

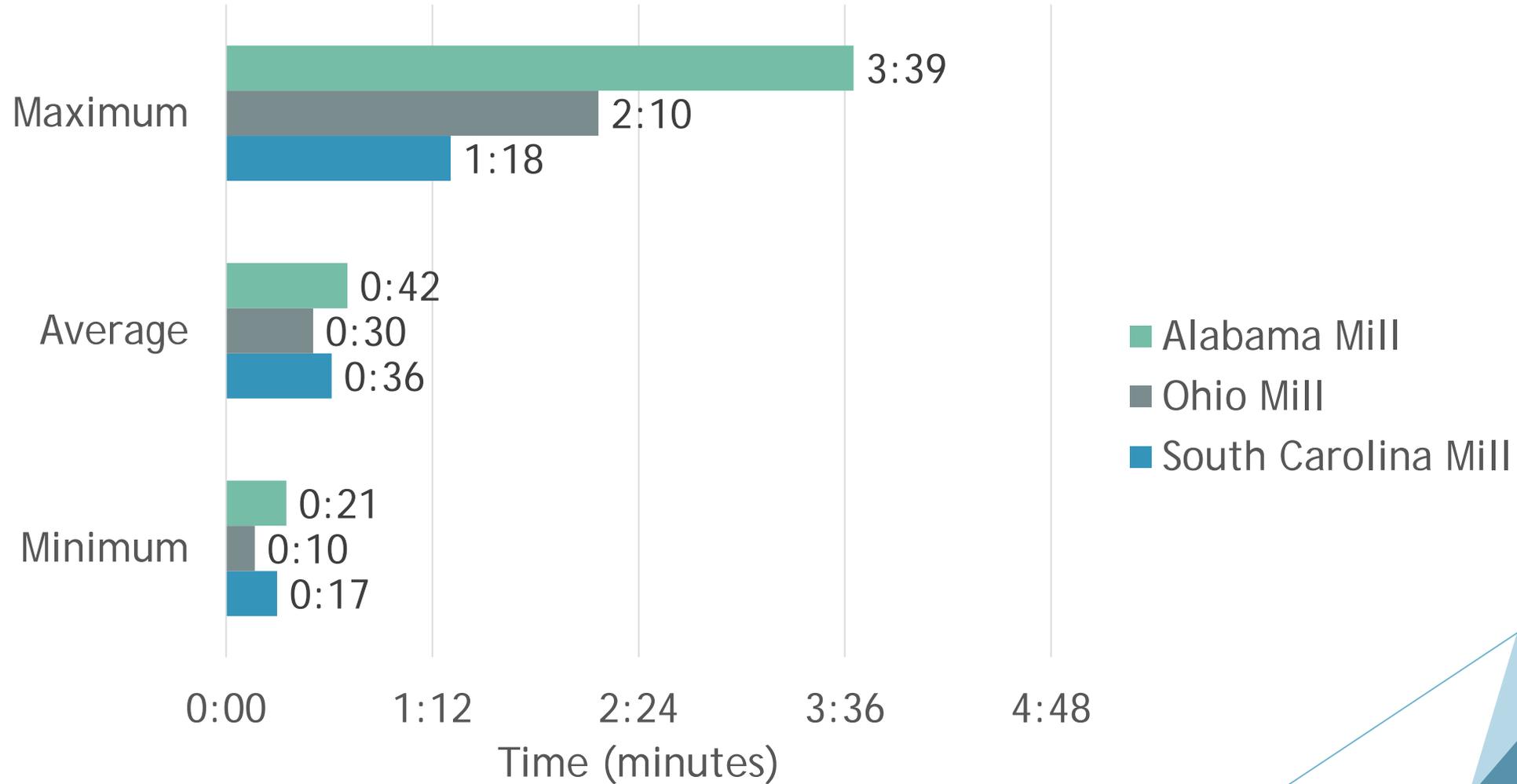
Utilization of Phone Application Technology to Record Log Truck Movements in the Southeastern U.S.

