Independent Review

Cashiering Point of Sale System

For the
State of Vermont Department of Motor Vehicles (DMV) And
Department of Information & Innovation (DII)

Submitted to the
State of Vermont, Office of the CIO
By

Strategic Technology Services

Original Submission: 10/3/2016
Final Submission: 11/17/2016

Attachments:
1. Project Costing Spreadsheet FINAL-REVIEW-SOV-DMV-Cashiering-STS_Cost_Detail_FINAL.xlsx)
2. Risk Register (FINAL-REVIEW-SOV- DMV-Cashiering -STS_Risk_Register_FINAL.pdf)
3. Point of Sale User Guide (POS User Guide 2016.pdf)
4. Microsoft Dynamics Sure Step Project Management Guide (DynamicsSureStepPM.pdf)
5. Penetration Test Results (ScanID_7074143_ScanDate_2016-09-20.pdf)
6. Business Intelligence Reporting Summary (Business Intelligence Dynamics 2016.pdf)

Table of Contents

1. Executive Summary

Provide an introduction that includes a brief overview of the technology project and selected vendor(s).

Project Summary

1. **Parties**:
    a. The contemplated contract is between State of Vermont Department of Motor Vehicles (DMV) and US eDirect, Inc. of Roslyn Heights, Long Island, New York.

2. **Term**:
    a. The term of this contract project is expected to be 5 years (~10/1/2016 – 9/30/2021) as follows:
        i. Implementation:
            • 8 months of implementation
        ii. Operations:
            • Remainder of term through the 5 year agreement.
    b. Contract terms have not yet been finalized at the time of the writing of this Independent Review.

3. **Solution and Cost**: While the contract is expected to cover a 5 year period, the cost analysis covers a 10 year period to support the minimum expected life-cycle.

Total Costs (10 years):	**$4.28M**
Implementation:	**$1.68M**
Operations:	**$2.60M**

    a. Software As a Service: **$1.42M**
        i. Software as a Service: POS Dynamics Enterprise License for 150-175 users ($70K Year 1, $150K annually thereafter)
    b. Hosting: **$250K**
    c. Software Maintenance: **$250K**
    d. Software Support: **$500K**
    e. Implementation Services: **$1.02M**
    f. Hardware: **$494K**
        i. Printers, Credit Card Swipes, Barcode Scanner, Cash Drawer, Pole Display, Document Scanner
    g. Internal staffing: **$173K**
    h. Contingency: **$122K**

4. **Approach**:
   a. Software as a Service of US eDirect Point of Sale (POS) Dynamics software in Amazon Web Services US East Region data center in Virginia, with the backup/disaster recovery site in the US West Region in Northern California.
   b. Implementation and training services provided by US eDirect.
   c. Data integration with other systems to be defined.
   d. Internal DMV staff supporting the project

	BEFORE	AFTER
Application(s)	*HP Sabre*	*POS Dynamics*
Hosting	*AOT*	*AWS*
Sys Admin	*DMV*	*US eDirect*
Application Management	*DMV*	*US eDirect*

5. **Management:** Senior Business Leadership and Subject Matter Expertise are aligned to complete solution implementation.

Vendor Profile

1. **US eDirect, Inc.**
   a. US eDirect is a privately held C corporation incorporated in New York, and is a provider of software and services to Campgrounds and Parks and Recreation Industry since 1999 with over 200 customers globally.
   b. No formal independent audit or review was provided.
   c. Per US eDirect Web Site: "*Since 1999, US eDirect has continued to develop and support the most reliable and comprehensive scheduling and recreational management software in the industry using Microsoft Dynamics Retail Management System (RMS) module at its core. Our focus is on the management needs of complex organizations, with multiple facilities such as; campgrounds, golf courses, aquatic and recreation centers, requiring reservations or activity registration integrated to point of sale. Our primary customer has multiple locations and is looking to centralize their multi-channel point of sale and reporting. We offer comprehensive packages specifically tailored with the features you want and need to run your programs efficiently and effectively.*"
   d. See www.usedirect.com for more information.

1.1 Cost Summary

IT Activity Lifecycle:	10 Years
Total Lifecycle Costs:	**$ 4.28M**
PROJECT COSTS:	*$1.68M*
Software Costs:	*$70K*
Implementation Services:	*$1.02M*
Internal Staffing Costs:	*$155K*
Hardware Costs:	*$260K*
Other:	*$166K*
OPERATING COSTS:	*$2.6M*
Software Costs:	*$1.35M*
Software Maintenance:	*$250K*
Software Support:	*$500K*
Hardware Maintenance:	*$234K*
Internal Staffing Costs:	*$18K*
Hosting:	*$250K*
CURRENT OPERATING COSTS:	$210K
Difference Between Current and New Operating Costs:	**$2.39M increase over 10 years**
Funding Source(s) and Percentage Breakdown if Multiple Sources:	See table below

Funding Source(s) and Percentage Breakdown if Multiple Sources:

FUNDING SOURCE	% of TOTAL	FUNDING SOURCE DESCRIPTION	FUNDING APPLIED TO (Implementation or Operations)	FUNDING AMOUNT
STATE FUNDING: Program Code: 59221; Account Code: 522286; **Implementation**	14.48%	Software-Desktop End User Computing	Implementation	$620,000
STATE FUNDING: Program Code: 59221; Account Code: 507568; **Implementation**	18.22%	IT Contracts – End User Computing	Implementation	$780,000
STATE FUNDING: Program Code: 59221; Account Code: 522217; **Implementation**	6.54%	Hardware-Printers, Copiers, Scan – End User Computing -	Implementation	$280,000
STATE FUNDING: Program Code: 59221; Account Code: 519085; **Operations**	54.88%	Hosting, Maintenance and Support Fees, Software as a Service	Operations	$2,350,000
STATE FUNDING: Transportation Fund Budget; **Operations**	5.89%	Internal Staff and Hardware	Operations	$252,000
TOTAL	**100%**			**$4,282,000**

Implementation Funds: **$1,680,000**
Operational Funds: **$2,602,000**

1.2 Disposition of Independent Review Deliverables

Deliverable	Highlights from the Review *Include explanations of any significant concerns*
Acquisition Cost Assessment	Rates for stated hourly rates and derived hourly rates are high. Comparisons to projects of similar scope point show comparable pricing. Comparison to other bids are high. See *Cost Comparison* (**Section 5.2)** for details.
Technology Architecture Review	The underlying Technology Architecture is sound. See *Technology Architecture* (**Section 6)** for details.
Implementation Plan Assessment	The approach to solution implementation appears sound. See *Assessment of Implementation Plan* (**Section 7)** for details.
Cost Analysis and Model for Benefit Analysis	Cost analysis provides accurate annual cost. No monetary benefits defined. See *Cost Benefit* (**Section 8)** for details.
Impact Analysis on Net Operating Costs	Increase in Operating Costs per attached Project Cost spreadsheet.

1.3 Identified High Impact &/or High Likelihood of Occurrence Risks

Risk Description	State's Planned Risk Response	Reviewer's Assessment of Planned Response
See Risk Register		

1.4 Other Key Issues

Recap any key issues or concerns identified in the body of the report.

1. No other issues identified.

1.5 Recommendation

The following recommendations are made relative to this pending project:

1. Address any remaining "High Risk" Risk Register items.
    a. *Note: As of 11/17/2016, all Risk Register Items have been sufficiently managed to reduce risk below "High Risk" level.*
2. If Risk Register items adequately reduced to an acceptable level, initiate contract draft and then proceed with project pending favorable contract terms and conditions.

1.6 Certification

I certify that this Independent Review Report is an independent and unbiased assessment of the proposed solution's acquisition costs, technical architecture, implementation plan, cost-benefit analysis, and impact on net operating costs, based on the information made available to me by the State.

_____   _____

Signature   **Date**

1.7 Report Acceptance

The electronic signatures below represent the acceptance of this document as the final completed Independent Review Report.

_____   _____

DII Oversight Project Manager   **Date**

_____   _____

State of Vermont Chief Information Officer   **Date**

2. Scope of this Independent Review

2.1 In-Scope

The scope of this document is fulfilling the requirements of Vermont Statute, Title 3, Chapter 45, §2222(g):

The Secretary of Administration shall obtain independent expert review of any recommendation for any information technology initiated after July 1, 1996, as information technology activity is defined by subdivision (a)(10), when its total cost is $1,000,000 or greater or when required by the State Chief Information Officer.

The independent review report includes:
- An acquisition cost assessment
- A technology architecture review
- An implementation plan assessment
- A cost analysis and model for benefit analysis
- An impact analysis on net operating costs for the agency carrying out the activity
- A procurement negotiation advisory services contract (as needed)

2.2 Out-of-Scope

If applicable, describe any limits of this review and any area of the project or proposal that you did not review.

- Procurement Advisory Services.

3. Sources of Information

3.1 Independent Review Participants

List the individuals that participated in this Independent Review.

Name	Employer and Title	Participation Topic(s)
Rob Ide	DMV Commissioner, **Project Sponsor**	Project plan, budget, staffing and desired outcomes
Jennifer Pittsley	DMV **Project Manager**	Primary point of contact; Project kickoff, Discussed project plan, budget, desired outcomes, project risks and risk mitigation
Carol Harrison	Director of Finance & Logistics	Project plan, budget, and desired outcomes
Nancy Prescott	DMV Branch Operations Manager	Project plan, current processes, and desired functionality
Dawna Attig	DMV IT Manager	IT Role during implementation and operations
Robbin Hopkins	DMV Accounts Receivable	Current processes and desired functionality
Cora Laroe	DMV Mail Processing Unit	Current processes and desired functionality
Serena Kemp	SOV; DII Oversight Project Manager	Project Management Oversight
Seamus Loftus	SOV; DII Enterprise Architect	Technology architecture
Glenn Schoonover	SOV Security Officer	Application security
Tom Hurd	Agency of Transportation Chief Information Officer	Desired outcomes and project risk
Andrew Davies	Vice President, US eDirect, Inc.	Participated on the conference call to discuss the vendor response to IR-related questions, which include: Roles, responsibilities, pricing model, comparable projects, ability to meet security requirements, technical architecture, PM Approach, Implementation Approach, Risk Management Approach
Phil Mimmo	Director of Business Development, US eDirect, Inc.	Participated on the conference call to discuss the vendor response to IR-related questions
Mike Giannone	Technical Lead, US eDirect, Inc.	Participated on the conference call to discuss the vendor response to IR-related questions

3.2 Independent Review Documentation

Complete the chart below to list the documentation utilized to compile this independent review.

*All document sources are the Project SharePoint site unless otherwise noted

Document Name	Description	Source*
CIO approved DMV IT_RFP_Cashiering_System_24May2016.pdf	RFP in PDF format	
IT_RFP_Cashiering_System.doc	RFP in Word format	
RFP DMV Cashiering Point of Sale System QA.doc	Vendor Q&A resulting from RFP	
IR Statement of Work Agreement STS - DMV Cashiering POS 09 2016.pdf	Independent Review Statement of Work	
Fin CONFIDENTIAL.pdf	Vendor Financial Statements	
Response to RFP- Cashiering and POS System- Best and Final Offer- US eDirect 8.26.2016.pdf	Vendor BAFO Proposal	
Response to RFP- Cashiering and POS System- US eDirect Inc.pdf	Vendor original proposal	
Risk_Log.xlsx	Project Risk Log	
Stakeholder_Analysis_Log_.xlsx	Stakeholder Analysis Log	
0148_001.pdf	DII OPM Invoice	
Cashiering_Budget_Log_V1.xlsx	Project Budget V1	
Cashiering_Budget_Log_V2.xlsx	Project Budget V1	
Costing_Workbook_DMVPOS_Draft.xlsx	Project TCO Analysis	
CostProposalAnalysis.xlsx	Summary of Bidder Cost	
DII-0037_001.pdf	DII OPM Invoice	
JulyHours.pdf	DII OPM Hours Summary	
CashieringSystem_Newsletter_May.pdf	Project Newsletter	
Communications_Mgmt_Plan.doc	Communications Management Plan	
DMV Cashiering System Replacement Project.pptx	Project Presentation	
DMV Point of Sale System-TalkingPoints.docx	Project Presentation Talking Points	
Meeting_Log_Template.doc	Project Meeting Templated	
ProjectCommunicationsMatrix.xlsx	Project Communications Matrix	
160308_CharterReviewMtg.doc	Charter Meeting notes	
160310_Meeting_Log.doc	Project Meeting notes	
160317_Meeting_Log.doc	Project Meeting notes	
pos working meeting 3-17-15.pdf	Project Meeting notes	
weekly meeting 9-24-15.pdf	Project Meeting notes	
160527StatusReport.docx, 160627StatusReport.docx, 160809StatusReport.docx, 160906StatusReport.docx	Project Status reports	
Architecture_Assessment_Workbook_DMVPOS.xlsx	EA Assessment Workbook	
DMV Architecture Assessment Report.pdf	EA Assessment Report	
ChangeLog.xlsx	Project Change Log	
Charter.doc	Project Charter as of 3/8/2016	
Signed Cashiering System IT ABC Form.pdf	IT ABC Form	
SignedCharter.pdf	Signed Project Charter as of 3/8/2016	
SOV_DMV_Cashiering_IR_KickoffAgenda.docx	IR Kickoff Agenda	David Gadway
AccountsReceivableInformation.pdf	AR Reports	Robbin Hopkins
FeeCode.xlsx	DMV Fee Schedule	Robbin Hopkins
POS-IRContactList.xlsx	IR Contacts	Jen Pittsley
DMV_POS_Vendor_Questions_V1.docx	IR Questions for Vendor	David Gadway
FY15 Revenue Report.xlsx 4thquarter.xlsx	DMV Revenue Report by Fee Code	
POS ERD DataModelDataDict.docx	DMV Data Model	
SOS_RFP_POS.pdf	Delaware Dept. of State Sample POS RFP	
401 (200812_VT_CCR 17) VTDMV_Revenue_Receipt.pdf	VT Drives (DMV Modernization Project) Revenue Receipt Requirements Document	
401 VtDMV_Revenue_High_Level_Design_(Process_Payment)_v2.pdf	VT Drives (DMV Modernization Project) Payment Process	

401 VTDMV_Revenue_Process_Payment (Customer Credit) Addendum1.pdf	VT Drives (DMV Modernization Project) Customer Credit	
402 (200812_VT_CCR 16) VTDMV_Revenue_Multiple Cash Drawer.pdf	VT Drives (DMV Modernization Project) Multiple Cash Drawer	
402 VTDMV_Revenue_Cash_Drawer_HLD_v2.pdf	VT Drives (DMV Modernization Project) Cash Drawer	
406 (200812_VT_CCR 15) VTDMV_Revenue_refund Rules.pdf	VT Drives (DMV Modernization Project) Revenue Refund	
407 VTDMV_Revenue_NSF_HLD_V2.pdf	VT Drives (DMV Modernization Project) Insufficient Funds	
408-Revenue Correspondence Final.pdf	VT Drives (DMV Modernization Project) Revenue Letters	
409-Revenue Corrections_HLD.pdf	VT Drives (DMV Modernization Project) Revenue Correction Process	
410 Fee_Setup_HLD.pdf	VT Drives (DMV Modernization Project) Fee Configuration/Setup	
CCR_36 Miscellaneous Refund Transaction.pdf	VT Drives (DMV Modernization Project) Refunds	
I54 VTDMV Vision Payment HLD Addendum 1 MASTER.pdf	VT Drives (DMV Modernization Project) Revenue and Refund VISION interface addendum	
I54a Interface Spec-VISION (Refund)_MASTER.pdf	VT Drives (DMV Modernization Project) Refund VISION Interface specification	
I54b Interface Spec-VISION (Revenue)_MASTER.pdf	VT Drives (DMV Modernization Project) Revenue VISION Interface specification	
Revenue Supporting Document.xls	VT Drives (DMV Modernization Project) list of correspondence (letter) types and when US eDirect	
CombinedScores.xlsx	Vendor scoring matrix	
Contacts Information for RFI Responses.xlsx	RFI Contacts	
DMV POS RFI QA.docx	RFI Vendor Q&A	
Scorecard.xlsx	Vendor Scoring Matrix template	
Interaction Context Diagram.pdfRequirementsFromRFP.xlsx	Interaction Context Diagram between banks, credit card processor, customers, counter staff, VISION, Tax, and the proposed Cashiering System	
RequirementsLog.xlsx	List of Functional and Technical Requirements	
Task Planning.pdf	Project Task Summary Graphic/Visual	
POS screen shots as is.docx	Current POS screen shots	
POS Screens.xlsx	Current POS screen shot listing, with expected POS replacement process, and comparison of current mouse clicks and to be mouse clicks	
Credential Modifiers Decision Tree.pdf, Credentials Decision Tree.pdf, Credit and Discounts Decision Tree.pdf, CVO Decision Tree.pdf, Driver Improvement Decision Tree.pdf, Enforcement Decision Tree.pdf, Exams Decision Tree.pdf, Parking Placards Decision Tree.pdf, Record Request Decision Tree.pdf, Registration Modifiers Decision Tree.pdf, Taxes Decision Tree.pdf, Titles Decision Tree.pdf, Truck Registration Decision Tree.pdf	Various Functional Process Decision Trees	
TransactionReporting.docx	Transaction History Reporting Use Case	
CashieringSystemSchedule.mpp	Cashiering Project MS Project Gantt Chart	

4. Project Information

4.1 Historical Background

DMV provides services to the citizens of Vermont in a variety of channels and locations, i.e. lock-box, DMV Express (online renewal services), our main office and ten additional branch locations. The department is seeking proposals on how those various channels might be integrated into this application for reporting and reconciliation purposes.

Currently the DMV operations are supported by multiple applications that are in need of modernization. The current portfolio contains more than 30 Access 97 applications, several mainframe applications, a stand-alone custom developed Point of Sale system (P.O.S.), an in house .NET developed data entry application, as well as some COTS applications including an automated testing application.

In DMV's efforts to serve its customer's needs most effectively, the DMV is seeking to consolidate the number of systems and upgrade to systems that are more sustainable and easier to support.

The plan is to start with the replacement of the Point of Sale system, and then continue through a series of additional projects to update the entire Department's application portfolio.

Based on risk of failure for the current P.O.S. application, and the impact that failure would have on the department, it is DMV's top priority to procure and implement a new cashiering/P.O.S. application.

4.2 Project Goal

High level goals of the project include:
- Collect and categorize approximately $300M in revenue;
- Support segregation of duties;
- Support reconciliation processes;
- Implement role based security, auditing, and reporting.

The objectives and success criteria of the project are outlined in the table below:

#	Objective	Success Criteria
1	Define requirements for a solution that would replace the current POS and Cash Log applications.	Requirements necessary to issue an RFP have been identified by February 1, 2016.
2	A new COTS application is implemented to replace the functionality of POS and Cash Log.	The existing POS and Cash Log applications are no longer in use and a new application is operational prior to July 1, 2017.
3	Easily accessible, consistent transaction counts and revenue figures for each different service/item that are processed through this application.	A report will be available from the system for any user defined date range and product/product group (i.e. Credentials; 2 year driver's license vs. 4 year driver's license) at go live.
4	Increased security.	No more shared accounts, and all transactions will have date/time and user information associated with them.
5	Timelier processing of revenue.	The new cashiering system will categorize the revenue into the correct fee codes/accounts at the time the money is received.

4.3 Project Scope

Overall Scope: The high level scope of this project includes the following functional and technical requirements:

4.1.1 Ability to have a customizable home page/Dashboard by user group

4.1.2 Allow for a single consolidated deposit from all batches in one location

4.1.3 Ability to support multiple Tenders, such as but not limited to: e-check, cash, credit card, contactless payments

4.1.4 System should allow a single transaction fee to be split into one or more funds in the following methods: Percentage based splits, dollar amount splits or a combination there of

4.1.5 User should be required to change password every 90 days

4.1.6 System should require strong passwords

4.1.7 Users should be able to request passwords reset or change their own

4.1.8 Ability for the system to calculate sales and or purchase and use tax

4.1.9 Digital signature capture

4.1.10 Ability to print receipts

4.1.11 Imaging of checks and/or money orders received

4.1.12 System should provide an audit trail for all activity

4.1.13 Meets Payment Application Data Security Standards (PCI PA-DSS)

Vendor indicated ability to meet this requirement in the RFP response, but the IR analysis proved otherwise, as Vendor now says they are PCI-DSS vs. PCI PA-DSS compliant. This is identified in the Risk Register. Upon post IR presentation follow up analysis, the following findings were made as of 11/4/2016:

This item was identified as an issue needing resolution during the Independent Review presentation discussion on 10/3/2016. Upon follow-up and further analysis conducted by DII CISO Glenn Schoonover and DMV Project Manager Jen Pittsley, it was the opinion of the CISO that:

"Bottom line: A PCI PA-DSS certified application is not required for the merchant (DMV) to achieve PCI Compliance. The application and the Cardholder Data Environment will be evaluated as part of the overall PCI Assessment, however some payment brands (MasterCard, Visa, AmEx, etc...) may require the use of PA-DSS applications. That would bear further investigation. As to the question of engaging a consultant that would be entirely up to you. Given the nature of this project and the sensitivity of the data involved that might not be a bad idea."

4.1.14 System should lock account if incorrect password is entered multiple times

4.1.15 Integrated credit card processing/authorization

4.1.16 Integration with NADA online for purposes of calculating tax due

4.1.17 Ability to tie cashiering system transaction to supporting documentation that will be keyed and imaged at a later date and time

4.1.18 Ability to automatically generate overpayment request based on business rules

4.1.19 Ability to support multiple layers of General Ledger categorization; i.e. Account, fund, program code

4.1.20 Ability to search by PID/Plate Number/location/date & time, etc.

4.1.21 All transactions to be date and time stamped

4.1.22 Ability to endorse checks

4.1.23 Ability to calculate registration amount for trucks based on a per thousand weight

4.1.24 Ability to maintain 7 years of transaction history

4.1.25 Custom reporting capability that can be exported in a variety of formats

4.1.26 Redundancy and fault tolerance in the event of a network outage by facilitating an offline mode to maintain business operations

4.1.27 Physical security as well as data auditing to prevent data loss, corruption, manipulation, and/or intentional fraud

4.1.28 Allow user definable tenders

4.1.29 Allow split tender capability

4.1.30 Search for items/services in multiple methods

4.1.31 Allow for user defined item/service

4.1.32 Scan bar codes at point of sale

4.1.33 Ability to require management override for price changes

4.1.34 Specify user who completed a transaction

4.1.35 Integration with existing customer information for purposes of pulling back customer information based off PID or Plate entered

4.1.36 Ability to add notes or instructions for specific customers

4.1.37 Ability to add notes or instructions for specific items/services

4.1.38 Ability to bundle items together

4.1.39 Ability to suggest items often purchased together

4.1.40 Ability to put a transaction on hold for another customer service rep to finish

4.1.41 Issue a refund at the Point of Sale

4.1.42 Ability to customize receipts by adding a company logo and or specific messaging

4.1.43 Hardware and/or supplies should not be proprietary

4.1.44 Ability for refunds to be created

4.1.45 Original transaction should be reversed and prevent additional refunds on that transaction

4.1.46 Transaction Summary Reports

4.1.47 Credit Card settlement Reports

4.1.48 Audit Reports

4.1.49 Convert all sales to US dollars using stored exchange rates

4.1.50 Store foreign currency exchange rates by date range

4.1.51 Chip and pin/EMV capable

4.1.52 Overage and shortage report by cashier

4.1.53 End of shift reconciliation reports

4.1.54 Ability to report by cashier, office, service and total department

4.1.55 Software shall not be dependent on updates that require administrative rights to process

4.1.56 System uptime availability of 99.5%, if hosted system

4.1.57 Compatible with VMWare

4.1.58 Compatible with current versions of Internet Explorer, Chrome, Firefox, etc. as well as two previous versions

4.1.59 API capability

4.1.60 Ability to capture e-mail addresses

4.1.61 Ability to opt-in to renewal notices by e-mail

4.1.62 Ability to prohibit specific tender types by customer

4.1.63 Ability to calculate change due to a customer at point of sale

4.1.64 Ability to identify the customer

4.1.65 Ability to charge for multiple services in one transaction

4.1.66 Ability to calculate total due based on services provided

4.1.67 Ability to track Non-Sufficient Funds (NSF) or Protested Checks (PC)

4.1.68 Ability to resolve NSF/PC within the system

4.1.69 Ability to verify funds when check is presented

4.1.70 Ability to interface with VISION (Vermont's PeopleSoft ERP System)

4.1.71 End of shift reconciliation requires user to enter the count of each denomination in drawer (10-$5 bill, 50 quarters, etc.) and the system calculates total cash.

4.1.72 Ability for user to enter check amount for each check at end of shift

4.1.73 Ability to generate a detailed deposit ticket that includes total cash and checks listed individually by check number and dollar amount

Out of Scope:
- Real-time integration with VISION.
- Integration with other third party hosted systems such as Xerox applications, Solutions through Software applications, etc.
- Scanning of documents at the point of sale.
- Integration with the DMV Express service(s).
- Additional functionality within in-house Phoenix application to balance POS to Phoenix.

4.3.1 Major Deliverables

See **Section 4.4** below.

4.4 Project Phases, Milestones and Schedule

Provide a list of the major project phases, milestones and high level schedule. You may elect to include it as an attachment to the report instead of within the body.

The **original** milestones/deliverables of the project are outlined in the table below. **The actual dates are not yet finalized at the time of the writing of this IR report.**

Milestone/Deliverable	Target Delivery Date or Range
Project Start Date	October, 2016
Contract Signing	11/1/2016
Project Kickoff	11/2/2016
Discovery/Requirements Definition	11/24/2016
Database Server Setup	12/2/2016
Data Migration and Validation	1/5/2017
System Setup Sandbox Testing	1/30/2017
Sandbox Testing	5/5/2017
Training	5/26/2016
Implementation/Roll Out	6/26/2017
Go Live with 11 POS Locations	6/27/2017

A payment scheduled aligning payments to deliverables is not yet established. This is identified in the Risk Register.

5. Acquisition Cost Assessment

List all acquisition costs in the table below (i.e. the comprehensive list of the one-time costs to acquire the proposed system/service). Do not include any costs that reoccur during the system/service lifecycle. Add or delete lines as appropriate. Based on your assessment of Acquisition Costs, please answer the questions listed below in this section.

The following chart represents the <u>Acquisition Costs</u> for the stated project period. Detailed composition of these numbers are found in the attached project cost spreadsheet.

IT Activity Lifecycle:	10 Years
Total Lifecycle Costs:	**$ 4.28M**
PROJECT COSTS:	*$1.68M*
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TOTAL	100%			$4,282,000

Implementation Funds:	$1,680,000
Operational Funds:	$2,602,000

5.1 Cost Validation

Describe how you validated the Acquisition Costs.

The Acquisition Costs were validated through the following methods:
1. Comparison of Hourly Rates of Similar Services
2. Comparison with Projects of Similar Scope
3. Comparison with Other Bidders

1. <u>**Comparison of Hourly Rates of Similar Services:**</u>

At $200/hour for report design and development, and $250/hour for software development, hourly rates are considered **high** in comparison to similar services available in the general marketplace of $100/hour and $150/hour respectively.

2. <u>**Comparison with Projects of Similar Scope:**</u>

The Vendor provided the projects listed below indicating they are stated to be similar in Scope.

Vendor was asked to define how the Projects are similar in Scope:

1. <u>In duration and deliverables</u>: It is within the average for *large scale enterprise software implementations* which typically falls between 5 and 7 months.

Vendor was then asked what attributes are considered in indicating the DMV project as a "*large scale enterprise software implementation*":
1. Over 100 end users
2. Comparable transaction volume (although transaction to be determined)

Company Name:	**Miami Dade County Parks**
Company Address:	275 NW 2nd Street, Miami, Florida 33128
Contact Name:	Jeremy Crowley, Sales System Administrator
Contact Telephone Number:	305-755-7823
Date Work Undertaken:	2007 to present

<u>Nature of Assignment</u>: Miami is the nation's 3rd largest County parks system. Miami operates over 100 store locations, >200 POS terminals in addition to the following add-on functionality:
Camp/Program Enrollments (summer camps, after school etc.), Class/Athletic Program Enrollments, Scholarships/Memberships, Customer Account Management/Billing, Park/Facility Reservations (Pavilions, Shelters, Camping, Athletic fields etc.), Park Entry/Tollbooths, Point of Sale Retail, Online Reservations, Online Program Registrations.

Company Name:	**Minnesota Department of Natural Resources**
Company Address:	500 Lafayette Rd. St. Paul, MN 55155
Contact Name:	Megan Klotz
Contact Telephone Number:	651-259-5648
Date Work Undertaken:	2011 to Present

Nature of Assignment: Point of Sale system for >75 State Parks including POS, inventory management, financial system interface and additional recreation management capabilities. Minnesota currently manages approximately 15,000 individual POS items through the system, with 200 POS terminals and 450 end users.

Company Name:	**City of Los Angeles, Department of Recreation and Parks**
Company Address:	3900 W. Chevy Chase Drive Los Angeles, CA 90039
Contact Name:	Pam Orona, Systems Analyst II
Contact Telephone Number:	213-847-0571
Date Work Undertaken:	2004 to Present

Nature of Assignment: City of Los Angeles, Department of Recreation and Parks' Golf Division manages seven 18 hole courses and six par-3/9 hole courses within the City and is one of the busiest golf entities in the United States. The system processes over 1.5M tee times annually through the system, via web, mobile web and IVR. In addition, on-site POS sales and tennis court reservations are processed through the system.

COST COMPARISON CHART:

	High use of POS Functionality	Transaction Volume	End User Count	Pricing (Impl and Ops separate pricing)
DMV	150-175 Terminals	TBD Volume, ~$300M Revenue	Estimated 150-175 End Users	Impl: $884K, Ops $170K (Year 1), $250K (Year 2+) **(5 year total: $2M)**
Miami Dade County Parks	100+Terminals	150K Transactions, $12M+/Yr Revenue	~100	$800K Implementation, $100K/Yr Operations **(5 year total: $1.3M)**
City of Los Angeles, Department of Recreation and Park	50+ Terminals	1.5M Tee Time Transactions/Yr	~100	$450 K implementation; $100K/year operations **(5 year total: $1M)**
Minnesota Department of Natural Resources	200+ Terminals	850K Transactions, $20M+ Revenue	~400	$0 Implementation, $800K/Yr Operations (funded through convenience fees) **(5 year total: $4M)**
Missouri Department of Natural Resources	200+ Terminals	280K Transactions, $16M+ Revenue	~350	$0 Implementation, $1M/Yr Operations (funded through convenience fees) **(5 year total: $5M)**

In summary, the VT project costs are **comparable** with similarly scoped projects by this vendor, given price range of $1M to $5M, with VT at $2M, over a 5 year period.

3. **Comparison with Other Bidders:**

The table below compares US eDirect proposal with other bidders. Other than the Hosting cost difference, which is not significant, this relative apples to apples comparison shows the selected solution significantly **higher** than all other bidders except one.

Vendor	Hosting Included	Implementation Costs	Total Annual Costs over 5 years	Total Costs	Delta to other bids
A	No	$811,390	$265,310	**$1,076,700**	-48%
B	No	$1,093,413	Self-Funded	**$1,093,413**	-47%
C	No	$1,610,000	$1,025,000	**$2,635,000**	28%
D	No	$486,415	$645,345	**$1,131,760**	-45%
E	No	$820,840	$466,536	**$1,287,376**	-37%
F	Yes	$148,500	$1,169,700	**$1,318,200**	-36%
US eDirect	Yes	$884,000	$1,170,000	**$2,054,000**	

As such, the VT project costs are **higher** when compared with other bidders on this project.

5.2 Cost Comparison

How do the above Acquisition Costs compare with others who have purchased similar solutions (i.e., is the State paying more, less or about the same)?

Point of Comparison	Measure
Hourly Rates:	Costs are **high** in comparison to market rates.
Similarly Scoped Projects:	Costs are **comparable** to similarly scoped projects.
Comparison with other bidders:	Costs are **high** in comparison to other bids.

5.3 Cost Assessment

Are the Acquisition Costs valid and appropriate in your professional opinion? List any concerns or issues with the costs.

As outlined in the Cost Comparison **Section 5.2** above, in summary, this project has costs which trend **higher** than the analyzed cost comparison attributes.

Additional Comments on Acquisition Costs:
 None.

6. Technology Architecture Review

After performing an independent technology architecture review of the proposed solution, please respond to the following.

SUMMARY:
1. Services to implement Recreation Dynamics Point of Sale Software as a Service (SaaS) from US eDirect, the software vendor.
2. Hosting environment provided by Amazon Web Services.
3. Internal Project Management and Subject Matter staff supporting the project.

See **Appendix 4** for detailed technology specifications.

1. **State's IT Strategic Plan:** Describe how the proposed solution aligns with each of the State's IT Strategic Principles:
    - i. Leverage successes of others, learning best practices from outside Vermont.
    - ii. Leverage shared services and cloud-based IT, taking advantage of IT economies of scale.
    - iii. Adapt the Vermont workforce to the evolving needs of state government.
    - iv. Apply enterprise architecture principles to drive digital transformation based on business needs.
    - v. Couple IT with business process optimization, to improve overall productivity and customer service.
    - vi. Optimize IT investments via sound Project Management.
    - vii. Manage data commensurate with risk.
    - viii. Incorporate metrics to measure outcomes.

    - a. The following describes how this project exploits these principles:
        - i. Leverage successes of others, learning best practices from outside Vermont.
            1. *The proposed solution is proven and in use in many other cities and states as a Point of Sale application in the Recreation Industry for City and State Government clients. However, US eDirect has not yet implemented the solution to serve State Motor Vehicle clients.*

        - ii. Leverage shared services and cloud-based IT, taking advantage of IT economies of scale.
            1. *The application will be hosted at Amazon Web Services US East Region (Virginia) with multiple availability zones and failover to US West Region (N. California).*

        - iii. Adapt the Vermont workforce to the evolving needs of state government.
            1. *The proposed solution is expected to support desired operational improvements, many of which are back office operations. There is the chance that counter services take longer until such time that workflows can be shortened, as there is the chance that additional data, not currently collected, is collected in the new application, extending current workflow processes.*

iv. Apply enterprise architecture principles to drive digital transformation based on business needs.

1. *If Enterprise Architecture is defined as "alignment between IT and business concerns: to guide the process of planning and design the IT/IS capabilities of an enterprise in order to meet desired organizational objectives", then this project does deploy such principles to drive digital transformation of business needs by utilizing current database and web-based technologies to facilitate more efficient business processes and more complete data management (more data tracked, more accurate data, better reporting/visibility into the data).*

v. Couple IT with business process optimization, to improve overall productivity and customer service.

1. *This project is expected to improve back office productivity through reduction in manual processes such as financial reconciliation and revenue recognition. It may have a negative impact on customer service in the short term.*

vi. Optimize IT investments via sound Project Management.

1. *Both the Vendor and SOV are expecting to provide sound Project Management services on this initiative.*

vii. Manage data commensurate with risk.

1. *The approach to data security is sound. See the SECURITY section below.*

viii. Incorporate metrics to measure outcomes.

1. *This project has established metrics to target. See **Section 4.2** for details.*

2. **Service Level(s):** What is the desired service level for the proposed solution and is the technical architecture appropriate to meet it?

    <u>Desired</u> **Service Levels** were not defined in the RFP. See the ***Service Level Agreement*** section below for a description of the Service Levels the vendor is proposing.

3. **Sustainability:** Comment on the sustainability of the solution's technical architecture (i.e., is it sustainable?).

    A Windows Server/SQL Server based platform, built using the .NET development environment is expected to be sustainable.

4. **License Model:** What is the license model (e.g., perpetual license, etc.)?

    The proposed solution is a software as a service (SaaS) model, with pricing comprised of an annual software subscription.

    See the cost spreadsheet for the detailed components of what comprises the proposed solution.

    The license fee is approximately $1,000 per user annually.

5. Security: Does the proposed solution have the appropriate level of security for the proposed activity it will perform (including any applicable State or Federal standards)? Please describe.

Per the Vendor:

US eDirect meets FedRAMP, SOC Compliance, PCI Compliance, HIPAA Compliance, HTTPS API, Built-in Firewalls, and Multi-Factor Authentication.

- Defense controls include Secure Access, Built-In Firewalls, Unique Users, Multifactor Authentication, Private Subnets, Encrypted Data storage, dedicated connection option, and security logs.
- Uses AWS IAM tool with unique security credentials.
- Uses AWS security tools
- Uses Amazon IAM single sign-on
- SaaS solution uses HTTPS and SSL/TLS for secure communications.
- Information is secure
- AWS does monitor their system, and the POS does have monitoring tools in place.
- The system generates an audit trail for all activity pertaining to transactional/sale processing, refunds, returns and other tasks such as voids.
- Data is encrypted at rest, and uses SSL when required over APIs.

Security Architecture and Design: Describe the Vendor's proposed approach to support technical controls and technology solutions that must be secured to ensure the overall security of the System:

The overall Application and Data Security Model appears sound, and is described below.

Application Security Model:

Access to account data by US eDirect employees is limited to a necessary set of users consistent with their assigned responsibilities. Except to the extent necessary to provide subscribed services and as documented in our privacy policy, customer account data is not shared with any third parties. All customer account data access is logged and regularly audited.
- All communication from clients to the Recreation Dynamics (RD) servers is outbound on either port 80 or 443 and can be configured to use a proxy server.
- SSL encryption is enabled by default for client-server, and server-side payloads and data transfers (in-transit).
- Event data and Cold Storage Backup data is encrypted at-rest automatically using AWS Key Management Service.
- Operational data collected and stored by RD is not encrypted. The system encrypts any PII data.
- Recreation Dynamics, through Payment Dynamics is PCI-Compliant, PA-DSS Certified. The above statement was made by Vendor in initial response to Independent Review request for information. See section "***PCI Compliance***" below for additional detail.

Additional information:
- RD maintains a robust application security program. Developers receive application security training in areas including the OWASP Top 10.
- All projects go through a mandatory security review by the security team, and US eDirect performs continuous application vulnerability scanning on both staging and production environments.
- US eDirect conducts automated static code analysis and perform regular third-party security assessments.

Data Security Model:

Per the Vendor: "We only store the following non-sensitive PII, which is encrypted. No sensitive PII is stored."
- Name
- Address
- Phone
- Email Address
- DOB

If "Sensitive PII" is considered as those in the list below, as Driver's License and State ID information is to be collected and stored, the above statement would no longer be true:
- Social security numbers
- Bank account numbers
- Passport information
- Healthcare related information
- Medical insurance information
- Student information
- Credit and debit card numbers
- Driver's license and State ID information

Vendor indicates: *The Cashiering System does not store Driver's License or State ID- this is done in the Mainframe system. There is a potential integration to the Mainframe system whereby we could reference this information when performing a search, but the data would be stored in Mainframe only.*

This item is identified in the Risk Register.

PCI compliance: Vendor claimed in their response to the RFP, support as a "Standard Feature" for requirement# 4.1.13: *Proposed Solution is Payment Card Industry Payment Application Data Security Standard (PCI PA-DSS) validated.*

Vendor also notes PCI PA-DSS compliance on their web site page: http://www.usedirect.com/payment_processing.html (see screen shot below)
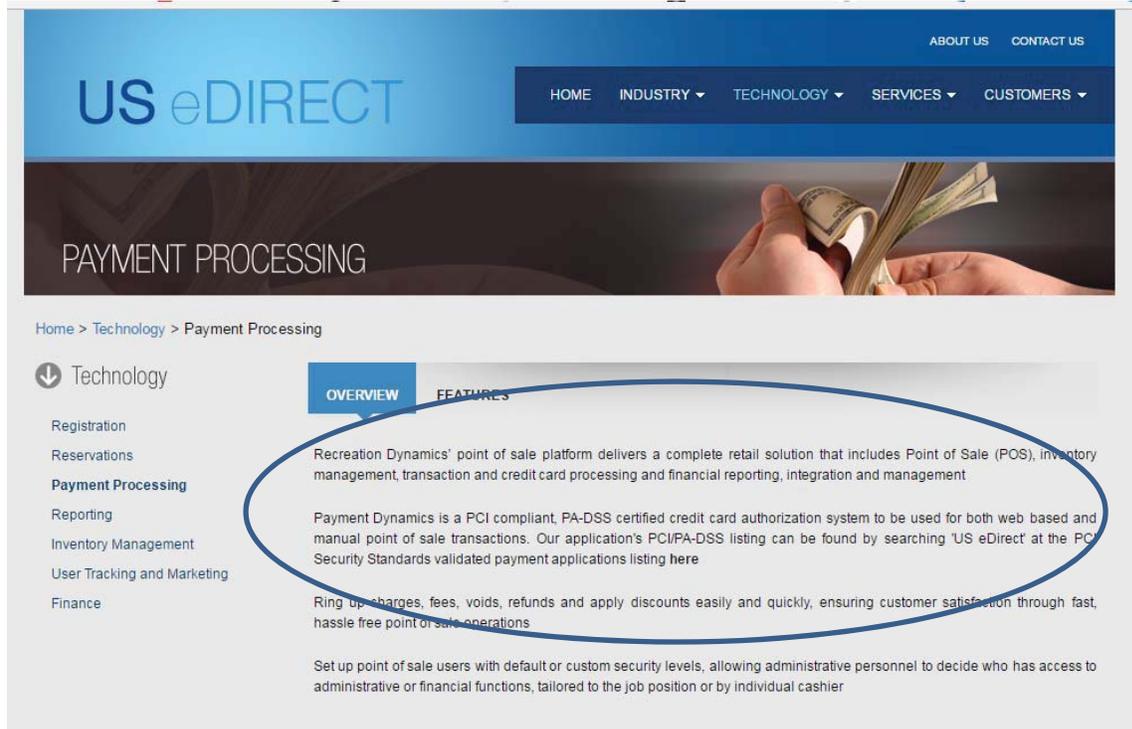
Independent Reviewer attempted to validate this by going to the link on that web page where the page says "…found by searching 'US eDirect' at the PCI Security Standards validated payment applications listing **here**.".

