Requirements/Design Specification

**Large Container Disposal Changes: Support for Additional Waste Types and Billing Methods**

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Revision** | **Description** | **Author** |
| 10/30/2014 | 1.0 | Initial Version with Requirements | Beckie Holmes |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

The information furnished herein by Republic Services Inc. is proprietary and confidential to Republic Services Inc. personnel and is not to be duplicated, published, or disclosed to any third party in whole or in part without permission from Republic Services, Inc.

© Copyright 2012, Republic Services Inc. - All rights reserved.

Table of contents

1 Business Requirements 6

1.1 Purpose of the Design Specification 6

1.1.1 Business Functional Requirements / Configuration 6

1.1.2 Technical Design Requirements 7

2 Assumptions 7

3 Technical Design 8

3.1 Referenced Documents 8

3.2 Process Flow and Mock Ups 8

3.3 Functional Logic 9

3.4 Data Sources & Mapping 9

3.5 InfoPro Interface 9

4 Report Changes 10

5 Appendix 10

# Business Requirements

## Purpose of the Design Specification

This document highlights items to be implemented for Disposal functionality.

### Business Functional Requirements / Configuration

| **Business Functional Requirement** | **Notes** |
| --- | --- |
| Config Templates | Two digit price code must be added to the “disposal sites” tab in the configuration templates so that all disposal locations that appear in the disposal location list can be uniquely identified with Lawson-InfoPro division-lf code-price code  InfoPro division should be part of the lookup – UQID should use IFP-Lawson-LF-Price-Waste type-bill type |
| Config Templates | Small container CMCs may need to be modified to add the price code to use for commercial and industrial business to ensure that the correct costs/waste types are used for small container solid waste and to ensure that the appropriate LF and price codes are applied to the container groups |
| Config Templates | Configuration templates must be populated for all additional waste streams and billing methods to be added in each division. Market prices, cash cost, and I/C rates must be added for each waste type/billing metohod added to the CMC  Additional waste streams that will be allowable must be controlled using the InfoPro master list. Add validation to CMCs where possible |
| Config: Start New Quote | No changes |
| Config: Site attributes | No changes |
| 1. Additional Attributes (Finalize quote screen) | Special handling code will be auto-populated from waste type selected. This will display on the final (finalize) screen and will be editable by the rep. The list of special handling codes will be a drop down list that is defined by the InfoPro list |
| Commerce: New large container container groups | When adding a new large container (temp or perm, existing customer or new), the available waste types drop down will show all waste types that have been added to the CMC file  A new dropdown will be added with the UOM.  This box will operate with an ajax rule that is governed by the waste type+division selected. Allowable values are “By the ton, “By the yard” and “by the load”. No “Each” for now. This list should update with the disposal location chosen and not let the user proceed to the next screen until a valid billing method is selected for the disposal location + waste type chosen. |
| Commerce: New large container | Add “Haul only” and “Haul plus processing” (only available for certain sites?) rename for purposes of disposal? (need to understand more on what these mean) |
| Commerce: Config | Need to be able to have multiple container locations at one site (have the ability to denote a container location within a site)  Add container group level attribute: need name: “container description? Conainer notes?” Delivery notes and service notes are currently at the site level, not container group level… |
| Commere: Pricing Large Container | Disposal prices should be based on a lookup of: Lawson Division, InfoPro Division, Waste Type, UOM. The list of facilities in Commerce will be all that match the user-selected criteria above. The user will select one disposal location. There will be only one record returned on a lookup of Division, InfoPro Division, Waste Type, UOM and facility description. This is the cash cost, intercompany rate, and market rate that will be used for pricing large container. If a site has multiple prices for the same waste stream, this must be denoted in the facility description so that reps know which one to choose. |
| Commere: Pricing Small Container | Small container pricing will be based on a lookup of Lawson division, InfoPro division, zip code, and waste type. There should only be one record returned for each of these combinations. In the case where no record is returned, third party disposal rates should be used. It is to be assumed that the third party disposal rate for recycling is zero. |
| Generate Documents | Want to be able to copy a quote and update the billing information … for example want to be able to bid the same exact services to different “authorized by” and billing info…should be able to handle with existing functionality:  Open up authorized by field to be edited |
| Generate Documents | Industrial-specific marketing literature may need to be added – check eRac. |
| Commerce: cost calculations | Disposal cost calculations should be modified to look at the unit of measure   1. If unit of measure is “by the ton”, then disposal cost = cash cost/ton, price = market price per ton. (from CMC), monthly estimated disposal cost = cash cost\*tons/haul\*hauls/mo 2. If unit of measure is “by the yard” then disposal cost = cash cost/yard, price = market price per yard (from CMC), monthly estimated disposal cost = cash cost\* yards/haul (container size)\*hauls/mo 3. If unit of measure is “by the load” then disposal cost = cash cost/load (from cmc), monthly estimated disposal cost = cash cost\*hauls/mo 4. The disposal portion of flat rates work the same as the above |
| Commerce: cost calculations | Cost calculations should support a negative cash cost, I/C rate, and market rate.  Line item disposal below floor rule applies (i.e. if disposal market price is -$10, -$11 would require approval) |
|  | Put spread between guardrails for disposal price  Spread should be a division-specific percentage between floor and average and average and target. Default to 5%, 5%. This percentage applies to all disposal rates if haul+disposal is chosen as an option, but not to flat rate, where margins are applied to prices. |
| Commerce: Commission | Commission formulas are unchanged, but if an additional waste category is added (i.e. C&D), calculations should support paying on this category (check we used waste category not waste type in commission table) |
| Commerce: Line item grid | The line item grid should display the waste type and the billing method in the description for the disposal line. The billing method on the disposal line should read “Per load”, “Per Yard’ or “Per ton” in the far right column |
| 1. Existing Customer | Existing customers adding a new large container will be treated exactly the same as new customers. |
| Documentation: Proposal | The proposal should list the waste type selected and show the unit of measure. The monthly summary should display the estimated monthly amount as described in BFR-0014: |
| Documentation: Sample Invoice | The sample invoice should show the correct billing method and waste type description |
|  | Add marketing materials options (C&D)…these should appear always |
| Documentation: CSA | The CSA should show the correct LF and price code for the waste stream and disposal site selected. The special handling code should appear on the CSA for non MSW and recycling waste types |
| 1. Approvals | No changes to approvals |
| 1. Flipping quotes | No impact on flipping quotes |
| 1. Reporting | The billing method and waste type may need to be brought into the reporting template |
| Finalize Quote | No impact |
| 1. InfoPro | Do we/are we sending UOM ? Can they receive the price code? |
| 1. AAE | AAE changes – reqs needed |

