

Using Existing Data to Support Equitable and Efficient Electrification

BC Local Government Guide

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The City of Victoria

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Contents

About this Guide	1
How the Datasets Were Selected	6
The Dataset Fact Sheets	7
The Recipe Pack: Using Data Together	33
From Data to Decisions	38
Other Useful Tools, Methods and Local Data.....	40
The Data Landscape in British Columbia	42
Notes on the Guide.....	44
Appendix A: Dataset Inventory – Information on Buildings.....	45
Appendix B: Dataset Inventory – Indexes and Data Sources on Occupants and Neighbourhoods	51

About this Guide

Introduction

Local governments have access to many datasets that can support planning for **building energy efficiency**, **electrification**, **decarbonization**, **cooling**, and **resilience**. When brought together, these datasets can reveal practical insights about local building stock, community needs, and climate risks that help shape better policies, programs, outreach, and investment decisions. The challenge is that these datasets are often spread across different owners, platforms, formats, and levels of accessibility.

This guide brings key information together in one place to help local governments better understand what data exists, what it can be used for, and how to think about combining datasets in practical ways.

This guide can help local governments to:



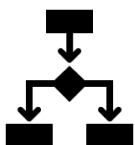
Understand what data exists. Identify building, energy, equity, exposure, and neighbourhood datasets that may be useful for local government climate and energy work.

Clarify what a dataset can & cannot answer. Understand the kinds of questions each dataset is well suited to support, where it has limitations, and when additional data, or technical support may be needed.



See how datasets might work together. Understand how combining select datasets can support better decisions.

Choose a practical starting point. Review how datasets can typically be accessed, what level of effort may be required, and what initial actions can help staff get started.



Use datasets to support decisions. Use data to inform outreach, incentives, engagement, funding applications, policy development, and project scoping.

Who this guide is for

The guide is written for **British Columbia local government staff** working on climate, energy, sustainability, resilience, and related files. It is intended to be useful across a range of local governments contexts, community sizes, and levels of data capacity.



For communities getting started



For larger or more advanced teams



For any local government interested in using existing datasets

For communities getting started: Use the guide to identify a small number of practical datasets that can support light analysis, early scoping, outreach planning, or internal conversations.

For larger or more advanced teams: Use the guide to support more detailed in-house analysis, GIS work, or planning & scoping for larger projects.

For everyone: Get an understanding of the data accessible to you and start thinking about how available data may help answer key questions, make decisions, and advance policy objectives.

What this guide is

- ✓ A practical orientation to selected building, energy, vulnerability, and exposure datasets relevant to British Columbia local governments.
- ✓ A reference for understanding what each available dataset can help answer, how it can be accessed, and what should be considered before using it.
- ✓ A starting point for designing data-informed programs, engagement, funding requests, policy development, or scopes of work.

What this guide is not

- ✗ It is not a GIS manual, modelling protocol, or step-by-step technical workflow.
- ✗ It does not replace detailed engineering, privacy review, data sharing agreements, or local validation.
- ✗ It does not imply that every local government needs a comprehensive building-level model to act.

What types of questions can the datasets in this guide help answer?

The datasets in this guide can help local governments explore practical questions that would support policy relating to building energy efficiency, efficient electrification, cooling, resilience, affordability, and equity.

For example:



Building stock and energy systems

- What types of buildings make up the local building stock?
- Where might buildings still rely on combustion-based heating systems?

Affordability, equity, and participation barriers

- Which neighbourhoods or building groups may face higher affordability barriers?
- Where could targeted outreach or additional support help improve access to efficiency, electrification, or cooling programs?

Cooling, heat exposure, and resilience

- Which areas may face higher heat exposure, lower access to cooling, or greater sensitivity to extreme heat?
- Where could cooling-related retrofits, such as heat pump installation, provide multiple benefits?

Combining datasets to support action

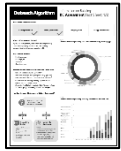
- Where do older buildings, combustion-based systems, and affordability barriers overlap?
- Where do heat exposure, limited cooling access, and vulnerable populations overlap?
- Which buildings, neighbourhoods, owners, or property managers may be priorities for outreach, incentives, technical assistance, or further study?

The Recipe Pack provided later in this guide provides a few example applications showing how selected datasets can be combined to explore specific planning questions. These examples are intended to help readers see how the data may be translated into practical analysis.

How to use this guide

This guide provides a **practical orientation to the datasets and data-use considerations** that can support local British Columbia (BC) governments working on building energy, electrification, cooling, resilience, and equity. The sections are intended to be read together: they introduce the data landscape, explain how datasets were selected, show how they may be used, and highlight key considerations before applying data to policy, program, funding, or outreach decisions.

Where should I start?

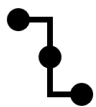


Dataset Fact Sheets

Use this section to **understand selected datasets in more detail**. Each Dataset Fact Sheet summarizes what the dataset contains, how it can typically be accessed, what questions it may help answer, and what limitations, interpretation issues, or processing needs to consider before using it.

Start here to get a foundational understanding of individual datasets!

→ [PAGE 7](#)



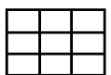
The Recipe Pack

Use this section to see **high-level examples of how different datasets may be combined** to explore practical planning questions related to electrification, efficiency, affordability, and thermal safety.

These are meant to provide high-level inspiration. These are not intended to prescribe a single method or technical workflow. They should be used alongside the Dataset Fact Sheets so users understand the processing needs of the datasets they are combining.

Use this section for inspiration on how to combine datasets!

→ [PAGE 33](#)



Dataset Inventory

Use this Dataset Inventory in Appendix A & B as a broader **reference list** of datasets, tools, methods, and resources identified through the project.

Keep this as a broader resource overview!

→ [PAGE 45](#)



Start with the data and the capacity you have!

Local governments do not need perfect data, a large team, or a complex model to gain valuable insights from data.

Many datasets are **already available in accessible or pre-processed formats**, so local governments **do not need to start from scratch**. The key is to start with a clear question, use the best data available for that purpose, and document assumptions along the way.

This guide is intended to help interested local governments find a practical starting point.

How the Datasets Were Selected

The datasets included in this guide were identified through a long-listing (Dataset Inventory development) and short-listing (Dataset Fact Sheet development) process. The project team began by developing a broad inventory of existing datasets, tools, platforms, and methods that could support local government work related to building energy efficiency, electrification, decarbonization, cooling, and resilience.

Development of the **Dataset Inventory** was informed by desktop review, project team input, and interviews with local government staff, utilities, and data practitioners. The intent was to develop an understanding of what data is available, what is being used in practice by those leading in this space, and where users may encounter challenges related to access, interpretation, processing, or application.

The broader Dataset Inventory was used to identify a smaller set of datasets for the **Dataset Fact Sheet** development. Datasets selected for Fact Sheet development were considered using three practical criteria:

- **Prevalence of Use:** Whether the dataset is widely used or commonly referenced in local government practice, used in some contexts, or more niche/emerging.
- **Ease of Access:** Whether the dataset is publicly available, available through a request, or requires a data sharing agreement, paid membership or subscription, or other access pathway.
- **Ease of processing:** Whether the dataset is user-friendly and readily usable, requires minor cleaning or processing, or requires significant processing and likely technical support.

The full Dataset Inventory is included in Appendix A & B. The datasets selected for deeper review are presented in the **Dataset Fact Sheets**. Together, the inventory and Dataset Fact Sheets are intended to provide both a broad view of available data and more detailed guidance on the datasets most relevant to common local government questions related to building energy efficiency, electrification, decarbonization, cooling, and resilience planning.

The Dataset Fact Sheets

This section is organized to help readers first understand how the fact sheets work, then navigate to the datasets most relevant to their needs.

About the Dataset Fact Sheets

- **Dataset Fact Sheet Types**
- **How to Read the Fact Sheets: Building Data**
- **How to Read the Fact Sheets: Indexes on Occupant and Neighbourhoods**

Dataset Fact Sheets: Information on Buildings

1. **BC Assessment**
2. **Building Benchmark BC**
3. **EnerGuide**
4. **BC Hydro**
5. **Technical Safety BC**
6. **CoStar**

Dataset Fact Sheets: Indexes & Data Sources on Occupants & Neighbourhoods

7. **Exposure Indexes and Data Sources**
8. **Vulnerability Indexes and Data Sources**
9. **Coping Capacity Indexes and Data Sources**

About the Dataset Fact Sheets

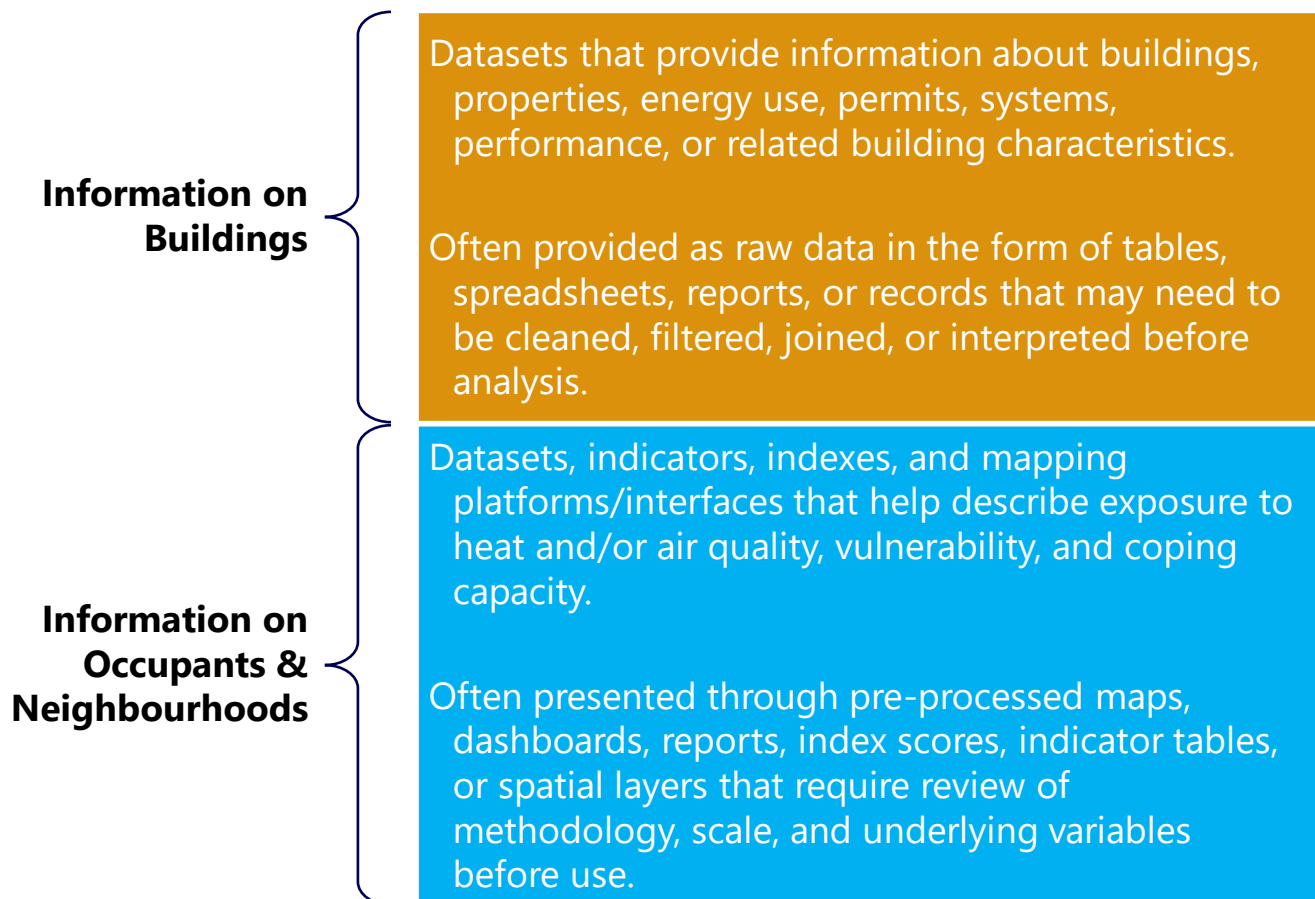
The Fact Sheets provide a **practical summary of selected datasets** that may support local government work on building energy efficiency, electrification, decarbonization, cooling, resilience, and equity-informed planning. Each Fact Sheet summarizes what the dataset or data source is, what information it contains, what questions it may help answer, how it can typically be accessed, what should be considered before using it, and what first steps are reasonable.

The Fact Sheets are **not technical manuals**. They do not provide data sharing or analysis templates, GIS workflows, modelling instructions, or legal advice.

Most datasets have **limitations**; however, a limitation does not mean a dataset should not be used. The key is to **understand what the data can and cannot answer** and ensure that limitations are acknowledged in both the analysis methodology as well in the conclusions derived.

Dataset fact sheet types

The fact sheets are grouped into two types:



How to read the dataset fact sheets: Building Data

The annotated templates below show the typical structure of the fact sheets. Individual fact sheets may vary slightly depending on the dataset, but the numbered callouts identify the main sections readers can expect to find.

Dataset Fact Sheet

Information on Buildings BC Assessment Fact Sheet 1/2

What Information is Available?

Building Identifiers	Building Attributes	Energy Systems	Energy Performance
✓			

What is BC Assessment Dataset?

A province-wide property assessment dataset providing standardized property valuation and core building characteristics for all taxable properties in BC.

Key Variables Include:

- Building address
- Building type
- Year built
- Gross floor area

Key Questions BC Assessment Dataset Can Help Answer:

- Establish a baseline building inventory
- How many buildings exist by major building type, and what share of the inventory does each type represent?
- Characterize the building stock by age and size to identify priority building groups
- How is the local building stock distributed by age and size, and which groups should be prioritized for retrofit?

How Can the basic BC Assessment Dataset Be Accessed?

Does your community have access to BC Assessment e-Services?

Yes → **Access Online**

- Log in on BC Assessment's website
- Go to Reports > All Reports
- Download the most recent Building Information Report (BIR)

No → **Contact BC Assessment**

- Email: communityinfo@bcassessment.ca to request access to e-Services
- Example Request: "We would like to request access to the BC Assessment 'Building Information Report (BIR)' dataset for X. The information will be used for Y."

Figure 1: Community Existing Building Floor Area Breakdown by Building Type

Figure 2: Community Existing Building Stock by Decade Built based on GFA

Dataset Fact Sheet

Information on Buildings BC Assessment Fact Sheet 2/2

Cleaning and Processing Efforts

1 2 3 4 5

6

(often required as BCA data):

- Is the data organized by assessment units (e.g., parcels or strata units) rather than standardized building-level entries. This requires aggregation, deduplication, and reconciliation to create a usable building inventory.
- Requires additional validation and QA/QC after cleaning to avoid double-counting and ensure accurate building counts and floor area estimates.
- Requires expertise to interpret data fields and understand how records relate to individual buildings.

Key Considerations

Considerations

- Records are based on assessment units (tax lots, strata units), not buildings, and may not align with real building footprints.
- May include multiple records per building, which can lead to double counting or require aggregation of floor area values.
- Building classification fields may require mapping to align with planning or analysis categories

Tips

- Validate key outputs (e.g., building counts, total floor area) against other sources such as municipal records or census data
- Document assumptions and methods used to reconcile records to the building level as results can vary by approach
- Contact BC Assessment to request broader data or custom extracts if the standard BIR does not meet needs; access is typically provided through a data sharing agreement.

Draft Initial Actions

1 Confirm with the finance department whether they already have access to the most recent BC Assessment dataset; if not, initiate a request to obtain it.