Marissa “Jo” Daniel, Tom Gallagher
& Tim McDonald

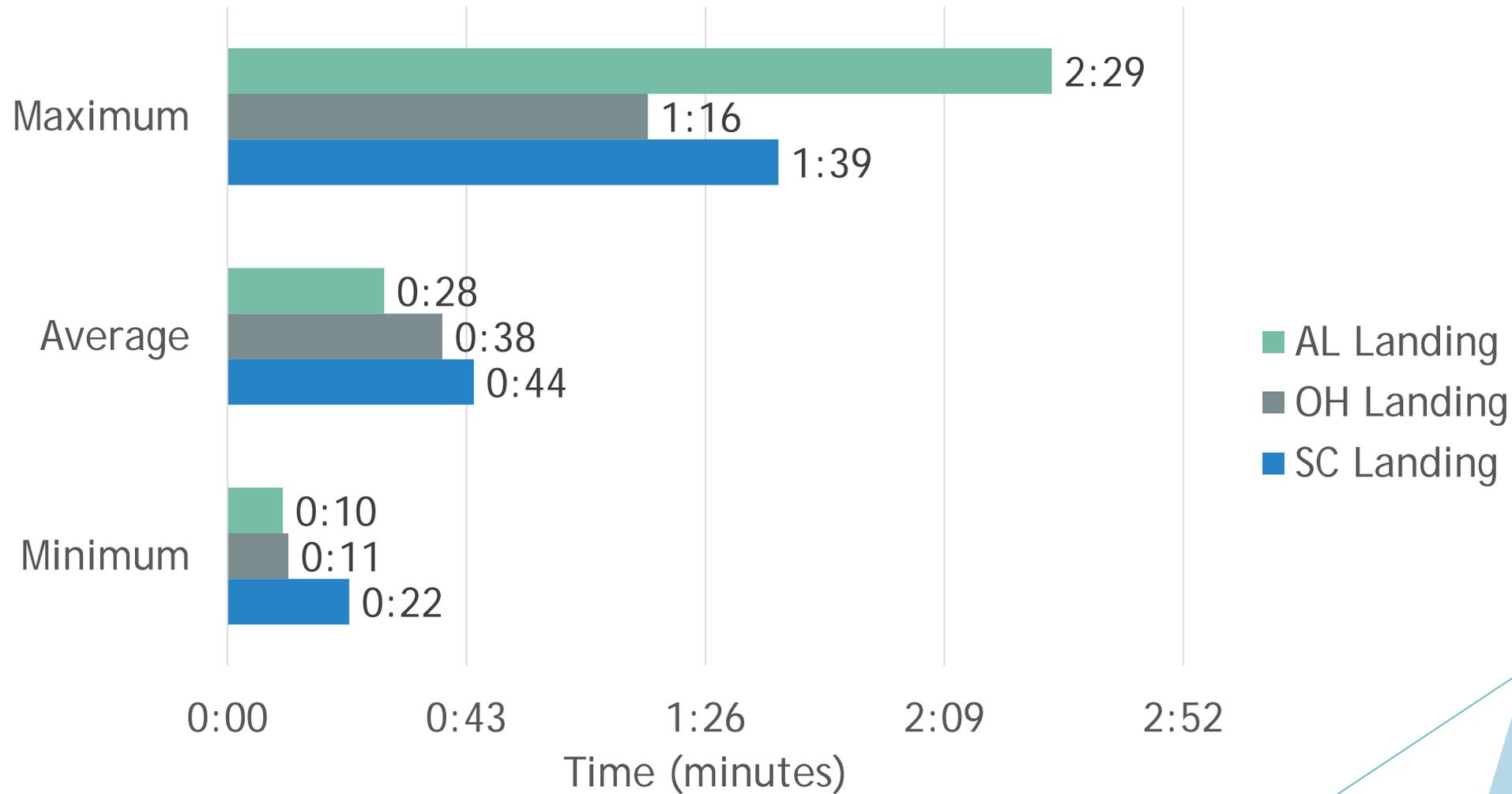
Initial Trucking App

- ▶ Originally funded by Wood Supply Research Institute (W.S.R.I.)
- ▶ Google based app developed by Dr. Timothy McDonald.
- ▶ Identified when driver had moved less than 500ft in 15 minutes.
- ▶ Ability to alert driver when a stop event occurred.
- ▶ 3 original state studies conducted. 1 additional study after minor modifications.
- ▶ Funding ended due to lack of participation.

