Ceres Inventory Process Flows

Purpose of this document

The purpose of this document is to provide a basic overview of the available inventory workflows throughout Ceres. This document is intended to be used in conjunction with setup and procedure documentation that provides details regarding specific Ceres data requirements & processing guidelines.

Ceres Object release 5.00.00 is required for the functionality described in this document.

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Workflow Overview

Ceres offers several configurations to manage the specific inventory processing needs of each food bank. While the basic flow of inventory remains the same; the configuration, pages & processes utilized within Ceres can vary depending on the business requirements and complexities of the food bank.

Basic inventory workflow



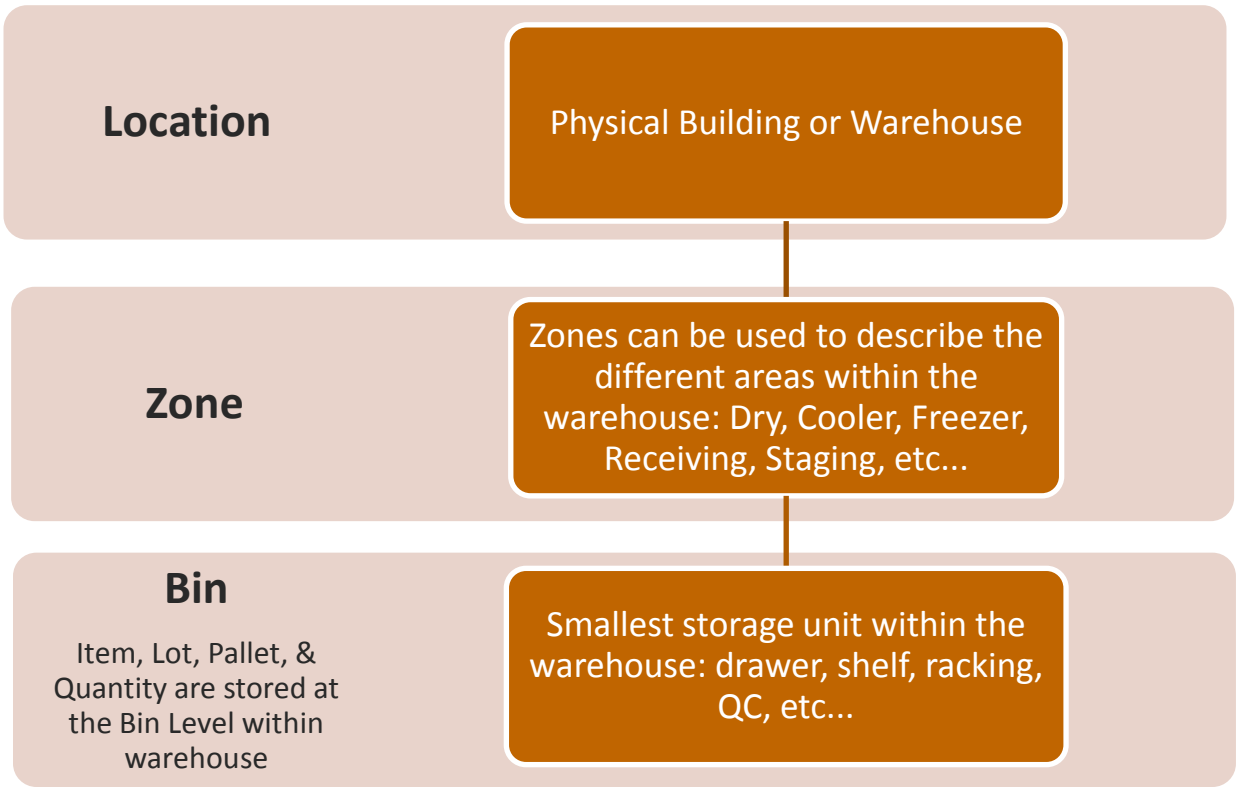
In general, inventory comes into a warehouse → is put away →stored & handled throughout the warehouse →picked for order fulfillment →and finally distributed.

This document will outline warehousing options that are available including the associated Ceres Document and/or Process used for handling the inventory. It is recommended that a detailed analysis is completed to determine which option(s) best suites each specific food bank.