2 Plan to log and internalize the data or support.

3 Identify information gaps that need to be addressed to support program and/or policy development.

For More Information

- To view the existing dataset inventory, visit: [\[Add link here\]](#)
- To access other dataset fact sheets, visit: [\[Add link here\]](#)
- For questions or feedback, please contact: [\[Add name and contact information here\]](#)

- Fact sheet title & sheet number:** Identifies the dataset, Fact Sheet type, and page number.
- Information available:** Shows the main types of information the dataset may contain.
- Dataset overview & key questions:** Explains what the dataset is, key variables it may include, and the types of questions it can help answer.
- How to access data:** Outlines how local governments can typically access or request the dataset.
- Example outputs:** Shows illustrative charts, maps, or summaries or other outputs the dataset could support.
- Cleaning and processing effort:** Indicates relative level of work needed before the data can be used.
- Key considerations and tips:** Highlights key limitations, interpretation issues, and provides practical advice for using the dataset.
- Initial actions:** Provides suggested first steps for local government staff.

Working with building data

Most building datasets explored in this work were not created for climate or energy analysis. They were often created for assessment, billing, permitting, inspection, reporting, or program administration. This means building dataset may be reliable for its original purpose, but still have important gaps, limitations, or structural issues when applied to building energy, electrification, cooling, or resilience questions. A dataset may provide a strong starting point for one question, while being a poor fit for another.

Datasets as a partial view of the building stock

Before using a building dataset, consider what part of the building stock it represents. A dataset may reflect a point in time: such as an assessment year, reporting year, permit date, or inspection date; a specific subset of buildings: such as larger buildings, reported buildings, assessed properties, permitted projects, utility customers, or buildings participating in a program; and/or, a specific purpose: such as taxation, code compliance, safety, benchmarking, or market analysis.

Processing effort ratings

The fact sheets include a processing effort rating to **indicate the likely level of cleaning, formatting, interpretation, or technical work needed before the data can be used for analysis.**

Established ratings are based on input and experience from data practitioners.



- 1. Insights readily visible:** Data is already presented in a visual and easily interpretable format, allowing insights to be identified immediately.
- 2. Insights readily obtainable:** Data is available in a usable format, and insights can be readily derived, although they are not already visualized.
- 3. Light processing required:** Data requires basic filtering, formatting, field selection, or simple calculations before actionable insights can be generated.
- 4. Moderate processing required:** Data requires additional processing, such as cleaning, or address matching, before it can support analysis.
- 5. Specialized processing required:** Data requires advanced cleaning, technical analysis, and specialized expertise before it can be used to support decision-making.

How to read the dataset fact sheets: Indexes on Occupant & Neighbourhood

The annotated templates below show the typical structure of the fact sheets. Individual fact sheets may vary slightly depending on the dataset, but the numbered callouts identify the main sections readers can expect to find.

Dataset Fact Sheet

About This Fact Sheet

This fact sheet brings together a selection of existing datasets to identify populations with varying levels of coping capacity within a community. Coping capacity reflects characteristics that reduce the likelihood that populations will be impacted by external stressors. Coping capacity indices are constructed using selected variables based on specific capacity dimensions that are used to measure, while data sources provide information on characteristics that support coping.

Key Questions This Fact Sheet Can Help Answer

- Where are populations with specific characteristics that may limit or support their ability to cope with extreme heat events?
- Where are populations with on-site conditions that support their ability to cope with extreme heat events?
- Where are populations with more access to public facilities and services, which can serve as cooling centers or are more likely to have backup power during power outages?

What does the Healthy Plan Map Greenspace Provision layer tell us?

Access to greenspace supports coping capacity by providing shaded environments and offering spaces for outdoor social connection during extreme heat events. In the City of Vancouver, the lowest greenspace provision is concentrated in the downtown core, the Broadway corridor, and interior East Vancouver neighborhoods such as Mount Pleasant, as well as along the Marine Drive industrial corridor.

Table 1
Coverage of Coping Capacity Dimensions by Dataset

Existing Data Sources	Intrinsic Capacity (e.g., housing levels, personal support networks)	On-site Capacity (e.g., housing conditions, cooling access)	Community & Services Capacity (e.g., tree canopy, access to facilities and services)
Canadian Census of Population	✓	✓	
British Columbia Survey on Population Experiences, Action, and Knowledge (SPEAK), Round 3	✓	✓	
University of Laval Extreme Heat Vulnerability Map coping capacity index			✓
Canadian Index of Social Resilience			✓
Healthy Plan Map Built Environment			✓
Vancouver Coastal Health Community Health and Climate Change Heat and Smoke Maps Adaptive Capacity Layer	✓	✓	
Metro Vancouver Social Equity Study	✓		✓
Metro Vancouver 2014 and 2020 Tree Canopy Cover and Impervious Surface			✓

Coping Capacity Indexes and Data Sources Fact Sheet 1/2

Figure 1
Canadian Index of Social Resilience

Figure 2
Healthy Plan Map Built Environment

Dataset Fact Sheet

Comparison of Coping Capacity Indexes and Data Sources

Existing Datasets	How It Can Be Used	Data Type		Normalization Scale	
		Indicator	Composite Index	Local	National
Canadian Census of Population	Enables analysis of the percentage of the population with a discrimination score (e.g., education, income, and housing tenure) that indicates coping capacity (e.g., what share of households are owned or rented with various periods of tenancy, which may indicate coping capacity).	Indicator			Local
British Columbia Survey on Population Experiences, Action, and Knowledge (SPEAK), Round 3	Enables analysis of the percentage of the population with a community health service use reporting score (e.g., use of health services, personal support networks, etc.) that indicates coping capacity (e.g., what share of households are owned or rented with various periods of tenancy, which may indicate coping capacity).	Indicator			Local
University of Laval Extreme Heat Vulnerability Map coping capacity index	This coping capacity index is calculated based on three dimensions: (1) housing conditions, (2) access to public facilities and services, and (3) access to greenspace. It is a composite index that combines indicators from these three dimensions to create a single score that represents coping capacity.	Composite Index			National
Canadian Index of Social Resilience	This index is calculated based on three dimensions: (1) housing conditions, (2) access to public facilities and services, and (3) access to greenspace. It is a composite index that combines indicators from these three dimensions to create a single score that represents coping capacity.	Composite Index			National
Healthy Plan Map Built Environment	Enables analysis of the percentage of the population with a built environment score (e.g., access to greenspace, public facilities, and services) that indicates coping capacity (e.g., what share of households are owned or rented with various periods of tenancy, which may indicate coping capacity).	Indicator			Local
Vancouver Coastal Health Community Health and Climate Change Heat and Smoke Maps Adaptive Capacity Layer	Identifies populations with greater capacity to cope with heat or smoke exposure (e.g., housing conditions, access to public facilities and services, and access to greenspace) that indicates coping capacity (e.g., what share of households are owned or rented with various periods of tenancy, which may indicate coping capacity).	Composite Index			Local
Metro Vancouver Social Equity Study	Enables analysis of the percentage of the population with a social equity score (e.g., income, education, and housing tenure) that indicates coping capacity (e.g., what share of households are owned or rented with various periods of tenancy, which may indicate coping capacity).	Indicator			Local
Metro Vancouver 2014 and 2020 Tree Canopy Cover and Impervious Surface	Enables analysis of tree canopy cover at the census dissemination block level (e.g., what share of households are owned or rented with various periods of tenancy, which may indicate coping capacity).	Indicator			Local

Key Considerations

- Overlap with datasets on vulnerability.** Many variables (e.g., income, education) are used in both vulnerability and coping capacity assessments. For example, higher income may indicate both lower vulnerability and greater coping capacity. This overlap is intentional, as it allows for a more comprehensive understanding of coping capacity.
- Complementary use of datasets listed.** Compared to the dimensions used to define vulnerability, coping capacity captures intrinsic, on-site, and community factors that provide different but complementary perspectives. Combining these datasets is recommended to build a more complete understanding of coping capacity.
- Data granularity for on-site capacity.** While some indicators reflect on-site conditions (e.g., housing conditions), others are available at aggregated levels (e.g., community health service areas) rather than at the building level. As a result, they provide different perspectives on coping capacity but not building-specific conditions, which may require other data sources to assess.
- Shared interpretation considerations.** For composite index vs. individual indicator and score vs. quintile, see the Vulnerability Fact Sheet for further discussion. The same considerations apply when interpreting datasets on coping capacity.

Initial Actions

- Select the coping capacity dimension to assess
- Use relevant datasets to identify areas with lower capacity
- Integrate across the three coping capacity dimensions and refine findings with local and supplementary data as needed

- Fact sheet title & sheet number:** Identifies the index/data source theme, Fact Sheet type, and page number.
- Theme overview & key questions:** Explains what the fact sheet covers and the types of questions the datasets can help answer.
- Coverage by dataset:** Shows which dimensions or topic areas are covered by each dataset.
- Example maps and outputs:** Shows illustrative charts, maps, or summaries or other outputs the dataset could support.
- Dataset comparison table:** Compares datasets by use, data type, and normalization scale (normalization scale refers to the geographic or comparison group used to convert indicators into relative scores, rankings, or categories).
- Key considerations and initial actions:** Highlights interpretation issues and suggests practical first steps for using the data.

Looking beyond the building

Building data can help identify what exists in the building stock: where buildings are, how old they are, what systems they may use, or how they perform. But building-level data does not always show who may be most affected by climate and energy decisions, where risks may be higher, or where additional support may be needed.

Looking beyond building characteristics can help local governments identify where efficiency, affordability, cooling, resilience, and equity objectives overlap. This can support more targeted and practical decision-making by showing where limited resources may provide multiple benefits, such as reducing energy costs, improving thermal safety, supporting vulnerable residents, or directing outreach to areas where additional support may be needed.

In this guide, exposure, vulnerability, and coping capacity are used as practical components of risk. Understanding these risks can support more equitable and practical decision-making by showing how climate-related hazards, social conditions, building conditions, and community resources may overlap.

Understanding Exposure, Vulnerability, and Coping Capacity

Where is the stressor most likely to occur?

Exposure refers to the degree to which people, buildings, infrastructure, or neighbourhoods may come into contact with a climate-related stressor, such as extreme heat, wildfire smoke, flooding, or poor air quality. For example, exposure data may help identify areas with higher land surface temperatures, lower tree canopy, greater flood hazard, or buildings more likely to experience overheating.

Vulnerability refers to social, economic, health, housing, demographic, or other factors that may increase the likelihood of harm from a stressor. For example, vulnerability indicators may include age, income, housing condition, tenancy, disability, language, health status, or access to cooling.

Who may face the greatest impacts?

Who has the fewest resources/ supports to respond or recover?

Coping capacity refers to the resources, services, infrastructure, and social conditions that may help people, buildings, or communities prepare for, respond to, adapt to, or recover from a stressor. This may include access to cooling, community facilities, social supports, emergency services, tree canopy, public space, transit, or local organizations.

Working with Indicators and Composite Indexes

Many exposure, vulnerability, and coping capacity datasets are presented as indicators or composite indexes.



INDICATOR

An indicator is a **single measure**.

Examples include land surface temperature, tree canopy coverage, percentage of residents over age 65, renter households, low-income households, housing condition, or distance to a cooling centre.



COMPOSITE INDEX

A composite index **combines multiple indicators** into a score, category, ranking, or map layer.

Composite indexes can be useful because they bring several dimensions together and make patterns easier to see. However, **an index is not a neutral or complete picture of risk**. It reflects choices about which variables are included, how they are weighted, what geography is used, and how results are compared.

Composite indexes **scores may be presented in different ways**, including: a numeric score, a percentile or ranking, a category such as low/medium/high, or a mapped priority area or hotspot.

Many indexes are **normalized**, meaning the underlying indicators are converted to a common scale so they can be compared, combined, ranked, or grouped. As such, these results are usually **relative to a comparison group**. For example, an area identified as “high vulnerability” may be high compared with other areas in the **municipality, region, province, or country**, depending on how the index was developed. The result does not mean the area has a fixed or absolute level of risk.

Dataset Fact Sheets

What Information is Available?



What is BC Assessment Dataset?

A province-wide property assessment dataset providing standardized property valuation and core building characteristics for all taxable properties in BC.

Key Variables Included:

- Building address
- Building type
- Year built
- Gross floor area

Key Questions BC Assessment Dataset Can Help Answer:

- Establish a baseline building inventory
How many buildings exist by major building type, and what share of the inventory does each type represent?
- Characterize the building stock by age and size to identify priority building groups
How is the local building stock distributed by age and size, and which groups should be prioritized for retrofit?

How Can the basic BC Assessment Dataset Be Accessed?

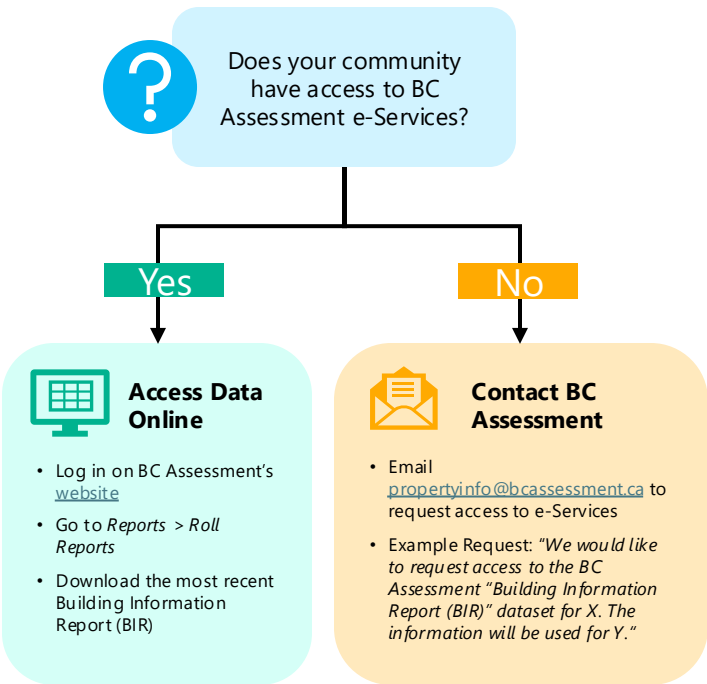


Figure 1
Example Figure: Building Sector GHG emissions by Building Type

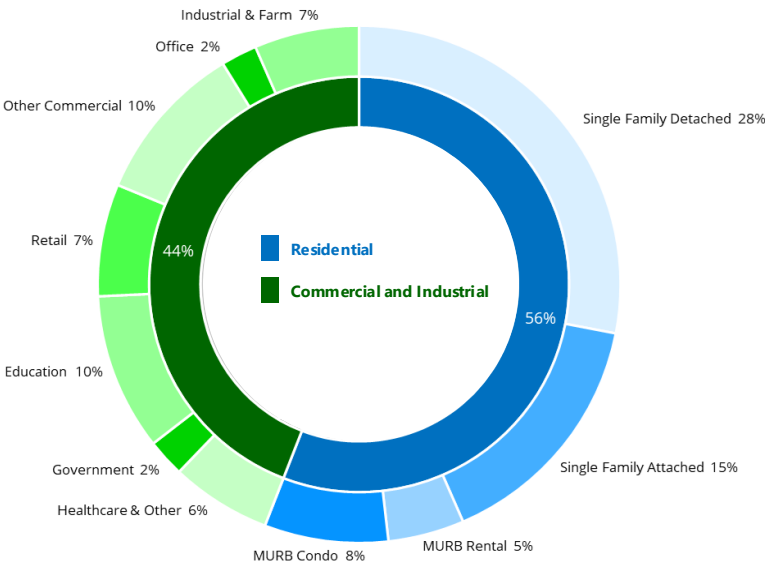
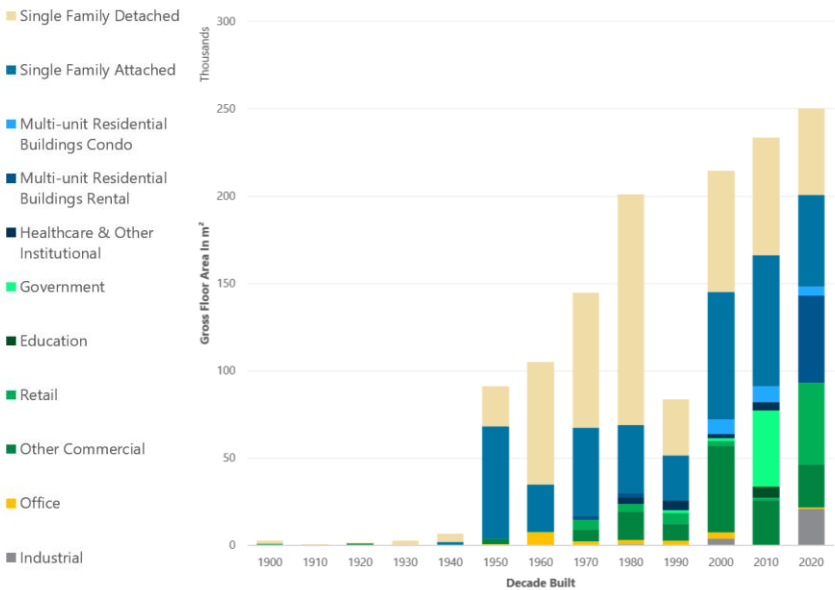


