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# **Software Requirements Specification**

**for**

## **Electronic Field Input System to a Fish Survey Database**

**Version 1.0**

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**Team 5**

**October 11, 2014**

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## Revision History

<b>Name</b>	<b>Date</b>	<b>Reason For Changes</b>	<b>Version</b>
Stacy Carlson, Thomas Flores, and Ralph Parkison	10/11/14	Initial Draft	1.0 draft 1
Stacy Carlson, Thomas Flores, and Ralph Parkison	11/7/14	Revisions to Satisfy Senior Project Requirements	1.0 draft 2

# 1. Introduction

## 1.1 Purpose

This SRS describes the software functional and nonfunctional requirements for release 1.0 of the Electronic Field Input System to a Fish Survey Database, hereafter referred to as the Creel Input System. This document is intended to be used by the client and the members of the project team to ensure that the system is implemented and functioning in accordance to the client's requirements. All requirements specified here are of high priority to the client and committed for release 1.0.

[Optional] Raw Fish Survey

[Optional] FWIN Survey

## 1.2 Document Conventions

[Highlight][Light Blue] – Optional if time allows  
"" – GUI (Graphical User Interface) element

## 1.3 Intended Audience and Reading Suggestions

This document is intended for both the client and the developers. The rest of this SRS defines the features of the software. Both the client and the developers should read the SRS in the order provided with particular care being given to the System Features.

## 1.4 Project Scope

The Creel Input System is intended to replace the Franklin D. Roosevelt Lake Creel Survey Form that was filled out by hand by the creel clerks, mailed to the client, and then transcribed into Excel spreadsheets. The Creel Survey Form is used for both the access and bus route types of creel survey. The access type is where the Creel Clerk stays at one location all day and the bus route is where the Creel Clerk travels from location to location.

The goal of the electronic system is to minimize data entry errors. Since the system will be fully functional with the Fish Survey Database, the client will also benefit from user-friendly and time efficient data access.

## 1.5 References

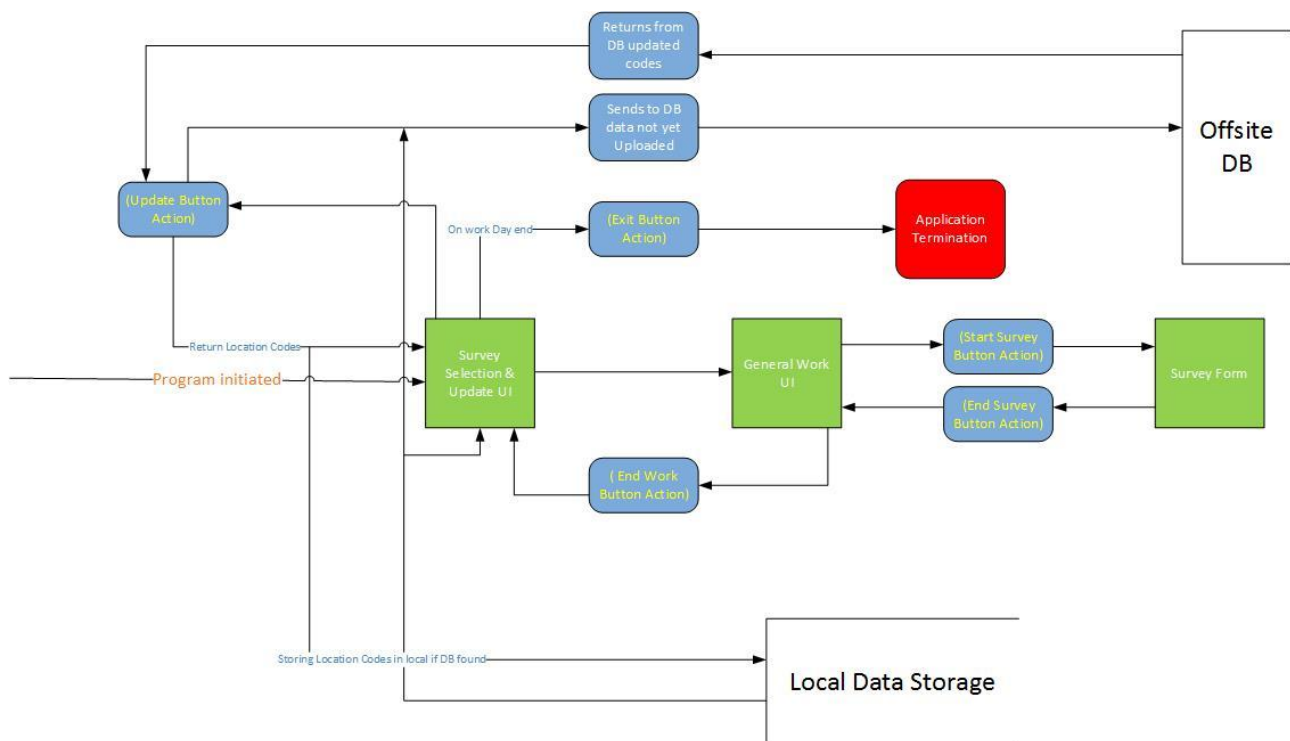
1. Franklin D. Roosevelt Lake Creel Survey Form, LRFEP, 2/8/05
2. Lake Roosevelt Recreational Creel Survey 2014 Survey Design And Protocol, 7/27/14
3. Lake Roosevelt 2004 Recreational Survey Design, 2004
4. 2014 Lake Roosevelt Creel Survey Protocol Presentation, 6/23/14

## 2. Overall Description

### 2.1 Product Perspective

The Creel Input System is the electronic replacement of the paper Franklin D. Roosevelt Lake Creel Survey Form. (See Appendix C.) The system provides a user interface to collect data and stores it internally. When an Internet connection is available the system connects with the Fish Survey Database for offsite data storage.

