Requirements/Design Specification

**Capture Small Container Compactors**

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Revision** | **Description** | **Author** |
| 10/15/2014 | 1.0 | Initial Version with Requirements | John Palubinskas |
| 11/2/2014 | 1.1 | Incorporated feedback from rev 1.0 review | John Palubinskas |
| 12/15/2014 | 1.2 | Incorporated feedback from rev 1.1 review and added screen shots | Roger |
|  |  |  |  |
|  |  |  |  |

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# Business Requirements

## Purpose of the Design Specification

This requirements/design document will describe the support for adding detailed compactor functionality to small containers. Compactor functionality currently exists for large containers, but for small containers, there is currently only a single checkbox to denote the presence of a compactor. The enhancements are detailed below.

### Business Functional Requirements / Configuration

| **Business Functional Requirement** | **Notes** |
| --- | --- |
| Config (Select Service Offering) page, needs to support detailed compactor offering for small containers | * Change existing label ‘Customer Owned?’ to ‘Customer Owned Container?’ * When existing Compactor checkbox is selected, display new items: * ‘Customer Owned Compactor?’ Checkbox * ‘Asset Value’ Currency Textbox * ‘Installation Cost Estimate’ Currency Textbox   If ‘Customer Owned Compactor’ is checked, do not display ‘Asset Value’ or ‘Installation Cost Estimate’ textboxes. |
| Configuration Templates changes | Compactor Maintenance Factor will require a configuration template change. |
| Commerce | * Commercial compactor pricing will use the same rental cost formulas as large container compactors (rental cost based on asset value). Floor, average, and target returns are table-driven and not division-configurable. These returns will be applied on top of the user-entered installation cost and asset value. * Line Item Grid needs to be expanded to include additional line items grouped under the small container (with compactor)   + Base Container - Per-Month (existing)   + Rental - Per-Month (new)   + Delivery - One-Time (new)   + Installation - One-Time, if charge > $0.00 (new) * If compactor is customer owned, the only line item shown should be the Base Container Per-Month item (no rental, delivery or installation.) * The finalize screen will display the Asset Value and future approval email. Location on screen should be in the section below the comments field. |
| Documentation   * CSA * Proposal * Sample Invoice | **CSA**   * C flag set to ‘Y’ if Compactor checked (existing) * ‘Installation’ added to Other column with Rate/Unit specified per the entered one-time installation value * Asset Value shown in Comments section of Office Use Only CSA   **Proposal**  **Service Details – Small Containers**  Add item: Compactor Rental: $###.## Monthly  *Note: Haul Rate or Disposal Rate items are not needed.*  **Estimated Monthly Amount**  Add row: Small Container Compactor Rental Charge  **One Time Charges**  Add row: Compactor Installation Charge Subtotal  Modify row: Delivery Charge Subtotal – add compactor delivery charge to subtotal.  **Sample Invoice**  No changes needed. |
| Approvals | Approvals will not need to be modified specifically for small container compactors. However, the Asset Value should be displayed on the approval email and on the approvals page. |