Mill Delay: State Comparison

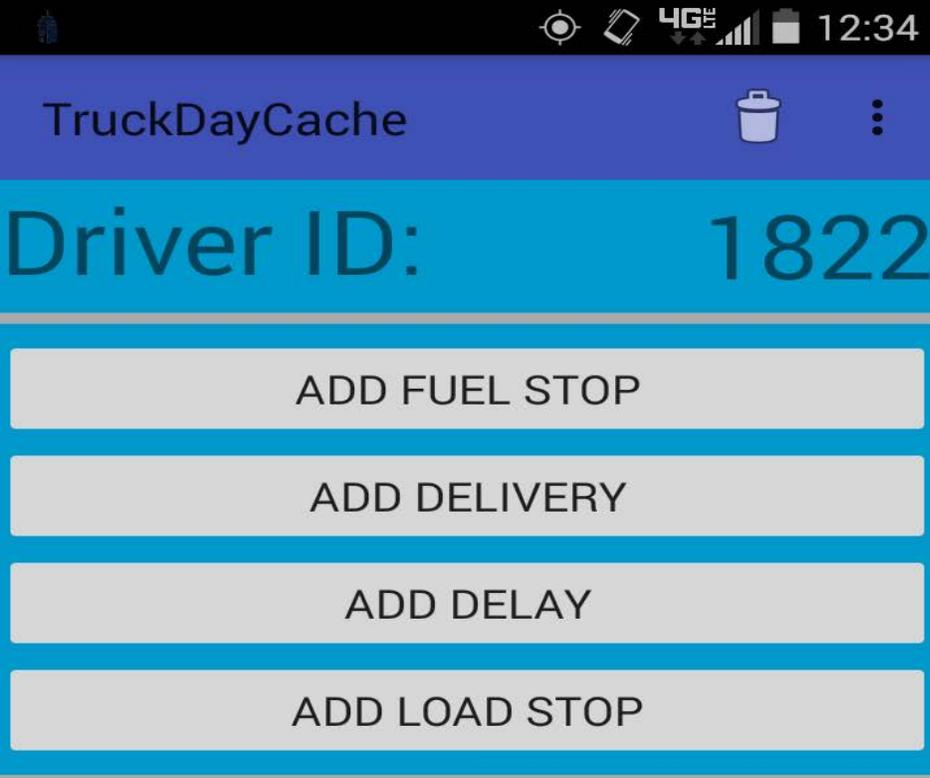


Landing Delay: State Comparison



Trucking App

- ▶ Developed by Dr. Timothy McDonald.
- ▶ Google Based App.
- ▶ App is currently only accessible to designated participants with Android phones.
- ▶ Activated through Gmail/Google Drive account.
- ▶ Data collected is stored in Google Drive on participants account.
- ▶ Data is “shared” to Marissa “Jo” Daniel at initial setup for collection and analysis



Main Screen

- ▶ Initial screen seen by driver.
- ▶ Recorded stops are displayed after occurrence here.
- ▶ Top right hand corner depicts three vertical dots, this is the options menu.