### Technical Design Requirements

| **Technical Design Requirement** | **Notes** |
| --- | --- |
| Config Templates | See below for necessary modifications to “Disposal Sites” tab and “Comm Disp by ZIP” tab. Proposal that we eliminate “Comm DSP by site” through this change and manage both commercial and industrial pricing on the “disposal sites” tab |
| Config: Waste Types |  |
| Config (Select Service Offering) page |  |
| Commerce |  |
| Documentation   * CSA * Proposal * Sample Invoice | None |
| InfoPro Interface | AAE must be modified to accept price code in addition to LF code, special handling code if that is added  AAE must be modified to accept different charge code/method on large container |

# Assumptions

The following items are assumptions are out of scope:

Special waste other than that billed by the yard, by the ton, or by the load with a per ton disposal cost and market rate for the waste type that the division defines in their configuration file

# Technical Design

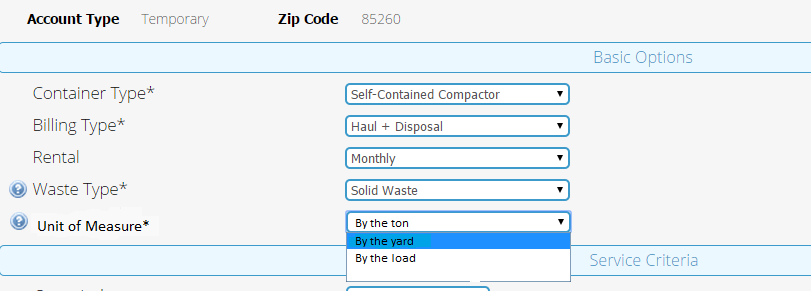
* Determine if service notes and delivery notes need to be moved to container group attributes or if an additional attribute needs to be added for container group service/delivery notes. Determine impact on AAE
* Add a container group attribute that is a description (first line of container notes). Should this description be visible to customer on proposal?
* Special handling code: we default and make overridable by the rep

