



McGraw-Hill Construction Data for California Energy Commission

Addenda A to Contract #2408017

OVERVIEW: Deliverables, Documentation, Reporting Medium, and Price:

- (1) BSD = Stocks
 - A. Delivery: Q2 '13, when CAS and CASC 2012 data are finalized
 - B. Historical Years: 1970-2012
 - C. Projection Years: 2013-2017
 - D. Process: BSD splits to be based on CASC (starts completions) data
- (2) CAS = Starts (Permits)
 - A. Delivery: Q2 '13, when CAS 2012 data is finalized
 - B. Historical Years: 1970-2012
 - C. Projection Years: Not Available
- (3) "CASC" = Starts (Completions)
 - A. Delivery: Q2 '13, when "CASC" 2012 data is finalized
 - B. Historical Years: 1970-2012
 - C. Projection Years: Not Available
- (4) CAS Construction Data – "Project Level"
 - A. Delivery: By 01-31-13.
 - B. Historical Years: 1967-2012 YTD (2012 YTD = 12/31/12 or later)
 - C. Variables: FIPS, FRAME, NAAMN, OWN, STC, YEAR, MO, AREA, VALUE, NUMPRO, STRYS, and UNITS
 - D. Medium: Deliver in Access format compatible with MS-Office 2007
- (5) Documentation:
 - A. "Addenda A," to be updated as required (Descriptive Enumeration of Reports)
 - B. "Table 1 - Formats & Definitions," to be updated as required (BSD, CAS, and CASC Codes)
 - a. Tabbed Sheets: Table 1 BSD, Table 1 CAS, Table 1 CASC, Table 2 Complete List, Table 2 BSD, Table 2 CAS, Table 2 CASC, Table 3 BSD, Table 3 CAS, Table 3 CASC, Table 4 BSD (these tables are in Addenda B)
- (6) Reporting Medium:
 - A. Data Reports: Deliver in Excel format compatible with MS-Office 2007
 - B. Documentation: Deliver in Word format compatible with MS-Office 2007
- (7) Purchase Cost:

A. Grand Total (All Reports for New Contract #2396802):	\$39,796
B. Residential Tables 3-3 through 3-6 ONLY:	\$ 9,589
C. Grand Total Less Residential Tables 3-3 through 3-6:	\$ 30,207
D. If Item (4) above (CAS Construction Data – "Project Level") is purchased separately:	\$ 11,824

DETAILS: Excel Pivot Tables:

Note: Except as otherwise noted, variables and formats contained in the tables listed below shall be identical to the variables and formats contained in the corresponding tables of the revised delivery (dated 3-29-11) of MHC Agreement #2396802.

CA Energy Table 1 BSD.xls: All Building Stock project types, history and forecast, in square feet and number of buildings

CA Energy Table 1 CAS.xls: All detailed CAS project types, history, in square feet and number of buildings.

CA Energy Table 1 "CASC".xls: All detailed "CASC" project types, history, in square feet and number of buildings.



CA Energy Table 2-1 BSD Area.xls: Commercial and Institutional BSD project types, history and forecast, in square feet. Further breakouts based on CASC splits for some project types, by story class, size class, and/or refrigerated/non-refrigerated.

CA Energy Table 2-2 BSD Bldgs.xls: Same as Table 2-1, except in number of buildings.

CA Energy Table 2-3 CAS Area.xls: Same as Table 2-1, except CAS data, history only. Same project types and breakouts as Table 2-1.

CA Energy Table 2-4 CAS Bldgs.xls: Same as Table 2-3, except in number of buildings.

CA Energy Table 2-5 “CASC” Area.xls: Same as Table 2-1, except “CASC” data, history only. Same project types and breakouts as Table 2-1.

CA Energy Table 2-6 “CASC” Bldgs.xls: Same as Table 2-5, except in number of buildings.

CA Energy Table 3-1 BSD Res Area.xls: BSD for residential categories, with Apartments further broken out based on CASC splits, into Units/Story classes. History and forecast, in square feet.

CA Energy Table 3-2 BSD Res Bldgs.xls: Same as Table 3-1, except in number of buildings.

CA Energy Table 3-3 CAS Area.xls: Same as Table 3-1, except CAS data, history only. Same project types and breakouts as Table 3-1.

CA Energy Table 3-4 CAS Bldgs.xls: Same as Table 3-3, except in number of buildings.

CA Energy Table 3-5 “CASC” Area.xls: Same as Table 3-1, except “CASC” data, history only. Same project types and breakouts as Table 3-1.