TruckDayCache

Driver ID

About

Stop Location Service

Archive Data

Set Driver Number

ADD

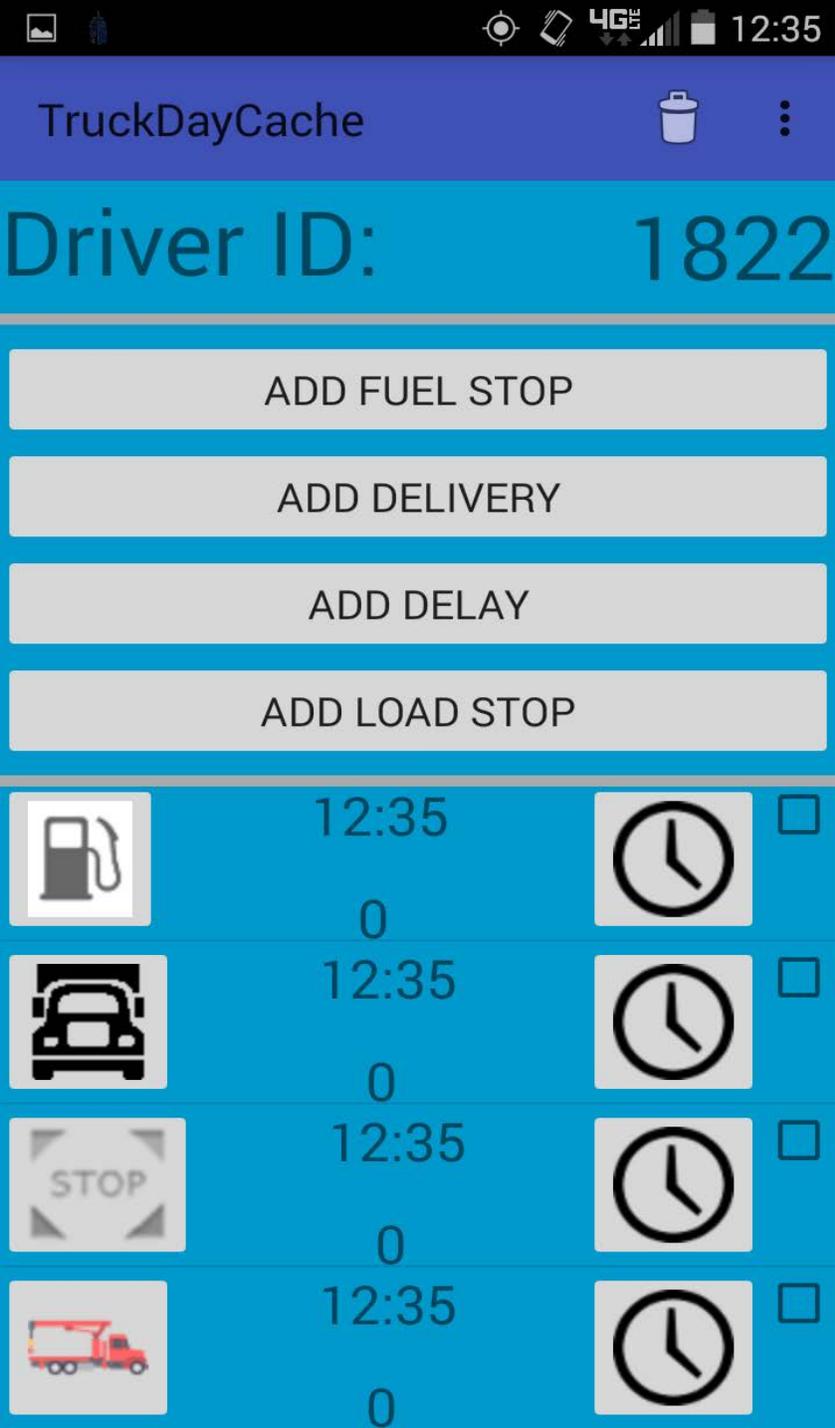
ADD DELIVERY

ADD DELAY

ADD LOAD STOP

Options

- ▶ About provides information about the app with regards to google licensing.
- ▶ Stop location service ends the program
 - ▶ This button asks driver if he wishes to archive his data before closing app to ensure data collection.
- ▶ Archive data sends operator to the collection page
 - ▶ Data is sent to the google server here.
- ▶ Set driver number allows driver to set his driver ID
 - ▶ This number is designated to him



Recorded Event

- ▶ When the driver incurs an event they have the option of inputting additional information into the app.
- ▶ Time of stop event is displayed for driver's benefit. Driver is able to input ending event time to determine duration.
- ▶ Fuel stops: input number of gallons purchased.
- ▶ Delivery & Load Stops: add scale ticket number.
- ▶ Delay: choose reason for delay.
- ▶ Event icon disappears from the page after inputting information.