[Optional] Raw fish and FWIN survey entry



### 2.2 Product Features

The Creel Input System features all fields that appear on the paper Franklin D. Roosevelt Lake Creel Survey Form. Users can fill out the form by selecting the angler answer from drop down menus or enter information via the onscreen keyboard.

[1] The application will sync with the database updating various codes i.e. [location, fish...]

[2] The application will upload survey data to database

## **2.3 User Classes and Characteristics**

Creel Clerk (favored)

A Creel Clerk is the user who interviews anglers and records the answers in the Creel Input System. All Creel Clerks have been trained how to do a creel survey. Creel Clerks possess a varying range of technical expertise, some may need basic computer skill training.

## **2.4 Operating Environment (OE)**

OE-1: The Creel Input System shall operate on the following operating system: Windows 7 Professional (64 bit).

OE-2: The Creel Input System shall operate on the following hardware platform: Getac Tablet (Model F110).

OE-3: The Creel Input System shall be fully compatible with the Fish Survey Database.

## **2.5 Design and Implementation Constraints (CO)**

CO-1: The Fish Survey Database must be used.

CO-2: The Creel Input System must use JSON to communicate with the Fish Survey Database.

CO-3: All code must be written in a language that allows for modification and upgrades.

## **2.6 User Documentation (UD)**

UD-1: The team will demonstrate the software to the client upon completion.

UD-2: The team will create help files for the software.

UD-3: The client will be responsible for training the Creel Clerks on use of the system.

## **2.7 Assumptions and Dependencies (DE)**

DE-1: The Creel Input System depends on the Fish Survey Database being implemented in the manner described by Team 4.

# **3. System Features**

## **3.1 Welcome Screen User Interface**

### **3.1.1 Description and Priority**

An options menu is displayed. Priority: High

### **3.1.2 Stimulus/Response Sequences**

Stimulus: A Creel Clerk selects the "Creel Survey". [Optional]Raw fish and FWIN  
Response: The application launches the survey.

Stimulus: A Creel Clerk selects "upload/update".  
Response: The application follows the upload/update procedures. (See 3.4 and 3.5)

### 3.1.3 Functional Requirements (REQ)

REQ-1: Creel Survey User Interface

## 3.2 General Work Information Entry User Interface

### 3.2.1 Description and Priority

A Creel Clerk enters general work information. Priority: High

### 3.2.2 Stimulus/Response Sequences

Stimulus: A Creel Clerk enters their initials, selects the survey type and section, and presses "start day".  
Response: Information is saved in internal memory log files. Creel Clerk is given the option to add a location.

Stimulus: A Creel Clerk clicks "end" upon ending work.  
Response: Ending work time is saved in internal memory log files. Welcome screen is displayed.

### 3.2.3 Functional Requirements (REQ)

REQ-1: Internal Log Files

## 3.3 Angler Creel Survey Entry User Interface

### 3.3.1 Description and Priority

A Creel Clerk completes an angler creel survey. Priority: High

### 3.3.2 Stimulus/Response Sequences

Stimulus: A Creel Clerk selected bus route.  
Response: Location time will count down and prompt the clerk to leave the location when time is up.

Stimulus: A Creel Clerk will enter angler party information. (See Appendix B, UI-3.1)  
Response: Information is saved in internal memory log files.

Stimulus: A Creel Clerk clicks the "add fish" button.  
Response: A new fish line is added to the screen with the fields, species caught and kept/released. (See Appendix B, UI-3.3)

Stimulus:	A Creel Clerk marks the fish as kept.
Response:	The fish details fields are added to the fish line. (See Appendix B, UI-3.4 and UI-3.5)
Stimulus:	A Creel Clerk marks the fish as released.
Response:	The total field is added to the fish line. (See Appendix B, UI-3.6)
Stimulus:	A Creel Clerk clicks the "add party" button.
Response:	Information is stored in internal memory log files and the fields are cleared. Previous parties are accessible via arrow buttons.
Stimulus:	A Creel Clerk clicks the "end location" button.
Response:	The system returns to the general work information entry screen. A summary of the location is displayed.

### 3.3.3 Functional Requirements (REQ)

- REQ-1: Internal Log Files
- REQ-2: Internal Log File naming convention  
"Initials-SurveyType-TimeDate-Fail/Success"
- REQ-3: Movement between views with various selections
- REQ-4: Entry responses informing user of result

## 3.4 Upload Data to the Fish Survey Database

### 3.4.1 Description and Priority

The Creel Clerk submits the data they collected via JSON object to the Fish Survey Database. Priority: High

### 3.4.2 Stimulus/Response Sequences

Stimulus:	The Creel Clerk chooses to upload the data.
Response:	The Creel Input System attempts to connect to the Fish Survey Database. If a connection is made within 5 minutes the Creel Clerk is prompted for their username and password. Otherwise the Creel Clerk is prompted to either try the connection again or skip it. If the upload fails to complete in 5 minutes the connection times out.
Stimulus:	Username or password fail validation by the Fish Survey Database.
Response:	The Creel Clerk is informed of the error and prompted to try again.
Stimulus:	Username and password are validated by the Fish Survey Database.
Response:	Data transfer begins.
Stimulus:	Data uploads to the Fish Survey Database.
Response:	The Creel Clerk is informed of the success.
Stimulus:	Data fails to upload to the Fish Survey Database.
Response:	The Creel Clerk is informed of the failure and is prompted to try again or exit.

