

Weatherization Data Transfer Business Rules  
and Data Dictionary

Version 4.3.1

DRAFT

**September 6, 2016**

Revision History – Data Transfer Rules

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**Approvals**

I have reviewed this document and approve it for release. Upon release or as of the date specified in the release notification this document will become the standard by which CSD will process data submission to the Weatherization Database; until such time it is replace by an updated version.

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Weatherization Data Transfer Business Rules

# Introduction

This document describes basic concepts and the business rules that must be followed by all agencies contracted with CSD to perform weatherization services and required to submit Job Record data to the CSD Weatherization Database (formerly the Bucket).

## Purpose

The purpose of this document to communicate the method by which weatherization agencies submit data to the Weatherization Database and the rules governing the ingestion and acceptance of the submissions.

## Scope

The scope of this document is to describe the data transfer process for weatherization funded programs only; it does not include cash assistance, CSBG or any other funded programs. This document only describes the data transfer process to the Weatherization Database and does not describe any of the online components of other CSD systems, such as EARS.

## Related Documents

This document should be used in conjunction with the following:

* XML Data Schema – Version # 2711
* Weatherization Database Data Transfer Reference Document – Version 4.3.1 – 09/06/2016
  + Data Schema Breakdown Worksheet
  + Measure Detail PY2015
  + Measure Detail PY2016
  + Measure Detail PY2017
  + Measure Detail Changelog

# Agency Data Transfer Obligations

When an agency becomes a contracted CSD Local Service Provider (LSP), each contract for weatherization services specifies there are certain obligations that must be maintained in order for the agency to continue to be able to bill CSD and receive payment for the work that they have performed under their contracts.

## Transfer of Files

The agency must submit data transfer files, detailing each of their weatherization jobs, to Weatherization Database. Files containing any number of weatherization Job Records may be submitted on an ongoing basis throughout the month. It is CSD’s expectation that when the EARS report is submitted for approval by the agency for any given month that the Weatherization Database, at that time, will contain agency weatherization job records sufficient to reflect the reimbursement numbers implied by EARS. CSD finalization and approval of EARS reports for payment will not occur until the submitted EARS Report and the reported job records in the Weatherization Database reconcile.

### Data File Mechanism

A properly formatted XML data transfer file must be used to transfer data to CSD.

### File Structure

Each tag of the XML data transfer file equates to a field (i.e. <FirstName>John</FirstName> equates to First name and the value is John). Each XML data transfer file can contain a number of job records. A file may contain jobs and associated measures that are being submitted for payment through any of the programs supported by CSD (it is not necessary to create one file per program).

An explanation of the currently allowed programs is available in section 9.1 of this document. Program specific requirements may change as new programs are implemented by CSD and as each program year expires and as new contracts for subsequent years are issued.

An in depth breakdown of the expected fields and a link to the full XML Data Schema is provided below in section 4 of this document.

## Contract, Program, & Subprogram Changes

As changes are made to CSD supported programs that impact the data transfer process this document will be updated and issued to contracted LSPs. Upon notice from CSD of any program changes impacting the data transfer process (i.e. Federal, state recommended changes, etc.) each LSP will be given 60 days lead time to make necessary ‘in-house’ process enhancements. CSD will work with each LSP to provide any necessary testing environments to allow them to test changes as necessary. As a general rule, program changes will not apply retroactively to previously approved job records but may impact in process records that have not been submitted or have been submitted but not yet approved for payment.

# Interacting with the Weatherization Database

The system Weatherization Agencies will interact with when submitting detailed weatherization job data is CSD’s Weatherization Database. This document supports and references the schema that must be used when submitting to the Weatherization Database and the Business Rules that each data transfer file submission must pass before it is accepted and added to the database. This section explains how Job Records are added, altered, and removed from the Weatherization Database.

## Submitting and Altering Job Records

Agencies submit detailed job information to CSD through the use of a data transfer file to the Weatherization Database. An agency data transfer file can contain one or more Job Records detailing services requiring reimbursement from one or more programs for which the LSP has a contract. Each Job Record in the data transfer file must have a designated record type. There are multiple acceptable record types.

The primary record types are Initial Weatherization, Re-Weatherization, Assessment/Diagnostic Only, ECIP Heating/Cooling Only, SWEATS Only, and Call-Back. Each record type can be indicated by selecting one of the acceptable “Recordset Status Code” values. The available record types are used to submit and alter Job Records within the Weatherization Database.

The interpretation of each “Recordset Status Code” when assigned to a submitted job record is outlined in sections 3.1.1 and 3.1.2. Further definition of business rules applied to the information submitted within each Job Record is supplied in section 4.2 of this document.

### Submitting a Job Record

Agencies are required to submit Job Records detailing new or additional services to the Weatherization Database on a regular basis. The available record types that can be used in the submissions are Initial Weatherization, Re-Weatherization, Assessment/Diagnostic Only, ECIP Heating/Cooling Only, SWEATS Only, and Call-back. If one of the listed record types is selected when submitting a record and the Job Control Code is unique for the submitting LSP, the Weatherization Database will store the submitted data as an entirely new Job Record.

#### Initial Weatherization (WX)

This record type corresponds with entering “WX” in the “Recordset Status Code” field. An initial weatherization report is the submission of a Job Record detailing new weatherization services, provided under one or more contracts, to a dwelling that has either never received weatherization services or is outside of the re-weatherization period.

Upon passing validation layers one (section 4.1) and two (section 4.2) Job Records with this type will be compared to the existing “Job Control Codes” for the “EARS Reporting Period” indicated in each Job Record. All Job Records in the submission with a previously unreported “Job Control Code” for the reporting LSP will be stored in the Weatherization Database as a new record for the “EARS Reporting Period” specified in the Job Record.

#### Re-Weatherization (REWX)

This record type corresponds with entering “REWX” in the “Recordset Status Code” field. Re-Weatherization is only allowed under the LIHEAP and LIWP weatherization sub-programs. Once a Job Record has been submitted to CSD for reimbursement (under LIHEAP, LIWP, or DOE), any later weatherization services provided to the home is considered re-weatherization and must be performed under the LIHEAP or LIWP sub-programs. This stipulation also applies even if only assessments and diagnostics were performed.

Upon passing validation layers one (section 4.1) and two (section 4.2) Job Records with this type will be compared to the existing “Job Control Codes” for the “EARS Reporting Period” indicated in each Job Record. All Job Records in the submission with a previously unreported “Job Control Code” will be stored in the Weatherization Database as a new record for the “EARS Reporting Period” specified in the Job Record.

#### Assessment/Diagnostic Only (ASSO)

This record type corresponds with entering “ASSO” in the “Recordset Status Code” field. A Job Record submitted with this type included only assessment and diagnostic measures. When safety conditions in the home require a full deferral, when the minimum number of weatherization measures cannot be installed, or when a client refuses/is unable to continue participation in the program and only assessment and pre-diagnostics have been completed, Assessment and Diagnostics costs shall be billed to this record type.

Upon passing validation layers one (section 4.1) and two (section 4.2) Job Records with this type will be compared to the existing “Job Control Code” for the “EARS Reporting Period” indicated in each Job Record. All job records in the submission with a previously unreported “Job Control Code” will be stored in the Weatherization Database as a new record for the “EARS Reporting Period” specified in the Job Record.

#### ECIP Heating/Cooling Only (HCSO)

This record type corresponds with entering “HCSO” in the “Recordset Status Code” field. Job Records of this type only include health and safety measures. These Job Records must meet the emergency criteria established in the contract under which reimbursement is requested.

Upon passing validation layers one (section 4.1) and two (section 4.2) Job Records with this type will be compared to the existing “Job Control Code” for the “EARS Reporting Period” indicated in each Job Record. All job records in the submission with a previously unreported “Job Control Code” will be stored in the Weatherization Database as a new record for the “EARS Reporting Period” specified in the Job Record.

#### SWEATS Only (SWTS)

This record type corresponds with entering “SWTS” in the “Recordset Status Code” field. Currently, portable heating or cooling appliances may be loaned to low-income persons on an interim basis, as needed and with CSD approval, when a state-declared crisis or emergency occurs that temporarily deprives occupants of heating, cooling, or electricity required to maintain their health, safety, and essential comfort level.

Upon passing validation layers one (section 4.1) and two (section 4.2) Job Records with this type will be compared to the existing “Job Control Code” for the “EARS Reporting Period” indicated in each Job Record. All Job Records in the submission with a previously unreported “Job Control Code” will be stored in the Weatherization Database as a new record for the “EARS Reporting Period” specified in the Job Record.

#### Call-back (CLBK)

This record type corresponds with entering “CLBK” in the “Recordset Status Code” field. In CSD weatherization, a "Call-back" is when a measure fails (either during inspection, or later within the warranty period) and the agency is required to correct the failure. A Call-Back is only allowed under the DOE weatherization program.