Reason For Stop

Stop ID:5

CANC

ASON

- In-woods Loading
- In-woods Delay
- Waiting at Mill
- Maintenance/Repair
- Traffic
- DOT Stop
- Fueling
- Personal/Meal Time
- Equipment Move
- Other

Stop Reasons

- ▶ 10 response's are available for the driver to select for their situation.
- ▶ Once selected, driver sets stop reason.

TransferActivity

Locations: 77 Events: 4

SAVE DATA AND QUIT

File IDs:

Data retrieved:

Data handed to Google Drive:

Data saved:

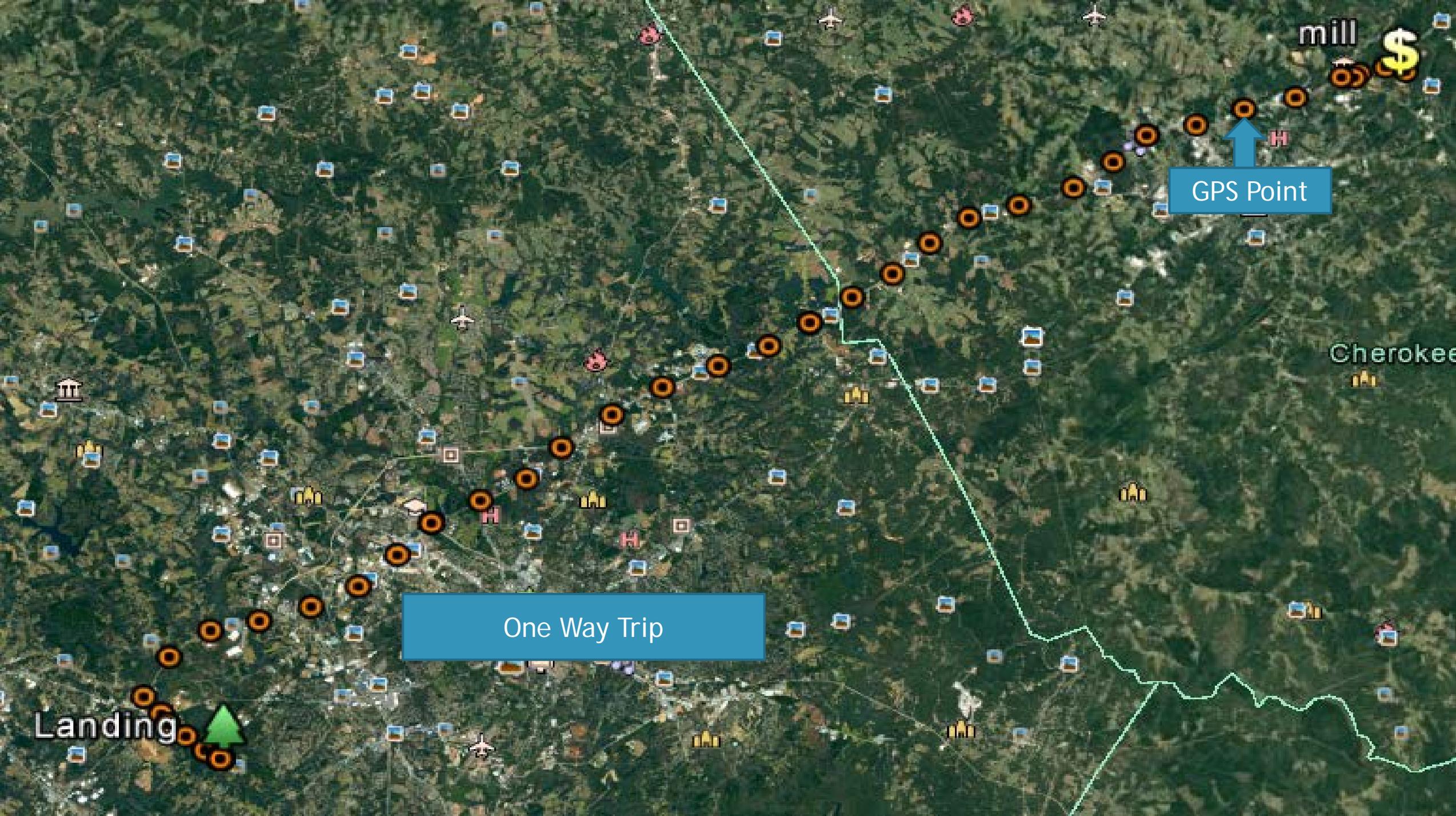
InformationSave index is 0

Retrieving data

Event data retrieved. Location data retrieved.

