

Ministry of Forests, Lands and Natural Resource Operations

IFORWASTE User Manual

<u>Manual Developed by:</u>	<u>Timber Pricing Branch</u>
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1 Introduction

This user manual describes the process for using the iFORWASTE application for the purpose of completing waste assessment audits as part of the provincial waste policy.

The Ministry of Forests, Lands and Natural Resource Operations (FLNRO) receive information from licensees through the online Waste System. Using the iFORWASTE application, a FLNRO Waste Checker can download a waste submission and complete a field audit of the information received as part of the waste audit process.

The audit process requires the licensee's submitted information to be downloaded from the online Waste System to an iPad. This enables the information to be reviewed and changes made during the waste audit. After reviewing the results, a determination of acceptability with the Waste Manual standards will be calculated.

Audits require extensive numerical comparisons of the licensee submitted data to the Waste Checker's audit data. The iFORWASTE application was designed to assist the Waste Checker's audit, and help determine if the waste submission meets the standards set in the Waste Procedures Manual.

Version 1.0 of iFORWASTE was released in June 2015 and has been used on the coast since then. Version 1.2.0 released in the spring of 2017 includes a number of enhancements including the use of interior grades. This new version provides for expanding the use of the application across the province as well as implements a number of enhancements developed over the past 18 months.



2 Loading the iFORWASTE Application and System Requirements

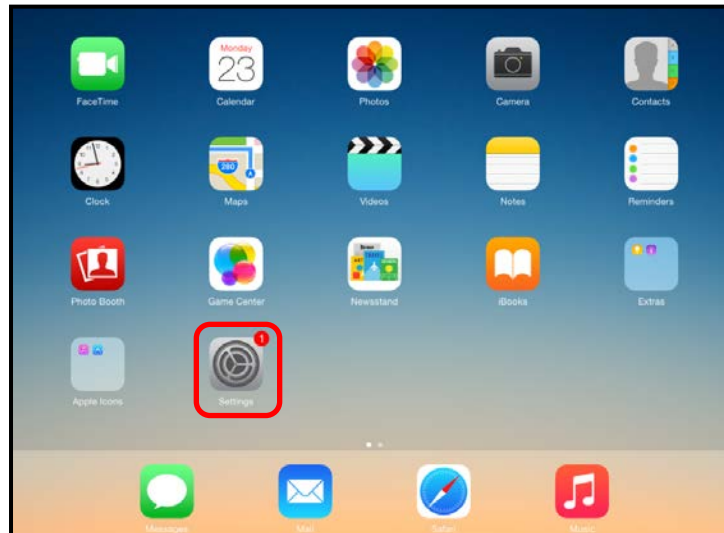
2.1. IFORWASTE System Requirements

IFORWASTE is an application designed specifically for the fourth generation iPad's running iOS version 10.0. iOS (iPad Operating System) is the type of operating system used on Apple devices and is the equivalent of the Windows operating system on the PC platform. The iFORWASTE application will not work on other types of devices.

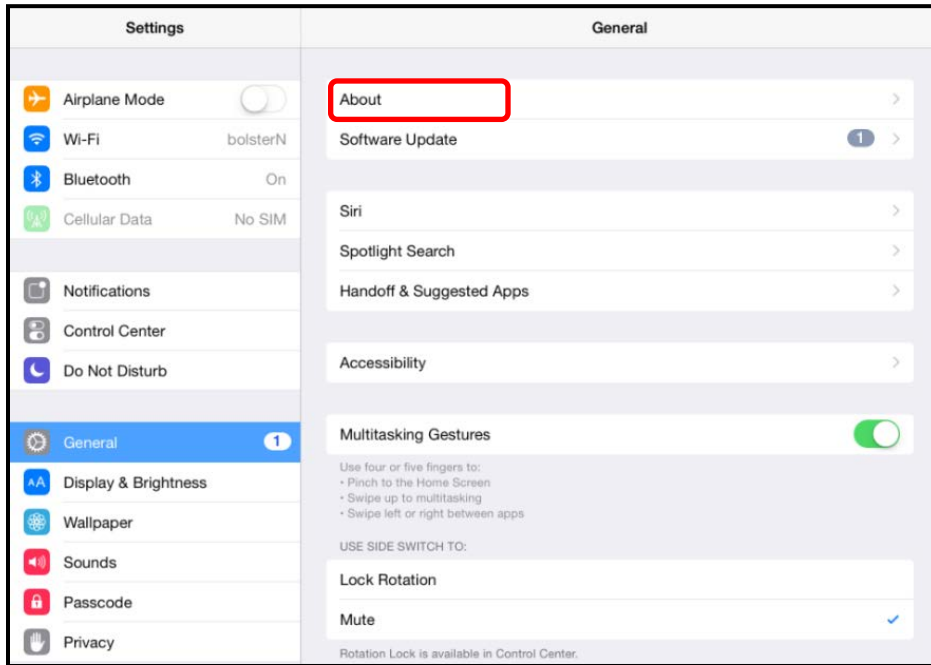
Note: Once installed, iOS updates cannot be uninstalled on iPads (Unlike windows PC updates). Do not install any iOS updates to iPads running iFORWASTE until you receive confirmation from your regional Waste Specialist. Installation of an incompatible IOS may cause the application to not operate correctly.

To check the version of your iPad's iOS:

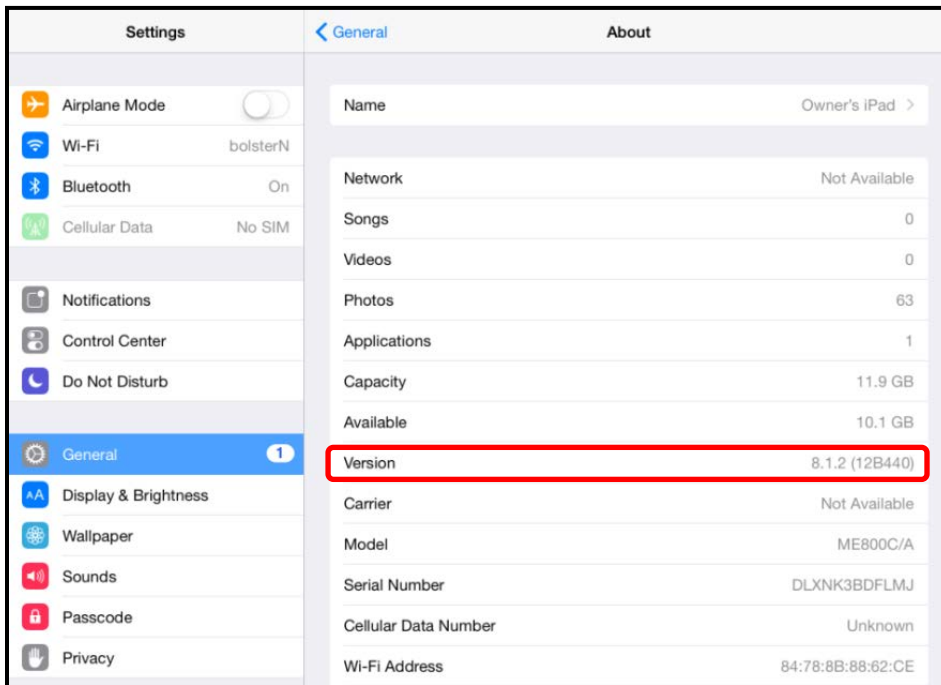
1. Navigate to the home screen and tap the **Settings** icon.



2. In the Settings sidebar, tap **General** and then tap **About**.



3. The iOS version is shown in the **Version** field.



2.2. Loading the iFORWASTE Application

The BC Government has migrated to a new Mobile Device Management Service (MDMS) using **AirWatch**, an enterprise mobility platform that simplifies management and security for mobile devices and the apps that run upon them.

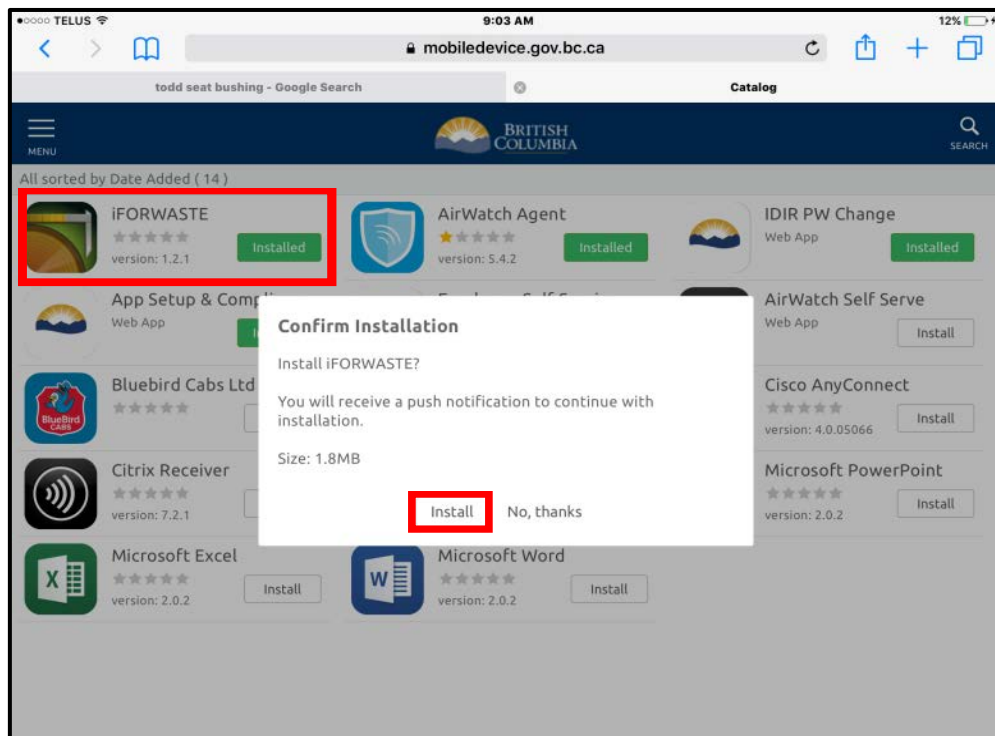
All staff with mobile devices (e.g. iPhones, iPads) must be enrolled, and as part of this enrolment, will have an AirWatch “Catalog” icon available. This “Catalog” will have the iForWaste app available to approved staff, who can then install iForWaste onto their mobile device."

Users unfamiliar with general tools and usage of the iPad can refer to [Appendix B: iPad Basics](#) at the end of this document for general iPad usage.

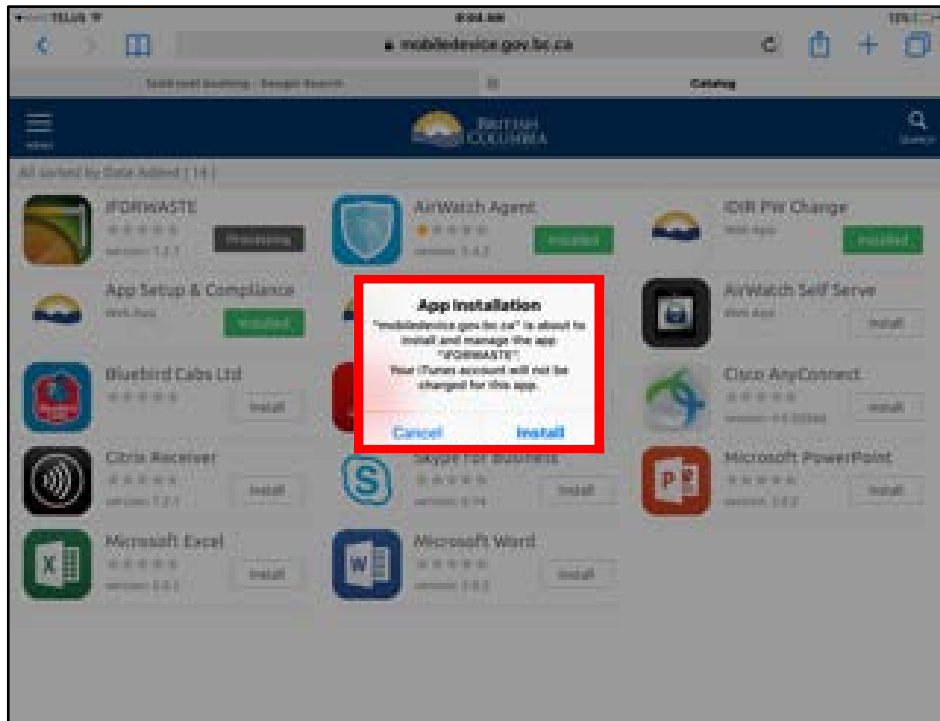
2.3. Installing iFORWASTE

To install the application follow these steps:

1. District Waste Specialist (applicant) notifies the FLNRO Area Waste specialist that they need access to iFORWASTE.
2. Area Waste Specialist confirms the request and notifies TPB Provincial Waste Specialist or Waste Policy Forester of the applicant’s request.
3. Provincial Waste Specialist or Waste Policy Forester approves access to iFORWASTE through Airwatch and approves access to Waste District –View status through ADAM. This is a two-step process required before the user will be able to see the application in the MDMS catalogue.
4. Applicant accesses the MDMS catalogue and installs the application.
5. Locate and open the Airwatch ‘Catalog’ Icon on the iPad.
6. Locate the Iforwaste installation icon and tap on ‘install’
7. A white Pop up Window will appear, Select ‘Install’



1. A Warning pop up window will appear, select 'Install'



2. The application will begin installing
3. Close the Catalog window
4. Iforwaste will be installed on your iPad and home screen.
5. Remove the old version of iFORWASTE from the iPad

2.4. Opening the iFORWASTE Application

To open the iFORWASTE application, navigate to the home screen and tap the **iFORWASTE** application icon.



3 IFORWASTE Calculation Conventions

IFORWASTE is waste audit compilation software that uses many calculations to produce the results and reports. Rounding of calculations has been completed in a number of sections of the software applied as follows:

3.1.1 Plot Level

- Volumes – 4 significant figures (0.0000)
- Values – 2 significant figures (\$0.00)

3.1.2 Stratum Level

- Volumes – 4 significant figures (0.0000)
- Values – 2 significant figures (\$0.00)

3.1.3 Block Level

- Volumes – 4 significant figures (0.0000)
- Values – 2 significant figures (\$0.00)

3.1.4 Reports

- Species/Grade Volumes - 4 significant figures (0.0000)
- Species/Grade Values – 2 significant figures (\$0.00)

3.1.5 Summary Totals

- Volumes - 2 significant figures (0.00)
- Values – 2 Significant Figures (\$0.00)

Note: In many cases iforwaste uses more significant figures than the online waste system. In some calculations this may result in small discrepancies between results from iforwaste vs the online Waste System.

4 IFORWASTE Page naming

The various pages that control the use of iFORWASTE have been named to assist in the use of the application. The pages have been named by menu topic and then sequentially as the user progresses into the application IE.

