Project Schedule that outlines the timelines for NDOW participation in project activities and work with the NDOW Project

Category	Description	Likelihood	Impact	Plan
				Manager to ensure the participation of the appropriate staff.
Schedule	Deliverables will not be reviewed according to the schedule in a timely manner causing a negative impact to the schedule	Low	Medium	The agreed upon project schedule will indicate the delivery dates for items requiring NDOW review and feedback. project sponsor will ensure NDOW resources are assigned as needed and schedule commitments are met.
Schedule	Agents will have out of date hardware with software incompatible with a modern web application.	Low	Medium	JMT will document minimum system requirements and disseminate to license agents long in advance of Go Live.
Requirements	Design reviews and / or user acceptance testing will lead to new or revised requirements as opposed to focusing on the identification of defects	Low	Medium	and the JMT Team will agree on the common goal of producing a high-quality system that meets the project objectives within the identified project schedule and will focus user-acceptance testing efforts around that goal
Deliverables	Application deliverables will not match 's vision for the system	Low	Medium	The JMT Team will implement an iterative development process that will result in NDOW access to working software at predefined increments along the project schedule. This gives the opportunity for NDOW to review, test, and provide feedback on the system early and often
Integration	Migration of Data from Legacy database will be more complex than anticipated due to poor data quality and poor design, and non-relational structure.	Medium	Medium	JMT Technology Group will begin to analyze the legacy database, plan and prototype the migration early in the planning and execution phases of the project to ensure that they identify and proactively address potential issues early in the project.
Resources	Project staff turnover will negatively impact schedule	Low	Low	JMT has a contractual relationship with a IT staffing company and has them on call to provide developer support specific to the needs of this project should that need arise
Technology	Project staff will be unfamiliar with technologies employed in the execution of this project	Low	Medium	The JMT Team organization will include an experienced system architect that will lead the identification of technologies to be leveraged for project execution and provide support to the application team in the implementation of these technologies. JMT will devise its resource plan to include developers with the requisite skillset for this project.
Requirements	Developers will interpret and implement requirements in a manner that is inconsistent with the overall vision for the system resulting in rework	Low	Medium	Project Manager, Business Analyst, and Development Lead need to stay one step ahead of developers and ensure that explicit direction is provided with regard to the interpretation and implementation of requirements. Use morning scrum meetings to ensure that any gaps in developer understanding are clear to project manager and that issues are surfaced quickly.

5.8 QUALITY ASSURANCE

Vendors shall describe the quality assurance methodology and processes utilized to ensure that the project shall satisfy State requirements as outlined in ***Section 4, Scope of Work*** of this RFP.

Quality Management Plan

The Quality Management Plan identifies the quality standards that are relevant to the IWILD System project and how the team will satisfy them. This Quality Plan is intended to document the expectations of quality for IWILD System Development deliverables and the processes, techniques, and materials by which these expectations will be met or exceeded.

The Quality Plan encompasses two major processes:

- ***Quality Assurance***
  Quality assurance activities focus on the processes used to manage and deliver the solution and can be performed by an IT manager, business sponsor, or third-party reviewer.

- ***Quality Control***
  Quality control activities are performed continually throughout a project to verify that project management and project deliverables are of high quality.

Quality Standards

The following quality standards are applicable to the quality management activities of this project:

IWILD System Development Standards – at the outset of this project, prior to the commencement of system development, multiple standard documents will be developed to ensure that System Development follows a consistent process founded in best practices. The purpose of these documents is to maintain quality and consistency throughout each release of the IWILD System.

The following documents will be developed / enforced:

- ***JMT LRS Coding Standards – Document that describes best practices for LRS developers.***
- ***Visual Studio Solution Structure Standard – Governs the structure by which the Visual Studio solutions are structured and the methods.***
- ***WILD System Database Design Standards – Governs the design of the database entities with regard to structure and nomenclature.***
- ***WILD System Design Specification***
- ***Any state required standards.***

Quality Management Tools

The following quality tools are applicable to the quality management activities of this project:

<u>Master Test Plan</u> – The Master Test Plan will map directly to the approved Functional Requirements and the Requirements Traceability Matrix and will provide a baseline against all functionality that will be tested and validated. The test lead will oversee the work of the test team to methodically test each feature against approved requirements. Test results will be tracked through Microsoft's Team Foundation Server.

<u>Team Foundation Server</u> – Microsoft's Team Foundation Server will be implemented for source code control, work item assignment and tracking, bug and issue assignment, and project management oversight. In a multi-developer environment, a software package such as Team Foundation Server is a critical element of the overall Quality Plan.

<u>StyleCop</u> – StyleCop ensures the quality and consistency of application code as it enforces syntax adherence to standards. Developers will not be able to check their code into the source code repository until such time that their code builds without errors. StyleCop is designed to cause build errors if syntax rules are violated.

***Visual Studio Code Analysis Tools and IWILD System Rule Set* – As StyleCop enforces syntax rules, the code analysis tool will enforce optimization rules to ensure code is structured for maximum performance.**

Quality Management Roles and Responsibilities

The following roles and responsibilities have been identified for execution of this quality plan:

Role	Quality Assurance Responsibilities
JMT Project Manager	Lead preparation of Quality Plan Ensure conformance to Quality Plan Continually evaluate quality assurance activities based on quality control results Review quality control procedures and test plans Oversee the quality of final deliverables
Development Team Lead	Direct system design activities Ensure adherence to best practices in database and applications development Conduct process and code reviews Support test plan creation and execution
Quality Assurance Team Lead	Direct testing activities Ensure testing adherence to Quality Control Plan Coordinate with Development Lead with regard to timing of testing activities Ensure tests are comprehensive and complete Oversee development of test cases Oversee execution of test cases
Business Analyst / Test Team	Develop use-case diagrams and support requirements analysis and documentation Design and implement quality assurance activities Design, document and execute test plans
Application Developers	Adhere to approved system design Develop code in accordance with defined standards and best practices Execute unit tests Support test plan creation and execution
Database Developers	Adhere to approved system design Develop code in accordance with defined standards and best practices Execute unit tests Support test plan creation and execution

Quality Control

Quality control refers to the activities used to verify that deliverables fulfill quality requirements. This project includes the following quality control activities:

***Unit Testing* will be performed during the development phase for each component of this system. Developers will develop and conduct unit tests on individual modules before integrating them into the system. This ensures that these modules are free of defects. Issues that are discovered will be documented in Team Foundation Server, where they are tracked throughout their life-cycle.**

***Integration testing* will be performed against completed features. This process begins with the creation of a comprehensive Test Plan from the use-cases documented in the System Requirements Specification. This plan will consist of test-cases, each of which is executed by test staff, and documented in our issue tracking software. Failed test-cases are reported to the development team for debugging and resolution. This process iterates until such time that the application passes all test-cases.**

***System Testing* will commence when JMT has fully integrated a new module into the IWILD System and the module has been verified as free of defect and validated against the requirements. System Testing is conducted on the integrated system to ensure that all components communicate and interoperate in accordance with the defined requirements. A test plan will be developed and executed with issues logged and tracked in the issues tracking software. The debugging and resolution process will iterate until the system passes all test-cases.**

***Performance Testing* will be conducted to validate the performance of the web application against the service level requirements. Performance will be assessed using a tool such as the Microsoft Web Capacity**

Analysis Tool (WCAT). Using this tool JMT can generate user scripts that represent typical user work flows and simulate the execution of these workflows for concurrent users. JMT will provide the results of the performance and acceptance validation testing in the form of a report.

Quality Assurance

Quality assurance refers to the processes used to create the deliverables that ensure quality requirements are fulfilled.
This project includes the following quality assurance activities in the project work plan:

- ***Automated Build Processes with Continuous Integration***
- ***Creation of Detailed System Designs – The development, documentation, and review of detailed system designs according to industry best practices; assuring quality in design prior to the commencement of coding.***
- ***Implementation of "Code Analysis" capabilities in Visual Studio - Code Analysis will be run by TFS Team Build and any violations will cause the build to fail. Developers are expected to always execute Code Analysis rules against their local code before checking into TFS.***
- ***Implementation of StyleCop - StyleCop analyzes C# source code to enforce a set of style and consistency rules. StyleCop will be configured to show violations as build errors so that all violations must be addressed prior to checking into TFS.***
- ***Process Reviews – The Development Lead routinely reviews developer process to ensure conformance with best practices in coding structure and adherence to the detailed system designs established during planning.***
- ***Code Reviews / Standards - Application code is periodically reviewed during the development process to ensure adherence to the documented coding standard.***
- ***Source Code Control – All source code is stored in a source code management system to provide multi-member teams, code management throughout the development lifecycle.***
- ***Code Documentation – Code is adequately documented***

Quality Review of System Requirements

JMT's requirements analysis team, under the guidance of the requirements manager, and with input from the project manager, is responsible for delivering a Functional Requirements document that adheres to JMT's quality standards.

Requirements will undergo the following internal quality reviews:

- ***Ensure functional requirements map to business requirements and to clearly defined scope items.***
- ***Ensure all requirements are appropriately numbered.***
- ***Ensure all requirements are formulated appropriately and that each requirement is at a level where it will result in one unique test case.***
- ***Ensure all requirements are presented in a format appropriate for the subject matter and depth of discussion.***
- ***Ensure all requirements are organized in a manner that presents a logical flow of the deliverable's content.***

- ***Ensure all requirements represent information reasonably expected to have been known at the time of submittal.***
- ***In each section of the deliverable, include only information relevant to that section of the deliverable.***
- ***Contain content and presentation consistent with industry best practices in terms of deliverable completeness, clarity, and quality.***
- ***Meets the acceptance criteria applicable to that deliverable, including any State policies, functional or non-functional requirements, or industry standards.***
- ***Contains no structural errors such as poor grammar, misspellings or incorrect punctuation.***

Requirements undergo the following client quality reviews:

- ***The client is issued the requirements set for review in electronic and potentially hard copy.***
- ***Typically, two weeks are allowed for the Subject Matter Experts to review the requirements. This can be expedited depending on client schedule demands.***
- ***Comments are marked up in the document and on the business process flows, and made in an additional column in the requirements workbook or the traceability matrix.***
- ***The SME team may choose to review any section of the requirements with individual team members or specialists in the client organization.***
- ***Once all comments have been collected, these are shared with the JMT team. Commonly this is done in a workshop forum, but it can also be electronically shared.***
- ***The JMT team confirms their understanding of the comments, and make updates as needed.***
- ***A new revision of the requirements documentation is issued to the client for formal acceptance.***

Quality Review of System Design

Once requirements have been developed and approved by the, the Systems Architect will be more actively engaged in the project. The architect will review the requirements and perform a Gap Analysis between the requirements and the solution. Any gaps will be noted and discussed at JMT's technical advisory committee meeting.

At each phase of the project JMT performs a design review to ensure the project remains on track. The system design is dependent on the client's chosen methodology. JMT executes successful projects in Waterfall, Agile and blended methodologies. In all these methodologies, there are minor differences in how the design is performed. In a pure waterfall methodology, the system design will be performed in one phase, which would end in a formal review. In the case of blended and agile methodologies the design is executed in phases as per the agreed methodology. In all cases designs are reviewed by the JMT Architecture team.

Typical aspects of internal review:

- ***Is the design congruent with the requirements?***
- ***Is the architecture congruent with the solution architecture?***
- ***Has all aspects of the technology and tools been addressed?***
- ***Have all interfaces been addressed?***
- ***Have all issues of concern been noted and addressed?***
- ***Have all risks been addressed?***

The design is shared with the client for review once finalized. Any risks that has been identified for this phase is incorporated into the project risk matrix by the project manager.

5.9 PROJECT MANAGEMENT

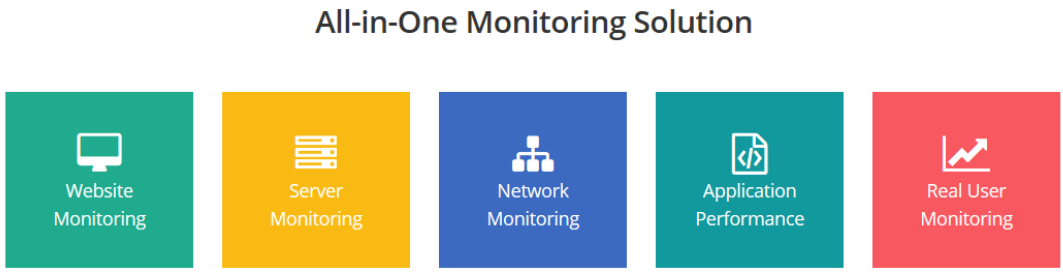
Vendors shall describe the metrics management methodology and processes utilized to satisfy State requirements as outlined in ***Section 4, Scope of Work*** of this RFP. The methodology shall include the metrics captured and how they are tracked and measured.

Performance Management

JMT works with the client, as a part of the planning for go live and implementation, to ensure that the performance expectations and performance metrics are clearly defined and understood by the JMT team. Performance management is an integral part of JMT's current project implementations and we have a trusted system by which we perform performance management. The details of the specific requirements to be measured is determined collaboratively by the project technical leads and the client. Factors that influence these are contractual requests from the client, current industry best practices and any specific project technical risks that has been identified.

JMT makes use of Site24X7's Performance monitoring services. Site24X7 (https://www.site24x7.com/) is a cloud solution used to Monitor the performance of web applications, both private and public facing. It also monitors performance of protocols like HTTPS, DNS, FTP, SSL, SMTP, POP, URLs and APIs from 60+ global locations (or via wireless carriers) and those within a private network.

It performs analysis on application availability and response time, pinpoint service issues with root cause analysis and measure SLA per metrics agreed upon. The high-level areas of the monitoring solution appear below.



Basic Features of this service includes:

- ***Website Monitoring – performance of all internet services.***
- ***Server monitoring – server outages, issues and root cause analysis.***
- ***Synthetic Transaction Monitoring – simulates and records user interactions in a real browser and performs optimization.***
- ***Application Performance Monitoring – identifies application servers and app components that are generating errors.***
- ***Network Monitoring – monitor critical network devices if needed.***
- ***Real User Monitoring – analyze performance by browser, platform, geography etc.***
- ***Public Status Pages – communicates service status to customers.***

If an incident were to occur, JMT will contact the predetermined ODNR representative immediately following our notification. In addition, a notification containing information about the event will be emailed to a predetermined list of contacts. Below is a general outline of the notification:

- ***Executive Summary – An executive summary of the event***
- ***Immediate Course of Action – A detailed plan of action to ensure that client data is secured and the intrusion attempt has been nullified.***
- ***Solution – An outline of how JMT is planning on addressing the issue going forward.***
- ***Details – A detailed description of the event and all surrounding facts.***

In addition to incidents, reports are available via Site24X7 to report metrics to the customer. Some metrics from the typical dashboards appear below. The Site24X7 solution has configurable functionality for sending alerts to team members. These alerts help ensure that situations are known to the team in a timeous fashion and action can be taken proactively.

5.10 DESIGN AND DEVELOPMENT PROCESSES

Vendors shall describe the methodology, processes and tools utilized for:

5.10.1 Analyzing potential solutions, including identifying alternatives for evaluation in addition to those suggested by the State;

As highlighted in 5.1.9 the JMT team anticipates our solution will effectively meet 100% of the requirements for the NDOW system. However, any potential system customizations and additional functionality to meet the needs of the system will be discussed with NDOW staff to explore potential solutions to be developed. Our business analysis team's approach includes the following tactics in defining the needs and alternatives for evaluation of a solution:

Requirements Development

JMT views requirements gathering as a collaborative process most successfully performed by a strong joint team with clearly defined roles and responsibilities. From the JMT side, this team is typically led by the project manager and the requirements manager. At project kick off the client is requested to identify a list of subject matter experts (SME's) or super users. This should be a fairly small team who will be involved throughout the requirements life cycle.

There are various methods for successful requirements elicitation. JMT's team of business analysts works with the client team to ensure that the elicitation sessions are tailored to be effective in terms of the diligence that needs to be applied to elicit great requirements while being mindful of the overall business drivers and demands of the client and their staff.

Depending on the demands, methodology and lifecycle of the particular project, JMT has deployed the following types of requirements elicitation models:

- ***Onboarding workshops: This is a great way for the client to impart knowledge to the requirements team and ensure that the elicitation sessions proceed according to the client's expectation.***

- ***Documentation sharing: Documentation can be shared with the JMT team via various mechanisms. Commonly used platforms are Google Drive, DropBox, and SharePoint.***

- ***JAD (Joint Application Development) sessions: These are most effective in full lifecycle projects with an Agile or near – Agile methodology.***

- ***<u>Requirements elicitation workshops</u>: These are deployed for most methodologies. The workshops can be on-site or remote, or a combination of the two. Most typically these sessions are attended by at least two JMT team members, where one team member will lead the session according to a pre-approved structure. This structure can be a draft business process, or a list of strategic process areas, or known areas of concern. With the client's permission, these sessions are often recorded to aid the documentation process and the drafting of the final requirements documentation with minimal impact to the client business.***

- ***<u>War rooms:</u> Although more typically used as a brainstorming tool, war room sessions can be deployed as requirement elicitation sessions, especially in cases where the new system has functionality that does not exist in the legacy system.***

- ***<u>Questionnaires</u>: In cases where the user community is large or geographically wide spread, questionnaires have been used effectively to elicit feedback on present systems, as well as needed requirements for new systems. Questionnaires can also be used effectively in public facing scenarios. Tools such as Google Docs and SurveyMonkey are common methods for deploying surveys.***

Documentation of Requirements

Documentation of requirements for the new system results from compiling all notes gathered during the elicitation sessions and arriving at sets of high level business requirements. This is where the high-level business requirements will be translated into functional, technical or non-functional requirements.

Requirements Types:

- ***BR – Business Requirements***
- ***FR – Functional Requirements***
- ***NFR – Non-Functional Requirements or Technical Requirements***

Requirements Phase Deliverables and Artifacts include:

a. ***The Final Requirements document***
    a. ***Functional Requirements Document***
        i. ***Business Process Flows***
        ii. ***Requirements Workbooks as an Appendix to the Final Requirements Document***
    b. ***Technical Requirements Document***
        i. ***Data Identification and Classification***
        ii. ***Data Workflows with Focus on Inputs and End Product***
b. ***Requirements Presentations***

Requirements Traceability

Although not a formal part of the BABOK, the JMT Business Analysis team finds requirement traceability as reflected in a requirements traceability matrix beneficial to our clients.

A Requirements Traceability Matrix or RTM captures all requirements proposed by the client and/or development team and their traceability in a single document delivered at the conclusion of the requirements lifecycle. Depending on the specific project methodology, it can point backwards to the mapped business processes and forwards to configuration items and test cases.

Requirements Traceability Matrix parameters may include:

- ***Requirement ID***
- ***Risks***
- ***Requirement Type and Description***
- ***Trace to design specification***
- ***Unit test cases***
- ***Integration test cases***
- ***System test cases***
- ***User acceptance test cases***
- ***Trace to test script***

Tools for Requirements Management

As a part of JMT's flexible and client centric approach to requirements gathering and analysis many different kinds of tools are deployed. Tools JMT's business analysis team most commonly uses in requirements gathering and support are:

- ***Case Complete***
- ***Team Foundation server***
- ***Microsoft Office suite, including Microsoft Project***
- ***Visio Flowcharts***
- ***War room materials including flip charts, white boards, sticky notes etc.***

5.10.2	Developing a detailed operational concept of the interaction of the system, the user and the environment that satisfies the operational need;

In developing the JMT Outdoor Licensing and Recreation Platform, JMT has gone through an iterative process by our team of user experience design experts. We have designed the customer enrollment and product purchasing workflows in response to data gathered from clients and customers to create an intuitive, modern, and aesthetically pleasing experience. When developing an operational concept of system interaction our business analysis, user experience and system architects converge to assess and plan solutions to meet the needs of the defined functional and non-functional requirements. This design process involves multiple components including:

User Experience Design and Wireframing

Our dedicated User Experience team focuses their efforts on assuring that our solution offers an efficient, intuitive, and enjoyable user experience. The JMT User Experience Team approaches our product designs by considering many aspects of the users' behavior, identifying their needs coupled with the context in which they interact with the system. Working closely with the System Architect and the development team, the User Experience designers help ensure the system user interface is not only visually appealing, but performs efficiently across all device platforms. Enhancements to the product user experience are data informed, utilizing site analytics, client feedback, and customer input to make design decisions and drive enhancements.

User Personas

In evaluating the functional interactions that the need to take place in an application, the JMT team of business analysts and user experience designers will create defined personas of system users. The user personas give context to how an end user will utilize the system to accomplish tasks, and help define what roles and permissions each user type will be assigned.

System Wireframes

Any added module and corresponding system component will be fully conceptualized through wireframe mockups prior to the commencement of any actual software development activities. These wireframes will show operational concepts for screen interactions that a user would be presented from each identified system component, allowing to quickly visualize what a completed module might look like in the solution.

5.10.3 Identifying the key design issues that shall be resolved to support successful development of the system; and

With each application, the JMT Technology Group develops, our team utilizes a standard Feature Set Design template to document the features of the solution. This design document, created by JMT's UX Designers and System Architects outlines the overall system design to meet its non-functional needs. This includes system architecture diagrams, database requirements, security requirements and standards for the front-end user interface. The Feature Set Design document is also used in conjunction with decomposing the requirements into detailed user stories and mock-ups.

As a fully hosted solution, The JMT Licensing and Recreation solution architecture has been designed with a set structure to ensure optimal operability while remaining flexible to meet the unique needs of individual natural resources agencies. We maintain a strongly documented solution built on proven technologies to bring immense value to our clients and to the millions of customers that use our solution as part of their outdoor experience. Our fully web-based licensing and registration solution is built on the Microsoft .NET platform and implements current industry standard web technologies including HTML 5 and CSS3. The solution makes appropriate use of client side JavaScript frameworks such as Angular JS to provide a modern, intuitive and responsive user experience.