## Referenced Documents

None

## Process Flow and Mock Ups

* Add UOM to “Basic Options on large container configurator
* Make this field mandatory (\*)
* Add help text explaining what this is “Unit of Measure is the method for billing disposal. This can be a per ton rate (“By the Ton”), a per load rate (“By the load”) or a per yard rate (“By the yard”)
* Default value is “by the ton”
* Haul + Minimum tonnage cannot be selected with “By the load” or “By the yard” pricing



### Changes to the CMC files

* Write VBA program to modify CMC files for structural changes. Analyst review needs to be done to update data

#### Disposal Sites Tab

* Add “is commercial flag and is\_industrial to “Disposal sites tab”
* Flag is populated by division. Can default to 1 for all solid waste, OCC/REC sites to 1 for is\_commercial
* disposalCosts\_com table populated from Disposal Sites tab where is\_commercial = 1
* Only sites where is\_industrial = 1 will be passed to disposal\_sites table in Capture.
* Add price code to comm dsp by zip tab
* Remove 3rd party and change logic so if Lawson # is missing, assume 3rd party
* List of supported waste streams to be maintained in CMC with validation rule on WasteType field. Delete “waste type” (rename waste\_code) column: this should be determined via lookup to InfoPro table and does not need to be in CMC
* Rename “waste type” to “waste code”
* Rename “waste description” to “waste type”
* Remove lat/long
* Remove final cost and final I/C rate

The final table should have the following structure:

Insert sample

#### Market Specs Tab

* Remove accepted waste streams from market specs tab
* Waste streams that are supported for a division for commercial sales will be sourced from disposal\_sites.
* All distinct waste streams where is\_commercial = 1 will appear in the small container configurator for that Lawson division
* All distinct waste streams where is\_industrial = 1 will appear in the large container configurator for that Lawson division
* Insert sample

#### Comm DSP by Site tab

* Eliminate this tab

#### Comm DSP by Zip tab

* Transform “Disposal Code” column to support 4 digit landfill and price code
* Add columns for additional waste types
* ETL transformation of CMC files into data warehouse will convert columns into rows for additional waste types
* Confirm with James/Brittany on table structure; insert table

#### Other Tables

* Ensure peak season table, margin tables, commission tables all existing customer tables map to waste category not waste type

### Waste types to add

* Waste type list to come from InfoPro. See below for current list. If a division wants a waste type not on the list, it must be added to InfoPro before it can be added to Capture.
* Waste category to be defined as below. If Recycling\_flag = 0 then Solid waste, otherwise, Recycling.

|  |  |  |
| --- | --- | --- |
| waste\_code | waste\_type | recycling\_flag |
| ALM | Aluminum | 1 |
| APL | Appliance | 0 |
| ASB | Asbestos | 0 |
| ASP | Asphalt | 0 |
| C&D | Construction and Demolition | 0 |
| CCR | Concrete | 0 |
| CON | Contaminated Load | 0 |
| DIR | Dirt | 0 |
| ELC | Electronics | 0 |
| FUR | Furniture | 0 |
| GLS | Glass | 1 |
| GRN | Compost / Yard Waste | 0 |
| GRV | Gravel | 0 |
| MAT | Mattresses | 0 |
| MPR | Mixed paper | 1 |
| MSW | Solid Waste | 0 |
| MTL | Metal | 1 |
| MXR | Mixed recyclables | 1 |
| OCC | OCC – Clean | 1 |
| P01 | Inert | 0 |
| P02 | Inert Box | 0 |
| PLS | Plastics | 1 |
| RCY | All in One - Single stream | 1 |
| ROF | Roofing | 0 |
| SLU | Sludge | 0 |
| SOP | Sorted Office Paper | 1 |
| SPC | Special Waste | 0 |
| SWL | Sorted White Ledger | 1 |
| TIR | Tires | 0 |
| WOD | Wood | 1 |