Archive Data

- ▶ Driver will be relocated to this page by choosing the archive option or selecting archive data before stopping app.
- ▶ Driver selects "Send Data to Server"
- ▶ Once data has been transferred the screen will either return to the main page or shut the app down.
- ▶ Driver's are asked to send data at the end of each workday.



mill



GPS Point

Cherokee

One Way Trip

Landing

Alymeric Analytics^{1.0}

Transport Analytics



User Marissa Jo Daniel mndc59@gmail.com	Files to Process Please select a file to process 1001.17-02-24_105210 <input type="button" value="Process File"/>	Summary Downloads 1001.17-03-07_160901 1001.17-03-06_142340 1001.17-02-27_154914	KML Downloads 1001.17-03-07_160901 1001.17-03-06_142340 1001.17-02-27_154914
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Summaries of Mileage and Stops for File: 1001.17-03-03_162852

Daily Summaries							
Day	Began	Ended	Number of Stops	Total Stopped Time	Mileage	In State	
27Feb2017_1	22:48:40	23:59:54	1	57.58	1.4	Alabama	
28Feb2017_2	00:48:47	23:58:26	6	738.48	13.0	Alabama	
01Mar2017_3	10:13:24	23:58:54	11	810.48	353.4	Alabama	
02Mar2017_4	00:00:05	23:59:06	9	830.28	282.1	Alabama	
03Mar2017_5	04:15:09	22:28:01	13	724.58	442.8	Alabama	