5.10.4 Integrating the disciplines that are essential to system functional requirements definition.

JMT has invested in an exceptional team of project managers, business analysts, architects, developers, user experience designers, quality assurance professionals and customer service providers to assure that we successfully live up to our commitment to deliver a high-quality product on schedule. Our team of technology professionals has successfully delivered multiple statewide outdoor licensing and recreation systems and has the experience and capability to deliver a successful solution for the Nevada Department of Wildlife.

JMT understands that establishing an experienced and dedicated project team is a critical component of project success – especially when project duration is compressed. Towards that end JMT Technology Group has formed an experienced team of senior-level staff including a project manager, business analyst, and development team that will be 100% dedicated to this project through production release. Each member of this team has played a critical role in a prior outdoor licensing and recreation solution implementation and this team is 100% ready to go on day 1.

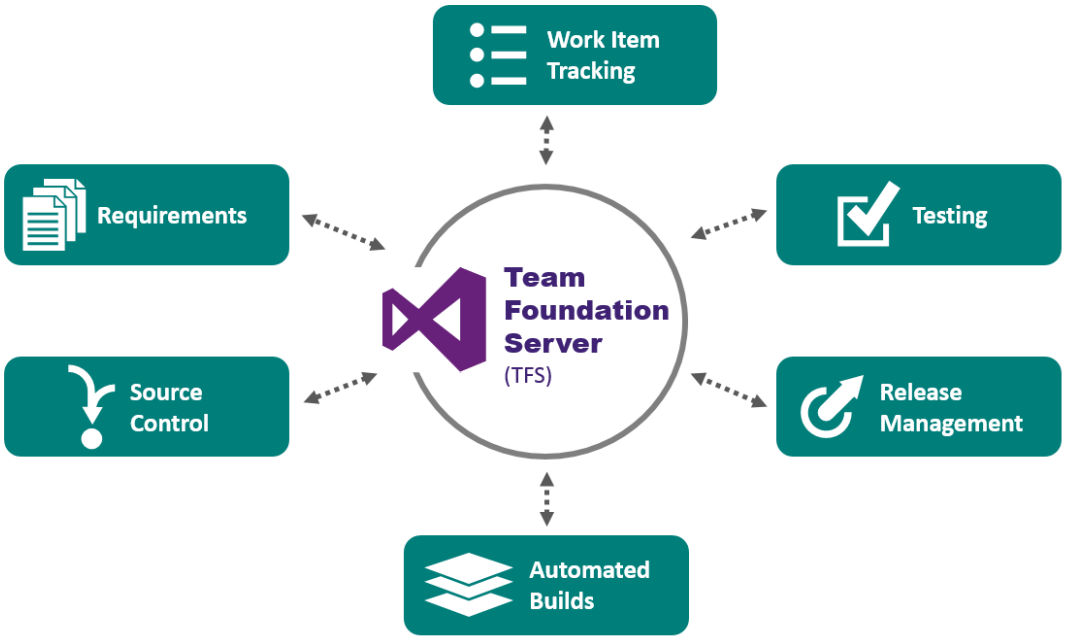
JMT will implement a hybrid agile development methodology whereby core business and functional requirements are elicited, analyzed, and documented at the project's outset in order to support the rapid development of the System release that meets initial deployment requirements and produces a replacement system built on JMT's Outdoor Licensing and Recreation Platform. Our understanding of the fish and wildlife industry and outdoor Licensing and Recreation technology provides an intuitive understanding of how to structure and time these releases. JMT will work collaboratively with Nevada Department of Wildlife to finalize and implement this plan integrating the proper disciplines throughout our team.

5.11 CONFIGURATION MANAGEMENT

Vendors shall describe the methodology, processes and tools utilized for:

5.11.1 Control of changes to requirements, design and code;

JMT utilizes Microsoft's Team Foundation Server for requirements, source code control, work item assignment and tracking, bug and issue assignment, automated builds, and project management oversight. In a multi-developer environment, a software package such as Team Foundation Server is a critical element of the overall Quality Plan.



As requirements change, so do designs and potentially code. This process is tracked through TFS. When requirements change, the business analyst documents the change in requirements in TFS. Those requirement changes are then vetted by the architect to understand how they affect the overall design and code. If the requirement involves a change to the user interface, the design team prepares wireframes to convey the changes graphically. Once approved by the client, user stories are developed and assigned to the developers for completion. After the developers finish the user stories, the QA team validates that the changes meet the changed requirements. This entire process is managed through TFS to verify that the process stays consistent throughout the entire project.

5.11.2 Control of interface changes;

JMT places a very high emphasis on user interface design and implementation. As requirements are complete, the design team builds wireframes and mockups to convey the user experience to both the

client and the developers. Once agreed upon, the developers build the user interface against the mockups. This process is no different when changes are made to an existing user interface. As changes are needed in requirements or even usability, the process stays the same. When requirements change, the business analyst documents the change in requirements in TFS. Those requirement changes are then vetted by the architect to understand how they affect the overall design and code. If the requirement involves a change to the user interface, the design team prepares wireframes to convey the changes graphically. Once approved by the client, user stories are developed and assigned to the developers for completion. After the developers finish the user stories, the QA team validates that the changes meet the changed requirements. This entire process is managed through TFS to verify that the process stays consistent throughout the entire project.

5.11.3 Traceability of requirements, design and code;

Although not a formal part of the BABOK, the JMT Business Analysis team finds requirement traceability as reflected in a requirements traceability matrix beneficial to our clients.

A Requirements Traceability Matrix or RTM captures all requirements proposed by the client or development team and their traceability in a single document delivered at the conclusion of the life-cycle. Depending on the specific project methodology, it can point backwards to the mapped business processes and forwards to configuration items and test cases.

<u>Requirement Traceability Matrix – Parameters include:</u>

- ***Requirement ID***
- ***Risks***
- ***Requirement Type and Description***
- ***Trace to design specification***
- ***Unit test cases***
- ***Integration test cases***
- ***System test cases***
- ***User acceptance test cases***
- ***Trace to test script***

A typical Requirements Traceability Matrix appears below:

Requirement Number	Business Process Flow	System Use Case	Sub System	Design Element	Code Tables	Test Case	Risk	Iteration
FR1	*BPF1: Apply new*	*UC1: Apply new*	*LIC*		*Source Code: Review application* *Tables: New Application*	TFSFR1	RSK003	SP1
TR25	*n/a*	*UC234: Validate*	*LIC*		*Source Code: Validate data entry*	TFSTR25	n/a	SP4
FR5	*BPF5: Notification*	*UC12: Notify new*	*LIC*		*Source Code: Notification sent*	TFSTK5	RSK005	SP4

					Tables: Notify1			

As part of the design and development of the system, JMT tracks work through TFS. Work items in TFS are tracked to requirements. Therefore, a linkage between the requirement, the design, and the code can be created so traceability is easy to follow.

5.11.4 Tools to help control versions and builds;

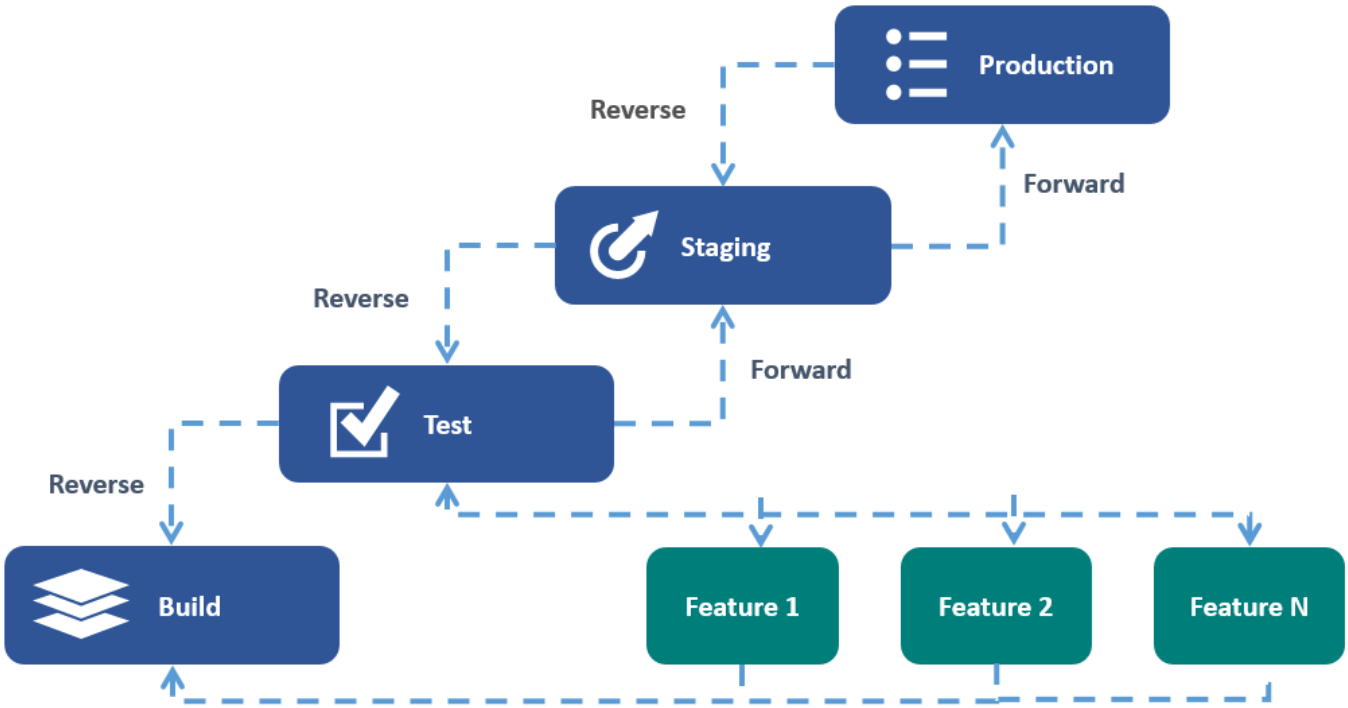
The JMT development team utilized a Git repository for source control. Git is an industry standard distributed revision control system aimed at speed, data integrity, and support for distributed, non-linear workflows. It allows the developers to store versions of the code and branch the code for individual features as well as releases. Once complete, these branches are merged back into the main code. The system allows developers to work on their own version of the code prior to merging back into the main code repository. The Git system handles the merging and provides the proper tools to allow developers to manually merge code when there are conflicts. This Git repository is managed through Microsoft's Team Foundation Server. JMT utilizes Microsoft's Team Foundation Server for requirements, source code control, work item assignment and tracking, bug and issue assignment, automated builds, and project management oversight.

Once code changes are made and merged back together, the build manager prepares a build through a continuous build integration plan. This process compiles the code, along with the css, to produce a build that is then copied to the Build environment. The Build environment is just one of four environments JMT utilizes as part of the release process.

Our development and quality assurance teams use the following four environments, all deployed within their own, dedicated resource group within the Microsoft Azure environment.

- ***Build – this is a continuous integration (CI) environment where features of the application are developed. After a feature has been developed, tested, and approved, it is promoted to the Test environment. Unit tests are run for each deployment to this environment. If the unit test fails, then the deployment is suspended until all unit tests have been fixed. This process ensures that any new code deployed to this environment meets our quality and development standards.***
- ***Test – this is the environment that our quality assurance team uses for testing. When they are not testing individual features, they are testing the system as a whole in this environment.***
- ***Staging – at any given time, this environment is in one of two basic states: production mirror or staged changes. This environment will match production so we can address any critical, production level bugs before it is promoted to production. The staging environment is also utilized heavily for regression testing and user acceptance testing (UAT) prior to a production deployment. It is from this environment that IDFG will have access to the new WILD system beginning in June of 2017***
- ***Production – this is the live, production environment. Changes to this environment are only made after a full regression test and client approval. JMT will not alter the state of this environment without the approval of the client.***

The following diagram depicts the progression of code changes from their development in individual features branches through the quality assurance environments and ultimately to production.



5.11.5 Parameters established for regression testing;

The purpose of regression testing is to ensure that no component of the system has been inadvertently impacted by the new code. The quality assurance team will methodically check all functions of the system, across roles, with an extensive focus on the customers and transactions.

JMT utilizes Microsoft's Team Foundation Server (TFS) to track requirements, source code control, work item assignments, bug and issue assignments, automated builds, and project management tasks. For regression testing, the JMT Quality Assurance team verifies that new builds don't introduce bugs or other issues with the existing code. This verification process utilizes User Stories stored in TFS that have been updated and tested in the past. These User Stories are retested with the new build to verify they still pass. Prior to performing the regression testing, the QA team updates the User Stories with any updates from newer User Stories from the current batch of work. The updated User Stories are stored in TFS for the current round of regression testing as well as for future regression testing.

Regression testing is executed in the staging environment once all new features / bug fixes have passed functional testing and have been marked as "Done" by the product owner. JMT will merge the new code into the staging branch of the source code so that the new features / bug fixes are integrated with code that represents a mirror of production.

5.11.6 Baselines established for tools, change log and modules;

JMT utilizes Microsoft's Team Foundation Server (TFS) to track requirements, source code control, work

item assignments, bug and issue assignments, automated builds, and project management tasks. This tool is used to track all work, inclusive of established work and change order requests. Both JMT and NDOW have access to the tool at any time. The JMT development staff utilize Visual Studio to complete the work as well as view the same information available in TFS.

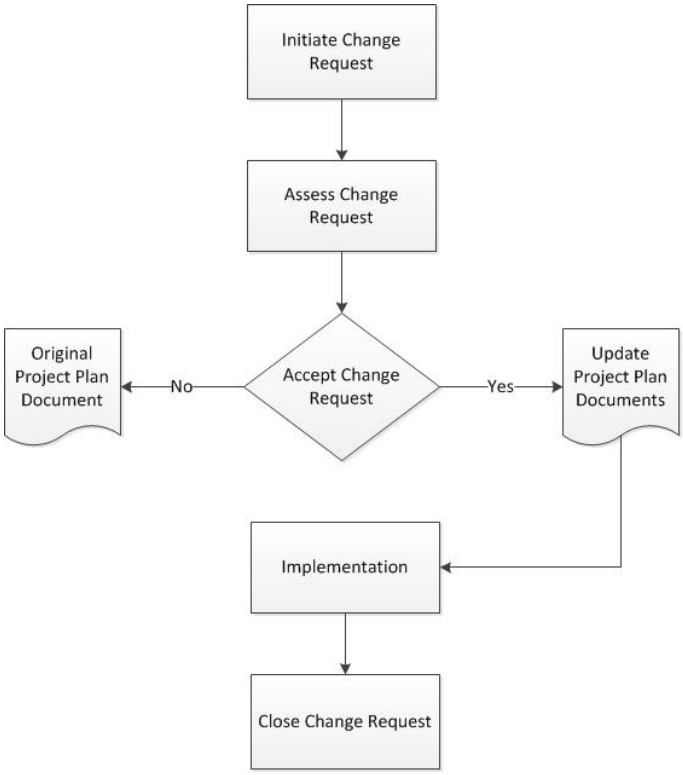
All work that needs to be performed is first placed into the backlog. This backlog acts as a log that represents work queued up for future iterations and releases. Once a new development cycle is about to begin, JMT and NDOW agree on which work items move from the backlog to the current iteration of development. The work identified for the current iteration of development is treated as a group of work that can be tracked from design to deployment.

5.11.7	Documentation of the change request process including check in/out, review and regular testing;
5.11.8	Documentation of the change control board and change proposal process; and
5.11.9	Change log that tracks open/closed change requests.

The scope of work for this implementation, largely defined by the RFP document, will be mutually agreed upon during the initiation phase of the project, and while the specific requirements and implementation details necessary to complete the scope will be defined in greater detail, the scope of the project will remain unchanged. It provides the baseline against which we can collaboratively perform scope change management throughout the project.

To be clear - JMT understands the need to be flexible and collaborative with regard to the implementation of the system. Scope change is introduced when wholly new features or functionality are introduced over the course of the project. The lack of a formal change control plank, in this scenario, introduces project risk. JMT's approach to Change Management will be guided by a structured set of events including:

- ***Initiation the Change Request by NDOW***
- ***Assessment of the Change Request by the JMT Project Manager and NDOW Project Manager***
- ***Approve or Disapprove the Change Request by NDOW***
- ***Update Project Baselines as Needed***
- ***Implement the Change***
- ***Close the Change Request***



The diagram to the right represents the flow of change management events.

All project changes must enter the Change Management cycle in the format of a Change Request. Legitimate changes to the product/project may stem from:

- ***Responses to problems internal to the project.***

- ***Externally imposed requirements.***
- ***Change in business requirements or strategy.***
- ***Proactive changes to improve performance or benefit.***

The following describes in detail each event in the Change Management Process:

<u>Initiate the Change Request</u> - Either NDOW's PM communicates the details of the change to JMT's PM or JMT's PM identifies a potential change through normal project activities and raises this issue with NDOW's PM. This constitutes the initial informal change communication. At this point, the Project Managers decided whether or not to proceed with the preparation of a Change Request. Once the details of the change have been recorded on a Change Request form, it is logged in the Project's Change Log within the Project Portal.

<u>Assess Change Request -</u> The Change Request is escalated to the core project team for evaluation. The CR is assessed for its impact on the project plan (resources, costs and schedule) by the Project Manager and Project Team. A separate timeline is built for later incorporation into the master plan, if and when the CR is approved. The Project Manager completes a brief Business Case with the assistance of the Project Team. The Project Manager will also identify potential alternatives to achieve the same objectives and consider whether deferring the change is a valid option. Examples of fundamental questions that should be asked and answered during the assessment include:

- ***Is the change unavoidable? (E.g. legislative requirements change).***
- ***Does the change directly increase the project's ability to meet its fundamental objectives?***
- ***Are there significant technical challenges?***
- ***Does the change introduce substantial new risk to the project?***

<u>Approve/Reject Change Request -</u> The results of the CR assessment are presented to the NDOW Project Manager. Based on the value judgment passed on the CR, it is accepted or rejected. If accepted, sign-off represents a new agreement on the updated Project Plan. The new timeline, Scope, costs and schedule are baselined. Change requests are then logged into TFS as a backlog item until it is time to implement the change. These backlog items are available for both JMT and NDOW to view at any time.

<u>Implement Change</u> - The new work required by the change is undertaken and completed according to the new Project Plan. Success criteria or testing for the change are applied to the CR work. Completion is assessed at the appropriate milestone. Change request work is handled very similar to the scoped work, where JMT follows the same policies and procedures for design, development, and testing. All work, whether original or change request functionality, is tracked from beginning to end through TFS. Each change request will have a branch in the Git source code repository that eventually is checked into the main branch of code, built, tested, and released.

The change request goes through the same quality control processes outlined for established work:

- ***<u>Unit Testing</u> will be performed during the development phase for each component of this system. Developers will develop and conduct unit tests on individual modules before integrating them into the system. This ensures that these modules are free of defects. Issues that are discovered will be documented in Team Foundation Server, where they are tracked throughout their life-cycle.***

- ***Integration testing will be performed against completed features. This process begins with the creation of a comprehensive Test Plan from the use-cases documented in the System Requirements Specification. This plan will consist of test-cases, each of which is executed by test staff, and documented in our issue tracking software. Failed test-cases are reported to the development team for debugging and resolution. This process iterates until such time that the application passes all test-cases.***
- ***System Testing will commence when JMT has fully integrated a new module into the System and the module has been verified as free of defect and validated against the requirements. System Testing is conducted on the integrated system to ensure that all components communicate and interoperate in accordance with the defined requirements. A test plan will be developed and executed with issues logged and tracked in the issues tracking software. Again, the debugging and resolution process will iterate until the system passes all test-cases.***
- ***Performance Testing will be conducted to validate the performance of the web application against the service level requirements. Performance will be assessed using a tool such as the Microsoft Web Capacity Analysis Tool (WCAT). Using this tool JMT can generate user scripts that represent typical user work flows and simulate the execution of these workflows for concurrent users. JMT will provide the results of the performance and acceptance validation testing in the form of a report.***

Close Change Request - Following successful implementation and testing of the CR work, Change Management Log is updated to reflect closure to this Change Request.

5.12 PEER REVIEW MANAGEMENT

Vendors shall describe the methodology, processes and tools utilized for:

5.12.1	Peer reviews conducted for design, code and test cases;
5.12.2	Number of types of people normally involved in peer reviews;
5.12.3	Types of procedures and checklists utilized;

As part of the design process, JMT utilizes a team consisting of the product owner, designers, developers, and testers. When the designer is tasked with creating a new wireframe or mockup, the designer takes the requirements and builds the wireframe of mockup. Prior to the client seeing these documents, the product owner, a developer, and a tester review the mockup to verify it meets the requirements, conforms to the system design, has the level of detail needed to develop, and has the proper elements needed for the tester to perform quality control.

As part of the Agile process, JMT breaks down work into User Stories. User Stories describe the work that needs to be done as well as defines the acceptance criteria utilized to test against and verify the work is complete and bug-free. When a User Story is assigned to a developer for a sprint (or batch of work), the developer first breaks down the User Story into tasks. Each User Story is required to have certain tasks established. One of the required tasks is a peer review of the work. This peer review is required to be performed by another developer on the team prior to the User Story being defined as complete.

Each User Story has one or more test cases used to verify that the User Story meets the acceptance criteria. These test cases are developed by the tester(s) assigned to the project. For quality assurance purposes, test cases are peer reviewed by the QA engineer assigned to the project. The QA engineer will verify that the test case is written correctly, establishing the proper steps to validate the acceptance

criteria has been met.