>Menu topic 'View Downloaded'

>Ifor201-'Downloaded'

>Ifor202 'Cutblock'

>Ifor203 'Stratum'

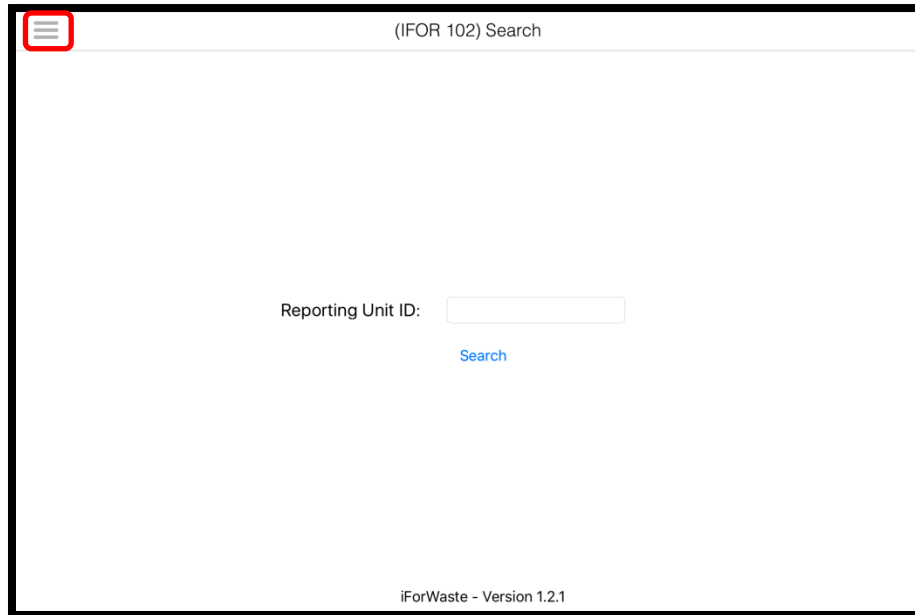
>Ifor204 'Plot'

>Ifor205'piece data'



5 IFORWASTE Menu

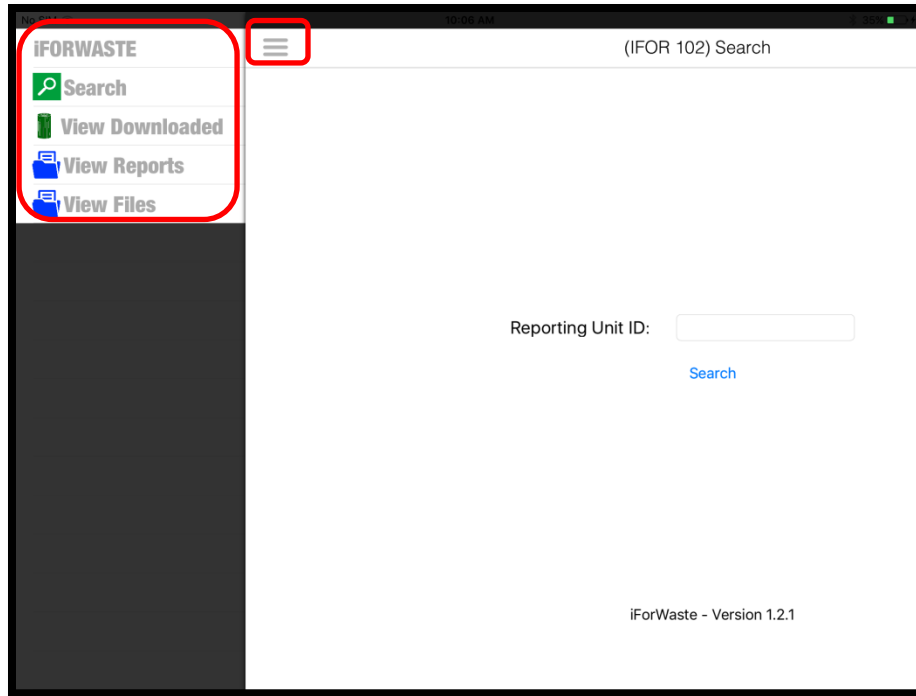
The iFORWASTE Menu can be accessed by tapping the **iFORWASTE Menu** button present at the top left of all screens.



From the iFORWASTE menu, the users can select any of the following options:

- **Search (IFOR101):** Allows users to access the online Waste System to download cut block information to the iPad. Search is described in detail in [Section 4 - Search](#).
- **View Downloaded (IFOR201):** Contains the downloaded data from the online Waste System for the cut block and tracks all information a Waste operator enters when performing a Waste audit. View Downloaded is described in detail in [Section 7 - Downloaded Blocks](#).
- **View Reports (IFOR 301):** Allows the user to view the list of reports created in the View Blocks section. View Reports is described in detail in [Section 8 - Reports](#).
- **View Files (IFOR 701):** contains the exported block .ifw files.





6 Cut block Search

Search allows users to access the Waste System to download cut block information to the iPad that will be audited. Cut block survey data is extracted from the Waste System to the iPad into a list found on the View Block screen and listed by Reporting Unit ID number with Block, Timber Mark, Net Area (ha), and Block Status information.

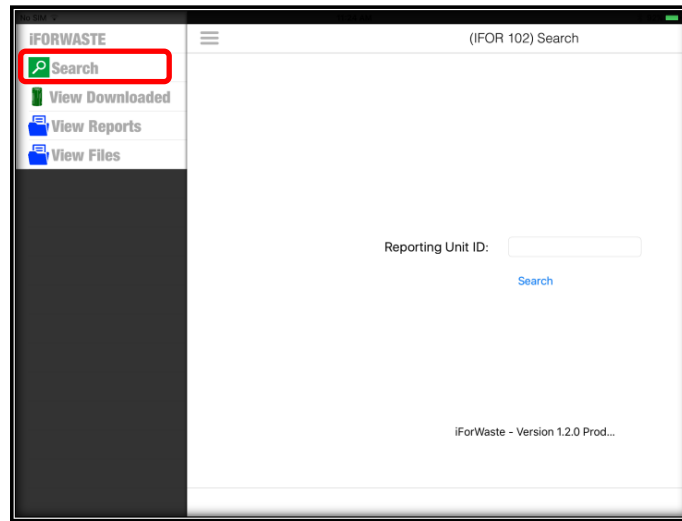
Note: you must have internet access for this function to work.

To download a **block** to your iPad:

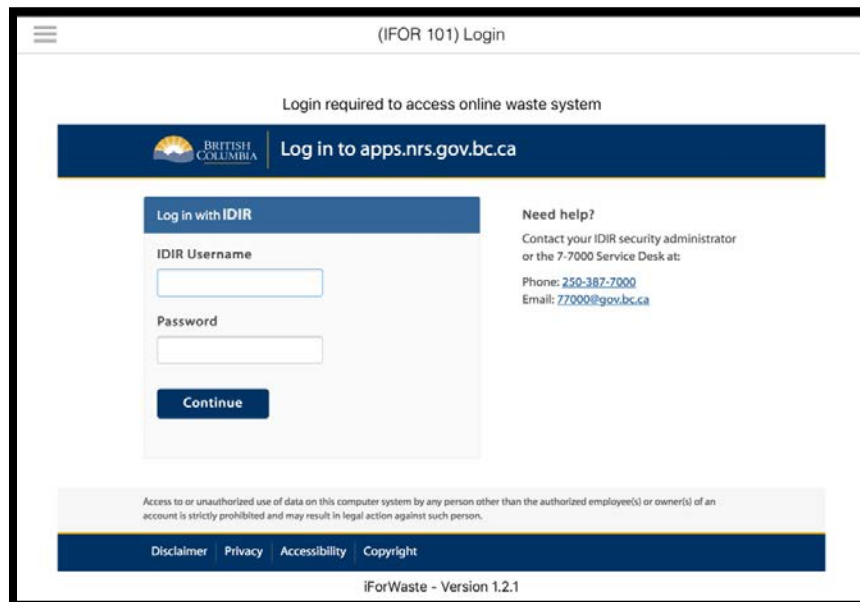
1. Tap the **iFORWASTE Menu** button.



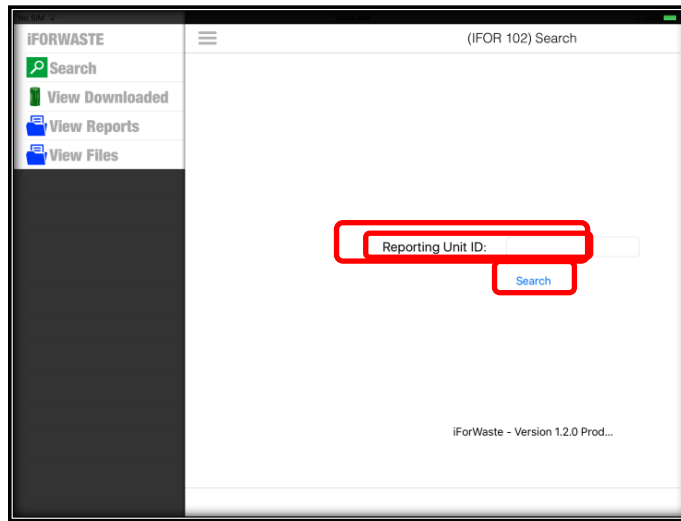
2. Tap Search (IFOR102).



3. When prompted, login to online Waste System by entering your IDIR username and password.



4. Enter the **Reporting Unit ID** the required cut block is located in and tap **Search**.



The Cut Block List screen will open, and all blocks in the Reporting Unit will be listed. Tap the required block and then it will be added to the iFORWASTE application.

(IFOR 103) Cut Block List				
Reporting Unit No.	Block	Timber Mark	Net Area (ha)	Block Status
6	1	16341	40.7	Draft

Note: Blocks that have already been added to your iPad will be shown with Grey highlighting. If the block has already been added to your iPad, you will not be able to select it for download.

(IFOR 103) Cut Block List				
Reporting Unit No.	Block	Timber Mark	Net Area (ha)	Block Status
7	B1	72894B	40.7	Draft



7 View Downloaded (IFOR201)

The view downloaded section of iFORWASTE is where the majority of the work for a WASTE audit is performed. The WASTE checker will use the view downloaded screen to list downloaded blocks and access block data to be audited. Functions available from the View Downloaded Blocks Screen are:

- Viewing survey data through Block, Stratum, and Plot screens
- Inputting audit data on the Block, Stratum, and Plot screens
- Reviewing audit results at the Plot, Stratum and Block levels

7.1 Downloaded Blocks (IFOR201)

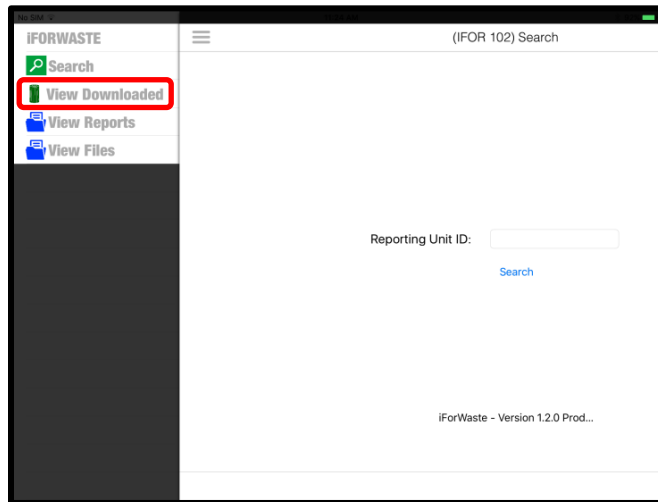
The Downloaded Blocks screen list all blocks that have been downloaded and is used by the WASTE Checker to navigate to the cut block that is being audited during the WASTE Check.

To open the list of blocks downloaded on your iPad:

1. Tap the **iFORWASTE Menu** button.



2. Tap **View Downloaded**.



3. The list of blocks loaded onto the iPad is visible in the **Downloaded** list. From this list, the following options are available:
 - a) Users can tap one of the Blocks to open the Cut Block Info screen (see [Section 6.2 – Cut Block Screen](#)).
 - b) Tap a hyperlink (**Block** or **Net Area (ha)**) to sort the list by that field.

(IFOR 201) Downloaded				
Reporting Unit No.	Block	Timber Mark	Net Area (ha)	Block Status
6	1	P:16341	40.7	Draft
7	B1	P:72894B	40.7	Draft

7.2 Cut Block Screen (IFOR 202)

The Cut Block screen allows the WASTE Checker to audit the cut block survey data by comparing the survey data to the WASTE Check assessments and measurements.

The Cut Block information screen is broken into 4 sections:

1. Timber Mark Information (see [Section 7.2.3 – Timber Mark Information](#))
2. Cut Block Information (see [Section 7.2.4 – Cut Block Information](#))
3. Stratums Information (see [Section 7.2.5 – Stratums Information](#))
4. Cut Block Value/Volume Table (see [Section 7.2.6 – Cut Block Value/Volume Table](#))



Timber Mark

Cut Block Information

Stratums Information

Cut Block Value / Volume Table

(IFOR 202) Cut Block - 1 Save

Timber Mark	Area (ha)	Waste Monetary Reduction Factor	Vol/ha (m ³ /ha) Avoid X or BTR	Benchmark (m ³ /ha)	Current WMRF	Edit Timber Mark
16341	40.7	Applied	50.53	35.00	0.3073	➤

Reporting Unit No.

CP / Cutblock

Licence

Location

Logged From

Logged To

Logging Complete

Survey Date

Check Area (ha)

Net Area (ha)

NP/NF Area

Maturity Code

Check Maturity Code

Return Number

Surveyor Licence

WASTE Checker

Name

Professional Designation

Registration Number

Position

Notes

Jan 31, 17 UAT

Delete Cut Block
Export Cut Block
Report

(IFOR 202) Cut Block - 2 Save

NP/NF Area

Maturity Code

Check Maturity Code

Stratums [Add Stratum](#)

Waste Type	Harvest Method	Plot Size	Waste Level	Area (ha)	
D	B	0	L	5.00	➤
P	H	4	M	25.00	➤
S	T	R	E	2.00	➤

	Original	Check	Difference %
Total Value	\$0.00	\$0.00	0.0
Billable Volume (m ³ /ha)	7.6828	7.6828	0.0
Cut Control Volume (m ³ /ha)	7.6828	7.6828	0.0

IForWaste - Version 1.2.1

Delete Cut Block
Export Cut Block
Report

In the Cut Block screen there are different types of text fields available:

- **Grey filled boxes:** These boxes cannot be edited as they contain the original survey information.
- **White/Yellow boxes:** These boxes can be edited with audit text/numeric values by the WASTE checker during the WASTE audit process.

Other options available to the users in the Cut Block screen are:



- **Menu:** Return the user to the View Blocks screen to view other blocks that have been downloaded to the iPad.
- **Save:** Saves any edits made in the Cut Block screen.
- **Report:** Generate a report for the cut block.
- **Export Cut Block:** Allows the user to create an export file (see [Section 7.2.1 Exporting a cut block file](#))
- **Delete Cut Block:** Removes the block from the ipad (See [Section 7.2.2 Deleting a cut block](#))

☰
(IFOR 202) Cut Block - 1
Save

Timber Mark	Area (ha)	Waste Monetary Reduction Factor	Vol/ha (m ³ /ha) Avoid X or BTR	Benchmark (m ³ /ha)	Current WMRF	Edit Timber Mark
16341	40.7	Applied	50.53	35.00	0.3073	➔

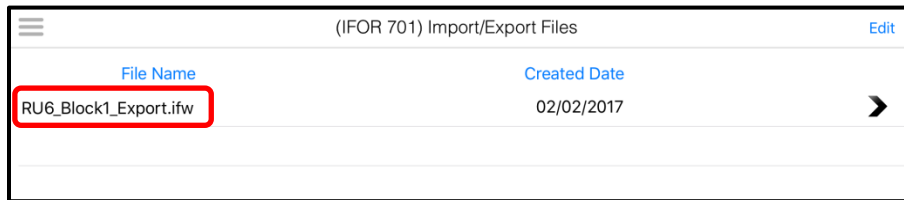
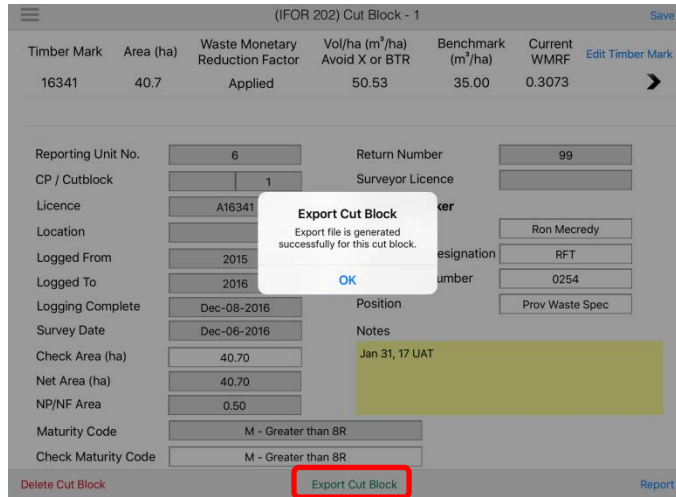
Reporting Unit No. <input type="text" value="6"/>	Return Number <input type="text" value="99"/>
CP / Cutblock <input type="text" value="1"/>	Surveyor Licence <input type="text"/>
Licence <input type="text" value="A16341"/>	WASTE Checker
Location <input type="text"/>	Name <input type="text" value="Ron Mecredy"/>
Logged From <input type="text" value="2015"/>	Professional Designation <input type="text" value="RFT"/>
Logged To <input type="text" value="2016"/>	Registration Number <input type="text" value="0254"/>
Logging Complete <input type="text" value="Dec-08-2016"/>	Position <input type="text" value="Prov Waste Spec"/>
Survey Date <input type="text" value="Dec-06-2016"/>	Notes
Check Area (ha) <input type="text" value="40.70"/>	Jan 31, 17 UAT
Net Area (ha) <input type="text" value="40.70"/>	
NP/NF Area <input type="text" value="0.50"/>	
Maturity Code <input type="text" value="M - Greater than 8R"/>	
Check Maturity Code <input type="text" value="M - Greater than 8R"/>	

Delete Cut Block
Export Cut Block
Report



7.2.1 Export Cut block

From the cut block screen, cut block data can be exported for transfer to another iPad. By clicking on the Export Cut Block icon data is exported to an .ifw file that is accessed from the Menu –View Files tab.