Clicking on "here" brings the user to *https://www.pcisecuritystandards.org/assessors_and_solutions/payment_applications?agree=true*

Independent Reviewing found only *PRE-EXISTING DEPLOYMENTS* are valid.

Independent Reviewer asked Vendor about this, and Vendor changed positions, claiming only PCI-DSS compliance. See the following detail explaining the change in position:

Independent Reviewer Question: Help me understand what compliance you are claiming: "Our system is PCI DSS compliant, in addition to storing all customer data under HIPAA compliance guidelines. "

> **US eDirect Response:** We are claiming PCI compliance. PA-DSS is regarding payment *applications* – i.e. is required for any system that utilizes an application that runs on the local computer terminal that processes credit cards. As our system moved to fully web based over the last 3 years, we no longer needed to pursue the PA-DSS standards.
>
> However, we are in the process of re-certifying for new deployments due to our goal of providing a version of our system which runs in an offline environment and thus would require a local payment application. As discussed, this would not however, process credit cards in an offline environment.
>
> A copy of our PCI-DSS compliance certificate is found below.
>
> Our corporate website is presently being overhauled and many of these areas of information are being updated to provide greater accuracy.

Independent Reviewer Question: The proposal in response to the RFP, specifically 4.1.13, indicates PCI PA-DSS compliance is a "STANDARD" function. Are you saying you want to change that response? If so, what response is correct?

> **US eDirect Response:** The correct response is PCI-DSS, which is appropriate for the web-based payment processing that does not use a local payment application.

Independent Reviewer Question: In your response to Independent Review questions, you provided this response to an Application Security-related question: "*Recreation Dynamics, through Payment Dynamics is PCI-Compliant, PA-DSS Certified.*", claiming the application is PCI PA-DSS Certified. Are you saying the application is not PCI PA-DSS Certified?

> **US eDirect Response:** Please replace the verbiage of 'PA-DSS' to 'PCI-DSS'.

These items are identified in the Risk Register.

Additional Information:

1. US eDirect uses Amazon Web services (AWS) for their cloud infrastructure. AWS Data Centers and Service Offerings have the following set of certifications for government and federal applications:
    a. FedRAMP Certification for the AWS Gov Cloud, and Public Cloud EAST and WEST regions ([FedRAMP AWS Information](#))
        i. Services Covered under FedRAMP, and US eDirect in the RD (Recreation Dynamics) Roadmap:
            1. RedShift - (Data Warehousing) https://aws.amazon.com/redshift/
            2. EC2 - (Virtual Server hosting) - https://aws.amazon.com/ec2/?hp=tile
            3. S3- (Amazon Simple Storage Service) https://aws.amazon.com/s3/
            4. EBS- (Elastic Block Store) https://aws.amazon.com/ebs/
            5. IAM - (Identity and Access Management) https://aws.amazon.com/iam/
    b. PCI DSS Level 1 Compliance (All Regions, All Services)
    c. ISO 27002 (All Regions, All Services)
    d. DoD Cloud Security Model Provisional Authorization (All Regions, All Services)
    e. ISO 9001:2008 (All Regions, All Services)

2. Infrastructure hosted in VMs managed in the AWS infrastructure will be provisioned with Windows Server 2012, and Linux AMI - 3.14.kernel Operating System. These servers are configured by default with the EC2 Security Groups Virtual Firewall for AWS VMs, which is part of the Amazon AWS EC2 certification of FedRAMP. The AWS virtual infrastructure has been designed to provide optimum availability while ensuring complete customer privacy and segregation. Additional security measures include:
    a. Secure access. Customer access points, also called API endpoints, allow secure HTTP access (HTTPS) so secure communications sessions are established using SSL/TLS.
    b. Built-in firewalls. Control egress as well as ingress.
    c. Unique users. The AWS Identity and Access Management (IAM) tool allows control to the level of access to the AWS infrastructure services. With AWS IAM, each user can have unique security credentials, eliminating the need for shared passwords or keys and allowing the security best practices of role separation and least privilege.
    d. Multi-factor authentication (MFA). AWS provides built-in support for multi-factor authentication (MFA).
        i. Of note: MFA is used by US eDirect staff to gain access to servers, not for end users to gain access to the application.
    e. Encrypted data storage. The data objects in Amazon EBS, Amazon S3, Glacier, Redshift, and SQL Server RDS are encrypted automatically using Advanced Encryption Standard (AES) 256, a secure symmetric-key encryption standard using 256-bit encryption keys.   S3 is expected to be used for DMV.
    f. Security logs: AWS CloudTrail provides logs of all user activity within the AWS account. This provides a log of what actions were performed on each AWS resources and by whom. The AWS API call history produced by CloudTrail enables security analysis, resource change tracking, and compliance auditing.
    g. Trusted Advisor. The Trusted Advisor service monitors AWS resources and alerts admins on security configuration gaps such as overly permissive access to certain EC2 instance ports and S3 storage buckets, minimal use of role segregation using IAM, and weak password policies.

When the Independent Reviewer asked Vendor: "Do any of the proposed applications store, process, or transmit cardholder data?", Vendor responded: "All modules at DMV locations use EMV compliant devices

and our system is 'out of scope' (i.e. it does not store, process or transmit card data.) If a web application for self-service is requested in the future our PCI compliant web applications will transmit cardholder data in an encrypted format."

Static Code Review Findings:
None conducted to date.

SSAE Type II Audit Report Results:
None provided however in RFP response, Vendor indicated willingness to comply. Further, vendor indicates: "*The system is hosted in our hosting partner AWS which has multiple SSAE 16 Type II audited facilities. AWS has in the past successfully completed multiple SAS70 Type II audits, and now publishes a Service Organization Controls 1 (SOC 1) report, published under both the SSAE 16 and the ISAE 3402 professional standards.*"

Penetration Test Findings:
See attached "*ScanID_7074143_ScanDate_2016-09-20.pdf*".

In summary, the **Security** appears sound, although there are several questions on why Vendor misrepresented their PCI-related security position, which are identified in the Risk Register.

6. **Hosting Environment**
    a. See the **HOSTING** section in **Appendix 4** for details.
    b. In summary, application is hosted by AWS East Region Data Center in Virginia with failover to availability zones within the East region and DR fail over to AWS US West Region in California.

   In summary, the **Hosting Environment** appears sound.

7. **Compliance with the Section 508 Amendment to the Rehabilitation Act of 1973, as amended in 1998:**
   Comment on the solution's compliance with accessibility standards as outlined in this amendment.
   Reference: http://www.section508.gov/content/learn

   Vendor indicates system complies with Section 508, having done extensive work with Minnesota and Capitol Visitor Center clients to provide 508 compliance and have provided VPAT's, and use industry standard tools for monitoring this compliance including WAVE accessibility tool.

   US eDirect design team understands the requirements of Section 508 and WCAG 2.0. The general guidelines are embedded in the design team culture and testing is conducted throughout the design process to conform to standards.

US eDirect uses the following check lists as a general guideline for web design
- SiteImprove tool
- Section 508: webaim.org/standards/508/checklist/
- WCAG 2.0: webaim.org/standards/WCAG/checklist/
- These practices are followed in our web design
- Check Keyboard Accessibility
- Evaluate Form Accessibility and Usability
- Check Images
- Verify Color and Contrast
- Test Content Scaling
- Check Headings and tags

In summary, the solution appears to meet **Section 508 Amendment to the Rehabilitation Act of 1973**.

8. **Disaster Recovery:** What is your assessment of the proposed solution's disaster recovery plan; do you think it is adequate? How might it be improved? Are there specific actions that you would recommend to improve the plan?

Please see DR/BC section described in **Appendix 4**.

In summary, the **DR/BC** plan is sound and adequate.

9. **Data Retention:** Describe the relevant data retention needs and how they will be satisfied for or by the proposed solution.

Data is retained for 4 days as described in **Appendix 4**.

There is a question as to whether 4 days is adequate when compared to up a 3 year minimum requirement by State of VT. This is identified in the Risk Register.

10. **Service Level Agreement:** What is your assessment of the service level agreement provisions that the proposed vendor will provide? Are they appropriate and adequate in your judgment?

SUMMARY OF SLAs:

TECH SUPPORT - SERVICE LEVEL AGREEMENT:
1. Service Levels: Software Support/Help Desk: Provides post-implementation 24x7 Support services, available via either toll free support line, or designated support email address- support@usedirect.com.
    a. Email: support@usedirect.com
    b. Phone: 516-767-2431 or Toll Free 866.935.4653
2. Support and Maintenance support window:
    a. Live support for "System issues" available from 7:00AM - 11:00 PM (EST) Monday - Sunday
    b. 'After Hours' support for system down issues provided 24x7x365. After Hours support is voicemail based. Typical response time is 15-30 minutes.
3. Support and maintenance response times and priority levels:
    a. **Level I Priority:** A Deficiency condition exists where any Software Component becomes unavailable, jeopardizes the Agency's compliance with laws, affects the security or integrity of any of the Agency's data, or degrades the Agency's response time below the performance requirements. Expect that all Level I Priority Deficiencies are resolved within **four (4) hours** of the notification of Deficiency.
    b. **Level II Priority:** A Deficiency condition exists and moderately disrupts the Agency's business operations or requires users to implement temporary Workaround processes for no more than one (1) Business week. Expect that all Level II Priority Deficiencies are resolved within **seven days** of the notification of Deficiency.
    c. **Level III Priority:** A Deficiency condition exists that minimally disrupts the Agency's business operations, causes a noticeable degradation in the software's response time but does not degrade below the Agency's performance requirements. Expect that all Level III Priority Deficiencies are resolved within **30 calendar days** of the notification of Deficiency.

SYSTEM RESPONSE TIME - SERVICE LEVEL AGREEMENT:
1. System Response Time for POS systems is < 3 seconds response time for end users.

SYSTEM AVAILABILITY - SERVICE LEVEL AGREEMENT (3 9s, 4 9s?): 99.9%
1. With an SLA uptime of 99.9%, US eDirect is committing that all solution components will be fully functional for public and agency staff to operate the system. The downtime of .0114% will include any unplanned outage time that the system is unavailable to provide its primary function. (This is considered 3 9's)

BUG FIX – SERVICE LEVEL AGREEMENT:
1. See TECH SUPPORT above.

HOSTING SERVICE LEVEL AGREEMENT:
1. US eDirect utilizes Amazon Web Services (AWS) for hosting. AWS will use commercially reasonable efforts to make Amazon EC2 and Amazon EBS each available with a Monthly Uptime Percentage of at least 99.95%.

DR/BC DESCRIPTION AND SERVICE LEVEL AGREEMENT:
1. Please see DR/BC section described in **Appendix 4**.
2. RPO: 1 minute.
3. RTO: 3 hours.

In summary, the proposed **Service Level Agreements** appear to meet VT requirements and expectations.

11. **System Integration:** Is the data export/reporting capability of the proposed solution consumable by the State? What data is exchanged and what systems will the solution integrate/interface with? ***Please create a visual depiction*** and include as **Appendix 1** of this report. Will the solution be able to integrate with the State's Vision and financial systems (if applicable)?

The proposed System Integration methodology is consumable by the State, given the web services and API approach anticipated to be used.

See **Appendix 1** for details.

In summary, the approach to **System Integration** is sound and adequate.

Additional Comments on Architecture:
None.

7. Assessment of Implementation Plan

7.1 Implementation Readiness

After assessing the Implementation Plan, please comment on each of the following.

1. **The reality of the implementation timetable**
   a. 8 months.
   b. See **Section 4.4** for Deliverables/Milestones.

   In summary, the **implementation timetable** appears reasonable given the Vendor's experience with other similar projects.

2. **Training of users in preparation for the implementation**

   In short, the Vendor utilizes a *Train the Trainer* methodology. US eDirect has found best results, and have proposed, on site *Train the Trainer*, role based training. In addition, the Vendor recommends an IT training room or other setup where the users are able to perform 'hands on' training.

   Additionally, please see the sample POS User Guide (*POS User Guide 2016.pdf*) attached to this report. This guide will be the basis of the specific user guide provided to DMV based on any additional required functions.

   In summary, the **training** approach appears sound and adequate.

3. **Do the milestones and deliverables proposed by the vendor provide enough detail to hold them accountable for meeting the Business needs in these areas:**

   A. Project Management
   B. Training
   C. Testing
   D. Design
   E. Conversion (if applicable)
   F. Implementation planning
   G. Implementation

   Please see Deliverables/Milestones Section (**Section 4.4**) for detail on Milestones and Deliverables.

   In summary, **there is sufficient detail enabling the vendor to be held accountable.**

4. **Does the State have a resource lined up to be the Project Manager on the project? If so, does this person possess the skills and experience to be successful in this role in your judgement? Please explain.**

   a. DMV has assigned Jen Pittsley and Jordan Villa to this effort. It is expected that 1 FTE will be allocated among these two people.
   b. Vendor has assigned one staff member to this effort for PM services, as described below, at .5 FTE.
   c. In summary, Project Management approach, resources, time allocation and skill set, are adequate.

5. **Readiness of impacted divisions/departments to participate in this solution/project**

    a. **DMV has assembled the following team for this project:**
        i. Rob Ide, DMV Commissioner, **Project Sponsor**
        ii. Jennifer Pittsley, **Project Manager**
        iii. Jordan Villa, **Project Manager**
        iv. Other project roles per the table below:

Name	Unit	Project Role
Carol Harrison	Director of Finance & Logistics	Executive Oversight Committee
William "Jake" Elovirta	Director of Enforcement & Safety	Executive Oversight Committee
Shannon Fassett	DMV Section Manager	Manager of the Mail Processing Unit
Nancy Prescott	DMV Branch Operations Manager	Manager of Counter Services staff
Donna Earle	Comm. Vehicle Operations Manager	Subject Matter Expert
Robbin Hawkins	Accounts Receivable	Subject Matter Expert
Cora Laroe	Mail Processing Unit	Subject Matter Expert
Dawna Attig	IT Manager	IT project support
Bob Laughlin	IT Systems Developer	IT project support

    b. **The vendor <u>Executive</u> team includes:**
        i. Andrew Davies, Division Vice President
          1. Role in Organization: Manages the division responsible for our enterprise point of sale (POS), recreation and ticketing clients.
        ii. Thomas Juliani, Technical Director
          1. Role in Organization: Manages the implementations of our major clients in the POS and recreation space.
        iii. Phil Mimmo, Director of Business Development
          1. Role in Organization: Responsible for the generation of new business for our POS, recreation and ticketing division, in addition to serving as a point of escalation for our current clients for contractual and implementation deliverables
        iv. Tony Alex, President
          1. Role in Organization: As President and founder, Tony oversees the on-going operations of the company, and serves in a steering role for large scale clients such as the State of Vermont.

    c. **The vendor <u>Project</u> team includes:**

Andrew Davies	Engagement Manager	.1 FTE
Tom Juliani	**PM**	**.5 FTE**
Viji Nair	BA	.4 FTE
Mike Giannone	Technical Lead	.2 FTE
Luis Jara	Technical Support	.1 FTE
Madhu Gupta	Data	.1 FTE
Keith Boone	QA	.2 FTE

Mr. Juliani is the designated Project Manager for this implementation. He is responsible for coordinating the project timeline, and managing US eDirect's additional staff resources. During implementation, Mr. Juliani will serve as the primary point of contact for the State.

Based on our experience conducting IRs, when comparing this project to other technology projects, both the vendor and department staff appear to be fully prepared to undertake a project of this scope.

6. Implementation/Project Management

This section describes vendor's approach to **Implementation and Project Management**.

US eDirect follows the Microsoft Dynamics 'Sure Step' implementation methodology for all implementations, including large software projects such as the one being proposed to DMV. This project management methodology is used for all personnel, subcontractors (if applicable) and project phases.

In summary, Sure Step is a compatible alternative to a pure PMBOK approach to Project Management. As such, US eDirect's Project Management approach is acceptable.

The five phases of the implementation project lifecycle denoted in the Sure Step Methodology is as follows:
1. Analysis
2. Design
3. Development
4. Deployment
5. Operation

Sure Step Methodology breaks down the activities across eight cross-phases:
1. Program Management
2. Technical Infrastructure
3. Training
4. Integration and Interfaces
5. Data Migration
6. Requirements and System Configuration
7. Custom Code Development
8. Quality and Testing

Each of these activities may be broken down into smaller work packages.

Additionally, the Independent Reviewer researched how 'Sure Step' crosswalks to PMBOK, and discovered the following information:

The whole project management discipline part of the **project management library** of Sure Step maps almost directly to what PMBOK calls the *knowledge areas*:

PMBOK	Sure Step
Integration Management	*(Program Management cross phase process)*
Scope Management	Requirements and System Configuration
Time Management	Time and Cost Management
Cost Management	Time and Cost Management
Quality Management	Quality and Testing
Human Resource Management	Resource Management
Communications Management	Communications Management
Risk Management	Risk Management / Issue Management
Procurement Management	Procurement Management
	Sales Management

There is one major and fundamental difference between Sure Step and PMBOK: Sure Step is written for, and from perspective of a solutions or service provider, while PMBOK is written from the perspective of the services buyer. This is why Sure Step has an extra discipline which is called *Sales Management*. Furthermore, Sure Step doesn't have an official *Integration Management* discipline, a cornerstone of project management in PMBOK, and in Sure Step this discipline roughly matches the program management cross-phase process.

Detailed Sure Step PM Approach to be used by US eDirect:

1) Analysis Phase - Goals, Tasks, Activities and Deliverables
The Analysis phase represents the official start of the implementation project. This phase is summarized here:
Goals:
- Confirm project scope and Work Breakdown Structure (WBS)
- Define and agree upon the project governance aspects of the implementation,
- Project Charter
- Define requirements and Develop a System Requirements Specification Document,
- Update and maintain the requirements traceability matrix
- Project Kickoff Meeting - Core Project Team / Stakeholders
  - Project Plan and WBS for the project
  - Project assumptions
  - Project scope review
  - Overview of documents to be developed
  - US eDirect expectations of Agency's role in project
  - Agency's expectations of US eDirect role in project
  - Other topics of interest, time permitting
- Infrastructure Review
  - Review existing infrastructure
  - Review existing technical environment
  - Develop Infrastructure Assessment Document
- Functional Requirements Gathering

- Conduct Discovery sessions
- Produce System Requirements Specifications Document
- Create Playground/Sandbox (Demo and Pilot Environments)
  - Install the application into a demo environment
  - Create the demo and pilot databases required for the implementation
  - Distribute and configure the client software components.
- Conduct Fit Gap Session (Gap Analysis)
  - Develop Formal Fit/Gap Summary document that describes at a high level the fits, gaps, and alternative solutions.
  - List of possible gaps, associated business needs, alternatives discussed, and recommended solutions where possible.
  - Validate list of potential customizations.
  - Document alternatives and initial functional specifications for customizations, conversions, interfaces, reporting, security, and workflow.

Key activities
Service Documents to be produced
- Business and Functional Requirements (System Requirements Specification Document)
- Operational Requirements
- Infrastructure Assessment Document
- Fit Gap Identification and Prioritization Report (Gap Analysis)
- Project Plan, WBS, and Resource-loaded Schedule for Design, Development and Test phase
- Communication Plan
- Test Plan

Milestones
- Agency accepts the US eDirect Service Documents to include, but not limited to the System Requirements Specification Document.
- Establish the Requirements Functionality Traceability Matrix for the key components that require development.

2) Design Phase - Goals, Tasks, Activities and Deliverables
The goal of the Design Phase is to define how the business requirements from the discovery and functional requirements gathering sessions will be implemented. This phase includes configuration of the overall POS Dynamics solution and the design of specific customizations needed to satisfy business requirements identified during the Analysis Phase. The customizations can range from simple user interface or report modifications to complex functionality additions or modifications based on the needs of the Agency. The phase also includes mapping for the interfaces and designing for the integration and data migration programs required to support the requirements. At the end of the phase, the master project plan will be updated and evaluated for impacts to scope and budget.
This phase is summarized here:

Key Activities
- US eDirect
  - Develop overall solution concept approach.
  - Design configuration and setup information for the new system
  - Design the integration scope
  - Design reporting approach and needs
- Agency
  - Agency team will attend business review workshops and project meetings

- Agency Project Manager will ensure SME involvement and project personnel participation
- Agency Project Sponsor will secure involvement from organization

Key deliverables
- Solution Design
    - Reporting requirements
    - System Administration
    - Registration processes
    - Reservation processes
    - Customer user interfaces and functions- online
    - Staff, administrative controls and functions
    - Interfaces
    - Tender Interfaces
    - Import interfaces
    - External interfaces
    - Security
    - Finalize Integration Strategy and Planning
    - Installation and setup of Demo, Development and Test environments.
    - Functional and Technical Design Document

Milestones
- Agency accepts the Functional and Technical Design Document

3) Development Phase - Goals, Tasks, Activities and Deliverables

The goal of the Development Phase is to develop the customization, integrations, and data migration processes that are defined and approved in the design specifications agreed upon in the previous steps. The major deliverables include the complete system configuration and the Enterprise Design Document. At the end of the phase, the master project plan will be updated and evaluated for impacts to scope and budget.

The POS Dynamics environment will utilize infrastructure through various phases of implementation. This infrastructure will be comprised of workstations, various hardware components, and software. Within this group activity, the hardware and software components will be put together to form the basis of development, test and conversion environments.

The US eDirect technical team will be providing the technical infrastructure specifications for all environments that will be utilized during the remainder of implementation. These specifications are detailed in the Infrastructure Assessment Document (Analysis phase deliverable).

- Pilot testing
    - Focuses on the successful completion of all the end-to-end business processes for the application.
- Data Migration
- Security
    - Document the activities involved in the use and application of a security layer throughout the POS Dynamics Implementation.
- Create Production Process Documentation
    - Detailed documentation which will be used as a training manual and post-production reference materials. As the POS Dynamics environment is developed and tested, the documentation will detail the steps specific to Agency business processes.

Key US eDirect activities during Development Phase:
- Deployment of Infrastructure and systems
- Configure base application on hardware
- Finalize base application configuration and setup data
- Develop and unit test the integrations and customizations
- Develop and configure reports
- Configure system security
- Conduct Integration Testing (including developing test scripts)
- Conduct System Testing
- Develop production process documentation (user manual)

Key Agency activities during Development Phase:
- Provide the data source files in format as specified for all integration points
- Make accessible the resources needed to validate base software configuration and setup data in conjunction with the US eDirect team
- Make accessible the resources needed to perform Integration and System Testing in conjunction with the US eDirect team
- Make available all the relevant departmental teams for training
- Make available the technical team resources for knowledge transfer

Service Documents to be produced
- Production Process Document

Milestones
- Process Testing complete
- Integration Testing complete
- System Testing complete
- Code Freeze

4) Deployment Phase - Goals, Tasks, Activities and Deliverables

The Deployment Phase will be a series of events as outlined in the Project Plan. Primarily this involves readying the environments for the software, loading the data and creating an environment for effective User Acceptance Testing. This is followed by a final Test Phase which validates all user functions and system functions. At the conclusion of this final testing, the system is ready to 'Go Live'.

This phase includes all the activities related to Performance and User Acceptance Testing, End User Training, and the actual cut-over to the new production environment. This phase marks the culmination of the Rollouts in terms of taking the solution live. The key deliverables and milestones of the Deployment Phase are listed below.

Goals
- User Acceptance Testing (UAT)
    - Acceptance testing is typically performed as one of the last steps before a system goes live. This testing includes the execution of key business processes to verify the output is consistent with a given set of inputs. The acceptance test verifies both the integration of the system and the configuration of the system by simulating transactions very close to those expected in production.
- Final Cut-Over (Go-Live)

- During this activity, the production hardware infrastructure is configured and validated. All hardware and software components needed to operate smoothly in production are verified.

Key US eDirect Activities during Deployment Phase
- Assist Agency in final hardware infrastructure and software configuration
- Finalize production process documentation
- Assist Agency in hand-over to US eDirect Support

Key Agency Activities during Deployment Phase
- Provide access to US eDirect to configure hardware infrastructure and software
- Develop and implement procedures and policies to support Agency personnel as required

Service Documents to be produced
- UAT Report

Milestones
- End User Training
- User Acceptance Testing
- GO LIVE

5) Operations Phase - Goals, Tasks and Deliverables

The Operations Phase transitions the Agency from the implementation project into on-going support following a successful go-live.

The deliverables for this phase include the transition from the implementation phase, to the support, maintenance and operations phase. Project closing also takes place where the agreed upon project documentation is provided to the customer and the agency signs off on, and formally accepts the system. The Key Deliverables and Milestones of the Operation Phase are listed below:

Deliverables
- Post Go-Live Support Report

Milestones
- Agency accepts the post live support agreement
- Agency formally closes the implementation project

7. **Adequacy of design, development, migration/conversion, and implementation plans**

This section describes vendor's approach to **design and development**.

See **2) Design** and **3) Development** phases described in the **Implementation/Project Management** section above.

Additionally, US eDirect uses Microsoft Excel to list the **requirements** in a matrix format indicating the module, requirement description, vendor required and requirement exists in US eDirect's system. Requirements that are needed and do not currently exist will then require additional documentation (change management, design, functional specification, and sign-off). Requirement changes will be added to Asana (Asana is web based software designed to improve team collaboration, allowing users to manage projects and tasks online. Teams create work spaces, projects and tasks, with notes, comments, attachments, and tags can be added to tasks.)

In summary, the **design and development** approach appears sound and adequate.

This section describes vendor's approach to **System Integration**.

In summary, the **System Integration** approach appears sound and adequate, which is primarily through the use of Web Services and APIs. See **Appendix 1** for additional detail.

This section describes vendor's approach to **Conversion/Migration**.

US eDirect plans to migrate **Static** and **Dynamic** Data from the existing system to the POS Dynamics system.

Static data may be obtained over a period of time and validated, and is typically provided in an Excel file or other similar format from the legacy system. Once the data has been imported it is unlikely that this data will change.

The Dynamic data and its validation is much more critical to the time constraints of a near-zero down-time transition. Essentially, there is the need to migrate the dynamic data into the system and directly cut over to the new system. This type of migration requires a very specific plan outlined below.
Static Data:
1. Fee Information
2. Finance and AR information such as Departments and General Ledger coding
3. Tax types and Percentages
4. Terminal security id's, usernames, user levels, user controls

Dynamic Data:
1. Customer Information (while the majority of this data remains fixed, we consider this dynamic as we will do iterative imports of customer data to capture new customers, up until go live)
2. Pending voids, returns, refund checks
3. Payment Balances
4. Gift card balances

The transport process for this is performed via import script from the data import files provided to the DMV and loaded with legacy data, via script into US eDirect SQL database.

The primary source will be the legacy POS system in regards to fees, departments etc. There may be the requirement to also migrate data stored in other systems such as the mainframe system, this will be determined during initial planning meetings.

For Static Data 1-2 rounds of migration are expected, dependent on the quality of the data provided initially. Typically, additional rounds may be needed if the data loaded was found to be inaccurate or requiring changes, but this is rare.

For Dynamic Data, such as customer information should this be imported, an iterative process is performed up until Go Live. Frequency is dependent on the availability of the data from the system of import, but typically the import accuracy is validated early in the schedule, and then more frequent imports are performed using the import script, up until the day prior to Go Live.

In summary, the **Conversion/Migration** approach appears sound and adequate.

This section describes vendor's approach to **Deployment**.

See **4) Deployment** phases described in the **Implementation/Project Management** section above.

Additionally, US eDirect does not require a client to run their previous system in parallel with the US eDirect system after Go Live. In the majority of software implementations, clients transition in full to the new application. The risk of full cutover is minimized through stringent user acceptance testing in the stages leading up to Go Live, ensuring fully tested scenarios that will be used in the new system.

US eDirect indicated DMV may choose to run their previous system in parallel in the following ways, which are optional and yet to be determined:
- Launch the POS system in a staged approach across one or multiple locations at a time (meaning the launched locations use the new system, and the ones that haven't been launched remain on the current system. This approach can be beneficial for scheduling VT's project resources.)
- Launch the new system but keep the previous system available in the event that its use is required. While US eDirect feels this is unlikely to be needed, it is an available option.

In summary, the **Deployment** approach appears sound and adequate.

The one area that requires additional detail is deliverable acceptance criteria, as that has yet to be developed. This is identified in the Risk Register.

1. **Adequacy of support for design, development, conversion/migration, and implementation activities**

   a. **DESIGN/DEVELOPMENT:**
      i. Both Vendor and DMV demonstrate adequate support in this area.

   b. **CONVERSION/MIGRATION:**
      i. Both Vendor and DMV demonstrate adequate support in this area.

   c. **IMPLEMENTATION:**
      i. Both Vendor and DMV demonstrate adequate support in this area.

2. **Adequacy of agency and partner staff resources to provide management of the project and related contracts (i.e. vendor management capabilities)**
   a. Both Vendor and DMV demonstrate adequate support in this area. See section above regarding Project Management approach and staff allocation from both Vendor and DMV.

3. **Adequacy of testing plan/approach**

   US eDirect's testing plan approach is to provide **Test Plans** as part of the project implementation. Test cases are provided in a Microsoft Excel format for ease of use. Testing is broken out into groups e.g., connectivity from locations to Servers, compatibility with existing and new hardware (POS registers and supporting peripherals), data (stores, locations, pricing).

   US eDirect uses Microsoft Excel to list **Test Cases**. Each line is a very specific test. The tests are organized into functions e.g., Transactions – cash sale, Transaction - credit card sale, Transaction– Cash Return, Customer – add new customer, Customer – search for existing customer. Each test case contains a description of the test, how to perform the test, the desired result, Tester name, date tested, pass/fail. Test cases will be role based. Each test case line contains a description of the test, how to perform the test, who should perform the test, the desired result, Tester name, date tested, pass/fail.

   Finally, US eDirect uses Microsoft Excel for the **User Acceptance Test (UAT)** check list. These tests will be scenario based by user roles. Each line is a very specific test. The tests are organized into functions for each role. Each test case contains a description of the test, how to perform the test, who should perform the test, the desired result, Tester name, date tested, pass/fail. User Acceptance testing will be at the location to verify the production environment and all configurations needed for that location.

   In summary, the **<u>Testing Plan/Approach</u>** appears sound and adequate.

4. **General acceptance/readiness of staff**

   The overall Acceptance and Readiness of DMV staff is strong. The team is comprised of qualified members, who are motivated to implement the proposed solution.

Additional Comments on Implementation Plan:

None.

7.2 Risk Assessment & Risk Register

*After performing a Risk assessment in conjunction with the Business, please create a **Risk Register** as an **Appendix 2** to this report that includes the following:*

1. ***Source of Risk**: Project, Proposed Solution, Vendor or Other*
2. ***Risk Description**: Provide a description of what the risk entails*
3. ***Risk ratings to indicate**: Likelihood and probability of risk occurrence; Impact should risk occur; and Overall risk rating (high, medium or low priority)*
4. ***State's Planned Risk Strategy**: Avoid, Mitigate, Transfer or Accept*
5. ***State's Planned Risk Response**: Describe what the State plans to do (if anything) to address the risk*
6. ***Timing of Risk Response**: Describe the planned timing for carrying out the risk response (e.g. prior to the start of the project, during the Planning Phase, prior to implementation, etc.)*
7. ***Reviewer's Assessment of State's Planned Response**: Indicate if the planned response is adequate/appropriate in your judgment and if not what would you recommend.*

See **Appendix 2.**

Additional Comments on Risks:

None.

8. Cost Benefit Analysis

1. **Analysis Description:** Provide a narrative summary of the cost benefit analysis conducted: The approach used was to gather all costs associated with project for a **10 year period**, identify revenue sources for the project, and identify tangible and intangible benefits that might also be used as revenue sources or expense reductions.

    a. COST COMPONENT: See the attached spreadsheet referenced in **Appendix 3** to gain an understanding of:
        i. Source of Funds
        ii. Use of Funds
        iii. Change in Operating Costs

    b. BENEFIT COMPONENT:
        i. See the Tangible and Intangible Benefits described below.

2. **Assumptions:** List any assumptions made in your analysis.
    a. Staff reductions are not expected or contemplated through the implementation of this solution.
    b. There is no revenue recovery anticipated.
    c. Costs are segmented into **Project Cost** and **Operational Costs.**

3. **Funding:** Provide the funding source(s). If multiple sources, indicate the percentage of each source for both Acquisition Costs and on-going Operational costs over the duration of the system/service lifecycle.
    a. The primary source of funds include, the following, the detailed amount from which are specified in the attached Project Cost spreadsheet referenced in **Appendix 3**:

Funding Source(s) and Percentage Breakdown if Multiple Sources:

FUNDING SOURCE	% of TOTAL	FUNDING SOURCE DESCRIPTION	FUNDING APPLIED TO (Implementation or Operations)	FUNDING AMOUNT
STATE FUNDING: Program Code: 59221; Account Code: 522286; **Implementation**	14.48%	Software-Desktop End User Computing	Implementation	$620,000
STATE FUNDING: Program Code: 59221; Account Code: 507568; **Implementation**	18.22%	IT Contracts – End User Computing	Implementation	$780,000
STATE FUNDING: Program Code: 59221; Account Code: 522217; **Implementation**	6.54%	Hardware-Printers, Copiers, Scan – End User Computing -	Implementation	$280,000
STATE FUNDING: Program Code: 59221; Account Code: 519085; **Operations**	54.88%	Hosting, Maintenance and Support Fees, Software as a Service	Operations	$2,350,000
STATE FUNDING: Transportation Fund Budget; **Operations**	5.89%	Internal Staff and Hardware	Operations	$252,000
TOTAL	**100%**			**$4,282,000**

Implementation Funds: $1,680,000
Operational Funds: $2,602,000

4. **Tangible Benefits:** Provide a list and description of the tangible benefits of this project. Tangible benefits include specific dollar value that can be measured (examples include a reduction in expenses or reducing inventory, with supporting details).
   a. There are no tangible benefits that can be monetized through this project.

5. **Intangible Benefits:** Provide a list and description of the intangible benefits of this project. Intangible benefits include cost avoidance, the value of benefits provided to other programs, the value of improved decision making, public benefit, and other factors that become known during the process of analysis. Intangible benefits must include a statement of the methodology or justification used to determine the value of the intangible benefit.
   a. Reduce risk associated with the potential for fraud within the existing application.
   b. Improved Operational Efficiencies through elimination of manual processes, which then also improves Employee Productivity.
   c. Improved Customer Service in terms of timely and accurate data, and reduction if number of times Customer needs to follow up with DMV or DMV needs to follow up with Customer.
   d. Modern software application that is easily maintainable by the vendor. The current solution has no vendor support nor can DMV make and compile code changes.
   e. Strengthening Security (both application and data security).
   f. Reduce number of refund transactions by 10%.
   g. Centralized document management when that is implemented (future phase).

6. **Costs vs. Benefits:** Do the benefits of this project (consider both tangible and intangible) outweigh the costs in your opinion? Please elaborate on your response.
   a. There are no tangible dollar benefits with this project.
   b. There is no monetary value assigned to the intangible benefits.

c. Given current operating costs of **$210K** over 10 years and the new expected operating costs of **$2.6M** over 10 years, <u>we expect an operating cost increase of **$2.39M**</u> with a **$1.68M** implementation cost to achieve that.

d. As such, the monetary benefits do not outweigh the costs. Monetary benefits should not be the reason to pursue this project.

7. **IT ABC Form Review:** Review the IT ABC form (Business Case/Cost Analysis) created by the Business for this project. Is the information consistent with your independent review and analysis? If not, please describe.

a. Reviewed the IT ABC Form and related project cost spreadsheet.

b. It is a comprehensive and fairly detailed cost analysis. Both the Implementation and Operational cost totals were compared to the IR Project Cost Spreadsheet, and numbers are much higher in the project cost spreadsheet, as summarized here:

ITEM	IT ABC FORM Budget	IR budget	% increase over IT ABC Budget	% increase over IT ABC Budget
Implementation Budget	$985,000	$1,680,000	$695,000	71%
M&O Budget (10 year total)	$1,300,000	$2,602,000	$1,302,000	100%
TOTAL	**$2,285,000**	**$4,282,000**	**$1,997,000**	87%

Additional Comments on the Cost Benefit Analysis:
No additional comments.

9. Impact Analysis on Net Operating Costs

As noted in **Section 1.1** above, the Cost Summary for this project is:

IT Activity Lifecycle:	10 Years
Total Lifecycle Costs:	**$ 4.28M**
PROJECT COSTS:	*$1.68M*
Software Costs:	*$70K*
Implementation Services:	*$1.02M*
Internal Staffing Costs:	*$155K*
Hardware Costs:	*$260K*
Other:	*$166K*
OPERATING COSTS:	*$2.6M*
Software Costs:	*$1.35M*
Software Maintenance:	*$250K*
Software Support:	*$500K*
Hardware Maintenance:	*$234K*
Internal Staffing Costs:	*$18K*
Hosting:	*$250K*
CURRENT OPERATING COSTS:	**$ 210K**
Difference Between Current and New Operating Costs:	**$2.39M increase over 10 years**
Funding Source(s) and Percentage Breakdown if Multiple Sources:	See table below

Funding Source(s) and Percentage Breakdown if Multiple Sources:

FUNDING SOURCE	% of TOTAL	FUNDING SOURCE DESCRIPTION	FUNDING APPLIED TO (Implementation or Operations)	FUNDING AMOUNT
STATE FUNDING: Program Code: 59221; Account Code: 522286; **Implementation**	14.48%	Software-Desktop End User Computing	Implementation	$620,000
STATE FUNDING: Program Code: 59221; Account Code: 507568; **Implementation**	18.22%	IT Contracts – End User Computing	Implementation	$780,000
STATE FUNDING: Program Code: 59221; Account Code: 522217; **Implementation**	6.54%	Hardware-Printers, Copiers, Scan – End User Computing -	Implementation	$280,000
STATE FUNDING: Program Code: 59221; Account Code: 519085; **Operations**	54.88%	Hosting, Maintenance and Support Fees, Software as a Service	Operations	$2,350,000
STATE FUNDING: Transportation Fund Budget; **Operations**	5.89%	Internal Staff and Hardware	Operations	$252,000
TOTAL	**100%**			**$4,282,000**

Implementation Funds: $1,680,000
Operational Funds: $2,602,000

1. See the spreadsheet attached in **Appendix 3** to review impact to Operating Costs.

2. Provide a narrative summary of the analysis conducted and include a list of any assumptions.
    a. The detailed spreadsheet provided with this analysis breaks out costs as follows:
        i.   Implementation (Project) Costs: Costs tied specifically to the Vendor. In other words, those costs that are incurred because we are undertaking the project.
        ii. Operating Costs: Internal costs, consisting of staffing and telecommunication costs, and external costs consisting of contracted services and on-going use of the software and related hosting.
        iii. Total Costs: Project Costs plus Operating Costs.

    b. The TOTAL COSTS are broken out as **IMPLEMENTATION (Project) COSTS** and **OPERATING COSTS**.

3. Explain any net operating increases that will be covered by federal funding. Will this funding cover the entire lifecycle? If not, please provide the breakouts by year.
    a. There are no Federal Funding sources. All Operating Costs/Operating Cost increases are funded with State of Vermont dollars.

4. What is the break-even point for this IT Activity (considering implementation and on-going operating costs)?
   a. There is no break-even point. This project is expected to cost more than current operational costs.

Appendix 1 - System Integration

SYSTEM INTEGRATION/INTERFACES

The Vendor indicated use of web services for SOAP and API for Restful services as the methods to exchange data between the proposed solution and DMV Systems.