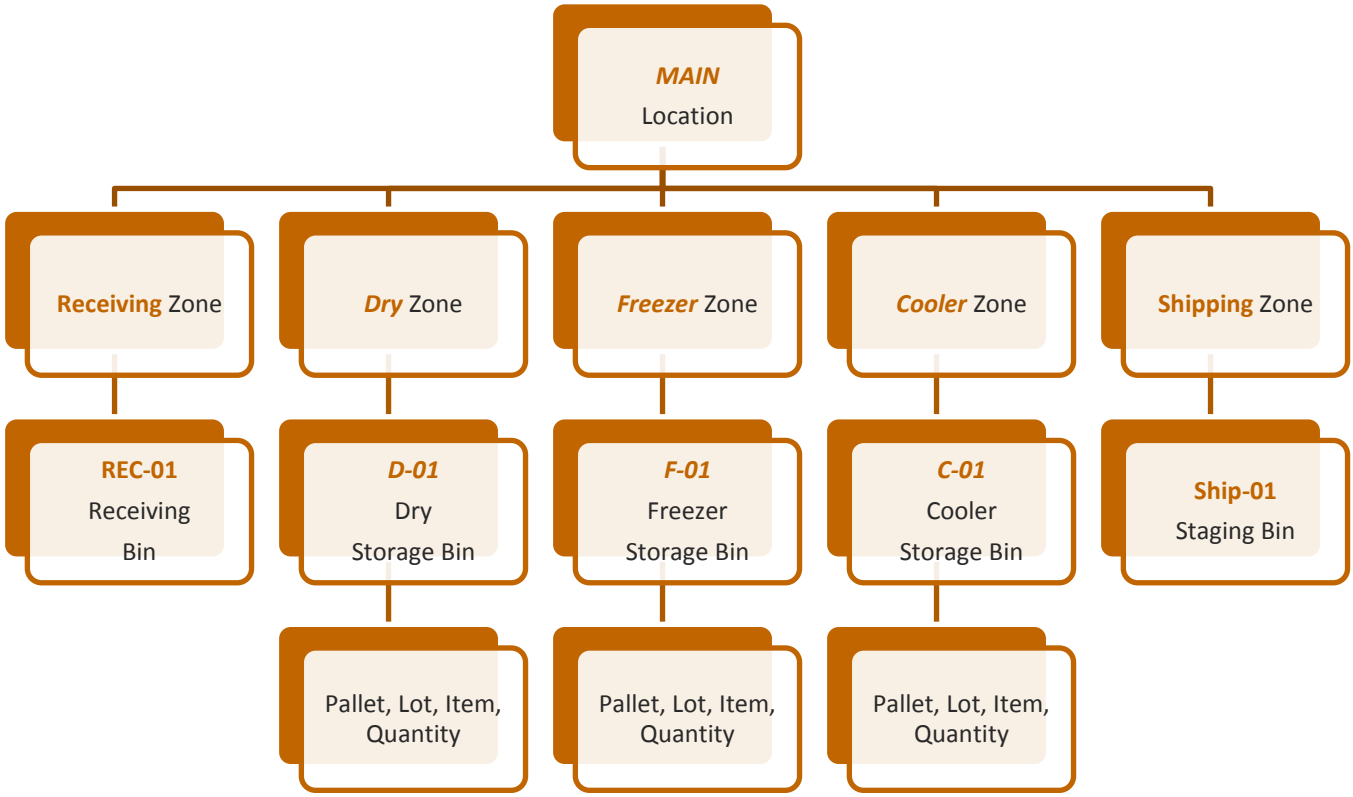
Warehouse Hierarchy

There are a few fundamental warehouse hierarchies that are required to exist for all warehouse configurations in Ceres.

- **Location** (the physical building or warehouse) – This a *required* layer
  - **Zone** (group of bins within the warehouse) – This is a *required* layer
    - **Bin** (physical storage unit) – This is a *required* layer
      - **Item** (specific type, size, brand of product) – This is a *required* layer
        - **Lot** (unique identifier for the receipt of the Item) – This is a *required* layer
          - **Pallet** (the physical pallet) – This is an *optional* layer



Below is an example of how each of the hierarchical layers coult be designated:



Receiving & Shipping using Order Lines

Using a Purchase and/or Donation Order to receive inventory uses a single step to facilitate receiving the item(s) quantity & placing the inventory into the warehouse. This is handled using the Purchase Order and/or Donation Order lines. There will be no warehouse documents used to process inbound inventory.