7.2.2 Deleting a Cut Block

The WASTE checker can delete a cut block from the iFORWASTE application in order to delete cut blocks that are no longer needed on the iPad.

(IFOR 202) Cut Block - 1 Save

Timber Mark	Area (ha)	Waste Monetary Reduction Factor	Vol/ha (m ³ /ha) Avoid X or BTR	Benchmark (m ³ /ha)	Current WMRF	Edit Timber Mark
16341	40.7	Applied	50.53	35.00	0.3073	➔

Reporting Unit No.	<input type="text" value="6"/>	Return Number	<input type="text" value="99"/>
CP / Cutblock	<input type="text" value="1"/>	Surveyor Licence	<input type="text"/>
Licence	<input type="text" value="A16341"/>	WASTE Checker	
Location	<input type="text"/>	Name	<input type="text" value="Ron Mecredy"/>
Logged From	<input type="text" value="2015"/>	Professional Designation	<input type="text" value="RFT"/>
Logged To	<input type="text" value="2016"/>	Registration Number	<input type="text" value="0254"/>
Logging Complete	<input type="text" value="Dec-08-2016"/>	Position	<input type="text" value="Prov Waste Spec"/>
Survey Date	<input type="text" value="Dec-06-2016"/>	Notes	<div style="background-color: yellow; padding: 5px;">Jan 31, 17 UAT</div>
Check Area (ha)	<input type="text" value="40.70"/>		
Net Area (ha)	<input type="text" value="40.70"/>		
NP/NF Area	<input type="text" value="0.50"/>		
Maturity Code	<input type="text" value="M - Greater than 8R"/>		
Check Maturity Code	<input type="text" value="M - Greater than 8R"/>		

Delete Cut Block Export Cut Block Report

7.2.3 Timber Mark Information

The Timber Mark Information section at the top of the Cut Block screen contains all information pertaining to the Timber Mark for the cut block. No information is editable in the Timber Mark Information section.

Timber Mark	Area (ha)	Waste Monetary Reduction Factor	Vol/ha (m ³ /ha) Avoid X or BTR	Benchmark (m ³ /ha)	WMRF	Edit Timber Mark
EC5090	8.00	Applied	76.06	35.00	0.5398	➔

To make edits to a Timber Mark for a Cut Block, tap the **Edit Timber Mark** hyperlink. This will open the **Timber Mark screen** (see [Section 7.3 – Timber Mark](#))



7.2.4 Cut Block Information

The Cut Block Information section of the Cut Block screen contains the general information for the cut block. In the Cut Block section, there are different types of text fields available:

- **Grey filled boxes:** These boxes cannot be edited as they contain the original survey information.
- **White/Yellow boxes:** These boxes can be edited with audit text/numeric values by the WASTE checker during the WASTE audit process.

The editable fields in the General Cut Block Information section are:

- **Check Area (ha):** The area measurement for the audited area in the cut block. This field is filled by default using the downloaded block information.
- **Check Maturity:** This assesses the utilization standard for the WASTE Check. The Checker can make their own assessment on the Block Maturity as either Mature "M - less than 8R" (Benchmark 35m³/ha) or Immature "I - Top less than 5R" (Benchmark 10m³/ha).
- **Waste Checker:** Information about the Waste Checker performing the WASTE audit.
 - **Name:** Name of the WASTE Checker (100 character maximum).
 - **Professional Designation:** Professional Designation of the WASTE Checker (100 character maximum).
 - **Registration Number:** Registration Number of the WASTE Checker (100 character maximum).
 - **Position:** Position of the WASTE Checker (100 character maximum).
- **Notes:** General notes regarding the cut block WASTE Check (256 character maximum).

CP / Cutblock	90	BLK82BD	Return Number	1234
Licence	A19232		Surveyor Licence	0254
Location				
Logged From	1990			
Logged To	1992			
Logging Complete	Jun-01-1990			
Survey Date	Jun-01-1992			
Check Area (ha)	10.00			
Net Area (ha)	10.00			
NP/NF Area	0.00			
Maturity	M			
Check Maturity	M - Greater than 8R			
			WASTE Checker	
			Name	
			Professional Designation	
			Registration Number	
			Position	
			Notes	

After any edits are made to the fields above, tap **Save**.



(IFOR 202) Cut Block - 1 Save

Timber Mark	Area (ha)	Waste Monetary Reduction Factor	Vol/ha (m ³ /ha) Avoid X or BTR	Benchmark (m ³ /ha)	Current WMRF	Edit Timber Mark
16341	40.7	Applied	50.53	35.00	0.3073	➔

Reporting Unit No.	<input type="text" value="6"/>	Return Number	<input type="text" value="99"/>
CP / Cutblock	<input type="text" value="1"/>	Surveyor Licence	<input type="text"/>
Licence	<input type="text" value="A16341"/>	WASTE Checker	
Location	<input type="text"/>	Name	<input type="text" value="Ron Mecredy"/>
Logged From	<input type="text" value="2015"/>	Professional Designation	<input type="text" value="RFT"/>
Logged To	<input type="text" value="2016"/>	Registration Number	<input type="text" value="0254"/>
Logging Complete	<input type="text" value="Dec-08-2016"/>	Position	<input type="text" value="Prov Waste Spec"/>
Survey Date	<input type="text" value="Dec-06-2016"/>	Notes	Jan 31, 17 UAT
Check Area (ha)	<input type="text" value="40.70"/>		
Net Area (ha)	<input type="text" value="40.70"/>		
NP/NF Area	<input type="text" value="0.50"/>		
Maturity Code	<input type="text" value="M - Greater than 8R"/>		
Check Maturity Code	<input type="text" value="M - Greater than 8R"/>		

Delete Cut Block
Export Cut Block
Report

7.2.5 Stratums Information

The Stratums Information section of the Cut Block screen contains all information pertaining to the Stratums for the cut block being audited. A Stratum is a unique and non-overlapping sub-unit of a population for which separate sampling statistics are calculated.

To view or make edits to an existing Stratum for a cut block, tap on the stratum (see [Section 7.4 – Stratum](#)). The user can also create a new Stratum by tapping the **Add Stratum** hyperlink.

Stratums					Add Stratum
Waste Type	Harvest Method	Plot Size	Waste Level	Area (ha)	
D	B	0	M	8	➔
R	R	0	M	2	➔
				0	Delete ➔

Either of the options above will open the Stratum screen (see [Section 7.4 – Stratum](#)). In the case of an existing stratum the information is displayed. If a new stratum is created, the information must be added. (see [Section 7.5 – Plots](#)).

A stratum that has been added by the user can be deleted by tapping the **Delete** link.



Stratums					Add Stratum
Waste Type	Harvest Method	Plot Size	Waste Level	Area (ha)	
D	B	0	M	8	>
R	R	0	M	2	>
				0	> Delete

7.2.6 Cut Block Value / Volume Table

The Cut Block Value/Volume Table at the bottom of the Cut Block screen displays Original and Checked data, the difference between the two sets of data are reported by percentage and a Pass /Fail determination identified.

If the difference between the Original data and Checked data is less than 10%, then the survey is a Pass. If the difference is greater than 10%, then the survey has not met the required standard.

- Total Value (\$/ha)
- Billable Volume m³/ha
- Cut Control Volume m³/ha

	Original	Check	Difference %
Total Value	\$0.01	\$0.01	0.0
Billable Volume (m ³ /ha)	74.5280	74.5280	0.0
Cut Control Volume (m ³ /ha)	84.7240	84.7240	0.0

Note: As checked data is entered or changed at the Piece, plot and stratum level, these tables change in real time to reflect the new information.

- **Original:** Volume and value information based on the original survey and timber mark information.
- **Check:** Volume and value information based on the audit survey and timber mark information.
- **Difference %:** The difference between Original measurements and Check measurements

Note: The value calculation reflects the WMRF impact as the audit progresses in real time. The final result is not known until the audit is complete.



7.3 Timber Mark (IFOR401)

The Timber Mark screen contains the information for the Timber Marks. If there is more than one timber mark within the cut block, the WASTE Checker can add or edit both the Primary Timber Mark and Secondary Timber Mark.

Note: the secondary TM is currently not activated. It will be added in a future version of iFORWASTE.

In the Timber Mark section, there are different types of text fields available:

- **Grey filled boxes:** These boxes cannot be edited as they contain the original survey information.
- **White filled boxes:** These boxes can be edited with audit text/numeric values by the WASTE checker during the WASTE audit process.

The editable fields in the Timber Mark screen are:

- **Waste Monetary Reduction Factor (block)**
 - **Automatic A - Survey Volume Applied**
 - **Automatic B - Survey Volume not applied** option: This function allows the auditor to add or remove the waste benchmark. The benchmark is added by default.
- **Conifer Sawlog:** The 12 month average stumpage Rate (\$/m³) for Coniferous sawlog grades. Enter the sawlog rate applicable to the timber mark. This rate will then be adjusted by the WMRF to calculate the 'Billing Rate'. This information can be obtained from the HBS 'rating' tab. It is calculated in accordance with the waste manual.
- **Billing Rate** is the Standard rate (sawlog, deciduous, Coast HB U, X and Y grade, Interior 1 and 2) multiplied by the WMRF. Waste billing is determined by multiplying the 'Billing rate' times the species/grade volume.

< (IFOR 202) Cut Block - 1
(IFOR 401) Timber Mark
Save

Primary Timber Mark

Timber Mark: Primary Logging Complete (PLC) Date:

Mark Area (ha):

Waste Monetary Reduction Factor (block)		Stumpage Rate (\$/m ³)	Billing Rate
<input style="border: 1px solid red;" type="text" value="Benchmark Applied"/>		Conifer Sawlog	<input style="border: 1px solid red;" type="text" value="10.25"/> 3.15
A = Avoidable (x or better) (m ³ /ha)	50.5287	Deciduous	<input style="border: 1px solid grey;" type="text" value="1.00"/> 1.00
B = Established Benchmark (m ³ /ha)	35.0000	Hemba U (\$/m)	<input style="border: 1px solid grey;" type="text" value="0.25"/> 0.08
WMRF = (A-B)/A	0.3073	X Grade (\$/m)	<input style="border: 1px solid grey;" type="text" value="0.25"/> 0.08
		Y Grade (\$/m)	<input style="border: 1px solid grey;" type="text" value="0.25"/> 0.25

Secondary Timber Mark

Timber Mark:

Mark Area (ha):



Waste Monetary Reduction Factor (block)		Stumpage Rate (\$/m ³)	Billing Rate
<input type="text"/>		Conifer Sawlog	<input type="text" value="0.00"/>
A = Avoidable (x or better) (m ³ /ha)	0.0000	Deciduous	<input type="text" value="0.00"/>
B = Established Benchmark (m ³ /ha)	0.0000	Hembal U (\$/m)	<input type="text" value="0.00"/>
WMRF = (A-B)/A	0.0000	X Grade (\$/m)	<input type="text" value="0.00"/>
		Y Grade (\$/m)	<input type="text" value="0.00"/>

Other options available to the users in the Timber Mark screen are:

- **Cut Block - [Cut Block ID]**: Return the user to the Cut Block screen to view other blocks that have been downloaded to the iPad.
- **Save**: Saves any edits made in the Timber Mark screen.

(IFOR 202) Cut Block - 1
(IFOR 401) Timber Mark
Save

Primary Timber Mark

Timber Mark: Primary Logging Complete (PLC) Date:

Mark Area (ha):

Waste Monetary Reduction Factor (block)		Stumpage Rate (\$/m ³)	Billing Rate
<input type="text" value="Benchmark Applied"/>		Conifer Sawlog	<input type="text" value="3.15"/>
A = Avoidable (x or better) (m ³ /ha)	50.5287	Deciduous	<input type="text" value="1.00"/>
B = Established Benchmark (m ³ /ha)	35.0000	Hembal U (\$/m)	<input type="text" value="0.08"/>
WMRF = (A-B)/A	0.3073	X Grade (\$/m)	<input type="text" value="0.08"/>
		Y Grade (\$/m)	<input type="text" value="0.25"/>

Secondary Timber Mark

Timber Mark:

Mark Area (ha):

Waste Monetary Reduction Factor (block)		Stumpage Rate (\$/m ³)	Billing Rate
<input type="text"/>		Conifer Sawlog	<input type="text" value="0.00"/>
A = Avoidable (x or better) (m ³ /ha)	0.0000	Deciduous	<input type="text" value="0.00"/>
B = Established Benchmark (m ³ /ha)	0.0000	Hembal U (\$/m)	<input type="text" value="0.00"/>
WMRF = (A-B)/A	0.0000	X Grade (\$/m)	<input type="text" value="0.00"/>
		Y Grade (\$/m)	<input type="text" value="0.00"/>



7.4 Stratum (IFOR203)

The Stratum screen allows for WASTE checkers to edit existing or add missing stratum information.

The Stratum screen contains the information for the Stratum and consists of three sections:

1. Stratum Information (see [Section 7.4.1 – Stratum Information](#))
2. Plot Information (see [Section 7.4.2 – Plot Information](#))
3. Stratum Level Value/Volume table (see [Section 7.4.3 – Stratum Level Value/Volume Table](#))

The screenshot shows the (IFOR 203) Stratum - CCSX interface. It is divided into three main sections:

- Stratum Information:** Includes fields for Waste Type (C - Cold Decked), Harvest Method (C - Any Combination), Assessment/Size (S - 100% Scale), Waste Level (X - Unstratified), Check Area (ha) (0.10), Survey Area (0.10 ha), and # Plots (1). There is a yellow highlighted area for Notes.
- Plot Information:** A table with columns: Plot Number, Baseline, Strip, Measure %, and Shape. The first row shows Plot Number 1, Baseline 0, Strip 0, Measure % 100, and a right-pointing arrow in the Shape column.
- Stratum Level Value / Volume Table:** A summary table with columns: Value (per ha), Original, Check, and Difference %.

	Original	Check	Difference %
Value (per ha)	\$7.20	\$32.40	77.8
Billable Volume (m ³ /ha)	49.6570	58.3090	14.8
Cut Control Volume (m ³ /ha)	61.5500	63.6660	3.3

Other options available to the users in the Stratum screen are:

- **Cut Block - [Cut Block ID]:** Return the user to the Cut Block screen to view other blocks that have been downloaded to the iPad.
- **Save:** Saves any edits made in the Stratum screen.
- **Report:** Generate a report for the Stratum.



(IFOR 202) Cut Block - (IFOR 203) Stratum - CCSX Save

Waste Type: C - Cold Decked Check Area (ha): 0.10 Survey Area: 0.10 ha

Harvest Method: C - Any Combination # Plots: 1

Assessment/Size: S - 100% Scale Notes: [Yellow filled box]

Waste Level: X - Unstratified

Plots

Plot Number	Baseline	Strip	Measure %	Shape
1		0	100	

	Original	Check	Difference %
Value (per ha)	\$7.20	\$32.40	77.8
Billable Volume (m ³ /ha)	49.6570	58.3090	14.8
Cut Control Volume (m ³ /ha)	61.5500	63.6660	3.3

7.4.1 Stratum Information (IFOR203)

The Stratum Information section contains the information for the particular stratum. In the Stratum section, the following text boxes available are:

- **White / Yellow filled boxes:** These boxes can be edited with audit text/numeric values by the WASTE checker during the WASTE audit process.

The following Stratum text boxes can be entered or edited:

- **Waste Type:** Select one of the following Waste Types:
 - Dispersed Types:
 - S - Open Slash/Clearcut
 - F - Felled and bucked
 - G - Group retention
 - D - Dispersed Retention
 - T - Standing Stem
 - Accumulated Types:
 - L - Landings
 - R - Roadside
 - W - Window, Debuilt Road
 - C - Cold Decked
 - P - Spot accumulation
 - O - Off-site landing
- **Harvest Method:** Select one of the following Harvest Methods:
 - S - Spar (high lead)
 - G - Grapple yarder
 - T - Tractor (cat)
 - P - Horse



- R - Rubber-tiered skidder
 - M - Hand logging
 - B - Hoe chucking
 - H - Helicopter
 - W - Wyssen
 - O - Other
 - C - Any combination
- **Assessment/Size:** Select one of the following Assessment Sizes:
 - 0 - 50 m2
 - 1 - 100 m2
 - 2 - 200 m2
 - 3 - 300 m2
 - 4 - 400 m2
 - 5 - 500 m2
 - 6 - 600 m2
 - 7 - 1 000 m2
 - 8 - 5 000 m2
 - 9 - 10 000 m2
 - E - Estimate Percent
 - O- Ocular Estimate
 - S - 100% Scale
 - **Waste Level:** Select one of the following Waste Levels:
 - L - Light
 - M - Medium
 - H - Heavy
 - X - Unstratified
 - **Area (ha):** The WASTE Checker can edit the Stratum area in hectares. The original Stratum area is entered by default.
 - **Notes:** The WASTE Checker can enter any general notes regarding this Stratum (256 character maximum).



