

# Supplemental Data Sources for Home Population Generation and Recruitment

The primary method for creating a population of homes from which to derive a random sample, as explained in the methodology, is to contact sample jurisdictions to obtain lists of homes. These lists are then sorted randomly to fulfill the sample. While this method has had success, it is not always possible to obtain a list of permits from a jurisdiction. In addition, even when permit data is available directly through a jurisdiction, it can be difficult to ascertain information on the construction status of sample homes. Knowing the phase of construction can be used to inform the timing of site visits to improve data collection efficiency.

For these reasons, alternative or supplemental methods of creating a home population for random sampling may be necessary. Alternative methods that may be used to build a list of recently permitted homes include target searches using jurisdictional inspection schedules, online real estate services, and general internet searches. The same alternative sources of data used to generate the population of homes may also help in scheduling site visits to arrive during phases of construction that maximize the number of observations per site visit.

## JURISDICTIONAL INSPECTION SCHEDULES

While uncommon, some jurisdictions publish online inspection schedules providing information about the type and timing of all scheduled inspections. This may also serve as a general list of open permits in that jurisdiction with the caveat that many projects might be underway, but not have any inspections scheduled at a given time, therefore other data sources will be required. Where available, online inspection schedules are a great starting point.

To find an online inspection schedule, perform an internet search using phrases such as, “[CITY] building inspection schedule”, or “today’s building inspection schedule for [CITY]”. Alternatively, these schedules may be found by navigating through the local building department’s website. Note that some jurisdictions only display the schedule if you are logged into their portal, but often, anyone can create a free account and log in.

The inspection schedule will often have indicators of whether a project is residential or commercial and new construction versus an addition or alteration. Filtering by the appropriate project types will help narrow the search to in-scope projects to build a population of homes from which to take a random sample.

Online inspection schedules may list the inspection type, which can be used to estimate which measures are available for observation. Table 1 shows field study site visit types and IECC inspection types alongside a list of measures likely to be found at the time of the

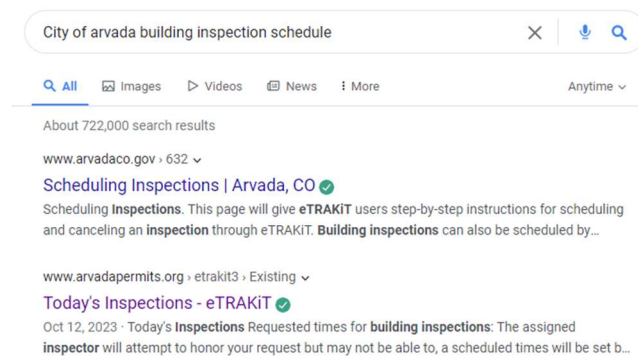


Figure 1. Example search for jurisdiction inspection schedules.

associated inspection. Note that insulation typically has a very short time window to observe insulation, while other items such as windows and mechanical systems may be observable at more than one inspection phase.

Table 1. Measures to verify by inspection type.

Site Visit Type	IECC Inspection Type	Measures to Observe
Foundation	Footing and foundation	<ul style="list-style-type: none"> <li>Foundation insulation</li> </ul>
Rough-in (Pre-drywall)	Framing and Rough-in	<ul style="list-style-type: none"> <li>Air barriers</li> <li>Windows</li> <li>Insulation</li> <li>Air barriers</li> <li>Windows</li> <li>Other items listed in plumbing and mechanical rough-in</li> </ul>
	Plumbing rough-in	<ul style="list-style-type: none"> <li>Pipe insulation</li> <li>Pump controls</li> <li>Windows</li> </ul>
	Mechanical rough-in	<ul style="list-style-type: none"> <li>Equipment type, size, and controls</li> <li>Pipe insulation</li> <li>Exhaust fan termination dampers</li> <li>Whole house ventilation systems</li> <li>Windows</li> </ul>
Final	Final	<ul style="list-style-type: none"> <li>Equipment type, size, and controls</li> <li>Lighting efficacy</li> <li>Lighting controls</li> <li>Air infiltration rate (ACH50)</li> <li>Duct leakage rate (CFM25)</li> <li>Attic insulation</li> <li>Windows</li> </ul>

Project teams should search for relevant inspection terms and permit types to filter for the types of inspections that will offer data needed for the study (**Error! Reference source not found.**). The first step is to identify indicators of whether a project is residential or commercial and filter or sort by residential permits. The second is to identify inspection types that indicate a suitable phase of construction for data collection, including the terms in Table 1 or variations thereof.

PERMIT	ADDRESS	INSPECTION	INSPECTOR	TIME	RESULT
12420 W 54TH DR	12420 W 54TH DR	CO-PUBLIC IMPROVMNT	Jonathan Galan	AM	
COMM21-00174	12420 W 54TH DR	CO/TCO	Default Counter	PM	
COMM21-00174	12420 W 54TH DR	LANDSCAPING	Default Planner	AM	
COMM21-00251	15594 W 63RD AVE	DRYWALL	Frank Goodard	AM	
COMM21-00251	15594 W 63RD AVE	ROUGH HVAC	Frank Goodard	AM	
	3895 W 58TH AVE	ABOVE CEILING HVAC	Daniel Amador	PM	
DEV21-00026	12420 W 54TH DR	DEV CONCRETE	Jonathan Galan	AM	
MISC23-00422	7350 ESTES ST	FINAL STRUCTURAL**	Frank Goodard	PM	
MISC23-00517	8923 ELLIS ST	FINAL STRUCTURAL**	Pete Henz	AM	
MISC23-00521	6996 BRAUN CT	ROUGH FRAMING	Pete Henz	AM	
MISC23-00644	6406 WOLFF ST	ROUGH FRAMING	Frank Goodard	PM	
RES21-01354	5430 CARR ST D	FINAL STRUCTURAL**	Frank Goodard	AM	
RES21-01354	5430 CARR ST E	FINAL STRUCTURAL**	Frank Goodard	AM	
RES22-01254	15185 W 68TH PL	ROUGH PLUMBING	Pete Henz	AM	
RES23-00183	11232 W 53RD DR		Jonathan Galan	TBD	
RES23-00183	11232 W 53RD DR	FINAL ELECTRICAL**	Greg Thomas	AM	
RES23-00183	11232 W 53RD DR	FINAL PLUMBING**	Pete Henz	PM	
RES23-00183	11232 W 53RD DR	FINAL STRUCTURAL**	Pete Henz	PM	
RES23-00185	5382 QUAIL WAY	INSULATION	Pete Henz	AM	
RES23-00185	5386 QUAIL WAY	ROUGH FRAMING	Pete Henz	AM	