Using an Agency Order to ship inventory uses a single step to facilitate picking the necessary items to fulfill the item(s) ordered & reducing the quantity on hand for those items. This is handled using the Agency Order Lines.

Receive & PutAway
Inventory in a single step

- Using the Order Line Location, Zone & Bin Code fields to identify where to place inventory for storage.
- Post & Receive the Order to increase quantity on hand.

Storage

- Inventory can remain in the Zone & Bin it was originally received into until it is ready for distribution.
- Warehouses can also choose to configure Bin Types to facilitate inventory flow throughout the warehouse.

Pick & Distribute
Inventory in a single step

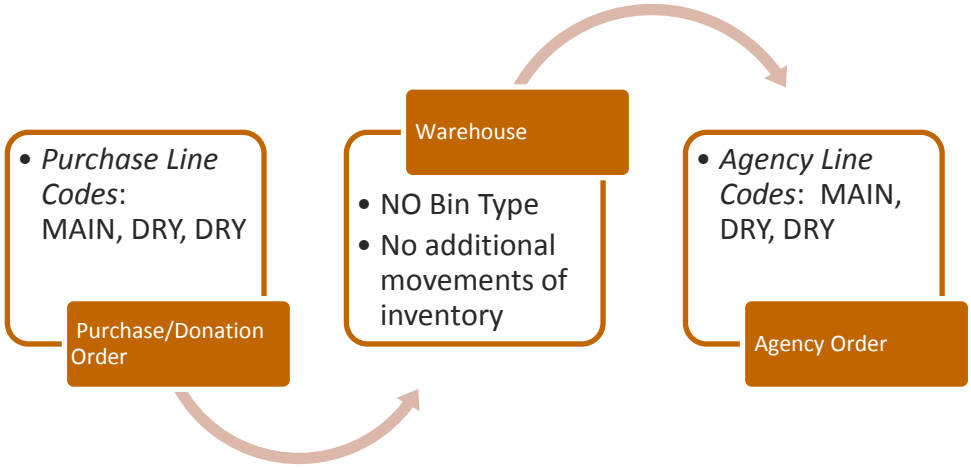
- Using the Agency Order Line Location, Zone & Bin Code fields identify where to pick & ship the inventory from.
- Post & Ship the Order to reduce quantity on hand.

Receiving

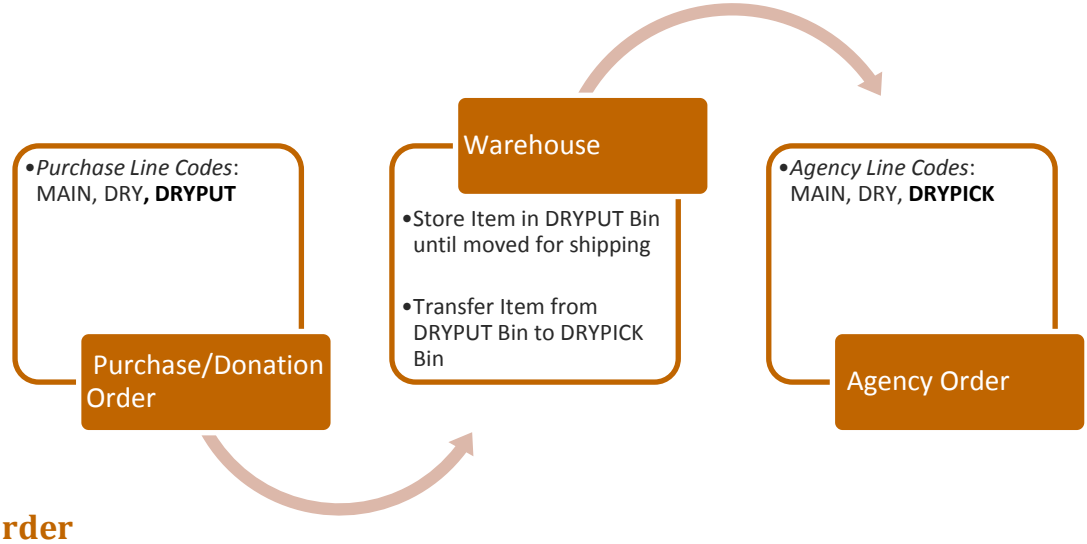
The Purchase Order & Donation Order can be posted in two steps: The user can post the quantity being received (Post > Receive) to increase the quantity on hand for the Item(s) on the Order prior to invoicing the Order. Invoicing can be completed at a later time and/or by a different user altogether. Using a two step process, while not required, could be used to reinforce an inherent separation of duties: warehouse personnel responsible for inventory quantity & location; office personnel responsible for FBC/UNC coding, costing & invoicing details. Additionally, the sooner the system recognizes the quantity on hand, the sooner it is available for the Agencies to view & order the inventory, facilitating maximum inventory distribution.