Upon passing validation layers one (section 4.1) and two (section 4.2) Job Records with this type will be compared to the existing “Job Control Code” for the “EARS Reporting Period” indicated in the Job Record. All Job Records in the submission with a previously unreported “Job Control Code” will be stored in the Weatherization Database as a new record for the “EARS Reporting Period” specified in the Job Record.

### Altering Job Records

Job records that have been submitted to the Weatherization Database can be altered at three stages in the submission process. The first stage that allows alterations is when a Job Record is at a pending status. Pending job records can be “Superseded” by resubmitting the same “Job Control Code” with updated information. The next stage that allows alterations is when a Job Record has been marked partial. When altering partial records the Weatherization Database will only accept changes for measures associated with EARS reports that have not been approved. Lastly, a Prior Period Adjustment can be submitted for a Job Record that has been marked as approved. The standard data transfer file process is used for any alterations.

#### Altering a Pending Job Record

If an agency notices that a Job Record they submitted for a Pending EARS Reporting Period report (new or adjusted) has an error or needs to be changed they are allowed to resubmit the record to update any incorrect information. This only applies to Pending Job Records for the relevant “EARS Reporting Period”. When altering a Pending record it is required that the submitting agency resubmit the entire Job Record with the new values, even fields and measures that were not altered need to be resubmitted. Pending Job Records that are not PPA’s can be moved to a different EARS Reporting Period and the record for the old period will be Superseded.

Upon passing validation layers one (section 4.1) and two (section 4.2), and after being compared to the existing “Job Control Codes” for the “EARS Reporting Period” being reported against, if an existing “Job Control Code” is found for the selected “EARS Reporting Period,” and the Job Record’s status is Pending, the Weatherization Database will replace (not update) the original record submitted with the newly submitted Job Record. The previously submitted Job Record that is being replaced will be marked as Superseded.

#### Altering a Partial Job Record

After an agency has some but not all of the outstanding EARS Reports for contracts leveraged in a particular Job Record approved, they may still have the need to alter measures submitted for the outstanding EARS Reports. Agencies can alter these “Partial” Job Records by resubmitting the entire job record with the updated values. Much like altering a pending record, this process requires that the entire record be resubmitted. This process only allows the altering of data that corresponds to EARS Reports that have not be approved. If changes are required to approved records, LSPs must wait until the entire Job Record has been approved and then submit a prior period adjustment.

Upon passing validation layers one (section 4.1) and two (section 4.2), and after being compared to the existing “Job Control Codes” for the “EARS Reporting Period” being reported against, if an existing “Job Control Code” is found for the selected “EARS Reporting Period,” and the Job Record’s status is Partial, the Weatherization Database will compare the submitted data to the existing Job Record. During the comparison, if the measures for the approved EARS Reports have been altered in any way the entire Job Record will be rejected. If no changes have been made to approved EARS Reports, the Weatherization Database will replace the Job Record data that was altered by the submission and note that the original complete record has been Superseded.

#### Prior Period Job Record Adjustment (PPA)

The only way to alter a Job Record that has been marked with an Approved Weatherization Database status is by entering “PPA” in the “Recordset Status Code” field and submitting the updated values to the Weatherization Database. A prior period adjustment is submitted by a LSP when there is any change to a previously approved Job Record. If a change alters the expenditure amounts for any of the contracts identified in the Job Record, an EARS Adjustment will also be required. Job Records submitted with this type require that the submitting LSP resubmit the entire job with the new values, even fields and measures that were not altered need to be resubmitted.

Upon passing validation layers one (section 4.1) and two (section 4.2) jobs with this type will be compared to the existing Job Records with the same “Job Control Code” for the “EARS Reporting Period” being reported against. If there isn’t a pending adjustment record for the selected “Job Control Code” and “EARS Reporting Period” the Weatherization Database will archive the original and previously paid “Job Control Code” record and a new record with the values submitted in the “PPA” will be stored. The Weatherization Database will then allow a report to be created to show the differences between the initial weatherization and the prior period adjustment. This record type will be submitted in connection to an EARS Adjustment Report.

## Deleting a Job Record

If an agency determines that a Job Record was submitted to the Weatherization Database in error and would like it to be removed they may contact CSD and ask for the record to be deleted. This process only applies to Job Records that have a Pending record status. If a Job Record has already been approved or partially approved for payment by CSD it must be altered using the Prior Period Adjustment process.

After a pending Job Record has been deleted it will appear in the Return Web Service with a Record Status of “DELETED”.

# Validation Layers

The Weatherization Database validates each data transfer file submission to be sure that it conforms to technical, program, and contract rules. The data transfer file validations are performed in two layers. Each layer verifies that a different set of rules have been met by the data in the transfer file. The first layer is the Data Transfer Schema, which is focused on the data transfer file structure such as individual field length and content. If the data transfer file fails the first layer the entire submission will be rejected. The second validation layer confirms a series of program and contract business rules and checks for conditional field requirements on a Job Record by Job Record basis. Any individual Job Record failing the second layer of validation is rejected independently of the rest of the submission.

## Validation Layer 1 – XML Data Schema

The XML Data Schema is an XML document detailing the acceptable field lengths and attributes for all data that may be uploaded in a Weatherization Database data transfer file. The schema itself breaks jobs into two validation groups labeled “JobRecord” and “MFWBJobRecord”. The first group, “JobRecord” is for the submission of single family weatherization jobs and individual units of a multifamily weatherization jobs. The second group, “MFWBJobRecord” is for the submission of weatherization performed in the common areas of a large multifamily building. Jobs in the second group require a TREAT Audit.

Each group has a list of fields for job reporting and a subgroup of fields for measure reporting. A majority of data transfer files will use the information detailed in the “JobRecord” group. To increase understanding of the XML Data Schema, a worksheet has been created that breaks down the schema definition file into its component parts. An explanation of these components and a link to the reference document containing the worksheet and schema definition are provided below.

### Data Schema Breakdown Worksheet Components

The Data Schema Breakdown Worksheet describes each field contained in the XML Data Schema and the field’s various components for the sake of readability. Below is each data field component as it is referred to in the reference document and how it relates to the schema:

#### XML Order

The “XML Order” is the order (position) in which the reference field appears in the XML Data Schema. It is included here for reference purposes only.

#### Field Group

Identifies which group and level the field in question belongs to. There are five major field groups possible in a data transfer file:

* **SF-Job** – Identifies the fields associated with a Single Family Dwelling Weatherization Job, fields in this group detail the assessed dwelling and applicant information.
* **SF-Measure** – Identifies fields associated with the measure records for a Single Family Dwelling Weatherization Job. Fields in this group detail the specifics of an installed measure and the group will repeat with new information for each measure installed.
* **MFWB-Job** – Identifies the fields associated with a Multifamily Whole Building Job, fields in this group provide identifying information for the assessed building.
* **MFWB-Measure** – Identifies fields associated with the measure records for a Multifamily Whole Building Job. The measures reported under this section are common area measures. Fields in this group detail the specifics of an installed measure and the group will repeat with new information for each measure installed.
* **Data Transfer** – Identifies data transfer file metadata. These fields identify the submitting agency, identify the batch ID for the jobs being submitted, and verify the integrity of the data transfer file.

#### Field Name

This column provides the name of the field being submitted. It corresponds with the XML element ‘name’ value.

#### Value Type

This column is used in conjunction with the “Acceptable Values” column to describe what values may be submitted for each field in the data transfer file. There are several different value types, each type corresponds with the XML ‘restriction base’ value listed in the XML Data Schema. The types listed in the file are:

* **Unsigned Byte** – In the XML Data Schema a field with this value type will only accept a small, whole, number. There are a couple different acceptable value ranges for this field.
* **String** – This value type limits the acceptable values to alphanumeric character values of varying lengths. The acceptable values for this type will often be further constrained to specifically alpha or specifically numeric characters.
* **Enumerated String** – This value type is for limiting values to a predefined set of specific acceptable entries. The set of acceptable entries vary among the fields with this value type. A simple example is the “Signed” field which will only accept submissions of ‘Y’ or ‘N’.
* **Integer** – This type is similar to “Unsigned Byte” in that it only accepts whole numbers, the difference is that the acceptable ranges are larger.
* **Date** – This value type restricts the acceptable field values to dates in the YYYY-MM-DD format.
* **YearMonth** – This value type restricts the acceptable field values to the Year and Month in the YYYY-MM format.
* **gYear** – This value type restricts the acceptable field values to four digit years, YYYY.
* **Decimal** – The decimal value type is used for submitting numbers that may possess decimals. All cost reporting fields will have this value type.