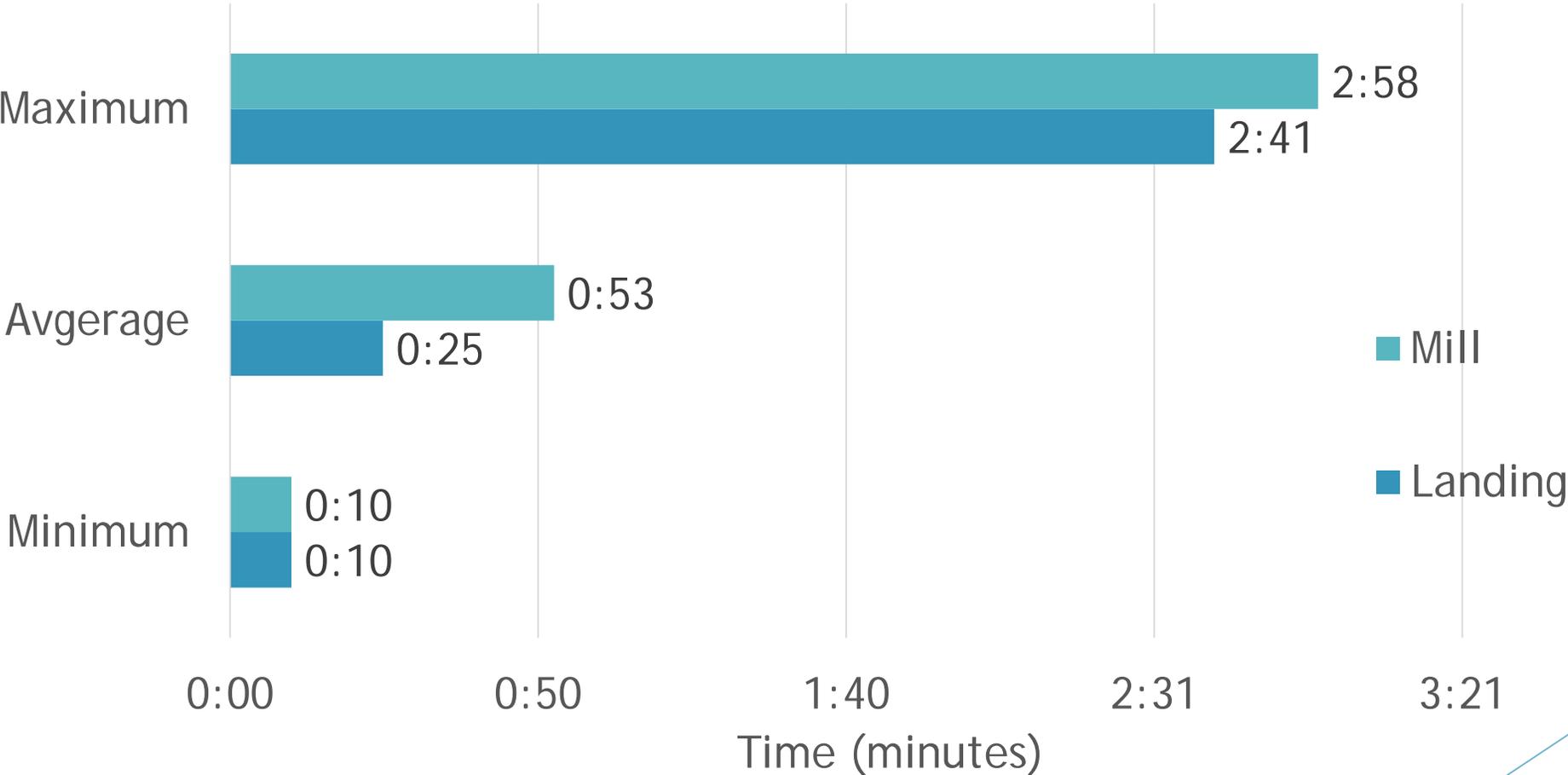
Calculated Stops					User-defined Stops				
Day	Time Of Stop	Duration	Lat	Lon	Day	Time	Type	Parameter	Time Added
27Feb2017_1	21:49:50	57.58	32.605766180555555	-86.25994822916668	01Mar2017	10:11:00	AM Mileage	561280	10:10:53
28Feb2017_2	00:01:34	46.07	32.60562608333333	-86.260031	01Mar2017	20:23:00	Delay	1	20:23:24
28Feb2017_2	00:54:52	48.47	32.60583408730158	-86.25990988095236	01Mar2017	23:28:00	Fuel	94	23:28:00
28Feb2017_2	01:45:44	460.83	32.605801739316234	-86.25995190170939	02Mar2017	10:13:00	AM Mileage	561671	10:13:12
28Feb2017_2	09:28:48	49.42	32.60558757936508	-86.25992710317459	02Mar2017	11:34:00	Delay	1	11:34:01
28Feb2017_2	10:20:40	46.20	32.605739291666666	-86.2599435	02Mar2017	18:00:00	Delay	2	18:35:45
28Feb2017_2	11:09:11	87.50	32.60579727272727	-86.2598872077922	02Mar2017	22:20:00	PM Mileage	561952	22:20:02
01Mar2017_3	00:00:05	612.13	32.60581538804068	-86.25989952926214	03Mar2017	07:32:00	AM Mileage	561952	07:31:41
01Mar2017_3	12:13:23	20.37	32.90241947916667	-86.45225593750001	03Mar2017	08:30:00	Delay	2	09:44:56

Example of Potential Results

Driver 1001

Number of Days Ran per Week:	5
Total Number of Days Ran:	9
Average Loads per Day:	3
Total Loads Hauled:	25
Miles Ran per Day:	369
Total Miles per Week:	1104
Number of Stop Events Occurred:	13
Most Prominant Stop Event Reason:	2

Initial Results: Round 2



Deliverables From the Study

- ▶ Set-out trucking versus hot-loading.
- ▶ Trade off of in-woods utilization versus truck utilization.
- ▶ Productivity analysis during quota versus non quota times
- ▶ Availability for owner to collect, interpret and analyze their own data.

Questions?



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