The proposed solution has web services capabilities. Broadly speaking the services are grouped under
   a. Customers
   b. Transactions
   c. Document storage
   d. Financials (NSF checks, AR)
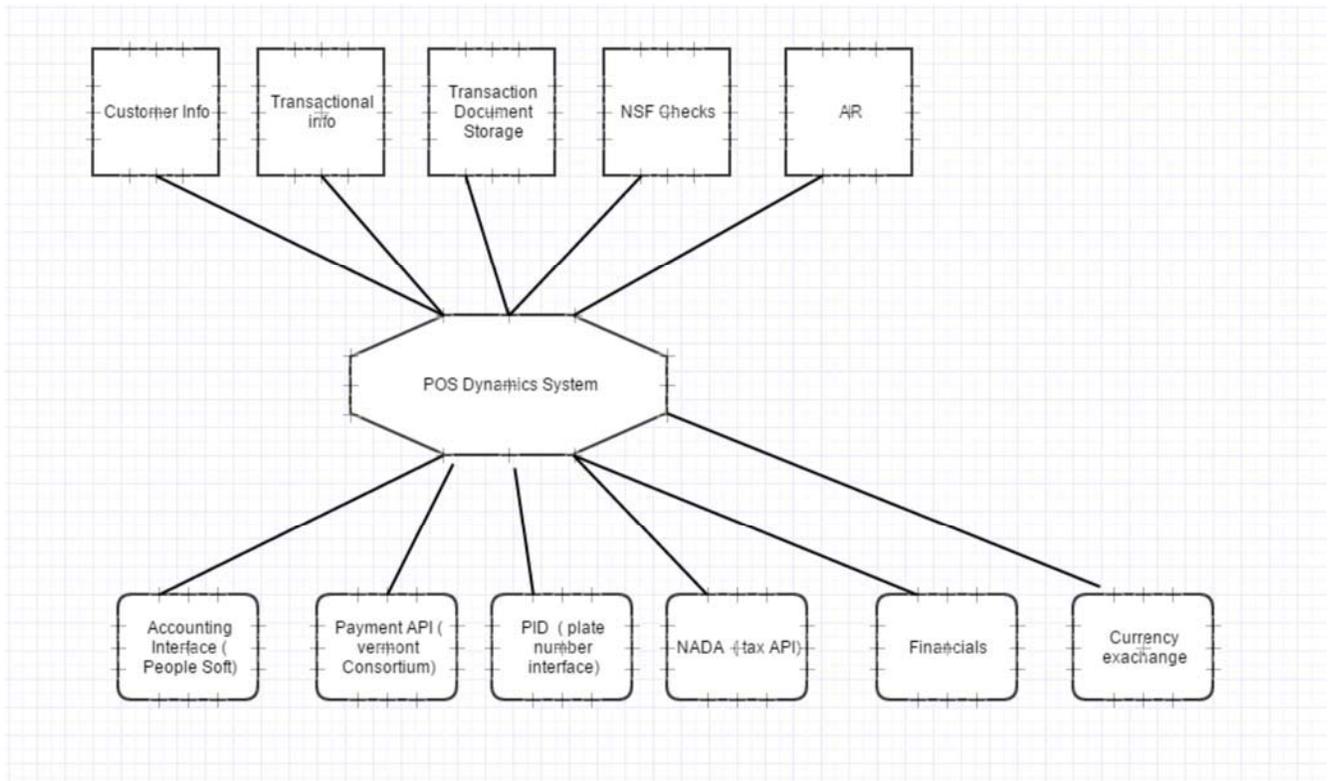
The system interacts with external APIs for:
   • Credit card processing
   • Accounting interface to People soft, where data is seamlessly transferred into the general Ledger buckets as required by the PeopleSoft format
   • Communication with NADA API for online tax referral
   • Currency exchange API

DMV expects to integrate with proposed solution as described in the diagram below:
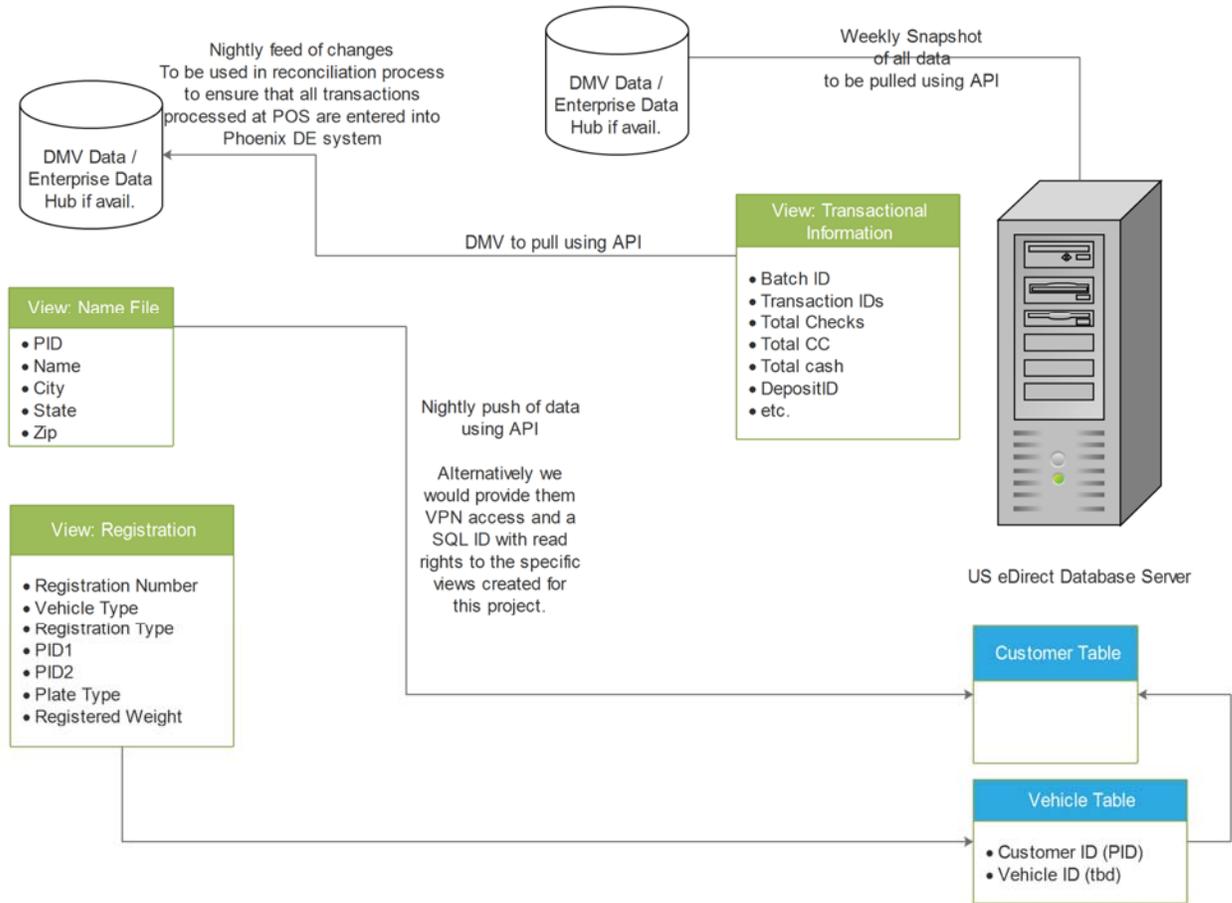
Of note: As highlighted above in the Security section of this report, DMV expects proposed solution to store Driver License information, which is considered sensitive PII information, while the Vendor indicated an expectation that they would not be storing Driver License information. This is identified in the Risk Register.

Appendix 2 - Risk Register

See attached document: FINAL-REVIEW-SOV- DMV-Cashiering -STS_Risk_Register_FINAL.pdf

Appendix 3 – Lifecycle Costs and Change in Operating Costs

See attached document: FINAL-REVIEW-SOV-DMV-Cashiering-STS_Cost_Detail_FINAL.xlsx

Appendix 4 – Technology Infrastructure

<u>ARCHITECTURE</u>

<u>Summary:</u>
- Amazon Web Services EC2 Virtual Server Hosting the application using hardware assisted virtual instances (HVM)
    - See https://aws.amazon.com/ec2/?hp=tile for more detail
- Windows Servers
- .NET application architecture
- Four environments, each of which utilizing DMV's data:
    - Production
    - QA (US eDirect Internal)
    - Testing (US eDirect for DMV to test new releases, features, bug fixes prior to a production release)
    - Training (US eDirect for DMV to train new employees in a dedicated training environment)

<u>Application Server Standard Configuration:</u>
- Microsoft Windows Server 2012

<u>Web Server Standard Configuration:</u>
- Microsoft Windows Server 2012
- IIS Version 8.0

<u>Database Server Standard Configuration:</u>
- Microsoft Windows Server 2012
- Microsoft SQL Server 2012 Standard

<u>Vendor Applications:</u>
- <u>Recreation Dynamics</u> (http://www.usedirect.com/parks.html) and the following modules within Recreation Dynamics:
    - <u>Point of Sale</u> (http://www.usedirect.com/payment_processing.html)
        - Note: Called "*Payment Dynamics*" on Vendor web site, although Vendor indicates new naming convention of "*Point of Sale Dynamics*"
    - <u>Finance</u> (http://www.usedirect.com/finance.html)
    - <u>Reporting</u> (http://www.usedirect.com/reporting.html)
- <u>Business Intelligence Dynamics</u> was also proposed, but there is no web page describing that product. See the attached PDF titled: "*Business Intelligence Dynamics 2016.pdf*" describing this product.
- Note: There is a lack of clarity on what products are actually being proposed, as Vendor proposed "Point of Sale System Dynamics" in their proposal, yet when asked, Vendor provided the product names listed above. Additionally, there is a disconnect in the product naming conventions and descriptions between the product names listed above and the product names listed on Vendor web site. This is identified in the Risk Register.

Diagrams illustrating Technical Architecture:
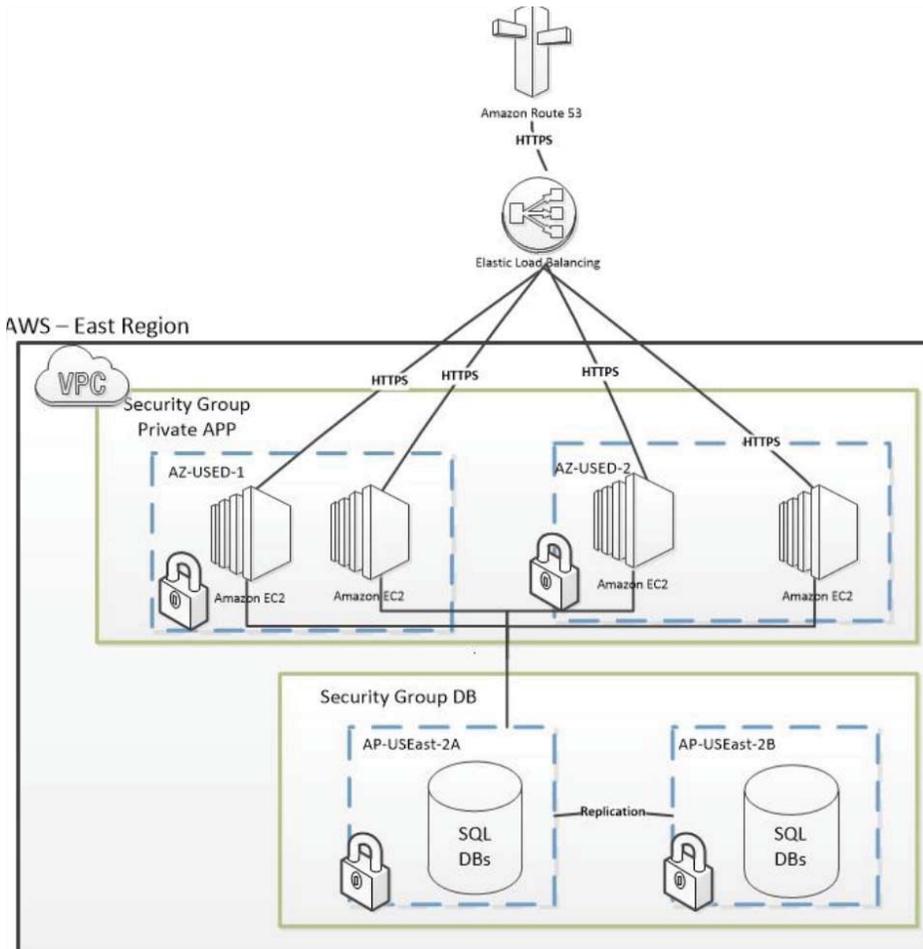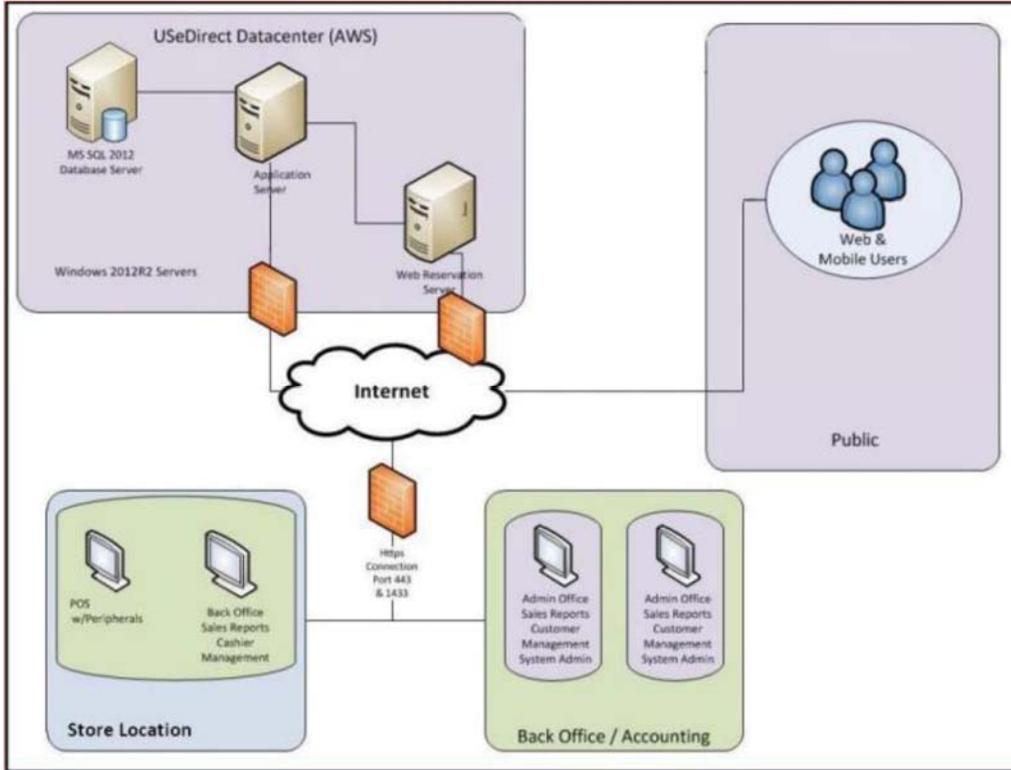
PRODUCTION ENVIRONMENT

- 2-3 load balanced Web Servers front ending the database server; exact number to be determined based on work load, <mark>which may impact budget as identified in Risk Register.</mark>

RELEASE TO PRODUCTION APPROACH

- Any new release version of the system is placed into the testing environment after it passes US eDirect internal QA. The Test environment is updated to the new version and a set of release notes is provided to DMV, in addition to training/demonstration of any new features, where required. The DMV SMEs and/or project staff can then test the system functionality, utilizing provided test plans. Once sign off occurs, a production update is scheduled based on the DMV's desired schedule. This is performed outside of normal business hours, typically 5-6am EST.

CLIENT

- Client workstation running Windows 7, 8, or 10
- Browsers: Vendor maintains support for a minimum of the previous 2 release versions as well as newly released versions for these browsers.
    - Internet Explorer
    - MS Edge
    - Google Chrome
    - Mozilla Firefox
    - Safari
    - Android Browser
    - Opera
    - Netscape

SOFTWARE DEVELOPMENT

- The current development environment/toolset is as follows:
    - .NET Framework V4.5
    - C# is programming language
- The development methodology is Agile

HOSTING

- The solution components reside on the scalable AWS cloud, which is designed for rapid scalability and high availability.
- Expect to deploy Amazon hardware assisted virtual instances (HVM) of Compute (EC2), Storage (S3), and Virtual Private Cloud (VPC).

<mark>Not sure yet of which instances of EC2 and S3 are to be used, but anticipate 3-4 front end web servers and one database server , which may impact budget as identified in Risk Register.</mark>

<u>SYSTEM MONITORING</u>
- The monitoring tool employed for the POS Dynamics product is called, New Relic.
- Alarms are maintained for various aspects of the system; key personnel are alerted via a variety of methods about impending problems such as disk space, memory, SLA, network congestion, etc. By having this production data available and analyzing it in the monitoring tools as well as with Business Intelligence (BI) tools, analysts are able to make recommendations to the State. Metrics from different time periods are used to compare how the overall system and or a specific function is performing as compared to the baseline.
- Additionally, AWS built-in tool called CloudWatch is used.
- System is monitored 24x7.

<u>DISASTER RECOVERY/BUSINESS CONTINUITY</u>
The primary production site for the Vermont DMV will be the AWS East Region Data Center in Virginia with failover to availability zones within the East region and DR fail-over to AWS US West Region in California.

The DR plan will use two approaches, "**Warm Standby**" and "**High Availability System**".

"**Warm Standby**"– the term warm standby is used to describe a DR scenario in which a mirrored version of a fully functional environment is always running in the cloud. Us eDirect will use this method to provide redundancy for the SQL database servers. The primary production SQL Server will be replication in real-time using Double-Take Availability (Vision Solutions) to the warm standby server to an exact replica located in the DR site. Using this method will not only allow US eDirect to replicate the production data but also any backup and transactions logs contained on the production server. Double-Take Availability continuously captures byte-level changes and asynchronously replicates the changes in real time to the DR site. Double-Take Availability ensures no data loss or downtime. In a disaster, the system can be reconfigured to use the warm standby server as the primary server to provide support for full production-load with no loss of data. All "Warm Standby" occurs within the US East Region (Virginia) location (including availability zones). If all availability zones fail, failover to US West (N. California) is initiated manually, with fail back also initiated manually.

"**High Availability System**" – The application and public facing web servers will use this method. These servers do not store critical data nor do files change on a regular basis so remain mostly stateless. These web and application servers will be duplicated in both zones (Primary and DR) and always running. The application and web servers will be both load balanced in order to direct traffic.

Snapshots of the application and public facing web services will be created on a regular basis. Amazon EC2 storage will be used as the destination for snapshots which will be located in AWS. If a disaster scenario were to occur, EC2 instances would be created in the AWS DR location from the Snapshots.

Activation of Emergency Response Team

When an incident occurs this plan must be activated by approved senior management at US eDirect. Senior management will decide the extent to which the DR/BC plan must be invoked.

Responsibilities of the team as it relates to this DR plan are to:
- Respond immediately to a potential disaster and call emergency services
- Assess the extent of the disaster and its impact on the business, data center etc.
- Decide which, if any, elements of the DR/BC Plan should be activated
- Contact Support per instructions below to "declare" a disaster and advise what DR servers need to be spun up
- Ensure all appropriate personnel are notified and allocate responsibilities and activities as required.

Business Office Disaster

In general this plan includes the following:
- Development Infrastructure Backup and Disaster Management including processes of off-site storage, recovery and periodic testing
- Call Center and Support System Backup and Disaster Management including processes of off-site storage, recovery and periodic testing
- Accounting and Financial Systems Backup and Disaster Management including processes of off-site storage, recovery and periodic testing
- Seamless operational transition across US eDirect business officers
- Telephone and Data Network Recovery and Failover management including processes of off-site storage, recovery and periodic testing.

In each instance, we have outlined precise steps to be taken by all relevant team members to ensure the following:
- Escalation is expedited to the right contacts as real time as possible, requiring a LIVE contact
- Swift and appropriate action is taken
- Impact to operations/customer service is minimized/obverted
- Issue is resolved quickly and efficiently
- Incident is logged and distributed to the team for future learning/opportunities

The DR plan will be housed in a multi-sheet excel workbook. US eDirect manages this process and ensures all updates are distributed to relevant team members after any/all changes and updates.

In summary, the **Disaster Recovery/Business Continuity** plan appears sound and adequate.

DATA BACKUP/RESTORE

Backup Plan:

US eDirect will use this method to provide redundancy for the SQL database servers:

The primary production SQL Server will be replicated in real-time using Double-Take Availability (Vision Solutions) to the warm standby server to an exact replica located in a different zone DR site. Using this method will not only allow US eDirect to replicate the production data but also any backup and transactions logs contained on the production server. Double-Take Availability continuously captures byte-level changes and asynchronously replicates the changes in real time to the DR site. Double-Take Availability ensures no data loss or downtime. In a disaster, the system can be reconfigured to use the warm standby server as the primary server to provide support for full production-load with no loss of data.

1. Recovery Point Objective (RPO): 1 minute
2. Recovery Time Objective (RTO): 3 hours
3. No real data retention period, rather, near real time data replication.

Restore Plan:

1. Not entirely applicable based on backup approach, as there is no restore, rather, repoint to warm standby server as noted above. <mark>This is identified in Risk Register.</mark>

In summary, the **Data Backup/Restore** plan appears sound and adequate.

DMV: Cashiering Point of Sale System Project

RISK REGISTER DESCRIPTION:

1. Risk Description: Provide a description of what the risk entails
2. Source of Risk: Project, Proposed Solution, Vendor or Other
3. Risk Rating: Risk ratings to indicate: Likelihood and probability of risk occurrence; Impact should risk occur; and Overall risk rating (high, medium or low priority)
4. Risk Strategy: State's Planned Risk Strategy: **Avoid, Mitigate, Transfer or Accept**
   a. Avoid: Avoid the activity; activities with a high likelihood of loss and large impact.
   b. Mitigate: Develop a plan to reduce risk to reduce the risk of potential loss; activities with a high likelihood of occurring, but impact is small.
   c. Transfer: Outsource risk (or a portion of the risk - Share risk) to third party or parties that can manage the outcome; activities with low probability of occurring, but with a large impact. Often times this is transferred back to vendor.
   d. Accept: Take the chance of negative impact, eventually budget the cost (i.e. a contingency budget line); activities where cost-benefit analysis determines the cost to mitigate risk is higher than cost to bear the risk, then the best response is to accept and continually monitor the risk.
5. Timing of Risk Response: Describes the suggested timing for carrying out the risk response (e.g. prior to the start of the project, during the Planning Phase, prior to implementation, etc.)
6. State's Planned Risk Response: Describe what the State plans to do (if anything) to address the risk (See Risk Response table)
7. Reviewer's Assessment of State's Planned Response: Indicate if the planned response is adequate/appropriate in your judgment and if not what would you recommend.

Department Action Step: Respond to the sections highlighted in yellow (Risk Strategy, State's Planned Risk Response) and send copy back to David Gadway for review

NOTE: Hyperlinks are used on the Risk ID. From the Risk Register, CTL-CLICK on a link to see the Risk Response, or from the Risk Response, CTL-CLICK on a link to go back to the Risk Register.

RISK REGISTER:

Risk #:	Risk Description	Source of Risk	Risk Rating: Impact	Risk Rating: Probability	Risk Rating: Overall Risk	State Risk Strategy Summary (Avoid, Mitigate, Transfer, Accept)	Timing of Response	Reviewer Assessment of Response
1a	Budget/Funding: Not all project costs known. Examples include: 1. Credit and Debit fees, First Data check verification fees, and First Data gateway fees. 2. Number of front end web servers necessary (AWS EC2 instance type). 3. Storage requirements (AWS S3 storage class).	Project	Medium	Medium	Medium	Mitigate	Prior to contract execution	Risk strategy accepted.

	Project	Medium	Medium	Medium	Mitigate	Prior to contract execution	Risk strategy accepted.

2a	**Contract Item:**
	The contract is a major component of the Procurement Advisory Services, and although Procurement Advisory Services has not been included in the Scope of the IR, there are a few contract-related recommendations:
	1. Define Deliverables Acceptance criteria and align payments to the Deliverables.
	2. Confirm definition of which products are being licensed, as neither "Point of Sale Dynamics" nor "Business Intelligence Dynamics", the proposed solutions, are described on the vendor web site. In fact, a Google search for "Point of Sale Dynamics" and "Business Intelligence Dynamics" does not find US eDirect. See **Appendix A** for additional detail.
	3. Confirm vendor is intending on licensing the proposed "Business Intelligence Dynamics", as it is not on the BAFO price sheet.
	4. Proposed fees seem high in the following areas and are worth negotiating:
	  a. Server/Hosting set up at $75K: As it is easy to spin up servers in AWS, this is a very high service fee.
	  b. Sandbox Testing Assistance and Configurations ($200K): High price for not knowing the value of this service.
	  c. Software Installation Assistance ($30K): With a SaaS solution, not clear what the is for.
	  d. Hosting and DR Related Charge ($125K): Not clear what this is for as DMV is paying for hosting elsewhere in the price sheet, including DR, and again, spinning up servers in AWS is not labor intensive.
	  e. Hosting Related PCI and EMV Charges ($45K): Not clear what this is for.
	  f. Hosting Related 3rd Party Charges ($60K): Not clear what this is for.
	  g. On site End user training: ($7.5K/day): High price relative to market prices.
	  h. Web based End user training: ($3.5K/day): High price relative to market prices.
	  i. Software development ($250/hour): High price relative to market prices.
	  j. Report design and development ($200/hour): High price relative to market prices.							

ID	Risk							
3a	**Vendor Risk:** Solution never deployed to support Motor Vehicles. As such, VT DMV would be the first such deployment for this vendor. A case could be made that "Point of Sale is Point of Sale", regardless of the business model", but businesses are very different and the technical components and business flows are very different. One such technical example is that Vendor has not yet completed a data interface with NADA, which may be desired by DMV.	Project	Medium	Medium	Medium	Accept	Prior to contract execution	Risk strategy accepted.
3b	**Vendor Risk:** Solution appears to be based on Microsoft Dynamics Retail Management System (RMS) (see https://usedirect.com/about.html) . When asked, Vendor indicated *"it used to be based on Dynamics, but is not anymore."* As such, it is not clear how much of the solution direction is out of the Vendor's control and based on the Microsoft RDS platform. See **Appendix B** for additional detail.	Project	Medium	Medium	Medium	Accept	Prior to contract execution	Risk strategy accepted.
3c	**Vendor Risk:** Vendor does not appear to keep current web activity, including News (https://usedirect.com/news.html) and Event items (https://usedirect.com/events.html) both of which are current only through 2014. When asked, Vendor replied: *"Our corporate website is presently being overhauled and many of these areas of information are being updated to provide greater accuracy."*	Project	Medium	Medium	Medium	Accept	Prior to contract execution	Risk strategy accepted.
4a	**SOV Service Level/Staffing:** The proposed solution may have a short term negative impact on customer service, due to potential additional time required to complete current processes due to potential of additional data collected from customers.	Project	Medium	Medium	Medium	Mitigate	Prior to system deployment	Risk strategy accepted.
5a	**Project Management Staffing:** No risk noted. Adequate Project Management staffing identified for project from both DMV and Vendor.							

6a	Project Schedule: No risk noted.						
7a	Infrastructure: Hardware Platform: Confirm with DMV IT that proposed backup and recovery is adequate: Primary Backup method is near real time replication to DR site vs. snapshots at points in time with certain data retention. There are nightly snapshots of the database server retained for 4 days as a failsafe and not as part of the primary backup method. State of VT requires 3 years of data retention unless a case can be made otherwise, per "Attachment C, 13. Records Available for Audit", unless case can be made to the contrary. This risk impacts service delivery.	Project	Medium	Medium	Medium	Accept	Prior to contract execution	Risk strategy accepted.
8a	Scope/Functional Requirements: No risk noted for requested functionality, as adequate Scope Definition completed prior to issuing RFP and vendor responded favorably to those requirements. However, Vendor highlighted additional features DMV may want to use, and one of those is misleading in its capabilities: **Offline mode:** *This allows for the mobility of the POS to locations that are remote and do not have internet access. The system may be online and synched, then transported offline to a location where* ***transactions are completed in offline mode***. *At the end of the day the system is returned to the location where internet is available and the system will* ***synch up the transactions*** *and download any price or item changes that effect that terminal.* This implies that all transactions can be completed in off-line mode, however, payment card transactions cannot be. DMV should determine if this poses a risk to planned operations.	Project	Medium	Medium	Medium	Accept	Prior to contract execution	Risk strategy accepted.

8b	Scope/Non-Functional Requirements: No risk noted. Adequate Scope Definition completed prior to issuing RFP and vendor responded favorable to those requirements.					
9a	Interoperability: No risk noted.					
10a	Compliance/Regulatory: No risk noted.					
11a	Security: Vendor responded in RFP that the proposed solution is PCA PA-DSS compliant, and claims same on their web site: http://www.usedirect.com/payment_processing.html, yet a lookup for "US eDirect" on this page (https://www.pcisecuritystandards.org/assessors_and_s olutions/payment_applications?agree=true) shows solution is valid only for **Existing Deployments** vs. **New Deployments.** During the IR, the vendor indicated they are PCI-DSS compliant only, vs PCI **PA**-DSS compliance. When vendor asked why the change in position, they responded: "*The correct response is PCI-DSS, which is appropriate for the web-based payment processing that does not use a local payment application.*" Further, as Vendor indicates cardholder information is NOT stored within their application, and as PCI PA-DSS compliance is applicable only to applications that DO store, process, or transmit cardholder data, PCI PA-DSS may not be required. DMV should confirm whether the POS application to be used is a requirement of DMV being able to say DMV is PCI DSS compliant, as only an *organization* can be PCI DSS compliant.	Project	Medium	Medium	Medium	Mitigate	Prior to contract execution	Risk strategy accepted.

ID	Description							
11b	Security: RFP requests Vendor to agree to cause an SSAE 16 Type II audit certification to be conducted annually. Vendor has not conducted an SSAE 16 Type 2 Readiness Assessment but claims AWS has these results. DMV should consider whether this is of concern to have done before contract execution, and if so, have Vendor complete before contract execution or produce results of AWS audit report.	Project	Medium	Medium	Medium	Transfer	Prior to contract execution	Risk strategy accepted.
11c	Security: Vendor indicates: *"We only store the following non-sensitive PII, which is encrypted. No sensitive PII is stored: Name, Address, Phone, Email Address, and DOB."* If Sensitive PII information includes Driver's License and State ID information, and that information is expected to now be collected and stored within the Vendor application, the above statement regarding storing non-sensitive PII information would no longer be true. Vendor indicates: *"The Cashiering System does not store Driver's License or State ID- this is done in the Mainframe system. There is a potential integration to the Mainframe system whereby we could reference this information when performing a search, but the data would be stored in Mainframe only."* DMV should confirm they do not expect Driver License information to be stored within the Vendor solution.	Project	Medium	Medium	Medium	Transfer	Prior to contract execution	Risk strategy accepted.
12a	Other: No Risk Noted.							

RISK RESPONSE:

Risk #:	State's Planned Risk Response and Reviewer's Assessment of State's Risk Response
1a	**STATE'S RISK RESPONSE:** Mitigate The State and Vendor as part of contract negotiations will finalize Credit, Debit and check verifications fees. The State will also clarify with the vendor that the hosting fees will remain at the current levels regardless of transaction volume and the number of web servers and storage devices necessary. **REVIEWER'S ASSESSMENT:** Risk strategy accepted.
2a	**STATE'S RISK RESPONSE:** Mitigate State will work with the vendor as part of contract negotiations to understand why the proposed vendor is higher than industry norms and reduce cost where possible. **DMV Follow Up Response:** The contract will have a deliverables based/milestone payment structure in which a large portion will be withheld for system acceptance. In addition, the State will require retainage be withheld on all payments and not paid out until after a negotiated successful stabilization period. The Statement of work will include an item relating to the State having license to the business intelligence tool that was demonstrated during the demo and insure that we understand all software as well as underlying platforms of that software that require licensure. We will ensure that any required licensing is the responsibility of vendor per State standard terms and conditions. **REVIEWER'S ASSESSMENT:** The proposed strategy addresses #4, but does not address #1-3. **REVIEWER'S ASSESSMENT #2:** Risk strategy accepted.
3a	**STATE'S RISK RESPONSE:** Accept DMV feels that collection of fees and categorizing that into account codes is not unique to DMV and that the experience they have with other government clients is relative the core statement of work for which they are being contracted for. NADA integration (nor any of the other third party interfaces) are considered critical elements of this project. **REVIEWER'S ASSESSMENT:** Risk strategy accepted.
3b	**STATE'S RISK RESPONSE:** Accept Based on the demonstration DMV is confident that the system is capable of delivering the functionality necessary. If it is not currently developed on the Microsoft Dynamics product we see that as providing us with additional flexibility but are aware of the limitations of SAAS in which functionality changes are based on the vendor's road map not an individual client and believe the benefits outweigh the risk. We will work to develop a change management strategy so that as system wide changes get implemented DMV identifies what impact that system change will have to our business and implement business process changes as necessary.

REVIEWER'S ASSESSMENT:
Risk strategy accepted.

3c

STATE'S RISK RESPONSE: Accept

While the website is outdated their product seems to be keeping pace with the technology marketplace. Vendor has stated that they are undergoing a website re-design currently.

REVIEWER'S ASSESSMENT:
Risk strategy accepted.

4a

STATE'S RISK RESPONSE: Mitigate

During the initial phase of the project the State will work with the vendor to identify ways in which we can minimize the amount of additional time required at the counter. DMV will assess the average time required as part of testing. DMV believes that customer services is more than just wait time and that other customer service aspects will be enhanced as a result of this project.

DMV Follow up response: Currently customers will come to an office or call and want information on a transaction they conducted the day before. Currently branch offices are generally unable to assist them for a couple of days because they have sent paperwork do Montpelier for processing. With document scanning they'll be able to provide those answers. Also the potential for an incorrect fee to be charged to a consumer is decreased as the fees are preset where as in the current application many of them allowed for the clerk to enter a fee.

REVIEWER'S ASSESSMENT:
Can you list above some examples of other customer service improvement goals you refer to, other than wait time?

REVIEWER'S ASSESSMENT #2:
Risk strategy accepted.

5a

STATE'S RISK RESPONSE:
N/A. No risk noted.

6a

STATE'S RISK RESPONSE:
N/A. No risk noted.

7a

STATE'S RISK RESPONSE: Accept

The state feels that the vendor proposed backup and recovery method improves our current recovery time objective (RTO) and recovery point objective (RPO) and will seek clarification from the Attorney General's office on the three years of data retention as we assumed this just meant that the data would not delete records from three years ago, not that the data as it existed three years ago be available. If required, we'll contractually obligate the vendor to keep SQL Server transaction logs for the three years.

REVIEWER'S ASSESSMENT:
Risk strategy accepted.

8a	**STATE'S RISK RESPONSE:** Accept
	As this pertains to future enhancements which DMV may choose to implement at a later time we do not see it as a risk to the current project and realize that we would need to keep this limitation in mind when developing the future state processes which might use the "off-line capabilities".
	DMV Follow up response: At this time the business has identified having off-line capabilities as a nice to have not a mandatory item. Being able to record the transaction and accept a check meets the requirement.
	REVIEWER'S ASSESSMENT:
	While the example provided might be a future need, does DMV already know if the example is a requirement, regardless of whether that is a future or current requirement?
	REVIEWER'S ASSESSMENT #2:
	Risk strategy accepted.
8b	**STATE'S RISK RESPONSE:**
	N/A. No risk noted.
9a	**STATE'S RISK RESPONSE:**
	N/A. No risk noted.
10a	**STATE'S RISK RESPONSE:**
	N/A. No risk noted.
11a	**STATE'S RISK RESPONSE:** Mitigate
	State will do more research on PCI PA-DSS vs PCI DSS compliancy and see what it takes for the DMV to be considered compliant. We will work with the vendor to ensure that the solution implemented will enhance the DMV's ability to claim we're PCI compliant.
	Update as of 11/4/2016:
	This item was identified as an issue needing resolution during the Independent Review presentation discussion on 10/3/2016. Upon follow-up and further analysis conducted by DII CISO Glenn Schoonover and DMV Project Manager Jen Pittsley, it was the opinion of the CISO that:
	"Bottom line: A PCI PA-DSS certified application is not required for the merchant (DMV) to achieve PCI Compliance. The application and the Cardholder Data Environment will be evaluated as part of the overall PCI Assessment, however some payment brands (MasterCard, Visa, AmEx, etc...) may require the use of PA-DSS applications. That would bear further investigation. As to the question of engaging a consultant that would be entirely up to you. Given the nature of this project and the sensitivity of the data involved that might not be a bad idea."
	REVIEWER'S ASSESSMENT:
	Risk strategy accepted.

11b	**STATE'S RISK RESPONSE:** Transfer
	As DMV nor AOT have security professionals on staff we would seek guidance from DII as to the appropriate audit /certifications and the timing of those audits/certifications.
	REVIEWER'S ASSESSMENT:
	Risk strategy accepted.
11c	**STATE'S RISK RESPONSE:** Transfer
	DMV does expect that there would be PII stored and transmitted within the application therefore we will require that all fields be encrypted both in transit and at rest. We feel as though the State's Standard Contract terms address the need for this information to be secure at all times.
	DMV Follow Up Response: Agreed, the State has meetings scheduled with the vendor well in advance of contract signing in which we will ensure that they understand that there will be PII stored within their system and have them outline the security measures they have in place to ensure the security of this information.
	REVIEWER'S ASSESSMENT:
	State's Standard Contract terms may address this need, but the Vendor has indicated that they do not expect to be storing sensitive PII. As such, a proactive approach prior to contract execution is required to ensure the Vendor meets this security standard.
	REVIEWER'S ASSESSMENT #2:
	Risk strategy accepted.
12a	**STATE'S RISK RESPONSE:**
	N/A. No risk noted.

APPENDIX A – Proposed Product Set

This Appendix is intended to provide additional information provided by the Vendor when the Independent Reviewer sought additional information on which products are being proposed and licensed.

Can you provide clarity on which product(s) DMV is buying? You refer to "Dynamics Enterprise" in the proposal, but there is no such solution on the web site. In conducting the IR call, you referred to solution as Recreation Dynamics. It is not clear where Point of Sale is provided within Recreation Dynamics, whether POS is a separate product, and if so, the name of that product.

US eDirect Response: Recreation Dynamics is our overall enterprise software solution, used by each of our clients. The Point of Sale module of Recreation Dynamics, as proposed to DMV and also utilized by the customers noted earlier in this document, is the primary module used by DMV for this project. Our Finance module will also be used for reporting and managing of financial processing information such as Departments, General Ledgers, Tax etc. The Reporting module will be used for custom reporting for the DMV.

To be sure I understand, please confirm:

1. Core Module: Recreation Dynamics is the core application. Is that this link: http://www.usedirect.com/parks.html ? If so, which "Management" module (Registration, Activity, or Membership) is to be used by DMV?

   US eDirect Response: Each module of the system– POS, reporting or otherwise, falls under the scope of Recreation Dynamics. The link noted above is specific to our Parks and Recreation clients– designed to provide them with details on how our system could handle some of their core functions. None of the modules you list will be used by DMV. As previously noted (and listed below in 2-4), DMV will be using the POS, Finance and Reporting modules of Recreation Dynamics.

2. Within Recreation Dynamics exists a Point of Sale module. Is that Payment Dynamics listed on your site here: http://www.usedirect.com/payment_processing.html ? If not, can you send me technical product literature on that product? The proposed solution was referred to as "Point of Sale Dynamics".

   US eDirect Response: The above link is accurate to the proposed Point of Sale module. Point of Sale Dynamics is our newer naming terminology for that feature set.

3. US eDirect Finance solution is to be used. Is that this link: http://www.usedirect.com/finance.html ?

   US eDirect Response: Yes.

4. Reporting Module. Is that listed on your site and/or can you send me technical product literature on that product? The proposed solution was referred to as "Business Intelligence Dynamics".

   US eDirect Response: http://www.usedirect.com/reporting.html details our standard reporting that is proposed to the DMV. In addition for more complex reporting needs we proposed our Business Intelligence Dynamics tool. Details of this were provided in our RFP response as you noted, and we have provided literature that contains some more sample reports on the BI reporting attached along with this document.

APPENDIX B – Relationship with Microsoft Dynamics Retail Management System

This Appendix is intended to provide additional information provided by the Vendor when the Independent Reviewer sought additional information on the relationship between the proposed solution and how that relates to Microsoft Dynamics Retail Management System.

Solution appears to be based on Microsoft Dynamics Retail Management System, per your web site, but you have indicated it "used to be based on Dynamics, but is not anymore." Interested in understanding that a bit more, including whether you are using old code from Microsoft and a detailed description of the underlying code base and how that was rewritten from the old Dynamics to the current product.

US eDirect Response:
Our point of Sale solution uses the best practices of the Microsoft Dynamics Retail systems. Our solution is not and has not been based on MS Great Plains Dynamics. However none of the code or modules have any direct connection with the Microsoft Dynamics platform.

We have however, achieved various integrations with various Microsoft Dynamics products.

Our corporate website is presently being overhauled and many of these areas of information are being updated to provide greater accuracy.

1. <mark>Are you using code from Microsoft product (Retail Management System or otherwise) in your product?</mark>
   US eDirect Response: No, there is no code from Microsoft in our product.

2. <mark>Are any of the proposed products using Microsoft code or products? If so, which ones, and how is that code licensed?</mark>
   US eDirect Response: No, there are no proposed products using Microsoft code or products.

3. <mark>Please describe how Microsoft Retail Management System is used in the proposed solution.</mark>
   US eDirect Response: It is not, we were referring to previous generations of the system which integrated to MS RMS. As noted above, there is no Microsoft products or code in our proposed solution.