5.12.4 Types of statistics compiled on the type, severity and location of errors; and

Errors in the system are detected in many different ways. Errors are first caught during unit testing by the developer. These errors are to be fixed prior to releasing the code to testing and are therefore not tracked beyond development. Errors that are caught in testing are logged as tasks in TFS and assigned back to the developer who originally worked on the development. Once code has been released to staging/UAT, errors are caught in two ways; by the user and by the code. JMT utilizes application logging to detect and log errors. These errors report the location of the error, the type of error, and the severity of the error. The developers have access to the logs and will proactively monitor the logs for errors. Once an error is detected, the developer logs the error into TFS like any other error would be manually logged. If a user finds an error during regression testing or UAT, the user has access to TFS and can create the work item at any time; reporting the type, severity, and location of the error.

Because all errors are created as work items in TFS, JMT has the ability to generate reports from TFS that provide various statistics on the errors found. Statistics include the number of errors reported, the types and severity of errors found, as well as the number of errors fixed by module, application, or time period.

5.12.5 How errors are tracked to closure.

JMT utilizes Microsoft's Team Foundation Server (TFS) to track requirements, source code control, work item assignments, bug and issue assignments, automated builds, and project management tasks. As part of the JMT development process all issues, bugs, and errors are tracked as work items in TFS. As soon as a bug or error is found, it is put into TFS as a work item and that work item is placed into the backlog of work. Depending on the severity of the issue, it is either fast tracked or is treated similar to any other work that needs to be performed. If it is considered an error that needs to be addressed right away, the work item is assigned to the appropriate resource and is tracked through the design, development, test, and deployment cycle. If the error is not a severe error and can be handled in the next release, it is placed into the next batch of work in TFS; which is then tracked through the normal development life cycle. Once the error has been fixed, tested, and released, the work item associated with that particular error is closed. That work item is always available for viewing by both JMT and NDOW; along with the history and details of how it was resolved.

5.13 PROJECT SOFTWARE TOOLS

5.13.1 Vendors shall describe any software tools and equipment resources to be utilized during the course of the project including minimum hardware requirements and compatibility with existing computing resources as described in ***Section 2.4, Current Computing Environment.***

5.13.2 Costs and training associated with the project software tools identified shall be included in *Attachment I, Project Costs.*

Microsoft's Team Foundation Server (TFS) ***- JMT utilizes Microsoft's Team Foundation Server (TFS) to track requirements, source code control, work item assignments, bug and issue assignments, automated builds, and project management tasks. This server is hosted at JMT and adds no additional cost to the project.***

Microsoft's Visual Studio (VS) – JMT will use Microsoft's Visual Studio to design, develop, test, and track work for this project. This software is installed on JMT development computers, is provided by JMT, and adds no additional cost to the project.

Adobe Creative Cloud – The Adobe Creative Cloud includes Photoshop and Illustrator, two software packages used by the designers to create mockups of the software. This software is installed on JMT development computers, is provided by JMT, and adds no additional cost to the project.

Indigo Studio – Indigo Studio is used by the designers to develop wireframes of the user interface. This software is installed on JMT development computers, is provided by JMT, and adds no additional cost to the project.

SendGrid – SendGrid is a software service that JMT utilizes to send mass emails out from the system for customer notifications and other email functionality needed. This is a software as a service package that charges per email sent and therefore does not require local hardware.

SQL Server 2016 – While JMT proposes utilizing Microsoft's SQL as a Service, JMT offers the ability to replicate the database down to a local copy at NDOW. While JMT recommends utilizing the replicated database hosted in Azure for NDOW access for reporting and other integrations, the option is available to replicate the production database to a local SQL Server. If NDOW chooses to have a local copy, a license will be needed for SQL Server 2016 as well as a server running Windows 2012R2 or higher Server OS with a minimum of 8GB of RAM and 250GB of storage.

Microsoft's Azure Cloud Hosting – JMT will utilize many components in the Microsoft Azure technology stack. Some of the components include SQL as a Service, Web Apps, Redis Cache, Storage, Traffic Manager, and Application Insights. There are no hardware requirements for NDOW and all costs are included in the hosting costs.

CloudFlare – CloudFlare is a Web Application Firewall that sits in front of the Microsoft Azure environment to monitor and log intrusion attempts as well as DDOS attacks, SQL injection attacks, cross-site scripting, cross-site forgery requests, and other such security threats. While on premise firewalls can quickly become outdated and require professional service hours to regularly update rules to protect against new threats thirds party services such as that provided by CloudFlare help you stay ahead of threats by automatically updating when new security vulnerabilities are released. This are no hardware requirements for NDOW and all costs are included in the hosting costs.

Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

SECTION VIII
ATTACHMENT H
PROPOSED STAFF RESUMES

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Section VIII – Attachment H – Proposed Staff Resume

5.1 VENDOR INFORMATION

Vendors shall include all proposed staff resumes per ***Section 5.5, Vendor Staff Resumes*** in this section.

See proposed staff resumes located on the following pages.

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Jeff Roberts***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Project Manager***		
# of Years in Classification:	***9***	**# of Years with Firm:**	***8***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE

Information should include a brief summary of the proposed individual's professional experience.

Mr. Roberts has over 19 years of experience providing GIS project management, programming and database services for customers throughout the mid-Atlantic region. Mr. Roberts has demonstrated success in the management and implementation of GIS projects through all phases of development with involvement in requirements identification and definition, systems design, project execution, and product development. He has substantial experience in the management and coordination of multiple team members and has been effective in maintaining the delicate balance between scope, cost, and schedule. Mr. Roberts has extensive experience with ESRI technology including ArcGIS Server, ArcEngine, and ArcGIS Desktop software. Jeff has progressive experience in the areas of applications development, web design and development, and GIS database design, updates and management. He is also a Certified Project Management Professional (PMP) with the Project Management Institute.

RELEVANT EXPERIENCE

Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Project Manager. (04/2017 – Ongoing) Mr. Roberts is managing the design, development, and implementation of WDFW's new licensing and recreation solution, WILD. His role includes developing project plans and schedules for successful implementation; ensuring successful and seamless communication with clients; ensuring sufficient staffing levels for project workload; ensuring work assigned was performed according to approved requirements and design; reporting progress of the execution of tasks and deliverables to client's Project Manager; and escalating risks and issues to be addressed by the client's Project Manager. (Software: Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server)

Go Wild! Electronic Game Checking System, West Virginia Division of Natural Resources – Project Manager. (10/2013 – Ongoing) Mr. Roberts led the design and development of West Virginia's electronic licensing system, to offer sportspersons the opportunity to purchase licenses at an agent location or via the internet. His efforts include identifying issues and risks to recommend possible issue and risk mitigation strategies associated with the project. He serves as the primary liaison between JMT and the client, and is responsible for ensuring that the work performed is within scope, consistent with requirements, and delivered on time and on budget. As of January 1, 2015, Go Wild! is in full production mode, and Mr. Roberts now oversees the ongoing maintenance and support of the system. The Go Wild! solution includes a robust Quota Hunt / Lottery capability and successful hunters have the ability to check their game at an agent location, over the internet, or by telephone via an Interactive Voice Response (IVR). (Software: Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server)

COMPASS Licensing System, Maryland Department of Natural Resources – Project Manager. (05/2011 – Ongoing) Mr. Roberts led the design, development, deployment, and support of COMPASS, Maryland's web-based, outdoor customer delivery system which includes licensing for activities such as hunting, fishing and off-road vehicles, harvest reporting, and online payment transactions. The system is used by DNR Service Centers, sports license agents and retailers, as well as being available to the public by telephone and online. Mr. Roberts is the Project Manager for the Operations and Maintenance contract as well as the current system improvements including new modules for boating, safety education, and off-road vehicle train reservations. (Software: Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server)

In-Store Implementation of MyAlaska, Alaska Department of Fish & Game – Licensing Implementation Consultant and JMT Project Manager. (06/2015 – 01/2016) Mr. Roberts provided consulting services and guidance for the implementation of a vendor portal for vendors to manage employees, provide customer service, view invoices, and pay automatic electronic invoices. His role included establishing a blueprint for project execution. As the Project Manager for JMT's portion of the project, he ensured that the system design, development and training remain within scope, schedule, and budget. (Software: Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server)

Vessel Information Management System (VIMS), Gallagher Marine Systems – Project Manager. (02/2010 – 04/2014) Mr. Roberts served as Project Manager for this complex project to upgrade an entire suite of custom business applications for Gallagher Marine Systems. The primary business driver for this effort was the need to replace an existing system built on antiquated technology and a poorly conceived architecture that was no longer supporting Gallagher Marine's business operations and sacrificing data quality. Mr. Roberts planned and managed the execution of all phases of this effort including the design and development of a completely revamped software solution, the design and development of a new relational database, the re-engineering of business processes, and the migration and data quality improvement of the existing customer database. In addition to supporting technical aspects of the project, Mr. Roberts was responsible ensuring conformance to project scope, schedule and budget and the quality of deliverables. (Software: Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server)

Water Supply Information and Permitting System, Maryland Department of the Environment – Project Manager. (02/2012 – 02/2015) Mr. Roberts led the design and development of the State's Water Supply Information & Permitting Systems (WSIPS), a new web-based system to manage water permits and enable customers to submit and track the status of permit applications electronically. The new WSIPS system assists Water Supply Program (WSP) staff with their reviews of permit requests by making critical data elements more easily accessible and by making it simpler for WSP staff to monitor compliance with permits and to initiate enforcement actions. (Software: Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server)

AIRPortal, Baltimore/Washington International Thurgood Marshall Airport – Project Manager. (10/2012 – 01/2016) Mr. Roberts supported the collaborative efforts of JMT and MAA to develop a proof of concept for sub-surface utility (SUE) data collection that supports the needs of both engineers and GIS users; researched and tested methodologies to implement seamless interoperability between CAD and GIS software while eliminating redundant efforts on either side; and participated in planning and requirements meetings. (Software: Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Master of Science in Applied Information Technology, 2008
Bachelor of Arts in Geography, 1996
Towson University
8000 York Rd, Towson, MD 21252

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Project Management Professional 9/1/2005

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)
Information required should include: environments, hardware, software, tools and databases.

ArcGIS Server, ArcGIS Mobile, ArcEngine, ArcGIS Desktop, Microsoft Office (Word, Excel, PowerPoint), Microsoft Project, Microsoft Visio, Microsoft SharePoint, Microsoft Team Foundation Server

REFERENCES
A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	*Company*	*Phone*	*Fax*	*Email*
Evan Yett	*Washington Department of Fish and Wildlife*	*360-902-2324*	*360 902-2945*	*evan.yett@dfw.wa.gov*
Robert D. Swan Jr.	*Maryland Department of Natural Resources*	*410-260-8368*	*410-260-8373*	*robert.swan@maryland.gov*
Charlie Kennedy	*West Virginia Division of Natural Resources*	*304-558-3315*	*304-558-4115*	*Charles.E.Kennedy@wv.gov*

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***x***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Mark Meisel***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Technical Lead***		
# of Years in Classification:	***12***	**# of Years with Firm:**	***3***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Meisel has 15 years of experience maintaining and developing software applications. He has extensive experience with the Microsoft stack which includes .NET, SQL Server, and related tools. He also has worked with user interface frameworks such as JavaScript, CSS and HTML. He has served as a team and project lead during periods of his career. He has experience working in both the public and private sectors. He earned a Master of Information Systems from University of Maryland Baltimore County and a Bachelor's degree in Computer Science from Radford University.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Senior Application Developer. (05/2016 – Ongoing) Mr. Meisel is the primary architect and lead developer from the Washington Department of Fish & Wildlife (WDFW) WILD licensing system. He is responsible for the application and infrastructure architecture, development of the WILD system, leading daily stand-up meetings and establishing development processes. He works closely with the Project Manager to set development schedules and establish scope of work. (Software: ASP.NET, ASP.NET MVC, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), JSON, SQL Server Reporting Services, T-SQL, SQL Server 2016, Microsoft's Team Foundation Server, Microsoft Windows, SASS, Agile development, W3C standards, Git, Microsoft Azure)

Go Wild! Electronic Game Checking System, West Virginia Division of Natural Resources – Senior Application Developer. (10/2013 – Ongoing) Mr. Meisel is part of the development team responsible for implementing an electronic licensing solution for the state of West Virginia. He has designed and implemented new functionality within the system using Microsoft technologies such as ASP.NET, MVC, C#, SQL, SQL Server Reporting Services and WCF. In addition, he has helped to establish development processes, quality control measures and deployment procedures. (Software: ASP.NET, ASP.NET MVC, C#.NET (4.0, 4.5), SQL Server Reporting Services, SQL Server 2008/2012)

COMPASS Licensing System, Maryland Department of Natural Resources – Senior Application Developer. (01/2015 – 05/2017) Mr. Meisel is the lead developer and a primary architect for the COMPASS application. His responsibilities include application architecture, establishing coding standards, outlining development processes as well as overall design and development. He is a proponent of the Agile Scrum development methodology and has been leading the team through this process. Mr. Meisel works closely with the Project Manager (PM) and Department of Natural Resources (DNR) Project Director to address any immediate concerns of the client and follow them to resolution. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET

(4.0, 4.5), XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Windows, SASS, jQuery, Agile development, W3C standards, Git)

Design Standards - Electronic Bid Documents, Maryland Aviation Administration – Senior Application Developer. (11/2013 – 08/2014) Mr. Meisel is responsible for the design and development of version "2.0" of the AirDocs application. The application consists of several modules which include Designer Tools and Engineering Documents. Functionally, the application allows users to view submitted documents, group documents into shopping carts, and share documents with other users. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), JSON, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Windows, jQuery)

Content Management System for Automotive Dealers, Baltimore, Maryland

Team Lead / Senior Developer. (05/11 – 11/13) Mr. Meisel was responsible for the design, development and maintenance of a state-of-the-art adaptive Content Management System (CMS) for automotive dealers. He managed work for both on-shore and off-shore developers. Mr. Meisel worked closely with support and project leads to ensure the application met user expectations and he acted as a mentor for junior developers and off-shore staff. (Software: ASP.NET MVC, ASP.NET WebApi, SQL Server, backbone.js, jQuery, Solr, and Windows Identity Foundation)

KIDnet, Baltimore, Maryland

Senior Developer. (08/10 – 05/11) Mr. Meisel worked with a team of three developers, one business analyst and a project lead to develop an application for children's outcomes. The application was used as a tool to "improve the quality of behavioral health treatment for children and adolescents through outcomes evaluation." He participated in the new development of tools as well as acted as the technical lead for all support requests. Mr. Meisel also acted as the reporting lead which was responsible for creating and maintaining all clinical reports. (Software: ASP.NET Web Forms, SQL Server, SQL Server Reporting Services, and jQuery)

Clinical Hour Logger, Roanoke, Virginia

Principal Developer. (05/07 – 12/10) Mr. Meisel was responsible for the design, development and maintenance of a clinical hour reporting application for a private healthcare college in southwestern Virginia. As principle developer, responsible for all aspects of the software development lifecycle. The application replaced paper and pencil reporting of clinical hours with a module built into the Student Information System (SIS). Students and clinical staff alike accessed the module using the same mechanism they would to access grades, financial information, and course scheduling and management. The application increased the accuracy of clinical hour reporting which, in turn, generated hundreds of thousands of dollars in lost revenue. *(Software: ASP.NET Web Forms and SQL Server)*

Clinical Hour Logger, Roanoke, VA – Principal Developer. (05/07 – 12/10) Mr. Meisel was responsible for the design, development and maintenance of a clinical hour reporting application for a private healthcare college in southwestern Virginia. As principle developer, responsible for all aspects of the software development lifecycle. The application replaced paper and pencil reporting of clinical hours with a module built into the Student Information System (SIS). Students and clinical staff alike accessed the module using the same mechanism they would to access grades, financial information, and course scheduling and management. The application increased the accuracy of clinical hour reporting which, in turn, generated hundreds of thousands of dollars in lost revenue. *(Software: ASP.NET Web Forms and SQL Server)*

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Master of Science in Information Systems, 2010
University of Maryland, Baltimore County
1000 Hilltop Cir, Baltimore, MD 21250

Bachelor of Science in Computer Science, 2007
Radford University
E Main St, Radford, VA 24141

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

N/A

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)
Information required should include: environments, hardware, software, tools and databases.

ASP.NET, ASP.NET MVC, ASP.NET WebAPI, C#, SQL Server, Visual Studio, VB.NET, WCF, and Entity Framework, backbone.js and AngularJS JavaScript frameworks, Oracle, MongoDB, Solr, JavaScript, CSS and HTML.

REFERENCES
A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	***Company***	***Phone***	***Fax***	***Email***
Evan Yett	***Washington Department of Fish and Wildlife***	***360-902-2324***	***360 902-2945***	***evan.yett@dfw.wa.gov***
Robert D. Swan Jr.	***Maryland Department of Natural Resources***	***410-260-8368***	***410-260-8373***	***robert.swan@maryland.gov***
Charlie Kennedy	***West Virginia Division of Natural Resources***	***304-558-3315***	***304-558-4115***	***Charles.E.Kennedy@wv.gov***

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***x***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Jon Harrison***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Implementation Lead***		
# of Years in Classification:	***9***	**# of Years with Firm:**	***11***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Harrison has 17 years of experience and is highly skilled in the design, development, and implementation of enterprise IT, GIS, and business and data collection applications for many State and Local government agencies. Mr. Harrison specializes in quality oversight and code review for various projects related to the size and scope of the NDOW. He is experienced with a wide array of programming languages and software packages and applies them in support of software development solutions. He oversees JMT's growing application development team with experience developing / modifying applications using ASP.NET (MVC and Web Forms), C#.NET, Silverlight, JavaScript, Flex, HTML, VB, experience with ArcGIS Server, ArcSDE and ArcObjects, GeoMedia and strong knowledge with SQL, Triggers and Stored Procedures. He also has experience with the analysis of program and production problems as well as working knowledge of Oracle and SQL Server.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Applications Manager. (04/2017 – Ongoing) Mr. Harrison provided leadership on the project; both as the Application's Manager and as the lead data migration specialist. In the role of Application's Manager, Mr. Harrison met weekly with the lead architect to go over major design decisions as well as any resource issues. He also met with project managers on a regular basis to provide insight and assistance on topics such as resource planning, testing, production releasing planning, and over all development procedures. In the role of lead data migration specialist, Mr. Harrison analyzed the existing data, created entity and field mappings between the old and new system, wrote migration procedures, validated results, wrote implementation plans, and met with the Washington leadership team bi-weekly to report progress, elicit requirements, and discuss any data related issues. (Software: ASP.NET, ASP.NET WebAPI, Visual Studio, Entity Framework, AngularJS, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Serve, Agile development)

Go Wild! Electronic Game Checking System, West Virginia Division of Natural Resources – Applications Manager. (10/2013 – Ongoing) Mr. Harrison led the design, development, testing, and deployment of the Electronic Game Checking System for the West Virginia Division of Natural Resources. The system was designed as a service oriented architecture built on top of multiple SQL Server 2012 databases. The web services and web portal were developed utilizing Microsoft's .NET 4.5 technology. As part of the design phase, Mr. Harrison worked with the UI team to build mock-ups based on the requirements of the system. Once vetted by the client, Mr. Harrison worked with a team of UI specialists, applications developers, and

database developers to build the system from the ground up. As each piece of the architecture was finished development, Mr. Harrison worked with the testing team to thoroughly test the code against the requirements. Once the development and testing were complete, Mr. Harrison led the deployment of the application; which consisted of a hosted solution and a warm back-up site powered by Microsoft's Azure technologies. Since the release, Mr. Harrison works with the development team to support operations and maintenance, including such tasks as; disaster recovery, database maintenance plans, application enhancements, customer data support, and support provided directly to the client. (Software: ASP.NET, ASP.NET WebAPI, ASP.NET MVC, Razor, Visual Studio, Entity Framework, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Serve, Agile development)

In-Store Implementation of MyAlaska, Alaska Department of Fish & Game – Applications Manager. (06/2015 – 08/2015) Mr. Harrison is leading the system architecture of a vendor portal for vendors to manage employees, provide customer service, view invoices, and pay automatic electronic invoices. His role includes attending weekly scrum meetings, guiding work priorities, architecting the system, monitoring system development against the architecture, overseeing the QA process, and working with the development and testing teams. (Software: ASP.NET, ASP.NET WebAPI, ASP.NET MVC, Razor, Visual Studio, Entity Framework, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Serve, Agile development)

COMPASS System, Washington Department of Fish and Wildlife – Applications Manager. (05/2011 – 04/2015) Mr. Harrison architected the design of a new relational database and customer portal for Maryland Department of Natural Resources that is used to track sports licensing in Maryland. The project was the first step in building a future web-based customer service delivery system. This contract was the initial contract that was used to clean data in the current COIN System. The project entailed data cleansing and data migration from a SQL Server 2000 disconnected Windows system to a SQL Server 2005 connected web-based system. Mr. Harrison was also responsible for overseeing the various development and support staff including junior developers and database administrators for this project. After the initial release of the Compass System, Mr. Harrison oversaw the evolution of the architecture as maintenance tasks and enhancements were requested. Jon worked with the development team to design and implement these enhancements while maintaining quality and consistency in the production environment. One of the major enhancements under this project was the addition of Commercial Fishing Licenses. The semi-retired system called COIN was still being used for this functionality. Jon developed the migration of data from the COIN system to the Compass system. A whole new set of web services were built on top of the newly designed database for Commercial Fishing Licenses and a new section was built in the web portal. Building off of the successful Compass system, the Compass V2 project is currently being architected and developed. Mr. Harrison is overseeing the architecture and development; while also switching the development to a full Scrum-based development process. The project includes upgrading many pieces of the system; including the .NET framework to 4.5. (Software: ASP.NET, ASP.NET WebAPI, ASP.NET MVC, Razor, Visual Studio, Entity Framework, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Serve, Agile development)

Vessel Information Management System (VIMS), Gallagher Marine Systems – Applications Manager. (02/2010 – 09/2010) Mr. Harrison designed and managed the development of a Vessel Information Management System for Gallagher Marine Systems. The system contained multiple components including a Windows-based disconnected field application, a Windows-based connected office application, a Microsoft Word add-in, a web-based customer portal, and a relational database. The database was developed in SQL Server 2008. (Software: ASP.NET, Visual Studio, WCF, JavaScript, CSS, HTML, C#.NET (4.0, 4.5), SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, Agile development)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Bachelor of Science in Information Systems Management, 2003
University of Maryland, Baltimore County
1000 Hilltop Cir, Baltimore, MD 21250

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

N/A

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)
Information required should include: environments, hardware, software, tools and databases.