### 

### Technical Design Requirements

| **Technical Design Requirement** | **Notes** |
| --- | --- |
| Modify small container logic in Commerce engine to handle multiple line items per container | Small container compactor will require the following line items:  Base Container - Per-Month  Rental - Per-Month  Delivery - One-Time  Installation - One-Time  Required columns are identical to existing line items:  Quantity  Description  Cost  Floor  Average  Target  Price  FRF  ERF  Total  Billing Method |
| Load new configuration template data into Capture | Compactor Maintenance Factor is division configurable, but currently set to 4% for large container compactors. Allowing for a configurable compactor maintenance factor will require an update the configuration templates.  Note: compactor margins are not division configurable. |
| Schema changes to support pricing | If adding a configurable compactor maintenance factor,  Div\_Sm\_Cont\_Factors will require a comp\_maint\_factor field. |
| Pricing Changes (needs review) | **Guardrails**  **Base (monthly)**  Cost =  Floor =  Average =  Target =  **Rental (monthly)**  Cost = Asset Value (user entered) \* 1.065 / 12  Floor = Revised Asset Value \* (1 + floor return) / 12  Average = Revised Asset Value \* (1 + average return) / 12  Target = Revised Asset Value \* (1 + target return) / 12  Note: If the rep prices the installation below cost, the difference between the installation cost and the proposed installation charge will be rolled into the asset value before calculating the rental guardrails. That value is the ‘Revised Asset Value’ in the rental guardrails above. For example, if:  Installation Cost = 15,000  Proposed Installation Price = 10,000  Unrecovered capital expense =  Installation Cost - Proposed Installation Price = 5,000  Asset Value = 30,000  + Unrecovered capital expense = 5,000  = Revised Asset Value = 35,000  **Installation (one-time)**  Cost = Installation Cost (user entered)  Floor = Installation Cost \* (1 + floor return)  Average = Installation Cost \* (1 + average return)  Target = Installation Cost \* (1 + target return)  **Delivery (one-time)**  Cost = 0.00  Floor =  Average =  Target = |
| 1. Existing Containers | Compactor asset values are unknown for existing customers, so default to parts table asset values. New editiable field will be created on existing container configuration screen. |
| InfoPro Integration | There should be few changes (if any) in the XML, but the IFP team may need to address the new data they will receive. |
| Delivery charges are in order of precedence (for large and small container both): | 1. Existing customer (small only right now): account\_rates (DEL) 2. Div\_Service\_Price: DEL rate for the specific container code in that division 3. Div\_Service\_Price: DEL rate for the empty (“”) container code in that division 4. Div\_Service\_Price: DEL rate for the specific container code for division zero 5. Div\_Service\_Price: DEL rate for the empty (“”) container code in division zero   Cost is filled in by formula for large container temporary accounts at half the haul rate; otherwise it shows up as zero.  \*Note that rates on delivery \***should not**\* be hard-coded. |

# Assumptions

Other Assumptions

* Small Container Compactor rental pricing will follow the same model as Large Container Compactor.
* There are no Disposal charges to incorporate for Small Container Compactor.
* We may need to add a constraint for the Container Size to limit it to 6 or 8 yard sizes only for small container compactor (VIP.)
* There are no expected impacts on Large Container.
* If the Small Conatiner Compactor installation logic is created to revise the asset value based on a proposed installation price that is below cost, then Large Container Compactor logic should be modified to follow similar logic (a new requirement for Large Containers.)