Figure 2
Example Figure: Existing Building Stock by Decade Built by GFA



Cleaning and Processing Efforts



External support is often required as BCA data:

- *Is structured for property assessment (taxation), not analysis, with records organized by assessment units (e.g., parcels or strata units) rather than standardized building-level entries. This requires aggregation, deduplication, and reconciliation to create a usable building inventory.*
- *Requires additional validation and QA/QC after cleaning to avoid double-counting and ensure accurate building counts and floor area estimates.*
- *Requires expertise to interpret data fields and understand how records relate to individual buildings.*

Key Considerations

Considerations

- *Records are based on assessment units (tax lots, strata units), not buildings, and may not align with real building footprints.*
- *May include multiple records per building, which can lead to double counting or require aggregation of floor area values.*
- *Building classification fields may require mapping to align with planning or analysis categories*

Tips

- *Validate key outputs (e.g., building counts, total floor area) against other sources such as municipal records or census data*
- *Document assumptions and methods used to aggregate records to the building level as results can vary based on approach*
- *Contact BC Assessment to request broader datasets or custom extracts if the standard BIR does not meet your needs; access is typically provided through a data sharing agreement.*

Draft Initial Actions



Confirm with the finance department whether they already have access to the most recent BC Assessment dataset; if not, initiate a request to obtain it.



Pilot data cleaning and processing to assess internal capacity and determine whether the work can be completed in-house or requires external support.



Identify information gaps that need to be addressed to support program and/or policy development.

What Information is Available?



What is CoStar Dataset?

CoStar is a pay-for-service, licensed commercial real estate database that provides building-level information on commercial properties.

Key Variables Included:

- Building address
- Building type
- Building owner
- Property manager
- Building class (A,B,C)
- Costar rating
- Rent (\$/sqft/yr)
- Green Rating (e.g. LEED)

Key Questions CoStar Can Help Answer:

- Apply an equity lens to the development of commercial building regulations or supports programs.
What share of the commercial building stock is made up of Class B and C buildings?
- Identify priority owners and property managers for engagement.
Who are the owners/property managers of commercial buildings in my area? Do they vary by archetype or class?

How Can CoStar Be Accessed

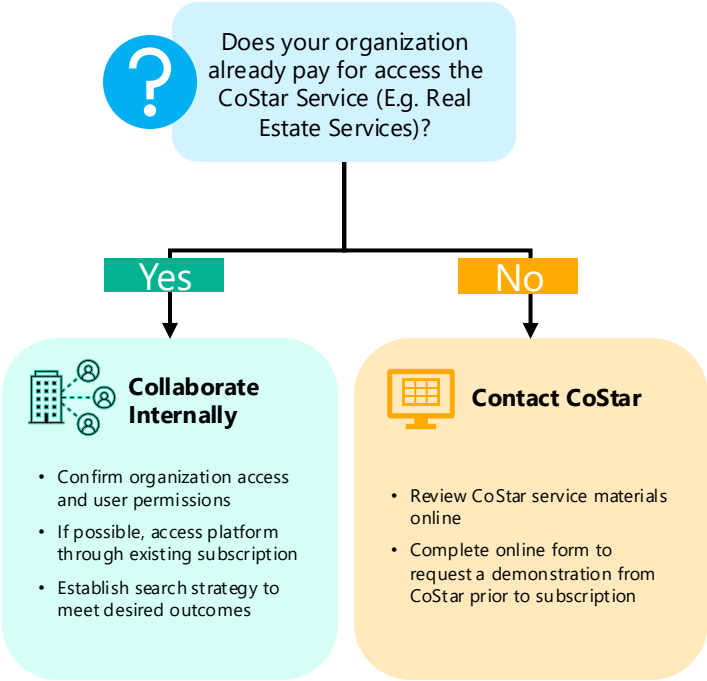


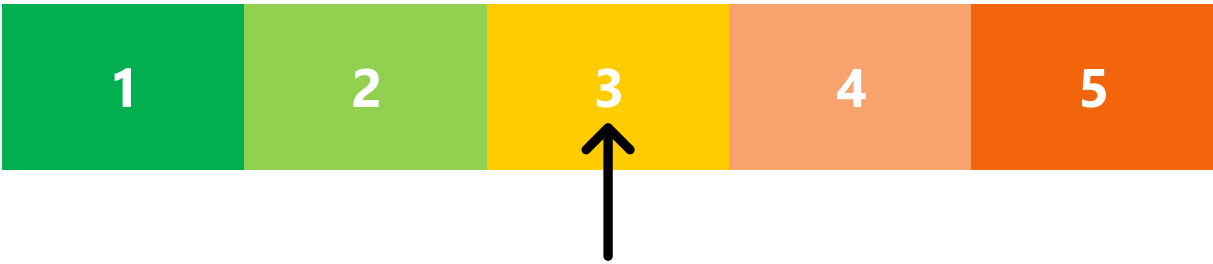
Figure 1
Understanding the Rating Systems Data Provided in CoStar



Figure 2
Supporting Commercial Owner Engagement: CoStar data can help you identify key interest holders for targeted outreach (example below)

Building Address	Building Type	Size (SF)	CoStar Rating	Building Class	Owner / Contact	Property Manager / Contact	...
123 Main St Vancouver, BC	Office	120,000+	★★★★★	A	ABC Realty Ltd. Jane Smith j.smith@abc.com	XYZ Property Management Chris Lee c.lee@xyz.com	...
456 West Ave Vancouver, BC	Retail	75,000+	★★★★☆	B	Westview Holdings Inc. Mark Brown m.brown@westview.com	Westview Management Sarah Kim s.kim@westview.com	...
789 Industrial Rd Vancouver, BC	Industrial	150,000+	★★★☆☆	B	Northshore Industries Ltd. Daniel Wu d.wu@northshore.com	ProManage Services Alex Chen a.chen@promanage.com	...
2020 Oak St Vancouver, BC	Office	90,000+	★★★☆☆	C	Oak Street Holdings Tom Wilson t.wilson@oakstreet.com	Oak Street Management Taylor Reed t.reed@oakstreet.com	...
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

Cleaning and Processing Efforts



External support is generally not required as CoStar data:

- *Is relatively straightforward to work with once exported.*
- *Typically downloaded into Excel format, with building-level information clearly organized across multiple columns.*
- *Note that the main effort is not in cleaning the file itself, but in structuring searches and exports to retrieve the right subset of records.*

Key Considerations

Considerations

- CoStar is designed primarily as an interactive property and market intelligence platform, not a bulk data delivery tool.
- Licensing terms limit automated extraction or storage of CoStar data in downstream databases without explicit permission.
- Users can review individual buildings in the platform or export records in batches for analysis, within limitations (~500 records per export, possible daily cap).
- CoStar is not a complete commercial database - coverage and field completeness can vary across property types, geographies, and variables such as ownership, leasing, or building quality.

Tips

- Confirm export limits and permitted uses under your license before building a larger analytical workflow.
- Define the target building universe in advance so exports can be split into manageable batches.
- Use consistent filters and field selections across export batches to make results easier to combine and compare.
- Use CoStar selectively for questions it is best suited to answer, such as commercial stock segmentation, building class, and ownership or property management analysis.
- Leverage the report feature to generate targeted, shareable summaries of selected buildings or market segments (E.g. as large commercial properties, Class B/C offices, or priority owner groups), to support internal work.

Draft Initial Actions



Evaluate whether CoStar is the right fit for your intended use. CoStar is most valuable when the objective is to understand and segment the commercial building stock rather than to build a universal inventory of all buildings.

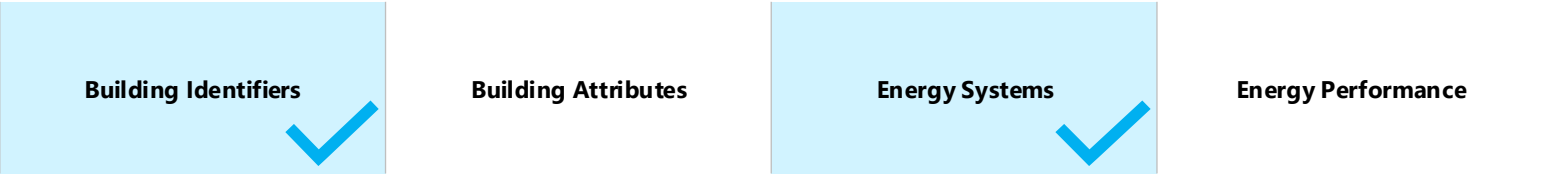


Evaluate the value of the dataset relative to its cost and licensing conditions. This should include reviewing CoStar online materials & demos and evaluating membership pricing options.



Secure internal approvals and procure a subscription. If CoStar is a good fit, confirm subscription, complete training, and define a search strategy to meet your needs.

What Information is Available?



What is a TSBC dataset?

Technical Safety BC (TSBC) data captures permits related to regulated electrical and gas work across BC. In municipalities with delegated authority, local governments may issue their own electrical and/or gas permits.

Key Variables Included (*potentially available upon request):

- Address

• Occupancy type

• Permit date

• Permit type (elec/mech)

• Work Description*

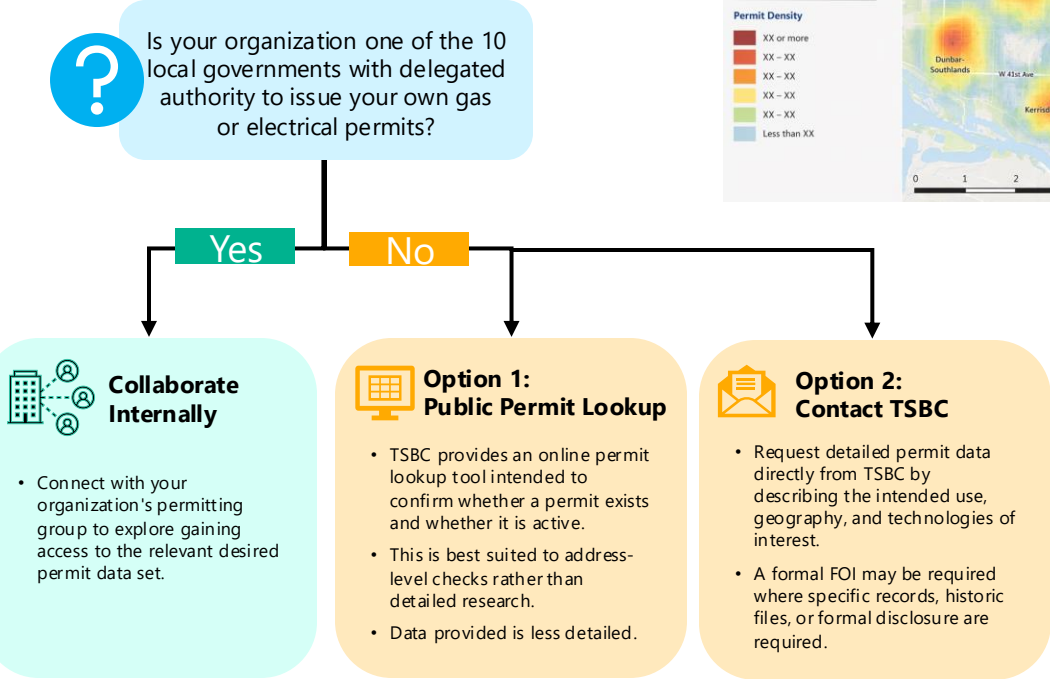
• Equipment type*

• EV Supply / Solar details*

Key Questions CoStar Can Help Answer:

- Identify where gas and electrical equipment installation or replacement activity is occurring:
Where are retrofit activities happening?
What is the relative rate of heat pump vs gas retrofits?
How does this activity vary across the community?

How Can TSBC Data Be Accessed



Cleaning and Processing Efforts



Some cleaning and processing effort is required

- Main effort is in interpreting permit descriptions, identifying relevant equipment or work types, and standardizing addresses; this can typically be done internally.
- External support may be needed where TSBC data is being combined with municipal gas, electrical, or mechanical permit records, or other data sets to support more detailed analysis.

Key Considerations

Considerations

- TSBC is often most useful as a permit-based indicator of equipment installation or upgrade activity, rather than as a complete building equipment inventory.
- Even in jurisdictions with delegated authority over gas permits, TSBC still covers specific gas work (E.g., higher pressure, or large capacity systems [$>409,000$ BTU/h] typically found in larger buildings).
- Permit descriptions are often qualitative and often need interpretation or keyword classification to identify the type of work completed

Tips

- TSBC data is best suited to understanding where regulated work is happening, what kinds of systems or technologies are involved, and how permit activity varies by geography, timing, or building segment.
- Constraints on use, confidentiality, sharing, and downstream storage should be clarified when requesting data directly from TSBC.
- Engage your internal GIS team, or seek external support, if mapping is a desired output, as geocoding and address cleaning may be needed before analysis.

Draft Initial Actions



Confirm whether TSBC is the right source for your jurisdiction and scope.

Determine whether TSBC is the primary permitting authority for the work of interest, or whether local government permit systems should be used, or a combination.



Define the analytical purpose before requesting data.

Identify the permit types, time period, and geography desired. Also consider potential implications of permit data use conditions in downstream analysis or public reporting.



Plan for address cleaning and permit interpretation

Assess whether internal staff can interpret permit descriptions and geocode addresses, or whether additional analytical support is needed.

Information on Buildings

Building Benchmark BC

Fact Sheet 1/2

What Information is Available?

Building Identifiers

Building Attributes

Energy Systems

Energy Performance

What is BBBC Dataset?

Building Benchmark BC is a voluntary building energy benchmarking and disclosure program launched in 2020. It creates a dataset of building performance information drawn from participating buildings, using ENERGY STAR Portfolio Manager and utility data, to help communities and building owners understand how similar buildings are performing.

Key Variables Included (*potentially available upon request)

- Building type
- Reporting year
- Gross floor area
- Building year
- Jurisdiction
- EUI performance
- GHGI performance
- Electricity use*
- Gas / other fuel use*
- Monthly energy data*

Key Questions BBBC Can Help Answer:

- Estimate indicative building energy performance by archetype based on sample buildings.
What is the typical energy use intensity of different building archetypes in my community?
- Develop a bottom-up breakdown of community building energy use or emissions by archetype.
How can archetype-level EUIs be combined with local floor area data (E.g., BC Assessment) to estimate energy use or emissions by building type?