### 3.4.3 Functional Requirements (REQ)



REQ-1: Internet Connection  
REQ-2: Fish Survey Database

### 3.5 Download Data From the Fish Survey Database

#### 3.5.1 Description and Priority

Updates from the Fish Survey Database are received in JSON object format and applied to the application's fields.

#### 3.5.2 Stimulus/Response Sequences

Stimulus: The Creel Clerk chooses to update the system.  
Response: The Creel Input System attempts to connect to the Fish Survey Database. If a connection is made within 5 minutes the data transfer begins. Otherwise the Creel Clerk is prompted to either try the connection again or skip it. If the download fails to complete in 5 minutes, the connection times out.

Stimulus: Data downloads from the Fish Survey Database and the updates are applied.  
Response: The Creel Clerk is informed of the success.

Stimulus: Data fails to download from the Fish Survey Database.  
Response: The Creel Clerk is informed of the failure and is prompted to try again or skip it.

#### 3.5.3 Functional Requirements (REQ)

REQ-1: Internet Connection  
REQ-2: Fish Survey Database

## 4. External Interface Requirements

### 4.1 User Interfaces (UI)

The user interface will be split into 3 different views.(See Appendix B and C)

- UI-1: Initial view will be a welcome screen that will provide choices for surveys and updating/uploading. If updating/uploading is selected the user will be presented with a progress indicator. (TBD)
- UI-2: The general work entry information view will collect information about the general workday. Users will be able to add a new location from this view. A day summary will appear on this screen as the day progresses. (See Appendix B, 2.1 and 2.2)
- UI-3: The angler creel survey entry view will collect information about the angler party being interviewed. Users will be able to add fish, view previous parties, add another

party, and end the location. If the survey is a bus type the application will prompt the user when time is up at the location. (See Appendix B, 3.1 and 3.2)

## **4.2 Hardware Interfaces (HI)**

- HI-1: Getac Tablet running Windows 7 (64bit)
- HI-2: Touch screen using a virtual keyboard
- HI-3: Stylus
- HI-4: Web based Server (ASP.Net) running MySQL (Fish Survey Database)

## **4.3 Software Interfaces (SI)**

- SI-1: Windows 7 (64 bit) installed on Getac (Connected via Windows Libraries on C#)
- SI-2: Offsite MySQL server (ASP.Net) where the database is stored (Connected via JSON Package Transfers)

## **4.4 Communications Interfaces (CI)**

- CI-1: Be able to package up data into a JSON object and send it to a web server
- CI-2: Be able to unpack a JSON object to update local data from the web server
- CI-3: Be able to reinitialize any unsuccessful data back into the application and attempt to repackage and retry upload

# **5. Other Nonfunctional Requirements**

## **5.1 Performance Requirements**

Our system does essentially no heavy processing so the application should run at an extremely fast rate where once the user submits data they should be immediately greeted with the appropriate screen. The only exception would be when sending data to the DB, which is reliant on Internet connectivity.

## **5.2 Security Requirements (SR)**

- SR-1: Username and password will be entered on the client side
- SR-2: Username and password will be verified on the server side
- SR-3: Client side will display pass/fail of credentials and allow/deny upload

### **5.3 Software Quality Attributes**

- Reliability: The application must be extremely reliable, working 100% of the time, so unit and field testing will have to be done to ensure this.
- Correctness: Additionally the application must be able to interact appropriately with the Fish Survey Database and submit data correctly.
- Maintainability: The software must be able to be updated as the list of fish species, locations, etc. changes.
- Usability: The interface must be intuitive, easy, and quick to use.

## **6. Other Requirements (R)**

- R-1: Testing and documentation of testing should be done to ensure the reliability of the product.
- R-2: Additionally the client will need full documentation on how to run the application, upgrades and/or maintenance.

## **7. Final Deliverables (D)**

- D-1: A Creel Input System executable for use on Getac tablets.
- D-2: A copy of all source code.
- D-3: A demonstration of the system.
- D-4: Email addresses for all team members to be used by maintenance/upgrade programmers.

## **Appendix A: Glossary**

[Access Type] – Creel clerk conducts creel surveys in one location all day.