#### Acceptable Values

This column further constrains the acceptable “Value Type” to clearly define what an acceptable submission for a particular field is. Each value type is constrained in a specific way:

* **Unsigned Byte** – Acceptable values are defined with an allowed number range.
* **String** – Acceptable values are defined with character caps and allowed character types.
* **Enumerated String** – A specific list of acceptable submissions is provided. These acceptable values are further defined in Appendix I of this document.
* **Integer** – Acceptable values are defined with an allowed number range.
* **Date** – The acceptable values are not further restricted from the YYYY-MM-DD format.
* **YearMonth** – The acceptable values are not further restricted from the YYYY-MM format.
* **gYear** – The acceptable values are not further restricted from the YYYY format.
* **Decimal** – The acceptable values are not further restricted.

#### Required Field

This column denotes whether or not the field is always required (Y), conditionally required (C), or optional (O).

Required Fields (Y) must always be present in the XML Data Transfer File, without exception. Conditionally Required (C) fields are only required based on certain criteria, that are outlined in the Layer 2 validations. If the requirements are not met, the fields may be omitted from the XML Data Transfer File. Optional Fields (O) must be omitted from the XML Data Transfer File if there is no valid entry for the field in question.

#### Field Definition

Definitions and descriptions for each field are provided in this column.

### Data Schema Breakdown Worksheet

The current Data Schema Breakdown Worksheet (Version 4.3.1, 09/06/2016) can be found as part of the Data Transfer Reference Document, linked below. To access the link you must be logged in to the Providers Website.

### XML Data Schema File

The current XML Data Schema can be found at the following link:

<http://schemas.csd.ca.gov/dataexchange/schema_wx_to_csd_v2711.xsd>

## Validation Layer 2 – Conditional Validations

The conditional validations that are performed by the Weatherization Database on agency data transfer files can be broken into two groups: job level validations and measure level validations. Job level validations verify the integrity of the job/assessment level data, ensuring that reported values are consistent with one another. Measure level validations denote the minimum required fields for each measure; verify the measure is allowed for the program and contract; and ensure that the appropriate mandatory measures are submitted with the report. Failing either group will mark the entire Job Record as “FAILED” and require the submitting agency to correct the error in their front end system and resubmit.

### Job Record Level Validations

Each Weatherization Job submitted in the agency data transfer file has several application and assessment level fields that apply to the entire job, regardless of measure. These fields identify the job general information, basic dwelling information, applicant general information, and demographic data. Because of the interrelation of many fields there are some basic validations performed to ensure data quality and integrity. The validations below are grouped into the general report areas outlined above and then by the field they are validating. All bullet points in the following subsections identify the specific schema fields and their relevant validations.

#### Job Record General Information

These validations ensure that the relevant job dates are in the right order and the Recordset Status Code provided is valid based on the other data provided.

* Building Control Code (MFWB Only)
  + When submitting a Job Record for the first time (no matching “Job Control Codes” are found) the Building Control Code must be unique to the agency submitting, except:
    - When the current Recordset Status Code is anything but “WX” and “ASSO”
    - AND the POS Address also matches the address reported for the matching Control Code.
* Dwelling Control Code (SF Only)
  + When submitting a Job Record for the first time (no matching “Job Control Codes” are found) the Dwelling Control Code must be unique to the agency submitting, except:
    - When the current Recordset Status Code is anything but “WX” and “ASSO”
    - AND the POS Address also matches the address reported for the matching Control Code.
    - OR the previously reported, matching, Dwelling Control Code is for a record with a Recordset Status Code of “HCSO”, “SWTS”, or “ASSO”.
* EARS Reporting Period (SF and MFWB)
  + The value must be for a period greater than or equal to the “Job Completed Date”.
* Eligibility Date (SF Only)
  + The date provided must be before or the same as the “Job Completed Date”.
* Job Assessment Date (SF Only)
  + The date provided must be before or the same as the “Job Completed Date”.
* Job Completed Date (SF Only) **(not enforced at this time)**
  + The date provided can be no more than 180 days after the “Job Assessment Date”.
* Job Control Code (SF Only)
  + The Job Control Code must unique except:
    - When the Recordset Status Code is “PPA”
    - OR the existing Job Control Code is for a job with the status of “PENDING” or “PARTIAL” and the Dwelling Control Code matches.
* Recordset Status Code (SF and MFWB)
  + If the assigned status code is “WX”:
    - The EARS Reporting Period cannot be for a previously approved period.
    - The Dwelling Control Code must not match any Job Records reported in previous EARS Reporting Periods. (SF Only)
    - The Building Control Code must not match any Job Records reported in previous EARS Reporting Periods) (MFWB Only)
    - The Dwelling Assessment (measure code 1) Measure must be included with the Job Record. It cannot be “Modified” (SF Only, type code 32). Except:
      * No assessment is required when there are only measures with a Subprogram Code of “TRP”.
    - There must be at least three priority measures included in the (SF Only) Job Record. Except:
      * When there are only measures with a Subprogram Code of “SLWP” or “TRP”.
  + If the assigned status code is “ASSO”:
    - The EARS Reporting Period cannot be for a previously approved period.
  + If the assigned status code is “HCSO”:
    - The EARS Reporting Period cannot be for a previously approved period.
  + If the assigned status code is “REWX”:
    - The EARS Reporting Period cannot be for a previously approved period.
  + If the assigned status code is “SWTS”:
    - The EARS Reporting Period cannot be for a previously approved period.
  + If the assigned status code is “CLBK”:
    - The EARS Reporting Period cannot be for a previously approved period.
  + If the assigned status code is “PPA”:
    - The EARS Reporting Period must be for a previously approved period.
    - The Job Control Code and Dwelling Control Code must both match a previously reported record. (SF Only)
    - The Job Control Code and Building Control Code must both match a previously reported record (MFWB Only)

#### Basic Dwelling Information

The Basic Dwelling Information field validations are to ensure the consistency of the assessment level dwelling data. These validations correlate related fields to ensure mismatched information isn’t reported.

* Census Tract # (SF Only)
  + If any of the reported measures have a Subprogram Code of “LIWP”, “SLWP” or “TRP” then this field is required.
  + The value reported must match the Census Tract independently determined by CSD using the reported POS Address.
  + If any of the reported measures have a Subprogram Code of either “LIWP” or “SLWP” the reported Census Tract must be in a qualifying DAC.
  + If any of the reported measures have a Subprogram Code of “TRP” the reported Census Tract must be in a qualifying DWR designated service area.
* Cooking Appliance Operation Status Code (SF Only)
  + If the Cooking Appliance Type is “NONE” then the operation status must be “N/A”.
* Cooking Appliance Type (SF Only)
  + If the Cooking Energy Type Code is “NONE” then the appliance type must be “NONE”.
* Cooking Energy Type Code (SF Only)
  + If the Cooking Appliance Operation Status Code is “N/A” then the energy type code must be “NONE”.
* Cooling Appliance Operation Status Code (SF Only)
  + If the Cooling Appliance Type Code is “NONE” then the operation status must be “N/A”.
* Cooling Appliance Type Code (SF Only)
  + If the Cooling Appliance Operation Status Code is “N/A” then the appliance type must be “NONE”.
* EnviroScreen Score (SF Only)
  + If any of the reported measures have a Subprogram Code of either “LIWP” or “SLWP” then the EnviroScreen Score must be reported.
  + The score reported must match the score independently calculated by CSD using the Census Tract #.
  + The value “CE” may only be used if all of the reported measures are for the “TRP” subprogram.
* Heating Appliance Operation Status Code (SF Only)
  + If the Heating Appliance Type Code is “NONE” then the operation status must be “N/A”.
* Heating Appliance Type Code (SF Only)
  + If the Heating Energy Type Code is “NONE” then the appliance type must be “NONE”.
  + If the Heating Energy Type Code is “WOOD” then the appliance type must also be “WOOD”
* Heating Energy Type Code (SF Only)
  + If the Heating Appliance Operation Status Code is “N/A” then the energy type code must be “NONE”.
  + If the Heating Appliance Type Code is “WOOD” then the energy type code must also be “WOOD”
* House Hold Size (SF Only)
  + If the Tenant Status Code is “None” then the House Hold Size must be “0”.
* POS Address (SF and MFWB)
  + The address reported cannot be a Post Office Box.
* SHPO PDS ID # (SF and MFWB)
  + If the value in Year Built is more than 45 years from the Assessment Date the SHPO PDIS ID must be populated, except:
    - When the Recordset Status Code is “ASSO”.
    - When the Building Structure Type Code is “MH”.
    - When there are only measures with a Subprogram Code of “SLWP” or “TRP”.
* Tenant Status Code (SF Only)
  + If the House Hold Size is “0” then the Tenant Status Code is “NONE”.
  + If the Dwelling Number of Units is “1” then the Tenant Status Code can be anything but “NONE” or “NCRT”.
* Water Heating Appliance Operation Status Code (SF Only)
  + If the Water Heating Appliance Type is “NONE” then the operation status must be “N/A”.
* Water Heating Appliance Type (SF Only)
  + If the Water Heating Energy Type Code is “NONE” then the appliance type must be “NONE”.
* Water Heating Energy Type Code (SF Only)
  + If the Water Heating Appliance Operation Status Code is “N/A” then the energy type code must be “NONE”.