## Changes to Capture tables

### The following changes to the Disposal\_Sites table are required

|  |
| --- |
|  |
| **Disposal\_Sites Table Changes** | | | |
| **Column Name** | **Data Type** | **Change** | **Notes** |
| facility\_id | Integer | Research | Appears to be all zeros. Research use and delete if not used |
| DisposalSite\_DivNbr | String | No change | Lawson division number for the hauling company using the facility |
| facility\_lawson\_div | Integer | No change | Lawson division number of the facility if RSG owned. Zero if non-RSG owned |
| hauling\_infopro\_div | String | No change | InfoPro division of the hauling company using the facility |
| is\_RSG\_owned | Integer | No change | Flag = 1 if Facility\_Lawson\_div >0. |
| Site\_Name | String | No change | Site description that appears in disposal grid |
| owner\_name | String | Delete | Not needed |
| facility\_type | String | Delete | Not needed |
| waste\_type | String | No change | Waste Type Code, three digit character from InfoPro |
| WasteType | String | No change | Waste Type Description, string, from InfoPro and based on waste\_type code |
| Disposal\_Site\_Cd | String | Modify | Replace two digit LF code with four-digit LF and price code. Alphanumeric, must be 4 digits. If either portion of the code is not two digits, first digit to be replaced with zero (0). |
| facility\_address | String | No change | Street address of facility |
| Latitude | Float | No change | Facility latitude |
| Longitude | Float | No change | Facility longitude |
| Cost | Float | Modify | Cash cost of disposal, modify to allow negative values |
| dsp\_xfer\_priceperton | Float | Modify | Intercomany cost of disposal, modify to allow negative values |
| market\_rate | String | Modify | Market rate for disposal base portion only, excludes fees, modify to allow negative |
| unit\_of\_measure | String | Modify | UOM, takes the value "Ton" for by the ton, "Yard" for by the Yard, "Load" for by the load. Currently only takes value “Ton” |
| Extra\_On\_Site\_Mins | Float | No change | Minimum number of minutes at the disposal location |
| Zip\_Plus\_Four | String | No change | Disposal location 4 digit Zip code (is this needed? Looks like not populated) |
| is\_Transfer\_Station | Integer | Delete | Not needed |

### The following changes to the DisposalCosts\_Comm table are required:

|  |  |  |  |
| --- | --- | --- | --- |
| **DisposalCosts\_Comm Table Changes** | | | |
| **Column Name** | **Data Type** | **Change?** | **Notes** |
| infopro\_div\_nbr | String | No change | InfoPro division for hauling company |
| Division | String | No change | Lawson Division for hauling company |
| disposal\_cd | String | Modify | Change from 2-digit landfill code to 4 digit landfill and price code. Must be 4 digits, any one digit codes to be padded with leading "0". String value |
| dsp\_site\_cost | Float | Modify | Cash cost of disposal, allow negative values |
| dsp\_xfer\_price | Float | Modify | Intercomany cost of disposal, allow negative values |

### The following changes to the small\_cont\_disp\_zip table are required:

|  |  |  |  |
| --- | --- | --- | --- |
| **small\_cont\_disp\_zip Table Changes** | | | |
| **Column Name** | **Data Type** | **Change?** | **Notes** |
| infopro\_div\_nbr | String | No change | InfoPro division for hauling company |
| division | String | No change | Lawson division for hauling company |
| waste\_type | String | No change | Waste Type |
| zip | String | No change | 5 digit zip code |
| disposal\_cd | String | Modify | Change from 2-digit landfill code to 4 digit landfill and price code. Must be 4 digits, any one digit codes to be padded with leading "0". String value |
| is\_franchise | Integer | No change | If value = 0, then zip code not priced? Confirm |
| is\_serviceable | Integer | No change | If value = 0, then zip code not priced? Confirm |

