

# Mobile Manifest and Dispatch Solutions

# Project overview

- Dairy Farmers of America (DFA) is interested in leveraging technology within our milk collection and delivery processes in order to:
  - Improve productivity and efficiency
  - Increase data to information
  - Increase innovation
  - Integrate compliance
  - Increase sustainability
- Technologies continue to provide opportunities for transformation of data to knowledge with near real-time capabilities

# Dairy.com platform

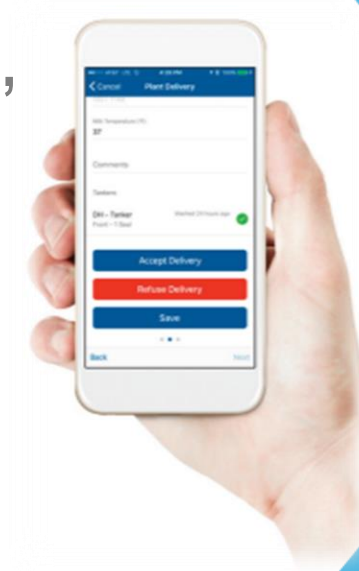
- Approximately 20% of the milk supply in the U.S. is utilizing this technology
- Several of DFA's largest customers are finding benefit in the program as other suppliers have implemented this platform
- The platform is compatible with our current operating system
- Supported by the devices that are currently used by drivers for electronic logs and time card management system
- Provides time and labor savings for the cooperative and its customers



# Dairy.com

## Mobile manifest and dispatch solutions

- Provides real-time monitoring and data on milk collection, load tracking and wash tag management
- Enhances traceability across the supply chain
- Minimizes errors
- Clean data is transferred directly into DFA's SAP system, eliminating paper verification and manual data input
- Leverages multiple mobile platforms (iOS and Android) and devices (phones and tablets)
- Simplified communication between dispatch, haulers and plants



# Why mobile manifest?

- **Mobile applications are strategic, paper not so much**
- **Timeliness of data to information**
  - Paper takes 2-3 days on average to transform into data
  - Mobile manifest is near real-time (minutes, not days)
- **Quality of data to information**
  - Paper requires interpretation of driver's handwriting
    - 5,000+ drivers across DFA
  - Mobile is dependent upon a driver's typing skills, which is minimized to weight and temperature primarily
  - Barcode scanning captures majority of the data elements
  - Accuracy improves as drivers become acclimated to the application
- **Sustainability**
  - Paper consumes natural resources – 1 million multiple-part manifests annually
  - Mobile consumes electronic resources

# Why mobile manifest?

- **The intent is to implement a mobile manifest application with the following attributes:**
  - Utilization of the application on a smartphone or tablet (Apple or Android)
  - Integrates with DFA SAP Milk Marketing Solutions
  - Continue to work with customers to enhance data sharing
  - Design technically to a standard of reusable programs to accommodate the frequent change in technological capabilities
- **Mobile manifest is a journey, not a big bang**
  - Requires coordination with each DFA customer
  - Requires thorough training for each driver
  - Requires Subject Matter Experts (SME's)

# Hauler data collection

The 'Scan Tanker' app interface shows a 'Tanker Number' field with 'MT0106' entered. Below this, there are three buttons for selecting a pickup location: 'Drop Yard', 'Plant Yard', and 'Direct Fill'. An 'or' separator is followed by a 'Start New Load' button. A 'Next' button is visible at the bottom right.

**To Start:** Driver logs in and selects route. Truck ID, seals, wash tags, and other fields are as entered or scanned

The 'Producer Pickup' app interface displays farm information: '4 Star Dairy', 'Big Sky Cooperative', and 'rBST Free'. It shows 'Milk Temperature (°F)' and 'Manual Temperature (°F)' both set to '36'. A table lists samples with their IDs and timestamps:

Sample ID	Component	Timestamp	Action
7745459	Component	6/5 16:53	Trash
7745460	Gold Vial	6/5 16:53	Trash

An 'Add Sample' button is located below the table. A 'Comments' field is at the bottom.

**At the Farm:**

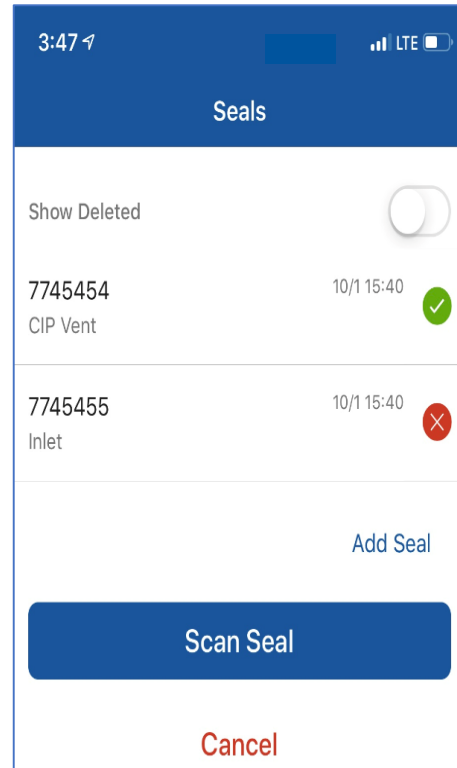
- Farm information captured by scanning tank QR Code
- Weights captured
- Sample information entered by barcode
- Producer's location confirmed