DMV: Cashiering Point of Sale System Project

STATEMENT OF: Use of Funds (Expenses), Source of Funds (Revenue), Cash Flow, and Net Change in Operating Cost

SUMMARY:		IMPLEMENTATION and OPERATING COSTS:	
Total Cost:	$4,282,000	Implementation Costs:	$1,680,000
Total Funding:	$4,282,000	New Operating Costs:	$2,602,000
State Funding:	$4,282,000	Current Operating Costs:	$210,000
Federal Funding:	$0		
Potential Revenue Recovery:	$0	NET CHANGE IN OPERATING COSTS-Decr./(Incr.):	($2,392,000) $
Funding Excess/(Shortage):	$0	State Decrease/(Increase):	($2,392,000)
		Federal Decrease/(Increase):	$0

Click on the links to the left to go to that data

CASH FLOW ANALYSIS: Click Here

USE OF FUNDS - START

Description	Note	Unit Price	Imp/Ops	Prior Costs	IMP	Year 1 (PY17) M&O	Year 2 (PY18) M&O	Year 3 (PY19) M&O	Year 4 (PY20) M&O	Year 5 (PY21) M&O	Year 6 (PY22) M&O	Year 7 (PY23) M&O	Year 8 (PY24) M&O	Year 9 (PY25) M&O	Year 10 (PY26) M&O	Software Total	Source
EXTERNAL-RELATED COSTS																	
VENDOR COSTS																	
SOFTWARE AND SERVICES																	
SOFTWARE ❶																	
Software Being Licensed:																	
Point of Sale Dynamics																	
Enterprise POS License for 150-175 users	Software as a Service		1			$70,000										$70,000	Vendor BAFO
Enterprise POS License for 150-175 users	Software as a Service, indicated to be included		0			$0	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$1,350,000	Vendor BAFO
Business Intelligence Dynamics																	
Variable Costs:																	
See items below			0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Vendor BAFO
			0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Vendor BAFO
						$0										$0	
SOFTWARE TOTAL						$70,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$1,420,000	
SERVICES																	
Implementation																	
Discovery/Requirements Analysis			1			$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50,000	Vendor BAFO
Server/Hosting Setup	Seems high for how easy it is to provision AWS		1			$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,000	Vendor BAFO
Project Management/Documentation			1			$100,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100,000	Vendor BAFO
Data Migration/Validation			1			$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,000	Vendor BAFO
Sandbox Testing Assistance and Configurations	Seem high		1			$200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$200,000	Vendor BAFO
Software Installation Assistance	What is this for?		1			$30,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,000	Vendor BAFO
User Acceptance Testing Assistance			1			$45,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$45,000	Vendor BAFO
Hosting Related																	
Hosting and DR Related Charge	Why is Server/Hosting above? What are these for?					$125,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$125,000	Vendor BAFO
Hosting Related PCI and EMV Charges	What are these for?					$45,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$45,000	Vendor BAFO
Hosting Related 3rd Party Charges	What are these for?					$60,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$60,000	Vendor BAFO
Training Related																	
Custom User Guide Documentation	$15K; Not needed					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Vendor BAFO
Sandbox Training Sessions	2@$2K					$4,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,000	Vendor BAFO
End User Train the Trainer-On site	5 @ $7.5K	$7500/day is very high				$37,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$37,500	Vendor BAFO
Admin Training-On site	3 @ $7.5K	$7500/day is very high				$22,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$22,500	Vendor BAFO
Variable Costs																	
Interfaces	TBD; Considering NADA, VISION, ADT Data Warehouse		1			$110,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$110,000	Vendor BAFO
Document Management System	Budget allocation; May not be needed					$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50,000	Vendor BAFO
Software Development	$250/Hour					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
BI Report Design	$200/Hour	High				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
On Site Training	$7.5K/day	High				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Webinar Training	$3.5K/day	High				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Misc. Hardware	Various	See below				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Other																	
Contingency	This amount may change based on how much of the $1.68M Impl budget is available		1			$122,555	$0	$0	$0	$0	$0	$0	$0	$0	$0	$122,555	

Category / Line Item	Detail / Notes	Total									
TOTAL: IMPLEMENTATION SERVICES		$1,151,555	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Services:											
Other Services Total:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SERVICES TOTAL		$1,151,555	$1,151,555	$0	$0	$0	$0	$0	$0	$0	$0
SOFTWARE AND SERVICES TOTAL		$2,571,555	$1,231,555	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
MAINTENANCE AND OPERATIONS SUPPORT											
Support - Enterprise POS		$500,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
Maintenance Enterprise POS		$250,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
MAINTENANCE AND OPERATIONS SUPPORT TOTAL		$250,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
HARDWARE											
Hardware for Implementation											
Thermal Printer	150 units anticipated	$28,500									
Credit Card Swipe	150 units anticipated	$89,000									
Barcode Scanner	150 units anticipated	$37,500									
Cash Drawer	150 units anticipated	$22,500									
Pole Display	150 units anticipated	$37,500									
Document Scanner	150 units anticipated	$45,000									
Hardware for Operations	Assumes 10% annual replacement/repair	$234,000	$0	$26,000	$26,000	$26,000	$26,000	$26,000	$26,000	$26,000	$26,000
HARDWARE TOTAL		$494,000	$260,000	$26,000	$26,000	$26,000	$26,000	$26,000	$26,000	$26,000	$26,000
HOSTING FEES											
Enterprise POS Hosting	Vendor BAFO	$250,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
HOSTING TOTAL		$250,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
OTHER FEES											
Independent Review		$13,895	$13,895	$0	$0	$0	$0	$0	$0	$0	$0
OTHER TOTAL		$13,895	$13,895	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL VENDOR COSTS		$4,079,450	$1,595,450	$276,000	$276,000	$276,000	$276,000	$276,000	$276,000	$276,000	$276,000
DII FEES											
Oversight Project Manager/Enterprise Architect - Flat Rate		$29,550	$29,550	$0	$0	$0	$0	$0	$0	$0	$0
DII FEES TOTAL		$29,550	$29,550	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL EXTERNAL-RELATED COSTS		$4,109,000	$1,625,000	$276,000	$276,000	$276,000	$276,000	$276,000	$276,000	$276,000	$276,000
INTERNAL COSTS											
DEPARTMENTAL INTERNAL COSTS											
Staff Development/Training			$0	$0	$0	$0	$0	$0	$0	$0	$0
Travel and Expenses			$0	$0	$0	$0	$0	$0	$0	$0	$0
WAN Costs			$0	$0	$0	$0	$0	$0	$0	$0	$0
Current Solution Maintenance	Saber; No vendor support so no cost		$0	$0	$0	$0	$0	$0	$0	$0	$0
Other 3rd Party Software			$0	$0	$0	$0	$0	$0	$0	$0	$0
Credit Card Processor	Currently VIC; Customer pays this fee, so no charge to DMV; There is an expected savings to customers of 1% which equates to $80K annually, due to reduced fee (3% to 2%)										
Staffing Costs:											
State Staff: Implementation	Proj Mgt .7 FTE; Implementation .3 FTE; SME 1 FTE		$55,000 (ABC #4)	$25,000 (ABC #4)	$75,000	$0	$0	$0	$0	$0	$0
State Staff: Operations	Remove manual processes, data transfers, and system patches but allocate some time ($5 hours/annually)		$0	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000 (ABC #4)	$18,000
DEPARTMENTAL INTERNAL COSTS TOTAL		$173,000	$155,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
TOTAL INTERNAL COSTS		$173,000	$155,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
TOTAL COSTS (IMPLEMENTATION and OPERATIONS)		$4,282,000	$1,780,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000

COST BREAKOUT (IMPLEMENTATION and OPERATIONS)

	Total									
Implementation	$1,680,000	$1,680,000	$0	$0	$0	$0	$0	$0	$0	$0
Operations	$2,602,000	$100,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000
COST BREAKOUT TOTALS (IMPLEMENTATION and OPERATIONS)	$4,282,000	$1,780,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$0

SOURCE OF FUNDS - START

Assume Year 1 is Implementation related, Years 2-x are Operations related

Revenue Source:			Prior	Year 1 (FY17)	Year 2 (FY18)	Year 3 (FY19)	Year 4 (FY20)	Year 5 (FY21)	Year 6 (FY22)	Year 7 (FY23)	Year 8 (FY24)	Year 9 (FY25)	Year 10 (FY26)	TOTAL
														$0
STATE FUNDING; Program Code: 59221; Account Code: 522286; **Implementation**	14.48%	Software-Desktop End User Computing	$0	$620,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$620,000
STATE FUNDING; Program Code: 59221; Account Code: 507568; **Implementation**	18.22%	IT Contracts – End User Computing	$0	$780,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$780,000
STATE FUNDING; Program Code: 59221; Account Code: 522217; **Implementation**	6.54%	Hardware-Printers, Copiers, Scan – End User Computing -	$0	$280,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$280,000
STATE FUNDING; Program Code: 59221; Account Code: 519085; **Operations**	54.88%	Hosting, Maintenance and Support Fees, Software as a Service	$0	$100,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,350,000
STATE FUNDING; Transportation Fund; Budget: **Operations**	5.89%	Internal Staff and Hardware	$0	$0	$28,000	$28,000	$28,000	$28,000	$28,000	$28,000	$28,000	$28,000	$28,000	$252,000
FEDERAL FUNDING: None			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL:	100.00%		$0	$1,780,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$4,282,000

Summary by State and Federal:

		Prior	Year 1 (FY17)	Year 2 (FY18)	Year 3 (FY19)	Year 4 (FY20)	Year 5 (FY21)	Year 6 (FY22)	Year 7 (FY23)	Year 8 (FY24)	Year 9 (FY25)	Year 10 (FY26)
State Funding (all Transportation Fund):	$4,282,000	0	$1,780,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000
Federal Funding:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

		Funding Overage/(Shortage):
Implementation Funds:	$1,680,000	$0
Implementation Costs:	$1,680,000	
Operational Funds:	$2,602,000	
Operational Costs:	$2,602,000	

SOURCE OF FUNDS - END

PROJECT CASH FLOW - START

IMPLEMENTATION

	Prior	Year 1 (FY17)	Year 2 (FY18)	Year 3 (FY19)	Year 4 (FY20)	Year 5 (FY21)	Year 6 (FY22)	Year 7 (FY23)	Year 8 (FY24)	Year 9 (FY25)	Year 10 (FY26)	TOTAL
Use	$0	$1,680,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,680,000
Source	$0	$1,680,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,680,000
Net Cash by Fiscal Year:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

OPERATIONS

	Prior	Year 1 (FY17)	Year 2 (FY18)	Year 3 (FY19)	Year 4 (FY20)	Year 5 (FY21)	Year 6 (FY22)	Year 7 (FY23)	Year 8 (FY24)	Year 9 (FY25)	Year 10 (FY26)	TOTAL
Use	$0	$100,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$2,602,000
Source	$0	$100,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,350,000
Net Cash by Fiscal Year:	$0	$0	($28,000)	($28,000)	($28,000)	($28,000)	($28,000)	($28,000)	($28,000)	($28,000)	($28,000)	($252,000)
Cash Flow:	$0	$0	($28,000)	($55,000)	($84,000)	($112,000)	($140,000)	($168,000)	($196,000)	($224,000)	($252,000)	($252,000)

CASH FLOW - END

NET CHANGE IN OPERATING COSTS - START

		Year 1 (FY17)	Year 2 (FY18)	Year 3 (FY19)	Year 4 (FY20)	Year 5 (FY21)	Year 6 (FY22)	Year 7 (FY23)	Year 8 (FY24)	Year 9 (FY25)	Year 10 (FY26)	TOTAL	
Proposed Operating Costs:													
Total New Operating Costs	Per Row 148	$100,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$2,602,000	
Total Proposed Operating Costs:		*$100,000*	*$278,000*	*$278,000*	*$278,000*	*$278,000*	*$278,000*	*$278,000*	*$278,000*	*$278,000*	*$278,000*	*$2,602,000*	
Current Operating Costs:													
Staffing:													
State Labor Hours to maintain current solution	Manual processes; Data transfers; System patches	.2 FTE	$13,500	$13,500	$13,500	$13,500	$13,500	$13,500	$13,500	$13,500	$13,500	$135,000	ABC#5
Equipment/Supplies			$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$25,000	ABC#5
Annual Maintenance of Current Solution:													
Hosting			$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$50,000	ABC#5
Credit Card Processor	Currently VIC. Customer pays this fee, so no charge to DMV. There is an expected savings to customers of 1% which equates to $80K annually, due to reduced fee (3% to 2%).	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	ABC#5
Total Current Operating Costs:		*$21,000*	*$21,000*	*$21,000*	*$21,000*	*$21,000*	*$21,000*	*$21,000*	*$21,000*	*$21,000*	*$21,000*	*$210,000*	
Net Operating Cost Decrease/(Increase)		**($79,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($2,392,000)**	#
New Operating Costs funded by SOV Sources		$100,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$278,000	$2,602,000	
Current Operating Costs funded by SOV Sources		$21,000	$21,000	$21,000	$21,000	$21,000	$21,000	$21,000	$21,000	$21,000	$21,000	$210,000	
❸ Net SOV Operating Cost Decrease/(Increase)		**($79,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($257,000)**	**($2,392,000)**	

NET CHANGE IN OPERATING COSTS - END

NOTES / ASSUMPTIONS:
❶ Software as a Service Model (SaaS)
❷ Staffing levels anticipated through this project
❸ Funding Sources
❹ Net Operating Costs ARE expected to increase

Business Intelligence Dynamics

Enterprise Reporting Module

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Business Intelligence Dynamics

Overview

More than just an ad-hoc reporting tool, Business Intelligence Dynamics is an enterprise data warehousing tool that provides for detailed key performance indicator reporting across your entire database, allowing users to report on trends, performance, marketing demographics and more, through a robust reporting tool that provides actionable data to drive key decisions across your organization. Business Intelligence Dynamics provides Agency administrators with access to customizable reporting capabilities, allowing the creation of reports on a diverse range of enterprise-level data that is created, saved, and stored in a multitude of formats and views. The BI tool, through data warehousing, provides access to the entire set of data without the need to directly access the production database. This means large reports that access millions of rows of data are not only generated quickly, but have no effect on production system processing or performance. The Enterprise Reporting Tool provides for automated scheduling of reports, which are transmitted through a variety of methods including email attachments. Data is refreshed a minimum of once a day into the BI warehouse, with greater frequency also available. The strength of the Business Intelligence Dynamics reporting tool is its ability to provide users with access to all applicable system database tables- from reservations, POS items, customers, address information, pass usage, group reservation history, in a format where data can be combined, cross-referenced, and compared across numerous modules, business areas, and financial years. This allows Agency to create and customize comparison reports, key performance indicator summaries, financial statistics for each business area, and countless other reports depending on business needs or a user's specific role. Business Intelligence Dynamics is far ahead of traditional Business Analysis tools because of the sheer volume and velocity of data it can quickly handle. The speed of data analysis is a key differentiator between Recreation Dynamics' Business Intelligence solution and all other offerings. Key components of **Business Intelligence Dynamics** include:

a. Users analyze gigabytes of data in seconds and not have to wait several minutes or more for the rendering of reports
b. The tool is visual in nature allowing for easy interpretation of the data, including graphical, tabular and other visual displays such as maps and pie charts.
c. Large amounts of data are stored and processed in seconds allowing the ability to feed back this information into the product workflow and make decisions on price, promotions and availability based on historic trends.
d. Easy to use and simple to master interface to create customized reports without the need for the vendor to create these reports as seen in other systems.

Sample use case:

Use Case: an Agency Administrator in central office wants to run comparison reports on how total enterprise revenue has increased year over year for the past three years, for use in a presentation to senior management. This is also a three-step process (illustrated below).

Access the Business Intelligence module. Should the report not already exist, Administrators can simply sort, drag, and drop data fields into the report, to display data in the format they desire. The screen below shows an Admin choosing to sort a report by Department Name by dragging that data field to the left most row:

Once the report is sorted, filters such as those shown below can quickly and easily add and remove data from the report. In this case, the user wants to see All Departments (e.g., all revenue) for 2012, 2013 and 2014:
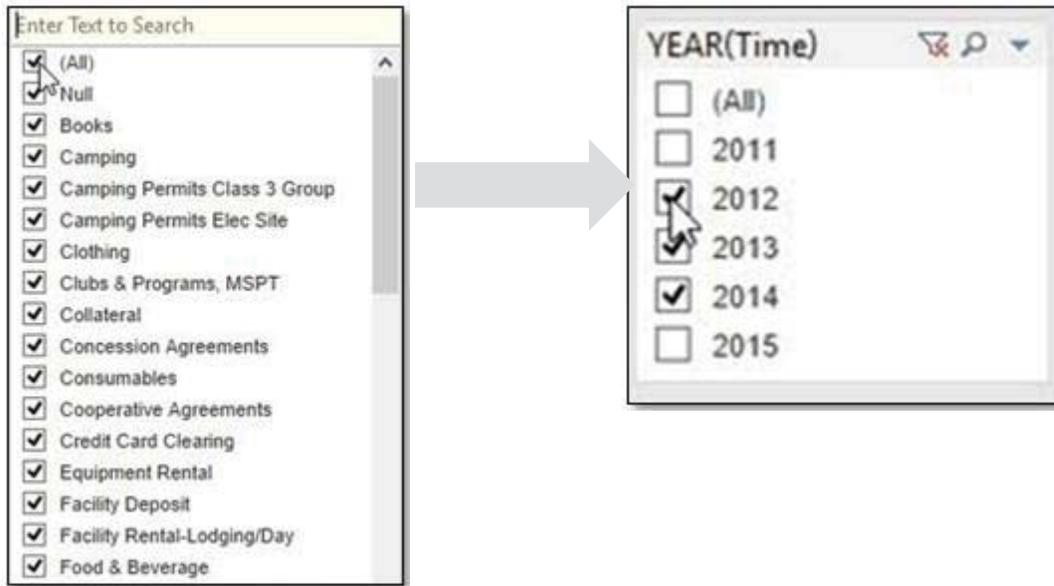
These filters will display millions of lines of data (up to 3 years) in a matter of seconds, and display in a format similar to the following image.
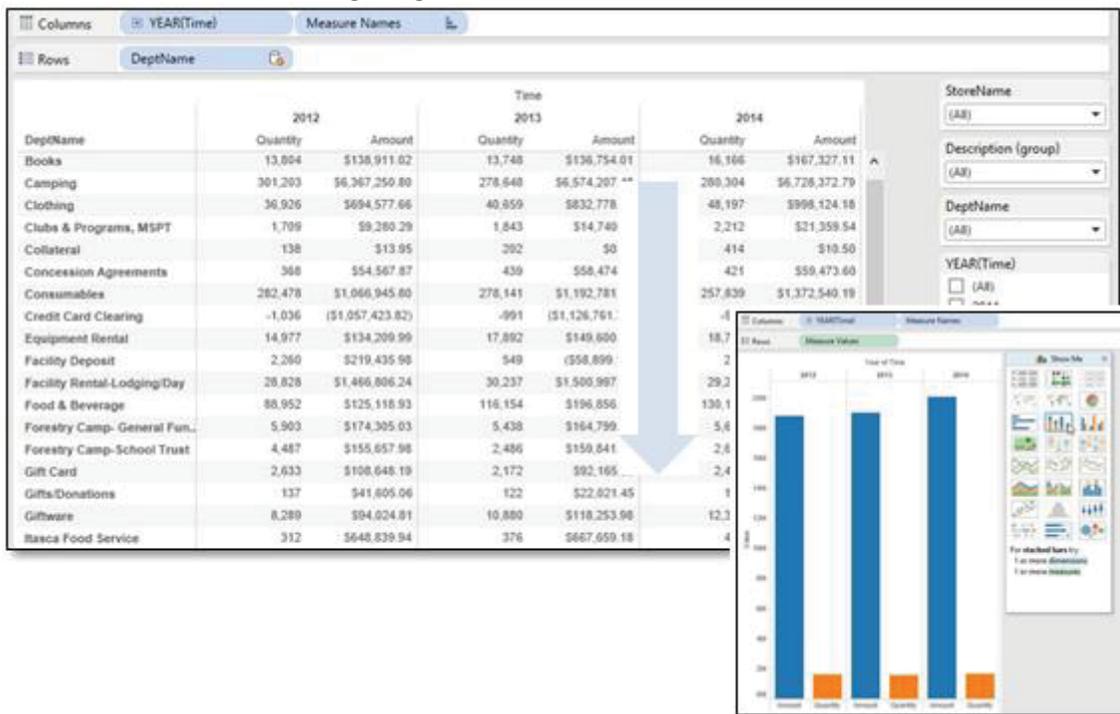
Immediately the Administrator will have access to their entire data for the past 3 years, where they can further drag, drop, sort, and filter the data as needed for whatever report they require. In the example, the Administrator required a report for a presentation on revenue increases year over year. Utilizing the system's 'Show Me' function, they could immediately display report in a graphic display such as bar charts, pie charts, maps, tables, or line graphs.

Sample Reports from Business Intelligence

Beginning on this page are a small selection of the reports that are available through Business Intelligence Dynamics, used by US eDirect's government point of sale and recreation clients. These reports illustrate the diversity of data displays, types of data and some of the options available to your Agency within this tool.

Average Nights stay vs Days prior to arrival

Confidential
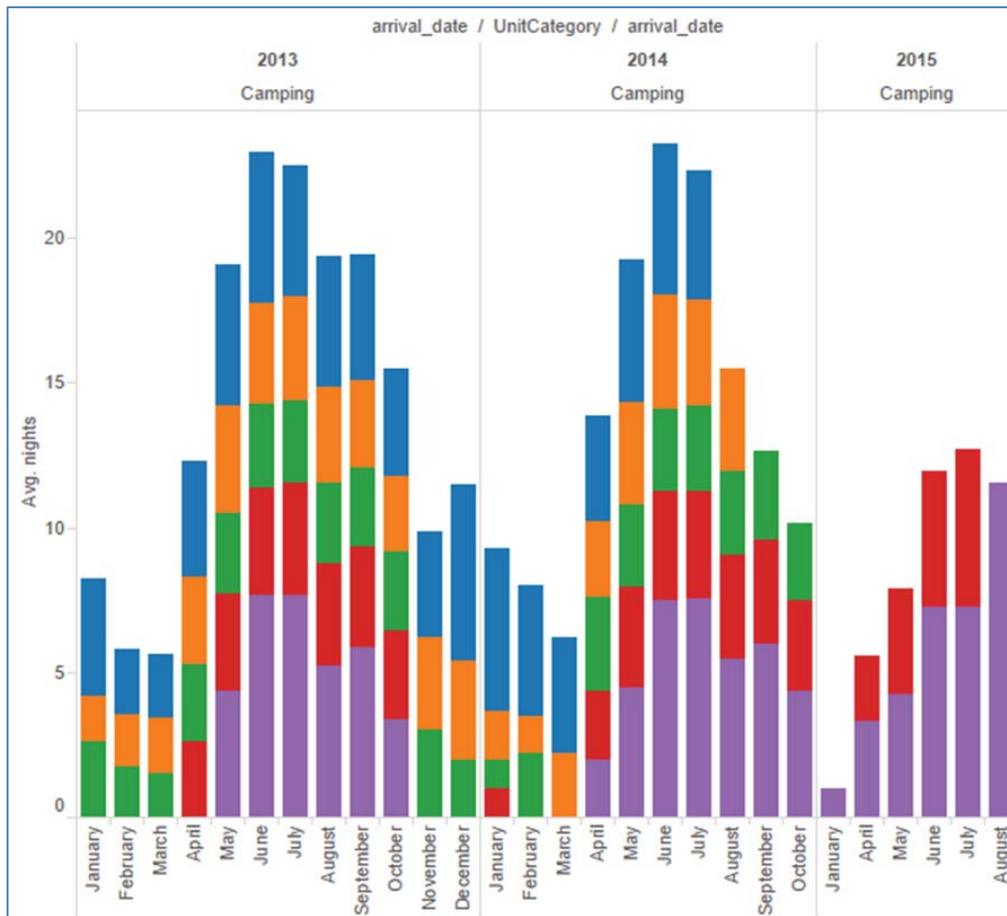
Figure: Stay vs Arrival

The different colors represent groupings based on Days to arrival
Purple – 340-360 days in advance
Red   ----14-340 days in advance
Green --- 1-14 days in advance
Orange --- Walk Ins
The above data generated by the BI tool shows that Purple – (340-360 days in advance) book for almost double the average stay period (7 day) in the peak June July months.

Demand
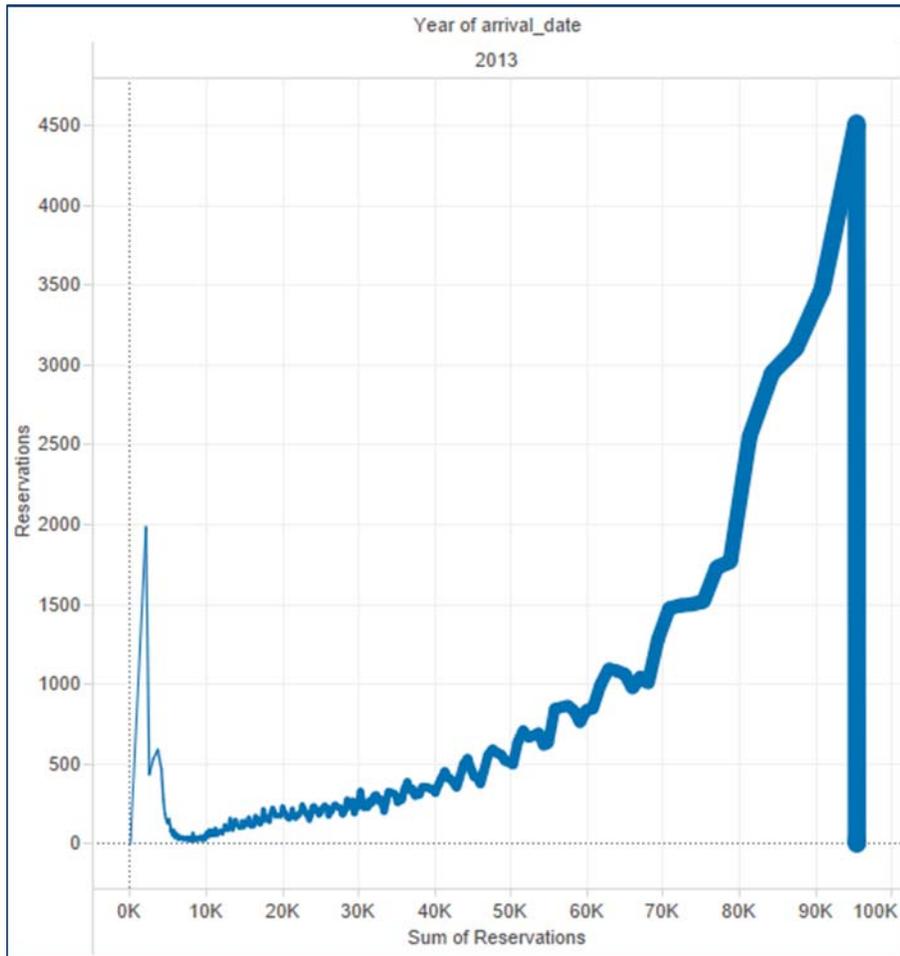
Figure: Demand Graph

Plot generated by the BI tool that shows the relationship between the number of Reservations made vs sum of Total bookings made for the year. The data shows high demand periods for 0-5% bookings and between 80-100% bookings.

Change in Occupancy Report

This report shows, via color coding and the size of each square, both the occupancy totals and the difference in occupancy percentage, for each campground location. This gives a clear representation of locations that have shown improvements, stayed the same or decreased their occupancy from one year to the next.
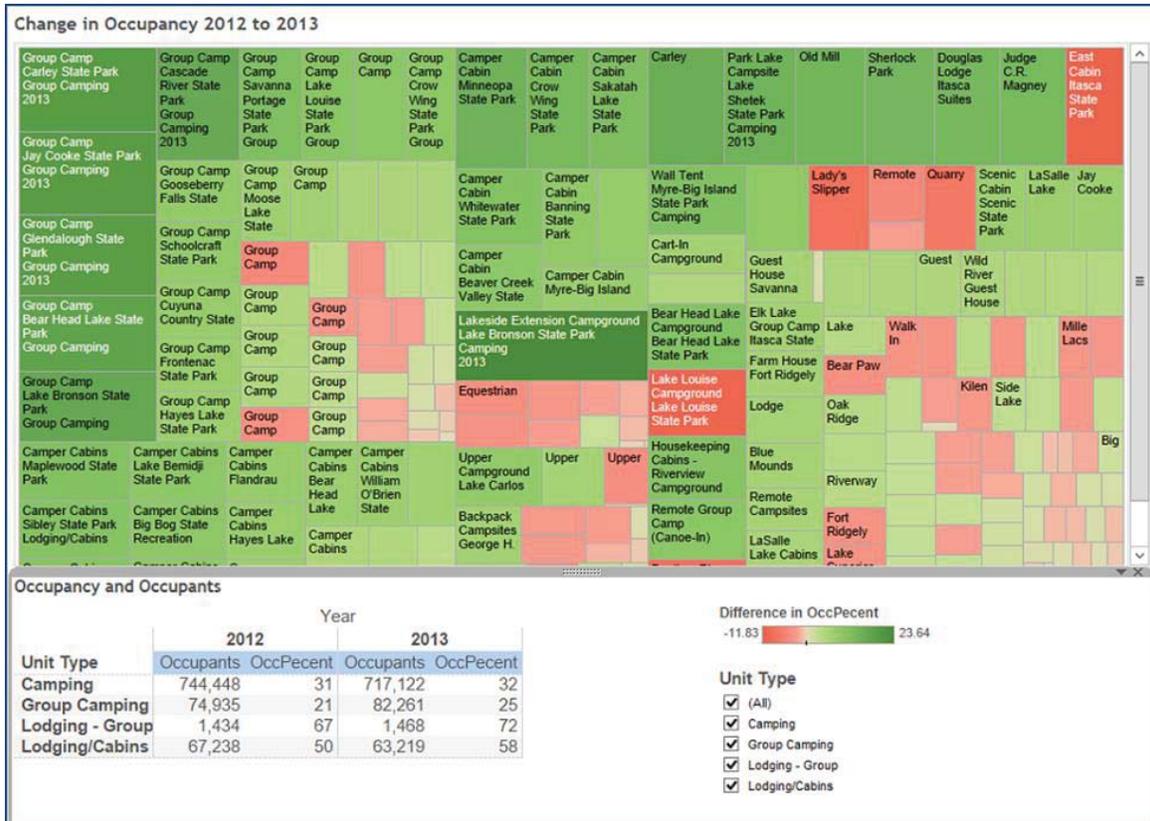
Figure: Change Occupancy Report

Each pie chart also breaks down the distribution of revenue via sales channel (web and in Agency) for each Department- allowing reporting on changes in customer trends based on marketing initiatives and other factors:
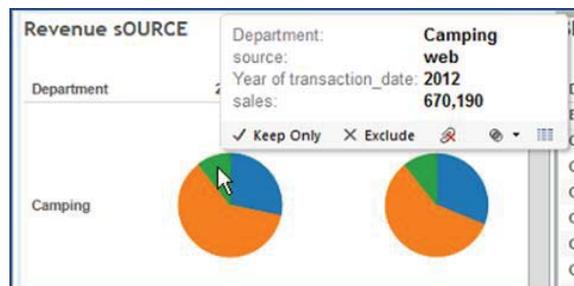
Figure: Pie chart

Occupancy Percentage – Summary and Detailed

Confidential

Reports for occupancy can also be displayed in a tabular format, and can be run for the entire enterprise. As shown in the figures below, the system provides the ability to view total occupancy across the entire enterprise, or down to individual Agency, site types, and even individual sites themselves. Agency will be able to view each individual site's performance, and make operational decisions on sites to upgrade, close, market or discount, etc.

Summary:	Detailed:
Summary of total occupancy % at a Agency Level:	Detailed view, down to the individual campsite

Summary:

Region	Place	UnitCatego..	isWkdy	AvailNi..	Reserv..	Avg. Occ
Central	Charles A. Lindbergh State Park	Camping	wkday	2,476	379	14.4%
			wkend	990	739	71.1%
	Crow Wing State Park	Camping	wkday	3,827	508	13.0%
			wkend	1,504	942	61.4%
	Cuyuna Country State Recreation Area	Camping	wkday	1,650	0	0.0%
			wkend	650	0	0.0%
	Father Hennepin State Park	Camping	wkday	6,910	1,692	24.4%
			wkend	2,721	2,368	86.7%
	Glacial Lakes State Park	Camping	wkday	3,228	603	18.6%
			wkend	1,260	866	68.0%
	Glendalough State Park	Camping	wkday	1,826	482	24.3%
			wkend	719	549	70.4%
	Lake Carlos State Park	Camping	wkday	8,412	4,293	50.8%
			wkend	3,305	2,859	85.9%
	Maplewood State Park	Camping	wkday	6,917	1,332	16.5%
			wkend	2,742	1,651	52.0%
	Mille Lacs Kathio State Park	Camping	wkday	5,471	1,032	18.8%
			wkend	2,155	1,455	67.4%
	Savanna Portage State Park	Camping	wkday	4,456	771	17.2%
			wkend	1,764	1,151	65.1%
	Sibley State Park	Camping	wkday	9,240	2,482	26.7%
			wkend	3,646	2,803	76.5%
Metro	Afton State Park	Camping	wkday	2,177	261	12.0%
			wkend	855	588	68.5%
	Interstate State	Camping	wkday	2,544	1,096	42.6%

StayDate 2014

Detailed:

Unit	isWkdy	AvailNi..	Reserv..	Avg. Occ
08-NR	wkday	66.0	3.0	4.5%
	wkend	26.0	9.0	34.6%
10	wkday	66.0	9.0	13.6%
	wkend	26.0	20.0	76.9%
12	wkday	66.0	2.0	3.0%
	wkend	26.0	17.0	65.4%
14	wkday	66.0	4.0	6.1%
	wkend	26.0	12.0	46.2%
17	wkday	66.0	10.0	15.2%
	wkend	26.0	15.0	57.7%
18-NR	wkday	66.0	6.0	9.1%
	wkend	26.0	10.0	38.5%
19	wkday	66.0	5.0	7.6%
	wkend	26.0	18.0	69.2%
20	wkday	66.0	6.0	9.1%
	wkend	26.0	20.0	76.9%
21	wkday	66.0	10.0	15.2%
	wkend	26.0	23.0	88.5%
22-NR	wkday	66.0	1.0	1.5%
	wkend	26.0	6.0	23.1%
23-NR	wkday	66.0	2.0	3.0%
	wkend	26.0	6.0	23.1%
24	wkday	66.0	8.0	12.1%
	wkend	26.0	25.0	96.2%
25	wkday	66.0	5.0	7.6%

StayDate 2014

Geographical Reporting

Confidential

Any data with a component of geographical/geospatial data- such as customer Zip codes, Agency Latitude/Longitude locations etc.- can be displayed on a map by simply utilizing the in-built 'show me function for data display:

Examples of this are shown below for Customers by Country, and a more granular view of data shown displayed by Zip Code. This can further be enhanced by combining data fields, for example to display a query of 'show me all customers who travelled >100 miles to Smith Falls State Park'

Customers by Country

Figure: Customers by Country

Customers by Zip Code:
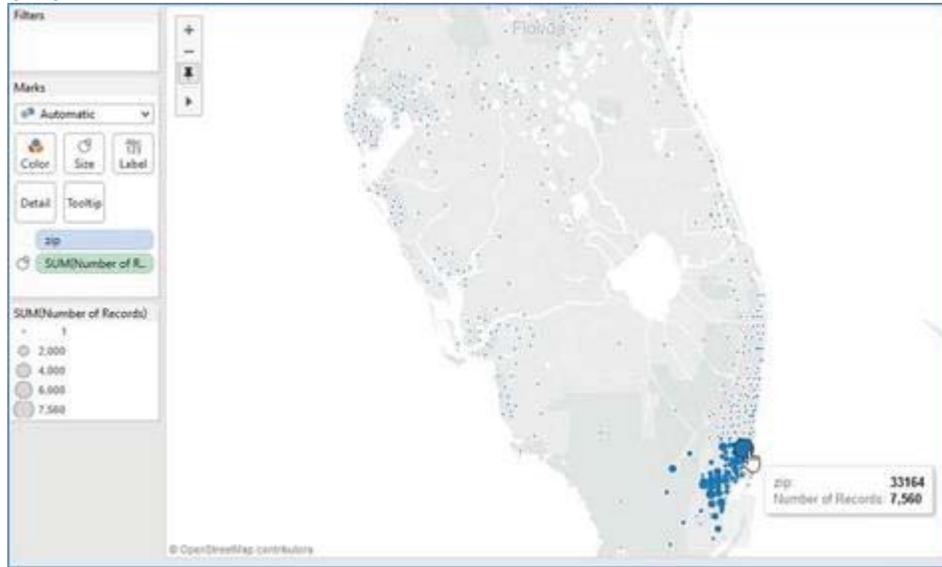
Figure: Customer by Zip Code

CHAPTER 1: INTRODUCTION TO MICROSOFT DYNAMICS SURE STEP

Objectives

The objectives are:

- Define the purpose of Microsoft Dynamics® Sure Step.
- Describe the value of the Microsoft Dynamics Sure Step methodology.
- Describe the benefits of using Microsoft Dynamics Sure Step.
- Describe the components of the Microsoft Dynamics Sure Step model.
- Describe who uses the Microsoft Dynamics Sure Step and during what phases of an implementation project.
- Differentiate between Microsoft Dynamics Sure Step and other Microsoft frameworks.
- Identify the components that comprise the Microsoft Dynamics Sure Step platform and interface.
- To learn how to navigate Microsoft Dynamics Sure Step.
- To learn how to install Microsoft Dynamics Sure Step.

Introduction

Microsoft Dynamics Sure Step is a comprehensive implementation methodology that provides prescriptive guidance, project management library, tools, and templates that Microsoft partners can use to implement Microsoft Dynamics products for their customers.

Microsoft Dynamics Sure Step is available to all Microsoft partners for Microsoft Dynamics. It can be downloaded from PartnerSource and is easy to install, configure, and use.

What is Microsoft Dynamics Sure Step?

Microsoft Dynamics Sure Step is a client-based tool that provides a systematic methodology for implementing Microsoft Dynamics solutions.

Microsoft Dynamics Sure Step supports the following Microsoft Dynamics products:

- Microsoft Dynamics® CRM
- Microsoft Dynamics® AX
- Microsoft Dynamics® GP
- Microsoft Dynamics® NAV
- Microsoft Dynamics® SL

Microsoft Dynamics Sure Step provides detailed guidance for the complete implementation life cycle. It consists of field-tested implementation best practices based on the implementation experience derived by Microsoft Consulting Services and Microsoft Dynamics Partners.

Microsoft Dynamics Sure Step includes project management guidance and tools integrated throughout the implementation methodology. Therefore, Microsoft Dynamics Sure Step provides guidance on how to manage implementation projects and how to perform the functional and technical tasks comprising the core of the Microsoft Dynamics implementation process.

The most useful components of Microsoft Dynamics Sure Step are the tools and templates that it provides to create the technical and project management deliverables produced during an implementation project. Microsoft Dynamics Sure Step provides a rich set of Microsoft® Office templates that are used to create implementation deliverables. Microsoft Dynamics Sure Step also provides many process flow diagrams that visually illustrate each phase in the implementation process; also use Microsoft Dynamics Sure Step to browse the methodology to display specific information about implementation tasks.

Additionally, you can use Microsoft Dynamics Sure Step to create and manage projects within the client-based tool. Use these user-defined projects to customize Microsoft Dynamics Sure Step so that it can support customer-specific implementation tools. Add tools and templates, and add or modify tasks, process, and guidance so that the methodology more closely supports a specific practice or industry.

The Value of Microsoft Dynamics Sure Step Methodology

Microsoft Dynamics Sure Step is an end-to-end, scalable implementation methodology. It provides a model based on best practices, tools, and templates to help partners and Microsoft Services perform successful implementations of Microsoft Dynamics solutions. The implementation methodology model includes implementation guidance, industry focused, product-specific content, and project management strategies and guidance.

The following list identifies the key attributes of Microsoft Dynamics Sure Step:

- End-to-end methodology
- Scalable
- Systematic
- Modular
- Repeatable
- Industry focused
- Partner focused

End-to-end Methodology

Microsoft Dynamics Sure Step addresses all phases of an implementation project, from the sales phase with diagnostics, planning and analysis, to design, development, deployment, and operations. Microsoft Dynamics Sure Step provides guidance for optimizing or upgrading an existing Microsoft Dynamics deployment.

Scalable

Microsoft Dynamics Sure Step is scalable:

- Utilize the methodology to implementation projects for small businesses, mid-market companies, and enterprise customers.
- Configure Microsoft Dynamics Sure Step to support a specific Microsoft Dynamics product and industry or vertical solutions.
- Configure Microsoft Dynamics Sure Step to support different types of implementation projects, such as Rapid, Standard, Enterprise, or Agile.
- Configure Microsoft Dynamics Sure Step to support other types of projects, such as Upgrade or Optimization Offerings.

Systematic

Microsoft Dynamics Sure Step provides a systematic, consistent, and repeatable approach to implementing Microsoft Dynamics products. The model has a number of phases, with each phase divided into phase specific processes or cross phase processes. The processes include the activities or steps to follow. In most cases, the results of activities are documented in a deliverable. These deliverables typically form the basis for subsequent activities in the same phase or a subsequent phase. Therefore, the output of one activity or phase provides the input into the next activity or phase.

Modular

Microsoft Dynamics Sure Step supports a modular approach to implementation projects. This capability allows partners to focus on specific phases, offerings, deliverables, or project management disciplines so that they can best address the specific needs and requirements of an implementation project.

Industry Focused

Microsoft Dynamics Sure Step references a compelling suite of technologies and solutions to address the customer's industry-specific requirements. Delivered through a network of channel partners providing specialized services, these adaptable business solutions and strong industry capabilities provide robust end-to-end enterprise solutions for organizations in key industries and related vertical segments.

Microsoft Dynamics Sure Step also provides diagnostic and implantation (Analysis through Operation) guidance at a horizontal solution level. Partners can build on the standard functionality to deliver Line of Business (LOB) applications across multiple industries.

Partner Focused

Microsoft Dynamics Sure Step helps partners take advantage of their strengths, use consistent and repeatable processes, and collaborate among the consultants in the organization. This approach allows partners to shift the balance between implementation revenue and business consulting revenue. Much of the content, guidance, project management strategies, tools, and templates are derived from the lessons learned in real-world implementation projects conducted by partners and Microsoft consultants.

Using Microsoft Dynamics Sure Step can also help partners manage and reduce the risk associated with implementation projects. The clearly defined set of processes and deliverables, built-in project management processes, including risk management tasks, and the systematic approach, will help reduce the risk in the projects.

The consistent approach to implementation supported by Microsoft Dynamics Sure Step also allows partners to work together on the same projects because each partner can use the same methodology. This is also the case when partners work together with the Microsoft Consulting Services organization.

Benefits of Using Microsoft Dynamics Sure Step

Microsoft Dynamics Sure Step provides the following benefits to Microsoft Dynamics partners and the Microsoft Services organization:

- Repeatable, consistent methodology and processes that provide a better implementation experience for partners and customers.

- An implementation framework that allows multiple partners working on the same project to "speak a common language" and work together toward a common implementation methodology.

- Flexible methodology that can be customized for Microsoft Dynamics products, size of customer organization, implementation type, and vertical markets.

- Integrated project management processes, tools, disciplines, and best practices.

- Decision Accelerator Offerings to help partners decrease the sales cycle.

- Optimization Offerings to aid partners in reducing risk and improving customer satisfaction.

- Incorporation of implementation best practices from Microsoft and partners.

- Reduced risk for consulting companies and their partners.

- Increased partner productivity and profitability.

- Greater customer satisfaction.

Microsoft Dynamics Sure Step Model

The Microsoft Dynamics Sure Step model defines a standardized, phased-based approach to implementation projects. Microsoft Dynamics Sure Step is flexible enough to use in many different scenarios and will help to meet different customer needs and improve the implementation experience.

The implementation model that forms the basis of Microsoft Dynamics Sure Step consists of the following:

- Project Types

- Phases

- Processes

- Deliverables and milestones

- Industry/vertical solutions

- Cross-industry/horizontal solutions

- Decision accelerator offerings

- Cross phase processes

- Optimization offerings

- Project management processes and disciplines

- Consultant and customer roles

Project Types

The Microsoft Dynamics Sure Step model can be distinguished into five separate Project Types:

- Enterprise
- Standard
- Rapid
- Upgrade
- Agile

Each project consists of a set of defined phases, cross phases and Optimization Offerings which represents a standardized approach for implementing Microsoft Dynamics Solutions.