(IFOR 202) Cut Block - 2 (IFOR 203) Stratum - DB0L Save

Waste Type: D - Dispersed retention

Harvest Method: B - Hoe chucking

Assessment/Size: 0 - 50 m²

Waste Level: L - Light

Check Area (ha): 5.00 Survey Area: 5.00 ha

Plots: 1

Notes: [Yellow box]

Plots Add Plot

Plot Number	Baseline	Strip	Measure %	Shape
1		0	100	

	Original	Check	Difference %
Value (per ha)	\$0.00	\$0.00	0.0
Billable Volume (m ³ /ha)	43.5200	43.5200	0.0
Cut Control Volume (m ³ /ha)	43.5200	43.5200	0.0

iForWaste - Version 1.2.1 Report

Note: Any edits to the fields above will result in the Stratum Name being updated. The Stratum name is defined as 4 characters generated by:

1. The FIRST character (alpha) is the one-letter code for Waste Type.
2. The SECOND character (alpha) is the one-letter code for Harvest Method.
3. The THIRD character (numeric) is the one-digit number which identifies the Assessment Method/Size used.
4. The FOURTH character (alpha) is the one-letter code for waste level.

7.4.2 Plot Information

The Plots section contains the piece details of each plot. A plot is a measured area within a Stratum for which separate sampling statistics are calculated.

To make edits to an existing Plot in a Stratum, tap on the Plot. The user can also create a new Plot by tapping the **Add Plot** hyperlink.

Plots					Add Plot
Plot Number	Baseline	Strip	Measure %	Shape	
1	A	1	100		>
2	A	1	100		>

Either of the options above will open a Plot screen (see [Section 5.5 – Plots](#)). In the case of an existing plot, the plot and piece information is displayed. If a new plot is created, the plot header and piece information must be added. (see [Section 5.5 – Plots](#).)



7.4.3 Stratum Level Value/Volume Table

The Value/Volume table that appears at the bottom of the Stratum screen displays Survey and Checked data for the Stratum, the difference between the two sets of data by percentage, and a Pass/Fail determination.

	Original	Check	Difference %
Value (per ha)	\$0.00	\$0.00	0.0
Billable Volume (m ³ /ha)	43.5200	43.5200	0.0
Cut Control Volume (m ³ /ha)	43.5200	43.5200	0.0

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[Report](#)

This information is presented to assist the checker by displaying the audit results and identifying where differences exist. The pass/fail determination is only made at the block level.

Note: As checked data is entered or changed at the Piece, plot and stratum level, these tables change in real time to reflect the new information.

- **Original:** Volume and value information based on the original survey and timbermark information.
- **Check:** Volume and value information based on the audit survey and timbermark information.
- **Difference %:** The difference between Original measurements and Check measurements

7.5 Plots (IFOR 204)

The Plots screen allows the WASTE Checker to view and audit plot survey data by comparing the original data to the WASTE Checker assessments and measurements. From the Stratum screen, select the plot to be audited

The plots screen contains the information for the plot and consists of three sections:

1. Plot Header Information (see [Section 7.5.1 – Plot Information](#))
2. Plot Pieces (see [Section 7.5.2 – Pieces Table](#))
3. Plot level Value/Volume table (see [Section 7.5.3 – Plot Level Value/Volume Table](#))



Plot Header Information

(IFOR 203) [Stratum - PBOX](#) (IFOR 204) Plot - 1 [Save](#)

Plot Number Measure % Check Measure %

Baseline Shape Strip

Size Return # Surveyor Licence

Residue Surveyor Checked By Ron Mecredy

Weather Assistant

Survey Date Check Survey Date

Notes

Plot Pieces

Pieces [Add Piece](#)

Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimensions for pieces inside plot				Grade	Deductions for Rot/Holes			Outside Measure		Piece Volume				
						Length (dm)	Top (R)	Top End	Butt (R)		Butt End	Length (dm)	Top (R)	Butt (R)	Decay	Far End	Add Length	Comment Code	Note	Survey (m ³)
NC	1	I	CE	W	A	1	20	C	35	C	K				0	0			0.0255	

Plot Level Value / Volume Table

	Original	Check	Difference %
Value (per ha)	\$0.00	\$0.00	0.0
Billable Volume (m ³ /ha)	43.5200	43.5200	0.0
Cut Control Volume (m ³ /ha)	43.5200	43.5200	0.0

iForWaste - Version 1.2.1 [Report](#)

In the above sections, there are different types of text fields available:

- **Grey filled boxes:** These boxes cannot be edited as they contain the original survey information.
- **White/Yellow boxes:** These boxes can be edited with audit text/numeric values by the WASTE checker during the WASTE audit process.

Other options available to the users in the Plot screen are:

- **Stratum - [Stratum ID]:** Return the user to the Stratum screen to view other plots in the cut block.
- **Save:** Saves any edits made in the Plot screen.
- **Report:** Generate a report for the Cut Block.



[\(IFOR 203\) Stratum - PBOX](#) (IFOR 204) Plot - 1 [Save](#)

Plot Number Measure % Check Measure %
 Baseline Shape Strip
 Size Return # Surveyor Licence
 Residue Surveyor Checked By
 Weather Assistant
 Survey Date Check Survey Date
 Notes

Pieces [Add Piece](#)

Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimensions for pieces inside plot				Grade	Deductions for Rot/Holes			Outside Measure		Comment Code	Note	Piece Volume		
						Length (dm)	Top (F)	Top End	Butt (F)		Butt End	Length (dm)	Top (F)	Butt (F)	Decay			Far End	Add Length	Survey (m ³)
NC	1	I	CE	W	A	1	20	C	35	C	K				0	0			0.0255	>

	Original	Check	Difference %
Value (per ha)	\$0.00	\$0.00	0.0
Billable Volume (m ³ /ha)	43.5200	43.5200	0.0
Cut Control Volume (m ³ /ha)	43.5200	43.5200	0.0

iForWaste - Version 1.2.1

[Report](#)



7.5.1 Plot Information (IFOR 204)

The Plot header Information section contains general information for the Plot. In the Plot header Information section, there are different types of text fields available:

- **Grey filled boxes:** These boxes cannot be edited as they contain the original survey information.
- **White filled boxes:** These boxes can be edited with audit text/numeric values by the WASTE checker during the WASTE audit process.

The following text boxes can be edited in the Plot Information section:

- **Shape:** Select one of the following shape code values:
 - C - Circular
 - S - Square
 - R - Rectangular
 - X - 100% scale
- **Check measurement %:** The checkers estimation of the plot measure %.
- **Residue Surveyor:** The original surveyor Enter text for Residue Surveyor(100 character maximum)
 - *Note: This field is intended to be filled from the original survey information. At this time this information is not available therefore, the surveyor name can be entered during the check survey.*
- **Weather:** Enter text for the Weather conditions (100 character maximum)
- **Assistant:** Enter text for the Assistant (100 character maximum)
- **Check Survey Date:** Auto filled or select the appropriate calendar date.
- **Notes:** Enter general Plot notes (256 character maximum)

The screenshot shows a web form titled "(IFOR 204) Plot - 1" with a "Save" button in the top right. The form contains several input fields:

- Plot Number: 1 (grey box)
- Measure %: 12 (grey box)
- Check Measure %: 12 (white box)
- Baseline: (grey box)
- Shape: (white box)
- Strip: 1 (grey box)
- Size: 0 - 50 m² (grey box)
- Return #: (grey box)
- Surveyor Licence: (grey box)
- Residue Surveyor: (white box with red border)
- Checked By: Ron Mecredy
- Weather: (white box with red border)
- Assistant: (white box with red border)
- Survey Date: Jan-30-2017 (grey box)
- Check Survey Date: Feb-07-2017 (white box with red border)
- Notes: (large yellow box with red border)



7.5.2 Plot Pieces

The Plot Pieces table allows the user to audit the Piece survey data by viewing the original data and determining if it will be 'Not Checked', Approved', 'No Tally' or Edited'.

The WASTE Checker can add a new piece by tapping the Add Piece hyperlink and then tapping **Yes** in the Add New Piece window.

Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimensions for pieces inside plot				Grade	Deductions for Rot/Holes			Outside Measure		Comment Code	Note	Piece Volume		
						Length (dm)	Top (R)	Top End	Butt (R)		Butt End	Length (dm)	Top (R)	Butt (R)	Decay			Far End	Add Length	Survey (m³)
NC	1	I	CE	W	A	1	20	C	35	C	K				0	0			0.0255	

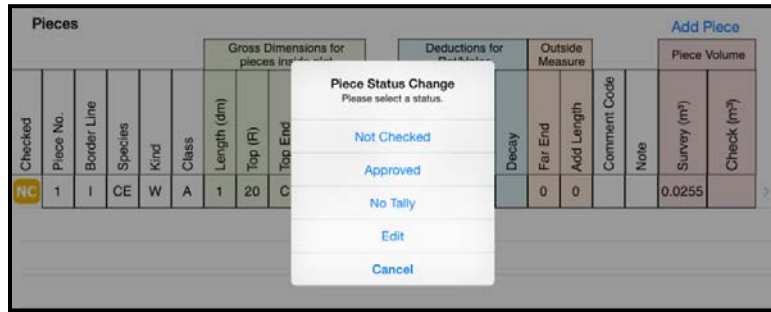
- The WASTE Checker can then tap empty fields to enter the piece values. The user can **Delete** a 'New' Piece by tapping '**New**'. A window will then appear and the checker selects '**Delete**' to delete the Piece

Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimensions for pieces inside plot				Grade	Deductions for Rot/Holes			Outside Measure		Comment Code	Note	Piece Volume		
						Length (dm)	Top (R)	Top End	Butt (R)		Butt End	Length (dm)	Top (R)	Butt (R)	Decay			Far End	Add Length	Survey (m³)
NC	1	I	CY	L	A	35	8	C	12	C	X				0	0			0.1144	
NEW	2					0	0		0						0	0			0	

The WASTE Checker can change the status of a Piece by tapping the orange NC field and then selecting one of the following options:

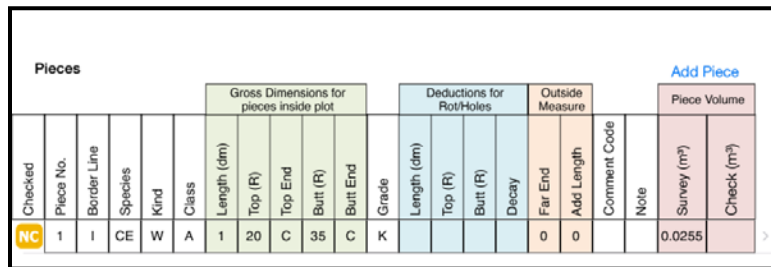
- **Not Checked**: Piece was not checked or not found.
 - An orange 'NC' is displayed in the Checked field.
- **Approved**: Piece data accepted as surveyed.
 - A green check mark displayed in the Checked field.
- **No Tally**: Piece should not have been measured and is removed from the plot volume calculations.
 - A red minus sign '–' is displayed in the Checked field.
- **Edit**: Creates a copy of the original piece. A new row will be added in the Piece table
 - A blue 'C' is displayed in the Checked field of the newly created line
 - The user can **Delete** a piece that was just set to Edit by tapping '**C**' in the Checked field and tapping **Not Checked** in the Piece Status Change window.



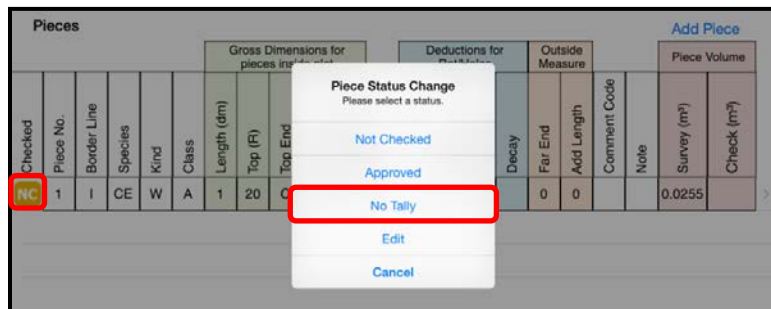


To edit a field in the Piece table:

1. Tap **NC** in the Checked field to change the Piece Status.



2. If the piece was not checked tap 'Not Checked' and move to next piece
3. If the piece is approved as measured, tap 'Approved' and move to next piece.
4. If piece should not have been tallied, tap 'No Tally' and move to next piece
5. If piece attributes need to be changed, tap 'Edit' and make the required changes as outlined below.
6. Tap **Edit**.



7. A new record for the edit piece will be added to the Pieces table.



Pieces																	Add Piece				
Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimensions for pieces inside plot				Grade	Deductions for Rot/Holes				Outside Measure		Piece Volume				
						Length (dm)	Top (R)	Top End	Butt (R)		Butt End	Length (dm)	Top (R)	Butt (R)	Decay	Far End	Add Length	Comment Code	Note	Survey (m³)	Check (m³)
<input type="checkbox"/>	1	I	CE	W	A	1	20	C	35	C	K					0	0			0.0255	
<input checked="" type="checkbox"/>	1C	I	CE	W	A	1	20	C	35	C	K					0	0			0.0255	

8. Tap the fields that need to be changed.

Pieces																	Add Piece				
Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimensions for pieces inside plot				Grade	Deductions for Rot/Holes				Outside Measure		Piece Volume				
						Length (dm)	Top (R)	Top End	Butt (R)		Butt End	Length (dm)	Top (R)	Butt (R)	Decay	Far End	Add Length	Comment Code	Note	Survey (m³)	Check (m³)
<input type="checkbox"/>	1	I	CE	W	A	1	20	C	35	C	K					0	0			0.0255	
<input checked="" type="checkbox"/>	1C	I	CE	W	A	1	20	C	35	C	K					0	0			0.0255	

9. A pop-up window allows the Waste Checker to enter in a numeric amount (no decimals are required as they are implied). The units of measure are indicated in the field header.

The screenshot shows a mobile application interface with a title bar that reads "Gross Dimensions - Top" and a "Save" button on the right. Below the title bar is a text input field containing the number "40". Below the input field is a standard numeric keypad with buttons for digits 1-0, a decimal point, a slash, a colon, a semicolon, parentheses, a dollar sign, an ampersand, an at sign, a return key, an undo key, a comma, a question mark, an exclamation mark, an apostrophe, a double quote, and a keyboard icon. The input field is highlighted with a red box.