VB.NET (2.0, 3.5, 4.0), C#.NET (2.0, 3.5, 4.0), ASP.NET (2.0, 3.5, 4.0), Microsoft AJAX, SharePoint, Javascript, HTML, XML, VBA, VB 6.0, ANSI C++, C, T-SQL, SQL Server 2000/2005/2008/2012, Oracle 10g/11g, PostgreSQL, Access, SharePoint, Install Shield, Visual Sourcesafe, Microsoft's Team Foundation Server, Subversion, Microstation's MDL v7/8, ESRI ArcObjects, Cartegraph, and AutoCAD. VB.NET 2003/2005, SQL Server Reporting Services, Crystal Reports, Access, Install Shield, Test Track Pro, AutoCAD, Microstation, and Microstation's MDL v7/8.

REFERENCES
A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	*Company*	*Phone*	*Fax*	*Email*
Evan Yett	*Washington Department of Fish and Wildlife*	*360-902-2324*	*360 902-2945*	*evan.yett@dfw.wa.gov*
Robert D. Swan Jr.	*Maryland Department of Natural Resources*	*410-260-8368*	*410-260-8373*	*robert.swan@maryland.gov*
Charlie Kennedy	*West Virginia Division of Natural Resources*	*304-558-3315*	*304-558-4115*	*Charles.E.Kennedy@wv.gov*

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***x***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Kevin Yanuk***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Applications Developer***		
# of Years in Classification:	***7***	**# of Years with Firm:**	***6***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Yanuk has 6 years of experience in geospatial data development, data management, software application support, and database maintenance.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Application Developer. (04/2017 – Ongoing) Mr. Yanuk designed and developed the JavaScript architecture of the LRS platform used for the State of Washington WILD System. He designed and developed a JavaScript compiler to assist in a custom LRS solution for JMT, and actively assisted in the development of UI components for the LRS application. (Software: ASP.NET WebAPI, Visual Studio, Entity Framework, C#.NET (4.0, 4.5), SQL Server 2008/2012, Microsoft's Team Foundation Server, JavaScript, AngularJS, NodeJS/NPM, Babel, HTML 5, JSON, W3C standards Git, Microsoft Windows, Linux, Agile development)

COMPASS, Maryland Department of Natural Resources – Application Developer. *(06/2015 – 11/2015)* ***Mr. Yanuk developed a new GIS system for creating valid waterfowl blind locations off the Maryland shoreline. He used all free, open-source GIS and web technologies. (Software: AngularJS, MongoDB, OpenLayers3, TurfJS)***

Water Supply Information and Permitting System, Maryland Department of the Environment – Application Developer. (05/2013 – 08/2013) Mr. Yanuk integrated new functionality to include dynamic PDF-printing of the current web map view. Google-Earth integration was also added to allow for extraction of current map extent and permit geometry, which was automatically opened and zoomed to in Google Earth via a single button click. (Software: ASP.NET MVC, Razor, Visual Studio, JavaScript, HTML 5, C#.NET (4.0, 4.5, JSON, ESRI JavaScript API, Microsoft Windows, Linux, jQuery, W3C standards)

911 Dispatch Field Verification and Collection Application, Maryland Aviation Administration – Application Developer. (01/2013 – 10/2013) Mr. Yanuk assisted in the development of a field verification and collection application for the Maryland Aviation Administration's 911 dispatch system for the BWI campus. He assisted in the design of workflow for field collection and verification of various on-ground features, including address points, and street centerlines. Mr. Yanuk translated prototypes of application forms into C# for testing and final use. He fixed various bugs and also created user accounts for MAA staff on laptops which the application was to be used in the field, and loaded latest versions of the application itself on the laptops. (Software: Visual Studio, C#.NET (4.0, 4.5), C#.NET WinForms, XML, ArcGIS Desktop, ArcGIS Engine API, ArcObjects, Microsoft Windows)

Sign Management Inventory Application, Delaware Valley Regional Planning Commission – Application Developer. (07/2013 – 07/2015) Mr. Yanuk was the sole developer charged with the design and development of a desktop application for collecting the retroreflectivity, as well as managing and updating the inventory of road signs in Mercer County, New Jersey. The application spoke directly to a retroreflectometer device via Bluetooth to capture GPS location, date, sign barcodes and retroreflectivity. (Software: Visual Studio, C#.NET (4.0, 4.5), C#.NET WinForms, XML, ArcGIS Desktop, ArcGIS Engine API, ArcObjects, Microsoft Windows)

GIS and Utility Management Systems Support, Howard County, MD – Application Developer. (09/2012 – 01/2013) Mr. Yanuk imported CAD annotation and object data to GIS for use in the development of a GIS system for Howard County's sewer system management. He provided quality control and quality assurance for GIS sewer data to maintain accuracy and consistency. He referenced contract drawings to solve inconsistencies between CAD and modeled GIS data and maintained and updated versions of SDE database to control editing workflow between multiple technicians and analysts. Mr. Yanuk wrote Python scripts and .NET add-ins to enhance analysis and improve workflow. (Software: ASP.NET, ASP.NET MVC, Visual Studio, AngularJS, MongoDB, JavaScript, C#.NET (4.0, 4.5), ArcGIS Server, ArcObjects, Microsoft Windows)

ADA Inventory and Compliance Assessment, Delaware Department of Transportation – Application Developer. (04/2012 – 02/2013) Mr. Yanuk provided quality control and quality assurance for field-collected GIS data of Delaware's infrastructure in accordance to ADA compliance standards. He transferred and synced GIS data between handheld field collection devices, and desktop machines for up to date analysis and data management. He provided GIS analysis and cartography for visualizing accessible pathways between specific address points and bus stops. Mr. Yanuk developed a .NET application to automatically update fields using specific spatial, prioritization, and cost calculations for feature classes in a main publication SDE database. He provided web development support in creating and maintaining map services, and writing XML content for the web-map legend, and various widgets. (Software: Visual Studio, C#.NET (4.0, 4.5), C#.NET WinForms, XML, ArcGIS Desktop, XML, ArcGIS Server, ArcObjects, Microsoft Windows)

GIS Enterprise Map Viewer, Washington Suburban Sanitary Commission (WSSC) – Application Developer. (05/2016 – 07/2016) Mr. Yanuk co-developed the framework and module systems for an updated version of the WSSC Enterprise Map viewer using new JavaScript technologies on both client and server (AngularJS, TypeScript, NodeJS, MongoDB+Oracle and ESRI JavaScript API) from an existing Silverlight Enterprise mapping application. The solution is built on Node js, Angular, Typescript, and Esri's ArcGIS Server technology. Mongo db is used for logging and Oracle is used for configuration storage. The solution is modular that allows for relatively easy expansion, and scalable. Many generic widgets were created for the initial deployment and additional development will be continued by the client and possibly other developers. (Software: AngularJS, TypeScript, NodeJS, MongoDB+Oracle and ESRI JavaScript API)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Master of Science in Geospatial Information Sciences, 2013
Bachelor of Science in Geography/GIS, 2010
College Park, MD 20742

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

N/A

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

C#.NET***, ASP.NET, ASP.NET MVC, ASP.NET, MongoDB, XML, SQL Server 2008/2012, OpenLayers3, TurfJS, ArcGIS Desktop, ArcGIS Engine, ArcGIS Mobile, WinForms, Visual Studio, TypeScript, MongoDB+Oracle and ESRI JavaScript AP, Angular JS, ArcObjects***

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	***Company***	***Phone***	***Fax***	***Email***

Evan Yett	***Washington Department of Fish and Wildlife***	***360-902-2324***	***360 902-2945***	***evan.yett@dfw.wa.gov***
Robert D. Swan Jr.	***Maryland Department of Natural Resources***	***410-260-8368***	***410-260-8373***	***robert.swan@maryland.gov***
Charlie Kennedy	***West Virginia Division of Natural Resources***	***304-558-3315***	***304-558-4115***	***Charles.E.Kennedy@wv.gov***

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***x***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Laure Bowman***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Systems Analyst & Trainer***		
# of Years in Classification:	***5***	**# of Years with Firm:**	***14***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Ms. Bowman has over 34 years of experience in database management and systems analysis. Ms. Bowman is experienced with the software development lifecycle as illustrated by her involvement in projects from requirements analysis to applications design and development to documentation and training. Most recently, Ms. Bowman has been involved with managing testing of the applications the JMT Team develops.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Systems Analyst. (05/2016 – Ongoing) Ms. Bowman has been involved in requirements elicitation sessions, developing user stories for development of the new WDFW WILD system based on JMT's solution. She works closely with the project manager, client stakeholders, and JMT development team to ensure the application meets or exceeds all requirements and end-user expectations. As Systems Analyst, Ms. Bowman identifies any gaps between application functionality and client requirements and works with the Project Manager to determine what approach to take to address these gaps. Ms. Bowman also works closely with the JMT Testing team to support testing efforts as well as tests business rules in the application. She is also working with the IVR vendor to ensure all big game harvest reporting will continue seamlessly when WDFW crosses over to the JMT application in mid-season. (Software: Microsoft Azure/Microsoft SQL Server 2016, Microsoft SQL Server Management Studio, Microsoft's Team Foundation Server/Team Services, Kaseya (remote control tool), Microsoft Office, Web Ex Productivity Tools)

Electronic Game Checking System, West Virginia Division of Natural Resources – Systems Analyst/Test Coordinator/Trainer. (01/2014 – Ongoing) Ms. Bowman works closely with the Project Manager, Applications Development Team, and Interactive Design Specialist to ensure the application meets or exceeds all requirements and end-user expectations. As Systems Analyst, Laure identified any gaps between application functionality and client requirements. She was also responsible for developing the test plan and all cases for three iterations of applications development. In her role as Trainer, Ms. Bowman supported the Project Manager in delivering training to the 180 license agents, as well as DNR staff and Help Desk staff. She was responsible for writing the user documentation provided via the application. In the Operations and Maintenance phase of the contract, Ms. Bowman continues to assist the project manager and WV ELS Help Desk staff to support the application. Ms. Bowman has been instrumental in the analysis and testing of the regular software updates that address issues and enhancement requests that are agreed upon with the client. (Microsoft SQL Server 2012, Microsoft SQL Server Management Studio, Microsoft's Team Foundation Server, Kaseya (remote control tool), Microsoft Office including Microsoft PowerPoint)

COMPASS, Maryland Department of Natural Resources – Systems Analyst. (01/2012 – Ongoing) Ms. Bowman worked closely with the project manager and applications development staff to understand the requirements for this integration of commercial fishing licenses, Pound Net licenses, Wait Lists, and Lottery products into COMPASS. She performed testing of new and enhanced functionality developed for the Maryland Department of Natural Resources as part of the COMPASS web application. She provided feedback on user interface and functionality to the application developers and project manager. The testing workflow was implemented in Team Foundation Server (TFS) to facilitate coordination between the Project Manager, development and testing staff. Ms. Bowman provides ongoing support of the COMPASS Electronic Licensing web application by testing any new and enhanced functionality developed for MD DNR. She ensures the system meets requirements and provides feedback on the user interface and functionality to the application developers and project manager. The most recent enhancements include Commercial Fishing Authorizations, Pound Net Licenses, and Wait Lists for Commercial Fishing Authorization products. (Microsoft SQL Server 2008, Microsoft SQL Server Management Studio, Microsoft's Team Foundation Server, Microsoft Office including Microsoft PowerPoint)

Pavement Assessment and Management System (PAMS), Prince George's County, Maryland – Systems Analyst/Technical Writer. (10/2011 – 05/2017) Ms. Bowman was involved with researching US ACE MicroPAVER system, third party systems that interface between Esri's ArcGIS and MicroPAVER such as Azteca CityWorks Pavement Management Interface to determine a feasible method for bi-directional transfer of pavement segments and PCI scores between ArcGIS and MicroPAVER. Ms. Bowman reviewed functional specifications and worked closely with the team to ensure the ArcGIS desktop Add-In application and associated data model met functional requirements and exceeded client expectations. Based on functional requirements, she executed a test plan for new work flows to manage pavement segments, capture multiple work history events and deteriorate pavement condition (PCI scores) in GIS instead of MicroPAVER. Ms. Bowman participated in requirements gathering and documentation sessions with the client and assisted with refinement of functional requirements for development of ArcGIS Desktop and Spatial Analyst tools to facilitate generation of specific needs list utilizing varied criteria and roadway project formulation. She was involved in meetings with the client to document and elicit requirements for the new Project Formation Tools functionality. (Software: ArcGIS Desktop, Bugzilla, Oracle SQL Developer, Oracle 11g R2, Microsoft Office)

Water Supply Information and Permitting System (WSIPS), Maryland Department of the Environment – Systems Analyst/Test Manager. (08/2012 – 05/2014) Ms. Bowman performed testing of the new web permitting system, WSIPS, developed for MDE. She documented feedback on user interface and functionality to the application developers and project manager. The testing workflow was implemented in Team Foundation Server (TFS) to facilitate coordination between the Project Manager, development and testing staff. (Microsoft SQL Server 2012, Microsoft SQL Server Management Studio, Microsoft's Team Foundation Server, Microsoft Office including Microsoft PowerPoint)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Bachelor of Science in Wildlife Biology, 1983
Colorado State University
Fort Collins, CO 80523

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

N/A

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

VB.NET, VB, VBA, C#.NET, ESRI ArcGIS Desktop SDK, ESRI ArcGIS Mobile SDK, Visual Studio 2003 through 2012, Team Foundation Server (TFS) 2010-2013, Microsoft Test Manager, Oracle, SQL Server, MS Access, ArcGIS Desktop, ArcGIS Engine, ArcGIS Mobile

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

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Name	Company	Phone	Fax	Email
Evan Yett	Washington Department of Fish and Wildlife	360-902-2324	360 902-2945	evan.yett@dfw.wa.gov
Robert D. Swan Jr.	Maryland Department of Natural Resources	410-260-8368	410-260-8373	robert.swan@maryland.gov
Charlie Kennedy	West Virginia Division of Natural Resources	304-558-3315	304-558-4115	Charles.E.Kennedy@wv.gov

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***x***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Jon Lauer***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Applications Developer***		
# of Years in Classification:	***5***	**# of Years with Firm:**	***8***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Jon Lauer has 5 years of experience maintaining and developing software applications. He has extensive experience with the Microsoft stack which includes .NET, SQL Server, and related tools. He also has worked with user interface frameworks such as JavaScript, CSS and HTML. He has served as a team and project lead during periods of his career. He has experience working in both the public and private sectors.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Application Developer. (05/2016 – Ongoing) Mr. Lauer is assisting in the development of Washington's new WILD system. He is involved in all aspects of application development including setting up build processes/environments, configuring the backend services, creating/managing database tables/records, and building out UI components to talk to services. (Software: C#, asp.net WebAPI, AngularJS, Javascript, EntityFramework, Sql server, SASS)

Electronic Game Checking System, West Virginia Division of Natural Resources – Application Developer. (10/2013 – 05/2017) Mr. Lauer assisted with development of a public facing web-based system for West Virginia's Department of Natural Resources. The system utilized Microsoft's SQL Server 2012 R2 as the backend database. The software solution was built on Microsoft's MVC 5.0 framework with C# .NET utilizing a service oriented architecture approach. Reports were created in SQL Service Reporting Services. He continues to assist with yearly maintenance. (Software: ASP.NET MVC, C#.NET (4.0, 4.5), SQL Server Reporting Services, SQL Server 2008/2012)

COMPASS, Maryland Department of Natural Resources – Application Developer. (10/2014 – 04/2016) Mr. Lauer assisted with development of a public facing web-based system for Maryland's Department of Natural Resources. The system utilized Microsoft's SQL Server 2008R2 as the backend database. The software solution was built on Microsoft's MVC 5.0 framework with C#.NET utilizing a service oriented architecture approach. Reports were created in SQL Service Reporting Services. Front-end functionality was written in AngularJS v1.3. (Software: AngularJS, C#.NET (4.0, 4.5), SQL Server Reporting Services, SQL Server 2008/2012)

In-Store Implementation of MyAlaska, Alaska Department of Fish & Game – Application Developer. (06/2015 – 02/2016) Mr. Lauer assisted with development of a public facing web-based system for Alaska's Department of Fish and Game. The system utilized Microsoft's SQL Server 2012 R2 as the backend database. The software solution was built on Microsoft's MVC 5.0 framework with C# .NET utilizing a layered

architecture with separation of concern. Reports were created in SQL Service Reporting Services. (Software: ASP.NET MVC, C#.NET (4.0, 4.5), SQL Server Reporting Services, SQL Server 2008/2012)

Water Supply Information and Permitting System, Maryland Department of the Environment – Application Developer. (03/2012 – 01/2015) Mr. Lauer aided in the development of a new water permitting system for Maryland's Department of the Environment. The application is developed using C#.NET, MVC4 and web services with a SQL Server 2012 back end constraints. (Software: ASP.NET MVC, C#.NET (4.0, 4.5), SQL Server 2008/2012)

Vessel Information Management System (VIMS), Gallagher Marine Systems – Application Developer. (05/2011 – 07/2011), (04/2014 – 06/2014) Mr. Lauer assisted with the development of a Vessel Management system for Gallagher Marine Systems. The system contained multiple components including a Windows-based disconnected field application, a Windows-based connected office application, a Microsoft Word add-in, a web based customer portal, and a relational database. The database was developed in SQL Server 2008. The Windows-based applications utilized Microsoft's Windows Presentation Foundation (WPF) technologies. The web-based application was ASP.NET/C#.NET 3.5 web application. (Software: ASP.NET, C#.NET (4.0, 4.5), SQL Server Reporting Services)

Vessel Information Management System (VIMS), Gallagher Marine Systems – Application Developer. Mr. Lauer assisted with the development of a Vessel Management system for Gallagher Marine Systems. The system contained multiple components including a Windows-based disconnected field application, a Windows-based connected office application, a Microsoft Word add-in, a web based customer portal, and a relational database. The database was developed in SQL Server 2008. The Windows-based applications utilized Microsoft's Windows Presentation Foundation (WPF) technologies. The web-based application was ASP.NET/C#.NET 3.5 web application. (Software: ASP.NET, C#.NET (3.5), SQL Server 2008)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Bachelor of Science in Information Technology, 2014
Excelsior College
7 Columbia Cir, Albany, NY 12203

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

N/A

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

.NET, ASP.NET/C#.NET, MVC4, SQL Server, JavaScript, CSS and HTML

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	Company	Phone	Fax	Email
Evan Yett	Washington Department of Fish and Wildlife	360-902-2324	360 902-2945	evan.yett@dfw.wa.gov
Robert D. Swan Jr.	Maryland Department of Natural Resources	410-260-8368	410-260-8373	robert.swan@maryland.gov
Charlie Kennedy	West Virginia Division of Natural Resources	304-558-3315	304-558-4115	Charles.E.Kennedy@wv.gov

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***x***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Alan Papa***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Customer Care Manager***		
# of Years in Classification:	***3***	**# of Years with Firm:**	***5***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Since 2014, Mr. Papa has been in the role as the Customer Care Manager for JMT. This position is a hybrid Help Desk/Customer Service Manager role for our external clients. Currently, he supports the state of West Virginia DNR locations, POS agent locations, and their residents. At the onset, Mr. Papa began implementing the systems and all the components required by contract. This included the computer, peripherals, and field installation work. In addition, Mr. Papa also serves as the Tier 3 Help Desk associate for the State of Washington's WILD System, handling issues that are unresolvable from the State's Help Desk Agents.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Customer Care Manager. (05/2016 – Ongoing) Mr. Papa is working with the Deputy Project Manager on the procurement, configuration, and deployment of License Vendor hardware. He is involved with the help desk training curriculum development. Mr. Papa will serve as the Tier 3 Help Desk associate, handling issues that are unresolvable from Washington's Help Desk Agents. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SharePoint, XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, OpenLayers3, TurfJS, ArcGIS Desktop, Kaseya (remote control software distribution tool), Microsoft Windows, Microsoft Server, Microsoft Office Suite, SASS, jQuery, Agile development, UT/UX, W3C standards, Git, Adobe Design Suite, Indigo Studios)

Electronic Game Checking System, West Virginia Division of Natural Resources – Customer Care Manager. (08/2013 – *Ongoing)* ***Mr. Papa is in charge of the point of sale (POS) agents' hardware/software implementation and help desk support for West Virginia's electronic licensing and game checking system. His role includes:***

- ***Managing a team of field technicians traveling to store locations for on-site installations***
- ***Serving as the initial point of contact for troubleshooting POS agent hardware/software PC and printer problems***
- ***Providing telephone and in-person support to users for directories and applications assistance***