Phases

The Microsoft Dynamics Sure Step model divides a full Microsoft Dynamics implementation project into six primary phases:

- Diagnostic
- Analysis
- Design
- Development
- Deployment
- Operation

Each phase in the Microsoft Dynamics Sure Step model consists of a set of defined activities and tasks. The result of the work performed in an activity is usually documented in a deliverable that provides guidance and direction in later steps in the implementation process.

Processes

The Microsoft Dynamics Sure Step model identifies the steps that are required to complete the activities and tasks in each phase. This allows partners to follow a systematic step-by-step approach to implementing Microsoft Dynamics products. Microsoft Dynamics Sure Step presents the processes for each phase in two ways:

- A hierarchical list of activities, tasks, and subtasks; presented in the tree structure of Microsoft Dynamics Sure Step.
- Process flow diagrams presented as Microsoft® Visio® diagrams that present a visual representation of the activities in each phase of the methodology.

In both cases, each step in the process is hyperlinked to the page that contains specific information about the activity or task.

Deliverables and Milestones

The work performed during the phases in Microsoft Dynamics Sure Step results in creating deliverables that document the decisions, scope, and plan-of-action for a phase, activity, or task. The deliverables that result from one activity or phase usually provide input and guidance to the next activity in the phase or the next phase in the methodology.

Microsoft Dynamics Sure Step guides the project team through the activities and tasks that are required to create the deliverables that help to conduct and manage implementation projects. Common deliverables include:

- Architecture assessment
- Project plan
- Functional requirements
- Go-Live plan/checklist

Microsoft Dynamics Sure Step also provides partners with milestones for each phase, so that the progress of the project can be tracked. Example milestones include:

- Customer accepts the Statement of Work
- Formal Project Kick Off Meeting
- Performance Testing which completes the introduction page for each phase in Microsoft Dynamics Sure Step and lists the deliverables and milestones produced during the phase. The commonly used tools, templates, and links are found in the Tools, Templates and Links section on each activity.

Industry/Vertical Solutions

A vertical solution is designed to deliver solutions to address the industry-specific requirements of a business. The goal is the foundation on which partners can build on the standard approach. The goal is delivered through a network of channel partners providing specialized services and end-to-end enterprise solutions for organizations in key industries (manufacturing, distribution, retail, professional services and across the public sector).

Microsoft Dynamics Sure Step provides diagnostic and implementation guidance at an Industry level and at a vertical and subvertical (or solution) level. Examples of the subset of the Industry-Vertical breakdowns include the following:

- Process Industries
    - Food and Beverage
    - Chemicals
    - Life Sciences and Pharmaceuticals
- Public Sector
    - Government
    - Health
    - Education
    - Non-Profit Organizations

Cross Industry/Horizontal Solutions

The Cross Industry/Horizontal Solutions are intended to address industry-generic common business processes or needs by which partners can build on the standard functionality to deliver Line of Business (LOB) applications across multiple industries. Purchasing, Payroll and Banking applications are examples of horizontal solutions.

Microsoft Dynamics Sure Step can be used to help determine the appropriate Microsoft Dynamics products and associated horizontal extensions that can be used to best meet the customer's needs through diagnostic and implementation guidance at a horizontal solutions level. Cross Relationship Management (XRM) is the only cross-industry and horizontal area addressed in this release of Microsoft Dynamics Sure Step, however, all three of the following areas are intended to be supported in Microsoft Dynamics Sure Step with access to detailed guidance and valuable tools, templates, and links:

- **XRM - with Microsoft Dynamics CRM as the platform**: Generally consists of Relationships and Interactions, Business Process Driven and Collaborative efforts.

- **Microsoft Dynamics - SharePoint**: A family of Microsoft enterprise portals used to aggregate SharePoint sites, information and applications into a single portal.

- **Contact Center Solution**: This solution helps an organization's contact center meet its high-level business goals by making the most out of every customer interaction and empowers the contact center agents with the right set of tools to quickly and precisely resolve or escalate issues.

Decision Accelerator Offerings

The seven optional Decision Accelerator offerings defined in the Diagnostic phase of Microsoft Dynamics Sure Step are designed to assist the customer with their decision making process for the implementation of a Microsoft Dynamics solution. A partner can deploy one or more of the Decision Accelerator offerings to support a variety of customer requirements.

Partners can select one or more Decision Accelerator offerings that best describe the specific needs of the customer and allows them in their due diligence process for the selection of an enterprise resource planning (ERP) or customer relationship management (CRM) solution.

Microsoft Dynamics Sure Step supports the following Decision Accelerator offerings:

- **Requirements and Process Review**: Review current processes to determine the requirements for the future state.
- **Fit Gap and Solution Blueprint**: Determine degree of fit with the Microsoft Dynamics solution.
- **Proof of Concept**: Validate requirements with customer's sample data.
- **Business Systems Architecture Assessment**: Confirm the architectural design for the Microsoft Dynamics solution.
- **Scoping Assessment**: Estimate high-level cost and resource plan to deploy the Microsoft Dynamics solution.
- **Business Case**: Prepare a business case for implementation of the Microsoft Dynamics solution.
- **Upgrade Assessment**: Review current release of the Microsoft Dynamics solution, to ascertain the best approach to upgrade to a subsequent release.

Optimization Offerings

Microsoft Dynamics Sure Step provides seven optimization offerings to use to perform a thorough independent review of an implementation. Optimization offerings are designed to help reduce risk and improve customer satisfaction for complex blended engagements that include consultants from several partners. The Optimization offerings provide:

- Functional design guidance for reviewing the proposed design for business and industry solution fit.
- Technical design guidance for reviewing the proposed technical design for performance, scalability, integration with other systems and third party software.
- Proactive quality management with access to expert technology specialists at appropriate checkpoints in the Sure Step

implementation to mitigate integration risk across the complete technology stack.

There are seven Optimization offerings; employ more than one offering for a given engagement, if desired:

- **Architecture Review**: Reviews the overall architecture and infrastructure to meet the customer's business requirements.

- **Design Review**: Reviews the design of the customizations and integration between Microsoft Dynamics AX and Microsoft Dynamics CRM with existing systems based on various scenarios.

- **Customization Review**: Reviews the custom code to improve performance, increase stability, improve security, and reduce costs.

- **Performance Review**: Reviews performance impact of the design and code based on guidance, tools, methods, and best practices.

- **Health Check**: Delivers proactive problem identification and suggested resolution of issues.

- **Upgrade Review**: Provides guidance to customers upgrading their current implementation of Microsoft Dynamics.

- **Project Governance and Delivery**: Provides proactive **full project lifecycle** governance and delivery execution support for the Microsoft Dynamics implementation project through regular assessment and provision of findings and recommendations.

Each Optimization is an umbrella offering with more detailed offerings listed under the tree structure.

Cross Phase Processes

A cross phase process is a group of related activities that span multiple implementation phases in a specific project scenario. The Microsoft Dynamics Sure Step model provides step-by-step guidance for important cross-phase processes by providing specific views that include the following:

- All the tasks that are performed.
- The phase in which each task is performed.
- Deliverables produced.

Microsoft Dynamics Sure Step has nine cross phase processes, grouped into three further areas.

- **Organization -** The Organization cross phase processes include:
  o Program Management
  o Training
  o Business Process Analysis

- **Solution -** The Solution cross phase processes include:
  - o Requirements and Configuration
  - o Custom Coding
  - o Quality and Testing

- **Technology -** The Technology cross phase processes include:
  - o Infrastructure
  - o Integration and Interfaces
  - o Data Migration

Project Management Processes and Disciplines

Project management activities and tasks are embedded throughout the phases and activities of Microsoft Dynamics Sure Step. Following the project management best practices integrated in Microsoft Dynamics Sure Step can help support the success of Microsoft Dynamics implementation projects.

The implementation methodology also provides detailed how-to information and best practices for the following project management disciplines:

- Risk management

- Scope management

- Issue management

- Time and cost management

- Resource management

- Communication management

- Quality management

- Procurement management

- Sales management

Roles Supported by Microsoft Dynamics Sure Step

Many different job roles are typically involved in Microsoft Dynamics implementation projects. The Microsoft Dynamics Sure Step model identifies and provides guidance for the consulting and customer roles that are involved in specific phases, activities, and tasks in an implementation project. Examples of the primary roles supported by Microsoft Dynamics Sure Step include the following:

Consulting roles	Customer roles
Project manager	Business decision maker
Engagement manager	Project manager
Solution architect	IT manager
Application consultant	Key user

Consulting roles	Customer roles
Development consultant	End-user
Technology consultant	Customer Executive Sponsor
Test Lead	Subject Matter Expert
	Customer Test Lead

Some consultant and customer companies might have only one person perform the functions of multiple roles. For example, in small companies, some people will function in multiple roles. By defining and supporting the roles involved in implementation projects, Microsoft Dynamics Sure Step is scalable for use by small and large partner organizations and customers.

Who Uses Microsoft Dynamics Sure Step?

Microsoft Dynamics Sure Step is designed to support all roles participating in a Microsoft Dynamics implementation project. In the progression of an implementation project, different roles are more engaged during specific phases, and less engaged in other phases. The project manager, while busiest during the start and early phases of the project is consistently engaged throughout the project.

In addition to project managers, engagement managers and team leads will focus heavily on the guidance contained in the Diagnostic and Analysis methodology phases and in the Offerings section. However, they must be aware of the content and activities contained in the Design, Development, Deployment, and Operation phases because they will be managing the work undertaken in those phases.

Application, functional, and technical consultants who deliver the solution must focus heavily on the Design, Development, Deployment, and Operation phases. Application and functional consultants will also be intricately involved in the Analysis phase, driving the finalization of the deliverables which feed into the Design documents. These consultants also have to familiarize themselves with the offerings supported by Microsoft Dynamics Sure Step and they can provide input into selecting the offering that best meets a customer's requirements.

Microsoft Dynamics Sure Step Model and Other Microsoft Frameworks

The Microsoft Dynamics Sure Step model incorporates some activities and best practices from other Microsoft methodology frameworks. Although it is not intended to replace these frameworks, Microsoft Dynamics Sure Step is designed specifically for implementing Microsoft Dynamics solutions.

The complete implementation life cycle supported by Microsoft Dynamics Sure Step overlaps the following Microsoft frameworks:

- Microsoft Solution Sales Process (MSSP) provides a framework for selling Microsoft solutions.

- Microsoft Solutions Framework (MSF) provides a framework for technical and software development projects.

- Microsoft Operations Framework (MOF) provides a framework for planning, operating, delivering, and managing an existing Microsoft solution.

Because the Microsoft Dynamics Sure Step model defines an end-to-end process, from planning and diagnostics through operation and optimization, it corresponds to the other Microsoft frameworks in the following ways:

- Processes in the Diagnostic phase correspond with phases in MSSP.

- Processes in the Analysis, Design, Development, and Deployment phases correspond to the processes in MSF.

- Processes in the Operation phase correspond to processes in MOF.

Microsoft Dynamics Sure Step Platform Structure

The Microsoft Dynamics Sure Step model is presented within a client-based tool that includes a Reference view and a Documents view of the methodology. Use the Reference view to navigate through the phases, processes, and activities of the model. The documents view provides users a documents-centric view of the Microsoft Dynamics Sure Step methodology across phases.

Tree Structure

The tree structure in the navigation pane of Microsoft Dynamics Sure Step contains the following nodes:

- Sure Step
- Diagnostic Phase - Decision Accelerators and Activities
- Project Types and Implementation Phases
- Optimization Offerings
- Project Management Library
- Roles
- Additional Resources

Filters

Microsoft Dynamics Sure Step supports all Microsoft Dynamics products and multiple service offerings. Manage this flexibility by using the filters provided to configure Microsoft Dynamics Sure Step so that it corresponds to the requirements of specific implementation projects.

Microsoft Dynamics Sure Step provides the following filters:

- **Solution**: Use this filter to display general product guidance or guidance for a specific vertical or horizontal solution.
- **Product**: Use this to display the content that is relevant to a specific Microsoft Dynamics product. When configuring this filter, Microsoft Dynamics Sure Step displays general content plus the content relevant to the selected Microsoft Dynamics product. Product specific information is displayed in the following locations:
  - In the Tools and Templates box on an activity page.
  - In a product-specific section on selected activity pages.

- **Project Type**: Use this filter to display content relevant to one the specific project types: Standard, Enterprise, Rapid, Upgrade, or Agile.

NOTE: By default, the filters are not selected after installation. This results in displaying content for all Microsoft Dynamics products and all project types. After selecting a filter, the new selection is maintained until it is changed, or upon closing Microsoft Dynamics Sure Step.

Activities, Tasks, and Subtasks

The activities and tasks that comprise each phase in the methodology are organized in a hierarchical structure. The first level under a phase is called an *activity*. Activities consist of *tasks*, which comprise the second level of the hierarchy. Some tasks are divided into *subtasks*, the third and lowest level in the hierarchy. Each of these levels will have the standard activity page. The figure shows an example of this three-level hierarchy.

```
Microsoft Dynamics Sure Step
⊞ Diagnostic Phase
⊟ Project Types and Implementation Phases
      Standard Project Type
      Rapid Project Type
      Enterprise Project Type
      Agile Project Type
      Upgrade Project Type
   ⊟ Analysis Phase
         Analysis Activity Flow
      ⊟ 1 1 1 - Project Planning for Enterprise Projects
            1 1 1 1 - Conduct Executive Kick Off
            1 1 1 2 - Develop Organization Change Management Strategy
            1 1 1 3 - Develop Leadership Action Plan
            1 1 1 4 - Finalize Project Charter
            1 1 1 5 - Finalize Work Breakdown Structure and Project Plan
      ⊟ 1 1 1 - Project Planning for Standard Projects
            1 1 1 1 - Project Planning
            1 1 1 2 - Monitoring and Controlling
            1 1 1 3 - Conduct Organization Risk and Readiness Assessment
            1 1 1 4 - Conduct Stakeholder Analysis
            1 1 1 5 - Develop Organization Change Management Strategy
            1 1 1 6 - Develop Communications Strategy and Plan
         1 1 1 - Project Planning for Rapid Projects
         1 1 1 - Project Planning for Upgrade Project Type
      ⊞ 1 1 2 - Risks and Issues Management
      ⊞ 1 1 3 - Communications Management
      ⊞ 1 1 4 - Proposal Management
      ⊞ 1 1 5 - Resource Management
      ⊞ 1 1 6 - Quality Management
         1 2 1 - Conduct Solutions Overview
         1 2 1 - Conduct Solutions Overview for Upgrade Project Type
         1 2 1 - Conduct Solutions Overview for XRM
```

FIGURE 1.1 ACTIVITIES, TASKS, AND SUBTASKS IN THE TREE STRUCTURE

Activity Page Structure

Each activity, task, or subtask page consists of the following sections:

- **Tools, Templates and Links**: Activity Pages display the corresponding Templates for the activity in this section. Templates can be Shell Templates, which can form the basis for the projects, or Sample Templates, which illustrate the use of the template at a fictitious company. Activity Pages also contain Tools or links, which redirect to other content in the methodology or to an external site.

- **Purpose**: Describes the purpose of the phase, activity, or task described on the activity page.

- **Description**: Defines the activity and how to perform the activity or task.

- **Pre-conditions**: Identifies the items that must be completed or deliverables that must exist before the activity can start. Because Microsoft Dynamics Sure Step defines a systematic approach to implementation, the output of one phase, activity, or task becomes the input into the next part of the process. Therefore, a post-condition from one activity becomes the pre-condition for the next activity. This is also the case for phases. Successfully completing one phase is the pre-condition for the next phase.

- **Diagrams**: Visio diagrams appear on introductory, activity, and many task pages. These diagrams provide another way to illustrate and navigate the methodology.

- **Roles**: Identifies who is involved in the activity, as an owner, a primary or optional participant.

Visio Process Diagrams

The introductory pages for each phase and activity (level 1) contain a Visio diagram that illustrates that phase or activity in a flowchart. For a phase, the Visio diagram shows the activities in that phase and any kind of decision tree logic for the phase. For an activity, the Visio diagram shows the tasks and decision logic that comprise that activity.

In addition, if a task (level 2) consists of subtasks (level 3) the activity page will also include a Visio diagram that shows the subtasks. If a task has no subtasks, it will not have a Visio diagram.

Using Visio Diagrams for Navigation

The shapes in the Visio diagram are hyperlinked to the corresponding page for the task or activity. Visio diagrams provide an alternative way to browse through Microsoft Dynamics Sure Step.

Pan and Zoom

Each Visio diagram includes pan and zoom controls to increase or reduce the size of the diagram. The pan and zoom feature includes a collapsible thumbnail diagram and a movable red frame that is used to display different areas of the flowchart.

Additional Resources

One of the key features of Microsoft Dynamics Sure Step is the resources it provides. Use the Additional Resources node in the tree structure to access these and other resources. This node contains the following components:

- **Information Flow from Functional Requirements to Design Documents**: This diagram details the flow of information from the Functional Requirements Document to the Solution Design Document.

- **Sure Step - SDM Alignment**: This diagram shows the mapping of Microsoft Dynamics Sure Step and Service Line Offerings to Microsoft Services Delivery Methodology (SDM), Microsoft Solutions Framework (MSF) and other related methodologies.

- **Onsite-Offshore Conceptual Work-Split across Implementation Phases**: This diagram shows a conceptual split of the work effort between onsite and offshore resources for the deployment of a Microsoft Dynamics solution using Microsoft Dynamics Sure Step.

- **Guidance for Partners and Customers on Project Type Selection**: This document provides guidance on which project type to choose.

- **Other Resource Links**: This provides links to additional resources available with respect to the Microsoft Dynamics Sure Step Methodology.

- **Environmental Management Accounting Project Guidance Document**: This document provides guidance on Environmental Management Accounting so that partners can determine if their project must adhere to best practice.

- **Product-Specific Resources**: This section contains a node for each Microsoft Dynamics product. Each node lists links to all the product-specific resources that are referenced throughout Microsoft Dynamics Sure Step. Use these links to quickly identify and access all the product specific tools that are included in and linked to Microsoft Dynamics Sure Step.

- **Glossary**: This node contains a list of definitions for frequently used implementation terms.

- **Sure Step Templates**: This section provides document templates for custom document creation, matching the standard Microsoft Dynamics Sure Step document look and feel.

Navigating Microsoft Dynamics Sure Step

Microsoft Dynamics Sure Step includes two ways to view and navigate through the methodology and resources:

- **Reference view**: This view provides a way for users to navigate through the methodology. Its key features include:
  - Project Type and Product filters
  - Forward and Back buttons
  - Breadcrumbs
  - Collapsible window sections

- **Documents view**: This view provides a way for users to view, filter, and access project documents across all phases of the methodology. Its key features include:

- Deliverables filter
- Locate content in Sure Step
- View documents for a single phase

Tabs

Microsoft Dynamics Sure Step includes the Sure Step Methodology, Projects, Resources, and Preferences tabs. Use each tab to perform particular tasks, such as:

- **Sure Step Methodology**: Use this tab to navigate through Microsoft Dynamics Sure Step using either the Reference View or the Documents view.
- **Projects**: Use this tab to create and manage projects. A project is a collection of Microsoft Dynamics Sure Step documents which can be edited and are created for a specific Project Type and Microsoft Dynamics Product. Customize each project to meet the requirements of each customer, if necessary.
- **Resources**: Use this tab to link to useful resources such as the Microsoft Dynamics Sure Step User Guide. Also use this tab to check for updated versions of Microsoft Dynamics Sure Step.
- **Preferences**: Use this tab to specify configuration preferences, such as the storage location for projects, a customized logo for deliverables, and the page that opens when Microsoft Dynamics Sure Step starts.

Reference View

There are a number of ways to browse the Reference view of Microsoft Dynamics Sure Step:

- **The tree structure**: Expand the various nodes on the tree structure and then click an item in the tree structure to browse to the corresponding activity page.
- **Visio process diagrams, including the diagram on the Sure Step page**: Browse the content pages for phases, offerings, project management disciplines, cross phase processes, and roles.

NOTE: Most diagrams in Microsoft Dynamics Sure Step contain hyperlinks to content pages.

- **Solution, Project Type and Product filters**: Use the Solution, Project Type and Product filters to refine the displayed content.
- **Forward and Back buttons**: Use these buttons to move through hyperlinked content the same way as in a Web browser.
- **Breadcrumbs**: Use Breadcrumbs to verify the current location and quickly move to higher levels in the hierarchy.

- **Collapsible window sections**: Customize the Reference view by collapsing the window sections that are not required.

Documents View

The Documents view provides many options for viewing documents across the phases of Microsoft Dynamics Sure Step.

- **Deliverables filter**: Use this filter to view only the customer-facing deliverables, or all deliverables.
- **Locate content in Sure Step**: Right-click a document and choose this option to switch to the corresponding Microsoft Dynamics Sure Step activity.
- **View documents for a single phase**: By clicking the column heading for a particular phase, view only the documents for that phase.

NOTE: Open documents in read-only mode from the Documents view. To open copies of these documents that can be edited use the Sure Step Projects tab.

Tools, Templates and Links

Open specific tools and templates in the methodology in the following ways:

- The **Tools, Templates and Links** box on an activity page.
- In the **Additional Resources** node in the tree structure, locate templates in two ways, by:
  - o Implementation phase
  - o Alphabetical order

In addition, Project management templates are located under Overview in the Project Management node in the tree structure.

Installing Microsoft Dynamics Sure Step

For Microsoft partners who have enrolled in a Partner Service Plan for Microsoft Dynamics, Microsoft Dynamics Sure Step is available for installation from the Microsoft Dynamics PartnerSource site.

Installation Requirements

Installing and using Microsoft Dynamics Sure Step requires the following:

- Microsoft® Internet Explorer® 7 or Microsoft® Internet Explorer® 8
- Microsoft®.NET® Framework
- 287 MB of hard disk space (for the full installation)

To use the templates and the other Microsoft® Office tools requires the following:

- Microsoft® Office 2007 or later versions
- Microsoft® Office Project® 2007 or a later version
- Microsoft® Office Visio® 2007 or a later version
    - The .NET Programmability Support option for Visio must be installed.

NOTE: To support Microsoft® Office® 2003 users, Microsoft Dynamics Sure Step supports the Office 2003 Compatibility pack. Each document must be saved as a Microsoft Office 2003 compatible document before it is sent to a customer.

For more information about how to install Microsoft Dynamics Sure Step, refer to the Microsoft Dynamics Sure Step *User Guide* included in the download package from PartnerSource.

Microsoft Dynamics Sure Step Components

When installing Microsoft Dynamics Sure Step, the following components will install:

- **The static content**: This consists of the HTML content, HTML-based video diagrams, and templates displayed in the Internet Explorer browser.
- **The source content**: This consists of the source HTML files, Visio files, and Microsoft Office templates. Use these components to generate the static content. Source content is required for modifying Microsoft Dynamics Sure Step.

Installing Microsoft Dynamics Sure Step from PartnerSource

From the Microsoft Dynamics Sure Step download page on PartnerSource, download the setup file and then run it from the local computer to install Microsoft Dynamics Sure Step and its components.

To install Microsoft Dynamics Sure Step:

1. Visit the following Web site: https://mbs.microsoft.com/partnersource/partneressentials/serviceplans/surestep.
2. Browse to the download page for Microsoft Dynamics Sure Step.
3. Download the Microsoft Dynamics Microsoft Dynamics Sure Step setup file to the local computer.
4. Double-click the setup file to begin the installation.

In the **Microsoft Dynamics Microsoft Dynamics Sure Step- Installation Wizard**, use the information in the following table to complete the installation.

Setup Wizard Page	Options
End-User Agreement	Review and accept the terms of the License Agreement.
Destination Folder	Select to install Microsoft Dynamics Sure Step in the default location or select a different location.
Confirm Installation	Click **Next** to start the installation.

NOTE: By default, the user guide is not installed and is a separate download available on the download page for Microsoft Dynamics Sure Step.

Default Installation Folder

The default installation folder for Microsoft Dynamics Sure Step depends on the operating system that is being used. The following table shows the default installation folder for Windows® XP and Windows Vista®:

Operating system	Default installation folder
Windows XP	%systemdrive%:\Documents and Settings\All Users\Documents\Microsoft Dynamics\SureStep
Windows Vista	%systemdrive%:\Users\Public\Documents\Microsoft Dynamics\SureStep

After Completing the Installation

After completing the installation, a new submenu called *Microsoft Dynamics Sure Step* will be available in the **Start** > **All Programs** > **Microsoft Dynamics Sure Step** menu. When all the components are installed, the following items are installed:

- **Microsoft Dynamics Sure Step:** Click to start Microsoft Dynamics Sure Step, content is displayed in the Microsoft Dynamics Sure Step client.
- **Microsoft Dynamics Sure Step User Guide:** The User Guide provides an overview for using the Sure Step tool.

Lab 1.1 - Exploring Microsoft Dynamics Sure Step

You are a Project Manager for your organization, researching the potential of Microsoft Dynamics Sure Step to help manage a range of projects of different sizes, durations and types. You need to become familiar with the Microsoft Dynamics Sure Step interface.

Scenario

In this lab, you will:

- Use a variety of navigation methods to browse Microsoft Dynamics Sure Step.
- Use additional features such as Visio diagrams, Additional Resources, and the content filters to locate information.

In the first exercise in this lab, use the Reference view to navigate to content in Microsoft Dynamics Sure Step.

In the second exercise, explore the Microsoft Dynamics Sure Step Document view.

Exercise 1: Challenge Yourself!

Complete the following tasks by using the Reference view in Microsoft Dynamics Sure Step:

Use the Microsoft Dynamics Sure Step tree structure to navigate to the following pages:

- The GO LIVE activity in the Deployment Phase of a Standard and Enterprise project
- The Analysis Phase of an implementation project
- The Business Analyst customer role

Use the Microsoft Dynamics Sure Step diagram on the Sure Step page to navigate to the following pages:

- The Rapid Implementation project type
- The Analysis phase
- The Project Manager consulting role
- The Training cross phase process

Use the Visio diagrams to navigate to the Deployment Phase of an Enterprise project.

Exercise 2: Challenge Yourself!

Complete the following tasks by using the Documents view in Microsoft Dynamics Sure Step:

- Display the customer facing deliverables for all phases.
- Display all documents for the Design phase.
- Locate the Project Charter in the Development phase within the Customer Facing Deliverables of the Document view.
- Navigate to an activity that uses the Business Case Customer Report document in the Microsoft Sure Step Dynamics Reference view.

Exercise 3: Challenge Yourself!

Complete the following tasks by using the tabs in Microsoft Dynamics Sure Step:

- View the list of existing projects.
- View the languages installed and additional resources available for Microsoft Dynamics Sure Step.
- Identify the location of the Project Repository.

Exercise 1: Need a Little Help?

Complete the following tasks by using the Reference view in Microsoft Dynamics Sure Step.

Use the Microsoft Dynamics Sure Step tree structure to navigate to the following pages:

- In Microsoft Dynamics Sure Step, ensure that you are in the Reference view.
- Use the tree structure on the left to navigate to the pages.

Use the Microsoft Dynamics Sure Step diagram on the Sure Step page to navigate to the following pages:

- In Microsoft Dynamics Sure Step, ensure that you are in the Reference view.
- Navigate to the Sure Step page.
- Click the appropriate area of the Sure Step Methodology diagram to navigate through the pages.
- Use the **back** button to return to the Sure Step page.

Use the Visio diagrams to navigate to the Deployment Phase of an Enterprise project.

- In Microsoft Dynamics Sure Step, ensure that you are in the Reference view.
- Click the appropriate area of the diagrams on each page to navigate through the pages.

Exercise 2: Need a Little Help?

Complete the following tasks by using the Documents view in Microsoft Dynamics Sure Step.

Display the customer facing deliverables for all phases.

- In Microsoft Dynamics Sure Step, ensure that you are in the Documents view.
- Use the Deliverables filter.

Display all documents for the Design phase.

- Use the Deliverables filter.
- Use the column headings to specify the required phase.

Locate the Project Charter in the Development phase within the Customer Facing Deliverables of the Documents view.

- Use the Deliverables filter.
- Navigate to the required phase.

Navigate to an activity that uses the Business Case Customer Report document in the Microsoft Sure Step Dynamics Reference view.

- Use the **Show All Phases** button.
- Right-click the required document.

Exercise 3: Need a Little Help?

Complete the following tasks by using the tabs in Microsoft Dynamics Sure Step.

View the list of existing projects.

- This information is available on the **Projects** tab.
- The list might be empty.

View the languages installed and additional resources available for Microsoft Dynamics Sure Step.

- This information is available on the **Preferences** tab.
- There might only be one language installed.

Identify the location of the Project Repository.

- This information is available on the **Preferences** tab.
- The location of the Projects Repository can vary.

Exercise 1: Step by Step

Use the following step-by-step procedure to complete the procedures in Exercise 1:

Use the Microsoft Dynamics Sure Step tree structure to navigate to the following pages:

1. The GO LIVE activity in the Deployment Phase.
   a. In Microsoft Dynamics Sure Step, click the **Reference** tab.
   b. In the tree structure, double-click **Project Types and Implementation Phases**.
   c. Double-click **Deployment Phase**.
   d. Click **4 4 2 - GO LIVE for Standard and Enterprise Projects**.

2. The Analysis Phase of an implementation project type.
   a. In the tree structure, if it is not already expanded, double-click **Project Types and Implementation Phases**.
   b. Double-click **Analysis Phase**.

3. The Business Analyst customer role.
   a. In the tree structure, double-click **Roles**.
   b. Double-click **Customer Roles Overview**.
   c. Click **Business Analyst**.

Use the Microsoft Dynamics Sure Step diagram on the Sure Step page to navigate to the following pages:

1. Navigate by clicking the appropriate part of the **Sure Step Methodology** diagram on the **Sure Step** page:
   a. Under Project Types, click the **Rapid** Project Type.
   b. Under Phases, click **Analysis**.
   c. Under Consulting Roles, click **Project Manager**.
   d. Under Cross Phase Processes, click **Training**.

2. Use the Visio diagrams to navigate to the GO LIVE activity in the Deployment Phase of an Enterprise project.
3. On the Sure Step page, on the **Sure Step Methodology** diagram, in the **Project Types** section, click **Enterprise Implementation**.
4. On the **Enterprise Project** page, on the diagram, click **Deployment**.

Exercise 2: Step by Step

Complete the following tasks by using the Documents view in Microsoft Dynamics Sure Step:

1. Display the customer facing deliverables for all phases.
   a. In Microsoft Dynamics Sure Step, click the **Documents** tab.
   b. In the Documents view, click the **Deliverables** filter, and then click **Customer Facing Deliverables**.

2. Display all documents for the Design phase.
   a. In Microsoft Dynamics Sure Step, if you are not already in the Documents view, click the **Documents** tab.
   b. In the Documents view, click the **Deliverables** filter, and then click **All Documents**.
   c. Click the **Design** column heading.

3. Locate the Project Charter in the Development phase within the Customer Facing Deliverables of the Documents view.
   a. In the Documents view, click the **Deliverables** filter, and then click **Customer Facing Deliverables**.
   b. Navigate to the **Development** phase.
   c. Locate the **Project Charter**.

Complete the following tasks by using the Documents view in Microsoft Dynamics Sure Step:

1. Navigate to an activity that uses the Business Case Template Word document in the Microsoft Sure Step Dynamics Reference view.
2. In the Documents view, click **Show All Phases**.
3. In the **Diagnostic** column, right-click **Business Case Customer Report**, and then click **Locate content in Sure Step**.
4. Verify that you are taken to the **Business Case** page in the Reference view.

Exercise 3: Step by Step

Complete the following tasks by using the tabs in Microsoft Dynamics Sure Step:

1. View the list of existing projects.
   a. In Microsoft Dynamics Sure Step, click the **Projects** tab.
   b. On the **Projects** tab, view the list of projects. The list might be empty.

2. View the languages installed and additional resources available for Microsoft Dynamics Sure Step.

    a. In Microsoft Dynamics Sure Step, click the **Preferences** tab.

    b. On the **Preferences** tab, in the **Content Language** section, view the languages and updates installed.

    c. There might be only one language installed.

3. Identify the location of the Project Repository.

    a. In Microsoft Dynamics Sure Step, click the **Preferences** tab.

    b. On the **Preferences** tab, in the **Project Repository** section, view the location.

    c. The location of the **Project Repository** can vary.

Lab Discussion

Discuss any questions about exploring Microsoft Dynamics Sure Step.

Summary

Microsoft Dynamics Sure Step provides systematic, prescriptive guidance for implementing Microsoft Dynamics solutions. It provides product specific content, best practices, tools, and templates to support large and small Microsoft Dynamics implementation projects.

Microsoft Dynamics Sure Step is built on an easy-to-use client-based platform, and includes the facility to create customizable projects so that Microsoft Dynamics Sure Step can be modified to meet business needs. Using Microsoft Dynamics Sure Step can help to minimize and manage the risk in implementation projects.

Test Your Knowledge

Test your knowledge with the following questions.

1. For each of the following elements, match the component from the Microsoft Dynamics Sure Step model with its definition.

_____ 1. Phases	a. The steps that are required to complete the activities and tasks in each phase.
_____ 2. Decision Accelerators	
_____ 3. Processes	b. Consists of defined activities and tasks that result in the creation of deliverables.
_____ 4. Cross Phase Processes	c. How-to information and best practices for groups of related project management tasks.
_____ 5. Project Management Disciplines	d. Offerings that assist the customer in the decision making process.
_____ 6. Project Management Processes	e. A group of related activities and tasks that span multiple implementation phases.
_____ 7. Deliverables	f. Definable work outputs from the processes performed that the project is chartered to deliver in each phase.
	g. Provides guidance for starting, executing, or closing an implementation.

2. What are the ways to navigate to a template in Microsoft Dynamics Sure Step? Select all that apply.

   ( ) The diagram on the Sure Step page

   ( ) Documents view - identify the template by phase

   ( ) Resources tab

   ( ) Tools, Templates and Links box on an activity page

3. On a computer running Windows Vista, on which of the following locations is the default installation folder for Microsoft Dynamics Sure Step?

   ( ) C:\Documents and Settings\All Users\Application Data\Microsoft Dynamics\Microsoft Dynamics Sure Step

   ( ) C:\Users\Public\Documents\Microsoft Dynamics\Sure Step

   ( ) C:\ProgramData\Microsoft Dynamics\Microsoft Dynamics Sure Step

   ( ) C:\Documents and Settings\All Users\ Microsoft Dynamics\Microsoft Dynamics Sure Step

Quick Interaction: Lessons Learned

Take a moment and write down three key points you have learned from this chapter

1.

2.

3.

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Solutions

Test Your Knowledge

1. For each of the following elements, match the component from the Microsoft Dynamics Sure Step model with its definition.

__b__ 1. Phases	a. The steps that are required to complete the activities and tasks in each phase.
__d__ 2. Decision Accelerators	b. Consists of defined activities and tasks that result in the creation of deliverables.
__a__ 3. Processes	c. How-to information and best practices for groups of related project management tasks.
__e__ 4. Cross Phase Processes	d. Offerings that assist the customer in the decision making process.
__c__ 5. Project Management Disciplines	e. A group of related activities and tasks that span multiple implementation phases.
__g__ 6. Project Management Processes	f. Definable work outputs from the processes performed that the project is chartered to deliver in each phase.
__f__ 7. Deliverables	g. Provides guidance for starting, executing, or closing an implementation.

2. What are the ways to navigate to a template in Microsoft Dynamics Sure Step? Select all that apply.

   (√) The diagram on the Sure Step page

   (√) Documents view - identify the template by phase

   ( ) Resources tab

   (√) Tools, Templates and Links box on an activity page

3. On a computer running Windows Vista, on which of the following locations is the default installation folder for Microsoft Dynamics Sure Step?

   ( ) C:\Documents and Settings\All Users\Application Data\Microsoft Dynamics\Microsoft Dynamics Sure Step

   (•) C:\Users\Public\Documents\Microsoft Dynamics\Sure Step

   ( ) C:\ProgramData\Microsoft Dynamics\Microsoft Dynamics Sure Step

   ( ) C:\Documents and Settings\All Users\ Microsoft Dynamics\Microsoft Dynamics Sure Step

Point of Sale User Guide: Neptune

2016

Contents

Point of Sale

General Overview

The Point of Sale (POS) screen is integrated with all the other functions in the system to allow for the combining of all services and items into a single shopping cart and a single transaction.

This section will cover the functional aspects of POS operation including:

- Selling items
- Changing prices, quantities
- Reviewing receipt journals
- Assigning customers
- Perform voids, refunds
- Managing Batches
- Accessing Tee Sheets

Accessing the POS

By default Recreation Dynamics redirects to the POS screen on logging into the system (whether at the start of a shift or after the system has been closed down for other reasons).

To open the POS, perform the following steps:

1. Double click the **Neptune POS** icon on your desktop. Recreation Dynamics **Login Screen** appears.
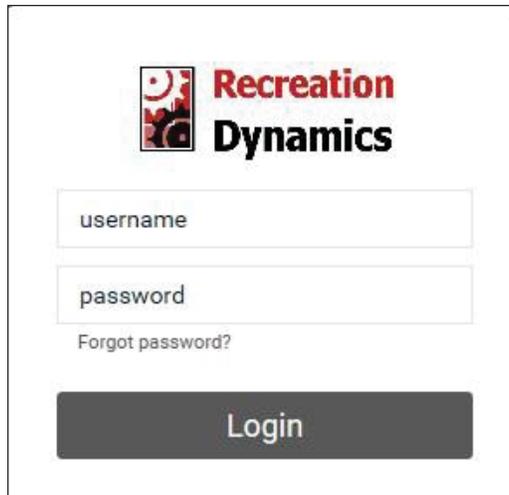
Figure: Login Screen

2. In the **Login Screen**, enter the username and password.
3. Click the **Login** button. The **POS screen** appears.
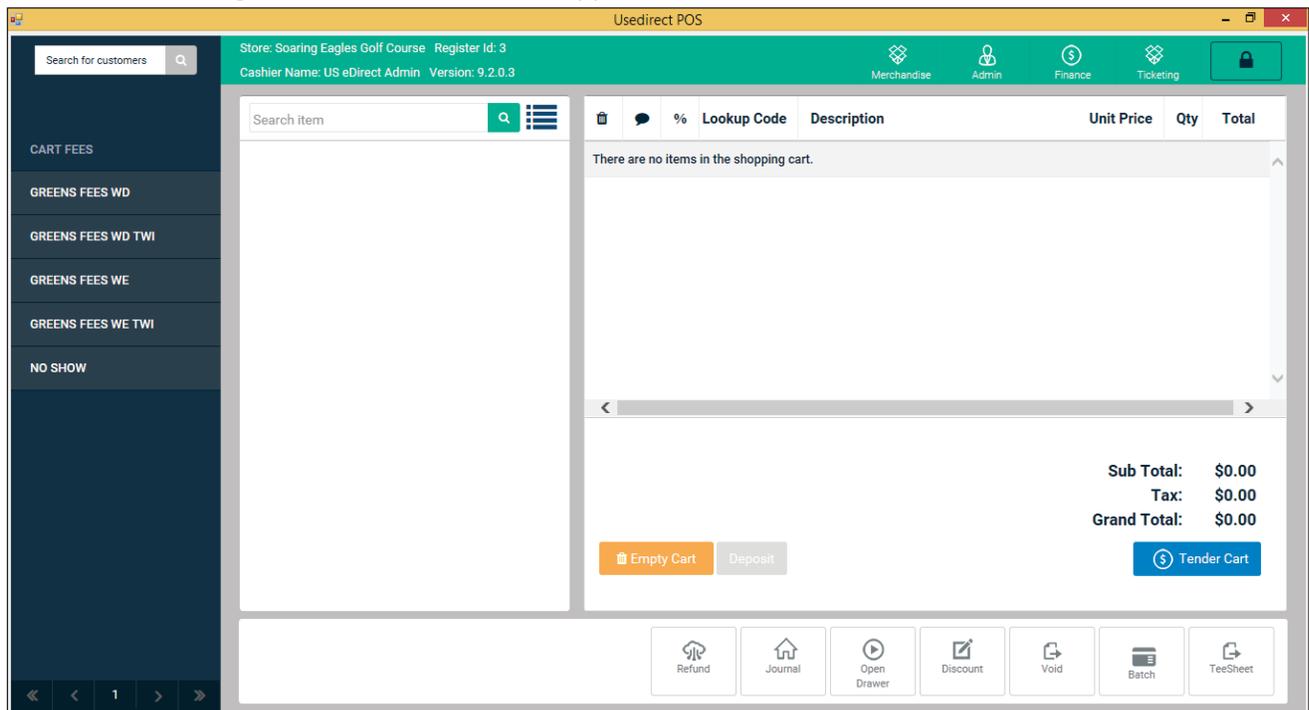
Figure: POS Screen

Adding Items to the Shopping Cart

This section covers sale of POS items. Items in the POS can be added to the cart and sold in 3 ways:
- Categories and Quick Buttons
- Search
- SKU Entry or Scan

Categories and Quick Buttons

Categories are displayed based on the frequently sold items at a location. The left side of the POS screen will be populated with the available Categories. These Categories will contain single or multiple POS items, as demonstrated below:
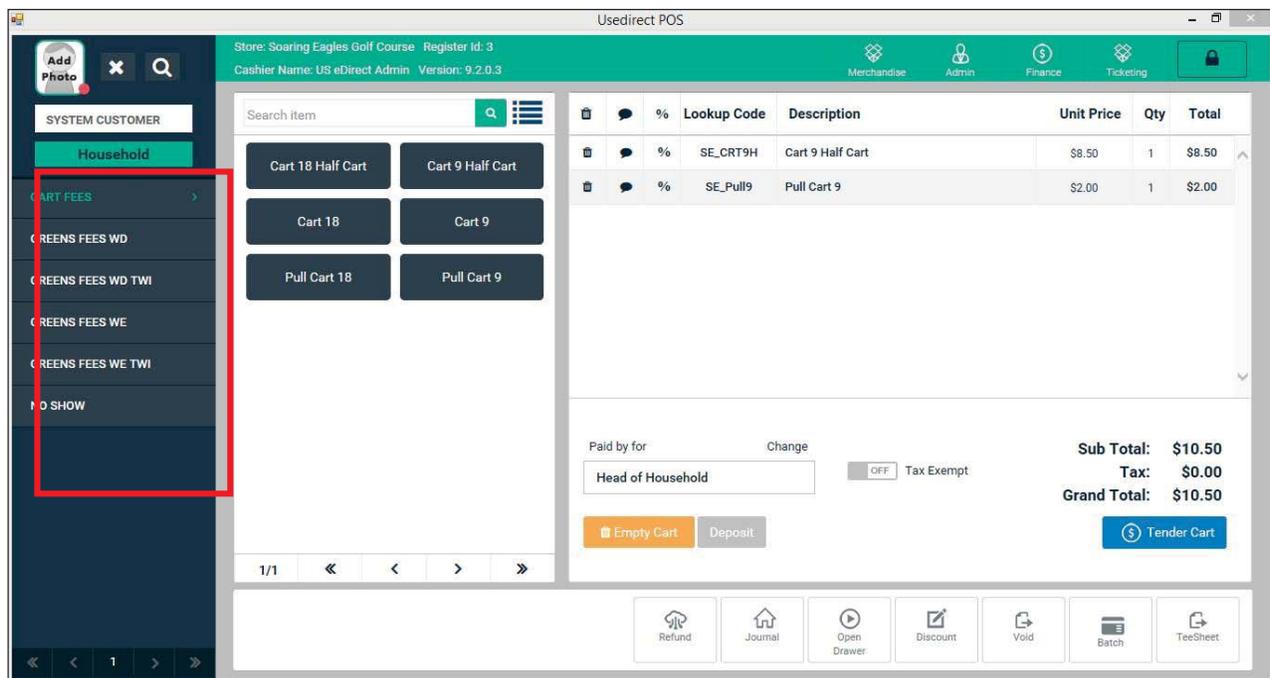
Figure: POS Screen

NOTE: The current Category will be highlighted in green. The items designated for this Category will be displayed in the central panel.