Warehouse Storage & Bin Designations

The warehouse can opt to designate all Bins within the warehouse as Storage or Pick Bins with essentially No Bin Type designation. This means where the inventory is received into on the Purchase and/or Donation Order lines is where the inventory will remain until the inventory is needed for shipping. At the time of Agency Order fulfillment, the Agency Order Lines would then identify that Location, Zone & Bin code to Post > Ship from. See example below.



The warehouse can also opt to designate Bins Types to facilitate specific types of inventory movements: Put-Away and/or Pick only. This option helps facilitate the flow of inventory throughout the warehouse. The inventory is Put-Away into a Put-Away type Bin upon posting the Order (Post > Receive). The item(s) reside in this bin until just before it is needed for shipping. An inventory movement is required to transfer the item(s) into a Pick type Bin. Using this bin configuration an Agency Order would not be able to select an item(s) that is not currently in a Pick Type Bin. See example below.



Agency Order

An Agency Order is entered along with the Location Code to identify which warehouse the order will be fulfilled by. The available Quantity for Order is based on many factors specific to the warehouse setup and the Agency setup.

If the food bank is using Agency Express, the Order will be entered by the Shopper, and imported into Ceres. The Order must be "Processed" so the food bank can make any changes to the Order before it is "Released" to the Warehouse for pickup or delivery to the Agency. These steps are only needed for Pre-orders from Agency Express if using this model. (5)

Shipping

Similar to receiving, the Agency Order can be posted in two steps: The user can post the quantity being shipped (Post > Ship) to decrease quantity on hand for the item(s) on the Order prior to invoicing the Agency. Invoicing the Order can be completed at a later time and/or by a different user altogether. Using the two step process is not required however could be used to enforce an inherent separation of duties: warehouse personnel responsible for inventory quantity & location; office personnel responsible for FBC/UNC, Fees, Grant Application, & Invoicing the Agency.

Shopping Food Bank Process

The Receiving & Shipping Options defined here are best suited to administer Shopping Food Bank processes. See example below.



- Using the Order Line Location, Zone & Bin Code fields to identify where to place inventory for storage.
- Inventory remains in the Zone & Bin it was received into.
- Shoppers select item(s)
- Food Bank personnel enter Agency Order, using same Location, Zone & Bin inventory was received & stored in.
- Post Shopping Order
- Ship & Invoice in single step.

Receiving & Shipping using Inventory Put-Aways & Inventory Picks

An Inventory Put-away document uses a two-step process to Receive & Put Inventory into the warehouse. This option requires a Purchase Order and/or Donation Order to place the order for the item(s) to be received then an Inventory Put-Away is created to place the Item(s) into the warehouse.

Similarly, an Inventory Pick document uses a two-step process to Pick & Ship inventory from the warehouse. This option requires an Agency Order to place the order for items to be picked up or delivered then uses an Inventory Pick document to pull the inventory from the warehouse.



- Order identifies the Location that will be receiving the inventory.
- Place item(s) into the warehouse zones & bins using Inventory Put-Away document.
- Post Inventory Put-away to increase quantity on hand for item(s) received.
- Inventory can remain in the warehouse until it is ready for picking.
- Agency Order identifies what item(s) to be picked up or delivered.
- Order is Released from Ordering Dept to Warehouse for Pick
- Guided Replenishment (WAP) is often used to move Pallets from Storage to Pick Bins
- Inventory Pick document is created to identify the Pick Bins where to find the item(s) necessary to fullfill order.
- Post Inventory Pick to reduce quantity on hand for the Item(s) on the Agency Order.

Receiving

A Purchase Order and/or Donation Order is entered along with the Location Code to identify which warehouse the inventory is intended for. When the delivery of inventory shows up at the warehouse the user will typically create Pallets and assign Lot No's to the quantity.

Inventory Put-Away

After the Pallet & Lot No's have been assigned and the Order is Released, an Inventory Put-Away document is generated from the Order. The Put-Away document is typically printed & used as put away instructions for warehouse personnel. This document will identify which Zone & Bins will be used to place the inventory into.