As Customer Care Manager, Mr. Papa is supporting the state of West Virginia DNR locations, POS agent locations, and their residents as well. At the onset, he began implementing the systems and all the

components required by contract. This included the computer, peripherals, and field installation work. The solution went live on January 1, 2015, requiring Help Desk support 7 days a week from the times of 9am until 9pm. JMT is using TalkDesk to provide a toll-free line to the state of WV. Overnight and weekend support is outsourced to Vitalyst with Mr. Papa as the issue escalation contact. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SharePoint, XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, OpenLayers3, TurfJS, ArcGIS Desktop, Kaseya (remote control software distribution tool), Microsoft Windows, Microsoft Server, Microsoft Office Suite, SASS, jQuery, Agile development, UT/UX, W3C standards, Git, Adobe Design Suite, Indigo Studios)

COMPASS, Maryland Department of Natural Resources – Customer Care Manager. (2014 – Ongoing) Mr. Papa is in charge of basic support for COMPASS which includes activating accounts, basic maintenance, and resetting passwords. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SharePoint, XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, OpenLayers3, TurfJS, ArcGIS Desktop, Kaseya (remote control software distribution tool), Microsoft Windows, Microsoft Server, Microsoft Office Suite, SASS, jQuery, Agile development, UT/UX, W3C standards, Git, Adobe Design Suite, Indigo Studios)

Guaranteed Pavement Information System (GPIS), City of Philadelphia – Customer Care Manager. (2014 – Ongoing) Mr. Papa is in charge of the Talkdesk toll-free help desk number implementation. JMT tracks issues with the system via email and entered into TFS. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SharePoint, XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, OpenLayers3, TurfJS, ArcGIS Desktop, Kaseya (remote control software distribution tool), Microsoft Windows, Microsoft Server, Microsoft Office Suite, SASS, jQuery, Agile development, UT/UX, W3C standards, Git, Adobe Design Suite, Indigo Studios)

Help Desk Technician – JMT Technology Group. *(2011 – 2014)* ***Mr. Papa provided customer support on help desk tickets for internal JMT employees and offices via phone, email, and on-site assistance. He imaged pc's and laptops, repaired hardware, and was in charge of the setup, maintenance and repair of local area networks. Other duties such as installs, server maintenance and software support were facilitated on a daily basis. He led the implementation of JMT's new Altiris system and managed the 2013 Refresh project. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SharePoint, XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, OpenLayers3, TurfJS, ArcGIS Desktop, Kaseya (remote control tool), Microsoft Windows, SASS, jQuery, Agile development, UT/UX, W3C standards, Git, Adobe Design Suite, Indigo Studios)***

Data Networks/BCPS – Project Lead/Network Administrator. (04/2010 – 10/2010) Mr. Papa provided customer support on help desk tickets to Baltimore County Public Schools. He managed a team of 7 full-time and 2 part-time technicians on the Windows 7/Dell desktop rollout project. Mr. Papa trained 7 new technicians on Windows 7, networking, system issues and hardware/software fixes, as well as set up, installed, networked, and rolled out over 1900 pc's and laptops to 100+ different Baltimore County schools. Mr. Papa scheduled software and printer jobs from the deployment console in Altiris after completion of all Windows 7 imaging at schools. Mr. Papa was responsible for all network issues that arose in both schools and offices and performed troubleshooting of small and large scale issues. He also responded to various tickets within the county for multiple different issues including replacement

computer parts, printer issues, network issues, etc. (Software: ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SharePoint, XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, OpenLayers3, TurfJS, ArcGIS Desktop, Kaseya (remote control tool), Microsoft Windows, SASS, jQuery, Agile development, UT/UX, W3C standards, Git, Adobe Design Suite, Indigo Studios)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Bachelor of Science in Management Information Systems, 2006
Rowan University
201 Mullica Hill Rd, Glassboro, NJ 08028

CERTIFICATIONS
Information required should include: type of certification and date completed/received.

A+ Certification, 2002
Net+ Certification, 2002
MCP, 2002
MOUS, 2002

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)
Information required should include: environments, hardware, software, tools and databases.

ASP.NET, ASP.NET MVC, Razor, ASP.NET WebAPI, Visual Studio, WCF, Entity Framework, AngularJS, MongoDB, JavaScript, CSS, HTML 5, C#.NET (4.0, 4.5), SharePoint, XML, JSON, SQL Server Reporting Services, T-SQL, SQL Server 2008/2012, Microsoft's Team Foundation Server, OpenLayers3, TurfJS, ArcGIS Desktop, Kaseya (remote control tool), Microsoft Windows, SASS, jQuery, Agile development, UT/UX, W3C standards, Git, Adobe Design Suite, Indigo Studios

REFERENCES
A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	*Company*	*Phone*	*Fax*	*Email*
Evan Yett	*Washington Department of Fish and Wildlife*	*360-902-2324*	*360 902-2945*	*evan.yett@dfw.wa.gov*
Robert D. Swan Jr.	*Maryland Department of Natural Resources*	*410-260-8368*	*410-260-8373*	*robert.swan@maryland.gov*
Charlie Kennedy	*West Virginia Division of Natural Resources*	*304-558-3315*	*304-558-4115*	*Charles.E.Kennedy@wv.gov*

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Dominic Cilento***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Database Manager***		
# of Years in Classification:	***8***	**# of Years with Firm:**	***11***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Mr. Cilento has 11 years of experience developing GIS solutions for a variety of local and state agencies in Maryland. As JMT's database administrator, he is responsible for the integrity of production and development databases in various relational database management systems (RDMS) including Oracle, SQL Server, and PostgreSQL. These databases exist in JMT's environment, hosted servers, clients' servers, and the cloud (Microsoft Azure, Amazon EC2).

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – Database Manager. (04/2016 – 09/2016) Mr. Cilento is responsible for the SQL Azure system in various environments including Build, Test, Stage and Production. This includes performance optimization, deployment, and the overall system architecture. He designed, configured, and deployed business intelligence solutions including SQL Service Reporting Services, SQL Server Analysis Services, and SQL Server Integration Services. (Software: Microsoft Visual Studio 2012, Microsoft SQL Server Reporting Services, Microsoft SQL Server Analysis Services, Microsoft SQL Server Integration Services, Microsoft SQL Azure, Microsoft SQL Server 2016, T-SQL, Microsoft Team Foundation Server, Microsoft Windows Server 2016, Microsoft Azure Virtual Machines)

Electronic Game Checking System, West Virginia Division of Natural Resources – Database Manager. (01/2014 – Present) Mr. Cilento migrated production data into a new environment and created a system to track all data changes using stored procedures and audit databases. Mr. Cilento also maintained and tuned development, staging, and production mirror environments, instantiated SQL Server database from legacy source data, researched source data to derive ETL (Extract Transform and Load) Process, designed destination database to support source data and new application, migrated Legacy data into SQL Server, deployed databases in Production environment, created stored procedures, maintained database project in Visual Studio 2012, Data Analytics, produced reports, exhaustive comparison between legacy data and new database, and configured Transaction Log Shipping between Production environment and Microsoft Azure Warm Backup site. He continues to provide periodic maintenance support. (Software: Microsoft Visual Studio 2012, Microsoft SQL Server Reporting Services, Microsoft SQL Server 2012, T-SQL, Microsoft Team Foundation Server, Microsoft Windows Server 2012)

COMPASS, Maryland Department of Natural Resources – Database Manager. (2012 – Present) Mr. Cilento implemented Microsoft SQL Server Replication between two physically separate SQL Server instances. Additionally, he maintained databases and provided extensive research in a variety of Microsoft Publications

and Articles for Replication best practices. He configured SQL Server Replication between Production databases and DNR's Reporting databases as well as configured Log Shipping to synchronize changes made in Production to Reporting databases on DNR's network. Additionally, Mr. Cilento gave general SQL Server database support (backups, performance issues, data import and export) in Production, Stage, Test, and Development environments, established Transaction Log Shipping between the Production environment and a Reporting server located at the client (MD DNR) facility, migrated legacy Vessel data into new database, and developed scripts to compare legacy data with new database. He continues to provide periodic maintenance support. (Software: Microsoft SQL Server Reporting Services, Microsoft SQL Server 2008 R2, T-SQL, Microsoft Team Foundation Server, Microsoft Windows Server 2008)

AIRPortal, Baltimore/Washington International Thurgood Marshall Airport – Database Manager. (01/2015 – 08/2016) Mr. Cilento provided AIRPortal Support Services for GIS and Document Management, migrated ArcGIS Server 10.0 to 10.2.2, upgraded Oracle 11g ArcSDE 10 to ArcSDE 10.2.2, and gave general Oracle database support (backups, performance issues, data import and export). (Software: ESRI ArcGIS Desktop 10.x, ESRI ArcGIS Server 10.x, ESRI ArcSDE 10.x, Oracle 11g R2, Oracle Enterprise Manager, PL/SQL, SQL Developer)

Water Supply Information and Permitting System, Maryland Department of the Environment – Database Manager. (03/2012 – 01/2015) In support of a new, web-based system that manages water permits and enables customers to submit and track the status of permit applications electronically, Mr. Cilento instantiated the Microsoft SQL Server database from exported source CSV files. He researched source data to derive the ETL (Extract Transform, & Load) process. He designed a destination database to support source data and the new WSIPS application. He migrated legacy data into SQL Server. He deployed databases and map services at MDE. He created spatial views and stored procedures. He maintains the database project in Visual Studio 2012. He also provides data analytics, produces reports and exhaustively compares the legacy data to the new database to ensure accuracy. (Software: Microsoft SQL Server Reporting Services, Microsoft SQL Server 2008 R2, T-SQL, Microsoft Visual Studio 2012, Microsoft Team Foundation Server, Microsoft Windows Server 2008, ESRI ArcGIS Desktop 10.x, ESRI ArcGIS Server 10.x, ESRI ArcSDE 10.x)

Pavement Assessment and Management System (PAMS), Prince George's County, Maryland – Database Manager. (11/2012 – Present) Mr. Cilento created processes to allow for GIS edits to be imported into the MicroPAVER™ database. He developed curriculum for GIS editing of the Pavement Network. He developed tools to facilitate the editing process as well as to ensure data validity. He conducted training for Prince George's County DPW&T in the use of GIS to maintain the Pavement Network. He produced maps in a variety of formats showing the Pavement Condition Index (PCI) of Prince George's County Pavement Network. He continues to provide periodic maintenance support. (Software: ESRI ArcGIS Desktop 10.x, ESRI ArcGIS Server 10.x, ESRI ArcSDE 10.x, Oracle 11gR2, PL/SQL)

Vessel Information Management System (VIMS), Gallagher Marine Systems – Database Manager. (03/2010 – 01/2015) Mr. Cilento managed the SQL Server 2008 database, and created stored procedures to convert existing flat database model into relational database model. He migrated the existing production database into new relational model. His other services included extract transform and load (ETL), data cleansing, backups and general maintenance, SQL script creation as well as extensive quality control. Dominic provided Data Quality Improvement services by validating the data prior to migration to eliminate invalid values. He scrubbed the data and produced clean data ready for import into the new relational model. Quality was improved by eliminating redundant data inherent in the flat database model. Post-migration, he validated the data to ensure that the existing entities, attributes, & relationships were maintained in the new model. Dominic performed migration duties by importing existing flat tables into SQL Server. (Software: Microsoft SQL Server Reporting Services, Microsoft SQL Server 2008 R2, T-SQL, Microsoft Windows Server 2008)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Bachelor of Science in Geography and Environmental Systems, 2004
University of Maryland, Baltimore County
1000 Hilltop Cir, Baltimore, MD 21250

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

Certificate: Geographic Information Science, 2004

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)
Information required should include: environments, hardware, software, tools and databases.

ArcGIS Desktop10.x, ArcGIS Server10.x, ArcSDE 10.x, PostGIS, Oracle 11gR2, Microsoft SQL Server 2008-2016, Microsoft SQL Azure, MySQL, PostGreSQL, MongoDB, T-SQL, PL/SQL, Microsoft Azure Virtual Machines, UNIX/Linux, Microsoft Office, SQL Developer, Oracle Enterprise Manager, Microsoft Azure Portal

REFERENCES
A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	***Company***	***Phone***	***Fax***	***Email***
Evan Yett	***Washington Department of Fish and Wildlife***	***360-902-2324***	***360 902-2945***	***evan.yett@dfw.wa.gov***
Robert D. Swan Jr.	***Maryland Department of Natural Resources***	***410-260-8368***	***410-260-8373***	***robert.swan@maryland.gov***
Charlie Kennedy	***West Virginia Division of Natural Resources***	***304-558-3315***	***304-558-4115***	***Charles.E.Kennedy@wv.gov***

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Lucy Gorsky***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Business Analyst***		
# of Years in Classification:	***9***	**# of Years with Firm:**	***2***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Ms. Gorsky has been in the technology business for over 35 years with a proven ability to succeed in dynamic client environments over several business industries. Her business and technical skills include requirements definition and validation, system testing, quality assurance, and system documentation.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

HBMS Mapping Tools – Business Analyst (03/2016 - 07/2016) PennDOT BPR tasked JMT Technology Group (JMTTG) to assist in the initiative to upgrade its existing Highway Beautification Management System (HBMS). HBMS is a system to record Outdoor advertising locations and permits along advertising restricted routes. Ms. Gorsky was responsible for eliciting and developing requirements that supports the map feature that pinpoints the location of the billboards and provides information about the billboards. She completed a review of the existing HBMS functionality, organization and user interface. She met and followed up with PennDOT stakeholders to finalize and prioritize the requirements. A formal Requirements Document was delivered and accepted by the stakeholders. (Software: Visual Studio, SharePoint, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Office, CaseComplete, Balsamiq Mockups)

RFP Document Development, BWI Marshall Website, Maryland Aviation Administration – Business Analyst (01/2016 – Present) Ms. Gorsky was responsible for developing the RFP document for a new BWI Marshall website. Ms. Gorsky analyzed the current website, gathered the requirements from the organizations that manage the contents of the website, and identified/developed the requirements included in the RFP document. Ms. Gorsky also provided consultative support throughout the review and selection process. (Software: Visual Studio, SharePoint, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Office, CaseComplete, Balsamiq Mockups)

AIRPortal Planning Document *Management Library – Business Analyst (03/2016 – Present)* ***The Office of Planning and Environmental Services (OPES) of the Maryland Aviation Administration (MAA) tasked the JMT Technology Group (JMTTG) to provide assistance and direction to develop business processes to improve the organization's document management practices. The project worked towards identifying documents that will be migrated to an existing document management system (AIRDocs), developing a digitization strategy and developing requirements to implement an OPES interface for searching and retrieving documents. Responsibility included:***

• Inventoried, analyzed and categorized over 700 documents • Prepared a Discovery Results Summary report detailing the findings and proposed recommendations • Defined the user interface requirements to upload,

search and retrieve and manage documents. (Software: Visual Studio, SharePoint, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Office, CaseComplete, Balsamiq Mockups)

Environmental Permit Tracking System Modernization, Maryland Department of the Environment – Business Analyst (02/2015 – 03/2016) Ms. Gorsky gathered requirements to analyze MDE Permit procedures to support MDE's effort to plan the modernization of an existing system. She gathered and analyzed the needs of 12 MDE programs and over 80 permit applications. Ms. Gorsky developed the Functional Requirements Document and the Requirements Traceability Matrix. (Software: Visual Studio, SharePoint, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Office, CaseComplete, Balsamiq Mockups)

QSSI Inc. – Columbia, Maryland

Business Analyst/Technical Writer (06/2011 – 02/2015)

Ms. Gorsky was responsible for writing and editing technical documents including IACS user manuals for Applications, Help Desks and Approvers, and Security documents. She prepared the IACS Release Notes, involving working with the IACS team in documenting Change Requests (CR) and known issues. She worked with IACS subject matter experts to gather and document system requirements. Ms. Gorsky reviewed and edited system test cases and test plans as well as developed procedures to prepare and create technical documents to comply with Section 508 Standards. She was responsible for the creation the PDF 508 versions of the user manuals, prepared Power Points and presented new functionality and known issues presentations to business owners and Help Desk users prior to a release. She met with Center of Medicare and Medicaid Services (CMS) IACS GTL on a weekly basis to provide IACS support. IACS supports over twenty CMS applications, such as MA/MA-PD/PDP/CC, PQRS and DMEPOS Bidding System. She was responsible for the development business and system requirements for an existing system. She analyzed the Quality Domain/PV-PQRS business owner requirements. Ms. Gorsky also acted as Scrum Master, leading a team of developers, testers and business analysts to produce a working product every 4 to 6 weeks. (Software: Visual Studio, SharePoint, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Office, CaseComplete, Balsamiq Mockups)

Social Security Administration – Baltimore, Maryland

Business / Requirement Analyst. (12/2010 – 06/2011) Ms. Gorsky interfaced with the Social Security Income (SSI) subject matter experts to elicit the requirements and detail specifications for the Inbound Web Service. She prepared the Detailed System Specifications (DSS) document detailing the Inbound Web Service requirements and process flows as well as created a power point presentation of the web service for the Technical Review Board. She also wrote test plans, test cases and test scripts in addition to performing regression and system integration testing to validate and verify that the SSI application operated in accordance with system requirements and design specifications. She communicated and documented issues identified during testing. Ms. Gorsky was responsible for reviewing and modifying other analyst's documents, such as test scenarios and test scripts. (Software: Visual Studio, SharePoint, SQL Server 2008/2012, Microsoft's Team Foundation Server, Microsoft Office, CaseComplete, Balsamiq Mockups)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Bachelor of Science - Information Management, 1997
University of Maryland, University College
1616 McCormick Drive, Upper Marlboro, MD 20774

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

N/A

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

Oracle databases, SQL, Visual basic, VB.Net, HTML, Access, MS Office, Windows NT, XP, Crystal Reports, Clarity Software for Project Management, CaseComplete, Balsamiq Mockups

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	***Company***	***Phone***	***Fax***	***Email***
Evan Yett	***Washington Department of Fish and Wildlife***	***360-902-2324***	***360 902-2945***	***evan.yett@dfw.wa.gov***
Robert D. Swan Jr.	***Maryland Department of Natural Resources***	***410-260-8368***	***410-260-8373***	***robert.swan@maryland.gov***
Charlie Kennedy	***West Virginia Division of Natural Resources***	***304-558-3315***	***304-558-4115***	***Charles.E.Kennedy@wv.gov***

PROPOSED STAFF RESUME FOR RFP 3432

A resume must be completed for all proposed prime contractor staff and proposed subcontractor staff.

Company Name Submitting Proposal:	***Johnson, Mirmiran & Thompson, Inc.***

Check the appropriate box if the proposed individual is prime contractor staff or subcontractor staff.			
Contractor:	***X***	**Subcontractor:**	

The following information requested pertains to the individual being proposed for this project.			
Name:	***Christine Miller***	**Key Personnel: (Yes/No)**	***Yes***
Classification; i.e., Project Manager, Implementation Lead, etc.	***Interactive Design Specialist***		
# of Years in Classification:	***15***	**# of Years with Firm:**	***2***

BRIEF SUMMARY OF PROFESSIONAL EXPERIENCE
Information should include a brief summary of the proposed individual's professional experience.

Ms. Miller has 15 years of experience designing and developing interactive media and web applications. She currently serves as an Applications Developer in the JMT Technology Group. Prior work experience includes developing user interfaces and front-end development for responsive websites and web-based applications, managing design teams, and assisting in development of platform tools for the automotive industry. She also has experience in advertising and editorial layout, pre-press, and creation of marketing collateral.

RELEVANT EXPERIENCE
Information required should include: timeframe, company name, company location, position title held during the term of the project/position and software/hardware used during the project engagement.

Johnson, Mirmiran & Thompson, Inc. – Hunt Valley, Maryland

WILD System, Washington Department of Fish and Wildlife – User Experience Designer, Web Developer. (05/2016 – Present) Ms. Miller supports the Washington Department of Fish and Wildlife as a front-end developer for the WDFW Licensing and Registration System. Wireframes are created to illustrate workflows in Infragistics Indigo Studio, then mocked up in either Adobe Illustrator or Photoshop. HTML and Sass/CSS is used to create interfaces for the development team, as well as applying styling alongside development in AngularJS. (Software: AngularJS, Sass, HTML 5, Adobe Design Suite, Indigo Studio)

Electronic Game Checking System, West Virginia Division of Natural Resources – User Experience Designer, Web Developer. (10/2013 – Present) Ms. Miller supports the ongoing maintenance for West Virginia Division of Natural Resources as a front-end developer on the Electronic Licensing Application. HTML and Sass/CSS is used to create interfaces for the development team, as well as applying styling alongside development in MVC C#. (Software: CSS/Sass, HTML 5, Adobe Design Suite, Indigo Studio, AngularJS, MVC C#)

COMPASS, Maryland Department of Natural Resources – User Experience Designer, Web Developer. (10/2014 – Present) Ms. Miller supports the Maryland Department of Natural Resources as a front-end developer for the Compass Licensing Application. Wireframes are created to illustrate workflows in Infragistics Indigo Studio and Balsamiq, then mocked up in either Adobe Illustrator or Photoshop. HTML and Sass/CSS is used to create interfaces for the development team, as well as applying styling alongside development in MVC C# or AngularJS. (Software: CSS/Sass, HTML 5, Adobe Design Suite, Indigo Studio, AngularJS, MVC C#)

eGIS Landing Page, Maryland State Highway Administration – User Experience Designer, Web Developer. (10/2014 – Present) Ms. Miller supports the ongoing maintenance of the design and front-end development of a landing page for the MD State Highway Administration's eGIS applications, using Adobe Illustrator for designs, and Sass and CSS in an Ember.js framework. The site will enable users of the eGIS mapping applications to better search, identify and access various map data contents within the application's public

and private versions. Additionally, the application enables State Highway Administration users to create and manage public and private eGIS custom map contents. (Software: CSS/Sass, HTML 5, Adobe Design Suite, Ember.js)

Archived Bridge Photography Public eGIS Content, Maryland State Highway Administration – User Experience Designer, Web Developer. (02/2015 – Present) Ms. Miller supports the Maryland State Highway Administration's Cultural Resources group in the design of a Historic Bridges Viewer and its interface into a public facing interactive map application using a Javascript API. The application allows users to locate historic bridges throughout the state and access photos and details on each bridge. Mockups were created using Adobe Photoshop and HTML and Sass/CSS development support is done in an Ember.js framework. (Software: JavaScript, CSS/Sass, HTML 5, W3C standards, Adobe Design Suite)

CTP Automation, Maryland Aviation Administration – Web Developer. *(10/2014 – Present)* ***Ms. Miller supports the Maryland Aviation Administration as a front-end developer for the CTP project. Using Sass/CSS, HTML, and Javascript in an Angular.js MVC framework, mockups from the User Experience Designer are translated into fully functioning web applications. The purpose of CTP is to automate the processing of funding requests thought the organizational hierarchy of the Maryland Aviation Administration and facilitate the workflow process***

that was previously handled offline. (Software: AngularJS, HTML 5, Sass, Javascript)

EDUCATION

Information required should include: institution name, city, state, degree and/or Achievement and date completed/received.