#### Applicant General Information

These validations ensure that the supplied application information is consistent and complete.

* Area Code (SF Only)
  + If the Phone field has been populated then an Area Code is required.
* Date of Birth (SF Only)
  + The date provided must be after “01/01/1900”.
  + If a DOB is provided, the applicant must be at least 16 years of age, as of the Eligibility Date.
  + If the House Hold Size is “0” or the applicant declined to provide a DOB the field must be blank.
* First Name (SF Only)
  + If the House Hold Size is “0” then the First Name must be “Vacant”.
* Last Name (SF Only)
  + If the House Hold Size is “0” then the Last Name must be “Vacant”.
* Monthly Income (SF Only)
  + The value provided must meet the Income Eligibility threshold listed in the guidelines table posted on [CSD’s Website](http://www.csd.ca.gov/Services/HelpPayingUtilityBills/EnergyIncomeGuidelines.aspx). Unless the 66% rule is in effect. Except:
    - When there are only measures with a Subprogram Code of “SLWP” or “TRP”.
* Phone (SF Only)
  + If the Area Code field has been populated then the Phone number is required.
* SSN (SF Only)
  + If the House Hold Size is “0” then the SSN must be all 9’s.
  + If there are only measures for the Subprogram Codes “SLWP” or “TRP” and a SSN was not provided, then the SSN must be all 8’s.
* Utility Account # Electric (SF Only)
  + If the Utility Account Information Release value is “ELEC” or “BOTH” then the Utility Account # Electric must be populated.
  + The value entered in this field must match the Account # format for the utility company identified by the Utility Company Code Electric.
* Utility Account # Gas (SF Only)
  + If the Utility Account Information Release value is “GAS” or “BOTH” then the Utility Account # GAS must be populated.
  + The value entered in this field must match the Account # format for the utility company identified by the Utility Company Code GAS.
* Utility Account Information Release (SF Only)
  + If any measure records associated with the job have a Subprogram Code of “LIWP” then the Utility Account Information Release value cannot be “N/A” if:
    - Cooking Energy Type Code is “ELEC” or “NGAS”,
    - Heating Energy Type Code is “ELEC” or “NGAS”, OR
    - Water Heating Energy Type Code is “ELEC” or “NGAS”.
  + If any measure records associated with the job have a Subprogram Code of “SLWP” then the Utility Account Information Release value cannot be “DECL” or “N/A” if:
    - Cooking Energy Type Code is “ELEC” or “NGAS”,
    - Heating Energy Type Code is “ELEC” or “NGAS”, OR
    - Water Heating Energy Type Code is “ELEC” or “NGAS”.
* Utility Company Code (SF Only)
  + The Utility Company Code provided must be a valid code (see Appendix IV)

#### Demographic Data

The Demographic Data validations compare the reported demographics to ensure consistency with the reported House Hold Size.

* Age 3 to 5 (SF Only)
  + The value provided must be less than the reported House Hold Size.
* Disabled (SF Only)
  + The value provided must be less than or equal to the reported House Hold Size.
* Farm Worker (SF Only)
  + The value provided must be less than or equal to the reported House Hold Size.
* House Hold Size (SF Only)
  + The value provided must be greater than the sum of the values in the fields: Under 3 and Age 3 to 5.
  + The value provided must be greater than or equal to the sum of the values in the fields: Under 3, Age 3 to 5, Age 6 to 18, and Over 60.
  + If the First Name and Last Name provided is “Vacant” then the House Hold Size must be “0”.
* Limited English (SF Only)
  + The value provided must be less than or equal to the reported House Hold Size.
* Native American (SF Only)
  + The value provided must be less than or equal to the reported House Hold Size.
* Over 60 (SF Only)
  + The value provided must be less than or equal to the reported House Hold Size.
  + If the Date of Birth is a date over 60 years ago as of the Eligibility Date then the value in Over 60 must be at least “1”.
* Under 3 (SF Only)
  + The value provided must be less than the reported House Hold Size.

### Measure Level Validations

In addition to the application and assessment level fields that are submitted to the Weatherization Database as part of the Job Record there is one or more self-contained measure sub-records. Each of these has their own set of fields to be validated. Measure Level validations can be broken into general validations and measure specific validations.

#### General Measure Validations

Validations in this group are focused on ensuring consistency in the information reported for each measure. These validations apply globally across all measures. All bullet points in this section identify the specific schema fields and their relevant validations. All validations in this section apply to both Single Family weatherization and Multi-Family Whole Building weatherization.

* Agency Contract Number
  + The contract type for the value reported in this field must be consistent with the value reported in the Subprogram Code field.
  + If the Recordset Status Code is “REWX” the Agency Contract Number cannot be for a DOE contract.
* Measure Control Code
  + The reported Measure Control Code must not have been previously used by the reporting agency.
* Measure Efficiency
  + The Measure Efficiency field is required for:
    - Low Flow Toilet – Bathroom 1 (Measure Type Code ##)
      * Value must be greater than 1.6.
    - Low Flow Toilet – Bathroom 2 (Measure Type Code ##)
      * Value must be greater than 1.6.
* Measure Fee Amount
  + The Measure Fee Amount is only allowed for the following measures:
    - Permits (Measure Code 49)
    - Lodging and Per Diem (Measure Code 52)
    - Disposal Fees (Measure Code 48)
    - SHPO Costs (Measure Code 66)
* Measure Installation Date **(not enforced at this time)**
  + The date provided must be greater than or equal to the Assessment Date.
* Measure Labor Hours Count
  + If there is a positive value reported in the Measure Labor Amount field then the Measure Labor Hours Count must be a positive value.
* Measure Rebate Amount
  + The Measure Rebate Amount field is only allowed (and required) for:
    - Solar Water Heater (Measure Code 154) Installation types.
* Subprogram Code
  + If the Recordset Status Code is “REWX” the Subprogram Code cannot be “DOE” or “DOED”.

#### Measure Specific Validations

The measure specific validations are focused on ensuring that valid information is being submitted for each measure. For communication and clarification purposes a Measure Detail Worksheet has been created to assist in determining the correct inputs for each measure. The worksheet lists the valid type codes and Section Numbers by measure. Additionally, for each measure, it identifies the allowed maximum cost and quantity. A breakdown of the worksheet and a link to the containing document is provided below. All validations in this section and its subsections apply to both Single Family weatherization and Multi-Family Whole Building weatherization.

##### Measure Detail Worksheet Components

The Measure Detail Worksheet identifies several of a measure record’s mandatory components and identifies, by measure, the valid entries for those components. Below is each column of the Worksheet and how it matches the XML Data Schema:

* **Sort** – The sort column in the Detail Worksheet is only for organization purposes and can be overlooked.
* **Subprogram Code –** This column identifies the different subprograms each measure can be billed to. To find the allowed Measure Code, Type Code, and Section Number combinations, first identify the Subprogram the Measure will be billed to. This field maps directly to the schema “Subprogram Code” field.
* **Category Name –** This column lists the category that each measure and type combination is valid for. Measures can appear in more than one section for each Subprogram Code.
* **Measure Name** – The name of the measure being installed. The names on the worksheet repeat for each Subprogram, Type, and Section combination they have.
* **Measure Code** – This field uniquely identifies each measure with a one to three digit code. The values in this field map directly to the schema “Measure Code” field. For a full list of Measure Names with paired Measure Codes refer to Appendix II.
* **Measure Type Description –** This is the text description of each measure type and shows the different variations each measure may have.
* **Measure Type Code –** This field uniquely identifies each measure type with a one to two digit code. The values in this field map directly to the schema “Measure Type Code” field. For a full list of Type Descriptions with paired Measure Type Codes refer to Appendix III.
* **Measure Section # –** This column lists the valid section numbers for each measure/type combination. The values in this field map directly to the schema “Measure Section #” field.
* **Maximum Cost –** This column identifies the maximum amount that is allowed to be spent on a specific measure within a unit, across all billable cost fields in the expenditure formula.
* **Maximum Type –** This column identifies whether the maximum cost is on a per dwelling basis, or focused on the count of the unit of material (linear foot, square foot, bulb, etc).
* **Maximum Measure Count –** Identifies the total number of measure units that is allowed to be installed. This field maps directly to the “Measure Count” field in the schema.
* **Priority Measure –** This field identifies whether the measure counts for the 3 Priority Measure rule.