10. The new measurement appears in the measurement field.



Pieces														Add Piece						
Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimensions for pieces inside plot				Grade	Deductions for Rot/Holes			Outside Measure		Piece Volume				
						Length (dm)	Top (F)	Top End	Butt (F)		Butt End	Length (dm)	Top (F)	Butt (F)	Decay	Far End	Add Length	Comment Code	Note	Survey (m³)
	1	I	CE	W	A	1	20	C	35	C	K				0	0			0.0255	
	1C	I	CE	W	A	1	40	C	35	C	K				0	0				0.0444

11. Repeat steps 5 and 6 for any other fields that should be updated.

12. Tap **Save** or move to the next piece.

The following fields can be added or edited into the Pieces table:

- **Border Line:** Select one of the following border lines code values:
 - B - Borderline piece (measure inside portion only)
 - I - Completely inside plot
 - X - Length exceeds plot width
- **Species:** Select one of the following tree species code values:
 - AL - Alder
 - AR - Arbutus
 - AS - Aspen
 - BA - Balsam
 - BI - Birch
 - CE - Red Cedar
 - CO - Cottonwood
 - CY - Cypress
 - FI - Douglas Fir
 - HE - Hemlock
 - LA - Larch
 - LO - Lodgepole Pine
 - MA - Maple
 - OT - Other (Cherry)
 - SP - Spruce
 - UU - Pacific Yew
 - WB - Whitebark Pine
 - WH - White Pine
 - WI - Willow
 - YE - Yellow Pine



- **Kind:** Select one of the following Material Kind code values:
 - B – Bucking/trimming waste
 - D - Down tree/snag
 - L - Log, slab, Sliver, chunk
 - S – Stump
 - T - Tree
 - U - Undersize
 - W - Bucking/trimming waste
 - X - Special Product
- **Class:** Select one of the following Waste Class code values:
 - A - Avoidable
 - U – Unavoidable
- **Gross Dimensions** for pieces inside plot fields:
 - **Length (dm):** Enter the length (in decimeters) the "in plot" length of the piece.
 - **Top (R):** Enter the gross diameter (in Radians), inside bark of the top end.
 - **Top End:** Select one of the following Top End code values:
 - B - Broken
 - C - Cut (bucked)
 - N - Natural
 - P - Pencil
 - U - Undercut
 - X - Buried
 - **Butt (R):** Enter the gross diameter (in Radians) the inside bark of the large end.
 - **Butt End:** Select one of the following Butt End code values:
 - B – Broken
 - C - Cut (bucked)
 - N - Natural
 - P - Pencil
 - U - Undercut
 - X - Buried
- **Grade:** Select one of the following Grade code values:
 - The following Grades are available for cut blocks in the Coast Resource Area
 - B - Peeler
 - C - Peeler
 - D - Lumber
 - F - Lumber
 - H - Sawlog



- I - Sawlog
- J - Gang Sawlog
- K - Cedar Shingle
- L - Cedar Shingle
- M - Cedar Shingle
- U – Utility Sawlog
- W – Deciduous Sawlog
- X – Chipper
- Y - Lumber reject
- Z - Firmwood reject
- 5 – Dead dry lumber reject
- The following Grades are available for cut blocks in the Interior Resource Area
 - 1 - Premium Sawlog
 - 2 - Sawlog
 - 4 - Lumber Reject
 - Z - Firmwood reject
 - 6 - Undersize
- **Deductions for Rot/Holes fields:**
 - **Length (dm):** Enter the length (in Decimeters) for the deduction.
 - **Top (R):** Enter the gross diameter (in Radians) the diameter deduction for the top end.
 - **Butt (R):** Enter the gross diameter (in Radians) the diameter deduction for the butt end.
 - **Decay:** Select one of the following Decay values:
 - B- Butt rot
 - C- Conk rot
 - H - Heart rot
 - P - Pocket rot
 - R - Ring rot
 - S- Sap rot
 - T- Top rot
- **Outside Measures fields:** (Not required)
 - **Far End:** Enter the diameter (in Radians) of the actual end of the piece when it is outside the plot boundary. This value can be estimated.
 - **Add Length:** Enter the length (in metres) the additional length of the piece that is outside the plot boundary. This value can be estimated.
- **Comment Code:** The Waste Checker can select one of the following comment codes:



- BK- Breakage
- BN - Bunch knots
- BR - Buried
- CA - Candleabra
- CC - Creek cleaning
- CF - Catface
- CK - Crook
- CL - Culvert log
- CP - Company piece
- CR - Severe Crook
- DP - Dead potential
- DU - Dead useless
- FC - Frostcrack
- FK - Fork
- FL - Fluted Butt (NOT IN XML)
- FP - Fence post
- FW - Firewood
- GL - Guyline stump
- HK - Hooked
- HN - Heavy knots
- HP - Helipad
- HS - Holding stump
- IN - Inaccessible
- KN - Knots
- LB - Long butt
- LN - Large knots
- MB - Machine breakage
- MP - Multiple part piece
- NP - Nil plot
- OB - Obstructed
- ON - Oversize knots
- PR - Pocket rot
- RE - Reconstructed
- S1 - Segment 1
- S2 - Segment 2
- S3 - Segment 3
- SA - Sapling
- SB - Shake block
- SH - Shatter



- SL - Slab
- ST - Standing tree
- SW - Sweep
- TR - Whole tree
- US - Unsafe
- WD - Coarse woody debris
- WF - Windfall
- WS – Windshear
- **Note:** A field for the WASTE Checker to edit or enter text about the piece (256 characters maximum).
- **Piece Volume fields:**
 - **Survey (m³):** The piece volume calculated based on the survey input values for the Piece.
 - **Check (m³):** If survey data was edited, a calculation is generated from the information that has been changed to correct the Piece Volume.

7.5.3 Piece Data Edits

When entering data into the Plot Pieces screen it is common to miss or enter incorrect values. These issues can result in either a “Fatal Error”, where the user will not be able to continue with the waste audit until the values have been corrected, or a “Warning”, where a popup will be displayed but the user can continue to the next screen.

To correct an inaccurate code or numeric value, the Waste Checker selects the field and enters or selects the appropriate value.



7.5.3.1 Fatal Errors:

The following is a list of “Fatal Errors” that will not allow the user to continue with the waste audit until the values have been corrected. Block Audit reports will not be permitted. A popup window will appear showing the location of the missing or incorrect data.

The screenshot shows a software interface for data entry. At the top, there are two tabs: "(IFOR 203) Stratum - SB4X" and "(IFOR 204) Plot - 2". A "Save" button is in the top right. The form contains several input fields: Plot Number (2), Measure % (100), Check Measure % (0), Baseline (empty), Shape (empty), Strip (2), Size (4 - 400 m²), Return # (empty), Surveyor Licence (empty), Residue Surveyor (empty), Checked By (Ron Mecredy), Weather (empty), Assistant (empty), Survey Date (Jan-31-2017), and Feb-07-2017. A Notes section is at the bottom. An error dialog box is overlaid on the form, with the text "Error" and "Check Measure Percentage cannot be 0%." and an "OK" button.

- If **Class = U – Unavoidable** then the **Comment Code** must be populated
- If **Kind = L**, the Length (in Pieces section) must be greater than or equal to 3.0 m unless **Border Line = B**.
- If **Waste Type = D - Dispersed** and **Kind = W – Bucking / trimming waste**, then **Butt End** cannot be **B - Broken**
- **Measure factor required.**
- **Measure factor cannot exceed 100%.**
- **Deduction length** cannot exceed piece **Length**.
- **Top deduction** cannot exceed piece **Top dimension**.
- **Butt deduction** cannot exceed piece **Butt dimension** .
- If **Maturity = Immature**, the Top must meet or exceed 5 Rads

7.5.3.2 Warnings:

The following is a list of “Warnings” that will generate a popup that will be displayed but the user can continue to the next screen and generate reports

- **Top or Butt out of Range**
 - If the top is greater than the butt a warning is generated.
 - If the Top and Butt differ by more than 4 rads a warning is generated.
 - A simple taper equation (length X 1.25r) is used to estimate the top or butt diameter. If the dimension is outside of the calculation an error is generated
- **Length** should not exceed 22m



- If Kind = S (Stump) then Butt (R) field is not required.

Stratum - SB4X Plot - 1 Save

Pieces Add Piece

Checked	Piece No.	Border Line	Species	Kind	Class	Gross Dimension			Butt (R)	Top End	Decay	Outside Measure		Comment Code	Note	Piece Volume	
						Length (dm)	Top (R)	Top End				Far End	Add Length			Survey (m³)	Check (m³)
	1	I	CE	S	A	9	62	C				0	0			1.087	
	1C	I	CY	L	A	50	62	C				0	0				3.5104
	2	I	CE	L	A	62	8	N				0	0			0.2269	
	3	I	CE	L	A	31	15	B	18	B	X					0.2674	
	3C	I	CE	W	A	31	15	B	18	B	X					0.2674	
	4	I	HE	S	U	4	14	C		N	J			US		0.0246	
	4C	I	HE	S	A	5	14	C	15	N	J			US		0.0308	

Report

Warning

Warning - Piece 4C: If Kind = S (Stump) then Butt (R) field is not required.

Error - Piece 3C: Stratum Type 'D' and Kind 'W', Butt End Code can't be 'B'.

Warning - Piece 1C: Top or Butt out of range.

OK
Continue



7.5.4 Plot Level Value/Volume Table

The Value/Volume table that appears at the bottom of the Plot screen displays Survey and Checked data at the Plot level, the difference between the two sets of data by percentage, and a Pass/Fail determination. This information is presented to assist the checker by displaying the audit results and identifying where differences exist. The pass/fail determination is only made at the block level.

Note: As checked data is entered or changed at the Piece, plot and stratum level, these tables change in real time to reflect the new information.

- **Original:** Volume and value information based on the original survey and timbermark information.
- **Check:** Volume and value information based on the audit survey and timbermark information.
- **Difference %:** The difference between Original measurements and Check measurements

	Original	Check	Difference %
Value (per ha)	\$0.00	\$0.00	0.0
Billable Volume (m ³ /ha)	43.5200	43.5200	0.0
Cut Control Volume (m ³ /ha)	43.5200	43.5200	0.0

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[Report](#)



8 Reports

Reports will be used by the WASTE Checker to present the audit information in a text format to the surveyor and licensee. Three reports can be produced in iFORWASTE: Check Summary, FS702 and Plot Tally Reports. The reports show the data collected during the audit and the overall results of the audit. The generate reports option is available in many screens. There are three reports that can be generated in the iFORWASTE app:

8.1 Available Reports

8.1.1 Check Summary Report:

This report shows the results of the check survey and a summary of the overall waste Audit results. The report shows a summary of the differences by plot, stratum and for the block.

Waste Check Summary Report									
RU: 595 Block: BLK82BD									
Plot Results Summary									
Plot	Stratum	Survey Pieces	Check Pieces	Grade Changes	Species Changes	Waste Class	Length Changes	Radii Changes	Missed/ Extra Pieces
1	DB0M	1	1	0	0	0	1	0	0
2	DB0M	1	0	0	0	0	0	0	0
3	DB0M	0	0	0	0	0	0	0	0
4	DB0M	1	1	0	0	0	0	0	0
1	RR0M	1	0	0	0	0	0	0	0
2	RR0M	1	0	0	0	0	0	0	0
TOTAL		5	2	0	0	0	1	0	0
Block and Stratum Volume Summary (Weighted)									
Stratum	Plot	Survey Vol.(m3)	Check Vol.(m3)	Diff(%)	Pass / Fail				
DB0M	1	0.025	0.051	50.10%	F				
DB0M	2	0.412	0.412	0.00%	P				
DB0M	3	0.000	0.000						
DB0M	4	0.000	0.000						
RR0M	1	0.114	0.114	0.00%	P				
RR0M	2	0.255	0.255	0.00%	P				
TOTAL		0.807	0.832	3.08%	P				
Block and Stratum Value Summary (Weighted)									
Stratum	Plot	Survey Val.(\$)	Check Val.(\$)	Diff(%)	Pass / Fail				
DB0M	1	\$0.000	\$0.000						
DB0M	2	\$0.000	\$0.000						
DB0M	3	\$0.000	\$0.000						
DB0M	4	\$0.000	\$0.000						
DB0M	TOTAL	\$0.000	\$0.000						
RR0M	1	\$0.012	\$0.012	0.00%	P				
RR0M	2	\$0.000	\$0.000						
RR0M	TOTAL	\$0.012	\$0.012	0.00%	P				
TOTAL		\$0.012	\$0.012	0.00%	P				
Notes									
Audit Date: March 18, 2015 Auditor:									



8.1.3 FS702 Report:

This report shows the full volume and value summary by species, grade. The report is a reproduction of the FS702 billing that would be produced for the block. The report shows the total volume and value and the expected WASTE billing to be paid by the Licensee to the Ministry.

Block Billing and Volume summary (FS702)								
Licence: TFL6		CP: 1		Block: 159A		Mark: 6/1		
Species	Product	Grade	Avoid	Pieces	Volume (m3)	Vol/ha (m3/ha)	Rate (\$/m3)	Total (\$)
BA		J	Y	15	222.921	5.559	0.00	0.00
BA		X	Y	2	86.703	2.162	0.19	16.47
CE		D	Y	1	239.140	5.964	0.00	0.00
CE		J	Y	2	36.731	0.916	0.00	0.00
CE		U	Y	1	49.918	1.245	0.00	0.00
CE		X	Y	5	343.422	8.564	0.19	65.25
CE		Y	Y	2	104.400	2.603	0.25	26.10
HE		J	Y	25	418.479	10.436	0.00	0.00
HE		U	Y	1	1.000	0.025	0.19	0.19
HE		X	Y	10	236.826	5.906	0.19	45.00
HE		Y	Y	5	86.414	2.155	0.25	21.60
SP		U	Y	1	44.648	1.113	0.00	0.00
BA		J		2	15.928	0.397	0.00	0.00
BA		U		1	8.013	0.200	0.00	0.00
CE		J		5	142.758	3.560	0.00	0.00
HE		J		15	236.628	5.901	0.00	0.00
HE		U		3	9.604	0.240	0.00	0.00
Total (Cut Control)				96	2283.53	56.95		N/A
Total HemBal Avoid		U		1	1.00	0.03		\$0.19
Total All Species Avoid		X		17	666.95	16.63		\$126.72
Total All Species Avoid		Y		7	190.81	4.76		\$47.70
Total Avoidable		All		70	1870.60	46.65		\$174.61
Total Unavoidable		All		26	412.93	10.30		N/A

Differences in summary values between app and report due to rounding

Notes

Audit Date: May 25, 2015
Auditor:

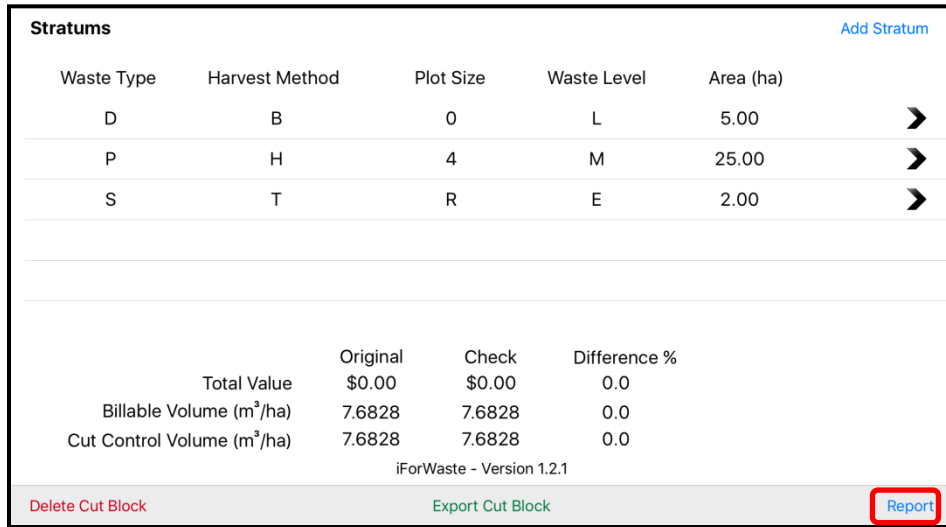


8.2 Generate Reports

The user can generate a report from most of the iFORWASTE screens by tapping the **Report** button at the bottom right of the screen.

To generate a report in iFORWASTE:

1. Navigate to the screen in the app and tap the **Report** hyperlink.



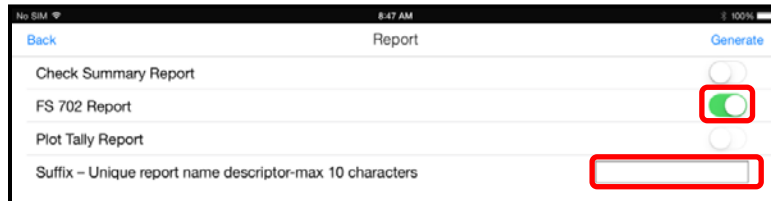
Waste Type	Harvest Method	Plot Size	Waste Level	Area (ha)	
D	B	0	L	5.00	➤
P	H	4	M	25.00	➤
S	T	R	E	2.00	➤

	Original	Check	Difference %
Total Value	\$0.00	\$0.00	0.0
Billable Volume (m ³ /ha)	7.6828	7.6828	0.0
Cut Control Volume (m ³ /ha)	7.6828	7.6828	0.0

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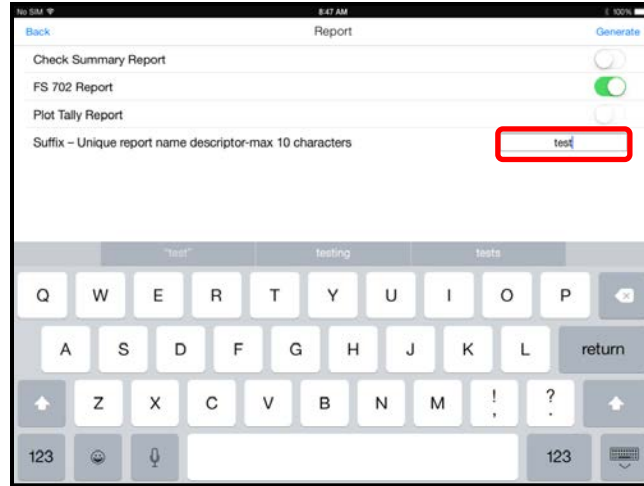
Delete Cut Block
Export Cut Block
Report

2. In the Reports list, switch the toggle for each of the reports the user wishes to create. The toggle will turn green for each report to be generated.