Bachelor of Arts in Graphic Design, 2003
Millersville University
1 S George St, Millersville, PA 17551

CERTIFICATIONS

Information required should include: type of certification and date completed/received.

N/A

HARDWARE/SOFTWARE SUMMARY (BE SPECIFIC)

Information required should include: environments, hardware, software, tools and databases.

HTML/HTML5, CSS, Sass, Javascript, jQuery, Angular, Git, Agile development, ASP 2.0, VBScript, User testing, UI/UX, W3C standards, Adobe Design Suite, Indigo Studios, Visual Studios, WordPress

REFERENCES

A minimum of three (3) references are required, including name, phone number, fax number and email address.

Name	Company	Phone	Fax	Email
Evan Yett	Washington Department of Fish and Wildlife	360-902-2324	360 902-2945	evan.yett@dfw.wa.gov
Robert D. Swan Jr.	Maryland Department of Natural Resources	410-260-8368	410-260-8373	robert.swan@maryland.gov
Charlie Kennedy	West Virginia Division of Natural Resources	304-558-3315	304-558-4115	Charles.E.Kennedy@wv.gov

Submitted by:
Johnson, Mirmiran & Thompson, Inc.
40 Wight Avenue
Hunt Valley, MD 21030

SECTION IX
PRELIMINARY PROJECT PLAN

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Section IX – Preliminary Project Plan

5.6 PRELIMINARY PROJECT PLAN

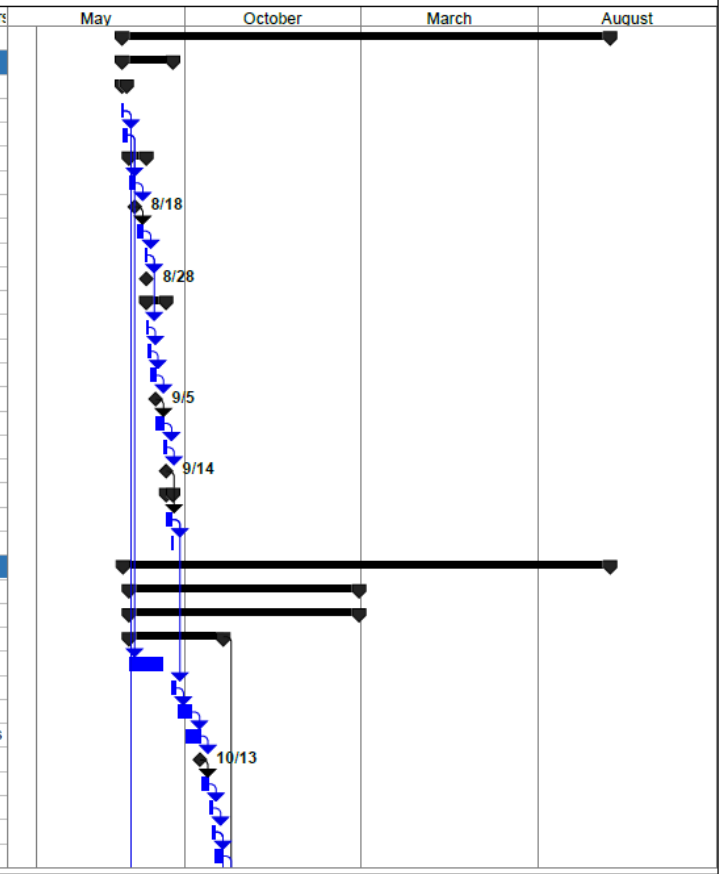
5.6.1 Vendors shall submit a preliminary project plan as part of the proposal, including, but not limited to:

5.6.1.1 Gantt charts that show all proposed project activities;

Please see JMT's proposed Gantt Chart on the following pages.

Master Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
1	**1 NDOW Licensing System**	**298 days**	**Tue 8/8/17**	**Mon 10/1/18**	
2	**1.1 Project Initiation**	**31 days**	**Tue 8/8/17**	**Wed 9/20/17**	
3	**1.1.1 Contract Award**	**4 days**	**Tue 8/8/17**	**Fri 8/11/17**	
4	1.1.1.1 Notice of Contract Award	1 day	Tue 8/8/17	Tue 8/8/17	
5	1.1.1.2 Internal Project Establishment	3 days	Wed 8/9/17	Fri 8/11/17	4
6	**1.1.2 Detailed Project Schedule**	**11 days**	**Mon 8/14/17**	**Mon 8/28/17**	
7	1.1.2.1 Develop Detailed Project Schedule	5 days	Mon 8/14/17	Fri 8/18/17	5
8	1.1.2.2 Deliver Draft Project Schedule to NDOW	0 days	Fri 8/18/17	Fri 8/18/17	7
9	1.1.2.3 NDOW Review and Feedback	5 days	Mon 8/21/17	Fri 8/25/17	8
10	1.1.2.4 JMT Revise and Finalize Project Schedule	1 day	Mon 8/28/17	Mon 8/28/17	9
11	**1.1.2.5 Deliverable: Project Schedule Submitted to NDOW**	0 days	Mon 8/28/17	Mon 8/28/17	10
12	**1.1.3 Project Management Plan**	**12 days**	**Tue 8/29/17**	**Thu 9/14/17**	
13	1.1.3.1 Develop Scope, Schedule and Cost Management Plans	1 day	Tue 8/29/17	Tue 8/29/17	10
14	1.1.3.2 Develop Quality, Change, and Staffing Management Plans	2 days	Wed 8/30/17	Thu 8/31/17	13
15	1.1.3.3 Develop Communication, Risk and Procurement Management Plans	2 days	Fri 9/1/17	Tue 9/5/17	14
16	**1.1.3.4 Deliverable: Project Management Plan Submitted to NDOW**	0 days	Tue 9/5/17	Tue 9/5/17	15
17	1.1.3.5 Client Review and feedback	5 days	Wed 9/6/17	Tue 9/12/17	16
18	1.1.3.6 Upate PMP	2 days	Wed 9/13/17	Thu 9/14/17	17
19	**1.1.3.7 Deliverable: Final Project Management Plan Submitted.**	0 days	Thu 9/14/17	Thu 9/14/17	18
20	**1.1.4 Kickoff Meeting**	**4 days**	**Fri 9/15/17**	**Wed 9/20/17**	
21	1.1.4.1 Prepare for Kickoff Meeting	3 days	Fri 9/15/17	Tue 9/19/17	19
22	1.1.4.2 Execute Project Kickoff Meeting	1 day	Wed 9/20/17	Wed 9/20/17	21
23	**1.2 Project Implementation**	**297 days**	**Wed 8/9/17**	**Mon 10/1/18**	
24	**1.2.1 System Analysis**	**140 days**	**Mon 8/14/17**	**Tue 2/27/18**	
25	**1.2.1.1 Functional Requirements Document**	**140 days**	**Mon 8/14/17**	**Tue 2/27/18**	
26	**1.2.1.1.1 Iteration 1 Requirements Elicitation and Documentation**	**58 days**	**Mon 8/14/17**	**Thu 11/2/17**	
27	1.2.1.1.1.1 Review RFP High Level Requirements	20 days	Mon 8/14/17	Mon 9/11/17	5
28	1.2.1.1.1.2 Execute Onsite Requirements Sessions	3 days	Wed 9/20/17	Fri 9/22/17	21
29	1.2.1.1.1.3 Plan and Execute Follow Up Sessions	10 days	Mon 9/25/17	Fri 10/6/17	28
30	1.2.1.1.1.4 Develop Functional Requirements Document (FRD)	10 days	Mon 10/2/17	Fri 10/13/17	29FS-5 days
31	**1.2.1.1.1.5 Deliverable: FRD Submitted to NDOW**	0 days	Fri 10/13/17	Fri 10/13/17	30
32	1.2.1.1.1.6 Review of FRD by NDOW	5 days	Mon 10/16/17	Fri 10/20/17	31
33	1.2.1.1.1.7 JMT Updates to FRD	2 days	Mon 10/23/17	Tue 10/24/17	32
34	1.2.1.1.1.8 NDOW Acceptance of FRD	2 days	Wed 10/25/17	Thu 10/26/17	33
35	1.2.1.1.1.9 Develop Requirements Traceability Matrix	5 days	Fri 10/27/17	Thu 11/2/17	34



Project: NDOW Proposed Schedule
Date: Fri 5/26/17

Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Progress
Milestone	Inactive Task	Manual Summary Rollup	Deadline
Summary	Inactive Milestone	Manual Summary	
Project Summary	Inactive Summary	Start-only	

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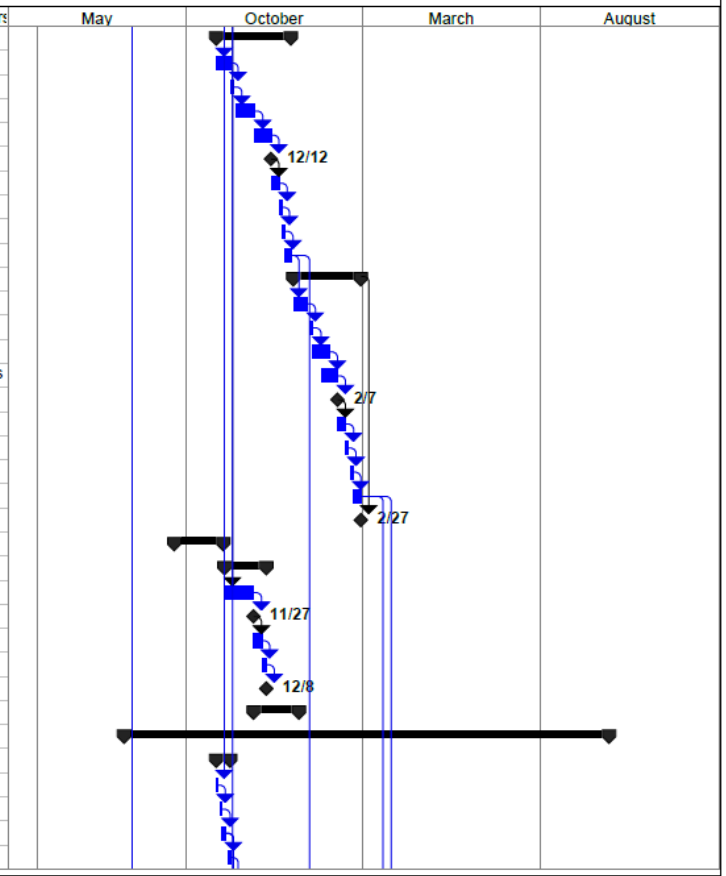
Master Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
36	**1.2.1.1.2 Iteration 2 Requirements Elicitation and Documentation**	**45 days**	**Fri 10/27/17**	**Fri 12/29/17**	
37	1.2.1.1.2.1 Review RFP High Level Requirements	8 days	Fri 10/27/17	Tue 11/7/17	34
38	1.2.1.1.2.2 Execute Onsite Requirements Sessions	3 days	Wed 11/8/17	Fri 11/10/17	37
39	1.2.1.1.2.3 Plan and Execute Follow Up Sessions	10 days	Mon 11/13/17	Tue 11/28/17	38
40	1.2.1.1.2.4 Develop Functional Requirements Document (FRD)	10 days	Wed 11/29/17	Tue 12/12/17	39
41	**1.2.1.1.2.5 Deliverable: FRD Submitted to NDOW**	**0 days**	**Tue 12/12/17**	**Tue 12/12/17**	**40**
42	1.2.1.1.2.6 Review of FRD by NDOW	5 days	Wed 12/13/17	Tue 12/19/17	41
43	1.2.1.1.2.7 JMT Updates to FRD	2 days	Wed 12/20/17	Thu 12/21/17	42
44	1.2.1.1.2.8 NDOW Acceptance of FRD	2 days	Fri 12/22/17	Sun 12/24/17	43
45	1.2.1.1.2.9 Update Requirements Traceability Matrix	5 days	Mon 12/25/17	Fri 12/29/17	44
46	**1.2.1.1.3 Iteration 3 Requirements Elicitation and Documentation**	**42 days**	**Mon 1/1/18**	**Tue 2/27/18**	
47	1.2.1.1.3.1 Review RFP High Level Requirements	10 days	Mon 1/1/18	Fri 1/12/18	45
48	1.2.1.1.3.2 Execute Onsite Requirements Sessions	3 days	Mon 1/15/18	Wed 1/17/18	47
49	1.2.1.1.3.3 Plan and Execute Follow Up Sessions	10 days	Thu 1/18/18	Wed 1/31/18	48
50	1.2.1.1.3.4 Develop Functional Requirements Document (FRD)	10 days	Thu 1/25/18	Wed 2/7/18	49FS-5 days
51	**1.2.1.1.3.5 Deliverable: FRD Submitted to NDOW**	**0 days**	**Wed 2/7/18**	**Wed 2/7/18**	**50**
52	1.2.1.1.3.6 Review of FRD by NDOW	5 days	Thu 2/8/18	Wed 2/14/18	51
53	1.2.1.1.3.7 JMT Updates to FRD	2 days	Thu 2/15/18	Fri 2/16/18	52
54	1.2.1.1.3.8 NDOW Acceptance of FRD	2 days	Mon 2/19/18	Tue 2/20/18	53
55	1.2.1.1.3.9 Update Requirements Traceability Matrix	5 days	Wed 2/21/18	Tue 2/27/18	54
56	**1.2.1.1.4 Milestone: Functional Requirements Document Accepted by NDOW**	**0 days**	**Tue 2/27/18**	**Tue 2/27/18**	**46**
57	**1.2.1.2 Site Branding**	**30 days**	**Thu 9/21/17**	**Wed 11/1/17**	
63	**1.2.1.3 System Design Document**	**24 days**	**Fri 11/3/17**	**Fri 12/8/17**	
64	1.2.1.3.1 Document System Architecture	15 days	Fri 11/3/17	Mon 11/27/17	26
65	**1.2.1.3.2 Deliverable: System Design Document Submitted**	**0 days**	**Mon 11/27/17**	**Mon 11/27/17**	**64**
66	1.2.1.3.3 NDOW Review and Feedback	5 days	Tue 11/28/17	Mon 12/4/17	65
67	1.2.1.3.4 Updates based on NDOW Feedback	4 days	Tue 12/5/17	Fri 12/8/17	66
68	**1.2.1.3.5 Milestone: System Design Document Accepted by NDOW**	**0 days**	**Fri 12/8/17**	**Fri 12/8/17**	**67**
69	**1.2.1.4 Implementation Plan**	**30 days**	**Tue 11/28/17**	**Fri 1/5/18**	
75	**1.2.2 System Development**	**296 days**	**Wed 8/9/17**	**Fri 9/28/18**	
76	**1.2.2.1 Establish Development Environment**	**8 days**	**Fri 10/27/17**	**Tue 11/7/17**	
77	1.2.2.1.1 Establish TFS Instance	1 day	Fri 10/27/17	Fri 10/27/17	34
78	1.2.2.1.2 Establish Source Control in GIT	2 days	Mon 10/30/17	Tue 10/31/17	77
79	1.2.2.1.3 Establish Dev and Test Environments	3 days	Wed 11/1/17	Fri 11/3/17	78
80	1.2.2.1.4 Develop Build and Publish Processes	2 days	Mon 11/6/17	Tue 11/7/17	79



Project: NDOW Proposed Schedule
Date: Fri 5/26/17

Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Progress
Milestone	Inactive Task	Manual Summary Rollup	Deadline
Summary	Inactive Milestone	Manual Summary	
Project Summary	Inactive Summary	Start-only	

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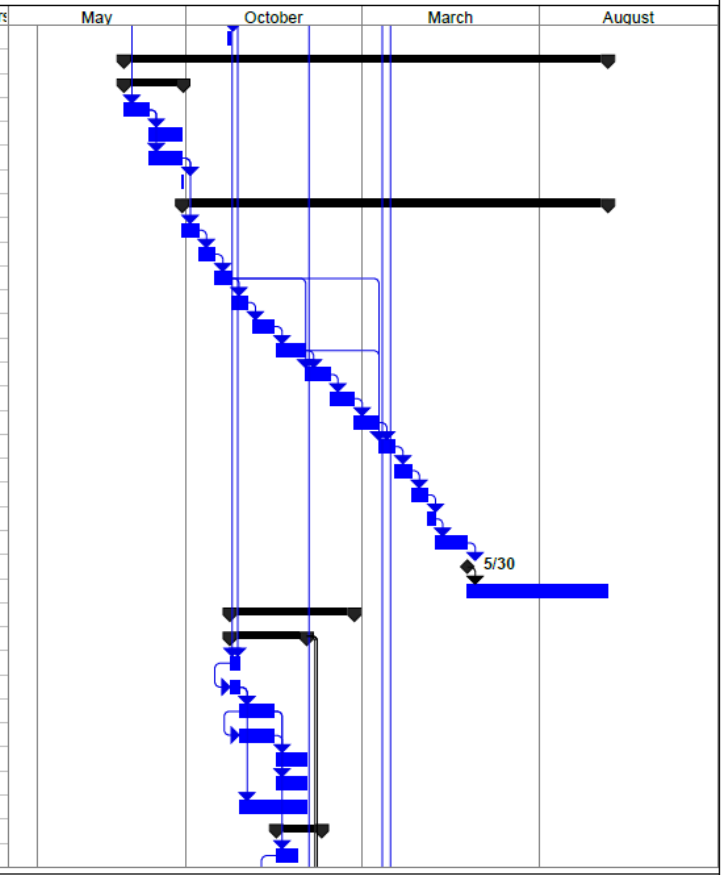
Master Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
81	1.2.2.1.5 Establish UAT Environments	2 days	Mon 11/6/17	Tue 11/7/17	79
82	**1.2.2.2 Clean and Migrate Legacy Data**	**296 days**	**Wed 8/9/17**	**Fri 9/28/18**	
83	**1.2.2.2.1 LRS Database Structure and Data Dictionary**	**36 days**	**Wed 8/9/17**	**Thu 9/28/17**	
84	1.2.2.2.1.1 Receive Backup of Legacy Databases and Documentation	15 days	Wed 8/9/17	Tue 8/29/17	4
85	1.2.2.2.1.2 Analysis of Legacy Databases	20 days	Wed 8/30/17	Wed 9/27/17	84
86	1.2.2.2.1.3 Identify and Document Design Modifications to LRS Database Schema	20 days	Wed 8/30/17	Wed 9/27/17	84
87	1.2.2.2.1.4 Establish NDOW Database in JMT Development Environment	1 day	Thu 9/28/17	Thu 9/28/17	86
88	**1.2.2.2.2 Legacy Data Migration**	**261 days**	**Thu 9/28/17**	**Fri 9/28/18**	
89	1.2.2.2.2.1 Develop Migration Plan	10 days	Thu 9/28/17	Wed 10/11/17	86
90	1.2.2.2.2.2 Develop Migration and Cleansing Scripts - Customers	10 days	Thu 10/12/17	Wed 10/25/17	89
91	1.2.2.2.2.3 Develop Migration and Cleansing Scripts - Locations	10 days	Thu 10/26/17	Wed 11/8/17	90
92	1.2.2.2.2.4 Develop Migration and Cleansing Scripts - Products	10 days	Thu 11/9/17	Wed 11/22/17	91
93	1.2.2.2.2.5 Develop Migration and Cleansing Scripts - Sales Transactions	15 days	Mon 11/27/17	Fri 12/15/17	92
94	1.2.2.2.2.6 Develop Migration and Cleansing Scripts - Vessels, Registrations, Titles	20 days	Mon 12/18/17	Thu 1/11/18	93
95	1.2.2.2.2.7 Develop Migration and Cleansing Scripts - Law Enforcement	15 days	Fri 1/12/18	Thu 2/1/18	91,94
96	1.2.2.2.2.8 Develop Migration and Cleansing Scripts - Harvest Reporting	15 days	Fri 2/2/18	Thu 2/22/18	95
97	1.2.2.2.2.9 Develop Migration and Cleansing Scripts - Controlled Hunts	15 days	Fri 2/23/18	Thu 3/15/18	96
98	1.2.2.2.2.10 Develop Migration and Cleansing Scripts - Conservation Education	10 days	Fri 3/16/18	Thu 3/29/18	91,94,97
99	1.2.2.2.2.11 Develop Migration and Cleansing Scripts - Volunteer Programs	10 days	Fri 3/30/18	Thu 4/12/18	98
100	1.2.2.2.2.12 Develop Migration and Cleansing Scripts - Special Licenses and Progra	10 days	Fri 4/13/18	Thu 4/26/18	99
101	1.2.2.2.2.13 Perform Initial Full Migration	4 days	Fri 4/27/18	Wed 5/2/18	100
102	1.2.2.2.2.14 Validate and Refine Data Migration	20 days	Thu 5/3/18	Wed 5/30/18	101
103	1.2.2.2.2.15 Legacy Data Migrated	0 days	Wed 5/30/18	Wed 5/30/18	102
104	1.2.2.2.2.16 Ongoing Monthly Data Migrations	87 days	Thu 5/31/18	Fri 9/28/18	103
105	**1.2.2.3 NDOW Iteration 1**	**76 days**	**Wed 11/8/17**	**Thu 2/22/18**	
106	**1.2.2.3.1 Application Customization and Configuration**	**47 days**	**Wed 11/8/17**	**Fri 1/12/18**	
107	1.2.2.3.1.1 Implement Global CSS Updates to Match NDOW Branding	6 days	Wed 11/8/17	Wed 11/15/17	80,35
108	1.2.2.3.1.2 Preparatory System Development Work	6 days	Wed 11/8/17	Wed 11/15/17	107SS
109	1.2.2.3.1.3 User Roles and Security	20 days	Thu 11/16/17	Fri 12/15/17	108
110	1.2.2.3.1.4 Customer Management	20 days	Thu 11/16/17	Fri 12/15/17	109SS
111	1.2.2.3.1.5 License Item Mangement	21 days	Mon 12/18/17	Fri 1/12/18	109
112	1.2.2.3.1.6 Location Management	21 days	Mon 12/18/17	Fri 1/12/18	110
113	1.2.2.3.1.7 Event Management	41 days	Thu 11/16/17	Fri 1/12/18	108
114	**1.2.2.3.2 Testing and Debugging**	**30 days**	**Mon 12/18/17**	**Thu 1/25/18**	
115	1.2.2.3.2.1 Prepare Test Cases	15 days	Mon 12/18/17	Thu 1/4/18	109



