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 |
| 2/19/2015 | 2.0 | Final Version with Requirements | Beckie Holmes |
| 3/9/2015 | 2.1 | Added variable names in InfoPro Interface section | Roger |
| 3/16/2015 | 2.2 | Added section for TDR changes/addtions from original scope. Also specified field names for a few variables | Roger |
|  |  |  |  |

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 additional waste types and billing methods.

### 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 |
| Config: Special Handling Codes | Special handling code will be auto-populated from waste type selected. This will display on the large container configurator 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 and contains the code and a description. (Only the code will be in the XML tag)  This needs to be on the large container configurator  Default where possible via a lookup table  Special handling code appears on CSA (column labeled “S” on line item portion) |
| 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. |
| 1. Contaminated Charges | Add “contamination” check box on configurator for large and small container (priority is large).  If box is selected, text box to enter contaminated rate information. Shows up in comments of CSA. |
| Commerce: New large container | On proposal, have language for any disposal charges read “Processing” $/ton rather than “Disposal $/ton” for recycling options  Add config attribute “Haul plus disposal vs Haul plus processing” (Default check box based on waste category?) |
| Commerce: Config | Delivery notes and service notes should be on the container screen. On CSA comments, add multiple lines (one for each container group, identify container group by description from line item grid)  Leave Delivery and service notes boxes on the generate docs screen. There will need to be a service and deliver notes box for every container group . May need to add ability to expand to view and edit all boxes with summary (non-editable box) appearing on the screen as default  Box on generate docs page will be pre-populated with information entered on configurator |
| 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.  What to do about negative large container disposal rates? Use RBB charge code? |
| 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 | Open up authorized by field to be edited so that multiple proposals can be sent out of the same configuration but with different account information and authorized by name. XML tag should remain the same as current |
| Generate Documents | Industrial-specific marketing literature may need to be added – check eRac.  Add marketing materials options (C&D)…these should appear always; not specific to quote details (Waiting on business to supply) |
| 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)  If disposal price is negative for large container, should appear on proposal as “Rebate per ton ”, “Rebate per yard” or “Rebate per load” |
| Disposal Pricing | 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 |
| 1. Expired quotes | Build “Reopen” functionality: allow click on expired quote and take straight to repricing screen. |
| 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 in the column labeled with an “S” |
| 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 |

### 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 |
| 1. AAE: Special Handling codes | AAE uses waste description to derive special handling code new tag for special handling code (provide to AAE)  Add Waste Code XML tag and provide to AAE. Formalize/share logic to drive container code from waste code and special handling code |
| 1. XML changes | Tag name for disposal\_cd should not change. Length will change from 2 digit to 4 digit string  Need new tags for container notes and delivery notes that have line items . Provide to AAE. Leave existing tag in place until AAE ready to receive line item tags (not March)  Current attribute on UOM is string. Attribute name should not change, but will support additional UOMs on disposal line |
| Config: Waste Types |  |
| Config (Select Service Offering) page |  |
| Commerce |  |
| Documentation   * CSA * Proposal * Sample Invoice |  |

### Technical Design Requirements CHANGE LOG

| **Technical Design Requirement** | **Notes** |
| --- | --- |
| Send the actual container code not the name. Name the variable containerCode\_line. This can be derived from the first two charaters of the Part Number and can be found in the account\_status table. | Added by RNB 3/16/15. Requested from InfoPro. This would eliminate the need for mapping on the AAE side when new container types are added. |
| Contaminated charge item will be on the line item grid. Attribute name will read “contamRate\_line” | Added by RNB 3/16/15. Name requested by InfoPro  For small and large containers InfoPro should default to “CON” charge type. Do not allow contaminated load for MSW. |
| The updated Authorized name (in Generate docs) should be mapped to the existing field. | Added by RNB 3/16/15. InfoPro can already see in test that any updates to the Authorized by are not being mapped into a second tag (\_billTo\_company\_name2).  They would like to make sure updates go into the existing tag (authorizedBy\_quote) or it will require changes on our side. |
| 1. Container Code | Container code (containerCode\_line) will be pulled from first two digits of parts number.  Or  Can we use “\_part\_custom\_field9” and always have the container code. Currently it does not seem correct, only receiving FL and RO. |
|  |  |