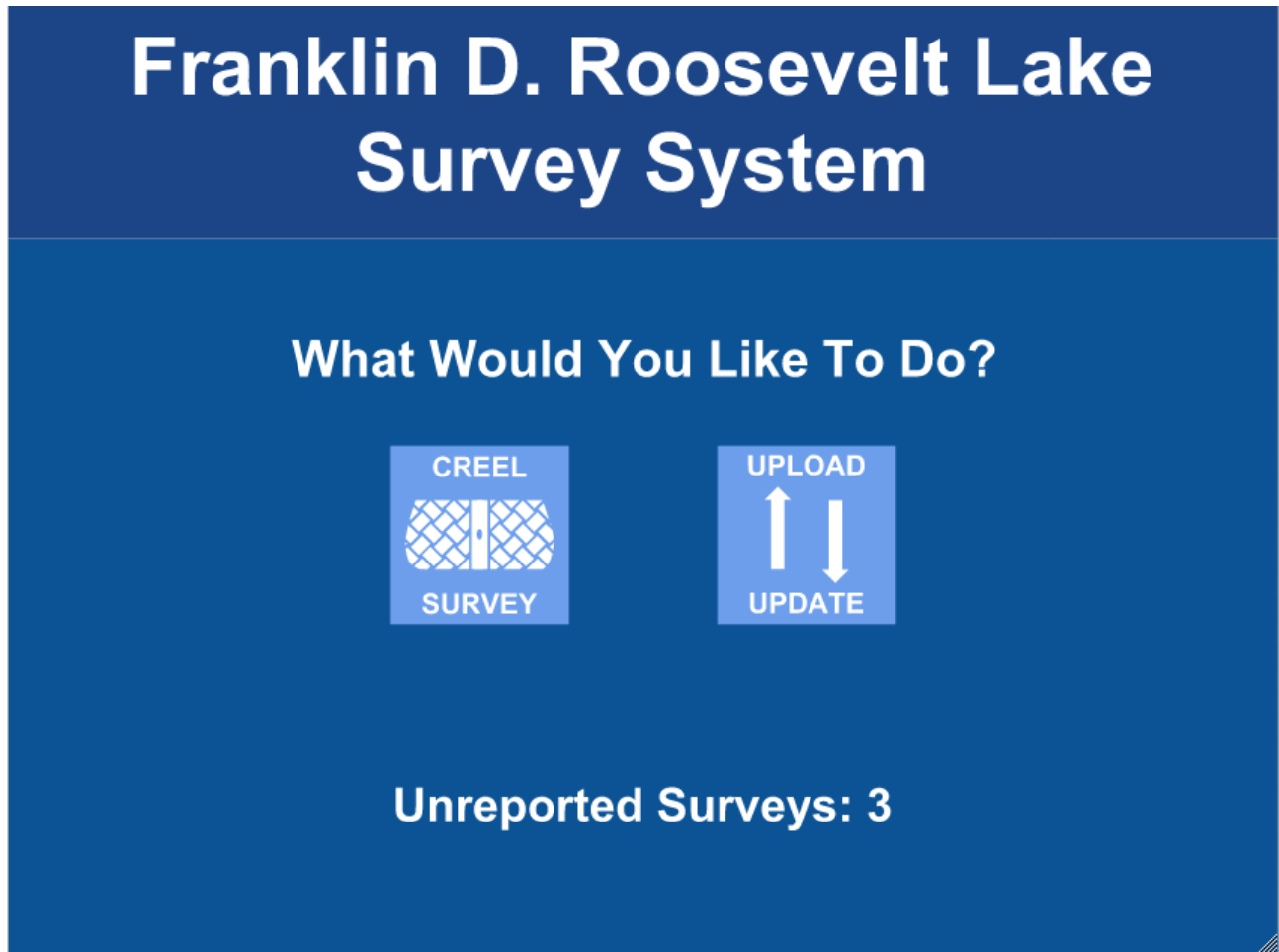
[Angler] – Fisherman

[Bus Route Type] – Creel clerk proceeds along a predefined route, arrives at each location on a precise schedule, conducts creel surveys at a site for a defined period of time, then proceeds to the next site along the route.