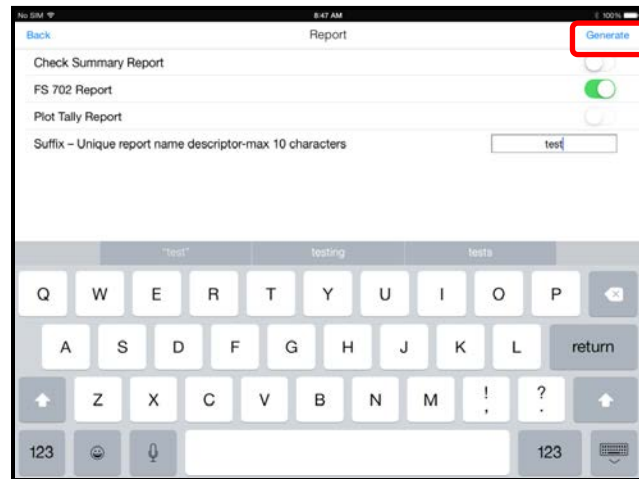


3. Add a desired suffix (any unique description up to 10 characters) if the report name requires customization to the default report names generated. Tap in the text box and type in the desired suffix. (I.E. 'Ver1-He', 'Ver2 CE' etc.)

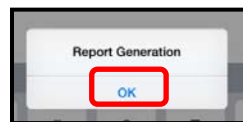




4. Tap **Generate**.



5. A report confirmation will appear. Tap **OK**.



8.3 View Reports

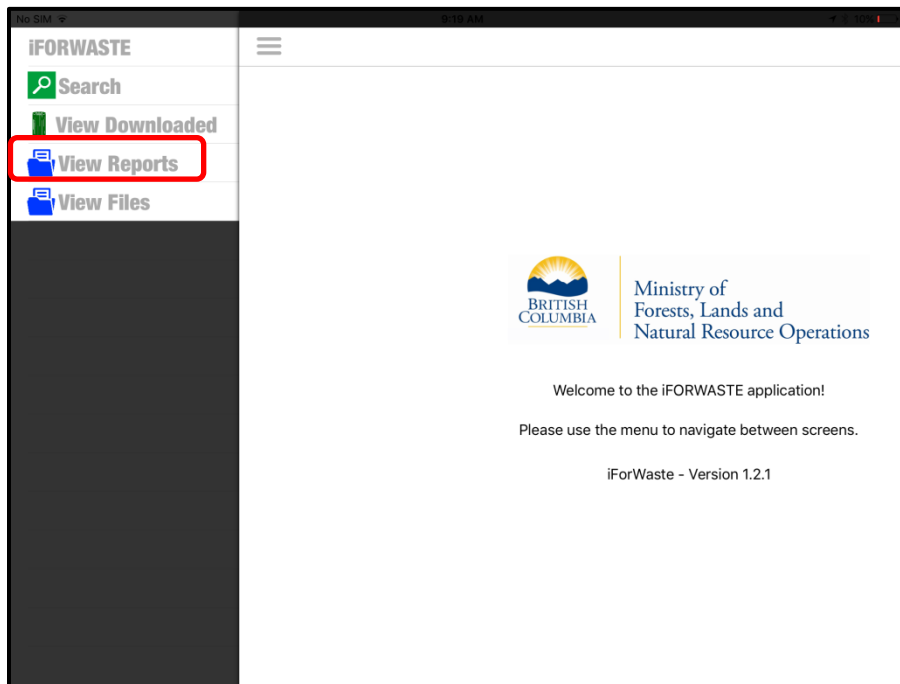
The user has the option to view the reports in several ways, within the iPad via iForwaste or iBook's and export to a PC where they can be viewed in pdf format or printed.

8.3.1 View reports in iFORWASTE:

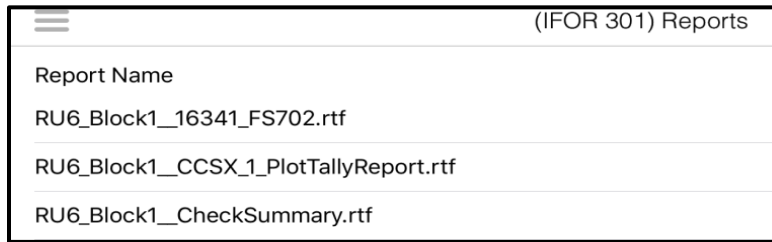
1. Tap the **iFORWASTE Menu** button.



2. Tap **View Reports**.



- All available reports will be shown in the Reports list (IFOR 301).



- Tap a report to view the report in iFORWASTE.

Note: The report can be viewed within iForwaste however; the format and size may be difficult to read.

8.3.2 View reports in iBooks

- Open the report in iforwaste
- Tap on the icon in the top right
- Select 'Save PDF to iBooks'
 - A message will appear 'Saving to iBooks'
 - iBooks will open showing the report.
 - You can now view the report in full size with the ability to zoom in as needed

8.3.3 Transfer Reports to PC

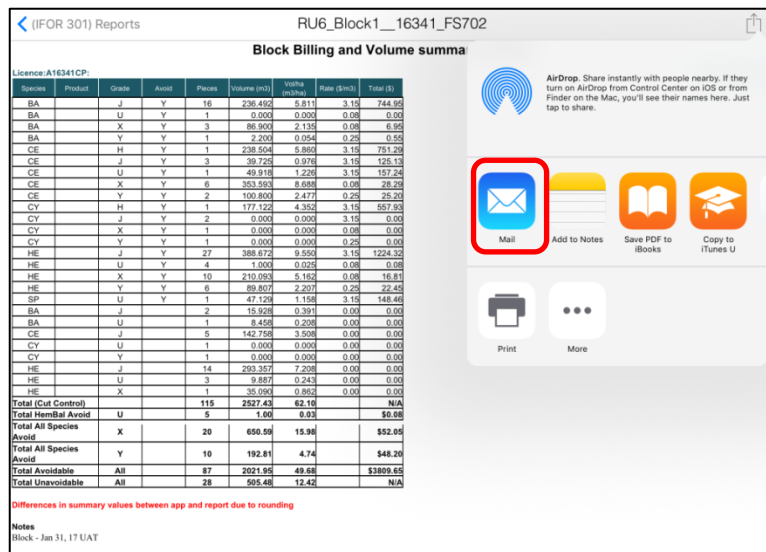
Once reports have been created, they can be transferred to the surveyor's personal computer to edit, save, store, and share the reports. The reports can be transferred by emailing or by direct connection to the PC through iTunes.

The report files are saved as .rtf (Rich Text Format files) and can be opened using MS Word. MS Word allows all fields/text in the report to be edited and saved.

8.3.3.1 Email

To transfer a report(s) from the iPad to the computer through email:

- In the View Reports menu select a report
- Select the share upload icon and tap mail.

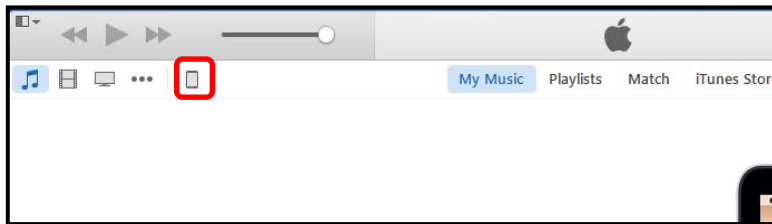


- i. An email message will be generated with the report included as an attachment.
- ii. Add your email address and any other recipients you wish to send the report to.
- iii. Add a subject name
- iv. Tap send and the report will be sent .rtf format
- v. Open the report from Microsoft Word
 1. The report can now be viewed, edited and saved as a word document.

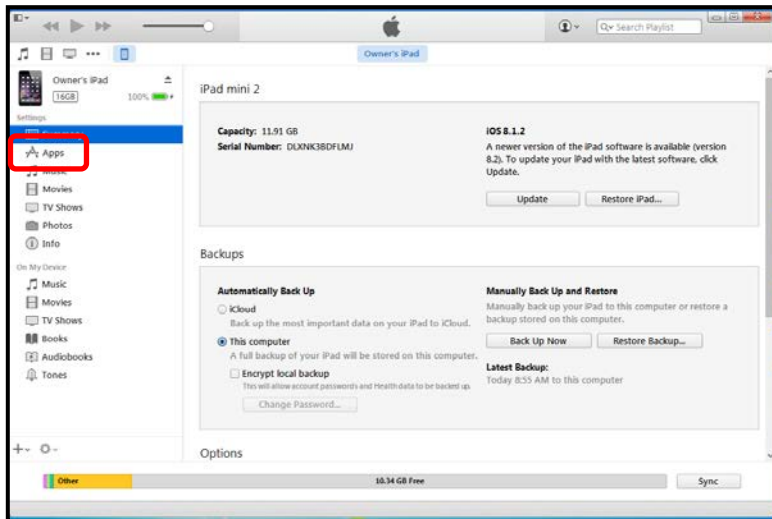
8.3.3.2 iTunes

To transfer a report(s) from the iPad to the computer through direct transfer:

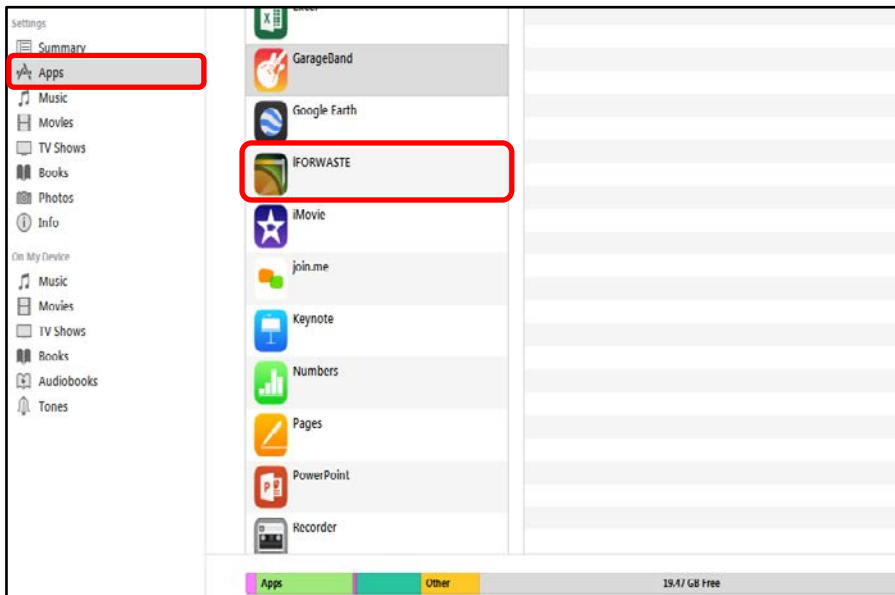
- a. Plug the iPad into computer using the iPad supplied USB cable.
- b. On the your desktop computer, open iTunes (this may happen automatically)
- c. Click the iPad button on the top of the iTunes bar



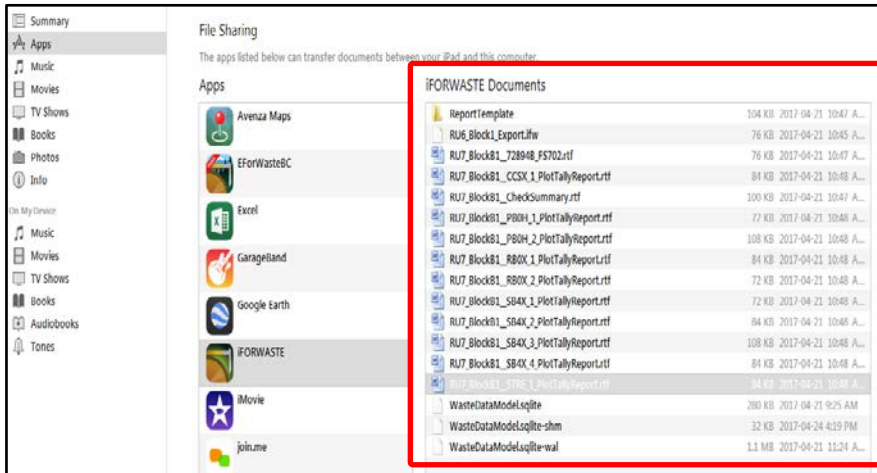
- d. Under **Settings**, select **Apps**



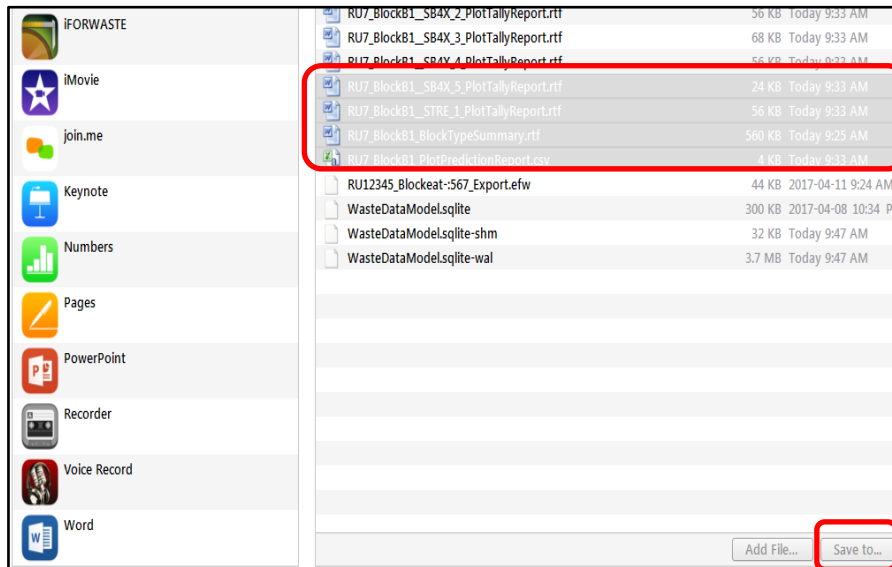
- e. Scroll down to the bottom of the Apps screen to File Sharing section and click the **IFORWASTE** icon.



- f. Once the IFORWASTE icon is clicked, the **Documents** section will be displayed.

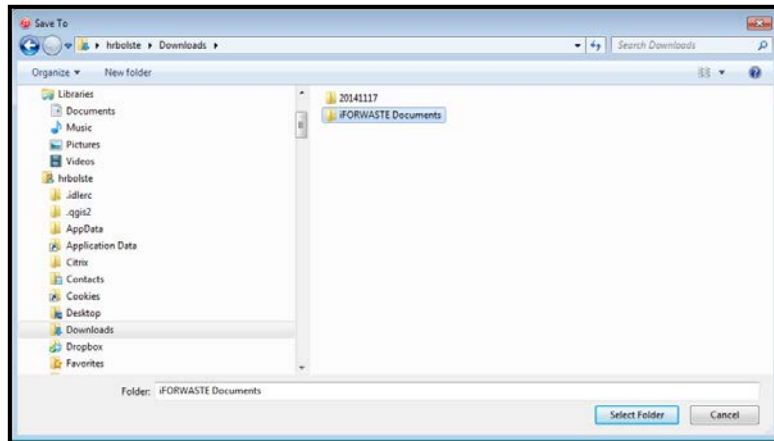


- g. Select the report(s) to be transferred to the user's computer and click the Save To button.



*Note: Users can select multiple reports by holding **Shift** and clicking multiple files in the EForwasteBC **Documents** section.*

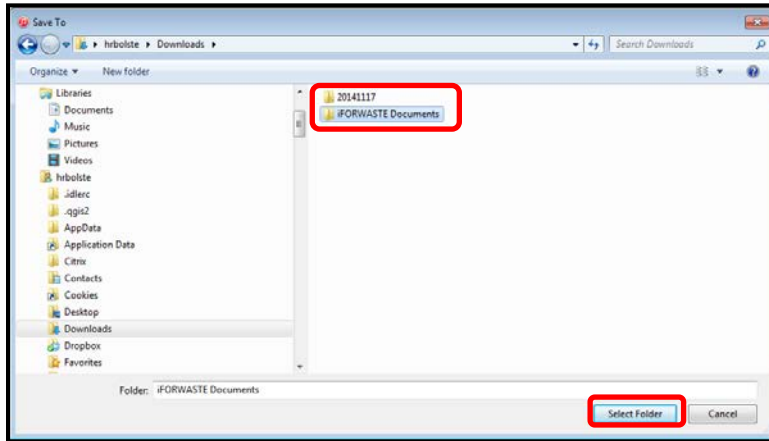
- h. Navigate to the appropriate folder on the computer to save reports to and click Select Folder.



- i. The Reports will be downloaded to the user's computer to the folder selected above.



- c. Navigate to the appropriate folder on the computer to save reports to and click Select Folder.