Modifications can be made at this time; if the warehouse personnel place the inventory into a different Zone & Bin combination they will update the put-way document accordingly.

Finally, the Inventory Put-Away is posted. In doing so the Item(s) quantity on hand is increased by the quantity received. It will then be necessary for someone to also go back to the original Order & post/invoice that. NOTE: there is a Post & Invoice option available from the Put-Away document.

Warehouse Storage & Bin Designations

Warehouse configuration options are similar to the "Receiving & Shipping using Order Lines" section above.

Agency Order

An Agency Order is entered along with the Location Code to identify which warehouse the order will be fulfilled by. The available Quantity for Order is based on many factors specific to the warehouse setup and the Agency setup.

If the food bank is using Agency Express, the Order will be entered by the Shopper, and imported into Ceres. The Order must be "Processed" so the food bank can make any changes to the Order before it is "Released" to the Warehouse for Pick. (5)

Warehouse Activity Plan (Movement Worksheet)

Once the Order staff have processed the orders and released them for Pick, the warehouse needs to move sufficient quantities of the ordered product to the Pick Bins. The Movement Worksheet Journal, and the function called create WAP is designed for this purpose. The routine will evaluate the Items on Released Orders, existing quantities in a Pick Bin, and previously generated Picks, then recommend dropping product from Storage or Receiving Bins to Pick Bins so it can be picked. The system uses a number of configurable criteria for this pick replenishment process (12). The Radio Frequency Handheld process (ADCS) can be used to execute the recommendations in the Movement Worksheet. (13). The Items on Agency Orders Report can be used to review in summary the Items on Order as well.

Inventory Pick

After the Order is entered, processed and released then an Inventory Pick is created. This document will identify which Zones & Bins and Pallets the item(s) for this order are to be pulled from.

> **Note:** If the warehouse is configured with Pick Bins and there is not sufficient quantity in the Pick Bins to cover the order quantity the Zone & Bin Codes on the Pick document will be blank. Once there is sufficient inventory in a pick bin the Pick document is printed and used by warehouse personnel to collect the item(s) necessary to fulfill the order.

Modifications to the Zone & Bin Codes are allowed at this time; if the item(s) is not in the Zone & Bin identified on the Inventory Pick document, the user can update the Inventory Pick with the correct Zone & Bin.

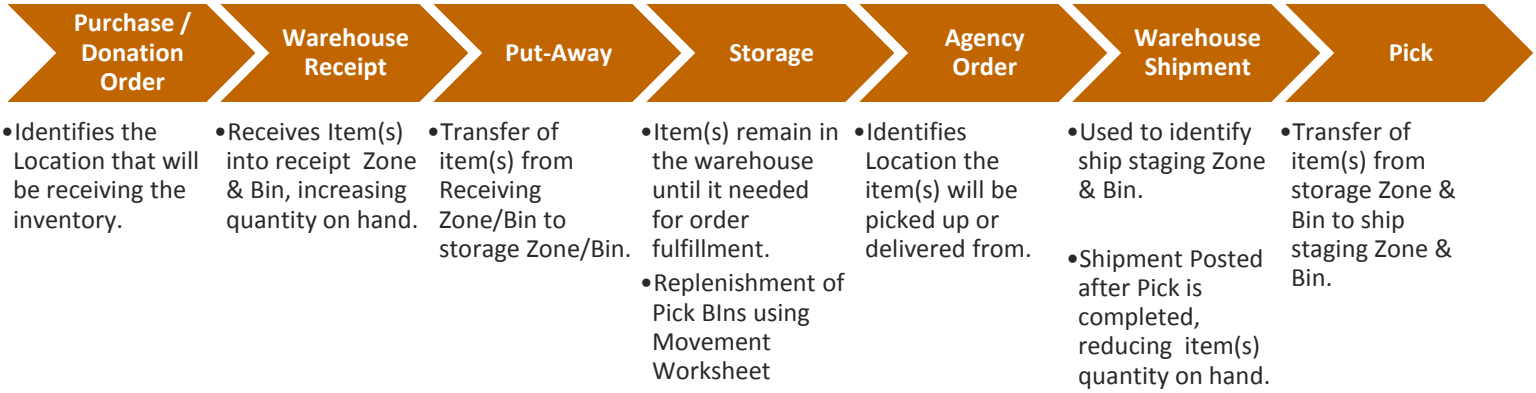
Finally, the Inventory Pick is posted. As a result of posting the Pick the Item quantity on hand is reduced & the Zone & Bin has been relieved of the item/quantity.