## Changes to Pricing formulas

### Small container lookups to determine disposal location should be modified in the following way:

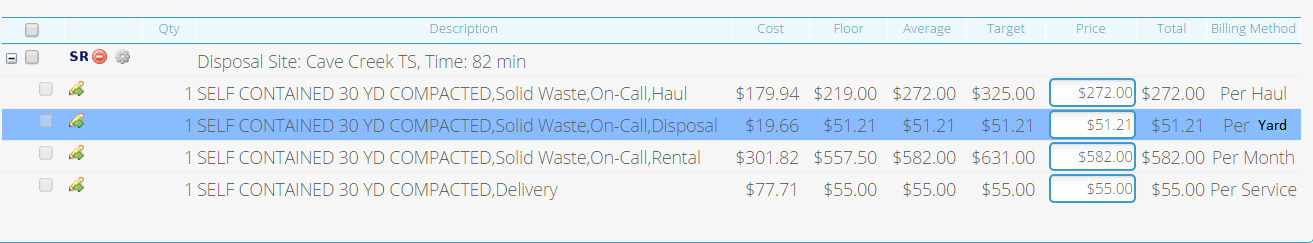
* Look up the combination of: lawson division, InfoPro division, waste type or WasteType, zip code in small\_cont\_comm\_zip.
* Query returns new disposal\_cd (4 digits). Only one record should be returned
* If no record is returned, third party disposal costs should be used. A third party disposal cost will need to be defined for non-MSW waste types or zero can be used for recycling waste types (Check with James)
* Lookup disposal cash cost (used in calculation of cost to serve) and intercompany expense (used in calculation of disposal expense for financial summary) from DisposalCosts\_Comm table using the combination of lawson division (division), InfoPro division (infopro\_div\_nbr), and disposal\_cd. This will return one record with dsp\_site\_cost (cash cost) and dsp\_xfer\_price (I/C rate)

### Large container lookups to determine disposal location should be modified in the following way:

* Query disposal\_Sites\_Table for all combination of Lawson Division (DisposalSite\_DivNbr), InfoPro Division (hauling\_infopro\_div), waste type code (waste\_type), and unit of measure (unit\_of\_measure) that match criteria selected by user
* Populate returned records in disposal table on large container configurator page. Order by RSG owned, closest to furtherst away, the third party closest to least close.
* When user selects a disposal location, the disposal\_cd associated with that selection is stored in the disposal\_cd variable. The cost (cash cost), dsp\_xfer\_priceperton (I/C rate) and market\_rate are returned for use in various parts of the price calculations. Cost is used in cost guardrail for disposal, dsp\_xfer\_priceperton is used in the financial summary and market\_rate is used in the floor, average, and target guardrails for disposal.

### Pricing formula modifications

* The pricing formulas will be modified in the following way:
  + Disposal price to be displayed with the UOM that is selected
    - If “Per Ton” is selected, then no change
    - Pricing if “Per Yard” if “Haul + Disposal” is selected:
      * “Per yard” appears on line item grid in the “Billing Method” column
      * The estimated monthly base cost for disposal will be calculated as estimated hauls/month \* container size \* container qty \* cost per yard/(1-fee percentage)
      * The estimated monthly total cost for disposal will be calculated as estimated hauls/month \* container size \* container qty \* cost per yard/(1-fee percentage)
      * The floor, average and target price per yard will be the market\_rate from the disposal\_sites table associated with the disposal\_cd selected in config from the disposal table
      * The cost of disposal in the financial summary will be calculated as estimated hauls/month \* container size \* container qty \* I/C cost per yard



* + - Pricing if Per Yard and “Flat Rate” is selected:
      * No change to display
      * There is no overage line
      * Disposal portion of total cost is calculated as: container size \* cost/yard
      * Disposal portion of base cost is calculated as: container size \* cost/yard/(1-fee %)
      * Disposal portion of total floor, average and target guardrails is calculated as container size \* market price/yard \* (1+fee %)
      * Disposal portion of base floor, average and target guardrails is calculated as container size \* market price/yard
    - Pricing if “By the Load” and Per Haul is selected
      * “Per Load” appears on the line item grid in the “Billing Method” column
      * The estimated monthly base cost for disposal will be calculated as estimated hauls per month \* qty \* cost per load /(1 – fee %)
      * The estimated monthly total cost for disposal will be calculated as estimated hauls per month \* qty \* cost per load
      * The floor, average, and target disposal price will be the price per load returned from the disposal\_cd selected in config from the disposal table
      * The estimated disposal cost in the financial summary will be calculated as estimated hauls/month \* qty \* I/C cost per load

## 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

* Disposal\_cd will change from two digits to four
* Addition of different UOM …will it affect the billing type/method?

# Report Changes

# Appendix

|  |  |
| --- | --- |
|  | Address doesn’t exist? Need a workaround….override with specific lat/long (can use cross street) |
|  | Approval process: have to wait for approvals –  Different approval process for temp vs perm on FRF waived  Deferred to future release |
|  | Communicate that can add multiple containers in capture… |

General questions

* On call customer wants 7 hauls a week …how to set up?