# 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

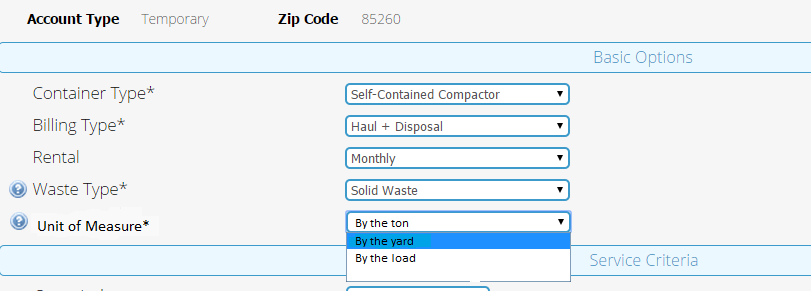
* Service notes and delivery notes need to be moved to container group attributes or if an additional attribute needs to be added for container group service/delivery notes. No impact on AAE as these fields not currently mapped
* Special handling code: we default and make overridable by the rep.

## 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:

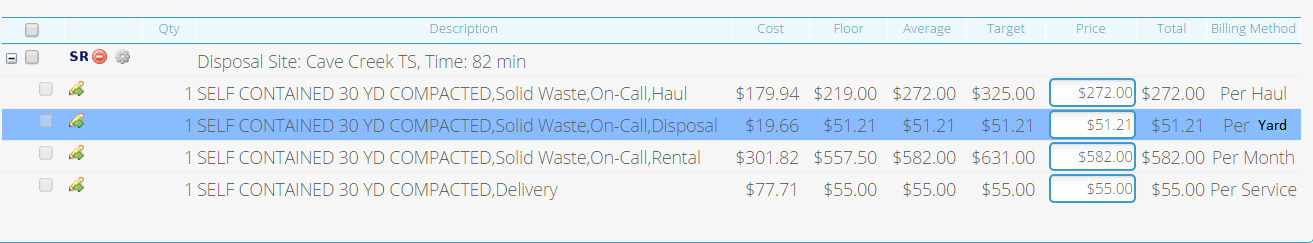
* Look up the combination of: lawson division, InfoPro division, waste type or WasteType, zip code in small\_cont\_comm\_zip.
* Query returns new disposal\_cd (4 digits). Only one record should be returned
* If no record is returned, third party disposal costs should be used. A third party disposal cost 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

* The following new tags will be added:
  + Service notes (serviceNotes\_line), and delivery notes (deliveryNotes\_line): new tags at the line item level for all containers. Not for ad hoc items
  + Special handling code (specialHandling\_line): new tag at the line item level
  + Waste\_Code (wasteCategory\_line, I think): three digit string with waste description. Waste\_code and special handling code maps to container type (insert table)
  + Container code (containerCode\_line) will be pulled from first two digits of parts number.
  + Contaminated Rate (contamRate\_line) what should be the code/charge types
* The following tags will be modified
  + Disposal\_cd (landFillCode\_line): change from two digit string (landfill) to four digit (landfill and price code) string
  + Billing Method (billingType\_line) string “per ton” will accept “per load”, “per yard”
* The following tags will not be modified
  + Athorized by (authorizedBy\_quote) - quote level
  + Delivery Notes (deliveryNotes\_quote) - quote level
  + Service Notes (serviceNotes\_quote) - quote level
* Additional research needs to be done to understand InfoPro requirements to properly support different UOMs. Unclear at this time what is required
* Need to understand how to handle negative disposal rates (if supported). Proposal to have DSP = 0 and RBB charge code for negative portion.
* It is acceptable for special handling code to be editable in AAE interface (not sure of current design)

# Report Changes

# Appendix

Deferred/Rejected

|  |  |
| --- | --- |
|  | 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 |

General questions

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