Receiving & Shipping using Warehouse Receipts & Shipments

Warehouse documents are typically utilized by those food banks that utilize more steps in their receiving or order fulfillment processes. Additionally the configuration of the warehouse Zones & Bins are more sophisticated in terms of processes & design.

Receiving inventory using a Warehouse Receipt is accomplished using 3 steps: placement of the order (Donation or Purchase), receiving inventory & putting the inventory away.

Similarly, shipping orders using a Warehouse Shipment is accomplished using 3 steps: placing of the Order by the Agency either via an order taker or Agency Express, picking the inventory for the order(s) & shipping the order(s).



Purchase / Donation Order

A Purchase Order and/or Donation Order are entered along with the Location Code to identify which warehouse the inventory is intended for. When the delivery of inventory shows up at the warehouse the user will create Pallets and assign Lot No's to the quantity.

Warehouse Receipt

After the Pallet & Lot No's have been assigned and the Order is Released, a Warehouse Receipt is generated. Warehouse Receipts can be used to receive a single order or used to combine the receipt of multiple orders.

Once the Warehouse Receipt has the Order lines identified, it is posted. Posting the Receipt will place the Item(s) into a receiving Zone & Bin where the quantity is not yet available for Agency Order fulfillment, but does show as Available Inventory.

Put-Away

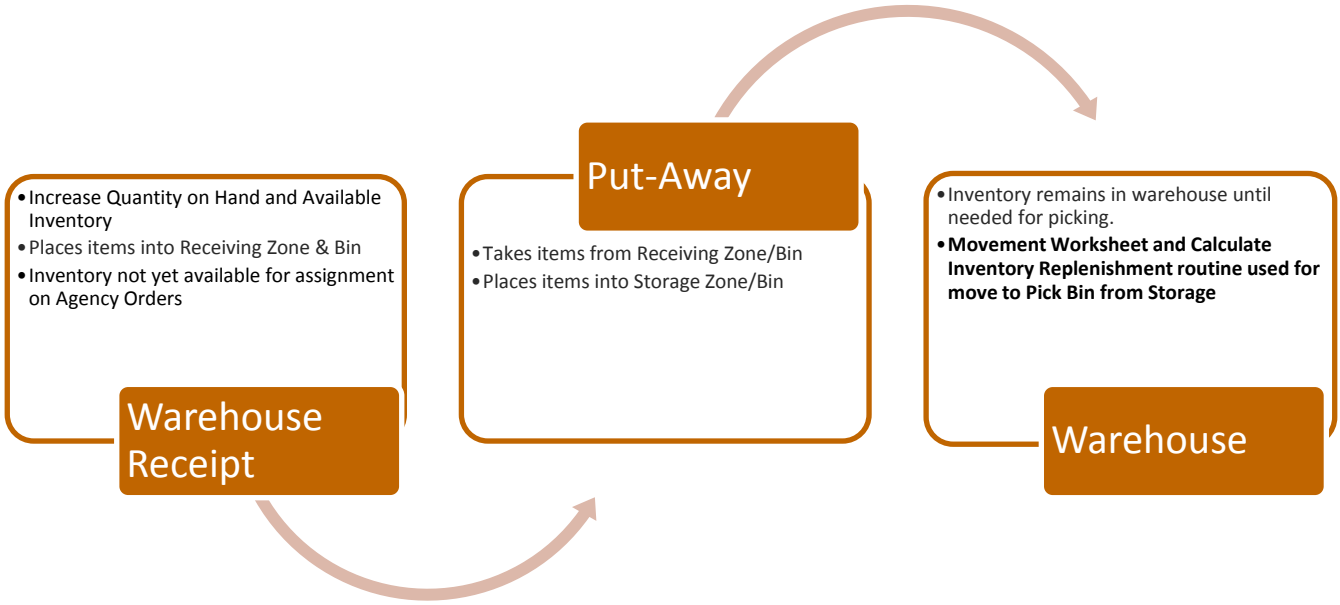
A put-away is created to handle the transfer of inventory from the Receiving Zone & Bin to the storage Zone & Bin. A Put-Away can be directly associated to the Posted Receipt (order by order) or can be created independent of the receiving process grouping multiple orders together or like items together.