Figure 2. Example jurisdiction online inspection schedule

## REAL ESTATE SERVICE WEBSITES

Real estate service websites such as [New Home Source](#), [Zillow](#), [Trulia](#), [Realtor.com](#), [Homes.com](#), and real estate sales company websites may be used to build the population of homes from which a random sample will be taken. Searches using real estate service websites may be filtered by a variety of fields to help identify homes that fall within the scope of the project and are in the specified location. These fields include:

- Location (ZIP Code, address)
- Home vintage (new construction, new home communities, home age, or year built)
- Move-in date
- Home type (detached, duplex/twin, townhome)
- Listing status (coming soon, for sale)

When using real estate service websites like Zillow, filtering for “for sale” homes may be helpful in identifying homes at the Final Inspection phase, which is useful for collecting blower door testing, duct leakage testing, and attic insulation observations.

## GENERAL WEB SEARCHES

General web searches using phrases such as “new homes in [location]” frequently return home builder websites which provide information about upcoming and active housing developments. Many sites have pages for “Communities” or “Homes for Sale”, including addresses, which can be used to add to the population of homes for a sample jurisdiction.

General web searches often allow project teams to find sample homes within larger subdivisions so that, even if a sample home is not at a useful state of construction for data collection, there is likely to be a nearby home that is. A nearby home may be used as a substitute for the sample home, provided project teams meet field study methodological requirements. Another benefit of finding home builder websites is that basic floor plans are usually provided, giving data collectors a feel for the project prior to arriving on site.

## HERS RATERS AND OTHER ENERGY PROFESSIONALS

HERS Raters and other energy professionals conduct insulation inspections and perform duct and envelope testing on new homes, so they often have a firm grasp on where new construction is occurring, along with knowledge of local builders and contractors and their installation schedules. A friendly HERS Rater or duct and envelope testing (DET) professional can help introduce the data collection team to builders and contractors. Rater and DET contractor inspection schedules can provide information on the best times to collect data in sample homes. HERS Rater and DET contractor contact information may be found in state and local online directories, utility new home rebate program websites, and general web searches. Other sources include [resnet.us](#) and [bpi.org](#).

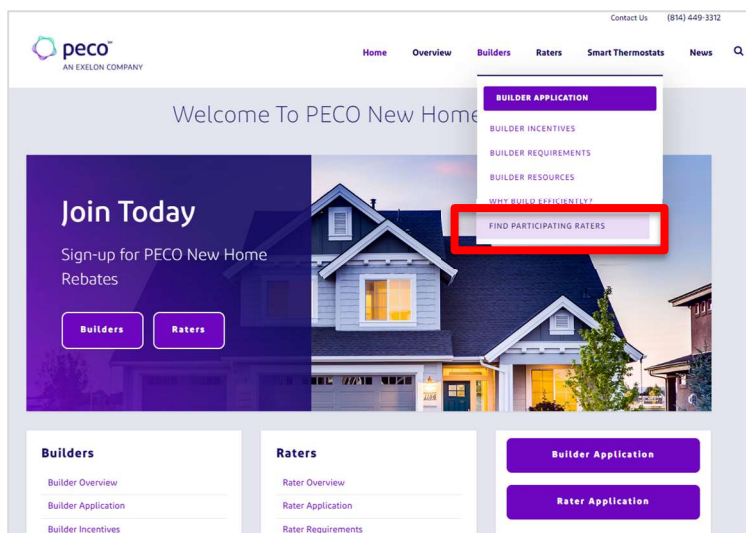


Figure 3. Example HERS Rater directory found at a utility rebate program website.

## INSULATION INSTALLER SCHEDULES

Obtaining insulation installer schedules is a great way to identify homes that are at one of the most fruitful points in construction. Speaking with builders, contractors, and HERS Raters may help identify the insulation contractor for a development and provide contact information. In addition, if the insulation contractor is active within the development, the contractor's truck may be easily visible. Once contact is made with the insulation contractor, data collectors can ask for the contractor's schedule of upcoming installations to identify when sample homes will be ready for observation of insulation R-values and installation quality.

## COMPILING NEW CONSTRUCTION DATA FROM ALL SOURCES

As active construction projects within a sample jurisdiction are identified, each project must be added to a master list of projects from which a random sample of homes will be drawn. This usually means that each home must be manually entered into a spreadsheet containing (at least) the site address and a unique identifier for future anonymization.

Jurisdictional inspection schedules, real estate service websites, and general web searches, may also be used as a source of information on the phase of construction for a particular project. Identifying the phase of construction may help with more efficient data collection in terms of observations per trip, especially later in the data collection process when sample homes may be pre-screened to improve the chances of observing the remaining key measures.

**For more information, contact:**

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