How Can BBBC Data Be Accessed

Access the public BBBC results online

- View the Disclosure Map to explore buildings that agreed to publicly share their performance data.
- View the interactive Annual Reports to view anonymized average EUI & GHGI's across building types and jurisdictions

Contact BBBC for more granular data

- More detailed data export may be available through direct request.
- Participating-community access, or other data-sharing arrangements may be required.

Figure 1
Access EUI and GHGI data for reporting buildings across jurisdictions and archetypes via BBBC interactive Annual Reports

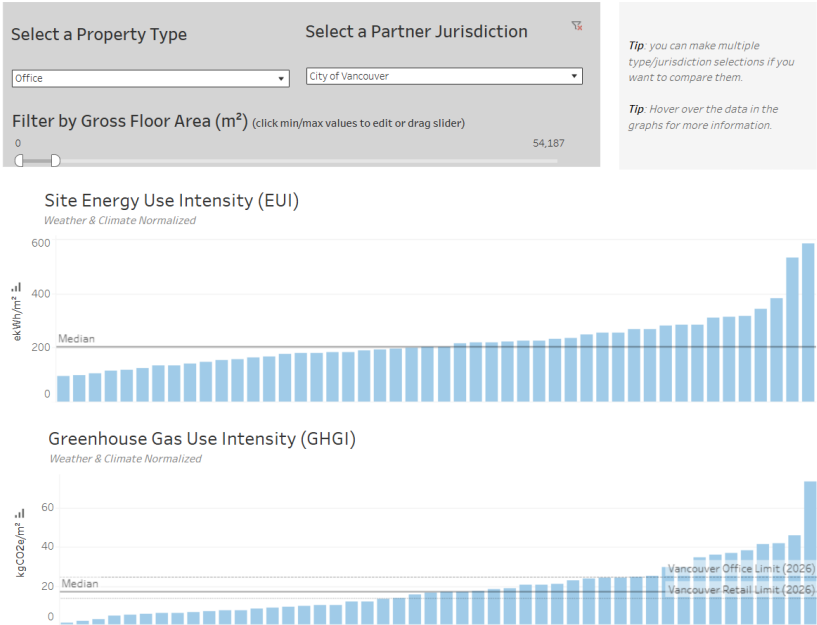
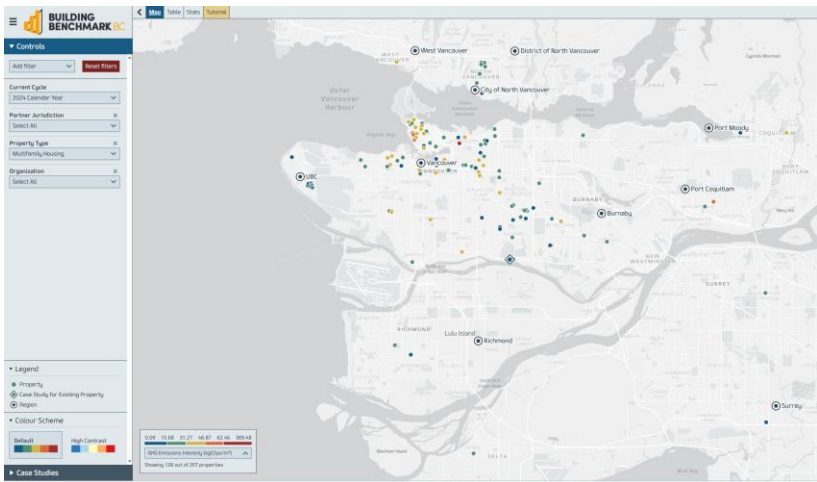
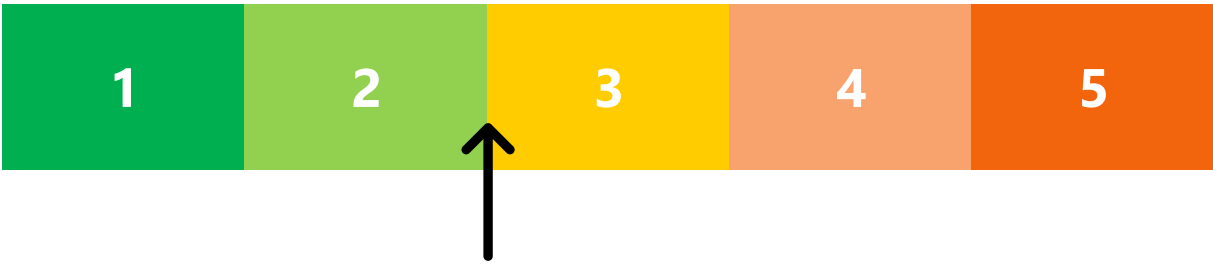


Figure 2
Explore building data + retrofit case studies through BBBC's online interactive map



Cleaning and Processing Efforts



Some cleaning and processing effort is required, depending on desired use

- *Building Benchmark BC is a performance sample dataset, not a community inventory.*
- *Public access is mainly through the Disclosure Map and annual reports, so some effort may be needed to compile and structure the disclosed sample for analysis.*
- *Main effort is in selecting representative buildings, grouping them into meaningful archetypes, and deciding how to use local versus comparable-community samples.*
- *Additional effort may be needed when combining BBBC with BC Assessment, CEEI, or other datasets to support community-wide modelling or extrapolation.*
- *This work can often be completed internally, but outside support may be helpful for more*

Key Considerations

Considerations

- *Building Benchmark BC reflects actual building performance, but does not provide information on installed equipment or heating systems*
- *The dataset may not be fully representative of the broader building stock, as participation is voluntary, and publicly disclosed results may skew toward more engaged or better-performing buildings.*
- *While systematic description retrofit measures (where year-over-year building performance improvement exists) is not provided, some case study information is embedded in the platform.*
- *Local sample sizes may be too small to support reliable archetype-level averages for all building types or subgroups.*

Tips

- *Use local BBBC records where possible, and supplement with buildings from similar communities, climate zones, or building types where local coverage is limited.*
- *Apply representative archetype EUIs to floor area totals from BC Assessment or another inventory source to estimate energy use or emissions by building type.*
- *Compare total energy from bottom-up archetype estimates against top-down community-wide totals from Community Energy & Emissions Inventory (CEEI) to calibrate building stock emissions modeling.*
- *Combine BBBC with other representative benchmark datasets to build a more robust archetype performance profile.*

Draft Initial Actions



Clarify the intended use.
Determine whether BBBC will be used to benchmark building performance, estimate archetype-level EUIs, or support bottom-up energy or emissions modelling.



Take stock of available supporting datasets.
Identify what other data sources are available to support the analysis, such as BC Assessment, CEEI, or other benchmark datasets.



Establish an analytical approach. Define the building archetypes, geographic scope, and approach for using local versus comparable-community samples.

What BC Hydro Datasets are Available?

BC Hydro offers a range of datasets that can help track progress and inform the development of energy efficiency and electrification initiatives across four broad categories:



Electric system adoption and trends



Renewable energy adoption



Uptake of energy efficiency and equity focused incentive programs (power smart programs)



Community energy consumption and electricity grid reliability

Table 1
Overview of Selected BC Hydro Datasets and Uses

Existing Datasets	How It Can Be Used	Building Type	Data Granularity
Electric Heating Indicator	Helps understand electric space heating adoption. <i>e.g., Which FSAs within a community have lower electric space heating adoption?</i>	Ground-oriented residential	FSA level
BC Hydro Residential End Use Survey	Provides insights into energy consumption, energy habits and behaviors, and adoption of technologies such as EVs, heat pumps, space cooling, and water heating. <i>e.g., What space cooling, space heating, and water heating systems are most commonly used in homes now?</i>	Residential	Community-level for CEM municipalities Province-level for other municipalities
Self-Generation Program Data	Helps understand participation in the program, the distribution of installed generation capacity and type of generation. <i>e.g., How has installed solar capacity grown over time?</i>	Ground-oriented residential	Community-level
Home Renovation Rebate Uptake Data	Helps understand participation in the Home Renovation Rebate Program, which is intended for homes with high bills from electric space heating. <i>e.g., What retrofit measures are most commonly adopted among participants?</i>	Ground-oriented residential	Community-level
Condo and Apartment Rebate Program Uptake Data	Helps understand participation in in suite energy efficiency upgrades in apartment and condo units. <i>e.g., What equipment upgrades are most commonly adopted among participants?</i>	Apartment-style residential	Community-level
Multi-Unit Residential Building Retrofit Program Data	Helps understand participation in whole building energy upgrades in apartments and condo buildings. <i>e.g., What retrofit measures are participants adopting?</i>	Apartment-style residential	Community-level
Continuous Optimization program Data	Helps understand participation among large commercial building owners in retro commissioning and recommissioning programs. <i>e.g., What measures (e.g., pilot projects, recommissioning, refresh studies) are most commonly used among participants?</i>	Commercial (over 40,000 square feet)	Community-level
Energy Conservation Assistance Program (ECAP) Uptake Data	Helps understand participation in equity-focused retrofit programs supporting income-qualified households. <i>e.g., What is the participation rate of income-qualified households within a community?</i>	Residential	Community-level

Note:

- This factsheet focuses on datasets most relevant to energy efficiency retrofits, reflecting the objectives of this project. Please refer to the full dataset inventory for a complete list of available datasets and detailed descriptions.
- For data granularity:
 - ➔ **Forward Sortation Area (FSA) Level:** The first three characters of a Canadian postal code represent the FSA, which provides finer grained insights within a community.
 - ➔ **Community Level:** Provides aggregated insights at the community scale, allowing for comparisons across communities.

How Can BC Hydro Data Be Accessed

▶ Municipalities **with** a Community Energy Manager (CEM)



Access aggregated datasets through the Data Sharing Portal, which will be made available to CEMs through their accounts when the portal is launched.

▶ Municipalities **without** a Community Energy Manager



Contact markettransformation@bchydro.com to make data requests.

Cleaning and Processing Efforts



Analysis can be completed internally by local government staff with spreadsheet data analysis

Most BC Hydro datasets are provided in aggregated and analysis-ready formats, meaning relatively limited cleaning and processing is required. In many cases, straightforward calculations, trend analysis, or comparisons across communities/FSAs and years may be sufficient to generate useful insights.

Key Considerations

- **Variations across datasets.** Data historical availability, update cycles, and granularity vary across datasets.
- **Representative coverage.** Many datasets are program-based and may not represent the full building stock or customer population within a community. Results should therefore be interpreted as indicative rather than comprehensive inventories.
- **Using multiple datasets to validate findings.** Combining multiple BC Hydro datasets may provide a more complete and reliable understanding of electrification trends, retrofit activity, renewable energy adoption, and equity-focused program participation. Individual datasets can be used to validate and reinforce findings, increasing confidence in the insights generated.

Initial Actions



Review the complete list of available datasets to understand dataset availability and key features



Clarify the analysis objectives and identify datasets that may help answer the questions.



Access datasets and assess whether the available data granularity, coverage, and quality are sufficient to support the intended analysis.

What Information is Available?

Building Identifiers	Building Attributes	Energy Systems	Energy Performance
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What is the EnerGuide Dataset?

Released by Natural Resources Canada, the dataset includes EnerGuide assessment results based on HOT2000 modelling software for existing homes (pre- and post-retrofit), new home designs, and as-built new homes across Canada.

Note: This factsheet focuses primarily on the **existing homes portion** of the dataset.

HOT2000 Dashboard

Community Energy Association (CEA) and BC Hydro are jointly developing a free online dashboard to provide a user-friendly interface for exploring EnerGuide data. It is intended to generate at-a-glance insights for both existing homes and new Part 9 homes, supporting retrofit analysis and planning, and improving new building performance.

Key Variables Included:

- Primary space heating fuel and equipment type
- Pre- and post-retrofit energy consumption by fuel type (Electricity (kWh/year), Natural gas (m³/year))
- Proposed retrofit measures and actual upgrades

Key Questions the EnerGuide Dataset Can Help Answer:

- **Systems and fuel distribution:** What fuel types are used across assessed homes? What heating and DHW systems are most common?
- **Energy performance and retrofit outcomes:** How do energy use and emissions vary across homes and regions?
- **Retrofit trends:** What technologies (e.g., heat pumps) are being adopted?
- **Policy and program targeting:** Which building segments show the greatest opportunity for energy and emissions reductions?

How Can EnerGuide Dataset Be Accessed?

- [EnerGuide Rating System Open Data](#)
- HOT2000 Dashboard (in development, expected by end of 2026)

Table 1
EnerGuide Evaluation Types

D	Pre-retrofit (baseline assessment)
E	Post-retrofit (follow-up assessment)
P	Design (planned performance)
N	As-built (completed construction)

Figure 1
ERS Files and Estimated Savings

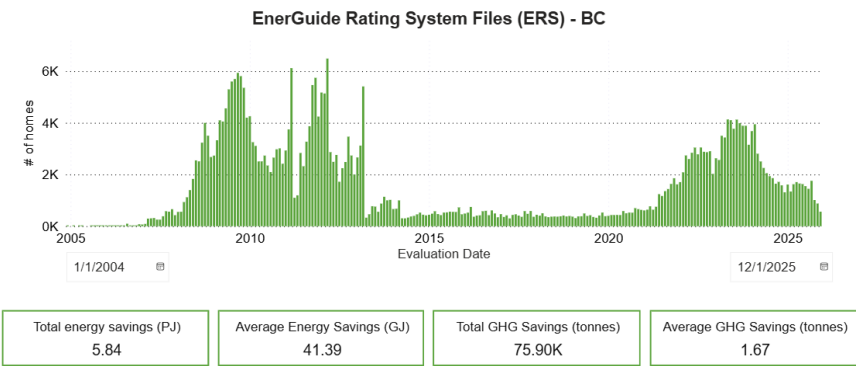
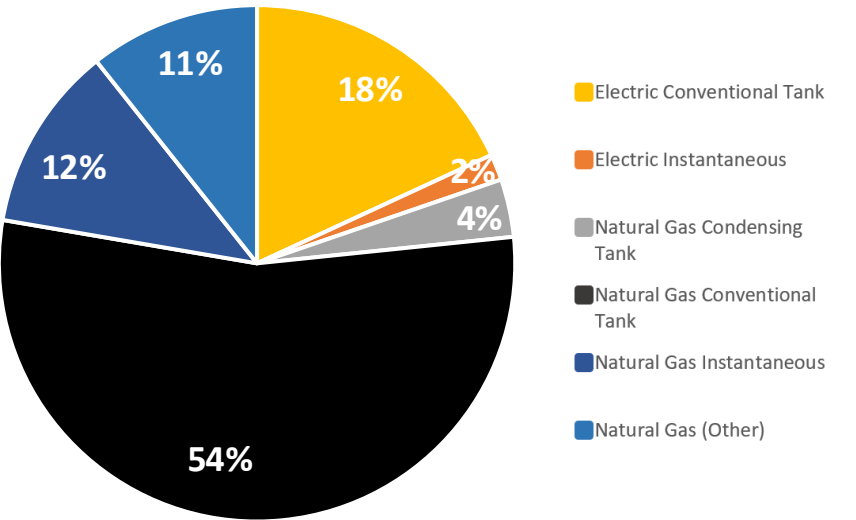
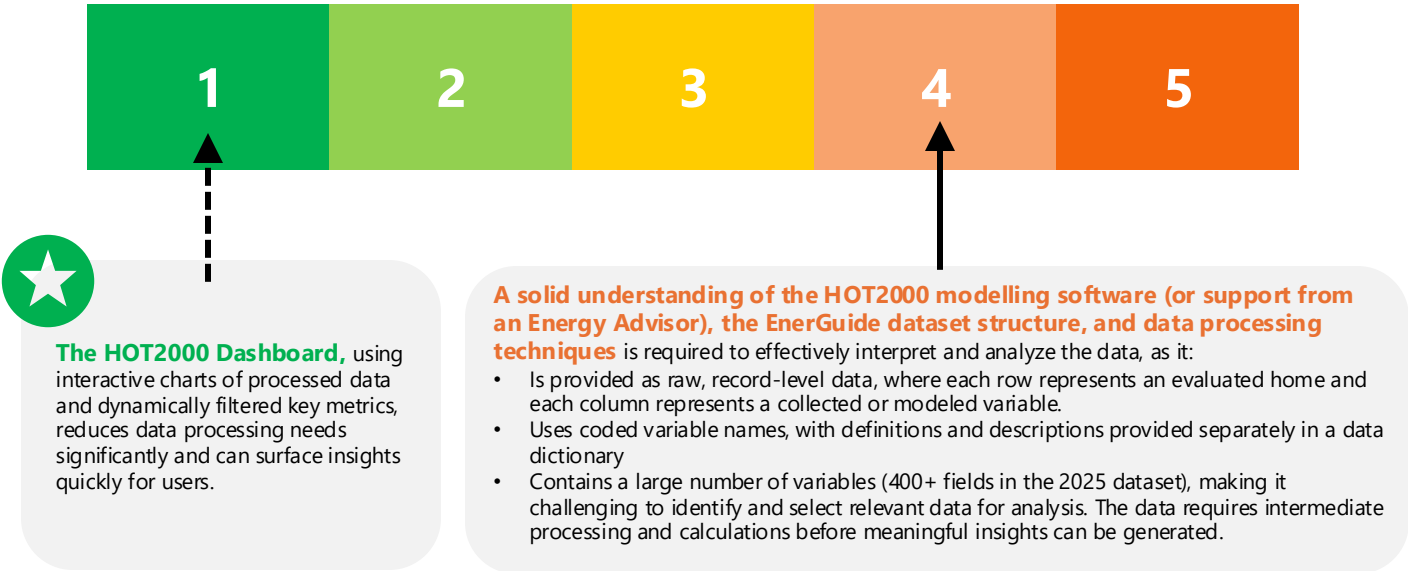