##### Identifying a Valid Measure Record

To ensure that measures are submitted correctly and to understand the utility of the Measure Detail Worksheet it is important to know how the Weatherization Database processes a measure record. Bullet points in this section identify field from either the schema or the Measure Detail Worksheet, as denoted next to the field name, and provides the field’s their relevant validations. The following validations are performed to ensure that the measure is billable to CSD:

* Subprogram Code (Schema and Measure Detail field)
  + Compare selection to the type of contract entered in Agency Contract Number, reject invalid combinations (i.e. LIWP is not a subprogram of a DOE Contract).
* Measure Code (Schema and Measure Detail field)
  + Compare entry to measures allowed for identified Subprogram Code, reject invalid measures.
* Measure Type Code (Schema and Measure Detail field)
  + Check Subprogram Code and Measure Code combination for valid Type Codes, compare to entry and reject invalid selections.
  + Check Subprogram Code, Measure Code, and Type Code combination, reject if combination is reported more than once within the Job Record.
* Measure Section # (Schema and Measure Detail field)
  + Compare Subprogram Code, Measure Code, and Type Code combination against allowed combinations for entered Measure Section # and reject invalid combinations.
* Maximum Cost (Measure Detail field)
  + Check Subprogram Code, Measure Code, Measure Type Code, and Measure Section # combination for allowed Maximum Cost.
    - Compare Maximum Cost against the sum of Measure Fees Amount, Measure Materials Amount, Measure Labor Amount, and Measure Subcontractor Amount.
      * If the sum is larger than the Maximum Cost, check Measure Waiver Code for a valid Waiver Code, if there is not a valid Waiver reject the record.
* Measure Count (Schema field)
  + Check Subprogram Code, Measure Code, Measure Type Code, and Measure Section # combination for allowed Maximum Measure Count.
    - Compare Maximum Measure Count against value entered in Measure Count.
      * If the value is larger than the Maximum Measure Count, check Measure Waiver Code for a valid Waiver Code, if there is not a valid Waiver reject the record.
      * If the Maximum Type is “Dwelling” the measure count is not capped.

##### Additional Measure Specific Validations

In addition to checking to ensure the correct types, sections, and maximums have been entered, there are also a handful of measure specific validations that will be performed. These validations are focused on ensuring program specific requirements are met when measures are reported. All fields in this section identify a specific measure and their relevant validations.

* Caulking (Measure Code 18)
  + The Measure Type selected must coincide with the Building Structure Type Code and Dwelling Number of Units selected.
* Cooling Repair (Measure Code 10)
  + May only be installed under an “ECCS” Subprogram Code if the value reported in Cooling Appliance Operation Status was either “NOOP” or “CRIS”.
* Cooling Replacement (Measure Code 11)
  + May only be installed under an “ECCS” Subprogram Code if the value reported in Cooling Appliance Operation Status was either “N/A”, “NOOP”, or “CRIS”.
* Heating Source Repair (Measure Code 12)
  + May only be installed under an “ECHS” Subprogram Code if the value reported in Heating Appliance Operation Status was either “NOOP” or “CRIS”.
* Heating Source Replacement (Measure Code 13)
  + May only be installed under an “ECHS” Subprogram Code if the value reported in Heating Appliance Operation Status was either “N/A”, “NOOP”, or “CRIS”.
* Hot Water Flow Restrictor (Measure Code 26)
  + May NOT be installed under the SLWP subprogram if the Water Heating Energy Type Code is “WOOD”.
* Water Heater Blanket (Measure Code 33)
  + May NOT be installed under the SLWP subprogram if the Water Heating Energy Type Code is “WOOD”.
* Water Heater Repair (Measure Code 15)
  + May only be installed under an “ECHS” Subprogram Code if the value reported in Water Heating Appliance Operation Status was either “NOOP” or “CRIS”.
* Water Heater Replacement (Measure Code 16)
  + May only be installed under an “ECHS” Subprogram Code if the value reported in Water Heating Appliance Operation Status was either “NOOP” or “CRIS”.
* Contractor Post-Weatherization Inspection (Measure Code 6)
  + Must be installed if other measures were billed to the “DOE” Subprogram Code, except:
    - When the Recordset Status Code is “ASSO”
* Limited Home Repair (Measure Code 153)
  + May only be reported under the TRP program if a Low Flow Toilet (Measure Code 155) was also reported without a Non-Feasibility Code. The Measure Type(s) must correspond to the reported Low Flow Toilet(s).
* Low Flow Toilet (Measure Code 155)
  + If reported against the “TRP” subprogram, the only allowed Measure Non-Feasibility Codes are “CBI”, “IPM”, and “REF”.
* WX Non-Feasible - Trip Charge (Measure Code 160)
  + May only be reported under a “ASSO” Recordset Status Code and must be the only Measure reported.

##### LIWP Carbon Investment Return Validation

For each Job Record (unique Job Control Code) submitted to the Weatherization Database all measures billed to LIWP for that Job Record must meet a certain level of effectiveness as a package. A package is defined as all measures installed to an individual dwelling that are identified by the LSP as billable to LIWP. The effectiveness rating, called the Carbon Investment Return (CIR), is determined in advance for each agency and applied individually for every Job Record. Each job that does not meet the Carbon Investment Return for the submitting agency will be rejected by the Weatherization Database. More information on the Carbon Investment Return and how it applies to each agency can be found on CSD Providers Website at the following link:

<http://providers.csd.ca.gov/Energy/LIWP/CIRCalculator.aspx>

##### Supplemental LIWP Maximum Allocation

For each Job Record (unique Job Control Code) submitted to the Weatherization Database all measures billed to SLWP for that Job Record must not exceed a cumulative total of $2,600 across all expenditure fields.

##### Toilet Replacement Program Maximum Expenditures

Due to the limited funds available for the Toilet Replacement Program, agencies are not allowed to exceed $350 dollars of direct activities for each toilet installed, or up to $750 for each complex toilet installation.

# Job Record Statuses

As agencies proceed through the Data Transfer File submission process the Job Records that are submitted to CSD are assigned a variety of statuses internal to the Weatherization Database. These statuses identify where in the workflow the Job Record is within CSD’s and the Weatherization Database’s manual and automated processes. The statuses are all reported back to agencies through the Return Web Service, with varying levels of additional information to better clarify the current state of the Job Record and potentially any actions that may need to be taken. The statuses are as follows:

* **FAILED** – LSP action required – This status identifies that a Job Record has failed the Layer 2 validations. When this status is received in the Return Web Service a list of the failed validations will also be provided with the record.
* **PENDING** – No LSP action required – This status is provided for Job Records that have passed that Layer 2 validation and are waiting to be reconciled against the EARS Report for designated EARS Reporting Period. No additional information is provided in the Return Web Service.
* **SUPERSEDED** – No LSP action required – The Superseded status is applied to a “PENDING” or “PARTIAL” Job Record when it is altered (replaced) through the process outlined in sections 3.1.2.1 and 3.1.2.2 of this document. Superseded Job Records are no longer counted against the EARS Reporting Period they were reported for; instead, the newly submitted Job Record is counted. No additional information is provided in the Return Web Service.
* **PARTIAL –** No LSP action required – This status is applied to Job Records that have billed more than one Contract for the worked performed and have had at least one, but not all, of the Contract EARS Reports for the given EARS Period Approved for payment.
* **DELETED** – No LSP action required – Job Records with a deleted status have been deleted from the Weatherization Database by CSD Staff at the request of the LSP. Only Job Records that previously had a status of “PENDING” or “SUPERCEDED” can be deleted. No additional information is provided in the Return Web Service.
* **APPROVED** – No LSP action required – An approved status identifies Job Records that have been reconciled against all related EARS Reports for the corresponding EARS Reporting Period. The EARS Reports will move forward in the payment process and the Job Records have been locked and can only be altered through the Prior Period Adjustment process. No additional information is provided in the Return Web Service.
* **ADJUSTED** – No LSP action required – This status is applied to a Job Record from an approved EARS Reporting Period that has had a Prior Period Adjustment submitted against it. No additional information is provided in the Return Web Service.