CA Energy Table 3-6 “CASC” Bldgs.xls: Same as Table 3-5, except in number of buildings.

CA Energy Table 4-1 BSD Mfg Area.xls: Historical and forecast BSD data, in square feet, for Durable and Non-Durable Manufacturing – both further broken out into Plants, Warehouses, and Labs, based on CAS splits.

Note: *INCLUDES (Separately Tabulate-able) Manufacturing Warehouses.*

CA Energy Table 4-2 BSD Mfg Bldgs.xls: Same as Table 4-1, except in number of buildings.

Note: *INCLUDES (Separately Tabulate-able) Manufacturing Warehouses.*

DETAILS: Flat Files:

Table 1 BSD Area and Bldgs.txt (contains data from Excel Table 1 BSD)

Table 1 CAS Area and Bldgs.txt (contains data from Excel Table 1 CAS)

Table 1 “CASC” Area and Bldgs.txt (contains data from Excel Table 1 “CASC”)

Table 2 BSD Area and Bldgs.txt (contains data from Excel Tables 2-1 and 2-2)

Table 2 CAS Area and Bldgs.txt (contains data from Excel Table 2-3 and 2-4)

Table 2 “CASC” Area and Bldgs.txt (contains data from Excel Table 2-5 and 2-6)



Table 3 BSD Res Area and Bldgs.txt (contains data from Excel Tables 3-1 and 3-2)

Table 3 CAS Area and Bldgs.txt (contains data from Excel Table 3-3 and 3-4)

Table 3 “CASC” Area and Bldgs.txt (contains data from Excel Table 3-5 and 3-6)

Table 4 BSD Mfg Area and Bldgs.txt (contains data from Excel Tables 4-1 and 4-2)

Pivot Table Operation

Each of the Excel pivot tables has as its “page” level a field called “Geography”. This allows the user to select either “State Total”, “County”, or “Climate Zone”. Once this selection is made, the user can then further select which county or counties to view, or which climate zone(s). There is one state total available, *California*.

Each pivot table field (for example: County/CZ/State, Project Type, Owner Class, Story Class, Size Class, New/Add/Alt, etc.) allows the selection of any one of the included breakouts, any combination of them, or all of them.

In those tables where Warehouse construction includes a breakout between refrigerated and non-refrigerated, these breakouts will be found in the Size Class drop-down box (this was done to avoid adding an additional level of fields just to accommodate one project type).

The word “blank” appearing in any heading cells below a project type name indicates that the breakout for that layer does not apply to the project type in question.

For example, in Table 2-4, you will see the following headings “MISC NONPARK:

MISC NONPARK
 (blank)
 (blank)
 (blank)
 ALL ADD ALT NEW

because MISC NONPARK is not broken out by Owner Class, Story Class, or Size Class. It is broken out by ALL, ADD, ALT, and NEW, which explains the presence of those headings in the bottom heading layer.

The headings for OFFICE, which has all breakouts, may appear as follows (Illustration shows only the first column):

OFFICE
 FED
 1-3 Stories
 <30K Sq Ft
 ADD



Obtaining CAS Splits

The factors used to further break out Building Stock standard categories were obtained from CASC (construction starts completions) data in the following manner: Data were retrieved on a county level, and multipliers were generated based on an average for the 1970 – 2012 time period. This was done instead of calculating multipliers based on individual years to avoid inserting artificial volatility into the Building Stock data base, which generally shows very steady movement.

Notes on Completions Data

The basis for the calculation of Completions data is the set of United States Census Bureau starts to completion tables. These may be seen at <http://www.census.gov/const/C30/length.html>. As the construction industry changes, the tables of lags we apply to our Starts data change as well. For this reason, Completions numbers, even for the earlier historical time periods, will be different than those seen in previous deliveries. This will also affect those tables of Stock data that are shared out using Completions. Due to the new lag tables, Completions numbers for years prior to 1972 should not be used. The same goes for Stock data that has been shared out using Completions. Completions data for years prior to 1972 will be hidden (unchecked) in the pivot tables. Such data will not be hidden (unchecked) in the Stock tables, as not all categories of Stock need to be shared out, and the earlier (than 1972) data for those categories is perfectly usable. The Building Stock categories that have been shared out using Completions are any where a breakout is shown for story height, size class, or refrigerated vs. non-refrigerated. The categories in the Table 4 series have also been shared out.

Discontinued County Designation

There used to be a county called “Dodge for pre-1970, unknown and multi” (California only, with Dodge FIPS code 06999). This designation has not been in use for quite some time, and data appears for it only for a few project types, and only in 1970 and 1971. During the past year, this designation was removed from the Dodge database. Therefore, the totals for 1970 and 1971 in this year’s tables may be slightly different than the totals shown in the previous delivery.