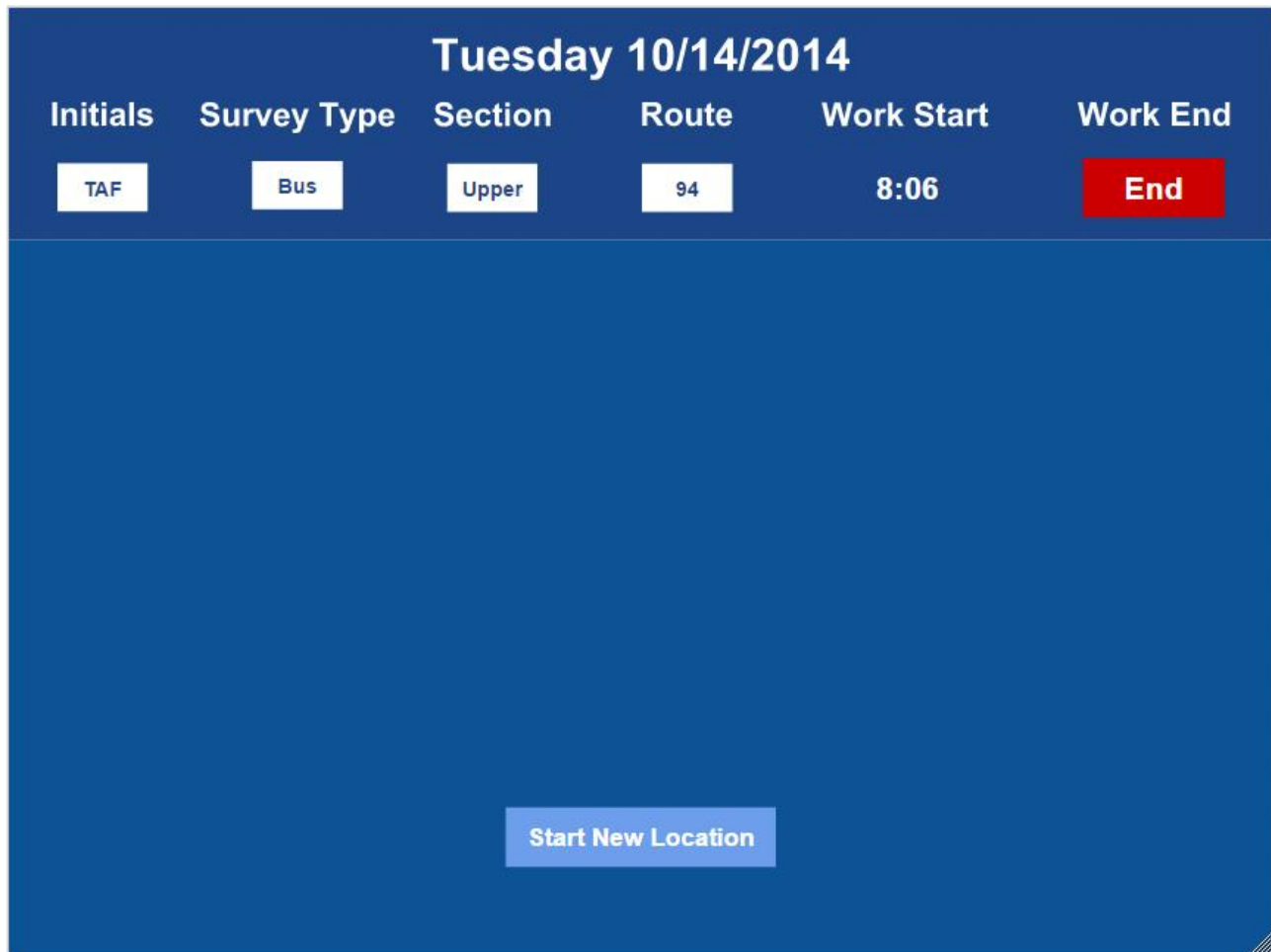
[Creel Survey] – An interview where the surveyor asks fishermen questions regarding their fishing activities and records their responses.

## Appendix B: User Interfaces

UI-1: Proposed Welcome Screen



## UI-2.1: Proposed General Work Information Screen



The image shows a software interface for a fish survey database. At the top, a dark blue header bar contains the date "Tuesday 10/14/2014" in white text. Below the header, there are six input fields arranged horizontally. The first four fields are labeled "Initials", "Survey Type", "Section", and "Route" respectively. The fifth field is labeled "Work Start" and the sixth is labeled "Work End". The "Initials" field contains the text "TAF". The "Survey Type" field contains the text "Bus". The "Section" field contains the text "Upper". The "Route" field contains the text "94". The "Work Start" field contains the text "8:06". The "Work End" field contains the text "End" in white text on a red background. Below these fields is a large blue rectangular area. In the center of this area is a light blue button with the text "Start New Location" in white.

Initials	Survey Type	Section	Route	Work Start	Work End
TAF	Bus	Upper	94	8:06	End

Start New Location

## UI-2.2: Proposed General Work Information Screen with Day Summary

**Tuesday 10/14/2014**

Initials	Survey Type	Section	Route	Work Start	Work End
TAF	Bus	Upper	94	8:06	End

Location	Start	End	Parties	Fish
Bus Route 94	8:05	8:55	4	37
Bus Route 95	9:37	10:19	7	31
Bus Route 96	10:53	11:45	2	6
Bus Route 97	12:13	13:08	10	53

Start New Location

## UI-3.1: Proposed Angler Creel Survey Entry Screen

**5th Location**

Location Start Time	Location	Time At Location
8:06	30 - Snag Cove	0:50

**Party #3**

Party Size	No. of Anglers	Start Time	End Time	Complete Trip	Target Species 1	Target Species 2
2	2 +	6:30	13:06	Y N	Rainbow Trout	Kokanee Salmon

+ Fish      New Party      End Location

## UI-3.2: Proposed Angler Creel Survey Entry with Bus Route Timer Screen

### 5th Location

Location Start Time

8:06

Location

30 - Snag Cove

Time At Location

0:50

### Party #3

Party Size	No. of Anglers	Start Time	End Time	Complete Trip	Target Species 1	Target Species 2
2	2 +	6:30	13:06	Y N	Rainbow Trout	Kokanee Salmon

Species Caught	Kept / Released	Total	Length	Weight	Mark / Tag	Fin Clip	Tag Type	Tag Number	Notes
Rainbow Trout	K R	1	380	712	Y N	Y N	Floy	ABCDEFGHIJ 1234567890	
Kokanee Salmon	K R	1	97	216	Y N				
Rainbow Trout	K R	7							
Kokanee Salmon	K R								

+ Fish

New Party

End Location

## UI-3.3: Proposed Fish Line with Species and Kept/Released

Kokanee Salmon

K R

## UI-3.4: Proposed Fish Line, Fish Kept with Tag Info

Species Caught	Kept / Released	Total	Length	Weight	Mark / Tag	Fin Clip	Tag Type	Tag Number	Notes
Rainbow Trout	K R	1	380	712	Y N	Y N	Floy	ABCDEFGHIJ 1234567890	