# Job Record Contract Status Records

While the Weatherization Database allows LSPs to leverage multiple contracts in each Job Record that is submitted, EARS requires that a separate report is submitted each contract. To assist the reconciliation of each EARS report, the Weatherization Database tracks the Contract Statuses individually for each Job Record. Much like the Job Record Statuses, the Contract Statuses will be reported with the return web service. The Weatherization Database tracks Contract Status for DOE, ECIP, LIHEAP, and LIWP EARS Reports. The available contract statuses for each are:

* **N/A** – This Contract Status is assigned when a Job Record passes validation Layer 2 and the contract in question is not leveraged.
* **PENDING** – Much like a pending Job Record status, this Contract Status is assigned to each contract leveraged when the Job Record passes validation Layer 2.
* **APPROVED –** An approved Contract Status is assigned when the specific program EARS Report has been reviewed and approved for payment. When this status is applied for a leveraged contract, the corresponding measures are locked and cannot be altered until the entire Job Record has been approved.
* **SUPERSEDED** – The Superseded Contract Status is applied when an LSP has altered the measures associated with the leveraged contract in question.

# Job Submission Workflow Diagram



# Return Web Services

Two Web Services will be available for agencies to monitor whether or not the Job Records contained in their data transfer file(s) passed or failed the Layer 2 Conditional Validations. If the agency data transfer file fails Validation Layer 1 Data Schema the entire submission is instantly rejected and reported as failed at the time the data transfer file submission was attempted. Agencies will be responsible for addressing the Layer 1 validation errors and resubmitting all jobs in the failed batch again. After a batch of jobs passes Layer 1 the Weatherization Database will attempt to add the all of the Job Records to the database and Layer 2 validations will be performed.

During Layer 2 Validation each job will be marked as “PENDING” if it passed the Layer 2 Validations and marked as “FAILED” if it did not pass one or more of the validations. “PENDING” jobs are accepted in the Weatherization Database and will be used for program purposes and reconciliation to the agency EARS Reports identified in the reported Job Records. A “FAILED” record is a rejected job, and not used for program purposes or agency payment. Agencies will be responsible for addressing the validation errors and resubmitting the whole job in a future data transfer file submission.

The existing Weatherization Database Web Service will be modified to include two new service operations “FetchBatchStatus” and “FetchJobStatus” for requesting the status of jobs submitted to the Weatherization Database. Through the submission of a correctly formatted request an agency will receive a report of the success or failure of each job they have attempted to submit to the Weatherization Database during a specified date range, or for a specified EARS Reporting Period. Selecting a date range in which no batches were submitted or an EARS Reporting Period that has not be reported against with both result in the web service returning no data. Each Agency should submit the requests on a regularly scheduled basis in order receive notification of rejected Job Records and to comply with reporting period deadlines.

The web service request record for the “FetchBatchStatus” operation consists of the “Agency Code” for the requesting agency, and the beginning and end dates for the date range of batch submission dates the requesting agency wants a report on. The web service operation will return a list of “batch results” with “job results” sub records, one “job result” per job in each batch received within the requested date range. Each “job result” will contain data elements that uniquely identify the job within its data transfer file, a status code denoting successful or failed acceptance of the job, and, if failed, a list of reasons for failure. Additionally, if a previously accepted Job Record was deleted, it will be marked as such. Note that the list of reasons may contain more than one reason, but not necessarily all reasons, since a Job Record being rejected for one particular reason might prevent other potentially rejecting validations from running properly.

The web service request record for the “FetchJobStatus” operation consists of the “Agency Code” and an “EARS Reporting Period”. The web service operation will return a list of “job results” similar to the “FetchBatchStatus” operation, except without the “batch results” parent records.

The “FetchBatchStatus” operation request must be formatted in the following fashion, using the same conventions as the Web Service Schema:

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Value Type** | **Acceptable Values** |
| Agency Code | String | 5 numeric characters |
| Data Transfer File Begin Date | Date | Date |
| Data Transfer File End Date | Date | Date |

Upon receipt of the “FetchBatchStatus” operation request, the Weatherization Database will return to the front end system a series of records in the following format:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Group** | **Field Name** | **Value Type** | **Acceptable Values** | **Description** |
| Batch-Record | Batch GUID / Text ID(if REJECTED) | String | Unbound | Unique identifier used as the identity of the batch of Job Records sent. |
| Batch-Record | Received Date | Date | Date | Date the batch was received. |
| Batch-Record | Batch Status | Enumerated String | ACCEPTED  REJECTED | Layer 1 Validation results. |
| Batch-Reject | Rejection Reason | String | Unbound | The reason the batch failed the Layer 1 XML Schema validation. Repeated for each failing Schema Validation |
| Job-Record | Job Control Code | String | 40 Characters | The unique identifier for the weatherization job being reported. |
| Job-Record | Job Record Status Date | Date | Date | The date the Job Record was last updated in the Weatherization Database. |
| Job-Record | Recordset Status Code | String | 4 Characters | Describes whether the recordset is initial, adjustment, or re-weatherization |
| Job-Record | EARS Reporting Period | String | 6 Numeric Characters | The EARS reporting period the job is being billed in. To be submitted in YYYYMM format. |
| Job-Record | Job Record Status | Enumerated String | FAILED  PENDING  SUPERSEDED  PARTIAL  DELETED  APPROVED  ADJUSTED | The status of the Job Record submitted. |
| Job Record | DOE EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the DOE contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job Record | ECIP EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the ECIP contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job Record | LIHEAP EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the LIHEAP contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job Record | LIWP EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the LIWP contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job-Record | Rejection ID | String | 20 characters | A unique ID that identifies the Job Record and its associated rejections. |
| Job-Reject | Measure Control Code | String | 36 Characters | Unique identifier used as the identity of the jobsheet detail record. |
| Job-Reject | Business Rule Code | String | 10 Characters | A code that uniquely IDs the reason for failure. |
| Job-Reject | Reason Text | String | 200 Characters | Text reason associated with the above code. |

The “FetchJobStatus” operation request must be formatted in the following fashion, using the same conventions as the Web Service Schema:

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Value Type** | **Acceptable Values** |
| Agency Code | String | 5 numeric characters |
| EARS Reporting Period | YearMonth | YearMonth |

Upon receipt of the “FetchBatchStatus” operation request, the Weatherization Database will return to the front end system a series of records in the following format:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Group** | **Field Name** | **Value Type** | **Acceptable Values** | **Description** |
| Job-Record | Batch GUID | String | Unbound | Unique identifier used as the identity of the batch the Job Record was a part of. |
| Job-Record | Job Control Code | String | 40 Characters | The unique identifier for the weatherization job being reported. |
| Job-Record | Job Record Status Date | Date | Date | The date the Job Record was last updated in the Weatherization Database. |
| Job-Record | Recordset Status Code | String | 4 Characters | Describes whether the recordset is initial, adjustment, or re-weatherization |
| Job-Record | EARS Reporting Period | String | 6 Numeric Characters | The EARS reporting period the job is being billed in. To be submitted in YYYYMM format. |
| Job-Record | Job Record Status | Enumerated String | FAILED  PENDING  SUPERSEDED  PARTIAL  DELETED  APPROVED  ADJUSTED | The status of the Job Record submitted. |
| Job Record | DOE EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the DOE contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job Record | ECIP EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the ECIP contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job Record | LIHEAP EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the LIHEAP contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job Record | LIWP EARS Status | Enumerated String | N/A  PENDING  APPROVED  SUPERSEDED | The status of the LIWP contract EARS Report reconciliation, for the EARS Reporting Period identified in the Job Record. |
| Job-Record | Rejection ID | String | 20 characters | A unique ID that identifies the Job Record and its associated rejections. |
| Job-Reject | Measure Control Code | String | 36 Characters | Unique identifier used as the identity of the jobsheet detail record. |
| Job-Reject | Business Rule Code | String | 10 Characters | A code that uniquely IDs the reason for failure. |
| Job-Reject | Reason Text | String | 200 Characters | Text reason associated with the above code. |

# Background Concepts & Terminology

There are several background concepts and terminology that will make it easier to understand the business rules outlined in this document. The concepts and terminology are not presented in any particular order.

## Contract, Program, Subprogram

CSD contracts with a network of agencies to deliver services as specified in contracts between CSD and the LSP. Contracts are the main mechanism that CSD uses to distribute grant funds received from various sources. Contracts are normally established based on the requirements of an individual funding source. Contracts may be issued for any given grant (e.g. several different types of contracts are issued based on the Community Services Block Grant). A contract will however, normally distribute funds from a single grant source (e.g. LIHEAP and CSBG grants are not normally distributed within the same contract).

Contracts define services to be delivered by contracted agencies based on programs and subprograms. Programs are used to group subprograms that have similar characteristics. Subprograms are the actual tools that the contracted agencies use to deliver services. Each program will have one or more subprograms to allow the delivery of services. The subprogram will define the services that can be offered by the contracted agency.