Figure 2
Example Heating System Breakdown in Existing Single Family Dwellings



Cleaning and Processing Efforts: ↑ represents the current state and ↑ represents expected future practices



Key Considerations

Considerations

- As participation in EnerGuide evaluations is voluntary or program-driven, the dataset is sample-based rather than a complete building inventory.
- The dataset is also subject to self-selection bias and may over-represent retrofit-active households or program participants, which should be considered when interpreting results or scaling insights.
- Each building is only identifiable by its Forward Sortation Area (FSA), so the data cannot be used for building-level analysis.

Tips

- EnerGuide data provides valuable insights on energy systems and building performance, where the sample is reasonably representative at the FSA level, it can be used to identify system distributions, retrofit trends, and emerging patterns within the community.
- Use tools such as the HOT2000 dashboard, developed by BC Hydro and CEA, to support analysis and reduce the effort required to process data.
- Not all assessments required a pre-retrofit (D) and post-retrofit (D) evaluation type, which may limit insights gained when comparing those data sets.

Draft Initial Actions

- 1**

Check the HOT2000 dashboard (once available) to determine whether the intended analysis is covered by the dashboard outputs.
- 2**

Download and review the data [dictionary](#) to understand available variables definitions, and data structure before working with the dataset.
- 3**

Identify a set of relevant variables aligned with the analysis focus to narrow the scope and simplify processing efforts.

About This Fact Sheet

This fact sheet compiles a selection of existing datasets to support the identification of areas with varying levels of exposure to heat and/or pollution within a community. Exposure refers to the nature and degree to which people, assets, or services are subject to climate-related shocks or stressors (i.e., come into contact with them). Exposure indexes combine selected variables relevant to the conditions being measured, while individual data sources provide specific indicators that can be used to assess exposure.

Key Questions Covered Datasets Can Help Answer

- Where are areas most exposed to heat under both typical conditions and extreme events?
- How will heat exposure change over time (e.g., current vs future conditions)?
- Where are areas most exposed to poor air quality caused by wildfire smoke?

Table 1
Coverage of Exposure Dimensions by Dataset

Existing Data Sources	Heat Exposure	Definition	Air Quality	Definition
ClimateData.ca	✓	Modelled 30-year averages (1951–2100) of multiple heat variables showing trends under different emissions scenarios		
University of Laval Extreme Heat Vulnerability Map Exposure Index	✓	Calculated heat exposure values from temperature, built environment, and environmental factors		
Climate Insight	✓	Modelled 30-year averages across baseline (1971–2000), mid-century (2041–2070), and end-of-century (2071–2100), showing heat trends under emissions scenario SSP5-8.5 <i>Note: Selected variables and scenario derived from ClimateData.ca</i>		
Vancouver Coastal Health (VCH) Community Health and Climate Change Heat Exposure Map	✓	Cooling degree days above 18°C (PRISM Climate Normals 1981-2010)		
VCH Community Health and Climate Change Wildfire Smoke Exposure Map			✓	Days with PM2.5 concentrations ≥ 25 µg/m ³ (2009–2018 or 2015–2018, depending on region)
Healthy Plan Map Urban Climate	✓	Average land surface temperature (May to September 2019-2021)		
Healthy Plan Map Urban Air Pollution			✓	Modelled estimate of nitrogen dioxide (NO ₂) (traffic-related air pollution) for 2016
CRD Regional Heat Map Land Surface Temperature	✓	Land surface temperature during the 2021 heat event		
CRD Regional Heat Map Air Temperature	✓	Modelled air temperature based on regression using land surface temperature and local environmental factors		

Figure 1
VCH Community Health and Climate Change Heat Exposure Map

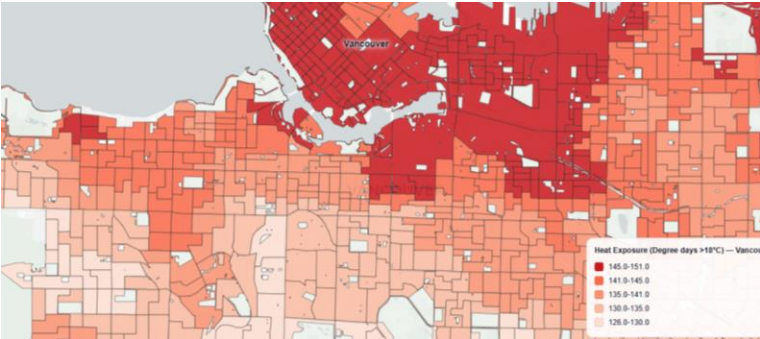


Figure 1
University of Laval Map Exposure Index



Table 2
Comparison of Exposure Indexes and Data Sources

Existing Datasets	How It Can Be Used	Data Type		Normalization Scale	
		Indicator: Individual variable	Composite Index: Multiple variables combined into a single score	Local: Reflects performance against local peers	National: Reflects performance against national peers
ClimateData.ca	Enables analysis of heat trends under different emissions scenarios across multiple time horizons. <i>e.g., How many days above 32°C is a census subdivision expected to experience under SSP5-8.5?</i>	● Indicator		⊙ Local Coverage: Canada	
University of Laval Extreme Heat Vulnerability Map Exposure Index	The exposure index is calculated using information from satellite imagery on ground temperature, as well as impermeability, vegetation, and the built environment. Data on proximity to water, altitude, and location are also integrated. <i>e.g., Which areas experience higher heat wave exposure when accounting for land surface temperature, built environment and environmental characteristics?</i>		⊞ Composite Index		⊕ National
Climate Insight	Enables analysis of heat trends under emissions scenario SSP5-8.5 across three selected time horizons. Note that Climate Insight derives data from ClimateData.ca, providing one emissions scenario over three defined time horizons for two heat variables: days with maximum temperature above 30°C and hottest day. <i>e.g., What is the maximum daytime temperature a census subdivision is expected to experience?</i>	● Indicator		⊙ Local Coverage: Canada	
VCH Community Health and Climate Change Heat Exposure Map	Enables analysis of the need to cool buildings during warmer weather based on cooling degree days. <i>e.g., Which areas may experience higher heat exposure and have a greater need for air conditioning?</i>	● Indicator		⊙ Local Coverage: Vancouver Coastal Health region and Fraser Health region	
VCH Community Health and Climate Change Smoke Exposure Map	Identifies areas with higher exposure to wildfire smoke based on the frequency of poor air quality days. <i>e.g., Which areas may experience the most days with wildfire smoke?</i>	● Indicator		⊙ Local Coverage: Vancouver Coastal Health region and Fraser Health region	
Healthy Plan Map Urban Climate	Enables analysis of land surface temperature exposure during typical summer conditions at the dissemination area level. <i>e.g., Which areas may experience higher average summer temperatures?</i>	● Indicator		⊙ Local Coverage: Canada	
Healthy Plan Map Urban Air Pollution	Enables analysis of traffic-related air pollution exposure at the dissemination area level. <i>e.g., Which areas may have higher traffic-related air pollution exposure?</i>	● Indicator		⊙ Local Coverage: Canada	
CRD Regional Heat Map Land Surface Temperature	Enables analysis of land surface temperature during extreme heat events. <i>e.g., Which areas may experience higher heat exposure during extreme heat events?</i>	● Indicator		⊙ Local Coverage: CRD	
CRD Regional Heat Map Air Temperature	Enables analysis of how extreme heat is experienced by an individual. <i>e.g., Which areas may experience the highest air temperatures, increasing the likelihood of human thermal discomfort?</i>	● Indicator		⊙ Local Coverage: CRD	

Key Considerations

- **Different exposure definitions.** Definitions of exposure vary significantly across datasets, with less consistency seen for vulnerability or coping capacity. For instance, both the Healthy Plan and CRD Heat Map use land surface temperature but differ in how exposure is represented: one reflects typical summer conditions, while the other captures conditions during extreme heat events. They provide different, yet complementary, insights into heat exposure and should be understood prior to use.
- **Shared interpretation considerations.** For **composite index vs. individual indicator** and **score vs. quintile**, see the Vulnerability Fact Sheet for further discussion. The same considerations apply when interpreting datasets on exposure.

Initial Actions

- 1

Review how exposure is defined using Table 1 and 2
- 2

Use relevant datasets to identify areas with high heat exposure/poor air quality
- 3

Combine or validate insights across datasets and use local knowledge and supplementary data as needed

About This Fact Sheet

This fact sheet brings together a selection of existing datasets to identify populations with varying levels of coping capacity within a community. Coping capacity reflects characteristics that reduce the likelihood that populations will be impacted by external stressors. Coping capacity indices are constructed using selected variables based on specific capacity dimensions that the index is designed to measure, while data sources provide individual indicators of characteristics that support coping capacity.

Key Questions Covered Datasets Can Help Answer

- Where are populations with intrinsic characteristics that may limit or support their ability to cope with extreme heat events?
- Where are populations with on-site conditions that support their ability to cope with extreme heat?
- Where are populations with more access to public facilities and services, which can serve as cooling centers or are more likely to have backup power during power outages?

What does the Healthy Plan Map Greenspace Provision layer tell us?

Access to greenspace supports coping capacity by providing shaded environments and offering spaces for outdoor social connection during extreme heat events. In the City of Vancouver, the lowest greenspace provision is concentrated in the downtown core, the Broadway corridor, and interior East Vancouver neighborhoods such as Mount Pleasant, as well as along the Marine Drive industrial corridor.

Table 1
Coverage of Coping Capacity Dimensions by Dataset

Existing Data Sources	 Intrinsic Capacity (E.g., Housing tenure, personal support network)	 On-site Capacity (E.g., Housing condition, cooling access)	 Community & Services Capacity (E.g., Tree canopy, access to facilities and services)
Canadian Census of Population	✓	✓	
British Columbia Survey on Population Experiences, Action, and Knowledge(SPEAK), Round 3	✓	✓	
University of Laval Extreme Heat Vulnerability Map coping capacity Index			✓
Canadian Index of Social Resilience	✓		
Healthy Plan Map Built Environment			✓
Vancouver Coastal Health Community Health and Climate Change Heat and Smoke Maps Adaptive Capacity Layer	✓	✓	
Metro Vancouver Social Equity Study	✓		✓
Metro Vancouver 2014 and 2020 Tree Canopy Cover and Impervious Surface			✓

Figure 1
Canadian Index of Social Resilience

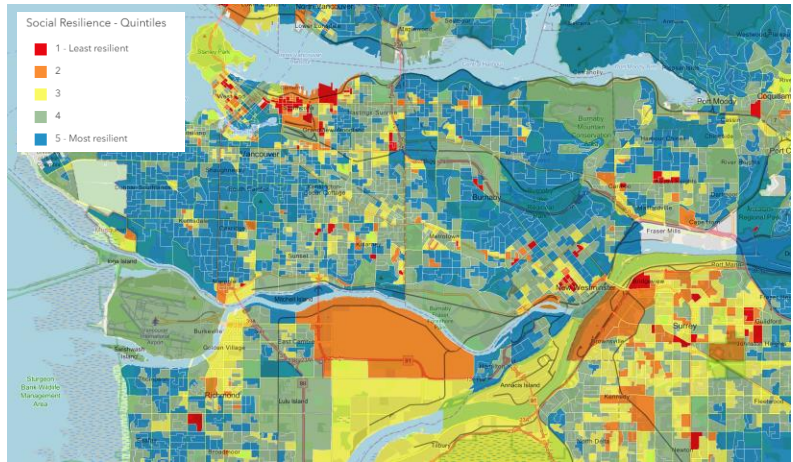


Figure 2
Healthy Plan Map Built Environment Greenspace Provision

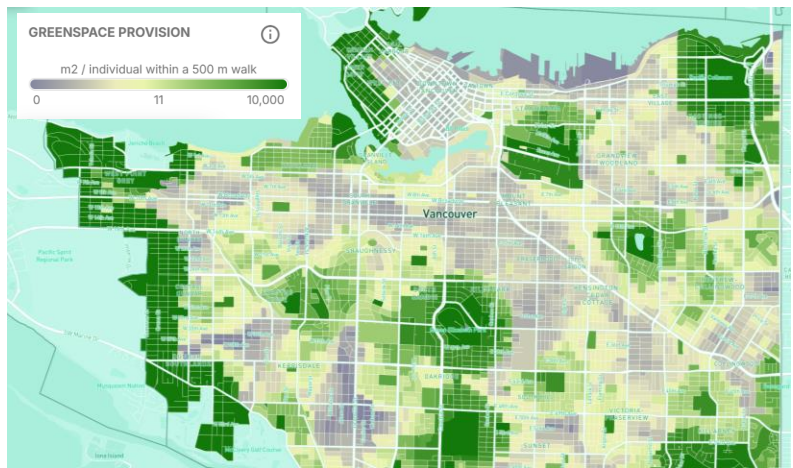


Table 2
Comparison of Coping Capacity Indexes and Data Sources

Existing Datasets	How It Can Be Used	Data Type		Normalization Scale	
		Indicator: Individual variable	Composite Index: Multiple variables combined into a single score	Local: Reflects performance against local peers	National: Reflects performance against national peers
Canadian Census of Population	Enables analysis of the percentage of the population within a dissemination area (DA) with characteristics that enhance coping capacity <i>e.g., what share of households are owned or rented (with owners potentially having more ability to adopt adaptive actions)?</i>	● Indicator		⊙ Local Coverage: Canada	
British Columbia Survey on Population Experiences, Action, and Knowledge, Round 3	Enables analysis of the percentage of the population within a community health service area reporting access to on-site cooling and personal support networks <i>e.g., what share of residents report having cooling at home (AC or heat pump), and what share report connections with friends or family?</i>	● Indicator		⊙ Local Coverage: BC	
University of Laval Extreme Heat Vulnerability Map coping capacity Index	This coping capacity index is calculated based on distance to places and services that provide shelter and relief from extreme heat (e.g., the nearest libraries, community centers, hospitals, and shopping centers). <i>e.g., which areas have residents with greater access to potential cooling spaces and services during extreme heat events?</i>		⊞ Composite Index		⊕ National
Canadian Index of Social Resilience	The index aims to reflect a community's ability to respond to and recover from natural hazards, including wildfires, floods, earthquakes, and severe storms, based on indicators pertaining to education, employment and dwelling characteristics, homeownership, income, and age. <i>e.g., which areas have populations with greater capacity to respond to and recover from natural hazards?</i>		⊞ Composite Index		⊕ National
Healthy Plan Map Built Environment	Enables analysis of built environment features, such as greenspace provision, recreation and sports facilities, retail and services, and tree canopy cover, that support coping capacity at the neighborhood level <i>e.g., which areas have higher tree canopy coverage?</i>	● Indicator		⊙ Local Coverage: Canada	
Vancouver Coastal Health Community Health and Climate Change Heat and Smoke Maps Adaptive Capacity Layer	Identifies populations with greater capacity to cope with heat or smoke exposure based on factors such as income and social status, physical environment (e.g., housing), education and literacy, and social supports and coping skills <i>e.g., where are populations with greater adaptive capacity to heat or wildfire smoke?</i>		⊞ Composite Index	⊙ Local Coverage: Vancouver Coastal Health region and Fraser Health region	
Metro Vancouver Social Equity Study	Enables analysis of the percentage of the population within a DA with variables that contribute to enhanced coping capacity at both individual and neighborhood levels <i>e.g., what share of residents have higher access to healthcare facilities within a 3 km driving distance?</i>	● Indicator		⊙ Local Coverage: Metro Vancouver	
Metro Vancouver 2014 and 2020 Tree Canopy Cover and Impervious Surface	Enables analysis of tree canopy cover at the census dissemination block level <i>e.g., which areas have higher tree canopy that supports the mitigation of extreme heat?</i>	● Indicator		⊙ Local Coverage: Metro Vancouver	