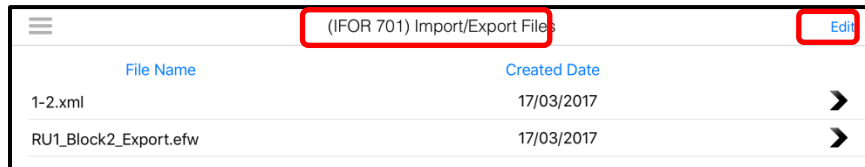
- d. The Reports will be downloaded to the user's computer to the folder selected above.



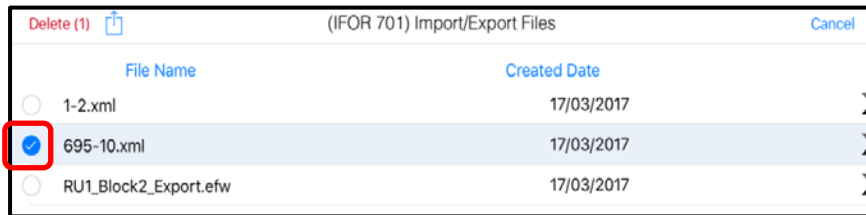
9.2 Emailing files (IFOR701)

Files can be emailed directly from IFORWASTE via the IFOR701 screen. To email a file

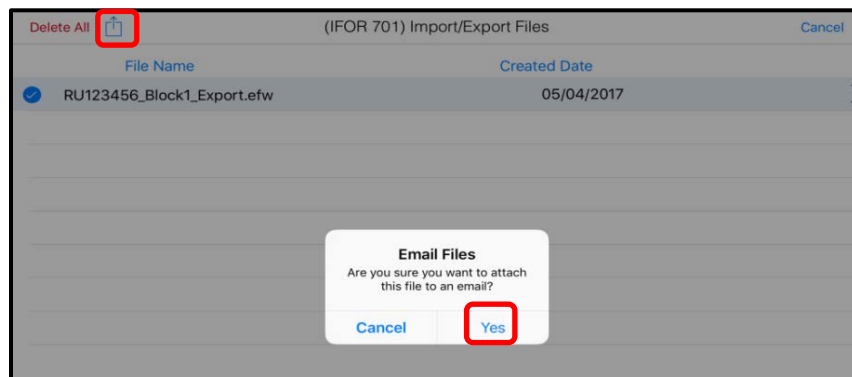
- a. Select 'Edit' from the IFOR701 screen



- b. Select the file(s) to be emailed by selecting the radio button to the left of the file.

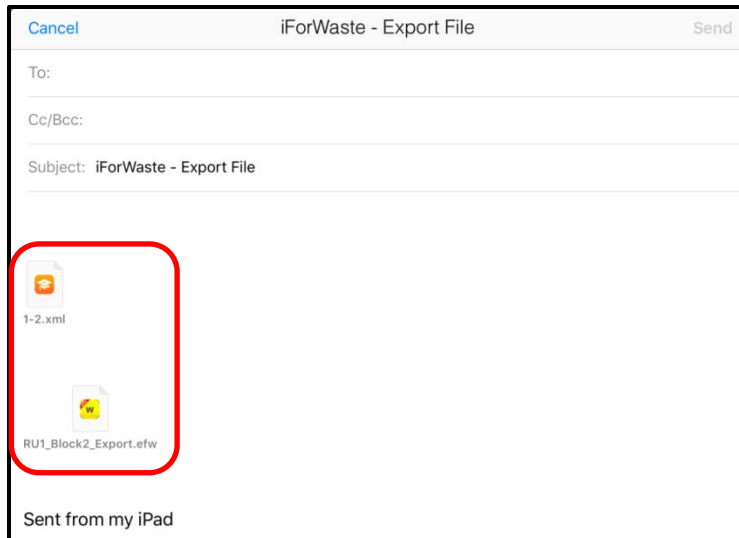


- c. Select the upload file icon and then select yes when prompted to attach the file to an email.



- d. An email will be automatically generated with the file(s) attached.





- e. Address the email and tap 'Send'.
 - 1. The files will be sent via email to all addresses selected.

9.3 Importing files

Blocks can be imported into IFORWASTE in two ways, via email or iTunes. Blocks imported through email are opened directly from an email. Blocks imported via iTunes must be manually transferred and are stored on the View Files page then 'imported' into the View Created page.

9.3.1 Importing by email

- a. Cut Block files (.EFW) can be imported directly into IFORWASTE from emails.
 - i. Open the email containing an .EFW file on the iPad.
 - ii. Tap the file icon then select IFORWASTE from the sharing dropdown.



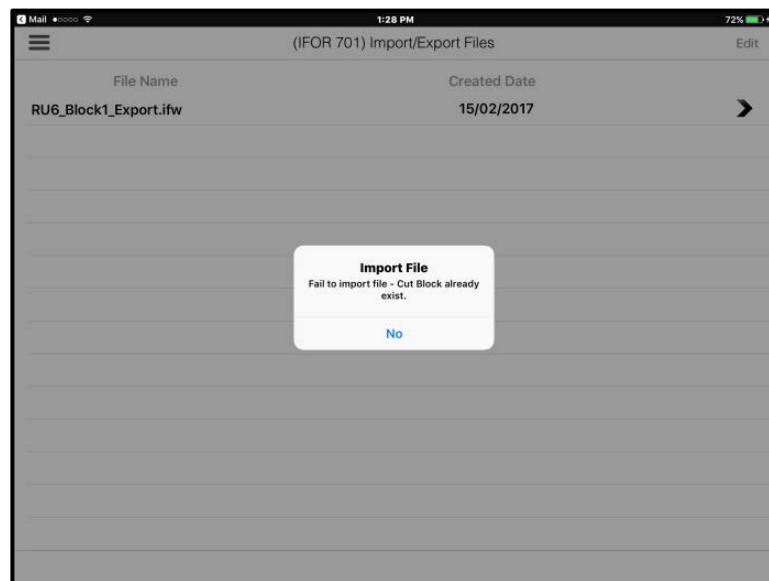
The file will be imported directly into IFORWASTE with two possible outcomes



A message advising the import was successful will be displayed

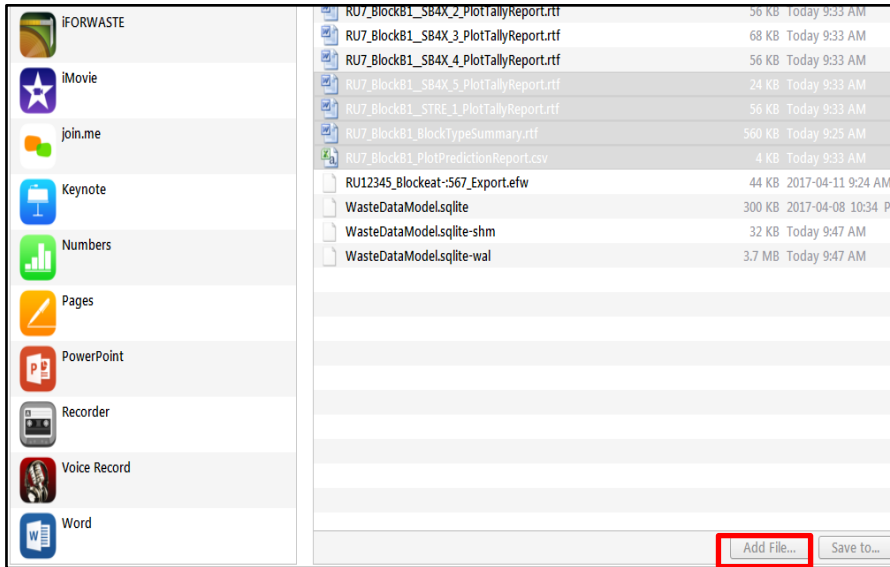


A message advising the import failed because the cut block already exists is displayed. If you still wish to import the file you will need to delete the original version and reattempt the import process.

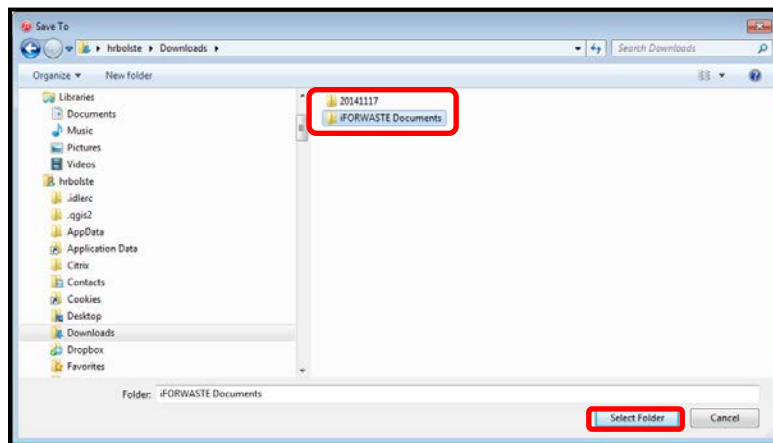


9.3.2 Importing through iTunes

- a. Connect the iPad to a computer and access the application files as instructed in section 8.3.3.2.
- b. In the **IFORWASTE** Documents section select the 'Add File Button'



- c. Navigate to the appropriate folder on the computer containing the file to be imported and select the file.

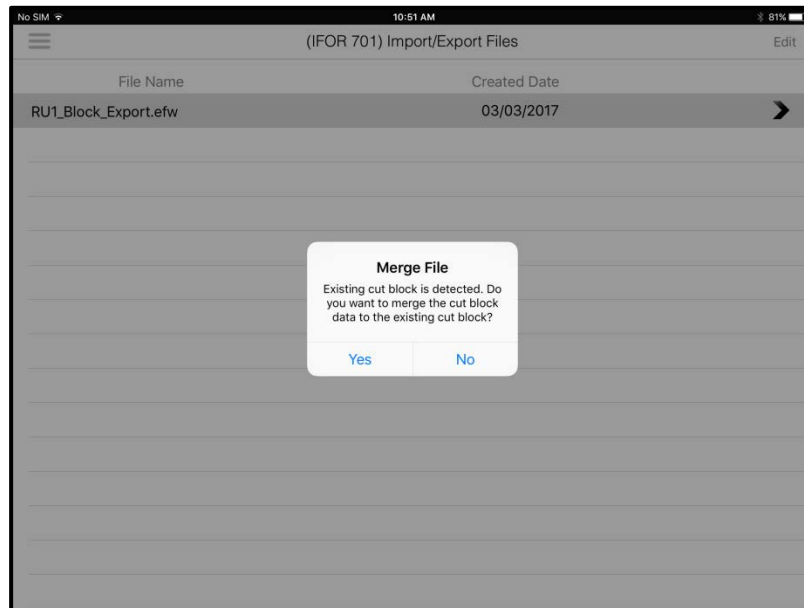


- d. The file will be transferred to the user's iPad and appear in the IFOR701 Screen.



10 Merging Files

IFORWASTE allows the user to merge (combine) files created on different iPads. The merge feature will be triggered when the user imports cut block data from an email or an exported file in the “View Files” screen (IFOR 701). The application detects an existing cut block when the same Cut Block ID, Cutting Permit ID (CP), Reporting Unit number and License exists. A pop up window will appear asking the user if the imported data should be merged with another block.



The merge feature will only succeed if the following conditions exist.

- The Cut Block screen (IFOR 202), Stratum Screen (IFOR 203) and Timber Mark screen (IFOR 401) in both Cut Blocks is identical.
 - If any field on these screens contains different data the merge will fail.
 - The application will show a list of mismatched field names.
 - If originating file contains data in a field and the same field in the imported file is blank the merge will be accepted.
 - The data contained in the field will be maintained in the new dataset.
 - A stratum cannot contain duplicate plot numbers.
 - When a duplicate plot number exists the merge will fail and the application will show a list of duplicate plot numbers.



10.1 The Merging Process

The merge process allows two files, (original and import files) to be merged into a single file on the originating iPad. The merged file will contain the block header information (cut block screen- IFor202) and any unique strata and plot data contained within each file to be merged. Within a given stratum all unique plot numbers will be merged as well as all plot data.

- Example:
 - iPad A
 - Reporting unit 123456
 - License A98765
 - Cutting Permit A1
 - Cut Block 1
 - Stratum: SB2X
 - plots: 1, 3, 5, 10, 12
 - Stratum PBOX
 - Plots 1,2,3,4
 - iPad B
 - Reporting Unit 123456
 - License A98765
 - Cutting Permit A1
 - Cut block 1
 - Stratum: SB2X
 - Plots: 2, 4, 6, 7, 8, 9, 11
 - Stratum: CCSX
 - Plot 1

Will become

- iPad A
 - Reporting unit 123456
 - License A98765
 - Cut block 1
 - Stratum: SB2X
 - plots: 1,2,3,4,5,6,7,8,9,10,11,12
 - Stratum PBOX
 - Plots 1,2,3,4
 - Stratum: CCSX
 - Plot 1



Caution:

- Cut block Screen (Ifor202) fields: Return number, Surveyor License, Name, Designation, Number and Position in the imported file must be identical to the origination file or the imported file must contain blanks in these fields before a merge will succeed.
- Plot header information created within each iPad will be retained after a merge.
- Notes contained in each file will be appended to the originating file.
- It is recommended that the file containing the majority of information be used as the originating file.



Appendix A: Standard WASTE Audit Workflow

The following is a standard workflow for a WASTE Audit using iFORWASTE:

1. Download Block information using the Search function (see [Section 6 – Search](#))
2. Open and check the Cut Block information (see [Section 7.2.4 – Cut Block Information](#))
 - a. Review and edit the following fields:
 - i. Check Area (ha)
 - ii. Check Maturity
 - iii. Waste Checker:
 1. Name
 2. Professional Designation
 3. Registration Number
 4. Position
 - iv. Notes
3. Open and review Timber Mark information (see [Section 7.3 – Timber Mark](#))
 - a. Review and edit the following fields:
 - i. Timber Mark
 - ii. Mark Area (ha)
 - iii. Waste Monetary Reduction Factor (block)
 - iv. Conifer Sawlog
4. Open and review Stratum Information (see [Section 7.4.1 – Stratum Information](#))
 - a. Review and edit the following fields:
 - i. Waste Type
 - ii. Harvest Method
 - iii. Assessment/Size
 - iv. Waste Level
 - v. Area (ha)
 - vi. Notes
5. Open and Review Plot Information (see [Section 7.5.1– Plot Information](#))
 - a. Review and edit the following fields:
 - i. Shape
 - ii. Residue Surveyor
 - iii. Weather
 - iv. Assistant
 - v. Check Survey Date
 - vi. Notes
6. Review Plot Pieces (see [Section 7.5.2 – Pieces Table](#))
 - a. Review Plot Pieces and update Status.



- i. Not Checked
 - ii. Approved
 - iii. No Tally
 - iv. Edit
- b. If required, edit the following fields:
 - i. Border Line
 - ii. Species
 - iii. Kind
 - iv. Class
 - v. Gross Dimensions for pieces inside plot fields
 1. Length (dm)
 2. Top (R)
 3. Top End
 4. Butt (R)
 5. Butt End
 - vi. Grade
 - vii. Deductions for Rot/Holes fields
 1. Length (dm)
 2. Top (R)
 3. Butt (R)
 4. Decay
 - viii. Comment Code
 - ix. Note
7. Review Cut Block Value/Volume table (see Section [7.2.6 – Cut Block Value/Volume Table](#))
8. Generate Reports for Cut Block (see [Section 8.1 – Generate Reports](#))
9. Transfer reports from Ipad to Desktop computer



Appendix B: iPad Basics

This section outlines general iPad practices for users who are new and unfamiliar with the general functions of an iPad.

1. Turning the iPad On and Off

To Turn On the iPad.

1. Find the Sleep/Wake button on the top right of your device.
2. Press and hold down the button for a few seconds. The device will turn on.



3. If a passcode has been set on the iPad, enter the passcode.



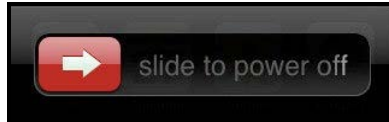
To Turn Off the iPad.

1. Find the Sleep/Wake button on the top right of your device.
2. Press and hold down the button for a few seconds until a small slide bar appears across the top of the display.



3. Drag the slider to power off the iPad.





2. Navigating between iPad Home Screens

The user can navigate between home screens by swiping to the side to move from screen to screen. This can be required for navigating to the iFORWASTE app.



3. Arranging Apps on the Home Screen

An iPad can display up to 11 home screens, allowing for plenty of room to organize apps that are loaded onto the iPad.

To move apps on a Home screen:

1. Tap and hold any app on that page. The app icons all jiggle.
2. Press, hold, and drag an app icon to another location on the screen to move it.
 - a. To move an app from one screen to another, while apps are jiggling, you can tap and drag an app to the left or right to move it to the next screen.
3. Tap the **Home** button to complete the app move (stops icons from jiggling).