Examples of programs offering services that must be reported to the Weatherization Database and their subprograms are provided in the table below (please note that this list does not include utility assistance, fast track, and other similar programs):

|  |  |  |  |
| --- | --- | --- | --- |
| **Contract / Year** | **Program** | **Subprogram Code** | **Description** |
| DOE | DOE | DOE | Department of Energy Weatherization |
| LIWP | LIWP | LIWP | Low Income Weatherization Program |
| LIHEAP | LIHEAP | LHWX | LIHEAP Weatherization |
| LIHEAP | ECIP | EHCS | ECIP Heating Services |
| LIHEAP | ECIP | EHCS | ECIP Cooling Services |
| LIHEAP | ECIP | SWTS | Severe Weather Energy Assistance and Transportation Services |

1. Appendix – Enumerated String Selection Definitions

This appendix identifies all of the “Enumerated String” types, their associated data transfer file fields, and defines the acceptable enumerated string values.

1. **Building Structure Type**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Building Structure Type Code | BR | Brick |
| MH | Mobile Home |
| ST | Stucco |
| WD | Wood |

1. **Operational Status**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Cooking Appliance Operation Status Code | OPER | Operational |
| Cooling Appliance Operation Status Code | NOOP | Nonoperational |
| Heating Appliance Operation Status Code | CRIS | Crisis – function of the appliance constitutes a hazard. |
| Water Heating Appliance Operation Status Code | N/A | No appliance |

1. **Energy Type Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Cooking Energy Type Code | ELEC | Electric |
| NGAS | Natural Gas |
| Heating Energy Type Code | PROP | Propane |
| WOOD | Wood |
| FOIL | Fuel Oil |
| Water Heating Energy Type Code | NONE | None |
| OTH | Other |
| KERO | Kerosene |

1. **Cooking Appliance Type Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Cooking Appliance Type | RNG | Range |
| CT | Cook Top |
| OTH | Other |
| NONE | None |

1. **Cooling Appliance Type Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Cooling Appliance Type Code | ACC | Air-Conditioning Central |
| ACWI | Air-Conditioning Window |
| ACWA | Air-Conditioning Wall |
| ECR | Evaporative Cooler Roof |
| ECWL | Evaporative Cooler Wall |
| NONE | None |
| ECWN | Evaporative Cooler Window |

1. **Heating Appliance Type Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Heating Appliance Type Code | EWDV | Exterior Wall Direct Vent |
| FAU | Forced Air Unit |
| FLR | Floor Furnace |
| INT | Interior Wall Furnace |
| PACK | Package Unit |
| NONE | None |
| OTH | Other |
| WOOD | Wood Fueled Appliance |

1. **Recordset Status Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Recordset Status Code | WX | Initial Weatherization |
| REWX | Reweatherization |
| PPA | Prior Period Adjustment |
| ASSO | Assessment/Diagnostic Only |
| SWTS | SWEATS Only |
| HCSO | ECIP Heating/Cooling Only |
| CLBK | Callback |

1. **Tenant Status Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Tenant Status Code | OWN | Owner Occupied |
| RNT | Renter |
| TMG | Temporary/Group Shelter |
| NONE | Vacant |
| M100 | MUD-HUD/USDA 100 |
| MH66 | MUD-HUD/USDA 66 |
| NCRT | Non-Certified Resident |

1. **Utility Information Release Consent**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Utility Information Release Consent | GAS | Consented to Release Gas |
| ELEC | Consented to Release Electric |
| BOTH | Consented to Release both Gas and Electric |
| DECL | Declined to Release both Gas and Electric |
| NONE | Does not have utilities |

1. **Water Heater Type**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Water Heater Type | CONV | Conventional – Storage |
| ONDM | Instant – On Demand |
| HPMP | Heat Pump |
| GSHP | Ground Source Heat Pump |
| INTG | Integrated |
| SWH | Solar Water Heater |
| NONE | None |

1. **Measure Non-Feasibility Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Measure Non-Feasibility Code | CBI | Measure Can’t Be Installed |
| IPM | Measure in Place |
| MLR | Maximum Level Reached |
| NNM | Measure Not Needed |
| OPI | Measure Installed through Other Programs |
| REF | Measure Refused by Client |

1. **Measure Reweatherization Justification Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Measure Reweatherization Justification Code | FAI | Premature Failure |
| MIS | Measure Missing |

1. **Subprogram Code**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| Subprogram Code | LHWX | LIHEAP Weatherization |
| DOE | DOE Weatherization |
| ECSS | ECIP Cooling Services |
| ECHS | ECIP Heating Services |
| SWTS | SWEATS |
| DOED | DOE Disaster Relief |
| LIWP | Low Income Weatherization Program |
| SLWP | Supplemental LIWP |
| TRP | Toilet Replacement Program |

1. **EnviroScreen Score**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Acceptable Values** | **Expanded Value** |
| EnviroScreen Score | 96-100 | CalEnviroScreen Score range dwelling belongs to. |
| 91-95 | Range dwelling belongs to. |
| 86-90 | Range dwelling belongs to. |
| 81-85 | Range dwelling belongs to. |
| 76-80 | Range dwelling belongs to. |
| N/A | Not Applicable |
| CE | Categorical Eligibility |

1. Appendix – Measures Codes

Measure Codes are two digit identification numbers that indicate a specific measure. These numbers are used by the Weatherization Database to identify the measure and apply any measure specific validations. The measure code must be submitted for each measure being reported to the Weatherization Database.

| **Measure** | **Measure Code** |
| --- | --- |
| Dwelling Assessment | 1 |
| Combustion Appliance Safety Test | 2 |
| Blower Door Test | 3 |
| Duct Leakage Test | 4 |
| Energy Audit | 5 |
| Contractor Post-Weatherization Inspection | 6 |
| Carbon Monoxide Alarm | 7 |
| Cooking Appliance Repair | 8 |
| Cooking Appliance Replacement, Range Or Cook Top | 9 |
| Cooling Repair | 10 |
| Cooling Replacement | 11 |
| Heating Source Repair | 12 |
| Heating Source Replacement | 13 |
| Kitchen Exhaust Installation, Repair And Replacement | 14 |
| Water Heater Repair | 15 |
| Water Heater Replacement | 16 |
| Attic Ventilation | 17 |
| Caulking | 18 |
| Ceiling Insulation | 19 |
| Compact Fluorescent Lamps | 20 |
| Cover Plate Gaskets | 21 |
| Duct Insulation | 22 |
| Duct Repair And Replacement | 23 |
| Fluorescent Torchiere Lamp Replacement | 24 |
| Glass Replacement And Window Repair | 25 |
| Hot Water Flow Restrictor | 26 |
| Kneewall Insulation | 27 |
| Minor Envelope Repair | 28 |
| Refrigerator Replacement | 29 |
| Sliding Glass Door | 30 |
| Thermostat | 31 |
| Vent Cover, Interior | 32 |
| Water Heater Blanket | 33 |
| Water Heater Pipe Wrap | 34 |
| Weatherstripping | 35 |
| Window Replacement | 36 |
| Ceiling Fans | 37 |
| Exterior Water Pipe Wrap | 38 |
| Floor Foundation Venting | 39 |
| Floor Insulation | 40 |
| Microwave Oven | 41 |
| Shadescreens | 42 |
| Shutters | 43 |
| Storm Windows | 44 |
| Timer, Electric Water Heater | 45 |
| Tinted Window Film | 46 |
| Wall Insulation, Stucco And Wood | 47 |
| Disposal Fees | 48 |
| Permits | 49 |
| Hers Rater | 50 |
| Shop Fee | 51 |
| Travel Credit | 52 |
| Mileage Outside Of 60-Mile Round Trip | 53 |
| Portable Equipment Purchased & Held On Reserve | 54 |
| Repair & Maintenance Of Reserved Appliances | 55 |
| Additional Reimbursement-Fees, Fares, Or Costs For Rental Vehicles | 56 |
| Portable Equipment Delivered On Loan To A Dwelling | 57 |
| Fuel For Generators | 58 |
| Site Cleanup | 59 |
| Other Related & Necessary Costs Not Listed | 60 |
| Doors, Exterior (All Other Types) | 61 |
| Lead Safe Weatherization | 62 |
| Mechanical Ventilation | 63 |
| Filter Replacement | 64 |
| Smoke Alarm | 65 |
| SHPO Costs | 66 |
| Mileage To Cooling Center Or Hotel | 67 |
| Temporary Shelter/Housing | 68 |
| Utility Assistance Payment | 69 |
| Other Personal Tangible Individual Benefits | 70 |
| Other Emergency Services | 71 |
| Other | 72 |
| Limited Home Repair | 153 |
| Solar Water Heater | 154 |
| Low Flow Toilet | 155 |
| LED Replacement Bulb | 156 |
| LED Night Light | 157 |
| Occupancy Sensor | 158 |
| Power Strip | 159 |
| WX Non-Feasible - Trip Charge | 160 |
| Environmental Testing | 161 |