Project: NDOW Proposed Schedule
Date: Fri 5/26/17

Task		External Tasks		Manual Task		Finish-only	
Split		External Milestone		Duration-only		Progress	
Milestone		Inactive Task		Manual Summary Rollup		Deadline	
Summary		Inactive Milestone		Manual Summary			
Project Summary		Inactive Summary		Start-only			

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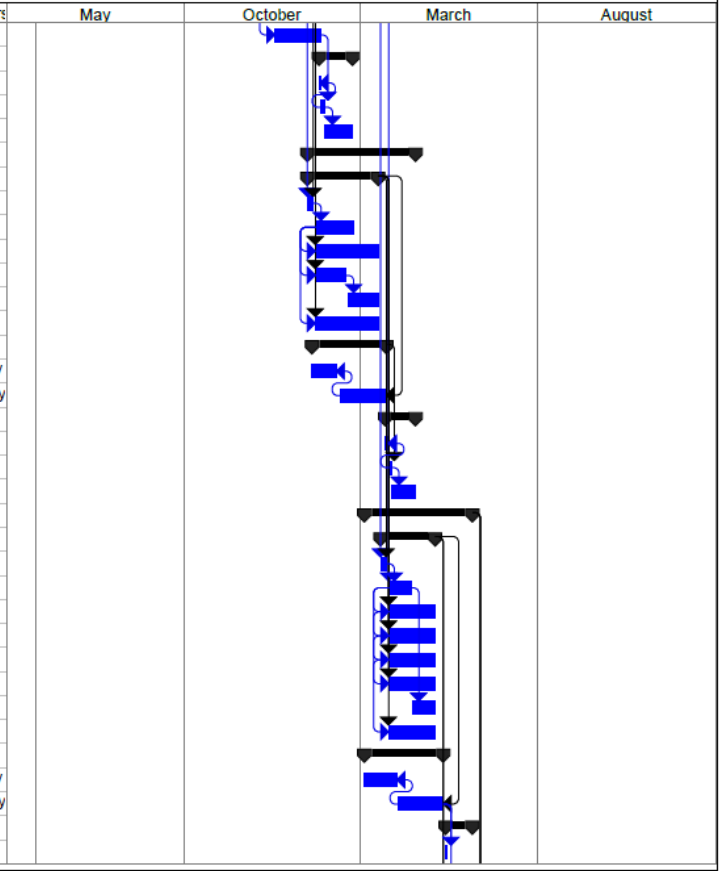
Master Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
116	1.2.2.3.2.2 Execute Test Cases, Address Defects, Harden	30 days	Mon 12/18/17	Thu 1/25/18	115SS
117	**1.2.2.3.3 Release**	**21 days**	**Thu 1/25/18**	**Thu 2/22/18**	
118	1.2.2.3.3.1 Develop Release Notes	1 day	Thu 1/25/18	Fri 1/26/18	119SF
119	**1.2.2.3.3.2 NDOW System Iteration 1 - Onsite Design Review Meeting**	**2 days**	**Fri 1/26/18**	**Mon 1/29/18**	**116**
120	1.2.2.3.3.3 NDOW Review and Feedback	18 days	Tue 1/30/18	Thu 2/22/18	119
121	**1.2.2.4 NDOW Iteration 2**	**67 days**	**Mon 1/15/18**	**Tue 4/17/18**	
122	**1.2.2.4.1 Application Customization and Configuration**	**45 days**	**Mon 1/15/18**	**Fri 3/16/18**	
123	1.2.2.4.1.1 Final Iteration 1 Hardening	5 days	Mon 1/15/18	Fri 1/19/18	106,45
124	1.2.2.4.1.2 Address NDOW Iteration 1 Feedback	25 days	Mon 1/22/18	Fri 2/23/18	123
125	1.2.2.4.1.3 Sales Transaction Process	40 days	Mon 1/22/18	Fri 3/16/18	106,124SS
126	1.2.2.4.1.4 License Document Templates	20 days	Mon 1/22/18	Fri 2/16/18	106,124SS
127	1.2.2.4.1.5 Cancelations, Voids, Adjustments	20 days	Mon 2/19/18	Fri 3/16/18	126
128	1.2.2.4.1.6 Vessel Registration and Titling	40 days	Mon 1/22/18	Fri 3/16/18	106,124SS
129	**1.2.2.4.2 Testing and Debugging**	**46 days**	**Fri 1/19/18**	**Fri 3/23/18**	
130	1.2.2.4.2.1 Develop Test Cases	15 days	Fri 1/19/18	Fri 2/9/18	131SF-1 day
131	1.2.2.4.2.2 Execute Test Cases and Debug	30 days	Mon 2/12/18	Fri 3/23/18	122FF+5 day
132	**1.2.2.4.3 Release**	**18 days**	**Fri 3/23/18**	**Tue 4/17/18**	
133	1.2.2.4.3.1 Develop Release Notes	1 day	Fri 3/23/18	Mon 3/26/18	134SF
134	**1.2.2.4.3.2 NDOW System Iteration 2 - Onsite Design Review Meeting**	**2 days**	**Mon 3/26/18**	**Tue 3/27/18**	**129**
135	1.2.2.4.3.3 NDOW Review and Feedback	15 days	Wed 3/28/18	Tue 4/17/18	134
136	**1.2.2.5 NDOW Iteration 3**	**67 days**	**Mon 3/5/18**	**Tue 6/5/18**	
137	**1.2.2.5.1 Application Development**	**35 days**	**Mon 3/19/18**	**Fri 5/4/18**	
138	1.2.2.5.1.1 Final Iteration 2 Hardening	5 days	Mon 3/19/18	Fri 3/23/18	122,55
139	1.2.2.5.1.2 Address Iteration 2 Feedback	15 days	Mon 3/26/18	Fri 4/13/18	138,55
140	1.2.2.5.1.3 Financial Management - Invoicing and ACH	30 days	Mon 3/26/18	Fri 5/4/18	122,139SS
141	1.2.2.5.1.4 Returnable Documents and Credits / Debits	30 days	Mon 3/26/18	Fri 5/4/18	122,140SS
142	1.2.2.5.1.5 Controlled Hunts	30 days	Mon 3/26/18	Fri 5/4/18	122,141SS
143	1.2.2.5.1.6 Mobile Law Enforcement	30 days	Mon 3/26/18	Fri 5/4/18	122,139SS
144	1.2.2.5.1.7 Systems Integrations	15 days	Mon 4/16/18	Fri 5/4/18	139
145	1.2.2.5.1.8 Reporting	30 days	Mon 3/26/18	Fri 5/4/18	122,142SS
146	**1.2.2.5.2 Testing and Debugging**	**50 days**	**Mon 3/5/18**	**Fri 5/11/18**	
147	1.2.2.5.2.1 Develop Test Cases	20 days	Mon 3/5/18	Mon 4/2/18	148SF-1 day
148	1.2.2.5.2.2 Execute Test Cases and Debug	29 days	Tue 4/3/18	Fri 5/11/18	137FF+5 day
149	**1.2.2.5.3 Release**	**17 days**	**Mon 5/14/18**	**Tue 6/5/18**	
150	1.2.2.5.3.1 Develop Release Notes	1 day	Mon 5/14/18	Mon 5/14/18	148



Project: NDOW Proposed Schedule
Date: Fri 5/26/17

Task		External Tasks		Manual Task		Finish-only	
Split		External Milestone		Duration-only		Progress	
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Summary		Inactive Milestone		Manual Summary			
Project Summary		Inactive Summary		Start-only			

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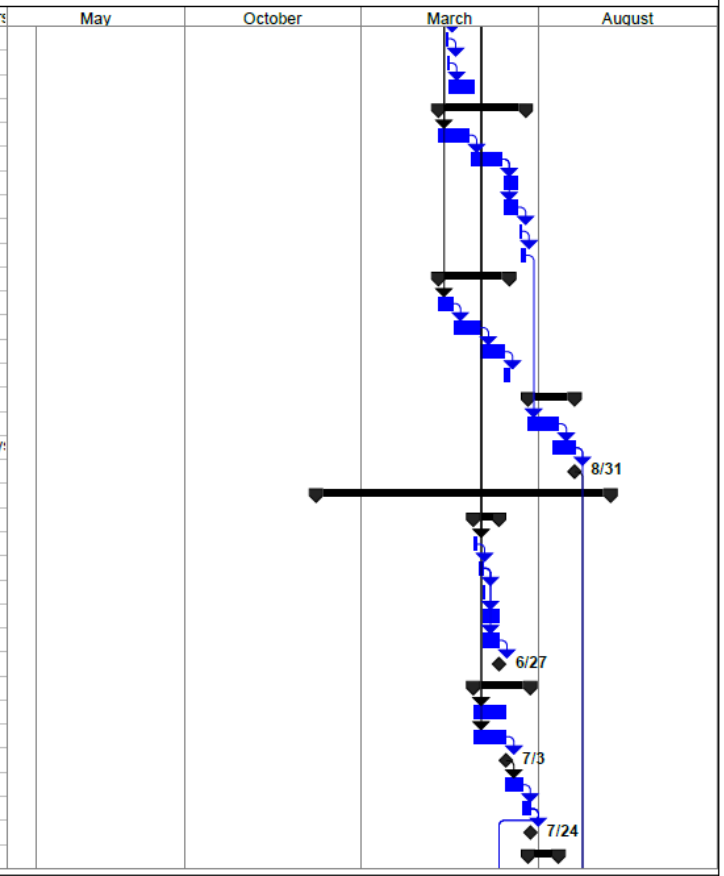
Master Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
151	1.2.2.5.3.2 Publish Build to NDOW Staging Environment	1 day	Mon 5/14/18	Mon 5/14/18	148
152	**1.2.2.5.3.3 NDOW System Iteration 3 - Onsite Design Review Meeting**	**1 day**	**Tue 5/15/18**	**Tue 5/15/18**	**151**
153	1.2.2.5.3.4 NDOW Review and Feedback	15 days	Wed 5/16/18	Tue 6/5/18	152
154	**1.2.2.6 Final Integration Testing and Hardening Phase**	**55 days**	**Mon 5/7/18**	**Fri 7/20/18**	
155	1.2.2.6.1 Final Application Hardending Tasks	20 days	Mon 5/7/18	Fri 6/1/18	137
156	1.2.2.6.2 Address Iteration 3 Feedback	20 days	Mon 6/4/18	Fri 6/29/18	155
157	1.2.2.6.3 Fully execute Test Plan on Integrated System	10 days	Mon 7/2/18	Fri 7/13/18	156
158	1.2.2.6.4 Execute Performance Testing and Optimize	10 days	Mon 7/2/18	Fri 7/13/18	156
159	1.2.2.6.5 Release Full Tested and Complete LRS to Staging Environment	1 day	Mon 7/16/18	Mon 7/16/18	158
160	**1.2.2.6.6 Final Onsite Design Review Meeting**	**4 days**	**Tue 7/17/18**	**Fri 7/20/18**	**159**
161	**1.2.2.7 Populate Data Warehouse**	**45 days**	**Mon 5/7/18**	**Fri 7/6/18**	
162	1.2.2.7.1 Design Data Warehouse	10 days	Mon 5/7/18	Fri 5/18/18	137
163	1.2.2.7.2 Develop ETL Scripts and Establish ETL Process	16 days	Mon 5/21/18	Mon 6/11/18	162
164	1.2.2.7.3 Validate Data Warehouse	15 days	Tue 6/12/18	Mon 7/2/18	163
165	**1.2.2.7.4 Onsite Design Review Meeting**	**4 days**	**Tue 7/3/18**	**Fri 7/6/18**	**164**
166	**1.2.3 User Acceptance Testing**	**30 days**	**Mon 7/23/18**	**Fri 8/31/18**	
167	1.2.3.1 NDOW Execute UAT - Final Acceptance	20 days	Mon 7/23/18	Fri 8/17/18	160
168	1.2.3.2 Final Code Updates	15 days	Mon 8/13/18	Fri 8/31/18	167FS-5 days
169	**1.2.3.3 Milestone: Deployment of NDOW System Accepted by NDOW**	**0 days**	**Fri 8/31/18**	**Fri 8/31/18**	**168**
170	**1.2.4 System Implementation and Rollout**	**181 days**	**Mon 1/22/18**	**Mon 10/1/18**	
171	**1.2.4.1 Establish Production and Warm Backup Cloud Environments**	**16 days**	**Wed 6/6/18**	**Wed 6/27/18**	
172	1.2.4.1.1 Establish NDOW System Production Environment in Azure	3 days	Wed 6/6/18	Fri 6/8/18	136
173	1.2.4.1.2 Establish NDOW System Warm Backup Environment in Azure	3 days	Mon 6/11/18	Wed 6/13/18	172
174	1.2.4.1.3 Intial Deployment of NDOW System Application and Database	1 day	Thu 6/14/18	Thu 6/14/18	173
175	1.2.4.1.4 Establish Reporting and Data Warehouse Environment in Azure	10 days	Thu 6/14/18	Wed 6/27/18	173
176	1.2.4.1.5 Test Disasater Recover Scenarios	10 days	Thu 6/14/18	Wed 6/27/18	173
177	**1.2.4.1.6 Milestone: Production Environment Fully Established**	0 days	Wed 6/27/18	Wed 6/27/18	176
178	**1.2.4.2 Admin and End User Documentation**	**35 days**	**Wed 6/6/18**	**Tue 7/24/18**	
179	1.2.4.2.1 Prepare End User Documentation	20 days	Wed 6/6/18	Tue 7/3/18	136
180	1.2.4.2.2 Prepare System Administration Documentation	20 days	Wed 6/6/18	Tue 7/3/18	136
181	**1.2.4.2.3 Documentation Submitted to NDOW**	**0 days**	**Tue 7/3/18**	**Tue 7/3/18**	**180**
182	1.2.4.2.4 NDOW Review and Feedback	10 days	Wed 7/4/18	Tue 7/17/18	181
183	1.2.4.2.5 Updates to End User Documentation	5 days	Wed 7/18/18	Tue 7/24/18	182
184	**1.2.4.2.6 End User Documentation Approved by NDOW**	**0 days**	**Tue 7/24/18**	**Tue 7/24/18**	**183**
185	**1.2.4.3 Establish Service Desk**	**20 days**	**Mon 7/23/18**	**Fri 8/17/18**	



Project: NDOW Proposed Schedule
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Task		External Tasks		Manual Task		Finish-only	
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Project Summary		Inactive Summary		Start-only			

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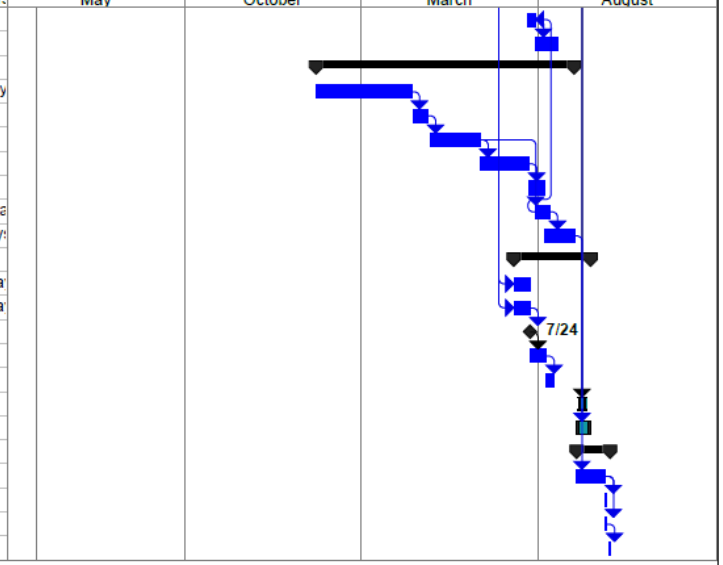
Master Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
186	1.2.4.3.1 Train Service Desk Technicians	5 days	Mon 7/23/18	Mon 7/30/18	194SF
187	1.2.4.3.2 Establish Ticketing and Issue Tracking Software	15 days	Mon 7/30/18	Fri 8/17/18	186
188	**1.2.4.4 POS Hardware Deployment**	**160 days**	**Mon 1/22/18**	**Fri 8/31/18**	
189	1.2.4.4.1 POS Hardware Procurement Phase	60 days	Mon 1/22/18	Fri 4/13/18	74FS+10 day
190	1.2.4.4.2 Configure POS Hardware and Software and Test	10 days	Mon 4/16/18	Fri 4/27/18	189
191	1.2.4.4.3 Establish Inventory in COI Warehouse	31 days	Mon 4/30/18	Mon 6/11/18	190
192	1.2.4.4.4 Communication with Agents	30 days	Tue 6/12/18	Mon 7/23/18	191
193	1.2.4.4.5 Develop Installation Manual	10 days	Tue 7/24/18	Mon 8/6/18	192
194	1.2.4.4.6 Ship POS Hardware Configurations	10 days	Mon 7/30/18	Fri 8/10/18	191FS+34 da
195	1.2.4.4.7 Confirm POS Hardware Installations	20 days	Mon 8/6/18	Fri 8/31/18	194FS-5 days
196	**1.2.4.5 NDOW and Dealer Training**	**48 days**	**Wed 7/11/18**	**Fri 9/14/18**	
197	1.2.4.5.1 Develop Agent Training Materials	10 days	Wed 7/11/18	Tue 7/24/18	183FS-10 da
198	1.2.4.5.2 Develop NDOW Training Materials	10 days	Wed 7/11/18	Tue 7/24/18	183FS-10 da
199	**1.2.4.5.3 Training Materials Submitted to NDOW for Review**	**0 days**	**Tue 7/24/18**	**Tue 7/24/18**	**198**
200	1.2.4.5.4 NDOW Review and Feedback	10 days	Wed 7/25/18	Tue 8/7/18	199
201	1.2.4.5.5 Updates based on NDOW Feedback	5 days	Wed 8/8/18	Tue 8/14/18	200
202	1.2.4.5.6 Execute NDOW Training	4 days	Wed 9/5/18	Mon 9/10/18	169
203	1.2.4.5.7 Execute Dealer Trainings	10 days	Mon 9/3/18	Fri 9/14/18	195
204	**1.2.4.6 Go-Live**	**21 days**	**Mon 9/3/18**	**Mon 10/1/18**	
205	1.2.4.6.1 Settling in Time	19 days	Mon 9/3/18	Thu 9/27/18	168
206	1.2.4.6.2 Legacy NDOW System Taken Offline	1 day	Fri 9/28/18	Fri 9/28/18	205
207	1.2.4.6.3 Final Data Migration and Validation	1 day	Fri 9/28/18	Fri 9/28/18	205
208	1.2.4.6.4 Release of LRS to End Users - LRS in Production	1 day	Mon 10/1/18	Mon 10/1/18	207



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5.6.1.2 Planning methodologies;

JMT Technology Group understands that, while project execution is a team effort, ensuring the success of the project is ultimately the responsibility of the Project Manager. As the prime contractor, it is critical that we designate the Project Manager as the single point of contact for NDOW, through which all communications will flow. This will be documented clearly in the project's Communication Plan. Beyond the importance of communication protocol and vendor responsiveness, JMT designates the Project Manager as the single point of contact for the client because we believe in the immense value of developing the relationship. We are committed to building a collaborative partnership with NDOW in order to grow and maximize the value of the licensing system to the state over the long term.