To add an item to the shopping cart, perform the following steps:
1. In the **POS Screen**, click on the desired Category displayed on the left side of the screen. The corresponding items for the selected Category appears in the central panel as shown below:
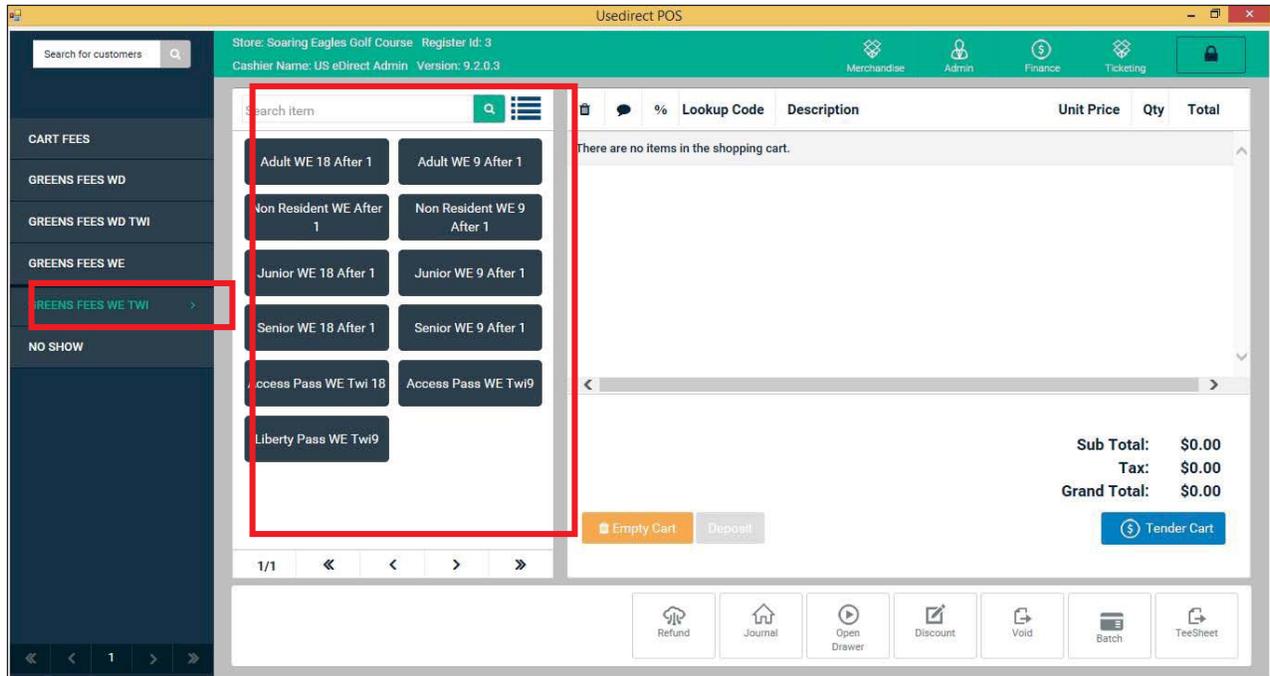
Figure: Select Category Screen

NOTE: In the example above, 'GREEN FEES WE TWI' Category tab has been selected, and within that Category are several items including, 'Adult WE 18 After 1, Liberty Pass WE Twi9'.

2. Click on the desired item (s) to add it to the shopping cart (on right side panel) as shown below:
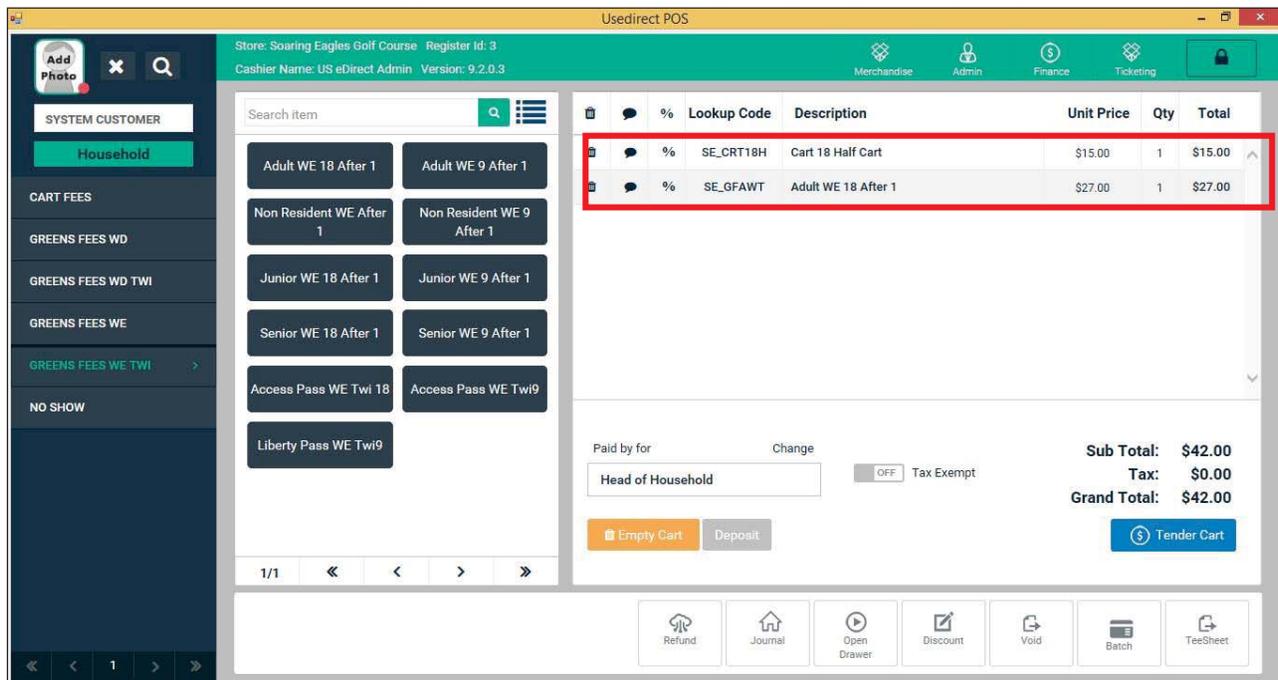
Figure: Add Items to Shopping Cart

NOTE: One or more items can be added to the Shopping Cart from the same Category or from a different Category. In the example above, the item 'Adult WE 18 After 1' from the Category 'GREENS FEES WE TWI'

and the item 'Cart 18 Half Cart' from the Category 'CART FEES' has been added. For navigating through many Categories within the POS, please use the navigation up/down arrows found at the bottom tray of left panel.

Search

For POS locations with many retail items, or based on user preference, items can also be searched for in the POS by using the **Search Item** box in the top section of the POS screen. This search field is also used for directly adding items to the cart by using the exact Item Lookup Code/SKU. This will be covered in the next section.
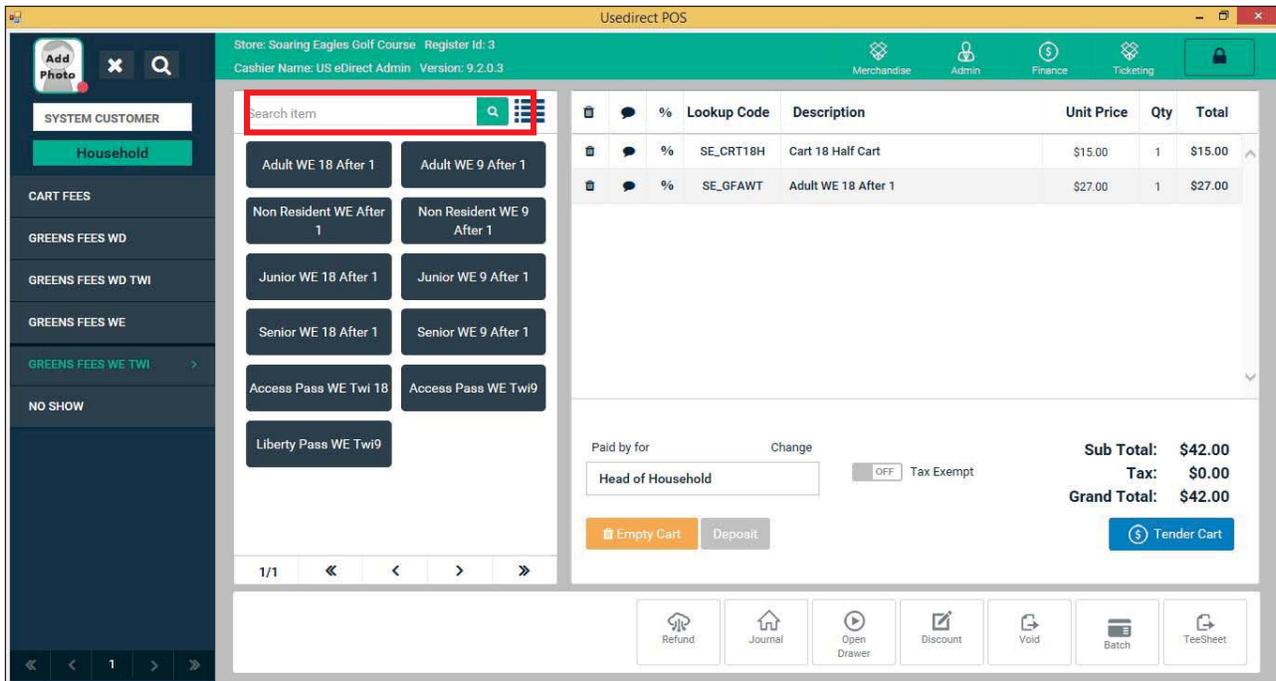
Figure: POS Screen

To search for an item in the POS screen, perform the following steps:
1. In the **Search Item** field of the POS Screen, enter a full or partial word.

2. Click the [🔍] icon. The POS Screen appears with the search results.
3. Select the item you wish to sell, and it will be added to the Shopping Cart

Tendering a Sale

Once items have been added to the shopping cart using any of the methods described in *Adding Items to the Shopping Cart* topic, or during processes such as booking a Tee Sheet, campsites/cabins or selling annual passes, the staff will be ready to tender and complete the transaction.

The Tender function can be invoked by using the **Tender Cart** button at the bottom right of the POS screen:
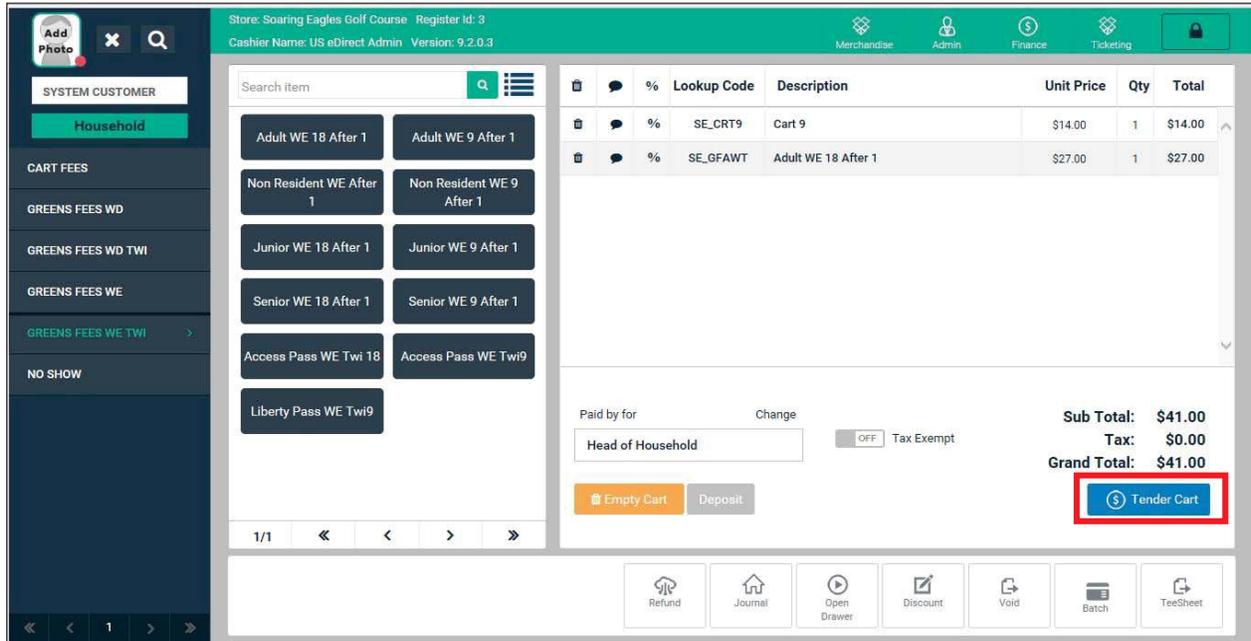
Figure: POS Screen

To Tender and accept payment for all items in the cart, perform the following steps:
1. In the POS Screen, click the **Tender Cart** button. A popup with the Tender Transaction details appears.
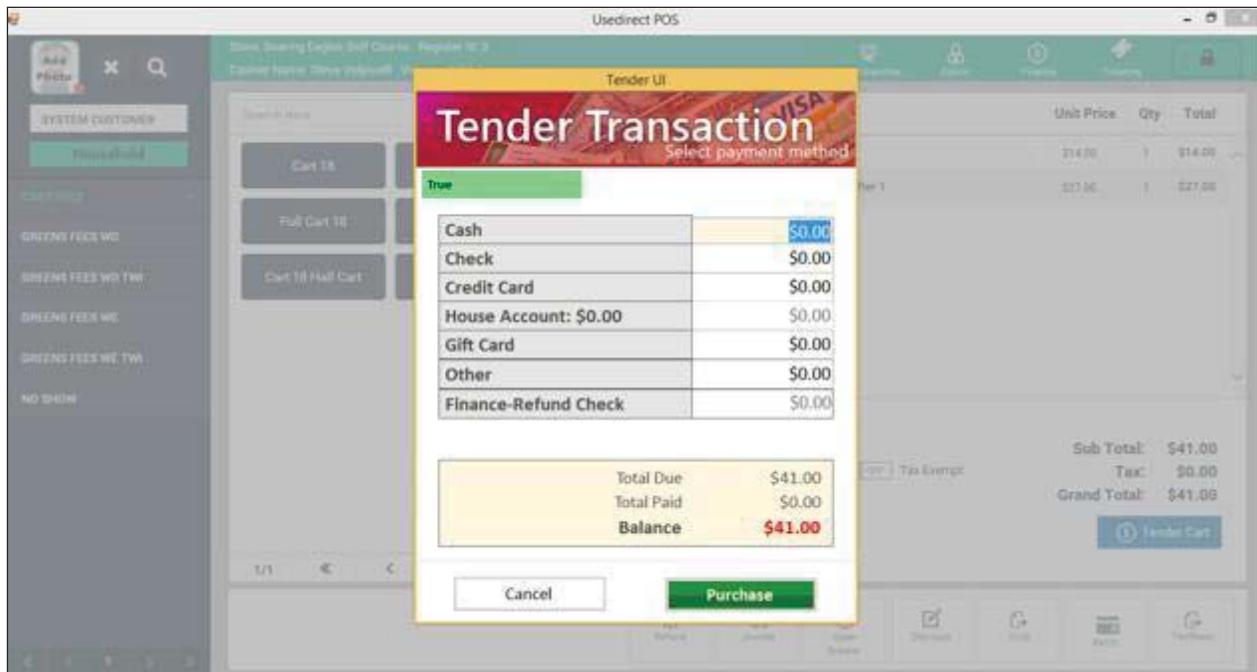
Figure: Tender Transaction

NOTE: The following pages explain the different tender types that can be used to process a sale through Recreation Dynamics.

Tender Types

Cash

The Tender Transaction popup will default with the cursor in the 'Cash' field to allow staff to quickly enter cash amounts. The cash field simply requires the staff to enter the numeric amount of cash that has been handed over by the customer.

Figure: Tender Transaction

To make a cash payment, perform the following steps:

1. In the Tender Transaction popup, click the **Cash** field and enter the cash amount given by the customer. The system will calculate the change amount if applicable as demonstrated below:

Figure: Cash

2. Click the **Purchase** button to tender the sale. Else, click the **Cancel** button.

NOTE: In the above example, the customer is paying $50.00 in cash towards a $41.00 transaction and the system automatically calculates and displays the change amount of $9.00.

Check

Selecting the Check field in the Tender Transaction popup will open up a Check Payment popup. This popup will display the total remaining sale amount of the transaction on the check.

Figure: Tender Transaction

To make a check payment, perform the following steps:

1. In the Tender Transaction popup, click the **Check** field. A popup with Check Payment details appears.

Figure: Check

2. Enter the amount to be paid, Routing Number, Acccount Number and Check Number.
3. Click the **Accept** button to tender the sale. Else, click the **Cancel** button.

Credit Card

Selecting the Credit Card field will open up the Credit Card Payment popup. Staff can either swipe or manually enter the credit card information into the system.

Figure: Tender Transaction

To make a Credit Card payment, perform the following steps:
1. In the Tender Transaction popup, click the **Credit Card** field. A popup with Credit Card Payment details appears.

Figure: Credit Card

NOTE: For most in-park transactions, a simple swipe of the credit card into the credit card reader will fill all required information in automatically. Manual entry of credit card information can be done in the event that either the card isn't present (for call center or other phone based payments), or the card reader cannot read the credit card.

2. To enter credit card information manually, perform the following steps in the Credit Card popup:
   i. Enter the **Name on Card** in the text box provided
   ii. Select the **Card Type** from the drop down list provided
   iii. Enter the **Card Number** in the text box provided
   iv. Select the **Month** and **Year** for the **Exp Date** from the drop down list provided
   v. Enter the **CVV** number in the text box provided
   vi. Click the **Accept** button to tender the sale. Else, click the **Cancel** button

NOTE: The card number and CVV fields will immediately encrypt and hide the entered numbers for security purposes. Staff must also ensure that the expiration date fields are accurate, in addition to selecting the correct Card Type (Visa, MasterCard, Discover, AMEX).

Gift Card

The Gift Card option will be used to tender Gift Cards sold through the Recreation Dynamics system as well as previously purchased gift certificates and any promotional gift cards that were issued by the Agency.

Figure: Tender Transaction

To make payment through a Gift Card, perform the following steps:
1. In the Tender Transaction popup, click the **Gift Card** field. A popup with Gift Card Payment details appears.

Figure: Gift Card

2. In the Gift Card popup, enter or scan the Gift Card serial number in the text box provided next to the **Gift Card** field.
3. Click the **Accept** button to tender the sale, Else, click the **Cancel** button.

NOTE: The system will search the Gift Card database and display the remaining balance of the card.

Finance Refund Check
This tender type will only become enabled if the shopping cart total is <$0.00 and as such a refund is required. Selecting this window will open up the Finance Refund Check window, where notes/a reason for the refund check will be entered:

Figure: Refund Check

Splitting Tenders/Multiple Tender Types

In the event that there are multiple people paying for a sale, or a customer wishes to divide their payment up into multiple tenders and/or tender types, this section explains how a payment can be split across different tender types.
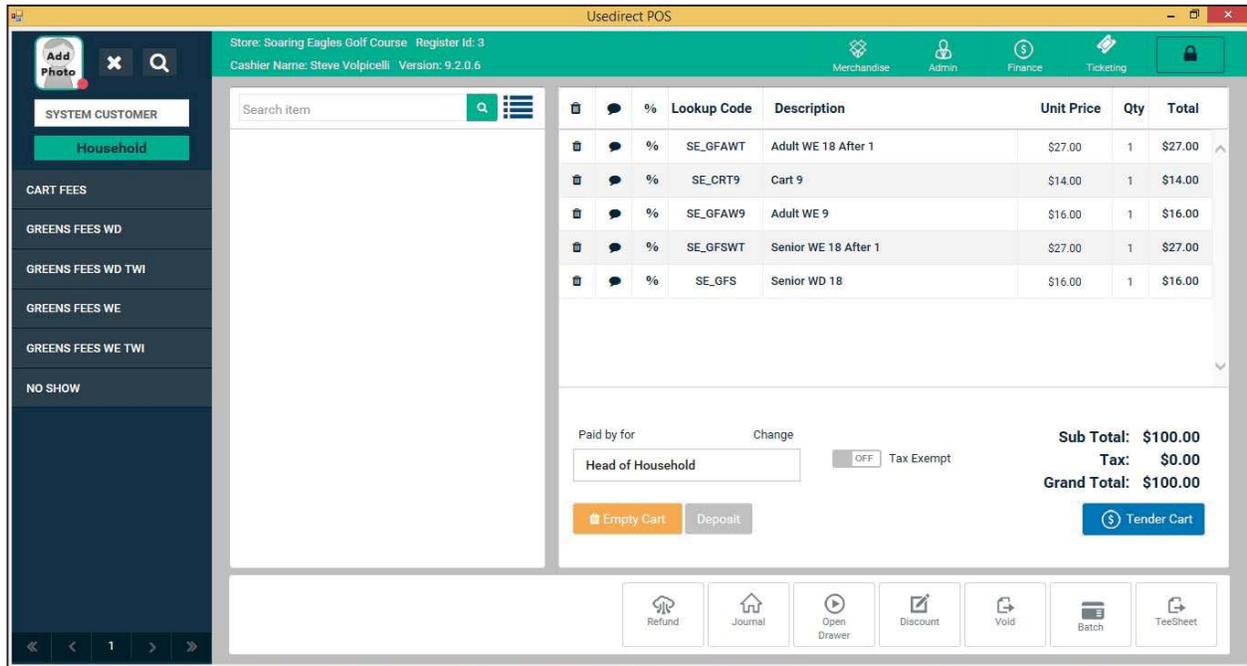
Figure: POS Screen

Example Scenario
The scenario below will show a payment being split into cash, check, 2 credit cards and a gift card. Please follow these guidelines for any other combinations of payment types that you may experience:
Desired breakdown of payments for Shopping Cart total of $100.00:

- Cash $27.00
- Check $14.00
- Visa $16.00
- MasterCard $27.00
- Gift Card 1 $16.00

NOTE: It does not make a difference, which tender type is selected first to initiate the payment process. This example will work down from top to bottom in the Tender Transaction popup, first entering Cash, and finishing with the Gift Card payment.

Figure: Tender Transaction

To split the payment across different tender types, perform the following steps in the Tender Transaction popup:

1. In the **Cash** field, enter the amount paid in cash.

Figure: Cash Payment

NOTE: The remaining balance has been updated to $73.00.

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16 | P a g e

2. To make payment through a check, click the **Check** field. A popup with Check Payment details appears.

Figure: Check Payment

NOTE: The system will default the remaining balance of the transaction in the check, which is $73.00 in this example. Change the total to the amount the check has been written for, in this case $14.00.

3. In the Check Payment popup, enter the amount the customer would like to pay by check, **Routing Number**, **Acccount Number** and **Check Number**.

Figure: Check Payment

4. Click the **Accept** button to add this to the list of tenders used in this transaction. Else, click the **Cancel** button.

NOTE: The Tender Transaction popup will now display a $27.00 Cash and $14.00 Check payment with a remaining balance of $59.00, for a total of $100.00 as shown below:

Figure: Tender Transaction

5. To make a Credit Card payment, click the **Credit Card** field. A Credit Card Payment popup appears:

Figure: Credit Card Payment

NOTE: The Tender Amount will default to the remaining balance of the transaction. Please change the Tender Amount to the desired payment amount for the Credit Card, in this case $16.00. Staff can swipe or enter all card data manually.

6. In the Credit Card Payment popup, enter the required information in the fields as shown below:

Figure: Credit Card Payment

    i.   **Tender Amount**: Enter the amount to pay by credit card
    ii.   **Name on Card**: Enter the customer name
    iii.   **Card Type**: Select a card type from the drop down list provided
    iv.   **Card Number**: Enter the credit card number
    v.   **Exp Date**: Select the month and year for the expiration date from the drop down list provided
    vi.   **CVV**: Enter the CVV number
    vii.   To add the Credit Card payment to the list of tenders being used for this transaction,
    viii.   Click the **Accept** button. Else, click the **Cancel** button.

Figure: Tender Transaction

NOTE: To process a second Credit payment, re-click in the credit card field in the Tender Transaction popup and repeat the above steps. As mentioned earlier, the remaining balance will be displayed in the **Tender Amount** field. This must be changed if the customer wishes to divide their transaction further. The popup will also display any other credit cards that have been used.
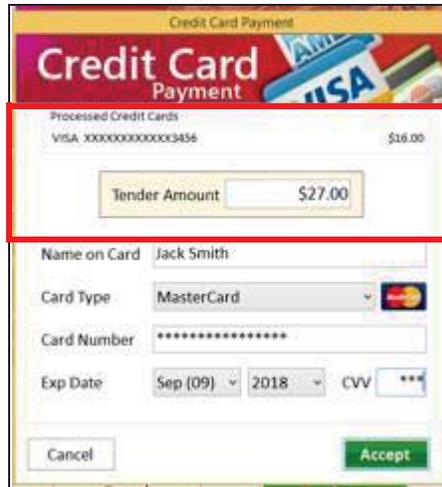
Figure: Credit Card Payment

7. Click the **Accept** button to add the Credit Card to the list of tenders being used for this transaction. Else, click the **Cancel** button. The transaction will now have a remaining balance of $16.00.

Figure: Tender Transaction

8. To tender the remainder of this total onto a Gift Card, click the **Gift Card** field and add/scan the **Gif Card** serial number. The Gift Card Payment popup appears.

Figure: Gift Card Payment

NOTE: The Gift Card must have enough remaining balance to use this tender payment type.

9. Click the **Accept** button to add the Gift Card payment to the list of tenders being used for this transaction. Else, click the **Cancel** button.

NOTE: Once all payments have been added, and the system has reached the total of the transaction (in this case $100), the system will process and complete the sale. In addition to entering multiple credit card payments, staff can do multiple checks and gift cards as well.

Completing the Sale

Once staff have entered one or more tender types for payment of a particular transaction, the sale can be completed by clicking the **Purchase** button at the bottom right of the Tender Transaction popup as shown below:
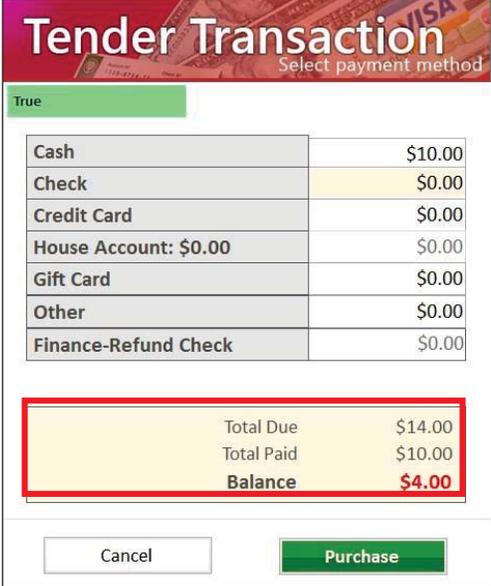
Figure: Tender Transaction

NOTE: If the **Total Due** and **Total Paid** amount matches, selecting **Purchase** will complete the sale and return staff to the POS Screen. Selecting **Purchase** without having the **Total Due** match the **Total Paid** will result in the following message:
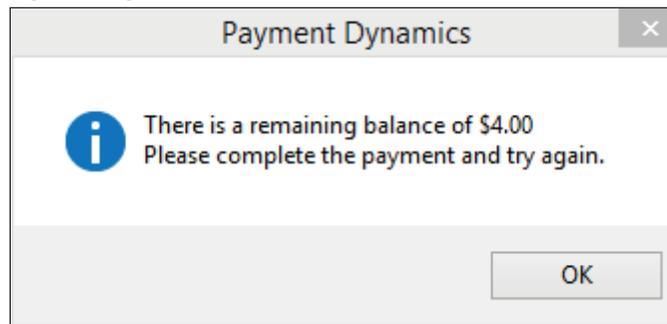
Figure: Payment Error Message

NOTE: This message will alert staff to the fact that there was an error in the entry of a certain tender, or that the customer must pay the remaining funds before they may complete the sale. To go back to the shopping cart screen at any time, click the **Cancel** button. This will cancel the act of tendering/completing the sale, but will NOT cancel the items from the shopping cart.

Additional Functions

Change Item Quantity

An item quantity may be changed via two methods:
- Clicking the Item Button Multiple Times
- Directly Entering the value in the Quantity (Qty) field

1. Selecting/Clicking the Item Button Multiple Times:

This method is to use the item quick key buttons to add multiple items. This can be performed by simply clicking on the item for how many of that item you wish to add. For example, to add 3 Cart 9s, the user would click the item key 3 times.
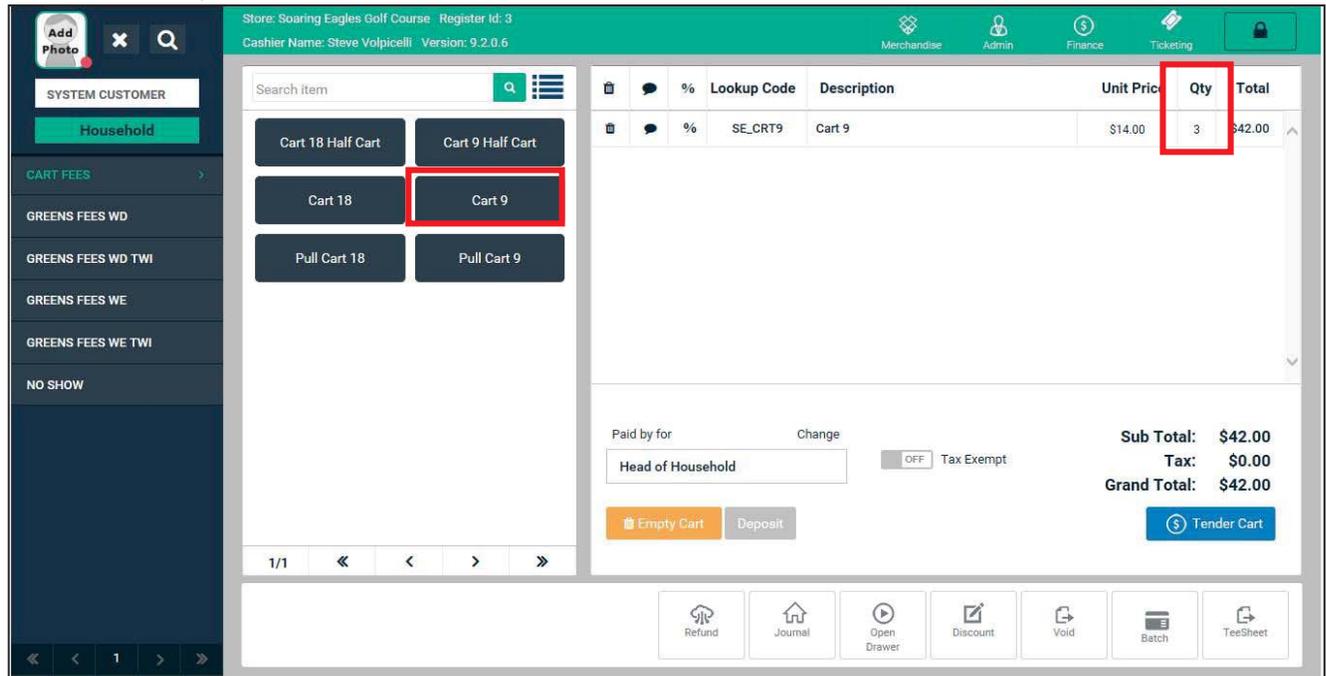
Figure: Item Quantity

NOTE: If at any time during the sale the customer wishes to add more of a specific item, staff may use this method to add an additional item.

For example, there are 3 Cart 9s in the above shopping cart and the customer wants to add Cart 18 as shown below:

🗑	💬	%	Lookup Code	Description	Unit Price	Qty	Total
🗑	💬	%	SE_CRT9	Cart 9	$14.00	3	$42.00
🗑	💬	%	SE_CRT18	Cart 18	$24.00	1	$24.00

Figure: Add New Item

NOTE: To add a fourth Cart 9, the staff person needs to click the Cart 9 item **only one additional time.** The system knows the existing quantity of 3, adds a single item, and totals 4 as shown below:

🗑	💬	%	Lookup Code	Description	Unit Price	Qty	Total
🗑	💬	%	SE_CRT9	Cart 9	$14.00	4	$56.00
🗑	💬	%	SE_CRT18	Cart 18	$24.00	1	$24.00

Figure: Increase Item Quantity

2. Using the Quantity (Qty) Field

Another method to update the quantity of the item is to directly change in the shopping cart section of the POS.

🗑	💬	%	Lookup Code	Description	Unit Price	Qty	Total
🗑	💬	%	SE_CRT9	Cart 9	$14.00	4	$56.00
🗑	💬	%	SE_CRT18	Cart 18	$24.00	1	$24.00

Figure: Item Quantity

To change the item quantity, perform the following steps:
1. In the Item Quantity screen, click the **Qty** field of the desired item. The Update Quantity popup appears displaying the curent quantity of the item, in this case 4.

Update Quantity   Qty

`—`   4   `+`   4

OK   1

Figure: Update Quantity

2. To update the quantity, type the desired quantitynumber into the quantity field, and click the **OK** button.

Update Quantity

`—`   7   `+`

OK

Figure: Updated Quantity

NOTE: This will update the item quantity in the shopping cart as shown below:

Figure: Shopping Cart

Change Item Price

Staff with the right credentials will be able to change the unit price of an item.
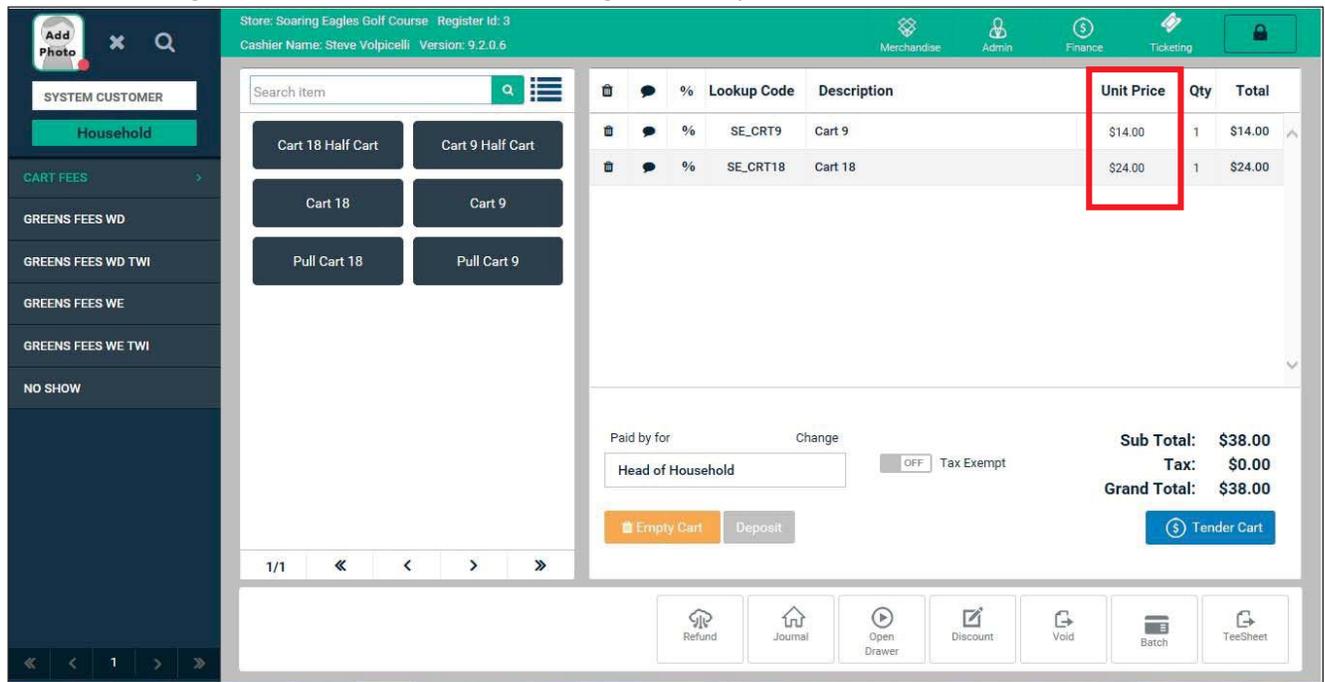
Figure: POS Screen

To change the price of an item, perform the following steps:

1. In the POS Screen, click **Unit Price** of the desired item. The Update Unit Price popup appears.
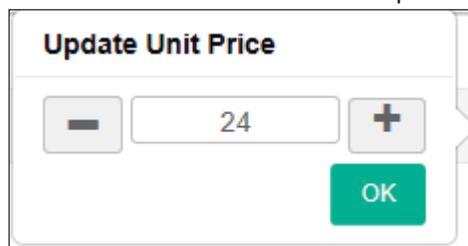
Figure: Change Item Price

NOTE: The existing amount is displayed.

2. In the Change Item Price popup, use the '-' and '+' symbols provided to update the price. Click the **Ok** button to accept the price change.

🗑	💬	%	Lookup Code	Description	Unit Price	Qty	Total
🗑	💬	%	SE_CRT9	Cart 9	$14.00	1	$14.00
🗑	💬	%	SE_CRT18	Cart 18	⚡ $20.00	1	$20.00

Figure: Updated Price

NOTE: A lightning bolt, as well as red font for the new Unit Price, displays to the user that the price has been changed from the default Unit Price.

Please note that the Total (Unit Price x Quantity) for the item cannot be changed. To change the Total, a modification to the Unit Price or Quantity is required.

Removing Items

Items can be removed from the shopping cart individually or all the items in the cart can be removed.
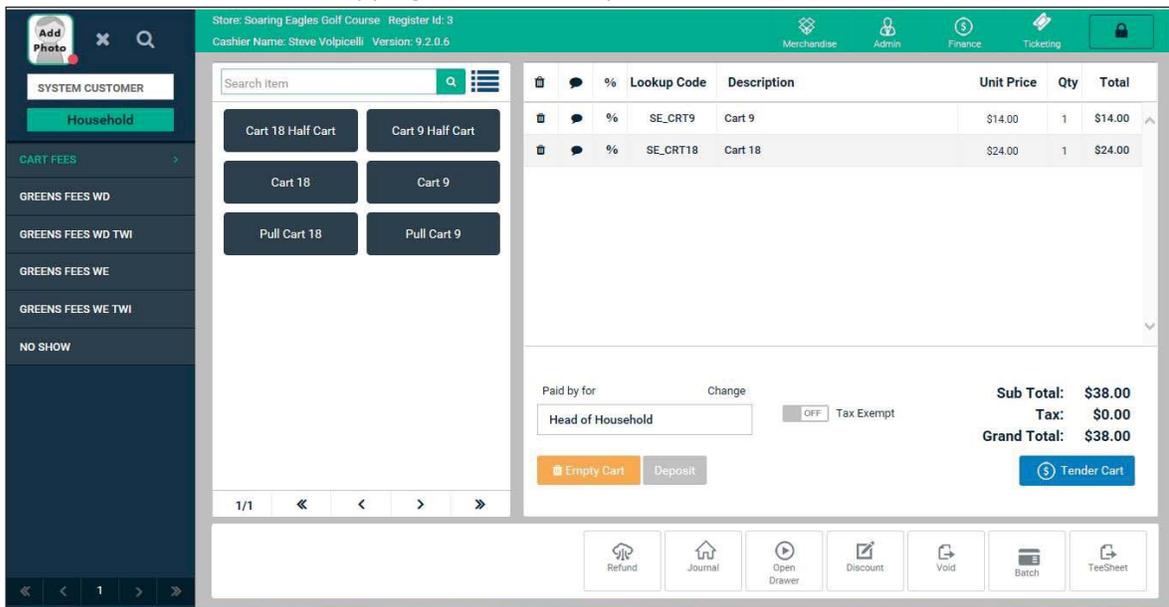
Figure: POS Screen

NOTE: The **Empty Cart** button can be used to remove all items from the shopping cart.