UI-3.5: Proposed Fish Line, Fish Kept Without Tag

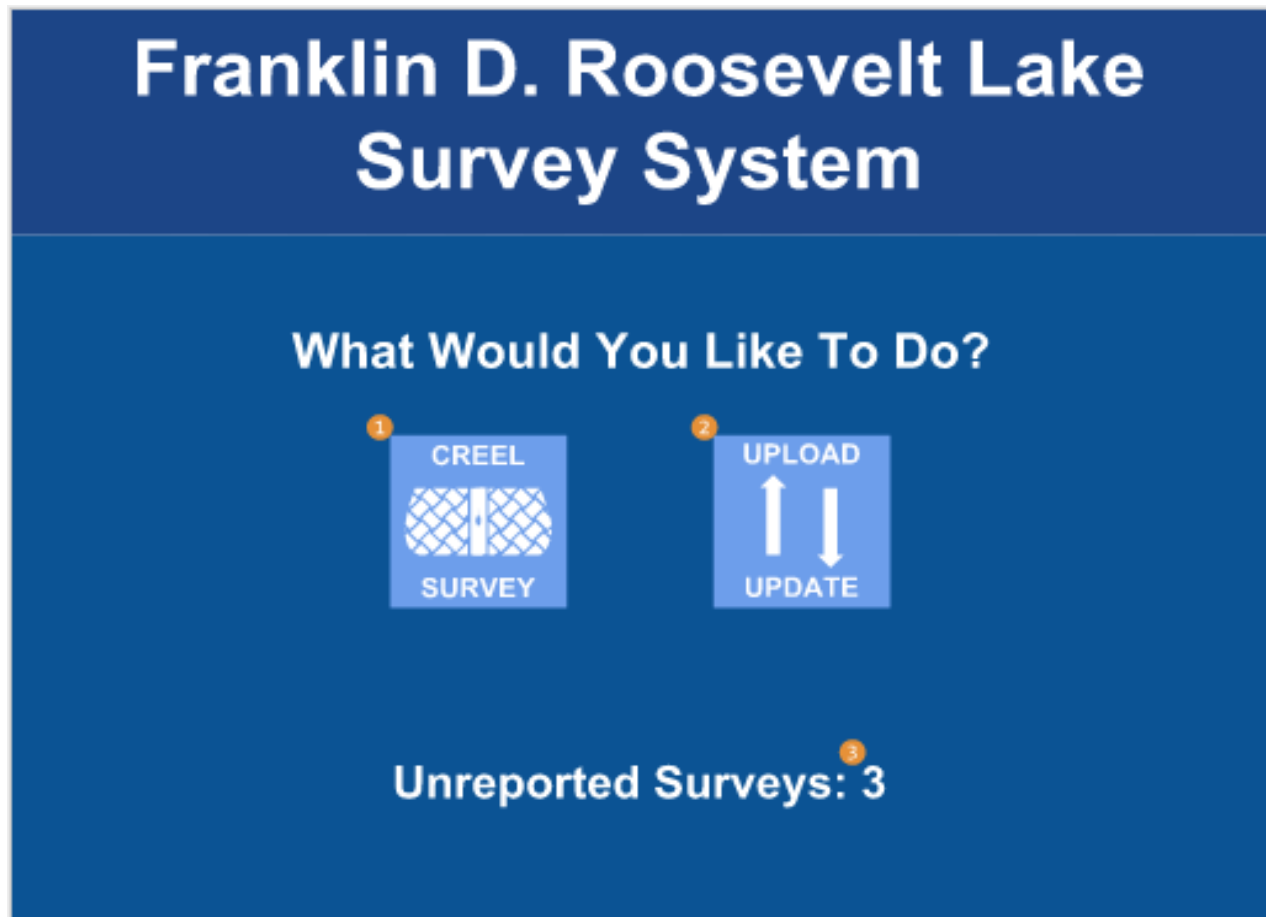
Kokanee Salmon	K	R	1	97	216	Y	N	
----------------	---	---	---	----	-----	---	---	--

UI-3.6: Proposed Fish Line, Fish Released

Rainbow Trout	K	R	7	
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## Appendix C: User Stories

### US-1: Proposed Welcome Screen User Stories



The user will begin the program exclusively with one of two goals. They will either be within a Wifi location with the intent to upload their surveys, or they will be on location with the intent to complete a day's survey.

The active controls and labels on the screen will work as follows:

1. The [CREEL SURVEY] button will exit the startup screen and launch the day summary page for the creel survey.
2. The [UPLOAD UPDATE] button will do the following when clicked:
  - a. Attempt to make a connection database web applications. Once a connection is made, the system will update location and fish variables to match the database, and it will upload each day's survey to the database.
  - b. Place an undetermined waiting animation somewhere in the center of the screen while the process completes.
  - c. Disable all buttons on the screen while the process completes.

3. The Unreported Surveys label will display the count of surveys that have not yet successfully been uploaded to the database. Thus the number on this label will be incremented with each new survey, and it will be reset to zero every time all surveys have been uploaded.