Once the Put-Away is created it is printed and used by warehouse personnel as instructions directing them to which Zone & Bin take the Item(s) from and where to place the item(s) into the storage Zone &

Bin. Registering the Put-away finalizes the transfer of the Item(s) from the Receipt Zone & Bin to the Storage Zone & Bin.

Warehouse Storage & Bin Designations

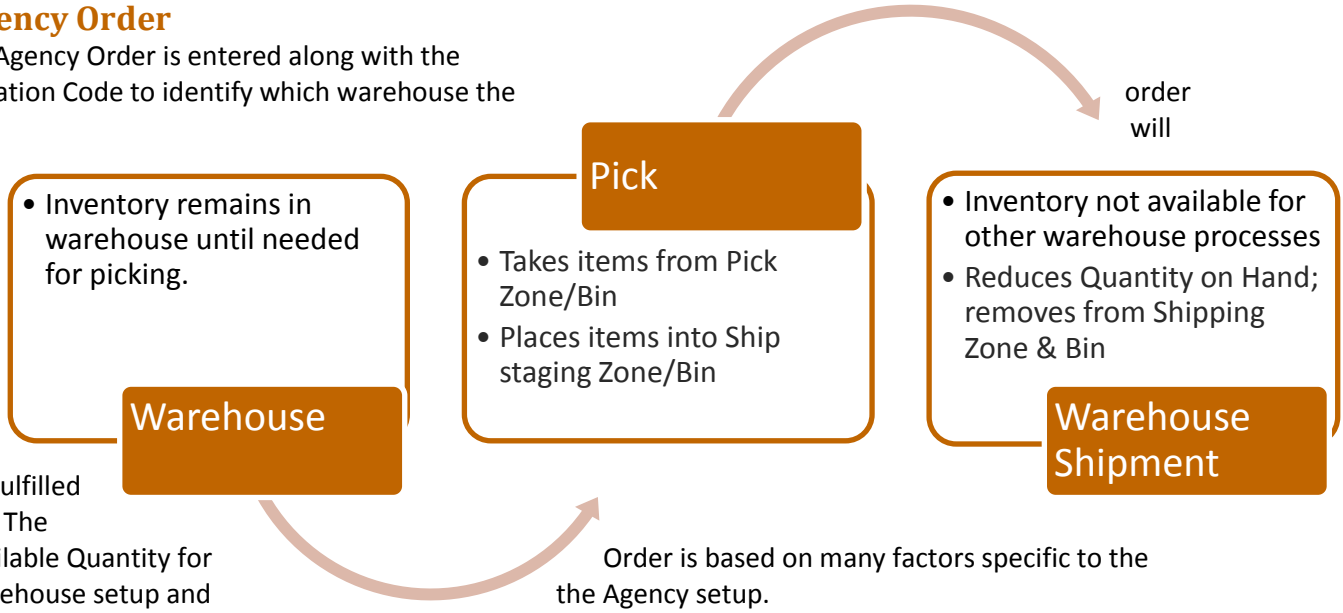
Using warehouse documents to handle the procurement process requires a more sophisticated configuration of the warehouse. The Location is required to identify Receiving & Shipping Zones & Bins in addition to the storage Zones & Bins. The Receiving Zone is where inventory is initially placed upon receipt and is not available for Picking.



Similarly, the Shipping Zone is considered the Ship Staging area and once inventory is placed here cannot be handled by any other warehouse process other than posting the Shipment

Agency Order

An Agency Order is entered along with the Location Code to identify which warehouse the order will be fulfilled by. The available Quantity for Order is based on many factors specific to the warehouse setup and the Agency setup.



If the food bank is using Agency Express, the Order will be entered by the Shopper, and imported into Ceres. The Order must be "Processed" so the food bank can make any changes to the Order before it is "Released" to the Warehouse for Pick and Shipment.

Calculate Inventory Replenishment/ Movement Worksheet

Once the Order staff have Processed the orders and Released them for fulfillment, the warehouse needs to move sufficient quantities of the Ordered product to the Pick Bins. The Movement Worksheet Journal, and the function called Calculate Inventory Replenishment is designed for this purpose with the Warehouse Shipment Workflow. The routine will evaluate the Items on Released Orders and existing quantities in a Pick Bin, then recommend dropping product from Storage or Receiving Bins to Pick Bins so it can be picked. The Items on Agency Orders Report can be used to review in summary the Items on Order as well.