# Technical Design

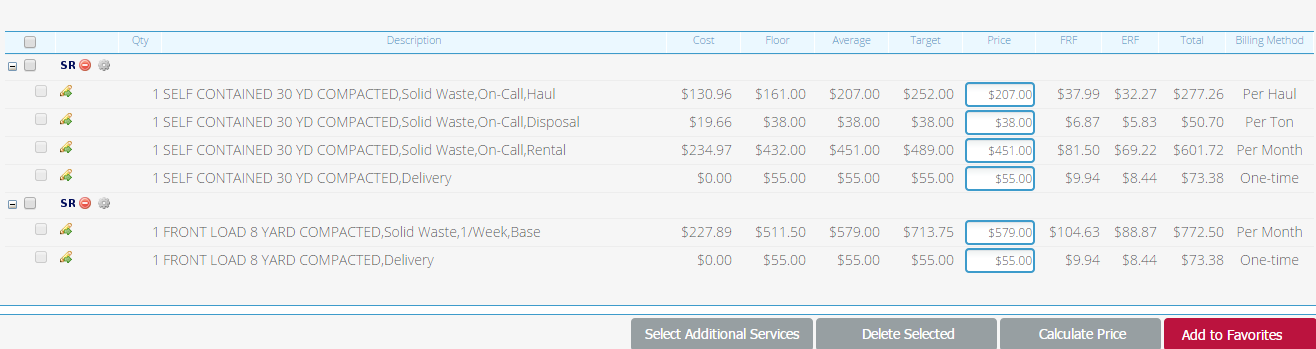
## Referenced Documents

None

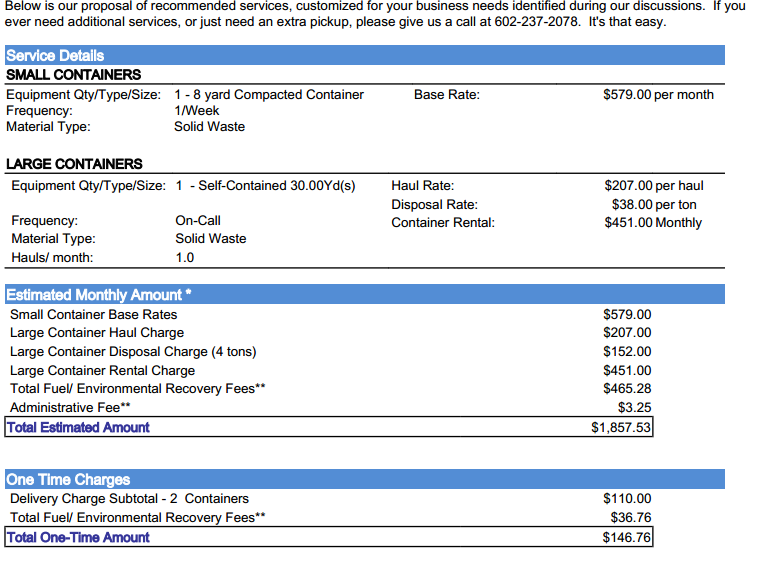
## Process Flow and Mock Ups

Use current container process flow and logic for large containers

An example of the current line item grid for new/new business. In this case new lines for Rental and Installation would need to be added for the small container with a compactor.



On proposal for the above new/new example add Container Rental

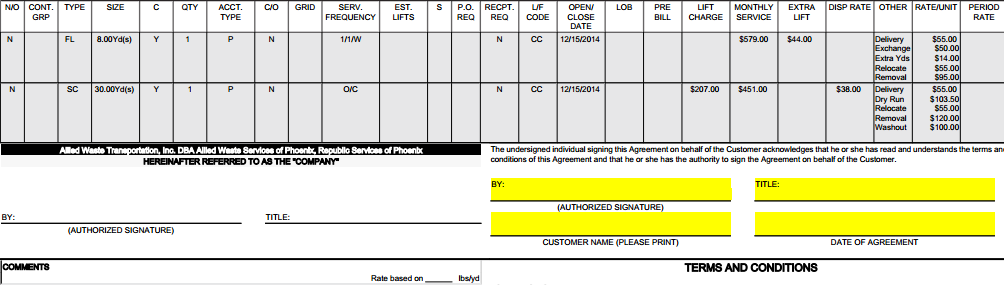


Add one time installation charges here. DEL charges will be part of the container delivery

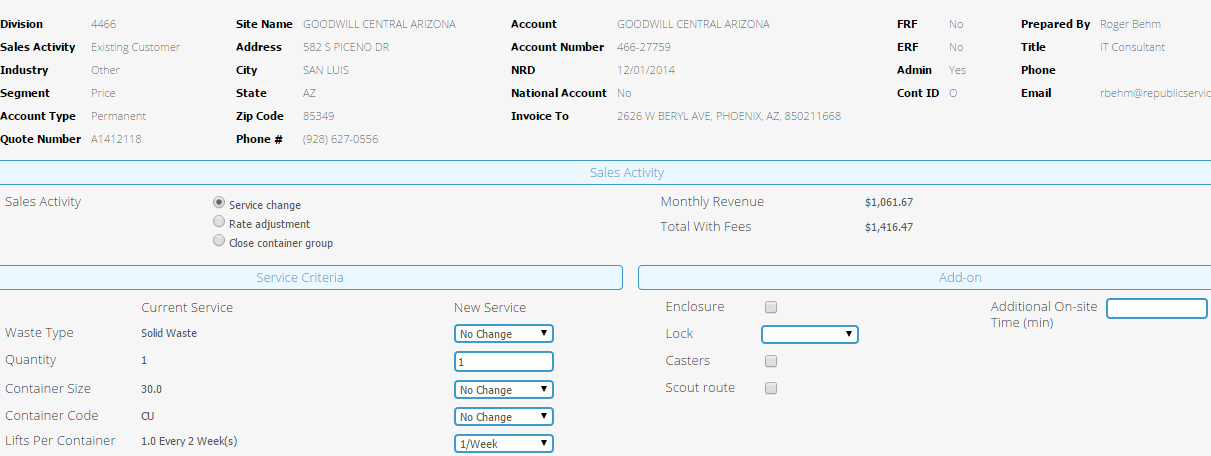
Compactor Rental $99.99 per month

Add installation charge here.