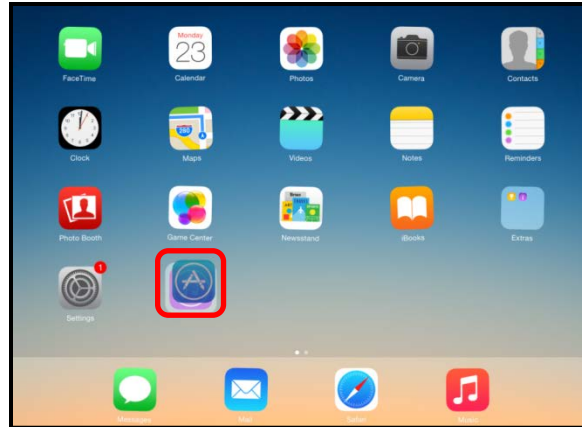
3.1. Organizing Apps into Folders

iPad lets you organize apps into folders to sort common uses and functions.

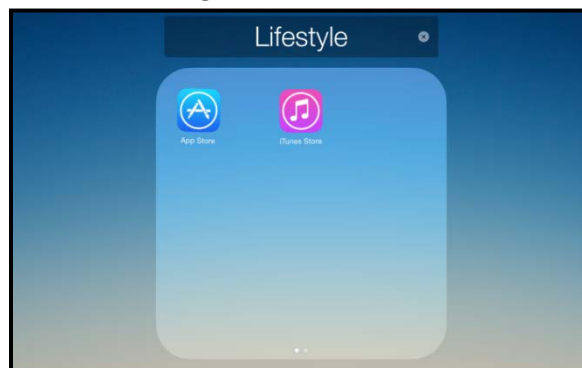
To create an apps folder:

1. Tap and hold any app on that page. The app icons all jiggle.
2. Drag an app on top of another app.





3. The two apps get added to a single folder.

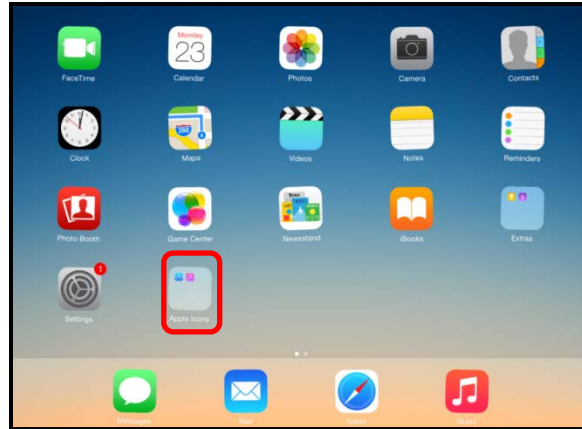


4. Change the name for the folder by tapping in the name field and typing the folder name to be used.



5. Tap anywhere outside of the bar to save the name and folder.





6. Tap the **Home** button to complete the app move (stops icons from jiggling).

3.2. Deleting Apps from iPad

When an app is no longer needed it can be deleted to save space on the iPad.

Note: Apps that come built into the iPad cannot be deleted.

To delete an app from the iPad:

1. Navigate to the app to be deleted. Tap and hold the app until all apps begin to jiggle.
2. Tap the **Delete** button (small x in the top left of the icon) for the app you want to delete.



3. In the confirmation dialog, tap **Delete** to proceed with the deletion.



4. A dialog asking to rate an app before deleting it appears. Either tap the **Rate** button to rate the app or **No Thanks** to opt out of the survey.

4. Unique iPad settings for Iforwaste

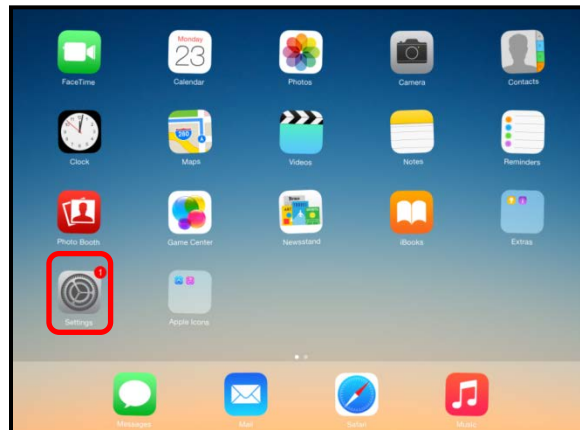
4.1. Passcode

4.1.1. The "Require Passcode" option allows the user to set the amount of time that passes by before the iPad asks for a passcode.

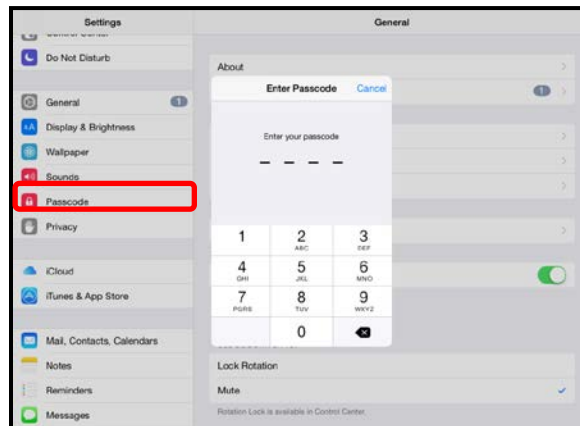
- "Immediately" will request that you enter a passcode upon turning on the device or waking it up from sleep.
- Otherwise, you can pick a time between 1 minute to 4 hours for the lock time. iPads typically use a default setting of 15 minutes.

The user can use the following steps to set a password for the user's iPad.

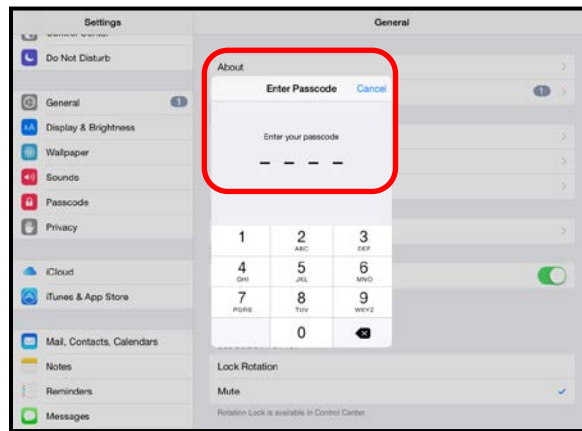
1. From the iPad Home screen, tap **Settings**.



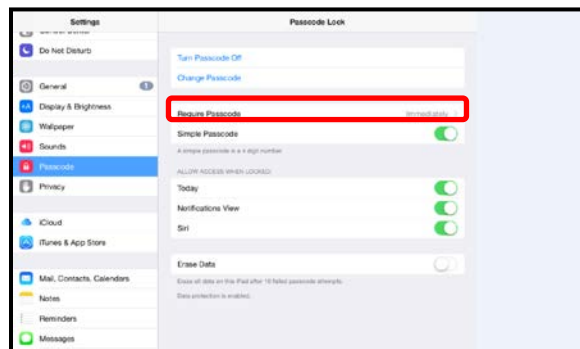
2. Tap **Passcode**.



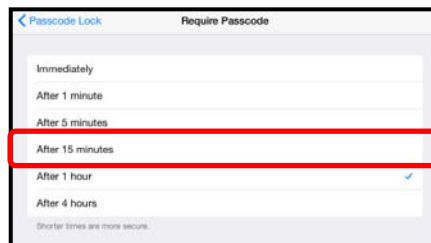
3. The Passcode Lock screen appears. Enter the **iPad Passcode**.



4. Tap **Require Passcode**.



5. Select the desired length (recommended option is 1 hour).

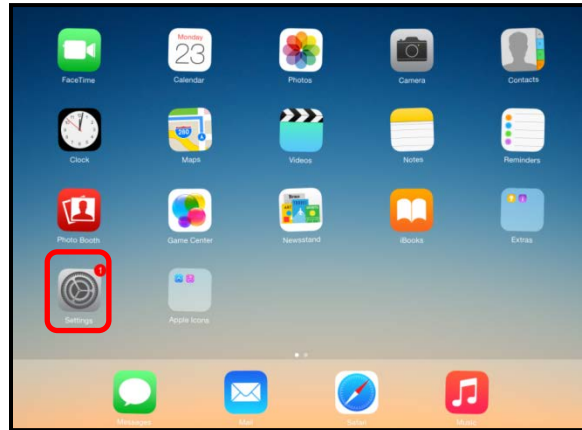


4.2 Font Size

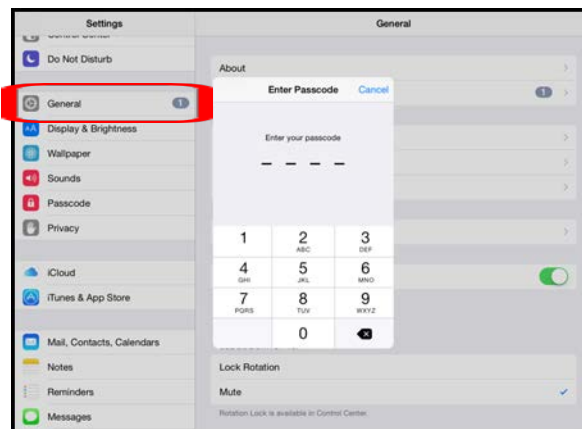
4.2.1 The default iPad font size needs to be reduced to allow some of the screens to display correctly.

4.2.1.1 The user can use the following steps to set a password for the user's iPad.

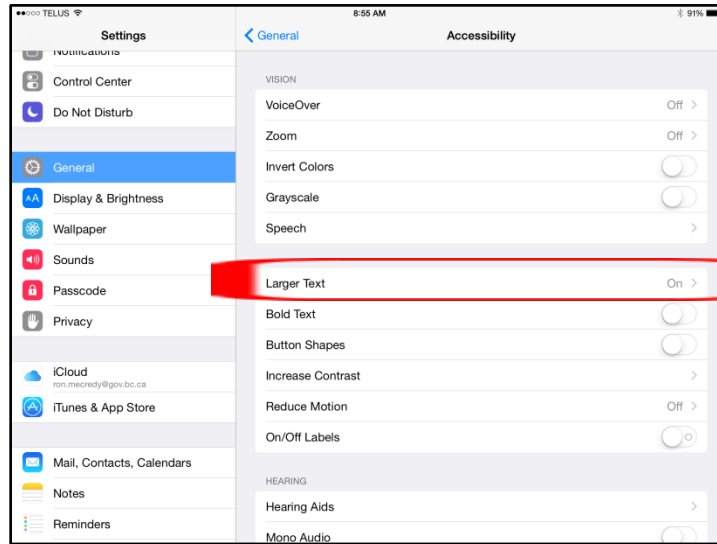
1. From the iPad Home screen, tap Settings.



2. Tap **General**



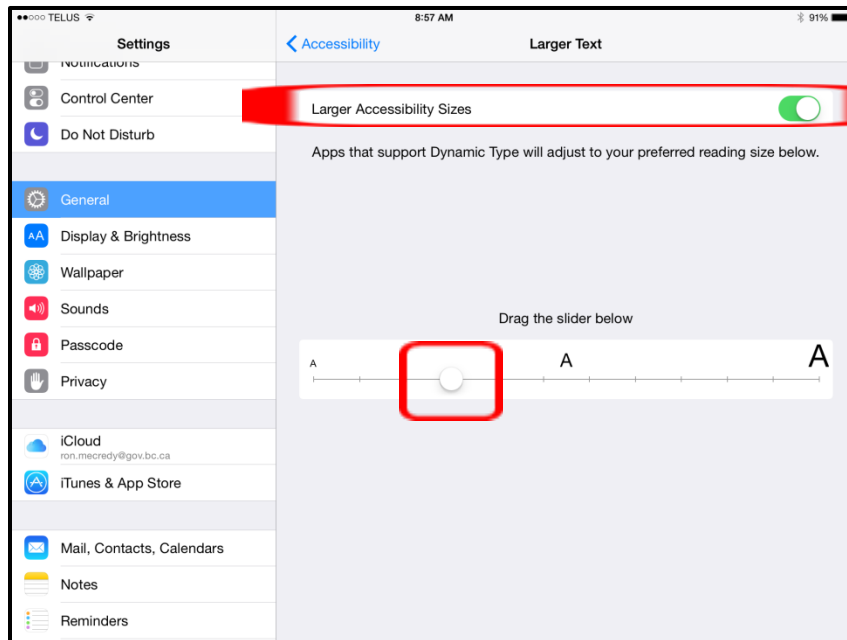
3. Tap Accessibility



4. Tap 'Larger Text'

4.2 Set 'Larger Accessibility Sizes' to On

4.3 Set Scroll bar to 3rd setting point



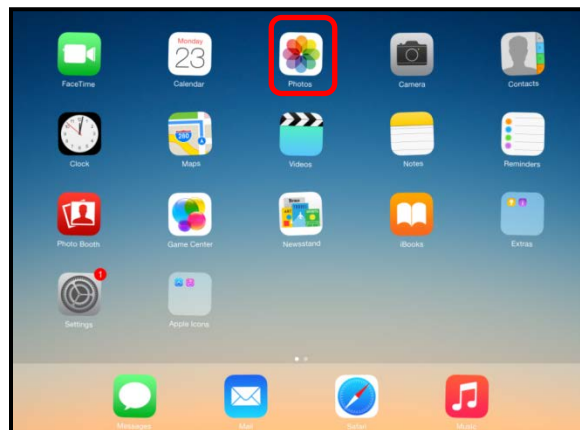
5. Taking Screenshots

To take a screenshot on your iPad:

1. Locate the Home and Sleep/Wake buttons. The Home button is located directly below your iPad's display. The Sleep/Wake button on the top right of your device.



2. Simultaneously press the Home button and Sleep/Wake button when viewing the screen you want to capture. The iPad will flash if done correctly.
3. Once screen is captured, photos will automatically be saved in the **Photos** app. The screen shot can then be transferred to a desktop computer or emailed if the iPad has that capability.



4. Navigate to Photos app to view captured screenshot.



6. Closing an Application

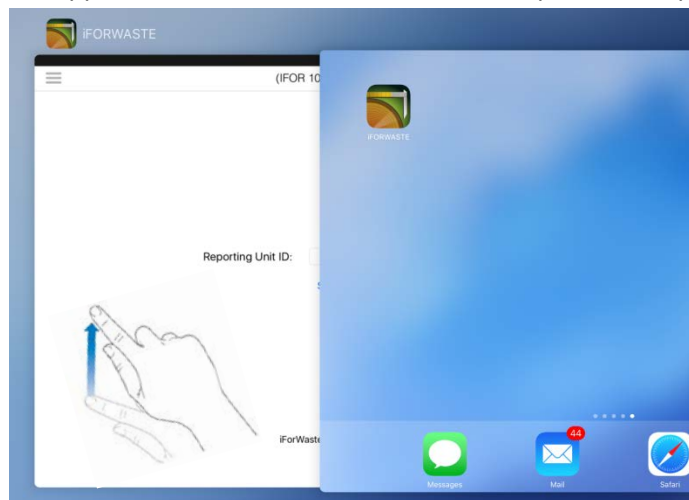
Tapping the home button will minimize the current application the user is using and open the Home Screen. This will not close the application properly and it will still be open in the background.

To close an application:

1. Double click the home button to open the multitasking screen.



2. Press and hold the application window to be closed and swipe to the top of the screen.



7. User Guide

The Apple iPad user Guide contains all general information for the iPad including:

- An overview of iPad buttons and screens
- Common iPad functions
- Customizing the iPad
- General iPad help

The User Guide for the iPad 4 Mini can be found at the following location:

https://manuals.info.apple.com/MANUALS/1000/MA1595/en_US/ipad_user_guide.pdf

8. Protective Case

Care and Maintenance for the protective case can be found on the 'Survivor' website:

<http://griffintechology.com/support/survivor>

To clean the protective case:

1. Remove the iPad from the protective case
 - i. Be sure to use a flat and stable surface when removing iPad from protective case.
 - ii. Unclip screen protector from plastic shell, starting at the top of the iPad.
 - iii. Place both hands on both sides of the top left corner of the case. Use your thumbs to press out and down on the case until you hear a click. Work your way around, repeating this motion on the other corners of the case. When pressing down on the third corner, the iPad will come out of the hard plastic shell.
2. To clean the protective case it is suggested to use a clean, lint free cloth with warm water. Avoid applying corroding cleaning products such as alcohol and chemical based cleaners.
3. Be sure to allow protective case to completely air dry before putting the iPad back into the case.