🗑	💬	%	Lookup Code	Description	Unit Price	Qty	Total
🗑	💬	%	SE_CRT9	Cart 9	$14.00	1	$14.00
🗑	💬	%	SE_CRT18	Cart 18	$24.00	5	$120.00

Figure: POS Screen

To remove individual items from the shopping cart, perform the following steps:

1. In the POS Screen, click the 🗑 button to the left of the item name. The **Remove Item** screen appears.
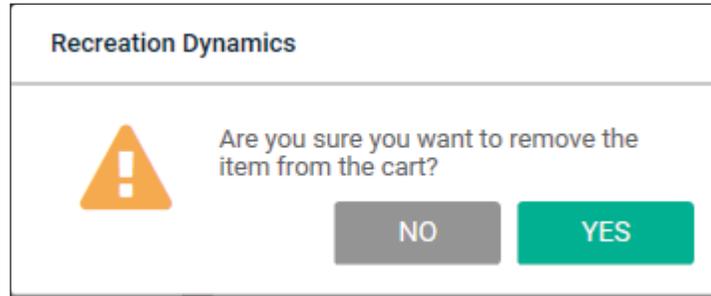
Figure: Remove Item

2. Click '**Yes'** to remove the item. Else, click '**No'** to keep the item in the Shopping Cart.

NOTE: This will remove the entire quantity of the associated item. For example in the example above there is a quantity of 5 Cart 18s in the shopping cart. Selecting Remove will remove all 5 Cart 18. To remove less than the total amount, use the Change Item Quantity feature explained previously.

Adding Comments

Comments can be added to any POS item within the shopping cart by using the Comment icon.
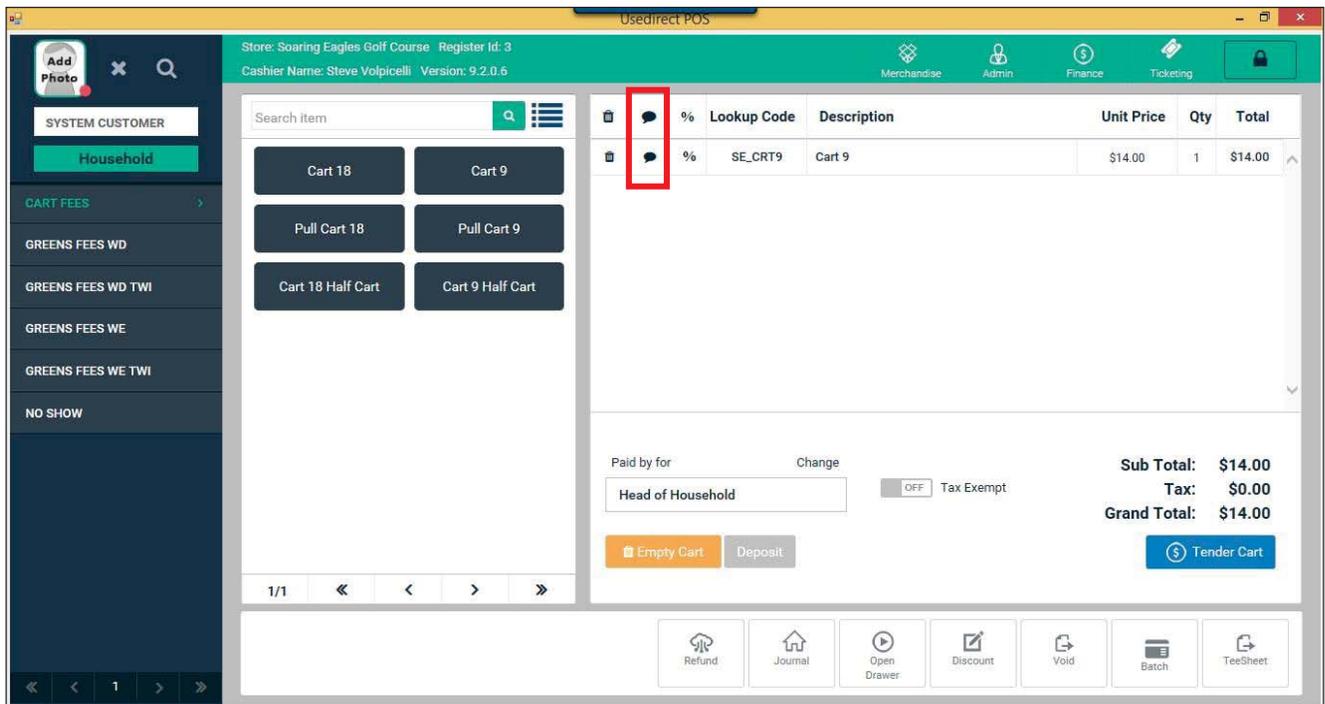
Figure: POS Screen

NOTE: Please note this feature is not designed for adding comments about bookings.

To add a comment to a POS item, perform the following steps:
1. In the POS Screen, click the comment bubble to the left of the item. The **Add Comment** popup appears.
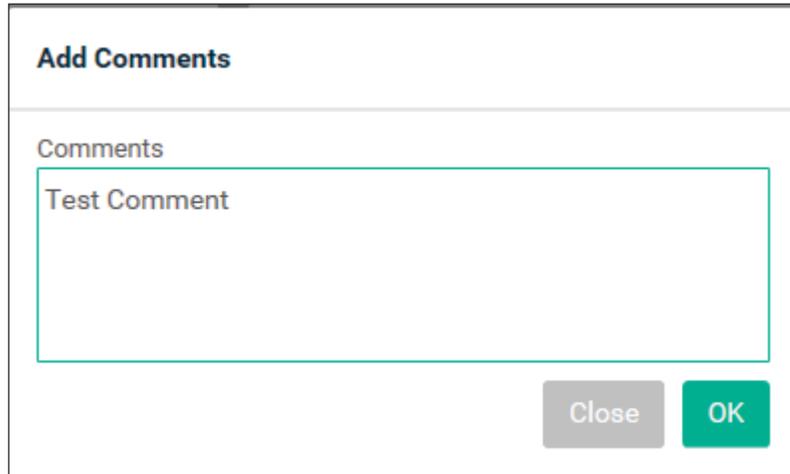
Figure: Add Comment

2. Enter a comment in the **Comments** field. Click the **OK** button to add the comment to the item. Else, click the **Close** button.

NOTE: The item will display that a comment has been added for it, by adding a yellow bubble to the existing comment bubble as shown below:

🗑	💬	%	Lookup Code	Description	Unit Price	Qty	Total
🗑	💬	%	SE_CRT9	Cart 9	$14.00	1	$14.00

Figure: Item with a Comment

NOTE: Comments will also display next to the item on the receipt, as shown on the following page:

Figure: Transaction Details

Emptying the Cart

Staff have the ability to empty the shopping cart of ALL items including POS items, reservations and annual pass sales.
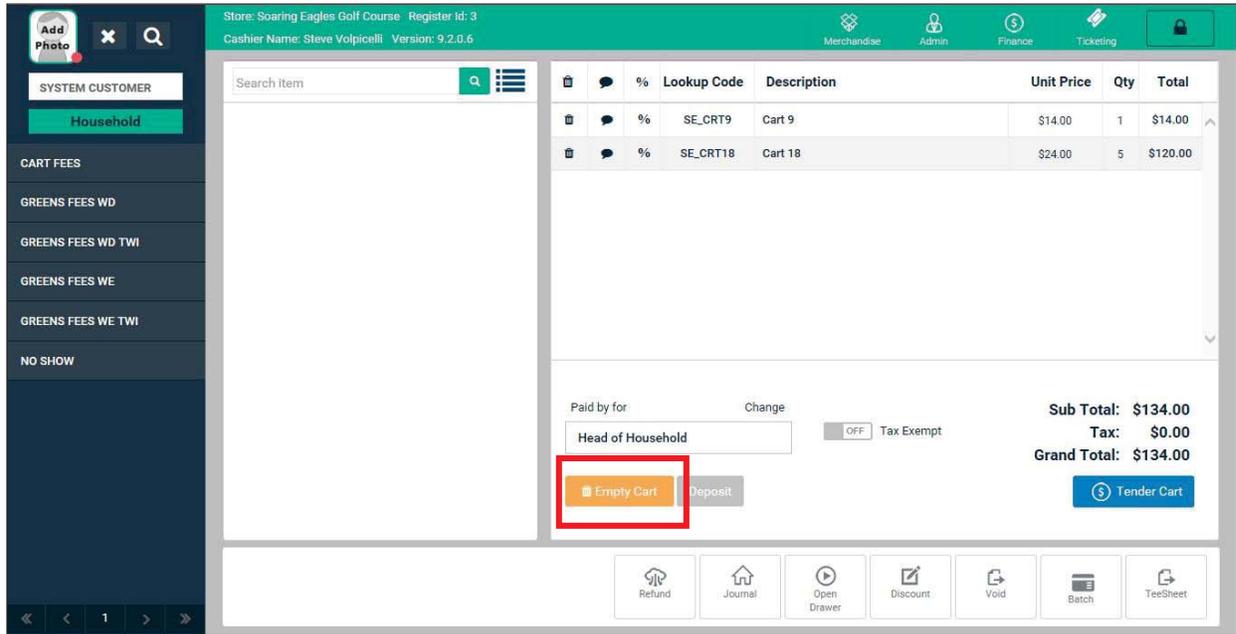
Figure: POS Screen

To empty the shopping cart of <u>ALL</u> items, perform the following steps:
1. In the POS Screen, click the **Empty Cart** button. The Confirmation Message popup appears.
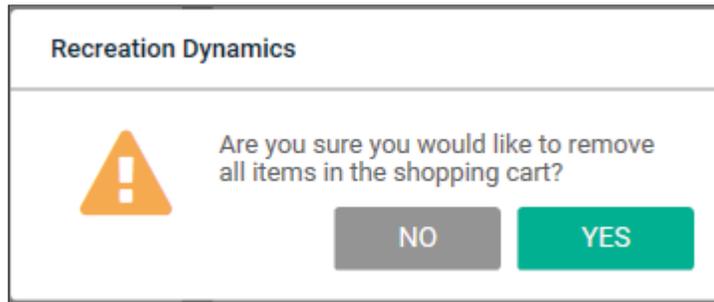
Figure: Confirmation Message

2. Click the **Yes** button to empty the cart of all items. Else, click the **No** button to keep all the items in the shopping cart.

Refunds

This section will cover refunding items sold through the POS.
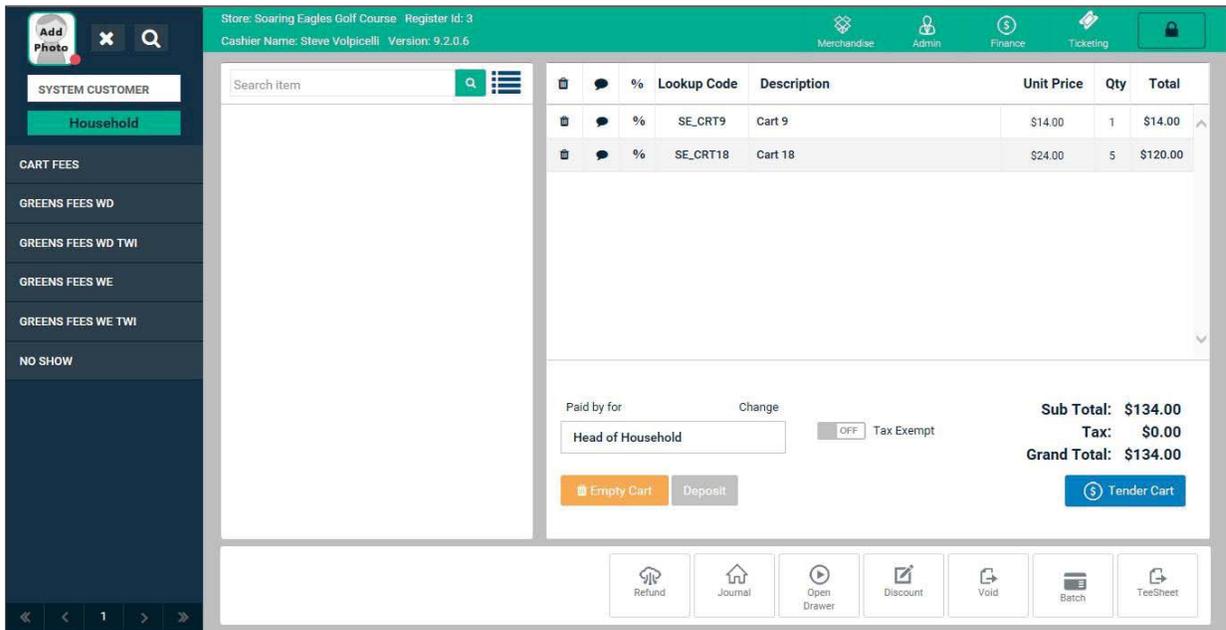
Figure: POS Screen

The Refund function can be accessed via the **Refund** tab at the bottom of the POS Screen, highlighted in the image below:
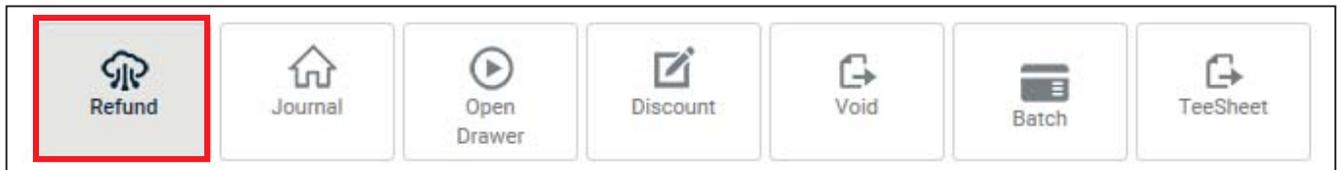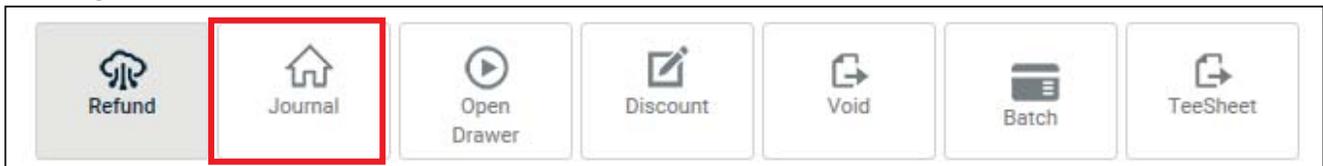

Figure: POS Refund

To perform a refund, in the POS Screen, click the **Refund** tab. The **Link Refund** popup appears.
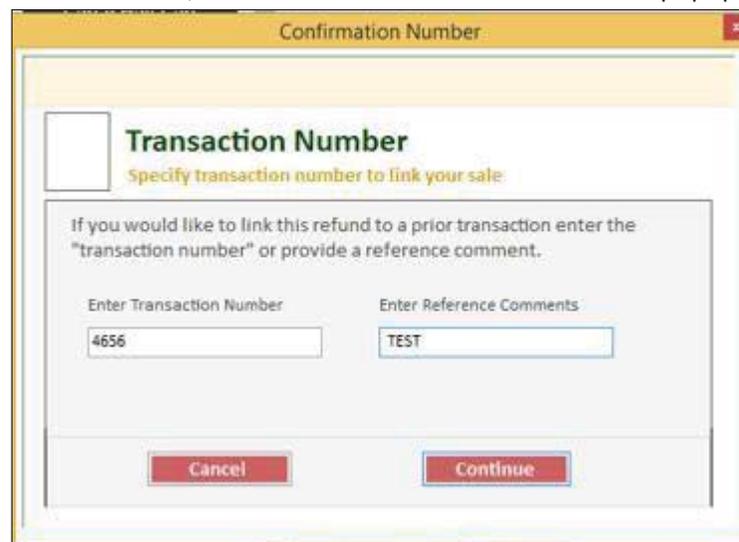
Figure: Link Refund

NOTE: Please note the text found in this popup "*If you would like to link this refund to a prior transaction enter the transaction number or provide a reference comment*". For an explanation on the linking process, please see the following section.

Concept of Linked Refunds

Any refund processed through the POS via the method on the previous pages will be 'linked' to a previous transaction via a common 'Confirmation Number'.

Transactions will get two numbers assigned to them at the time of sale, whether the transaction is for a Tee Sheet booking, a POS item, or combinations of services:

- Transaction Number
- Confirmation Number

Transaction Number

A Transaction Number is a sequential number that is linked to each register. For example, transaction 123 for a can of soda will be followed by transaction 124, 125 etc.
These numbers increase in increments of 1, and cannot be repeated.

Confirmation Number

A Confirmation Number however, may be repeated. The Confirmation Number is a method to link different transactions together for reporting, auditing and reference purposes.
An example would be a Tee Sheet or campsite reservation and modification. When a customer makes a booking, they will be provided a Confirmation Number. This number will allow staff and the customer to reference their reservation at any time. Should the customer modify this reservation, they will receive **the same confirmation number.** This means that staff and the customer can view the information for that confirmation number, and see not only the initial reservation, but also the subsequent modification, all in one area.

This same concept has been applied to POS sales. This will allow two processes to happen:

- Linking the information of the first transaction (the sale) to the second transaction (the refund) for reporting and audit purposes.
- Retrieving the original payment method from the first sale (credit card, cash etc.), ensuring the refund is given to the correct tender type.

Linking a Refund

To link a refund to another transaction, enter the transaction number from the original receipt. In this example, the customer purchased 2 Cart 9s. Below shows the receipt, and where the transaction number is displayed:

Transaction Detail

Soaring Eagles Golf Course

5901 South Highway 163 Columbia NY 65203

Transaction #:	4656
Register #:	3
Cashier #:	Steve Volpicelli
Batch #:	9
Customer:	CUSTOMER, SYSTEM
Date: 6/7/2016	Time: 2:06 PM
Transaction Type:	Sales
Confirmation Number:	717925

Description	Unit Price	Qty	Amount
Cart 9 -	$14.00	2.00	$28.00

Sub Total :	$28.00
TAX :	$0.00
Grand Total :	$28.00
Cash :	$28.00

Payment History   Print   Print laser   Email   Close

Figure: Transaction Receipt

Staff have two methods to retrieve the transaction number from the original sale:
    a. Have the customer provide their original receipt, and read the number off the receipt
    OR
    b. Use the Journal Search function outlined in a previous section to retrieve the initial receipt, and make a note of the transaction number/reprint the original receipt

Once the original receipt has been retrieved, follow the process to perform a refund outlined in the last section (Refunds). The following screen will appear:
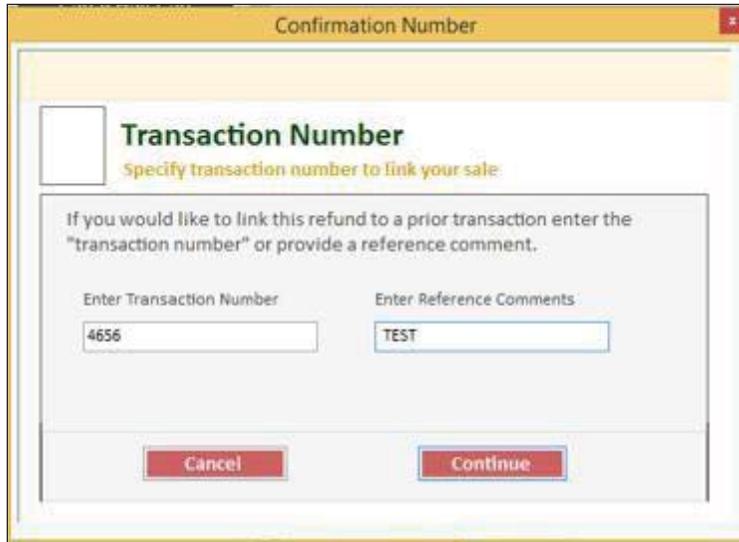
Figure: Transaction Receipt

NOTE: The transaction number of the original receipt must be entered in the **Enter Transaction Number** field or optionally you may also enter comments in the **Enter Reference Comments** field. Click the **Continue** button once your entries are completed. The Tender Transaction popup appears.
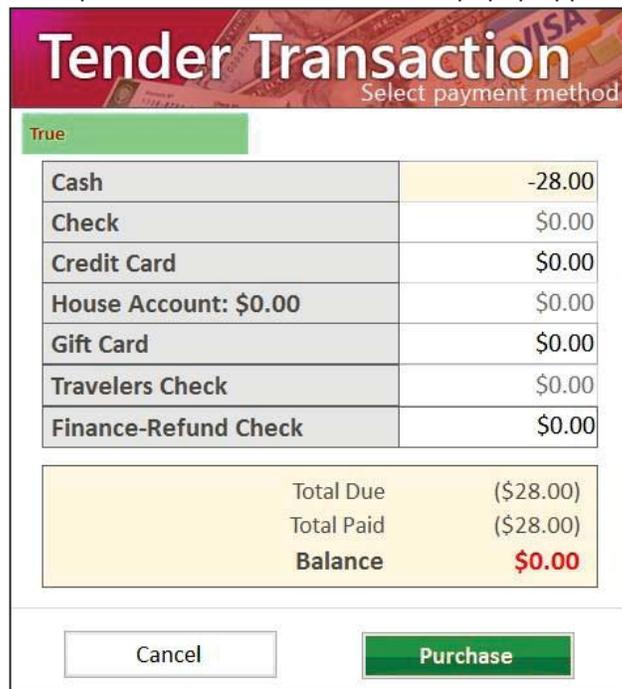
Figure: Tender Transaction

NOTE: In this case- the original transaction was made with cash, so the refund **MUST GO TO CASH. Please ensure that the refund goes back to the original payment type(s).** Selecting **Purchase** will complete the refund. Please note, for Linked refunds that were originally made on a credit card, the following screen will appear:

Figure: Requesting a Refund

Because this is a Linked refund, the Recreation Dynamics system can retrieve the original card authorization code, allowing staff to refund directly to the original card.

NOTE: In the event that this refund was performed more than 120 days after the original sale, the system may display an error message saying that it is unable to perform the refund to the original card. Please select 'Choose other refund types'
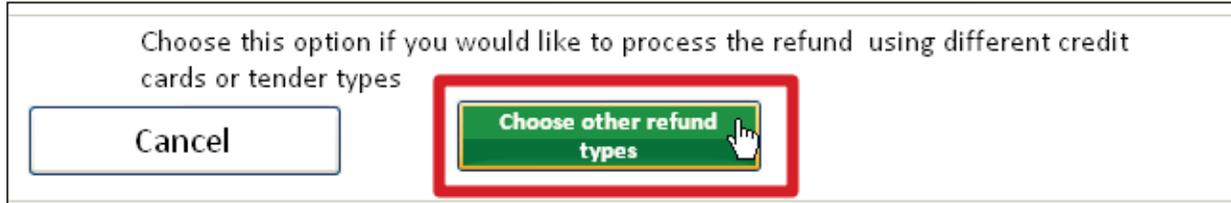
Figure: Choosing Other Refund Types

This will allow staff to re-swipe/re-enter the customer's credit card, and refund accordingly.
Once the Linked cancellation process is completed, reviewing the Journal will show a history of both the original sale and the refund, linked by the Confirmation Number entered:

Transaction Detail

Soaring Eagles Golf Course

5901 South Highway 163 Columbia NY 65203

Transaction #:	4657
Register #:	3
Cashier #:	Steve Volpicelli
Batch #:	9
Customer:	CUSTOMER, SYSTEM
Date: 6/7/2016	Time: 2:14 PM
Transaction Type:	Sales
Confirmation Number:	717925

Description	Unit Price	Qty	Amount
Cart 9 -	$14.00	-2.00	($28.00)

Sub Total :	($28.00)
TAX :	$0.00
Grand Total :	($28.00)
Cash :	$28.00

Payment History | Print | Print laser | Email | Close

Figure: Transaction Receipt

To view all the activities of a particular transaction, in the Transaction Receipt Screen, click the **Payment History** button**.** A Payment History popup appears:

Payments History

Payments made for confirmation number: 717925

Store Details	Amount	TenderType	Date	Additional Details
Soaring Eagles Golf Course Trans# 4657	($28.00)	Cash	6/7/2016 6:02:14 PM	
Soaring Eagles Golf Course Trans# 4657	$28.00	Cash	6/7/2016 5:53:57 PM	

Close

Figure: Payment History

Journal

The journal keeps track of all the transactions that has taken place at all sales channel be it the Web, Call Center or Park.
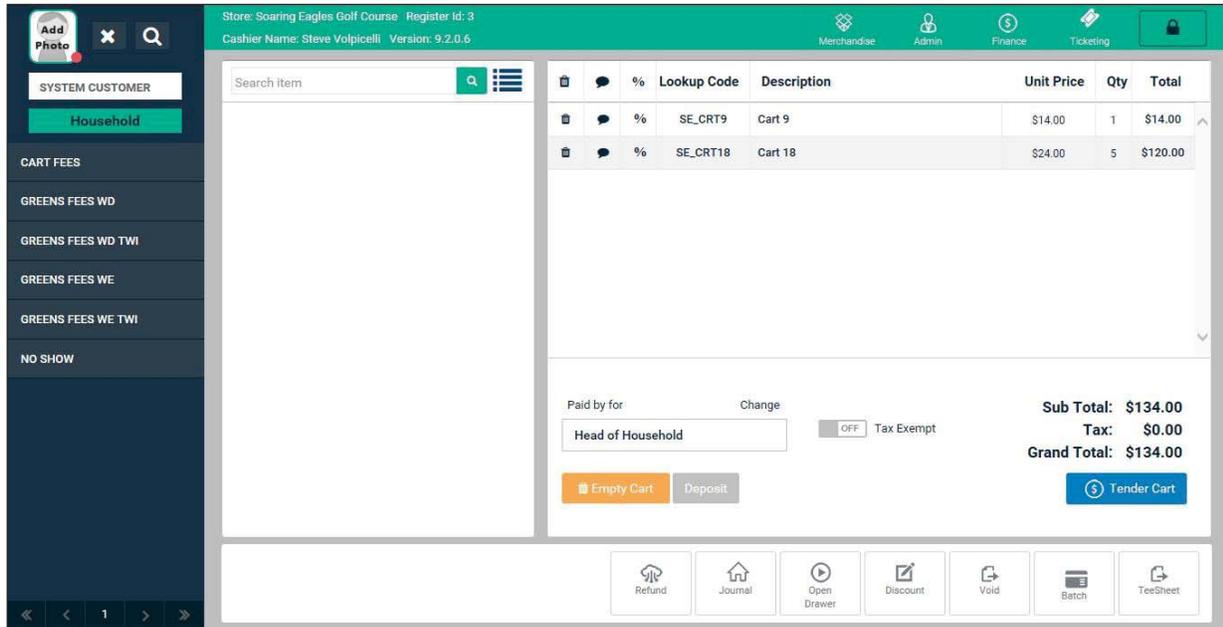
Figure: POS Screen

The Journal function can be accessed via the **Journal** tab at the bottom of the POS Screen, highlighted in the image below:

Figure: POS Journal

To open the Journal, perform the following steps:
1. In the POS Screen, click the **Journal** tab. The **Journal** popup appears.

Figure: Journal

NOTE: By default, the journal will display all the transactions for the current date.

In the Journal, there are many different tasks that can be performed:

Reviewing a Receipt

To review the contents of a particular transaction, perform the following steps:
1. In the Journal popup, double click on the desired transaction. The Transaction Receipt popup appears.

Transaction Detail

Soaring Eagles Golf Course

5901 South Highway 163 Columbia NY 65203

Transaction #:	4653
Register #:	3
Cashier #:	Steve Volpicelli
Batch #:	9
Customer:	CUSTOMER, SYSTEM
Date: 6/7/2016	Time: 4:59 AM
Transaction Type:	Sales
Confirmation Number:	717923

Description	Unit Price	Qty	Amount
Senior WE 18 -	$27.00	1.00	$27.00
Junior WE 18 -	$27.00	1.00	$27.00

Sub Total :	$54.00
TAX :	$0.00
Grand Total :	$54.00
Cash :	$54.00

Payment History	Print	Print laser	Email	Close

Figure: Transaction Receipt

Reprinting a Receipt

Once a receipt has been re-generated using the steps shown previously, it can be printed via one of two methods as shown in the Transaction Receipt:

1. **Print**: This will print the receipt from the receipt/journal printer, attached to the POS terminal (if applicable)
2. **Print Laser**: This will print from an attached/networked laser printer on 8 ½ x 11" paper. The user may select, which laser printer to send the journal receipt to as shown below:

Figure: Laser Print

Review Payment History of a Transaction

The payment history button found at the bottom of a receipt accessed through the journal is a method to review all transactions, which have been linked to the same Confirmation Number.

Figure: Transaction Receipt

NOTE: Confirmation Numbers can be used as a method to link together two or more transactions. Please see the section on Refunds for a detailed explanation of the Confirmation Number refund- linking process.

In the Transaction Receipt, selecting the **Payment History** button will display any transactions that have been linked to the current transaction receipt. A typical example of this would be a sale, followed by a refund, of a particular item, as shown below:

Figure: Payments History

NOTE: The Payment History of this transaction shows two Payments made for Confirmation Number 717925.

Journal Search Filters

To filter the results displayed in the Journal, the staff has four options:
- Search by Dates
- Search by Transaction Number
- Search by Customer
- Search by Batch Number

Figure: Journal

By Dates
This filter allows staff to view transaction receipts over a specific date range as shown below:

Figure: Date Search

By Transaction Number
This filter allows staff to retrieve all transactions tied to a specific Transaction Number.
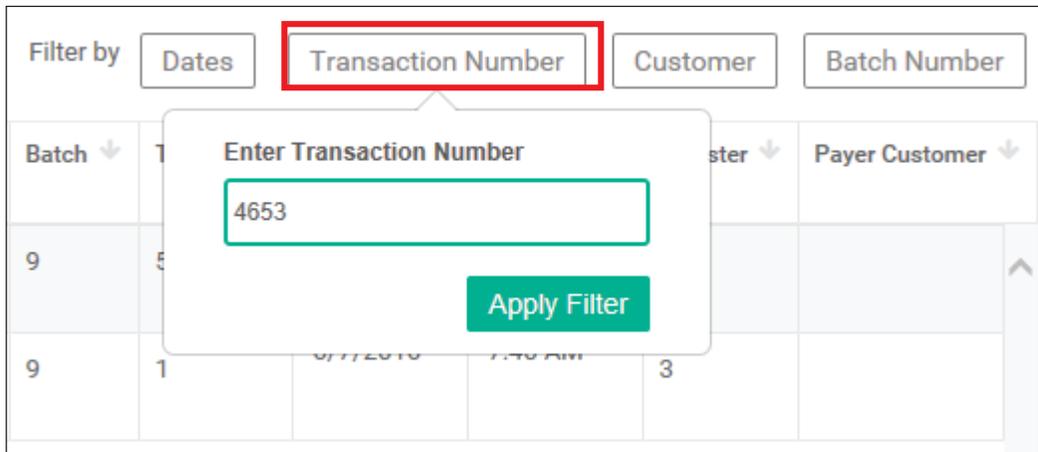
Figure: Transaction Number Search

By Customer

This filter allows staff to review all transactions performed by a specific customer, from all sales channels (Web, Call Center, and Walk-In) and locations.
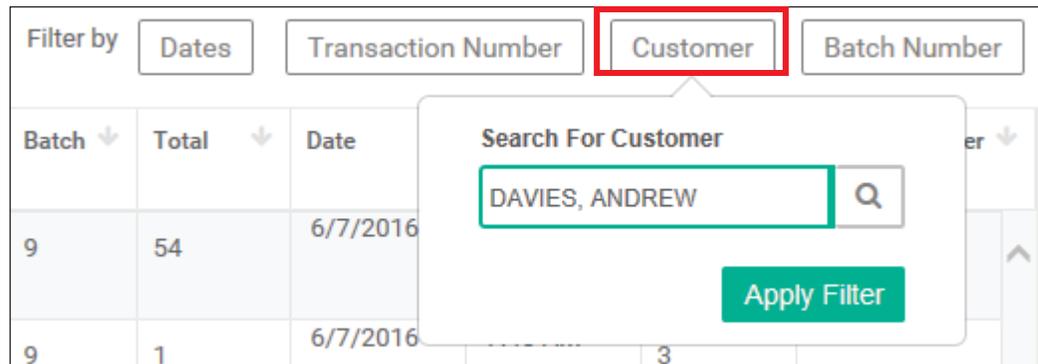
Figure: Customer Search

By Batch Number

This filter is typically used for reviewing the transactions within a single register batch, to diagnose closing total issues such as over/shorts:
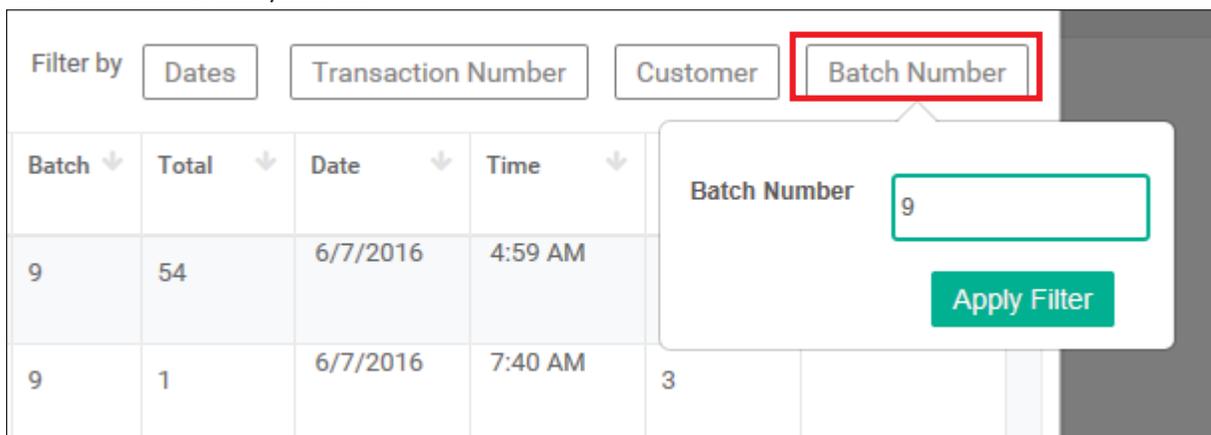
Figure: Batch Number Search

Navigating between pages

When the search filter displays many results, it will be necessary to navigate across multiple Journal pages. Please use the arrow keys provided at the bottom of the Journal for this purpose as shown below:

Store	Transaction	Payment Type	Transaction Type	Customer	Cashier	Batch	Total	Date	Time	Register	Payer Customer
Soaring Eagles Golf Course	319	Cash	Sales	STRAND, TOM	US eDirect Admin	9	94	4/28/2016	2:49 PM	3	
Soaring Eagles Golf Course	318	Cash	Sales	STRAND, TOM	US eDirect Admin	9	94	4/28/2016	2:47 PM	3	
Soaring Eagles Golf Course	317	Cash	Sales	STRAND, TOM	US eDirect Admin	9	46	4/27/2016	4:24 PM	3	
Soaring Eagles Golf Course	316	Cash	Sales	CUSTOMER, SYSTEM	US eDirect Admin	9	16	4/27/2016	4:22 PM	3	

Figure: Journal

Open Drawer

It is possible to open the cash drawer without tendering a sale (sometimes called a No Sale).
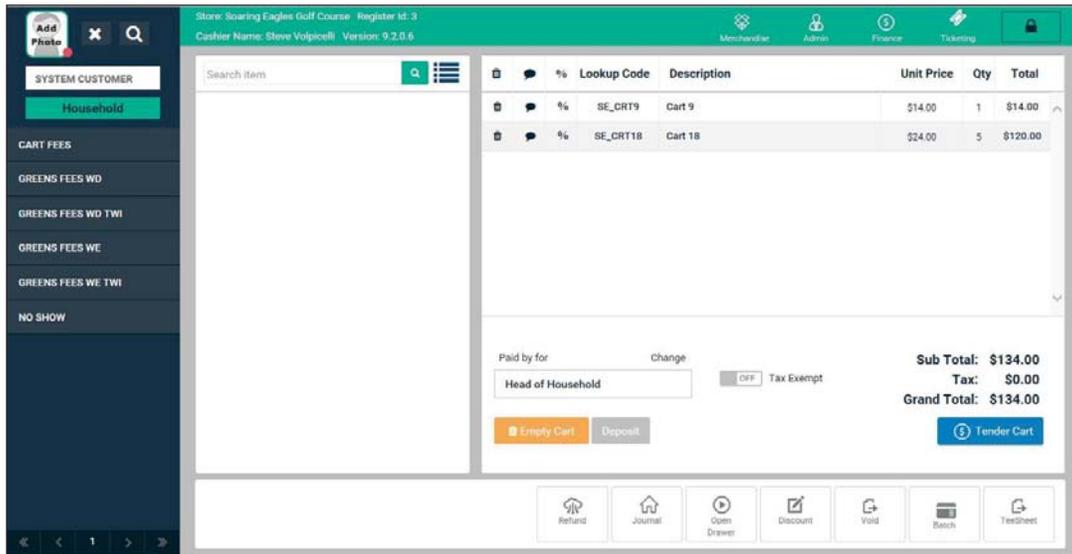
Figure: POS Screen

The Open Drawer function can be accessed via the **Open Drawer** tab at the bottom of the POS Screen, highlighted in the image below:
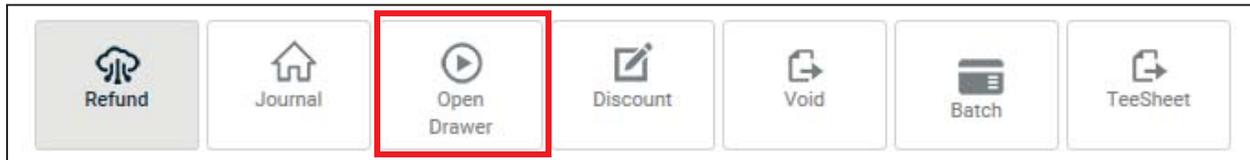
Figure: POS Open Drawer

To open drawer, perform the following steps:
1. In the POS Screen, click the **Open Drawer** tab.

Figure: Open Drawer Reason

2. In the **Comments** field, enter a reason for performing the Open Drawer function.

NOTE: Selecting Open Drawer will pop open the cash drawer and allow staff to make change, count current register totals or perform other tasks.

Discount

Discounts can be provided to customers by staff with the appropriate privileges. Discounts can be given for individual items in the shopping cart or for all the items in the transaction.
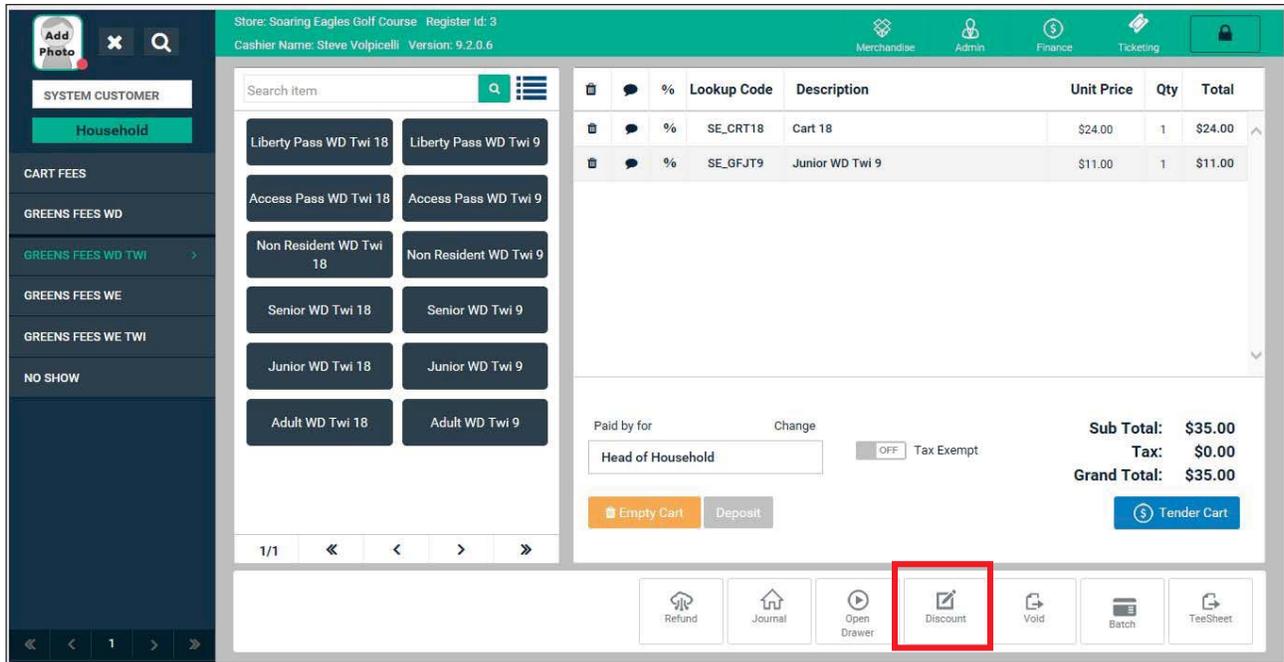
Figure: POS Screen

To provide discounts, perform the following steps:
1. In the POS Screen, click **Discount**. The Discount popup appears.

Figure: Discount

2. In the **Discount** popup, perform the following steps:
   a. **Discount Level:** Choose the nature of discount from the radio button provided

       b. **Discount Details:** Select the type of discount provided from the drop down list and enter the discount amount or percentage in the text box next to it

       c. **Comment:** Enter a comment

3. Click the **Ok** button to activate the discount. Else, click the **Close** button

Figure: POS

NOTE: In the above example, the item price has been reduced by $2.00 for all the items in the transaction. Staff can click ⚡ or the price to make changes to the **Unit Price** of the item.