Key Considerations

- **Overlap with datasets on vulnerability.** Many variables (e.g., income, education) are used in both vulnerability and coping capacity assessments. For example, higher income may indicate both lower vulnerability and greater coping capacity. This overlap is particularly evident for intrinsic capacity variables. Thus, the results can be used to cross-validate the datasets used under the two analyses.
- **Complementary use of datasets listed.** Compared to the dimensions used to define vulnerability, datasets for coping capacity capture intrinsic, on-site, and community factors that provide different but complementary perspectives. Combining these data sources is recommended to build a more complete understanding of coping capacity.
- **Data granularity for on-site capacity.** While some indicators reflect on-site conditions (e.g., cooling availability), they are available at aggregated levels (e.g., community health service areas) rather than at the building level. As a result, they provide neighborhood-level insights but not building-specific conditions, which may require other data sources to assess.
- **Shared interpretation considerations.** For **composite index vs. individual indicator** and **score vs. quintile**, see the Vulnerability Fact Sheet for further discussion. The same considerations apply when interpreting datasets on coping capacity.

Initial Actions

- 1

Select the coping capacity dimension to assess
- 2

Use relevant datasets to identify areas with lower capacity
- 3

Integrate across the three coping capacity dimensions and refine findings with local and supplementary data as needed

About This Fact Sheet

This fact sheet brings together a selection of existing datasets that can be used to identify vulnerable populations within a community. Vulnerability indexes are constructed using selected variables based on a specific definition of vulnerability that the index is designed to measure, while vulnerability data sources provide individual indicators of specific characteristics. While definitions and dimensions vary across datasets, vulnerability here reflects characteristics that increase populations’ likelihood of being impacted by external stressors.

Key Questions Covered Datasets Can Help Answer

- Where are populations more likely to require financial support?
- Where are populations that may face language barriers to accessing programs and services?
- Where are populations more vulnerable to heat waves due to pre-existing health conditions?

Table 1
Coverage of Vulnerability Dimensions by Dataset

Existing Data Sources	 Economic (E.g., income, employment)	 Social and Demographic (E.g., Age, education)	 Cultural (E.g., Identity, language)	 Health (E.g., Chronic conditions, mental health)
Canadian Census of Population	✓	✓	✓	
British Columbia Survey on Population Experiences, Action, and Knowledge, Round 3	✓			✓
University of Laval Extreme Heat Vulnerability Map Sensitivity Index	✓	✓		
Canadian Index of Social Vulnerability	✓	✓	✓	
Canadian Index of Multiple Deprivation (CIMD) Residential Instability Index		✓		
CIMD Economic Dependence Index	✓			
CIMD Ethno-cultural Composition Index			✓	
CIMD Situational Index		✓		
Climate Insight Energy Poverty Index	✓			
Healthy Plan Map Vulnerable Population	✓	✓	✓	
Vancouver Coastal Health Community Health and Climate Change Heat and Smoke Maps Sensitivity Layer		✓		✓
Metro Vancouver Social Equity Study	✓	✓	✓	✓
CRD Regional Heat Map Demographic Vulnerability Index	✓	✓	✓	✓

Figure 1
Healthy Plan Map Vulnerable Population

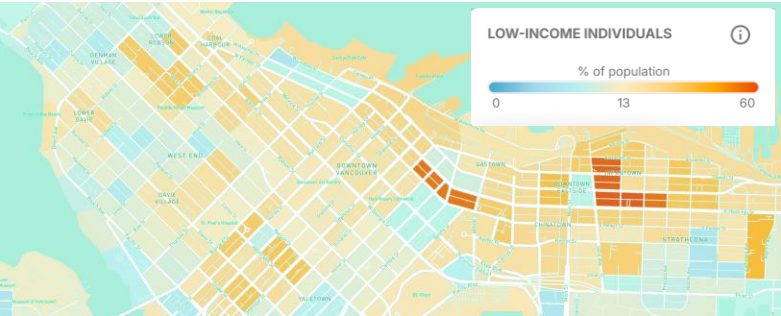


Figure 2
CRD Regional Heat Map – Demographic Vulnerability Index

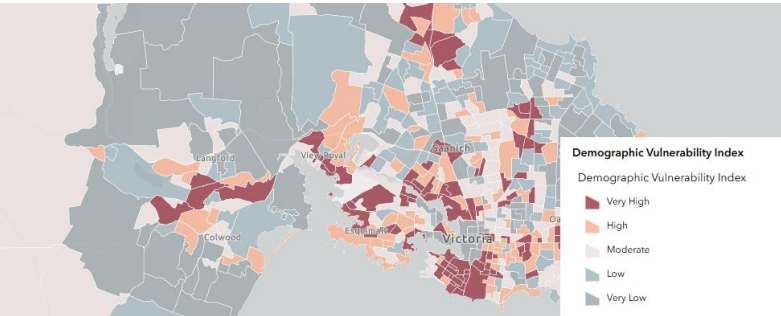


Table 2
Comparison of Vulnerability Indexes and Data Sources

Existing Datasets	How It Can Be Used	Data Type		Normalization Scale	
		Indicator: Individual variable	Composite Index: Multiple variables combined into a single score	Local: Reflects performance against local peers	National: Reflects performance against national peers
Canadian Census of Population	Enables analysis of the percentage of the population within a dissemination area (DA) that meets selected characteristics <i>e.g., what share of residents are aged 65 and older or use a non-English language at home?</i>	● Indicator		⦿ Local Coverage: Canada	
British Columbia Survey on Population Experiences, Action, and Knowledge, Round 3	Enables analysis of the percentage of the population within a community health service area reporting selected health status and health-related behaviors <i>e.g., what share of residents report fair or poor mental health?</i>	● Indicator		⦿ Local Coverage: BC	
University of Laval Extreme Heat Vulnerability Map Sensitivity Index	Identifies populations within a community at the DA level that are more vulnerable during heat waves <i>e.g., which areas have residents with higher sensitivity to extreme heat?</i>		⌘ Composite Index		⊕ National
Canadian Index of Social Vulnerability	Identifies populations within a community at the DA level that are more vulnerable to natural hazards, including wildfires, floods, earthquakes, and severe storms <i>e.g., which areas have residents who are more vulnerable to natural hazards and disasters?</i>		⌘ Composite Index		⊕ National
Canadian Index of Multiple Deprivation	Identifies populations within a community at the DA level that are more vulnerable to experiencing inequalities. <i>e.g., which areas seeing neighborhood populations that fluctuate over time, or which areas have residents who are more likely to experience economic dependency?</i>		⌘ Composite Index		⊕ National
Climate Insight Energy Poverty Index	Enables analysis of the percentage of households in a DA experiencing a high energy cost burden <i>e.g., what share of households spend 6% or more of their after-tax income on energy needs?</i>	● Indicator			⊕ National
Healthy Plan Map Vulnerable Population	Enables analysis of the percentage of the population within a DA that reflects selected vulnerability characteristics <i>e.g., what share of residents are low-income older adults?</i>	● Indicator		⦿ Local Coverage: Canada	
Vancouver Coastal Health Community Health and Climate Change Heat and Smoke Maps Sensitivity Layer	Identifies older adults and individuals with pre-existing health conditions who are more sensitive to higher temperatures/wildfire smoke. <i>e.g., where are these populations located?</i>		⌘ Composite Index	⦿ Local Coverage: Vancouver Coastal Health region and Fraser Health region	
Metro Vancouver Social Equity Study	Enables analysis of the percentage of the population within a DA with selected inequity indicators. <i>e.g., what share of residents are visible minorities?</i>	● Indicator		⦿ Local Coverage: Metro Vancouver	
CRD Regional Heat Map Demographic Vulnerability Index	Identifies areas at the DA level where residents have a range of health concerns and selected sociodemographic characteristics. <i>e.g., where are these populations located?</i>		⌘ Composite Index	⦿ Local Coverage: CRD	

Key Considerations

- **Census update cycle.** Census data underpins many vulnerability datasets and is updated every five years, with the 2026 Census underway. However, project-based indexes often remain static, limiting their ability to reflect changing community characteristics over time. So, it is worth checking the base year for these indexes and can consider using other available data sources to validate the findings.
- **Dissemination area level data granularity.** As many data inputs are derived from Census data, dissemination areas, comprising one or more adjacent dissemination blocks and typically representing populations of 400 to 700 people, are the most common unit of geographic analysis, which can serve as a useful starting point for identifying spatial patterns of vulnerability.
- **Composite index vs. Individual Indicator.** A composite index combines multiple variables into a single score. However, predefined variable selection and weighting may not fully reflect local priorities or context. Compared to a single indicator, a composite index is more effective for identifying priority areas, as vulnerability is a multidimensional concept. It can be used alongside indicator-based data and validated against selected priority indicators.
- **Score vs. quintile.** Results are typically presented as scores or quintiles. Quintiles reflect relative rankings and, when based on national scales, may limit local interpretation as they depend on the comparison group. While widely used in maps for ease of visualization and comparison, they are recommended to be validated against underlying scores.

Initial Actions

- 1

Start with an existing index map to locate hotspots
- 2

Compare across multiple datasets to identify consistent patterns
- 3

Review underlying variables and weighting methodology and consider local priorities
- 4

Validate with local and supplementary data as needed, and summarize findings

The Recipe Pack: Using Data Together

Using Available Datasets to Answer Planning Questions

The Recipe Pack was developed to help local governments move from understanding what datasets exist and what information individual datasets contain, to exploring how multiple datasets can be combined to support practical planning questions and generate actionable insights. Please note that the examples are intended to show how available datasets can be used together to support local planning and decision-making. They are not intended to represent a single prescribed approach or a complete analytical methodology.



Before using this Recipe Pack

The examples in this section should be **used together with the Dataset Fact Sheets**. The fact sheets provide important details on each dataset's strengths, limitations, access requirements, geographic scale, and likely level of processing effort.

Step 4 — combining datasets — can be especially tricky. Depending on the datasets used, this may involve cleaning, address matching, joining records, aligning geographies, spatial analysis, or other technical work. Some examples may be possible with spreadsheet analysis, while others may require support from internal GIS/data teams or an external data analytics or geospatial consultant.

What's Included?

The Recipe Pack includes three example applications focused on:



Multi-unit residential buildings (MURBs)



Single-family dwellings (SFDs)



Commercial buildings

Five Steps to Move from Data to Action

The examples follow a five-step analytical process that can be adapted to different local government needs.



- **Step 1.** Define the planning question or objective to explore.
- **Step 2.** Identify key indicators that help inform the planning goal.
- **Step 3.** Select available datasets that provide insights related to each indicator.
- **Step 4.** Combine datasets using approaches based on available internal capacity and resources.
- **Step 5.** Translate findings into action, such as identifying future study needs, supporting outreach and engagement, program design, and policy development.

Tips and Considerations

- **Use the examples as inspiration.** Local governments may need to adapt the datasets, scale of analysis, or level of effort based on local priorities and available capacity.
- **Review the relevant Dataset Fact Sheets before applying an example.** The fact sheets provide more detailed information on dataset applications, access steps, limitations, geographic scale, and likely processing effort.
- **Start with a clear planning question before selecting datasets.** This helps determine whether a light-touch scan, spreadsheet analysis, GIS overlay, or more detailed technical analysis is appropriate.
- **Compare datasets at a common geographic scale,** such as a neighbourhood, census geography, postal area, or municipality. Be cautious when datasets use different units of analysis.
- **Validate results** with local knowledge, internal records, engagement, or other datasets before using them to support decisions, outreach, or program design.
- For broader checks on data fit, scale, limitations, equity interpretation, access, and governance, refer to the **Data Use Compass**.



RECIPE PACK: MULTI-UNIT RESIDENTIAL BUILDINGS

Example Applications of Combining Available Datasets for Multi-Unit Residential Buildings

Step 1. Define Planning Objectives

Identify **priority MURBs** that would benefit from efficient electrification opportunities to advance equitable carbonization objectives.

Step 2. Identify Key Indicators

Example	Example Key Indicators
1	→ Presence of MURBs + Older building stock + Continued reliance on combustion-based systems
2	→ Presence of MURBs + Occupants with higher economic vulnerability
3	→ Presence of MURBs + Higher heat exposure + Limited cooling access

Step 3. Select Available Datasets

Data Category	Primary Dataset(s)	Alternative Dataset(s)
<i>Note: The primary and alternative datasets shown in this example are provided for illustrative purposes only. Depending on the planning objective and desired outputs, different datasets may be more appropriate. Refer to the individual dataset fact sheets and/or the dataset inventory for information on dataset characteristics and considerations when selecting datasets for a specific planning question.</i>		
Existing building stock	BC Assessment	Canadian Census of Population (occupied private dwellings by structural type and construction period)
Energy systems and performance	BC Hydro electric heating indicators	BC Assessment, TSBC permit data
Affordability	Climate Insight Energy Poverty Index	Healthy Plan Map Vulnerable Population
Heat exposure	University of Laval Extreme Heat Vulnerability Map Exposure Index	Healthy Plan Map Urban Climate
Cooling access	British Columbia Survey on Population Experiences, Action, and Knowledge (SPEAK), Round 3	Canadian Census of Population (Private households by housing suitability)

Step 4. Combine Datasets to Generate Insights

Dataset Combination	Potential Insight
Example 1: Existing building stock + Energy systems and performance	→ Identify MURBs or areas with higher concentrations of MURBs that may have higher future electrification needs and may require additional planning and technical support.
Example 2: Existing building stock + Affordability	→ Identify MURBs or areas with higher concentrations of MURBs where the capital and/or operating costs of electrification may present greater affordability challenges, and where additional financial assistance or support may be needed.
Example 3: Existing building stock + Heat exposure + Cooling access	→ Identify MURBs or areas with higher concentrations of MURBs that may face higher overheating risks during heat season and could benefit from cooling-focused retrofits.