Warehouse Shipment

Once the Agency Orders are Processed and Released (as above), a Warehouse Shipment is created. Warehouse Shipments can be used to combine Orders together or used to Ship Agency Orders order by order. See Pick section below for the next process in the Warehouse Shipment.

Pick

A Pick document is created from the Warehouse Shipment. The Pick document is then printed and used by warehouse personnel to direct them to the appropriate Zone & Bin to take the inventory from as well as identifying which Zone & Bin is being used to stage this Shipment. NOTE: the Pick documents' take line Zone & Bin will not be populated if sufficient quantity is not currently sitting in a pick bin, so the Movement Worksheet process or a manual replenishment process as above is a critical pre-requisite.

Once the inventory has been physically transferred from the storage Zone & Bin to the Shipping Zone & Bin the Pick can be registered. This process transfers the inventory into the Shipment Staging Zone and this inventory is no longer available for any other warehouse process.

Finally, the Warehouse shipment is posted reducing the quantity on hand for the item(s) in question and removes the inventory from the Ship staging Zone & Bin.

Ceres Supported Inventory Workflow Options:

Ceres was designed to support seven receiving workflows and three shipping workflows of various complexities. Most food banks current workflow can be supported by a combination of these models.

Receiving Options

Option 1

- Purchase/ Donation Order Only - simplest Model, as in Ceres 1.x

Option 2

- PO/DO entry plus Inventory Put Away with guidance into Last used Put Away Bin.
- One posting step
- One Order = one Put Away

Option 3

- PO/DO entry plus Warehouse Receipt with guidance into Last used Put Away Bin.
- One posting step
- Multiple Orders = one Receipt

Option 4

- PO/DO entry plus Warehouse Receipt using Receiving Bin and Warehouse Put Away with guidance in Last Used Put Away Bin.
- Two Posting steps required
- Multiple Orders = one Receipt, one Put Away

Option 5

- PO/DO entry plus Warehouse Receipt using Receiving Bin and manual Put Away process.
- Two posting steps required
- Multiple Orders received into Receiving Bin at once, then manual transfers required

Option 6

- PO/DO entry plus Warehouse Receipt directly into Put Away Bin (no receiving bin)
- One posting step
- Multiple Orders = One receipt

Option 7

- PO/ DO entry plus Warehouse Receipt to Receiving Bin and Warehouse Put Away using configurable Put Away Templates. *This is the most complex model for receiving and would be a major process change for all food banks*.
- Two posting steps required
- Multiple Orders = One Receipt into Receiving Bin, then guided Put Away

Shipping Options

Option 1

- Agency Order Only - simplest Model, as in Ceres 1.x
- One Posting step (post Order)
- No guidance for Bins to select product
- Best model for Shopping Food Banks
- Manual replenishment process, no handheld support for replenishment

Option 2

- AO entry plus Pick Document
- Pick defines Bins, Lots, Pallets to select
- One order picked and posted at a time
- No movement to Staging before Shipment
- Typical Model used by Ceres 2.x sites
- ADCS Handhelds can be used with this option for guided replenishment

Option 3

- AO entry plus Warehouse Shipment for the Ship Date
- One or more orders can be selected for Warehouse Shipment at a time
- Shipment defines Bins, Lots and Pallets to select
- One posting step
- No movement to Staging before Shipment

To an extent, food banks can mix and match the options listed above. As part of the project implementation, these options will be evaluated. It is possible at a later date to select a more complex model, but that would require additional implementation/ coaching.

For a shopping food bank, Option 1 and Option 1 would be appropriate. For a small pre-order food bank, Option 1 and 3 may be useful, or Option 3 and 3. The other workflows are often used by the larger food banks, and a major criterion for selection is whether the food bank wishes to handle each order alone, or group orders together inbound and outbound. Another concern is ADCS handheld support – since some models will use the ADCS handheld functionality more than others.

Related Topics

1. Agency Order Processing Overview
2. Bin Overview
3. Donation Order Processing
4. Location Overview
5. Purchase Order Processing
6. Warehouse Activity Plan – WAP
7. Warehouse ADCS Barcode Processing

8. Warehouse Lots and Pallets
9. Warehouse Put-Away Overview
10. Warehouse Receipting Overview
11. Zone Overview