1. Appendix – Measure Type Codes

Measure Type Codes are two digit identifiers that indicate specific measure subtypes that can be selected. Measure Types are specific to the measure selected and must be correctly reported to the Weatherization Database for each measure.

| **Measure Type** | **Type Code** |
| --- | --- |
| < 36" clearance | 1 |
| > 36" clearance | 2 |
| 19 cu. ft. and below | 3 |
| AC Forced Air Unit (Split System) | 4 |
| AC Wall/Window Unit | 5 |
| AC Window/Wall Unit | 6 |
| Air Conditioner | 7 |
| EC | 8 |
| EC Roof | 9 |
| EC Window/Wall | 10 |
| Electric | 12 |
| Evaporative Cooler | 13 |
| Evaporative Cooler/Air Conditioner | 14 |
| Fan | 15 |
| Faucet Restrictor | 16 |
| Fixed, Glass Glazing | 17 |
| Fixed, Polycarbonate | 18 |
| Forced Air Unit (Split System) | 19 |
| Generator | 20 |
| Hard Wire - Interior | 21 |
| Hard-Wired & Line-Cord | 22 |
| Heater | 23 |
| Hinged Door | 24 |
| Int/Ext Wall Furnaces & Floor Furnace | 25 |
| Lithium Battery | 26 |
| Lodging and per diem | 27 |
| Low Flow Handheld Showerhead | 28 |
| Low Flow Showerhead | 29 |
| Manual | 30 |
| Mobile Home | 31 |
| Modified (For re-weatherized dwellings) | 32 |
| Multi (over 5 units) | 33 |
| Multi-Unit | 34 |
| Multi-Unit Central System | 35 |
| Natural Gas & Propane | 36 |
| Operable, Glass Glazing | 38 |
| Operable, Polycarbonate | 39 |
| Other | 40 |
| Over 19 cu. ft. | 41 |
| Package (Dual Pack) | 42 |
| Post | 43 |
| Pre | 44 |
| Programmable - Standard | 45 |
| Propane | 46 |
| Repair | 47 |
| Replacement | 48 |
| R-value 11 | 49 |
| R-value 19 | 50 |
| R-value 30 | 51 |
| R-value 38 | 52 |
| Single | 53 |
| Thread Based - Interior | 54 |
| With Attic | 55 |
| Without Attic | 56 |
| Wood-Fueled | 58 |
| N/A | 59 |
| Range Hoods, Wall/Ceilng Mounts | 60 |
| Mobile Home Furnace | 61 |
| Additional Reimbursement Single Family Dwelling | 62 |
| Repair - 72" x 80" and smaller | 63 |
| Repair - Greater than 72" x 80" | 64 |
| Replacement - 72" x 80" and smaller | 65 |
| Replacement - Greater than 72" x 80" | 66 |
| Scheduled Maintenance | 67 |
| Warranty Work | 68 |
| Louvered Door | 69 |
| Thermostatic Shower Valve | 70 |
| Low-Flow Showerhead + TSV | 71 |
| Tier 2 Advanced | 72 |
| FAFCO System Installation - 48in. | 73 |
| FAFCO System Installation - 96in. | 74 |
| Interior | 75 |
| Thread Based - Exterior | 76 |
| Hard Wire - Exterior | 77 |
| Exterior | 78 |
| Bathroom 1 | 79 |
| Bathroom 2 | 80 |
| AET 64SF System Install | 81 |
| Balanced System | 82 |
| Exhaust System | 83 |
| Supply System | 84 |
| Programmable - Learning | 85 |
| AET 41SF System Install | 86 |

1. Appendix – Utility Company Codes

Valid California Utility Company Codes.

| **Utility Code** | **Utility Name** |
| --- | --- |
| 1 | Included in Rent. |
| 2 | Submetered |
| A | Pacific Gas & Electric |
| AY | Palm Springs, City of |
| AZ | ACN Energy |
| B | The Gas Company (Socal Gas) |
| BY | Biggs, City Of |
| C | Southern California Edison |
| CY | Coalinga, City Of |
| D | San Diego Gas & Electric (SDGE) |
| DY | Healdsburg, City Of |
| E | Los Angeles Department Of Water & Power |
| EY | Trinity County Pud |
| F | Sacramento Municipal Utility District (SMUD) |
| FY | Valley Electric Association |
| G | Bear Valley Electric |
| GY | Needles, City Of |
| H | Long Beach, City Of |
| HY | Lompoc, City Of |
| I | Anaheim, City Of |
| IY | Palo Alto, City Of |
| J | Pacific Power And Light |
| JS | Pacific Power And Light - Submetered |
| JY | Banning, City Of |
| K | Imperial Irrigation District |
| KY | Burbank, City Of |
| L | Redding, City Of |
| LY | Roseville, City Of |
| M | Riverside, City Of |
| MI | Merced Irrigation District |
| MY | Santa Clara, City Of |
| N | Glendale, City Of |
| NY | Ukiah, City Of |
| O | Colton, City Of |
| OY | Gridley, City Of |
| P | Shasta Lake, City Of |
| PY | Lodi, City Of |
| Q | Turlock Irrigation District |
| QU | Surprise Valley Electric |
| QY | Edison Source |
| R | Alameda Power And Telecom |
| RY | Azusa Light And Water |
| S | Pasadena, City Of |
| SY | Plumas-Sierra Rural Electric Cooperative |
| T | Modesto Irrigation District |
| TU | Anza Electric Cooperative |
| TY | Green Mountain Energy Resources |
| U | Sierra Pacific Power |
| US | Sierra Pacific Power - Submetered |
| UY | Truckee-Donner Pud |
| V | Southwest Gas |
| VY | Lassen Municipal Utility District |
| W | Avista Utilities |
| WS | Avista Utilities - Submetered |
| WY | Dept. Of Water And Power, Los Angeles (DWPLA) |
| X | Enron Energy Services |
| XY | Earth Source |
| 3 | Wood/Pellets Non-Regulated Utility |
| LE | Liberty Electric Utilities |
| BI | Bureau Of Indian Affairs |
| MV | Moreno Valley Utilities |
| SL | Sewer Lifeline Rate Assistance Program |
| 4 | Propane Non-Regulated Utility |
| 5 | Fuel Oil Non-Regulated Utility |

1. Appendix – County Codes

Valid California County Codes.

| **County Code** | **County Name** |
| --- | --- |
| 01 | Alameda |
| 02 | Alpine |
| 03 | Amador |
| 04 | Butte |
| 05 | Calaveras |
| 06 | Colusa |
| 07 | Contra Costa |
| 08 | Del Norte |
| 09 | El Dorado |
| 10 | Fresno |
| 11 | Glenn |
| 12 | Humboldt |
| 13 | Imperial |
| 14 | Inyo |
| 15 | Kern |
| 16 | Kings |
| 17 | Lake |
| 18 | Lassen |
| 19 | Los Angeles |
| 20 | Madera |
| 21 | Marin |
| 22 | Mariposa |
| 23 | Mendocino |
| 24 | Merced |
| 25 | Modoc |
| 26 | Mono |
| 27 | Monterey |
| 28 | Napa |
| 29 | Nevada |
| 30 | Orange |
| 31 | Placer |
| 32 | Plumas |
| 33 | Riverside |
| 34 | Sacramento |
| 35 | San Benito |
| 36 | San Bernardino |
| 37 | San Diego |
| 38 | San Francisco |
| 39 | San Joaquin |
| 40 | San Luis Obispo |
| 41 | San Mateo |
| 42 | Santa Barbara |
| 43 | Santa Clara |
| 44 | Santa Cruz |
| 45 | Shasta |
| 46 | Sierra |
| 47 | Siskiyou |
| 48 | Solano |
| 49 | Sonoma |
| 50 | Stanislaus |
| 51 | Sutter |
| 52 | Tehama |
| 53 | Trinity |
| 54 | Tulare |
| 55 | Tuolumne |
| 56 | Ventura |
| 57 | Yolo |
| 58 | Yuba |

1. Appendix – Computation of Checksum field

The Checksum field is used at CSD to ensure that the received file’s XML data is identical to what was sent from the agency:

In short, the Checksum value is calculated as an MD5 Hash of the entire Inner XML of the WeatherizationDataTransfer element of the schema. Following is a VB.Net example of the computation, where “jobs\_node” is the WeatherizationDataTransfer element:

|  |
| --- |
| Dim jobsData As String = jobs\_node.InnerXml()  Dim hash() As Byte = (MD5.Create()).ComputeHash(System.Text.Encoding.ASCII.GetBytes(jobsData))  Dim sb As StringBuilder = New StringBuilder()  For i As Integer = 0 To hash.Length - 1  sb.Append(hash(i).ToString("x2"))  Next  jobs\_node.SetAttribute("Checksum", sb.ToString()) |