Step 5. Translate Findings into Action

- Prioritize MURBs or areas with higher concentrations of MURBs for further assessment (e.g., targeted surveys to collect additional data)
- Inform targeted outreach and engagement with strata councils, strata organizations, and housing providers regarding available programs, incentives, and technical support that may better align with their needs.
 - Use the analysis to support evidence-based funding applications for targeted incentives, technical assistance programs, and implementation support for priority MURBs.



RECIPE PACK: SINGLE FAMILY DWELLINGS

Example Applications of Combining Available Datasets for Single Family Dwellings

Step 1. Define Planning Objectives

Identify **priority single family dwellings (SFDs)** to support an equitable and efficient electrification.

Step 2. Identify Key Indicators

Example	Example Key Indicators
1	→ Presence of SFDs + Older building stock + Continued reliance on combustion-based systems
2	→ Presence of SFDs + Language and cultural barriers
3	→ Presence of SFDs + Higher heat exposure + Greater health vulnerability

Step 3. Select Available Datasets

Data Category	Primary Dataset(s)	Alternative Dataset(s)
<i>Note: The primary and alternative datasets shown in this example are provided for illustrative purposes only. Depending on the planning objective and desired outputs, different datasets may be more appropriate. Refer to the individual dataset fact sheets and/or the dataset inventory for information on dataset characteristics and considerations when selecting datasets for a specific planning question.</i>		
Existing building stock	BC Assessment	Canadian Census of Population (occupied private dwellings by structural type and construction period)
Energy systems and performance	BC Hydro electric heating indicators	EnerGuide/ TSBC permit data
Cultural vulnerability	Healthy Plan Map Vulnerable Population	Canadian Census of Population (Knowledge of official languages, immigrant status)
Heat exposure	University of Laval Extreme Heat Vulnerability Map Exposure Index	Healthy Plan Map Urban Climate
Health vulnerability	VCH Community Health and Climate Change Heat Map Sensitivity Layer	British Columbia Survey on Population Experiences, Action, and Knowledge (SPEAK), Round 3

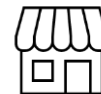
Step 4. Combine Datasets to Generate Insights

Dataset Combination	Potential Insight
Example 1: Existing building stock + Energy systems and performance	→ Identify SFDs or areas with higher concentrations of SFDs that may have higher future electrification needs and may require additional planning and technical support.
Example 2: Existing building stock + Cultural vulnerability	→ Identify SFDs or areas with higher concentrations of SFDs where language and cultural barriers may affect awareness of, access to, or participation in electrification transition and available supports.
Example 3: Existing building stock + Heat exposure + Health vulnerability	→ Identify SFDs or areas with higher concentrations of SFDs that may face higher overheating risks during summer months and where occupants may be more vulnerable to overheating due to pre-existing health conditions.

Step 5. Translate Findings into Action

- Prioritize SFDs or areas with higher concentrations of SFDs for further assessment (e.g., homeowner surveys to collect additional data and potential retrofit case study development with pre- and post-retrofit energy performance information).
- Inform targeted outreach and engagement strategies, such as multilingual communications and educational materials, in areas where language may be a barrier to participation.
- Prioritize cooling-focused retrofit initiatives and awareness-raising regarding the availability of public cooling facilities in identified priority areas.

RECIPE PACK: COMMERCIAL BUILDINGS



Example Applications of Combining Available Datasets for Commercial Buildings

Step 1. Define Planning Objectives

Identify **priority commercial buildings, building owners, and property managers** for electrification outreach and engagement.

Step 2. Identify Key Indicators

Example	Example Key Indicators
1	→ Presence of commercial buildings + Older commercial building stock
2	→ Presence of commercial buildings + less-resourced commercial buildings + Building owner or property managers info

Step 3. Select Available Datasets

Data Category	Primary Dataset(s)	Alternative Dataset(s)
<i>Note: The primary and alternative datasets shown in this example are provided for illustrative purposes only. Depending on the planning objective and desired outputs, different datasets may be more appropriate. Refer to the individual dataset fact sheets and/or the dataset inventory for information on dataset characteristics and considerations when selecting datasets for a specific planning question.</i>		
Existing building stock	BC Assessment	CoStar
Building ownership and management	CoStar	Business Improvement Areas (BIAs), and other industry associations
Commercial building classification	CoStar	<i>No comparable alternative identified</i>

Step 4. Combine Datasets to Generate Insights

Dataset Combination	Potential Insight
Example 1: Existing building stock	→ Identify older commercial buildings that may represent priority opportunities for targeted outreach and engagement.
Example 2: Commercial building classification + Building ownership and management	→ Identify building owners and property managers of potentially less-resourced buildings (E.g., CoStar Class B, or C buildings).

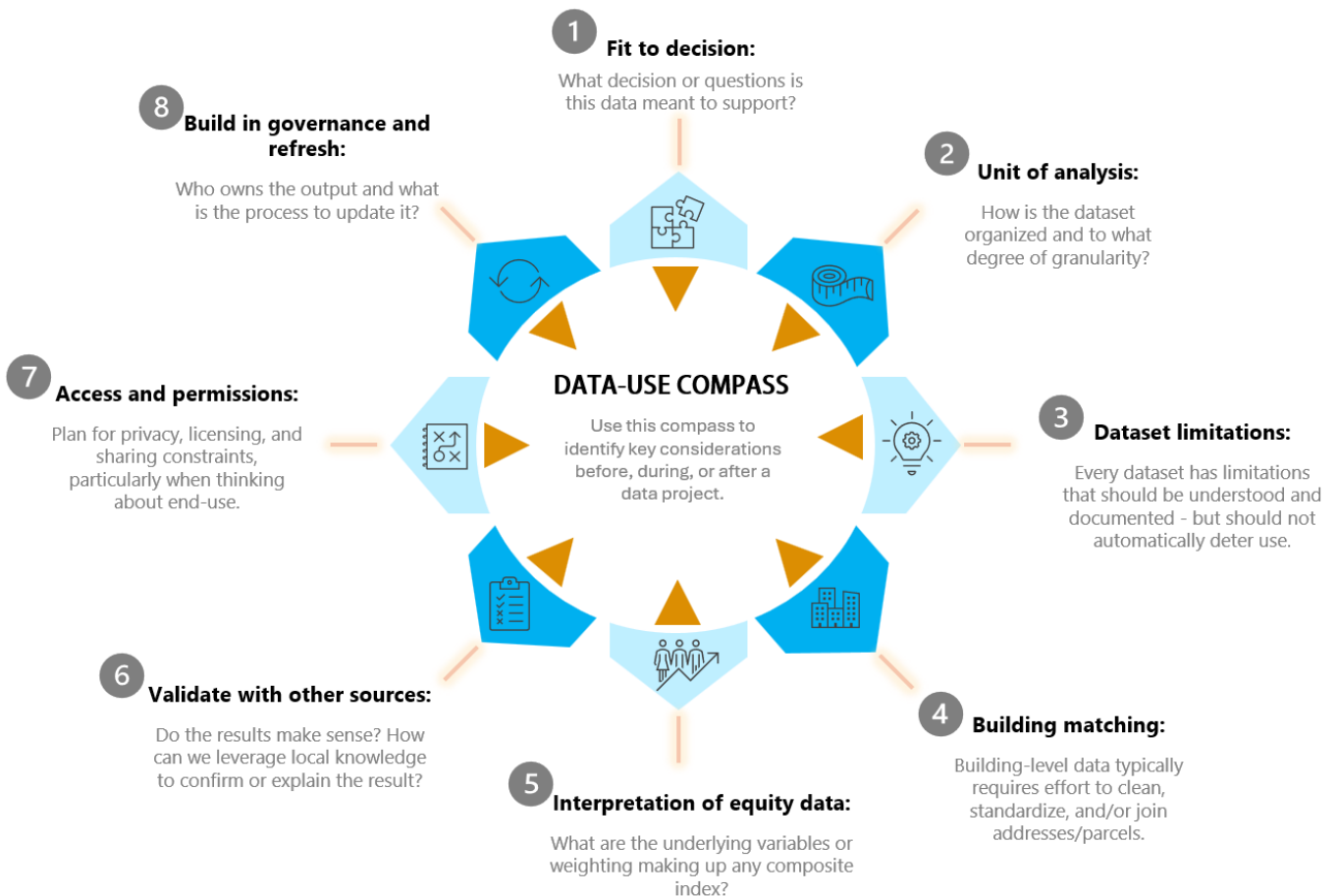
Step 5. Translate Findings into Action

- Prioritize commercial buildings, building owners, and property managers for targeted outreach and engagement, and explore opportunities to engage through industry associations.
- Inform the development of targeted technical support and resources tailored to different commercial building groups that may face similar barriers to electrification.
- Leverage sustainability leaders and early adopters to share lessons learned and develop case studies that support commercial building electrification.

From Data to Decisions

The Data-Use Compass

Use this Data-Use Compass to help guide your project from question to application. The considerations below bring together recurring considerations that apply across many of the datasets in this guide and highlight key checks for Local Governments to consider before, during, and after data analysis.



DATA USE COMPASS

1 Fit to decision

Start with the decision or question the data is meant to support.

Not every decision requires the same level of analysis. Ask:

- *Is the intent to identify patterns or make building-specific conclusions?*
- *What level of confidence is needed?*
- *What are the consequences if the data is wrong or incomplete?*

2 Unit of analysis

Check what each dataset represents. Data may be organized by building, parcel, property account, postal code, census tract, municipality, or region. This matters because datasets are often combined or compared, and errors can occur when the units do not align.

3 Dataset limitations

Every dataset has limitations. It may be incomplete, dated, difficult to interpret, designed for a different purpose, or missing key variables. These limitations should be documented as key considerations, not treated as automatic reasons to avoid using the data.

4 Building matching

Many building-level datasets are address-based. Before records can be mapped, joined, or compared, addresses may need to be cleaned, standardized, and matched to parcels or buildings. This behind-the-scenes work can be significant and can determine whether a dataset can be used reliably.

5 Equity interpretation

Equity, vulnerability, exposure, and coping capacity data should be interpreted carefully. Composite indexes may hide underlying variables or weighting, and area-level data should not be treated as household- or building-level truth. Check what variables are included, how they are weighted, and scale of normalization (E.g., local, provincial, or national).

6 Validation

Use other sources to check whether the results make sense. Validation can include comparing against another dataset, reviewing maps with internal staff, testing a sample, checking local knowledge, or following up with data owners or community partners.

7 Access and permissions

Confirm access, privacy, licensing, and sharing requirements before analysis begins. Some datasets are public, while others require a request, subscription, confidentiality agreement, privacy review, or data sharing agreement. These rules may affect who can use the data and whether outputs can be shared publicly.

8 Governance and refresh

If a dataset, map, model, or priority list will be used beyond a one-time exercise, assign an owner and update plan. Document sources, dates, processing steps, assumptions, limitations, and refresh schedules so future users can understand and update the work.

Other Useful Tools, Methods and Local Data

Not all useful information will come from a third-party dataset. In many cases, local governments already hold important data that can strengthen analysis, fill gaps, or help interpret broader datasets. Other useful inputs may come from internal records, local GIS layers, engagement, or emerging methods. These additional datasets, tools and methods are also captured in the Dataset Inventory (See Appendix A & B).

Local Data: Municipal permits

Permit records can provide useful insight into how buildings are changing over time. Relevant records may include building permits, development permits, or mechanical permits. In communities that manage gas and electrical permitting locally, these can contain a wealth of relevant data.

Local Data: Internal program, service, and GIS data

Local governments often already hold information that can strengthen building, energy, and resilience analysis. Useful data may sit across GIS, planning, permitting, inspections, housing, emergency management, sustainability, engineering, business licensing, parks, or community services. The first step is identifying what the municipality already has, who maintains it, and whether it can be connected to other records. Examples of this data can include: parcel layers, building footprints, tree canopy, impervious surface, flood or hazard areas, cooling centres, community facilities, rental building inventories, inspection records, or engagement results.



Permit data is useful, but often not analysis-ready

Internal municipal records may be stored across different systems throughout time, contain inconsistent fields and descriptions, or captured in PDFs, drawings, attachments, or free-text fields. Building system information may also be incomplete or difficult to interpret without reviewing supporting documents. These characteristics can make **extracting useful information a labour-intensive process.**

AI tools may help reduce the manual effort of reviewing PDFs, drawings, or free-text permit records. However, many **local governments may not be able to use public AI tools for municipal records** due to privacy, data retention, or operational policy constraints.

Method: Surveys & engagement

Surveys and engagement can help answer questions that administrative datasets often cannot. This is especially useful for understanding awareness, barriers, comfort, cooling access, tenant experience, landlord or owner perspectives, contractor capacity, or interest in future programs.

Examples include:

- resident heating and cooling surveys
- tenant comfort surveys
- landlord or property manager questionnaires
- contractor or trade engagement
- community partner interviews

Tools: Emerging approaches

Some data gaps will not be solved by traditional administrative datasets alone. In these cases, local governments may consider emerging data methods that estimate, infer, extract, or monitor building and neighbourhood conditions in new ways. These approaches may not always be appropriate for light-touch analysis, but could be valuable for pilots, technical studies, or more advanced data projects. Project interviews highlighted several emerging approaches that may become increasingly useful for local governments,

Examples include:

- service companies that offer building footprint, use, and 3D volume (floor area estimate) datasets
- satellite & thermal imagery
- land surface temperature mapping
- remote sensing for heat loss or rooftop equipment



Emergence of synthetic building data

Some service companies now offer building footprint, use, height, and 3D volume datasets developed from imagery, open data, spatial analysis, and modelling.

These datasets may help local governments **create or improve a building stock inventory without relying only on administrative records**, which can often be spread across assessment data, permits, parcel files, internal systems, and PDFs.

Because the data is modelled, it should be **treated as an estimate rather than a confirmed record**. That does not mean they are less useful than administrative data in every case; administrative sources also have gaps, inconsistencies, and interpretation challenges. The key is to understand the question being asked, the

The Data Landscape in British Columbia

Current challenges

Fragmented ownership and unclear access pathways

Relevant data may be held by local governments, provincial agencies, utilities, federal agencies, private vendors, health authorities, regional districts, non-profits, or academic institutions. Within a single municipality, data may also sit across multiple departments or platforms.

Unclear or slow access pathways

Some datasets are public and easy to download. Others require formal requests, subscriptions, privacy review, data sharing agreements, or custom extracts. Utility and Crown corporation data can be especially valuable, but access may take time and require clarification.

High processing effort

Many datasets were created for assessment, permitting, billing, reporting, or program administration rather than climate and energy analysis. Datasets such as BC Assessment, permits, utility records, and commercial property data may require cleaning, aggregation, interpretation, or validation before use.

Maintenance of derived data

Building inventories, priority maps, modelled layers, and other derived outputs need documentation and refresh. Without a clear owner, update schedule, and record of assumptions, these products can quickly become outdated or difficult to reuse.

Capacity constraints

Many communities have limited GIS, coding, or modelling capacity. Practical starting points, shared methods, and clear guidance can help staff move forward without needing to build a complex model from the outset.

Data landscape in transition

More data is becoming available, but not always ready to use

Local governments have access to more building, energy, climate, and equity-related data than ever before. However, availability does not always mean the data is easy to access, interpret, or apply. Many datasets still require cleaning, agreements, technical support, or careful review before they can inform decisions.