Voids

Voids may be performed by selecting the **Void** button in the bottom of the POS Screen as shown below:
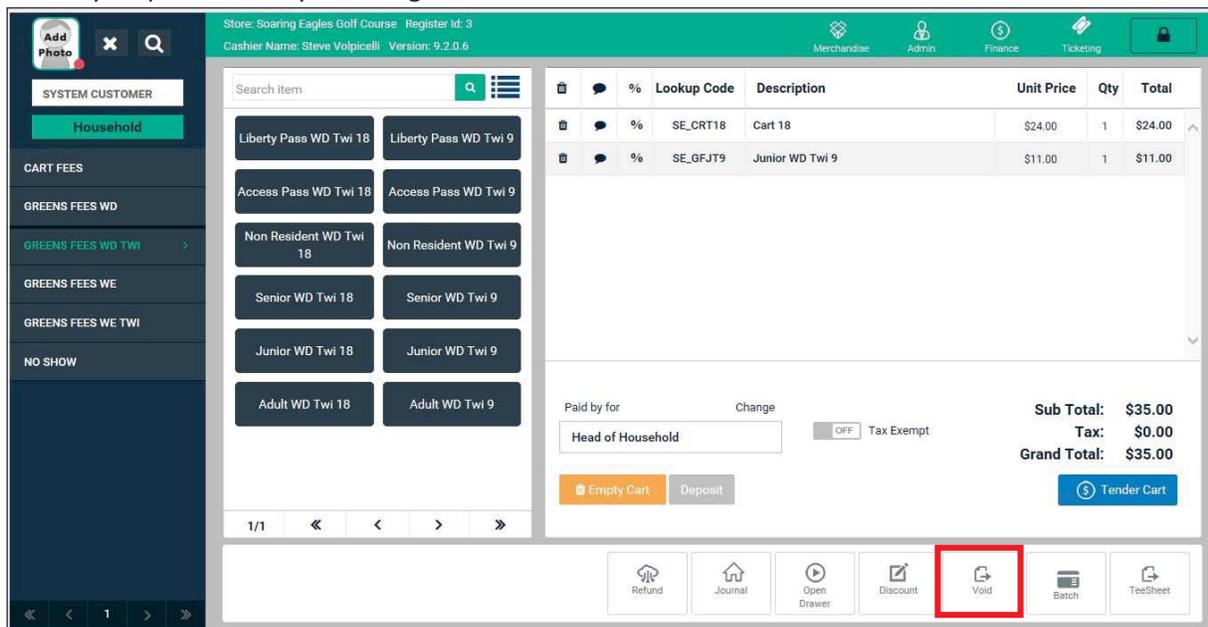
Figure: POS Screen

To void a transaction, perform the following steps:
1. In the POS Screen, click **Void.** The Void Transaction popup appears.
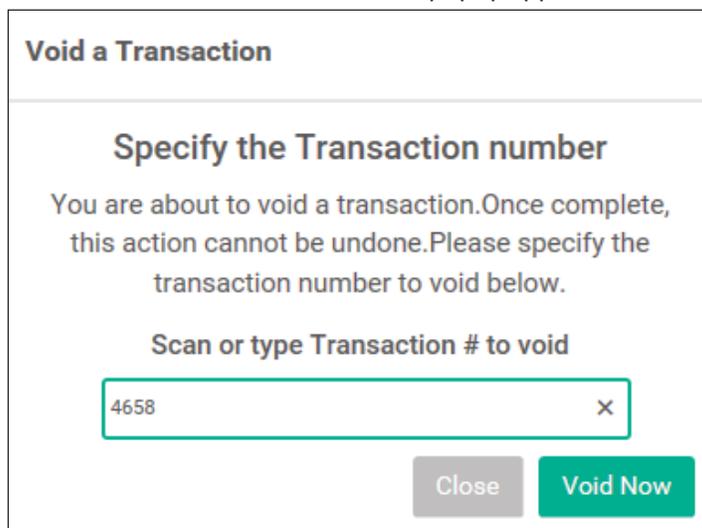
Figure: Void Transaction

NOTE: Transactions may only be voided on the same day they occurred. If the customer is unable to provide a receipt, please refer to the Journal Search of this guide for information on retrieving receipts based on date range, customer, transaction number and batch number.

2. In the Void Transaction screen, enter the **Transaction #** in the field provided. Click the **Void Now.** button**.** The POS Screen appears with items that have to be voided added to the shopping cart.
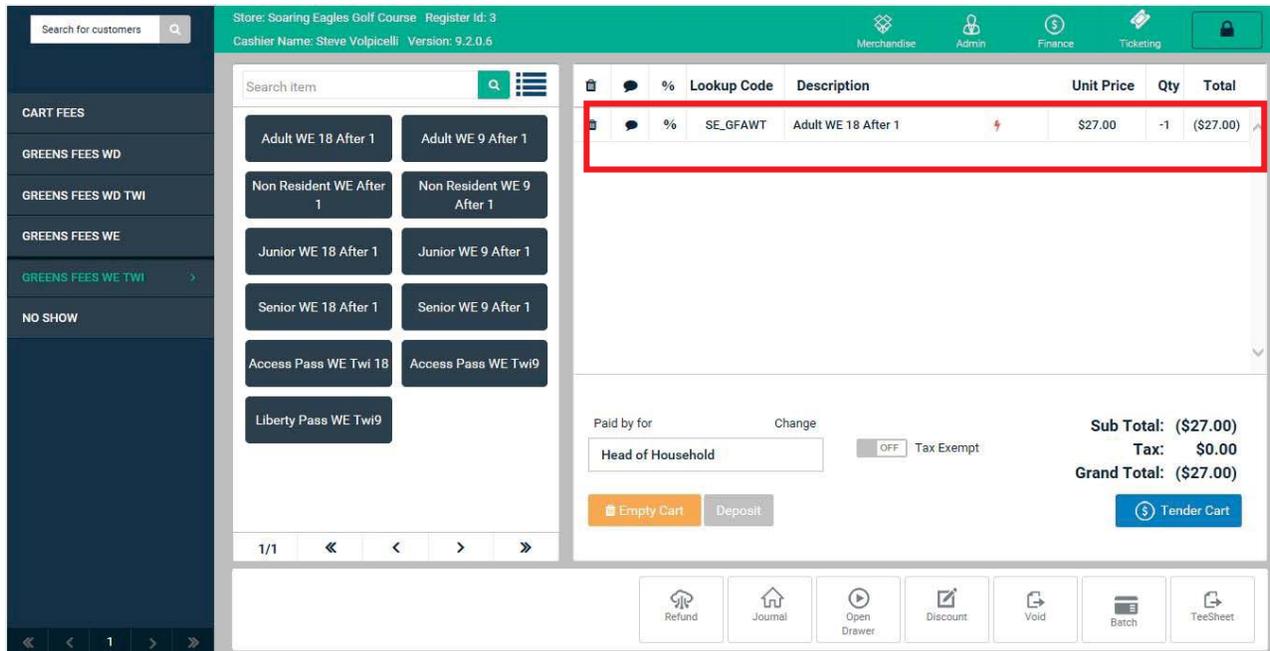
Figure: POS Screen

3. In the POS Screen, click **Tender Cart** to complete the Void. The **Request a Void** popup appears.
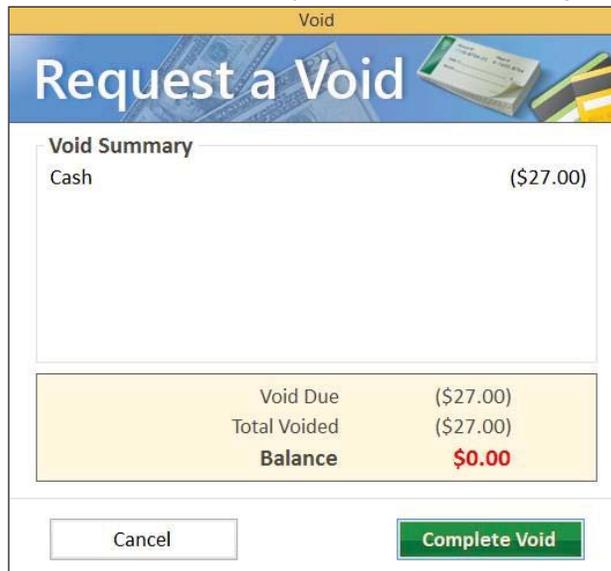
Figure: Complete Void

4. In the Complete Void screen, click the **Complete Void** button to refund the money to the customer. Else, click the **Cancel** button.

NOTE: Refund must be in the same method of payment: Cash if paid with cash, hand customer check back if paid with check, refund to credit card if paid with credit card, back to gift card if paid with gift card.

Batch

The Batch button is used by end users to perform a Blind Close Out.

Select Blind Close Out and enter the amount of cash you are closing the drawer with. All other tender types will be automatically calculated:

Closing Amounts

	Amounts	Comment:
Cash	200	
Check	0	
Visa	0	
MasterCard	0	
Discover	0	
Gift Card	0	
Finance-Refund Check	0	
Travelers Check	0	
Rain Check	0	

Close   CASH CALCULATOR   OK

You may use the Cash Calculator screen to assist in counting up your cash. Select the Cash Calculator button at the bottom right of the window, and add up the totals of each denomination. The system will automatically calculate your total:

Cash Calculator

	Quantity	Amount
Pennies	2	$ 0.02
Nickels	0	$ 0.00
Dimes	10	$ 1.00
Quarters	25	$ 6.25
Half Dollars	0	$ 0.00
Dollars	10	$ 10.00
Fives	5	$ 25.00
Tens	2	$ 20.00
Twenties	1	$ 20.00
Fifties	0	$ 0.00
Hundreds	0	$ 0.00
Total		$ 82.27

Close   OK

Once you have completed the process, the system will display the following message:

Blind Closeout Successful!

Now that you have performed a blind closeout, the total amount of currency in the cash drawer must be counted for the new batch.

On the next screen, you will be prompted to enter the opening amount from the cash in your new drawer.

Click 'OK' to enter opening amounts for the new batch.

OK

Selecting OK will return you to the logon page

US eDIRECT
www.usedirect.com
51 | P a g e

	Scan ID		Date
	7074143		**2016-09-20**

Start	Duration	End
2016-09-20 00:39:10	**1:34:17**	**2016-09-20 02:13:27**

CVSS 3.90 PASS

Port	**Protocol**	**Service**
80	TCP	www

Title
Web Server HTTP Header Information Disclosure

Synopsis:

The remote web server discloses information via HTTP headers.

Impact:

The HTTP headers sent by the remote web server disclose information that can aid an attacker, such as the server version and languages used by the web server.

Resolution:

Modify the HTTP headers of the web server to not disclose detailed information about the underlying web server.

Data Received:

Server type : Microsoft IIS Server version : 8.0 Source : Microsoft-IIS/8.0

CVSS 3.90 PASS

Port	**Protocol**	**Service**
443	TCP	www

Title
Web Server HTTP Header Information Disclosure

Synopsis:

The remote web server discloses information via HTTP headers.

Impact:

The HTTP headers sent by the remote web server disclose information that can aid an attacker, such as the server version and languages used by the web

server.

Resolution:

Modify the HTTP headers of the web server to not disclose detailed information about the underlying web server.

Data Received:

Server type : Microsoft IIS Server version : 8.0 Source : Microsoft-IIS/8.0

CVSS
1.00
PASS

Port   Protocol   Service
443   TCP   www
Title
SSL Certificate Information

Synopsis:

This plugin displays the SSL certificate.

Impact:

This plugin connects to every SSL-related port and attempts to extract and dump the X.509 certificate.

Resolution:

n/a

Data Received:

Subject Name: Country: US State/Province: New York Locality: Roslyn Heights Organization: US eDirect Inc. Common Name: *.usedirect.com Issuer Name: Country: US Organization: DigiCert Inc Common Name: DigiCert SHA2 Secure Server CA Serial Number: 05 DC 67 E0 61 BD A3 79 CD 55 39 44 93 09 A7 5A Version: 3 Signature Algorithm: SHA-256 With RSA Encryption Not Valid Before: Jun 24 00:00:00 2014 GMT Not Valid After: Sep 07 12:00:00 2017 GMT Public Key Info: Algorithm: RSA Encryption Key Length: 2048 bits Public Key: 00 A3 4D 5C BF 06 91 84 3B FA 2C 61 72 F5 15 31 8D F9 66 DF 18 FE 4D 2A A9 E3 04 2B 50 8E 1F 6D CB 32 72 19 78 6A B8 84 54 9C 0F BC FD 72 40 D3 08 E6 45 CA BC 2A 41 62 70 BD EE 62 5F 0B AD 81 14 74 15 BD D4 DA 8A 1E 1F 8B 3E CB 4B 7C 0A DB 2D 35 4D 12 DD D4 B3 8E 38 55 FC 4B B6 C8 00 09 60 F7 54 52 B9 A6 3D 87 D6 B5 B9 3C D1 DF 08 B9 1B AD 86 E9 E0 E4 2B 2C A7 66 81 17 FF D7 97 77 29 43 43 E5 1C C1 8A D2 F5 9D 37 AC 99 65 12 DD 8C 65 FC 07 C7 56 93 72 1E 41 90 6F B2 86 FB 52 00 3A 64 D9 C5 CA 40 63 F3 E8 77 0F 61 DB 4C 3C CF F9 97 8A 08 08 B5 D9 52 8E 48 EF C3 66 6D B7 D2 B0 4C 90 E3 13 26 D9 5C 43 BB 68 FE 64 6B 50 4D 99 3B 29 77 52 FB 6F 61 03 44 61 0F B7 82 B0 F1 2E 64 82 8F 39 6E D2 D0 9E 86 A3 89 85 B2 61 A9 80 59 76 51 D9 C0 E6 CD DD 8F D2 5B AE 36 99 53 Exponent: 01 00 01 Signature Length: 256 bytes / 2048 bits Signature: 00 06 D3 1A 91 DF AC BF AC 65 96 98 C6 17 4F 41 05 6A 2F 15 CD 16 61 0A A8 D7 EE 75 DB 05 2D 62 6A 62 87 8B 00 C9 98 3F 53 B5 A8 D5 51 99

AB E4 E3 84 82 04 B8 CD 49 91 7E E3 89 4A 4F 34 2C 74 2E 13 7A B8 C8 83 07 1E AD 0D A3 FB EA D0 0B 2B E5 F4 AE 44 71 98 1C 75 BC 48 06 13 DE A0 07 63 7B C6 33 10 6E 61 4D CA 3F 71 A3 F3 42 54 DC 43 ED 1E 40 71 84 FD B5 80 43 B7 8E 5D 87 C6 36 74 3C B1 EC DD 4B 85 5A DF 95 20 40 68 6A 57 BF 8A D3 95 9E 66 CB 48 38 99 BE D4 C2 98 36 94 29 93 B9 25 14 94 CD FA A2 2E A2 84 2A C2 D1 8E 0E 6C 93 43 FA 47 64 25 C5 90 D9 80 38 8B 6D 88 1C 03 A3 83 7A E8 91 93 CA 3B 0B 79 67 E4 4C D2 B3 22 9A 5A A4 9A E9 1B 74 F9 9A 14 84 8C 47 1E 62 41 BF FA 18 42 56 EC D4 7B 32 21 35 24 BA 52 43 0A B9 2B 38 06 09 62 94 48 24 18 35 07 5E AA 24 DE DB Extension: Authority Key Identifier (2.5.29.35) Critical: 0 Key Identifier: 0F 80 61 1C 82 31 61 D5 2F 28 E7 8D 46 38 B4 2C E1 C6 D9 E2 Extension: Subject Key Identifier (2.5.29.14) Critical: 0 Subject Key Identifier: 16 04 DE C2 60 D7 CC 18 D7 FC E5 D9 B4 BC AB 0F 49 DE C8 DF Extension: Subject Alternative Name (2.5.29.17) Critical: 0 DNS: *.usedirect.com DNS: usedirect.com Extension: Key Usage (2.5.29.15) Critical: 1 Key Usage: Digital Signature, Key Encipherment Extension: Extended Key Usage (2.5.29.37) Critical: 0 Purpose#1: Web Server Authentication (1.3.6.1.5.5.7.3.1) Purpose#2: Web Client Authentication (1.3.6.1.5.5.7.3.2) Extension: CRL Distribution Points (2.5.29.31) Critical: 0 URI: http://crl3.digicert.com/ssca-sha2-g2.crl URI: http://crl4.digicert.com/ssca-sha2-g2.crl Extension: Policies (2.5.29.32) Critical: 0 Policy ID #1: 2.16.840.1.114412.1.1 Qualifier ID #1: Certification Practice Statement (1.3.6.1.5.5.7.2.1) CPS URI: https://www.digicert.com/CPS Extension: Authority Information Access (1.3.6.1.5.5.7.1.1) Critical: 0 Method#1: Online Certificate Status Protocol URI: http://ocsp.digicert.com Method#2: Certificate Authority Issuers URI: http://cacerts.digicert.com/DigiCertSHA2SecureServerCA.crt Extension: Basic Constraints (2.5.29.19) Critical: 1 Fingerprints : SHA-256 Fingerprint: FA 82 DF D4 9B B8 6D D0 0B B3 25 74 34 7B F7 8E AB 32 53 A1 6E 8A CB CE 59 EF DA D6 63 3C 65 FA SHA-1 Fingerprint: F8 07 AE D5 E3 E1 C9 A8 72 D6 C0 E4 B2 F3 F9 2D 20 AC EF 11 MD5 Fingerprint: D7 F2 E7 58 79 B7 F0 C9 BE 9E A3 91 CD AA 51 A5

CVSS
1.00
PASS

Port	Protocol	Service
443	TCP	www

Title
SSL Cipher Suites Supported

Synopsis:

The remote service encrypts communications using SSL.

Impact:

This plugin detects which SSL ciphers are supported by the remote service for encrypting communications. See also :
https://www.openssl.org/docs/manmaster/apps/ciphers.html
http://www.nessus.org/u?7d537016

Resolution:

n/a

Data Received:

Here is the list of SSL ciphers supported by the remote server : Each group is reported per SSL Version. SSL Version : TLSv11 High Strength Ciphers (>= 112-bit key) ECDHE-RSA-AES128-SHA Kx=ECDH Au=RSA Enc=AES-CBC(128) Mac=SHA1 ECDHE-RSA-AES256-SHA Kx=ECDH Au=RSA Enc=AES-CBC(256) Mac=SHA1 DES-CBC3-SHA Kx=RSA Au=RSA Enc=3DES-CBC(168) Mac=SHA1 AES128-SHA Kx=RSA Au=RSA Enc=AES-CBC(128) Mac=SHA1 AES256-SHA Kx=RSA Au=RSA Enc=AES-CBC(256) Mac=SHA1 The fields above are : {OpenSSL ciphername} Kx={key exchange} Au={authentication} Enc={symmetric encryption method} Mac={message authentication code} {export flag}

	Port	Protocol	Service
CVSS **1.00** PASS		TCP	general

Title
Additional DNS Hostnames

Synopsis:

SecurityMetrics has detected potential virtual hosts.

Impact:

Hostnames different from the current hostname have been collected by miscellaneous plugins. SecurityMetrics has generated a list of hostnames that point to the remote host. Note that these are only the alternate hostnames for vhosts discovered on a web server. Different web servers may be hosted on name-based virtual hosts. See also : http://en.wikipedia.org/wiki/Virtual_hosting

Resolution:

If you want to test them, re-scan using the special vhost syntax, such as : www.example.com[192.0.32.10]

Data Received:

The following hostnames point to the remote host : - usedirect.com

	Port	Protocol	Service
CVSS **1.00** PASS	80	TCP	www

Title
Web Server Harvested Email Addresses

Synopsis:

Email addresses were harvested from the web server.

Impact:

SecurityMetrics harvested HREF mailto: links and extracted email addresses by crawling the remote web server.

Resolution:

n/a

Data Received:

The following email addresses have been gathered : - 'support@usedirect.com', referenced from : /contact.html - 'sales@usedirect.com', referenced from : /call_center.html /case_studies.html /golf.html /best_practices.html /inventory_management.html /parks.html /events.html /marketing.html /team_sports.html /marinas.html /user_tracking.html /advantage.html /reservations.html /registration.html / /references.html /data_analytics.html /index.html /payment_processing.html /finance.html /venues.html /customers.html /about.html /campgrounds.html /news.html /permits.html /reporting.html /contact.html - 'banderson@usedirect.com', referenced from : /news.html

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CVSS
1.00
PASS

Port	Protocol	Service
443	TCP	www

Title
Web Server Harvested Email Addresses

Synopsis:

Email addresses were harvested from the web server.

Impact:

SecurityMetrics harvested HREF mailto: links and extracted email addresses by crawling the remote web server.

Resolution:

n/a

Data Received:

The following email addresses have been gathered : - 'support@usedirect.com', referenced from : /contact.html - 'sales@usedirect.com', referenced from : /events.html /user_tracking.html /golf.html /call_center.html /references.html /case_studies.html /about.html /customers.html /reservations.html /contact.html /finance.html /advantage.html /permits.html /team_sports.html /campgrounds.html /parks.html /marketing.html /index.html /news.html /reporting.html /venues.html /registration.html /inventory_management.html /best_practices.html /payment_processing.html /marinas.html / /data_analytics.html - 'banderson@usedirect.com', referenced from :

/news.html

<table>
<tr><td rowspan="2">CVSS
1.00
PASS</td><td>**Port**</td><td>**Protocol**</td><td>**Service**</td></tr>
<tr><td>80</td><td>TCP</td><td>www</td></tr>
</table>

Port   **Protocol**   **Service**
80   TCP   www
Title
Web Application Sitemap

Synopsis:

The remote web server hosts linkable content that can be crawled by
SecurityMetrics.

Impact:

The remote web server contains linkable content that can be used to gather
information about a target. See also : http://www.nessus.org/u?5496c8d9

Resolution:

n/a

Data Received:

The following sitemap was created from crawling linkable content on the target
host : - http://www.usedirect.com/ - http://www.usedirect.com/about.html -
http://www.usedirect.com/advantage.html -
http://www.usedirect.com/best_practices.html -
http://www.usedirect.com/call_center.html -
http://www.usedirect.com/campgrounds.html -
http://www.usedirect.com/case_studies.html -
http://www.usedirect.com/contact.html -
http://www.usedirect.com/customers.html -
http://www.usedirect.com/data_analytics.html -
http://www.usedirect.com/docs/land_between_the_lakes.pdf -
http://www.usedirect.com/docs/miamidade.pdf -
http://www.usedirect.com/events.html -
http://www.usedirect.com/finance.html - http://www.usedirect.com/golf.html -
http://www.usedirect.com/index.html -
http://www.usedirect.com/inventory_management.html -
http://www.usedirect.com/marinas.html -
http://www.usedirect.com/marketing.html -
http://www.usedirect.com/news.html - http://www.usedirect.com/parks.html -
http://www.usedirect.com/payment_processing.html -
http://www.usedirect.com/permits.html -
http://www.usedirect.com/references.html -
http://www.usedirect.com/registration.html -
http://www.usedirect.com/reporting.html -
http://www.usedirect.com/reservations.html -
http://www.usedirect.com/styles/960-fluid.css -
http://www.usedirect.com/styles/reset.css -
http://www.usedirect.com/styles/usedirect.css -

http://www.usedirect.com/team_sports.html -
http://www.usedirect.com/user_tracking.html -
http://www.usedirect.com/venues.html Attached is a copy of the sitemap file.

CVSS	Port	Protocol	Service
1.00 PASS	443	TCP	www

Title
Web Application Sitemap

Synopsis:

The remote web server hosts linkable content that can be crawled by SecurityMetrics.

Impact:

The remote web server contains linkable content that can be used to gather information about a target. See also : http://www.nessus.org/u?5496c8d9

Resolution:

n/a

Data Received:

The following sitemap was created from crawling linkable content on the target host : - https://www.usedirect.com/ - https://www.usedirect.com/CampLBL/ - https://www.usedirect.com/CampLBL/Customers/Login.aspx - https://www.usedirect.com/CampLBL/Customers/NewCustomer.aspx - https://www.usedirect.com/CampLBL/Customers/Recover.aspx - https://www.usedirect.com/CampLBL/Default.aspx - https://www.usedirect.com/CampLBL/Facilities/MapView.aspx - https://www.usedirect.com/CampLBL/Facilities/MapView.aspx?map_id=0&map_level=Enterprise&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/CampLBL/Facilities/MapView.aspx?map_id=5&map_level=Region&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/CampLBL/Facilities/SearchView.aspx - https://www.usedirect.com/CampLBL/Facilities/SearchView.aspx?map_level=Enterprise&map_id=0&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/CampLBL/Facilities/SearchView.aspx?map_level=Region&map_id=5&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/CampLBL/WebResource.axd?d=WXT7H7C9c48N9GzBCFmraWr_wtrP3P9HymM8Yief_5wFgOw8wdRzcT5uEq7g_Au_6W2Ug7yih4TraV4P-1arv7Xfc4A7iuKDrdL90Mx3KS20RqJPu6uQgmZJm9a8_ua7KwYFQXDFaSBQoIjZWTi3xw2&t=635610901340000000 - https://www.usedirect.com/CampLBL/images/FavIcon.gif - https://www.usedirect.com/CampLBL/images/lbl/ParkImages/Place/1.jpg - https://www.usedirect.com/CampLBL/images/lbl/ParkImages/Place/2.jpg - https://www.usedirect.com/CampLBL/images/lbl/ParkImages/Place/3.jpg - https://www.usedirect.com/CampLBL/images/lbl/ParkImages/Place/4.jpg -

https://www.usedirect.com/CampLBL/multiselect/jquery.multiselect.css -
https://www.usedirect.com/CampLBL/multiselect/prettify.css -
https://www.usedirect.com/CampLBL/multiselect/style.css -
https://www.usedirect.com/CampLBL/styles/bootstrap.min.css -
https://www.usedirect.com/CampLBL/styles/colorbox.css -
https://www.usedirect.com/CampLBL/styles/tabs.css -
https://www.usedirect.com/CampLBL/styles/tooltipster.css -
https://www.usedirect.com/CampLBL/themes/ -
https://www.usedirect.com/CampLBL/themes/?theme=LBL -
https://www.usedirect.com/CampLBL/themes/LBL/styles/ie8.css -
https://www.usedirect.com/CampLBL/themes/LBL/styles/jquery-ui.min.css -
https://www.usedirect.com/about.html -
https://www.usedirect.com/advantage.html -
https://www.usedirect.com/best_practices.html -
https://www.usedirect.com/call_center.html -
https://www.usedirect.com/campgrounds.html -
https://www.usedirect.com/camplbl/ -
https://www.usedirect.com/camplbl/Customers/Login.aspx -
https://www.usedirect.com/camplbl/Customers/NewCustomer.aspx -
https://www.usedirect.com/camplbl/Customers/Recover.aspx -
https://www.usedirect.com/camplbl/Default.aspx -
https://www.usedirect.com/camplbl/Facilities/MapView.aspx -
https://www.usedirect.com/camplbl/Facilities/MapView.aspx?
map_id=0&map_level=Enterprise&nights=1&arrival_date=09/21/2016 -
https://www.usedirect.com/camplbl/Facilities/MapView.aspx?
map_id=5&map_level=Region&nights=1&arrival_date=09/21/2016 -
https://www.usedirect.com/camplbl/Facilities/SearchView.aspx -
https://www.usedirect.com/camplbl/Facilities/SearchView.aspx?
map_level=Enterprise&map_id=0&nights=1&arrival_date=09/21/2016 -
https://www.usedirect.com/camplbl/Facilities/SearchView.aspx?
map_level=Region&map_id=5&nights=1&arrival_date=09/21/2016 -
https://www.usedirect.com/camplbl/LBLRulesandRegs.pdf -
https://www.usedirect.com/camplbl/images/FavIcon.gif -
https://www.usedirect.com/camplbl/images/lbl/ParkImages/Place/1.jpg -
https://www.usedirect.com/camplbl/images/lbl/ParkImages/Place/2.jpg -
https://www.usedirect.com/camplbl/images/lbl/ParkImages/Place/3.jpg -
https://www.usedirect.com/camplbl/images/lbl/ParkImages/Place/4.jpg -
https://www.usedirect.com/camplbl/multiselect/jquery.multiselect.css -
https://www.usedirect.com/camplbl/multiselect/prettify.css -
https://www.usedirect.com/camplbl/multiselect/style.css -
https://www.usedirect.com/camplbl/styles/bootstrap.min.css -
https://www.usedirect.com/camplbl/styles/colorbox.css -
https://www.usedirect.com/camplbl/styles/tabs.css -
https://www.usedirect.com/camplbl/styles/tooltipster.css -
https://www.usedirect.com/camplbl/themes/ -
https://www.usedirect.com/camplbl/themes/?theme=LBL -
https://www.usedirect.com/case_studies.html -
https://www.usedirect.com/contact.html -
https://www.usedirect.com/customers.html -
https://www.usedirect.com/data_analytics.html -
https://www.usedirect.com/docs/land_between_the_lakes.pdf -

https://www.usedirect.com/docs/miamidade.pdf -
https://www.usedirect.com/events.html -
https://www.usedirect.com/finance.html - https://www.usedirect.com/golf.html
- https://www.usedirect.com/index.html -
https://www.usedirect.com/inventory_management.html -
https://www.usedirect.com/marinas.html -
https://www.usedirect.com/marketing.html -
https://www.usedirect.com/news.html - https://www.usedirect.com/parks.html
- https://www.usedirect.com/payment_processing.html -
https://www.usedirect.com/permits.html -
https://www.usedirect.com/references.html -
https://www.usedirect.com/registration.html -
https://www.usedirect.com/reporting.html -
https://www.usedirect.com/reservations.html -
https://www.usedirect.com/styles/960-fluid.css -
https://www.usedirect.com/styles/reset.css -
https://www.usedirect.com/styles/usedirect.css -
https://www.usedirect.com/team_sports.html -
https://www.usedirect.com/user_tracking.html -
https://www.usedirect.com/venues.html Attached is a copy of the sitemap file.

CVSS 1.00 PASS

Port   **Protocol**   **Service**
443   TCP   www

Title
Web Server Allows Password Auto-Completion

Synopsis:

The 'autocomplete' attribute is not disabled on password fields.

Impact:

The remote web server contains at least one HTML form field that has an input
of type 'password' where 'autocomplete' is not set to 'off'. While this does not
represent a risk to this web server per se, it does mean that users who use the
affected forms may have their credentials saved in their browsers, which could
in turn lead to a loss of confidentiality if any of them use a shared host or if
their machine is compromised at some point.

Resolution:

Add the attribute 'autocomplete=off' to these fields to prevent browsers from
caching credentials.

Data Received:

Page : /CampLBL/Customers/Login.aspx Destination Page:
/CampLBL/Customers/Login.aspx Page :
/CampLBL/Customers/NewCustomer.aspx Destination Page:
/CampLBL/Customers/NewCustomer.aspx Page : /camplbl/Customers/Login.aspx
Destination Page: /camplbl/Customers/Login.aspx Page :

/camplbl/Customers/NewCustomer.aspx Destination Page:
/camplbl/Customers/NewCustomer.aspx

Port	Protocol	Service
80	TCP	www

Title

Web Application Cookies Not Marked Secure

Synopsis:

HTTP session cookies might be transmitted in cleartext.

Impact:

The remote web application sets various cookies throughout a user's unauthenticated and authenticated session. However, there are instances where the application is running over unencrypted HTTP or the cookies are not marked 'secure', meaning the browser could send them back over an unencrypted link under certain circumstances. As a result, it may be possible for a remote attacker to intercept these cookies. Note that this plugin detects all general cookies missing the 'secure' cookie flag, whereas plugin 49218 (Web Application Session Cookies Not Marked Secure) will only detect session cookies from an authenticated session missing the secure cookie flag. See also : https://www.owasp.org/index.php/SecureFlag

Resolution:

Each cookie should be carefully reviewed to determine if it contains sensitive data or is relied upon for a security decision. If possible, ensure all communication occurs over an encrypted channel and add the 'secure' attribute to all session cookies or any cookies containing sensitive data.

Data Received:

The following cookie does not set the secure cookie flag : Name : ASP.NET_SessionId Path : / Value : czukyv5v5eypfqywl5u4ls0f Domain : Version : 1 Expires : Comment : Secure : 0 Httponly : 1 Port :

Port	Protocol	Service
443	TCP	www

Title

Web Application Cookies Not Marked Secure

Synopsis:

HTTP session cookies might be transmitted in cleartext.

Impact:

The remote web application sets various cookies throughout a user's unauthenticated and authenticated session. However, there are instances where the application is running over unencrypted HTTP or the cookies are not marked 'secure', meaning the browser could send them back over an unencrypted link under certain circumstances. As a result, it may be possible for a remote attacker to intercept these cookies. Note that this plugin detects all general cookies missing the 'secure' cookie flag, whereas plugin 49218 (Web Application Session Cookies Not Marked Secure) will only detect session cookies from an authenticated session missing the secure cookie flag. See also : https://www.owasp.org/index.php/SecureFlag

Resolution:

Each cookie should be carefully reviewed to determine if it contains sensitive data or is relied upon for a security decision. If possible, ensure all communication occurs over an encrypted channel and add the 'secure' attribute to all session cookies or any cookies containing sensitive data.

Data Received:

The following cookie does not set the secure cookie flag : Name : ASP.NET_SessionId Path : / Value : czukyv5v5eypfqywl5u4ls0f Domain : Version : 1 Expires : Comment : Secure : 0 Httponly : 1 Port :

CVSS
1.00
PASS

Port	Protocol	Service
443	TCP	www

Title
HSTS Missing From HTTPS Server

Synopsis:

The remote web server is not enforcing HSTS.

Impact:

The remote HTTPS server is not enforcing HTTP Strict Transport Security (HSTS). The lack of HSTS allows downgrade attacks, SSL-stripping man-in-the-middle attacks, and weakens cookie-hijacking protections. See also : https://tools.ietf.org/html/rfc6797

Resolution:

Configure the remote web server to use HSTS.

Data Received:

The remote HTTPS server does not send the HTTP "Strict-Transport-Security" header.

	Port	**Protocol**	**Service**
CVSS **1.00** PASS	80	TCP	www
	Title		
	Missing or Permissive Content-Security-Policy HTTP Response Header		

Synopsis:

The remote web server does not take steps to mitigate a class of web application vulnerabilities.

Impact:

The remote web server in some responses sets a permissive Content-Security-Policy (CSP) response header or does not set one at all. The CSP header has been proposed by the W3C Web Application Security Working Group as a way to mitigate cross-site scripting and clickjacking attacks. See also : http://content-security-policy.com/ https://www.w3.org/TR/CSP2/

Resolution:

Set a properly configured Content-Security-Policy header for all requested resources.

Data Received:

The following pages do not set a Content-Security-Policy response header or set a permissive policy: - http://www.usedirect.com/ - http://www.usedirect.com/about.html - http://www.usedirect.com/advantage.html - http://www.usedirect.com/best_practices.html - http://www.usedirect.com/call_center.html - http://www.usedirect.com/campgrounds.html - http://www.usedirect.com/case_studies.html - http://www.usedirect.com/contact.html - http://www.usedirect.com/customers.html - http://www.usedirect.com/data_analytics.html - http://www.usedirect.com/events.html - http://www.usedirect.com/finance.html - http://www.usedirect.com/golf.html - http://www.usedirect.com/index.html - http://www.usedirect.com/inventory_management.html - http://www.usedirect.com/marinas.html - http://www.usedirect.com/marketing.html - http://www.usedirect.com/news.html - http://www.usedirect.com/parks.html - http://www.usedirect.com/payment_processing.html - http://www.usedirect.com/permits.html - http://www.usedirect.com/references.html - http://www.usedirect.com/registration.html - http://www.usedirect.com/reporting.html - http://www.usedirect.com/reservations.html - http://www.usedirect.com/team_sports.html - http://www.usedirect.com/user_tracking.html - http://www.usedirect.com/venues.html

CVSS 1.00 PASS	**Port**	**Protocol**	**Service**
	443	TCP	www

Title

Missing or Permissive Content-Security-Policy HTTP Response Header

Synopsis:

The remote web server does not take steps to mitigate a class of web application vulnerabilities.

Impact:

The remote web server in some responses sets a permissive Content-Security-Policy (CSP) response header or does not set one at all. The CSP header has been proposed by the W3C Web Application Security Working Group as a way to mitigate cross-site scripting and clickjacking attacks. See also : http://content-security-policy.com/ https://www.w3.org/TR/CSP2/

Resolution:

Set a properly configured Content-Security-Policy header for all requested resources.

Data Received:

The following pages do not set a Content-Security-Policy response header or set a permissive policy: - https://www.usedirect.com/ - https://www.usedirect.com/CampLBL/ - https://www.usedirect.com/CampLBL/Customers/Login.aspx - https://www.usedirect.com/CampLBL/Customers/NewCustomer.aspx - https://www.usedirect.com/CampLBL/Customers/Recover.aspx - https://www.usedirect.com/CampLBL/Default.aspx - https://www.usedirect.com/CampLBL/Facilities/MapView.aspx - https://www.usedirect.com/CampLBL/Facilities/MapView.aspx? map_id=0&map_level=Enterprise&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/CampLBL/Facilities/MapView.aspx? map_id=5&map_level=Region&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/CampLBL/Facilities/SearchView.aspx - https://www.usedirect.com/CampLBL/Facilities/SearchView.aspx? map_level=Enterprise&map_id=0&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/CampLBL/Facilities/SearchView.aspx? map_level=Region&map_id=5&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/about.html - https://www.usedirect.com/advantage.html - https://www.usedirect.com/best_practices.html - https://www.usedirect.com/call_center.html - https://www.usedirect.com/campgrounds.html - https://www.usedirect.com/camplbl/ - https://www.usedirect.com/camplbl/Customers/Login.aspx - https://www.usedirect.com/camplbl/Customers/NewCustomer.aspx - https://www.usedirect.com/camplbl/Customers/Recover.aspx - https://www.usedirect.com/camplbl/Default.aspx -

https://www.usedirect.com/camplbl/Facilities/MapView.aspx - https://www.usedirect.com/camplbl/Facilities/MapView.aspx? map_id=0&map_level=Enterprise&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/camplbl/Facilities/MapView.aspx? map_id=5&map_level=Region&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/camplbl/Facilities/SearchView.aspx - https://www.usedirect.com/camplbl/Facilities/SearchView.aspx? map_level=Enterprise&map_id=0&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/camplbl/Facilities/SearchView.aspx? map_level=Region&map_id=5&nights=1&arrival_date=09/21/2016 - https://www.usedirect.com/case_studies.html - https://www.usedirect.com/contact.html - https://www.usedirect.com/customers.html - https://www.usedirect.com/data_analytics.html - https://www.usedirect.com/events.html - https://www.usedirect.com/finance.html - https://www.usedirect.com/golf.html - https://www.usedirect.com/index.html - https://www.usedirect.com/inventory_management.html - https://www.usedirect.com/marinas.html - https://www.usedirect.com/marketing.html - https://www.usedirect.com/news.html - https://www.usedirect.com/parks.html - https://www.usedirect.com/payment_processing.html - https://www.usedirect.com/permits.html - https://www.usedirect.com/references.html - https://www.usedirect.com/registration.html - https://www.usedirect.com/reporting.html - https://www.usedirect.com/reservations.html - https://www.usedirect.com/team_sports.html - https://www.usedirect.com/user_tracking.html - https://www.usedirect.com/venues.html

CVSS	Port	Protocol	Service
1.00 PASS	80	TCP	www

Title

Web Server Office File Inventory

Synopsis:

The remote web server hosts office-related files.

Impact:

This plugin connects to the remote web server and attempts to find office-related files such as .doc, .ppt, .xls, .pdf etc.

Resolution:

Make sure that such files do not contain any confidential or otherwise sensitive information and that they are only accessible to those with valid credentials.

Data Received:

The following office-related files are available on the remote server : - Adobe Acrobat files (.pdf) : /docs/miamidade.pdf /docs/land_between_the_lakes.pdf

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<table>
<tr><td rowspan="3">CVSS
1.00
PASS</td><td>**Port**</td><td>**Protocol**</td><td>**Service**</td></tr>
<tr><td>443</td><td>TCP</td><td></td></tr>
<tr><td colspan="3">**Title**
Enumerated CGIBIN List</td></tr>
</table>

Synopsis:

SecurityMetrics was able to enumerate the following cgibin directories on port 443: /camplbl/Customers /camplbl /camplbl/themes /CampLBL/Customers /CampLBL/Facilities /CampLBL /CampLBL/themes

Resolution:

No resolution required.

<table>
<tr><td rowspan="3">CVSS
1.00
PASS</td><td>**Port**</td><td>**Protocol**</td><td>**Service**</td></tr>
<tr><td>443</td><td>TCP</td><td>www</td></tr>
<tr><td colspan="3">**Title**
Web Server Office File Inventory</td></tr>
</table>

Synopsis:

The remote web server hosts office-related files.

Impact:

This plugin connects to the remote web server and attempts to find office-related files such as .doc, .ppt, .xls, .pdf etc.

Resolution:

Make sure that such files do not contain any confidential or otherwise sensitive information and that they are only accessible to those with valid credentials.

Data Received:

The following office-related files are available on the remote server : - Adobe Acrobat files (.pdf) : /docs/miamidade.pdf /docs/land_between_the_lakes.pdf /camplbl/LBLRulesandRegs.pdf

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<table>
<tr><td rowspan="2">CVSS
1.00</td><td>**Port**</td><td>**Protocol**</td><td>**Service**</td></tr>
<tr><td>443</td><td>TCP</td><td>www</td></tr>
</table>

Title
SSL / TLS Versions Supported

Synopsis:

The remote service encrypts communications.

Impact:

This plugin detects which SSL and TLS versions are supported by the remote service for encrypting communications.

Resolution:

n/a

Data Received:

This port supports TLSv1.1/TLSv1.2.