## US-2: Proposed General Work Information Screen User Stories

**Tuesday 10/14/2014**

Initials	Survey Type	Section	Route	Work Start	Work End
TAF	Bus	Upper	94	8:06	End

Location	Start	End	Parties	Fish
Bus Route 94	8:05	8:55	4	37
Bus Route 95	9:37	10:19	7	31
Bus Route 96	10:53	11:45	2	6
Bus Route 97	12:13	13:08	10	53

**Start New Location**

**Upper Portion** - The first three controls from the left will be the only controls active on the page when the page is first loaded as a new survey. The controls in this section will work as follows

1. Initials - When the user click on this box to enter their initials, an onscreen keyboard will appear to allow the user to easily type their initials.
2. Survey Type - This will be a dropdown that allows either the choice of either a Bus or Access type.
3. Section - Dropdown that allow the choice from Upper, Middle, and lower sections.
4. Route - This dropdown menu will only be active if the user selected the survey as a Bus type.
5. Work Start - Once the previous controls on this line have been entered, this green button will be made active. When the user clicks on the button, the following will happen:

- a. The button will turn into a time stamp on the UI that shows when the day started.
  - b. The [Work End] button will be activated.
  - c. The [Start New Location] button will also be activated.
6. Work End - This button will turn into a timestamp of when it was clicked

**Lower Portion** - This section will be inactive until the day has started.

7. Survey Summary Section - This area will print all locations the clerk has already surveyed.
8. Start New Location - This button will take you to the location survey screen when it is pressed. When the work day is over, this button will turn into a [Return To Main Screen] button that will take you back to the main page.

### US-3: Proposed Angler Creel Survey Entry Screen User Stories

**5th Location**

Location Start Time	Location	Time At Location
8:06	30 - Snag Cove	0:50

**Party #3**

Party Size	No. of Anglers	Start Time	End Time	Complete Trip	Target Species 1	Target Species 2
2	2 +	6:30	13:06	Y N	Rainbow Trout	Kokanee Salmon

Species Caught	Kept / Released	Total	Length	Weight	Mark / Tag	Fin Clip	Tag Type	Tag Number	Notes
Rainbow Trout	K R	1	380	712	Y N	Y N	Floy	ABCDEFGHIJ 1234567890	
Kokanee Salmon	K R	1	97	216	Y N				
Rainbow Trout	K R	7							
Kokanee Salmon	K R								

**+ Fish** **New Party** **End Location**

**Upper Portion** - This section displays the metadata for the current survey location. This data includes:

- The current survey location index for the day.
- The start time for the location.

- The location code and name. This will be a drop down in which the user must select a location before the lower portion is enabled.
- The time the clerk has been at the current location.

**Lower Portion** - This section will present all the controls for the group and fish data entry.

**Party Data Entry Line** - The input methods of the controls fit into the following categories:

- Numerical Text Entry - Party Size, Start Time, End Time, and Zip Code.
- Y | N Toggle Control (Yes/No) - Completed Trip.
- Alphanumeric Text Entry - Target Species 1 and Target Species 2.
- Special - No. of Anglers. Pressing the [+] button on this control will cause a small pop-up control to appear that will disable all controls, and it will present the clerk with the ability to add anglers to the group by entering a angler type and zip code for each angler.

**Fish Data Entry Lines** - When a new fish line is created, the clerk will be presented with a drop down to select the fish type and whether the angler kept the fish or released it. The visibility of the other controls depend on this second decision.

**K. Kept Fish**

- The total number of fish will automatically be selected as a single kept fish. This number will not be editable by the clerk.
- The clerk will also be required to enter data into the numerical text fields of fish weight and length.
- The clerk will also have to select whether there is a Mark or Tag on the fish. The visibility of the remaining controls are determined on the selection.
  - Y. Yes, there is a Mark or Tag present. The user will then be required to fill the following fields.
    - Indicate whether a Fin Clip is present using a toggle switch
    - Select a Tag Type using the corresponding drop down
    - Enter is an alphanumeric Tag Number
  - N. No, there is no Mark or Tag present. No other controls will be presented on this line.

**N. Released Fish**

- The clerk must then enter in the total number of fish of the selected species were released using an numeric keypad that will be displayed on the screen.
- No other controls will be presented on this line.

**Lower Buttons** - These buttons will accomplish and be enabled as follows:

- [(+) Fish] Button
  - This button will only be enabled when there is no incomplete fish or party line.
  - When clicked, this button will add a new fish data entry line and disable itself until the above condition is re-met.
- [New Party] Button

- This button will only be enabled when there is no incomplete party line.
  - When clicked, this will clear any data in incomplete fish lines on the current page, and save all completed fish lines in relation to the party information. It will then clear the fish and party lines so a new fishing party can be entered.
- [End Location] Button
  - This button will always be enabled.
  - When clicked, this will save all party information as objects inside the location object, and it will return to screen 2, the general work with day summary page.