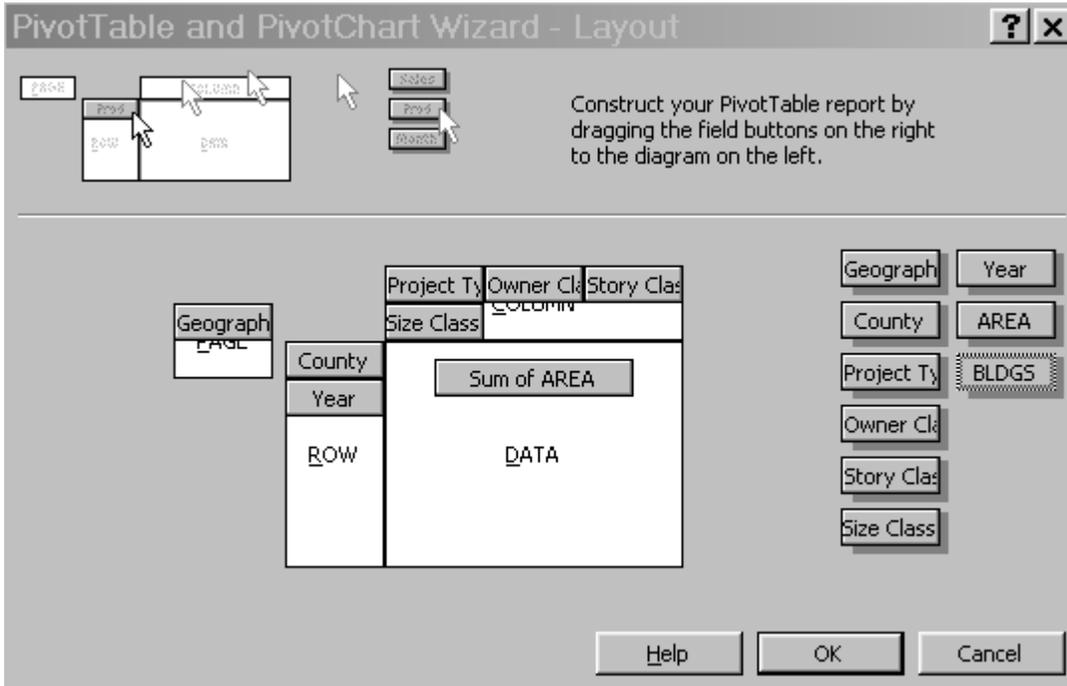
Discontinued Project Types

There are 24 discontinued detailed project codes, of which 18 are included in this service (each one has an asterisk in front of the long name). Although McGraw-Hill Construction is no longer coding to these discontinued project types, they need to remain in the service, as the data interval goes back to 1970, when those codes were still in use.

Using the Climate Zone Access database

The database **Revising the Climate Zone Multipliers.mdb** includes a sample table (Table 2 All BSD Data) and queries that will allow you to try different combinations of climate zone multipliers. The table “Climate Zone Multipliers” includes your current climate zone factors. This table (or a copy of it) can be edited to supply new multipliers. There are sixteen queries, each with a name in the form “Add CZxx Tbl 2”, where “xx” is a climate zone number from 01 to 16.

These queries are designed to work on a table that has only county level data in it (when importing a flat file to use with these queries, you would run a query to extract only the county level records, namely, those with “County” in the “Geography” field. The next step is to run a make-table query to generate state totals. The sixteen queries (which may be placed in a macro) can then be run to calculate the values for the climate zones, and append the records to the input table (filling the “Geography” field with the text “Climate Zone”, and the second field with the actual climate zone name, e.g., “CZ1”, “CZ2”, etc.) By the time all of the 16 queries have been run, the input table will contain data for the counties, and all climate zones. The final step is to append the state totals onto the input table; it is then ready to be imported into Excel as a new pivot table. The following illustration shows typical field placements in the pivot table layout template for one of your tables:



Please note that the sample data table in this Access database does not represent the actual data in your Excel tables – this was an earlier (and discarded) version, and is only used for illustration. The queries may have to be revised for tables that have additional fields (for example, if the county-level input table has an “Owner Class” field, that field will have to be added to the queries). The existing queries should serve as an example, however, to guide you in the building of additional sets of queries.

Once a pivot table is created from a data table in an Access database, it can be updated at any time (whenever you update the raw data) simply by clicking “Refresh Data” on the Pivot Table menu.