Asset value here in Office Use CSA only.



Existing Large or Small



Add “Asset Value” field here.

## Functional Logic

Use current container functional and pricing logic

## Data Sources & Mapping

For detailed mapping information, please refer to the BMI [Enterprise Mapping Document](http://itpmo-2013projects/Pricing%20Initiative/2.0%20Planning%20and%20Requirements/BMI%20Enterprise%20Mapping%20Document.xlsx).

## InfoPro Interface

There will likely be additiona fields that are passed to the AAE interface.

# Report Changes

No Changes

**7. Small Container Compactor (R-Engine) implementation**

*Working logic of R-Engine for small container before compactor implementation:*

The function COM\_pricing in R is responsible for the pricing of small container (New or Existing). The most important assumption in this working logic is that the container and compactor are considered a single unit i.e. if a customer’s “has\_compactor” flag is true then everything which is true for the container is also true for the compactor, such as, customer owned or not and all the cost is included in the calculations with the container itself. In this function for small containers the cost assets and ROI costs are calculated for container and compactor together since they are considered as a single unit. Hence, applying all the adjustments such as industry\_adj, segment\_adj etc. and margins on the total cost\_to\_serve for container and compactor together.

Cost Assets = Container Depreciation + Compactor Depreciation + Compactor Maintenance + Truck Depreciation + Container Maintenance per Month

ROI Cost = ((Truck Allocation + Container Cost + Compactor Cost + Working Capital) \*0.065/12) + Commission

Cost To Serve = Disposal Processing Cost + Disposal Trip Cost + Site Time Cost + Cost Assets + ROI Cost

This provides per month line item which includes container and compactor both.

*Working logic of R-Engine for small container after compactor implementation:*

In this Implementation we get rid of the most important assumption which is that the container and compactor are a single unit i.e. if “has\_compactor” flag is true then the container is mutually exclusive of the compactor. Hence, in this implementation we calculate cost assets and ROI costs for container and compactor separately and then cost assets and ROI costs for compactor along with container depreciation and container cost will make rental line item and remaining cost assets and ROI costs will make monthly line item. Also, all the adjustments are applied only to the container cost to serve and not on the compactor cost to serve along with FRF and ERF premiums are applied on the total cost to serve of both container and compactor but added to only container prices. Compactor has its own static margins applied to compactor cost to serve, which are different than the margins applied to the container cost to serve. The Compactor Cost, Compactor Depreciation and Compactor Maintenance is effected by if the customer has a compactor and if it is customer owned.

Compactor Depreciation and Maintenance = (Compactor Depreciation + Compactor Maintenance) \* Quantity\*(1-Compactor Owned)\*has\_compactor

Compactor Cost = Compactor Cost\*Quantity\*(1-Compactor Owned)\*has\_compactor

Cost Assets of container = Container Depreciation + Truck Depreciation + Container Maintenance per Month

Cost Assets of compactor = Compactor Depreciation + Compactor Maintenance

ROI Cost of container = ((Truck Allocation + Container Cost + Working Capital) \*0.065/12) + Commission

ROI Cost of compactor = Compactor Cost \* 0.065/12

Cost To Serve of container = Disposal Processing Cost + Disposal Trip Cost + Site Time Cost + Cost Assets of container + ROI Cost of container

Cost To Serve of compactor = Cost Assets of compactor + ROI Cost of compactor

The Parts table used to pull values of Compactor Cost, Compactor Life, Compactor Depreciation and Compactor Additional Site Time is “tbl\_parts\_mod”.

This will give 2 line items: Monthly and Rental.

# Appendix