## Appendix D: Legacy Forms

**Franklin D. Roosevelt Lake Creel Survey Form**

2/8/05

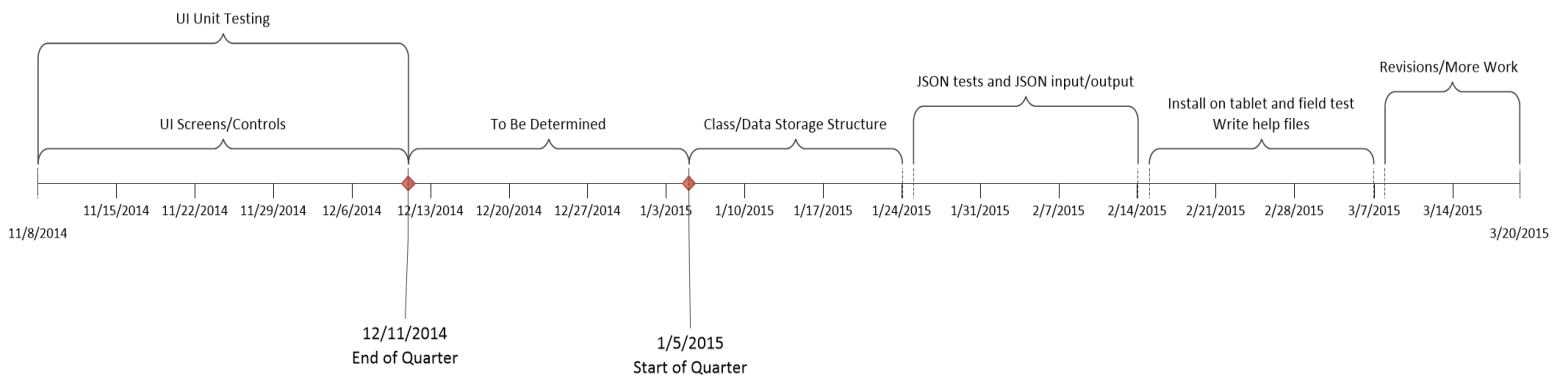
Date (mm/dd/yy) 2 8 05    Survey Type 1    Creel Clerk Initials J E m

Weekday 6    Start Work 0 7 0    Finish Work 0 0 0    Page 1 of 2

Section 1    Start Creel 1 0 0    Finish Creel 0 0 0    Total hours Creel 10.0

Comment #	Location	Party #	Party Size	Time Checked	No. of Anglers	Angler Type	Start Time	End Time	Complete Trip	Zipcode	Target Species 1	Target Species 2	Species Caught	Released / Kept	Total Length (mm)	Weight (g)	Species Origin	Mark	Fin Clip	Tag Color	Tag Number
	9		6	13:30	3	1	06:30	13:15	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:15		1	06:30	13:15	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:15		1	06:30	13:15	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:15		1	06:30	13:15	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
	5		3	13:40	3	1	07:00	13:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:20		1	07:00	13:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:20		1	07:00	13:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:20		1	07:00	13:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
	5		2	14:10	2	1	07:00	13:30	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:30		1	07:00	13:30	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:30		1	07:00	13:30	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				13:30		1	07:00	13:30	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
	5		2	15:50	2	1	07:00	15:10	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				15:10		1	07:00	15:10	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				15:10		1	07:00	15:10	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				15:10		1	07:00	15:10	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
	5		2	16:40	2	1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20		1	08:00	16:20	1	99206	3	0	3	3/1	825	385 mm	2	0	0	0	
				16:20																	

## Appendix E: Proposed Timeline and Distribution of Work



November 14						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
October 26	27	28	29	30	31	November 1
2	3	4	5	6	7	8
					3.1 (Thomas)	
					R-1 (Ralph and Stacy)	
9	10	11	12	13	14	15
3.1 (Thomas)						3.2 (Thomas)
R-1 (Ralph and Stacy)						
16	17	18	19	20	21	22
3.2 (Thomas)						3.3 (Thomas)
R-1 (Ralph and Stacy)						
23	24	25	26	27	28	29
3.3 (Thomas)						
R-1 (Ralph and Stacy)						
30						
3.3 (Thomas)						



December 14						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
November 30	December 1	2	3	4	5	6
	3.3 (Thomas)					
	R-1 (Ralph and Stacy)					
7	8	9	10	11	12	13
3.3 (Thomas)				Vacation, Work to be determined		
R-1 (Ralph and Stacy)						
14	15	16	17	18	19	20
Vacation, Work to be determined						
21	22	23	24	25	26	27
Vacation, Work to be determined						
28	29	30	31	January 1	2	3
Vacation, Work to be determined						

January 15						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
December 28	29	30	31	January 1	2	3
				Vacation, Work to be determined		
4	5	6	7	8	9	10
Vacation, Work to be determined	3.1, 3.2, 3.3 code behind (All)					
11	12	13	14	15	16	17
3.1, 3.2, 3.3 code behind (All)						
18	19	20	21	22	23	24
3.1, 3.2, 3.3 code behind (All)					3.4 (All)	
25	26	27	28	29	30	31
3.4 (All)						

February 15						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
February 1	2	3	4	5	6	7
3.4 (All)			3.5 (All)			
8	9	10	11	12	13	14
3.5 (All)						
15	16	17	18	19	20	21
R-1, 2.6, and Deliverables (All)						
22	23	24	25	26	27	28
R-1, 2.6, and Deliverables (All)						
March 1	2	3	4	5	6	7

March 15						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
March 1	2	3	4	5	6	7
R-1, 2.6, and Deliverables (All)						
8	9	10	11	12	13	14
Revisions/Optional Work (All)						
15	16	17	18	19	20	21
Revisions/Optional Work (All)						
22	23	24	25	26	27	
29	30	31	April 1	2	3	4

## Appendix F: Issues List

1. (DB Schema)**TBD**