The 'Plant Delivery' app interface shows 'Milk Type' as 'rBST Free' and 'Milk Temperature (°F)'. It lists 'Tankers' with 'MT0106' and 'Front - 2 Seals', and a status 'Washed 23 hours ago' with a green checkmark. At the bottom, there are three buttons: 'Accept Delivery', 'Refuse Delivery', and 'Save'.

**Delivery:** As Hauler approaches scale an email is generated with PDF attachment of manifest

# Plant delivery

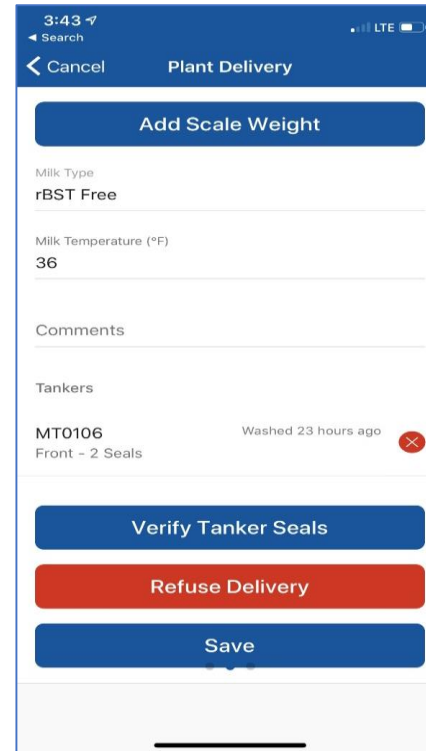
## Tanker QR Code



## Scan Tanker Seals to verify

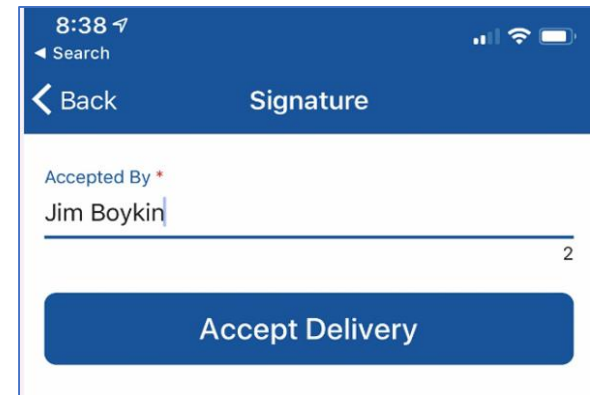
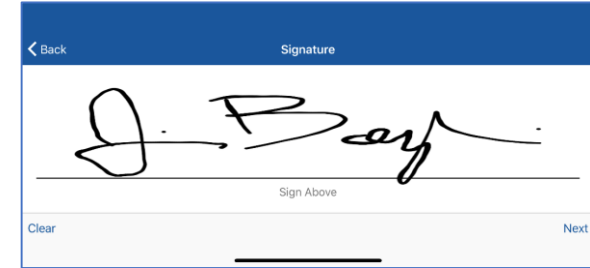
### Receiver will:

- Scan tanker QR code



### Enters:

- Temperature
- Enter load notes/comments



### Accept Load:

- Signature



# Why dispatch?

- The dispatch solution enables DFA, its customers and haulers to gain visibility into milk supply schedules and plant demand schedules
- Provides automated communications with haulers and plants through electronic notifications
- Mobile Manifest integrates with the dispatch tool
  - Validates unique load numbers as they are entered
  - Provides visibility to load locations and status

# Implementation approach

- **DFA's Mountain Area was the first to begin testing functionality of the mobile manifest and dispatch solutions**
  - Colorado fully transitioned to mobile manifest and dispatch in May 2019
  - Idaho and Utah implementation is currently in progress
- **Other Areas are interested in utilizing these tools**

# Mountain Area project timeline



Oct 2017

## Discovery

- Project preparation
- Business case
- Application evaluation

Sep 2018

## Planning

- Develop DDC and DFA integration
- Executed Conference room pilot
- Customer and Hauler briefings

May 2019

## Execution

- Implementation preparation
- Executed driver training
- Executed customer training
- Implemented in Colorado

In Progress

- Utah and Idaho implementations

# Current success rate

- **Since implementation, over 93% of Colorado manifests have been successfully uploaded into the DFA SAP system**
  - Manifests that contain errors are conveniently managed through an error screen
- **Customers using the tool today have a high level of confidence and are pleased with the new processes**