Proposed Project Management Approach

Project management is a combination of effectively managing and balancing scope, schedule, and budget. Our project management process depends on thorough planning, proactive management of baselines, and highly effective communications. For these types of projects we believe it's also imperative that the project manager have the requisite technical and domain knowledge to lead the team. The result of effective project management is higher quality with respect to project deliverables and satisfied owners and end-users.

Methodology

The project manager for this project is a certified Project Management Professional (PMP) and JMT's project management methodology is founded on the principles, practices, and processes provided by the Project Management Institute (PMI). This entails applying the project management knowledge areas of integration, scope, time, cost, quality, human resources, procurement, risk, and communications. These techniques are employed using a Project Management Life Cycle concept that is comprised of a five-step process from Initiation through Closeout with a comprehensive set of deliverables designed to ensure the completion of assignments on time and within budget. For each project, JMT's designated Project Manager develops a Project Management Plan in cooperation with our customer.

The key elements of JMT's management approach include:

- ***Developing comprehensive project plans and project schedules***
- ***Assigning and managing the correct resources***
- ***Providing the right communications, to the right stakeholders at the right times***
- ***Controlling manpower, budget and schedule allocations through stringent quality control measures***
- ***Providing independent & complete project reviews.***

Scope – To ensure project success, a project kick-off meeting will be conducted with key staff from the JMT Team and NDOW. The objective of this meeting is to review, discuss and agree upon the scope of the project and to assure all stakeholders are apprised of and aligned with the Project Management Plan. Meeting minutes will be developed by the JMT Team and submitted to the NDOW following the kick-off meeting.

Time – JMT Project Managers use Microsoft Project to schedule all project activities and project milestones. Once approved project schedules are baselined, regularly maintained, and used as a tool to track and analyze actual vs. planned schedule.

Cost – JMT has established powerful budget tracking software tools for use by all Project Managers. Budgets will be developed by each discrete and manageable task. Each task will be updated monthly as a percent complete. The percentage complete of the overall task will automatically be updated as each task is updated. JMT Project Managers closely monitor the combination of scope, cost and schedule to ensure on-time delivery within budget while meeting the business needs of NDOW.

Quality – JMT will jointly develop a Quality Plan with the NDOW for the project. The Quality Plan will document the scope of services provided by JMT, along with the Quality Assurance / Quality Control (QA/QC) program implemented by JMT and NDOW. The Quality Control program will include details about the procedures, workflows, communications and documentation control.

In addition, the Quality Plan will document the qualitative and quantitative Acceptance Criteria for all services and deliverables and provides a clear deliverables list with detailed specifications. The Quality Plan will be reviewed and updated as appropriate to reflect current conditions and lessons learned during the project life cycle.

Human Resources – The most important asset to a project is the Team that identifies, solves, and implements the solutions and services to meet customers' expectations. JMT's Project Managers identify the appropriate resources for all assignments through coordinated manpower planning and an active and ongoing professional recruitment process.

Procurement – In developing the project scope, JMT identifies resources that may need to be procured by the client to implement solutions. The procurement may include services, hardware, or software. JMT can assist with the procurement process as appropriate at the direction of NDOW.

Risk – JMT will develop a Risk Management Plan that will summarize the proposed risk management approach for each project. The Risk Management Plan will identify, analyze and manage risks both initially and throughout the life of the project. The plan will also define how often risks will be reviewed, the process for review and who will be involved.

Several key strategies JMT uses to assess and mitigate risk include the following:

- ***Issue tracking at the onset of the project and throughout the project life cycle allowing resolution of issues before they become problems.***
- ***Regular review and update of the Risk Matrix.***
- ***Regularly scheduled Team meetings with full minutes and action lists. This allows stakeholders to come to a common understanding of direction and requirements through discussion between cross-functional Teams.***
- ***Early and frequent deliveries for review and approval.***

Communication – In cooperation with NDOW, JMT will develop a Communication Plan for communicating with NDOW staff. The Communication Plan will define the timeliness of communication response between JMT and NDOW. The plan will also define the methodology for tracking action items and other issues, the methodology for tracking progress and the methodology for conducting meetings. Additionally, the Communications Plan will include methodologies for establishing and maintaining a partnership with the NDOW management and users, including techniques for obtaining and fostering senior level executive commitment.

Communication is critical to the success of any project, large or small. JMT maintains a customer-focused business model, which means JMT's Project Manager and technical support staff will listen to NDOW's needs and develop solutions that meet the objectives of the organization.

Monitoring and Controlling – JMT implements an earned value management approach to monitoring project health against baselines established during project planning.

5.6.1.3 Milestones;

Please see the following high level milestone schedule for the project. A detailed project schedule is included in section 4 of this proposal response and a detailed project work plan is provided further in this section.

Milestone	*Completion Date*
Notice of Contract Award	*8/8/2017*
Project Management Plan Accepted	*8/28/2017*
Project Schedule Accepted	*9/5/2017*

Milestone	*Completion Date*
Project Kickoff Meeting at NDOW	***9/20/2017***
Functional Requirements Document – Iteration 1 - Accepted by NDOW	***10/26/2017***
Functional Requirements Document – Iteration 2 - Accepted by NDOW	***12/22/2017***
Functional Requirements Document – Iteration 3 - Accepted by NDOW	***2/20/2017***
System Design Document Finalized	***12/8/2017***
Legacy Data Migrated in New Database and Accepted by NDOW	***5/2/2018***
Iteration 1 Presented to NDOW	***1/26/2018***
Iteration 2 Presented to NDOW	***3/26/2018***
Iteration 3 Presented to NDOW	***5/15/2018***
Performance and Load Tests Complete	***7/17/2018***
User Acceptance Testing Complete – Complete system accepted by NDOW	***8/31/2018***
End User Documentation and Training Materials Accepted by NDOW	***7/24/2018***
Retail Agent Onboarding Complete	***8/31/2018***
Training Complete	***9/14/2018***
NDOW System Production Release	***10/1/2018***

5.6.1.4 Task conflicts and/or interdependencies;

The project schedule included in section 5.6.1 clearly indicates predecessors where applicable. These predecessors indicate tasks that have interdependencies and ensures that the project schedule submitted presents a realistic plan for project for success.

5.6.1.5 Estimated time frame for each task identified in Section 4, Scope of Work; and

The project schedule included in section 5.6.1 provides a detailed for all tasks and activities required to complete the entirety of the project scope.

5.6.1.6 Overall estimated time frame from project start to completion for both vendor and State activities, including strategies to avoid schedule slippage.

<u>Overall Timeframe and Rationale for Proposed Schedule</u>

JMT has developed a project schedule that we believe maximizes benefit to the state while minimizing risk. It considers the state's scheduling objectives, the state's calendar of events and well as our considerable experience with the implementation of licensing systems of comparable scope.

While JMT has demonstrated success at delivering statewide licensing system on compressed schedules using an aggressive implementation timeline and a phased roll out, we are unable to commit to delivering a fully functioning system in less than 5 months. Even a phased deployment that involves a deployment of the vessel module within that time frame is unreasonable in our experience for the following reasons:

1. ***JMT proposes to deliver a singular integrates outdoor licensing and recreation solution which means in order to deliver the vessels module, the security, users, customers, products, sales transaction, document fulfillment etc. functionality all must be fully developed, tested and approved in that timeline.***

2. ***Data migration for customers, locations, and vessels must be complete and validated in that timeline.***

Based on this premise, our only scheduling constraints are:

- ***That we are live with a complete solution prior to December of 2018.***
- ***That we construct the schedule to avoid a deployment during NDOW's busiest timeframe.***

With these constraints, we have proposed October 1, 2018 as the Go Live date. This date is beyond NDOW's controlled hunt draw seasons and well in advance of the 2018 vessel registration renewals.

<u>Strategies to avoid schedule slippage</u>

The following strategies will be leveraged to avoid schedule slippage:

- ***Develop and baseline an achievable project schedule***
- ***Ensure project schedule considers dependencies between tasks***
- ***Ensure contractor and state are aware of critical deadlines***
- ***Continually monitor performance against schedule baseline***
- ***Identify variance early and determine / implement effective corrective actions.***
- ***Continually identify and monitor project risks***

5.6.2 Vendors shall provide a written plan addressing the roles and responsibilities and method of communication between the contractor and any subcontractor(s).

Project roles and responsibilities will be defined in detail in the Project Management Plan deliverable delivered to NDOW within 30 days of NTP. A preliminary Roles and Responsibility Matrix is found below.

PHASE	PROCESS	DELIVERABLE	RESPONSIBLE "R"	ACCOUNTABLE "A"	CONSULTED "C"	INFORMED "I"
Planning	Requirements	Requirements Management Plan (RMP)	Business Analyst	Business Analyst	Project Manager	Business Owner Stakeholders Project Manager
		Business Process Models	Business Analyst	Business Analyst	Architect Business Owner End User Project Manager Subject Matter Expert	Business Owner Stakeholders Core Solutions Team
		Business, User, Functional, Non-Functional Requirements	Business Analyst	Business Analyst	Architect Business Owner End User Project Manager Subject Matter Expert	Business Owner Stakeholders Core Solutions Team
		Requirements Traceability	Business Analyst	Business Analyst	Test Manager	Core Solutions Team

PHASE	PROCESS	DELIVERABLE	RESPONSIBLE "R"	ACCOUNTABLE "A"	CONSULTED "C"	INFORMED "I"
		Matrix (RTM) Linking Levels of Requirements				
	Design	Screen Mockups	Graphic Designer	Graphic Designer	Architect Business Analyst Database Admin Developer Development Manager Project Manager	Business Owner Core Solutions Team
		Use Case(s)	Business Analyst	Business Analyst	Architect Graphic Designer Project Manager Subject Matter Expert	Business Owner Stakeholders Core Solutions Team
Execution		Specifications	Systems Analyst	Systems Analyst	Business Analyst Architect Database Admin Graphic Designer Development Manager Project Manager Test Manager	Core Solutions Team
		Design Document	Architect	Architect	Business Analyst Database Admin Development Manager Systems Analyst Project Manager Test Manager	Business Owner Core Solutions Team
	Development	Developer Tasks	Architect	Architect	Business Analyst Developers Database Admin Development Manager Graphic Designer Project Manager Systems Analyst	Core Solutions Team
		Application Development	Developer(s)	Architect	Business Analyst Database Admin Development Manager Graphic Designer Project Manager Systems Analyst	Core Solutions Team
	Testing	Test Plan	Test Manager	Test Manager	Architect Business Analyst Project Manager Systems Analyst	Business Owner Core Solutions Team Stakeholder
		Test Cases	Test Lead	Test Manager	Core Solutions Team	Core Solutions Team
		Test Execution	Tester	Test Lead	Core Solutions Team	Core Solutions Team
		Requirements Traceability Matrix (RTM) Linking Test Cases to Requirements	Test Manager	Test Manager	Business Analyst	Business Owner Core Solutions Team

5.6.3 The preliminary project plan shall be incorporated into the contract.

JMT agrees that the preliminary project plan shall be incorporated into the contract.

5.6.4 The first project deliverable is the finalized detailed project plan that shall include fixed deliverable due dates for all subsequent project tasks as defined in Section 4, Scope of Work. The contract shall be amended to include the State approved detailed project plan.

Per our preliminary project schedule, JMT will deliver to NDOW the finalized detailed project plan on 8/28/2017. This document shall include fixed deliverable due dates for all subsequent project tasks as defined in Section 4, Scope of Work and JMT acknowledges that the contract shall be amended to include the State approved detailed project plan.

5.6.5 Vendors shall identify all potential risks associated with the project, their proposed plan to mitigate the potential risks and include recommended strategies for managing those risks.

A Risk Register will be used to facilitate the risk management process and to serve as the project artifact for the documentation and management of project risks.

The table below depicts the initial Risk Register for the new NDOW System.

Category	Description	Likelihood	Impact	Plan
Schedule	*NDOW resources will not be available as required causing a negative impact to the schedule*	*Low*	*Medium*	*JMT Technology Group Project Manager will develop a Project Schedule that outlines the timelines for NDOW participation in project activities and work with the NDOW Project Manager to ensure the participation of the appropriate staff.*
Schedule	*Deliverables will not be reviewed according to the schedule in a timely manner causing a negative impact to the schedule*	*Low*	*Medium*	*The agreed upon project schedule will indicate the delivery dates for items requiring NDOW review and feedback. NDOW project sponsor will ensure NDOW resources are assigned as needed and schedule commitments are met.*
Schedule	*Agents will not be available / make time for POS configuration installation.*	*Low*	*Medium*	*Advanced communications will ensure Agents are aware of schedule and expectations.*
Requirements	*Design reviews and / or user acceptance testing will lead to new or revised requirements as opposed to focusing on the identification of defects*	*Low*	*Medium*	*NDOW and the JMT Team will agree on the common goal of producing a high-quality system that meets the project objectives within the identified project schedule and will focus user-acceptance testing efforts around that goal*
Deliverables	*Application deliverables will not match NDOW's vision for the system*	*Low*	*Medium*	*The JMT Team will implement an iterative development process that will result in NDOW access to working software at predefined increments along the project schedule. This gives the opportunity for NDOW to review, test, and provide feedback on the system early and often*
Integration	*Migration of Data from Legacy database will be more complex than anticipated due to poor data quality and poor*	*Medium*	*Medium*	*JMT Technology Group will begin to analyze the legacy database, plan and prototype the migration early in the planning and execution phases of the project to ensure that they identify and proactively address potential*

Category	Description	Likelihood	Impact	Plan
	design, and non-relational structure.			***issues early in the project.***
Resources	***Project staff turnover will negatively impact schedule***	***Low***	***Low***	***JMT has a contractual relationship with a IT staffing company and has them on call to provide developer support specific to the needs of this project should that need arise***
Technology	***Project staff will be unfamiliar with technologies employed in the execution of this project***	***Low***	***Medium***	***The JMT Team organization will include an experienced system architect that will lead the identification of technologies to be leveraged for project execution and provide support to the application team in the implementation of these technologies. JMT will devise its resource plan to include developers with the requisite skillset for this project.***
Requirements	***Developers will interpret and implement requirements in a manner that is inconsistent with the overall vision for the system resulting in rework***	***Low***	***Medium***	***Project Manager, Business Analyst, and Development Lead need to stay one step ahead of developers and ensure that explicit direction is provided with regard to the interpretation and implementation of requirements.*** ***Use morning scrum meetings as a means to ensure that any gaps in developer understanding are clear to project manager and that issues are surfaced quickly.***

5.6.6 Vendors shall provide information on the staff that shall be located onsite in Carson City. If staff shall be located at remote locations, vendors shall include specific information on plans to accommodate the exchange of information and transfer of technical and procedural knowledge. The State encourages alternate methods of communication other than in person meetings, such as transmission of documents via email and teleconferencing, as appropriate.

While JMT intends to have a significant onsite presence throughout the duration of the project as described in 4.4.22, JMT will not have staff located onsite in Carson City. As the state has acknowledged there are many effective mechanisms for remote communication and collaboration. In addition to frequent email and phone communications, the following are some tools that JMT will bring to bear for this project.

<u>Online Collaboration Portal</u>

JMT will standup a project collaboration portal within the SharePoint Online platform. The NDOW Project Collaboration Portal will provide a means for project team members (both contractor and state) to share and collaborate on the project. This secure, permissions based platform will allow team members to access and collaborate on documents, and other information from anywhere—at the office, at home, or from a mobile device

<u>Web Ex</u>

The JMT project team members will have the ability to startup WebEx online meetings and teleconferences at any time throughout the project. This will allow team members from remote locations to collaborate and even share screens.

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SECTION X
OTHER INFORMATIONAL MATERIAL

NEVADA DEPARTMENT OF WILDLIFE BUSINESS SUPPORT SYSTEM

RFP 3432 I Opening Date: May 31, 2017 I Opening Time: 2:00 PM

JMT TECHNOLOGY GROUP

Litigation History

Summary of Litigation, Judgments, Settlements, and Claims (May 2017)

From time to time, JMT has been involved in litigation arising from the normal course of its business as an A/E consulting firm. It should be noted that JMT carries a comprehensive insurance program, and none of the claims will adversely affect JMT's ability, if selected, to fulfill its contractual obligations.

JMT's pending litigation and history during the last five years includes the following matters:

Contractor Claim: A subcontractor filed a claim against a construction Contractor for costs incurred in a project with the Delaware River Port Authority, after the Contractor's contract with DRPA was terminated for convenience. Following failed negotiations with the Contractor, the subcontractor filed suit against the contractor, the surety company and JMT, on the basis that that certain work was alleged to be performed at the direction of JMT's personnel working on behalf of the DRPA. JMT performed construction monitoring services under a separate contract with the DRPA, but had no direct contract with the Contractor or Subcontractor and was not responsible for their means and methods of construction. The case is in the early discovery stage. Torrado Construction Co. v. South State, Inc., et. al, United States District Court E.D. PA, Case No. 2:16-CV-06066

Contractor Accident: A construction worker was fatally struck by a sweeper truck while working in a construction zone on the New Jersey Turnpike. The estate has sued multiple parties including the NJ Turnpike Authority, NJ Dept. of Transportation, NJ State Police, the driver, owner and manufacturer of the sweeper truck, as well as multiple other parties having a role in the project, seeking unspecified damages. JMT was a subcontractor providing inspection services on the project, but had no responsibility for the contractor's means, methods or safety. The case is currently in discovery. Estate of Mike Alexander v. Northeast Sweepers, et.al., Superior Court of New Jersey, Docket No. ESX – L- 7229-14

Homeowner Claim: A homeowner filed a claim with its property insurance carrier for property damage as a result of a sewer backup, allegedly caused when a contractor struck a sewer line while drilling test holes for a streetscape project in Montgomery County, Maryland. JMT provided consulting engineering services, while the drilling operations were performed by a subcontractor. The insurer filed a subrogation claim against the Washington Suburban Sanitary Commission (WSSC), JMT, and the drilling subcontractor. JMT was dismissed from this matter without any contribution. State Farm Fire & Casualty Co. v. Washington Suburban Sanitary Commission, et. al, District Court of MD for Montgomery County, Case No. 060200056782016

Marina Claim: A marina owner filed suit against the Delaware Dept. of Transportation (DelDOT), Dept. of Natural Resources & Environmental Control (DNREC), JMT and other parties, seeking unspecified damages, abatement of nuisance and continuing trespass arising from the construction of a nearby paved trail that runs along the C&D Canal. The plaintiff alleges that the construction of the trail caused increased sediment, dirt and mud to flow into the canal and material deposits have reduced water depths at the marina, rendering multiple slips unusable. JMT provided design services in connection with the trail project, but did not have construction or maintenance responsibility. JMT was dismissed from this matter without any contribution. Summit North Marina, LLC v. Delaware Dept. of Transportation, et. al., Superior Court of Delaware, Case No. S16C-04-014 RFS

Motor Cycle Accident: A motorcyclist was killed when he struck another vehicle that was stopped in a construction zone. The family has sued multiple parties including the contractor and JMT who was providing inspection services

on the project, seeking unspecified damages. JMT would not have had any responsibility for the contractor's means, methods or safety. JMT was dismissed from this matter without contribution, and subsequently settled since settlement was more economical and a better result than funding the cost of appeals and continued litigation. Dipasquale v. Cohen, et al., Superior Ct of New Jersey, Docket No. ATL-L-6358-14

Contractor Accident: Two construction workers were killed by a motorist whom mistakenly drove through the construction site. Multiple parties were sued, including the Turnpike Authority and the Department of Transportation, JMT and all other parties having a role in the project. As the inspector on the project, JMT had no responsibility for the contractor's means, methods or safety. The case was subsequently settled. The settlement terms are confidential. Sprague v. NJ Turnpike Authority, et al., Superior Court of New Jersey, Docket No. UNN-L-2982-09 / Grice v. NJ Turnpike Authority, et al., Superior Ct of New Jersey, Docket No. MID-2-1295-10

Traffic Accident: The allegations stem from an accident in which the claimant was struck by a passenger vehicle while attempting to cross a street that was being used as a detour route due to construction on a nearby roadway. Claimant contended that many firms and municipalities were negligent in providing maintenance of traffic services as related to a construction project. JMT was released from this matter without any contribution. Whaley v. Allegheny Co., et. al., Court of Common Pleas of Allegheny County, Pennsylvania, Case No. GD-09-002390

Construction Error: While performing investigative services, underground sewer lines were inadvertently drilled causing a sewer leak into an adjacent construction site. Several parties were sued including the designers as well as the local municipality, the geotechnical contractor as well as the firm providing the locating services. JMT had no responsibility for the underground investigative services. This case was settled and JMT was released from this matter without any contribution. Univ. of MD Medical System Corp. v. One Call Concepts Locating Services, Inc., et al., Circuit Court of Baltimore City, MD, Case No. 24-C-13-005435 OT

Contractor Accident: A construction worker was killed when he fell from and was run over by a milling machine. The estate of the deceased worker has sued multiple parties including the equipment manufacturer, the Turnpike Authority, multiple construction contractors and the engineering firms providing inspection services on the project. JMT was a sub-consultant to the prime engineering firm on this project and had no responsibilities for the contractor's means, methods or safety. The case was settled since settlement was more economical and a better result than funding the cost of litigation. The settlement terms are confidential. Dirienzo v. Wirtgen Group, et al., Superior Court of New Jersey, Docket No. EJX-L-8042-12

Contractor Accident
A construction worker was injured in the course of his employment with a bridge painting contractor. The injured worker has sued multiple parties including the engineering firms whom were providing inspection services on the project. JMT was a sub-consultant to the prime engineering firm on this project and had no responsibilities for the contractor's means, methods or safety. The case was settled since settlement was more economical and a better result than funding the cost of litigation. The settlement terms are confidential. Rocha v. Kupper, LLC, Superior Ct. of New Jersey, Docket No. ESX-L2608-12