Pre-processed indicators and maps

Many exposure, vulnerability, and coping capacity datasets are already available as maps, dashboards, index scores, or spatial layers. These resources can help local governments begin analysis without creating their own composite indicators.

Shared tools are beginning to reduce the lift

New portals, dashboards, mapping products, and pre-processed indicators are helping local governments start from existing information rather than building every dataset from scratch (E.g. BC Hydro data portal and EnerGuide/Hot2000 data).

Methods are expanding

Remote sensing, synthetic building data, address matching tools, and AI-supported extraction are creating new ways to fill gaps where administrative data is incomplete or difficult to use. These methods can reduce manual effort but still require clear assumptions and validation.

Growing interest in practical data use

There is growing interest in using data to support climate, energy, and resilience decisions, but many communities still need better capacity, clearer pathways, and more streamlined tools. Not every question requires a major modelling exercise. Simple, transparent screening methods can be valuable when they are matched to the decision, supported by local knowledge, and used where the level of confidence is appropriate.

Opportunities for improvement

Key opportunities to strengthen the data landscape include:

- **Shared processing methods for commonly used datasets.**
- **More standardized data-sharing and privacy processes for major datasets.**
- **Clearer pathways for accessing utility and energy data.**
- **More consistent municipal permit data structures.**
- **Continued development of pre-processed, decision-ready tools.**



Solve it once, share it often

Many **local governments face the same data challenges**: cleaning assessment records, extracting permit information, matching addresses, and combining datasets across systems. When each community works through the same onerous steps on its own, time and resources are spent recreating work that could be shared. **Common methods, templates, and pre-processed datasets can reduce duplication** and help communities spend less time preparing data and more time using it.

Notes on the Guide

This guide reflects the datasets, access pathways, tools, and project understanding available at the time of development. The data landscape is changing quickly. New portals, updated census products, utility data-sharing processes, local datasets, and mapping tools may become available over time.

Before beginning a project, local governments should confirm current access requirements, data fields, licensing conditions, update schedules, and any privacy or sharing constraints with the relevant data owner.

This guide is intended to be a practical starting point and is not a static inventory. Future updates could add new datasets, revise access pathways, incorporate user feedback, update case examples, and reflect changes in data-sharing tools or local government needs.

Appendix A: Dataset Inventory – Information on Buildings

Existing Datasets	Information Covered by the Dataset				Description	Key Considerations	Data Owner	Data Granularity	Coverage Period and/or Cadence*	Geographic Coverage	Prevalence of Use	Ease of Access	Ease of Processing	Link
	Building Identifiers	Building Attributes	Energy System	Energy Performance										
BC Assessment	✓	✓	✗	✗	A province wide property assessment dataset that provides standardized property valuation and core building characteristics for taxable properties in BC. The dataset has been used to establish a baseline building inventory and characterize the local building stock, as it includes information such as address, building type, year built, and gross floor area. BC Assessment provides custom reports upon request of local governments.	- Property records are based on tax lots, which may not align with actual building parcels and footprints, and therefore require data processing and validation with secondary data sources. - While the BC Assessment dataset may include information on building systems and fuel types, the availability and consistency of these data fields are insufficient to generate meaningful insights.	BC Assessment	Tax Lot	Updated annually	BC	1	2	3	https://www.bcasessment.ca/
Technical Safety BC Permit Data	✓	✗	✓	✗	Technical Safety BC receives permit applications to ensure the safe installation and operation of regulated technical systems, including electrical equipment, natural gas and propane systems, boilers, pressure vessels, and refrigeration systems. These permitting activities form a dataset that captures information on permit type, installation, and alteration activities, enabling tracking of changes in building systems over time.	- Only covers a subset of buildings permitted to use technical systems within the community. - Requires additional data cleaning and processing for unstructured, text-based permit descriptions.	Technical Safety BC	Building level	Continuously updated	BC	1	2	3	https://www.technicalsafetync.ca
Municipal Permit	✓	✓	✓	✓	Municipal permit data is a significant administrative data source generated through local government permitting processes for new construction, renovations, alterations, demolitions, and, in some cases, electrical, plumbing, or mechanical work. At its best, it can provide detailed, address-level information on when and where building activity is occurring, and may offer insight into retrofit activity, equipment replacement, or other changes to building systems based on permit type and project description. For local governments, permit data can be a valuable source for understanding building change over time and for identifying candidate buildings or areas for more targeted analysis. However, the level of detail, structure, and accessibility of permit data varies significantly across municipalities and over time.	- Not a standardized dataset; formats, fields, and level of detail vary across municipalities and over time; records may be incomplete or inconsistently coded. Data may also be stored across legacy platforms or non-digitized formats. - Permit data can support very detailed analysis, but extracting useful insights on retrofit activity or building systems is often onerous and labour-intensive, particularly at scale. - Permit data may provide energy-performance information in jurisdictions that have adopted the Energy Step Code - AI-assisted extraction may help, but use of publicly available tools may be constrained by municipal data governance policies; secure, internally managed or public-sector-specific tools may be needed to support this work.	Local Governments	Building level	Continuously updated	BC	2	1	3	n/a
Green Sheet	✓	✓	✓*	✗	Green Sheet is a paid, private construction-market intelligence database focused on Metro Vancouver and the Thompson Okanagan. It aggregates building and demolition permit information, tracks projects across stages such as rezoning, development permit, building permit, pre-bid, tender, construction start, and completion, and provides contact information for project stakeholders. Designed primarily for construction-industry users, it supports tracking of renovation and new construction activity and identification of potential project opportunities. While not intended for public-sector policy analysis, it may still be useful as a supplementary source for identifying where renovation and replacement activity is occurring. Greensheet records include address-level entries with project type, applicant and/or contractor information, permit value, and issue date, and span a range of residential and commercial project types.	- Best suited as an indicator of construction and permitted retrofit activity. - Geography limited to Green Sheet’s service zones in Metro Vancouver and the Thompson Okanagan - The building-permit product is described as covering issued permits over \$20,000; smaller projects or unpermitted work is not represented. - For equity or decarbonization analysis, Green Sheet will likely work best when joined with other core building stock datasets, since it does not provide direct information on household characteristics, emissions, or energy use. *Energy system information captured is incomplete/inconsistent.	Green Sheet Construction Data Ltd.	Building-level	Continuously updated	Metro Vancouver & Thompson Okanagan	2	2	1	https://greensheet.ca/
CoStar	✓	✓	✗	✗	CoStar is a commercial real estate database that provides building-level information, including identifiers (e.g., address) and attributes such as building type, year built, and floor area. It also includes additional information such as renovation history, ownership, and property management. The dataset provides CoStar’s proprietary 1–5-star building rating, which reflects a property’s physical attributes independent of its location. This rating can serve as a consistent indicator to help identify buildings that need the most support. While the criteria vary by building type, ratings are generally based on an evaluation of architectural design, structural and systems specifications, amenities, site features, and third-party building certifications.	- Data coverage is focused on commercial and larger multi-family buildings - The CoStar rating provides a relative score of a building’s physical attributes. However, the detailed underlying inputs and breakdown results of each evaluation area are not disclosed.	CoStar	Building-level	Continuously updated	Canada (strongest coverage in major urban markets)	2	3	2	https://www.costar.com
Building Benchmark BC (BBBC) Data	✓	✓	✗	✓	Building Benchmark BC is a voluntary building energy benchmarking and disclosure program launched in 2020 to support improved building performance in British Columbia. It is a collaborative initiative led by local and regional governments and partners, and is managed by OPEN Green Building Society with support from OPEN Technologies. Participating building owners submit building performance data, largely through ENERGY STAR Portfolio Manager and utility integrations, to benchmark energy use and emissions and, if they choose, publicly disclose results. The program has grown into a province-wide dataset spanning many building types. The dataset provides property information, including owner, building type, address, gross floor area, and year built, along with performance metrics such as GHGI, EUI, and ENERGY STAR scores. As a result, it enables comparison of building performance over time and across similar building types.	- Best understood as a voluntary benchmarking dataset; participation is self-selected, public disclosure is participant-controlled, and coverage may not be representative across all geographies, sectors, or building types. - Strongest for whole-building energy and emissions benchmarking; less suited to analysis requiring detailed tenant, household, or socio-demographic information. - The dataset is primarily made up of larger Part 3 commercial buildings, with more limited representation of smaller commercial and residential buildings types. - Participation varies from year to year, which can affect cross-year comparisons. - Some records may be accompanied by case study information that helps explain performance changes, but this is not a standard field across the dataset.	BBBC / OPEN Green Building Society / OPEN Technologies	Building-level	2019-current	BC	2	1	1	https://grid.opentech.eco/orgs/buildingbenchmarkbc/viz

Existing Datasets	Information Covered by the Dataset				Description	Key Considerations	Data Owner	Data Granularity	Coverage Period and/or Cadence*	Geographic Coverage	Prevalence of Use	Ease of Access	Ease of Processing	Link
	Building Identifiers	Building Attributes	Energy System	Energy Performance										
BC Hydro data <i>Descriptions of the individual BC Hydro datasets are provided below.</i>	✕	✕	✓	✓	BC Hydro has numerous datasets that are useful to local governments to inform energy efficiency and decarbonization policy and program development. The following list of datasets represents some of the data that has been requested by local governments in the past and information that is low risk to share. Some broad categories of Hydro data include Power Smart program participation data, electricity system reliability information, participation in optional rate programs, etc. BC Hydro is currently developing a Local Government Data Sharing Portal to improve access to these datasets for Community Energy Manager.	-Data is currently accessed through requests and sometimes data sharing agreements, which may require extended timelines and coordination between BC Hydro and local governments. In general, data is more readily available for sharing when aggregated to a municipal or FSA level. Sharing data at a more granular level is more difficult due to privacy concerns. -The development of the Data Sharing Portal is ongoing, with data availability and granularity as well as timeline still to be confirmed -Municipalities with a Community Energy Manager will be able to easily access aggregated datasets in the Data Sharing Portal. Municipalities without one can make requests directly to markettransformation@bchydro.com	BC Hydro	Varies by dataset with majority datasets are more likely to be aggregated at postal code and municipal level	Varies by dataset (generally reflecting recent years, typically within the past 1 to 2 years)	BC	1	2	2	Available upon request
Community Energy & Emissions Data					The Community Energy and Emissions Inventory (CEEI) provides community-level greenhouse gas (GHG) emissions and energy consumption estimates for communities across B.C. BC Hydro provides electricity use by municipality to the province in order to create the inventory.	-BC Hydro is not able to provide updates to the electricity data usage by municipality outside of provincial government update cycles to the CEEI.	BC Hydro	Municipal level	In response to provincial updates	BC				
Time of day rate					Hydro's Time-of-Day (ToD) pricing is an optional rate structure for residential customers who have some flexibility in when they use electricity. Participants who opt into ToD receive a 5 cents per Kh discount on all electricity used between 11pm and 7am, and a 5cents per Kh surcharge to all electricity used in the on-peak period between 4-9pm. Data is available on total participation in ToD pricing per municipality, and as a % of total eligible accounts.	-The greatest potential savings are for those customers who own EVs. - Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation in 2024)	BC				
Self generation (net metering)					The Self-Generation rate (formerly known as Net Metering) allows BC Hydro customers who install solar panels to reduce their electricity bills based on the amount of electricity they generate. Participants can use their solar panels to power their home and/or business, drawing from the grid when necessary. When the solar panels are producing more power than can be used on-site, participants can send the excess power back into the grid, earning a credit towards their future electricity bills. These credits are paid out in cash if unused by the end of the fiscal year. Data available includes; number of participants participating in self generation broken down by municipality. This includes overall installed capacity (kW), and type of generation (solar, hydro wind, hybrid) by year since 2003. It also includes average residential system size by year.	-Participation numbers in self generation are cumulative and reflect the total installed solar capacity in a given municipality for systems under 100kW in size (nameplate capacity). The previous net metering program (2003-2026) had an installed (or nameplate capacity) limit of 100kW. Under the new self generation program customers would be able to build systems large enough to meet their own energy needs, with a 100 kW per-phase limit applied to net power injected into the grid rather than to the generating facility's nameplate capacity. -Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation in 2003)	BC				
Electricity System Reliability					This data speaks to the reliability of the supply of electricity at a municipal level. This data is presented by the following two indices: SAIFI: a metric that measures the number of sustained interruptions (longer than one minute) an average BC Hydro distribution customer in a community experienced in a year. CAIDI: a measurement that reflects the average interruption, in hours, per interrupted BC Hydro distribution customer in a community in a year. Data has been prepared for CEM communities for 2023-2025.	-Hydro is currently developing a community reliability dashboard that will present reliability performance for each local government, along with comparisons to peer communities with similar characteristics. As part of our ongoing data quality improvements, the metrics shared may be subject to change as we continue deeper data validation and refinement. -Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation)	BC				
Electric Heating Indicator					The electric heating indicator is based on customer-reported information when the account is setup and may be updated using a model that evaluates how daily electricity consumption responds to outdoor temperature, as well as seasonal usage patterns such as the load difference between winter and summer.	-This is a predictive dataset, using load-based classification, and should be interpreted as indicative rather than definitive. FSA's with below 5 units have been omitted due to privacy.	BC Hydro	Account level, aggregated to FSA	2025 (Updated annually (1st January))	BC				
Home Renovation Rebate					The Home Renovation Rebate Program is intended for homes that are primarily heated by electricity (electric baseboards, electric furnaces) and have high bills from space heating. Incentives are provided for different retrofit measures including: Windows and doors, insulation, heat pumps, and heat pump water heaters. Data available includes; participants per municipality per year. It also includes information on the exact retrofit measures (e.g. Insulation, Thermostat, Windows and Doors, Draft proofing, Ventilation Fan, Electric Service Panel).	-Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation)	BC				
Energy Conservation Assistance Program (ECAP)					ECAP helps income-qualified households lower energy bills by providing a free home visit, personalized energy-saving advice, and professional installation of eligible efficiency upgrades such as insulation, draft proofing, or in some cases a heat pump. Data available includes; participation number by year and municipality. Also include measure type, dwelling types and rented/owned.	-Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation)	BC				

Existing Datasets	Information Covered by the Dataset				Description	Key Considerations	Data Owner	Data Granularity	Coverage Period and/or Cadence*	Geographic Coverage	Prevalence of Use	Ease of Access	Ease of Processing	Link
	Building Identifiers	Building Attributes	Energy System	Energy Performance										
<i>EV Incentives</i>					This data covers all Hydro and Provincial rebate programs related to EV charging. For single family, this includes the number of incentives for individual home chargers and energy management devices. For MURBs, this includes how many buildings participated in the EV Ready Plan incentive, how many buildings participated in the EV-ready Infrastructure incentive (including number of EV ready stalls and energy management devices), and how many buildings participated in the MURB charger incentive. For commercial buildings, this includes how many participated in the workplace charging incentive. The MURB EV program helps apartment, condo, and townhome buildings prepare for electric vehicle charging by offering rebates for EV-ready planning, electrical infrastructure upgrades, and charger installation. Eligible multi-unit residential buildings can receive funding to cover part of the cost of making parking stalls ready for future chargers, reducing the upfront cost for strata corporations, owners, and residents who want to support EV adoption.	-All of these incentives are funded by the Government of B.C.'s Ministry of Energy and Climate solutions and administered by BC Hydro, with the exception of the incentives for energy management devices which BC Hydro funds. ¹ -Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation)	BC				
<i>Condo and Apartment Rebate Program (E.g. In-Suite Program)</i>					The Condo and Apartment Rebate Program provides rebates for individual condo owners and rental building owners to upgrade space and water heating equipment in their unit that has existing electric equipment. Data available includes: participation per municipality per year, retrofit measure (Ductless mini-split heat pump, Ductless multi-split heat pump, Heat pump water heater).	-Only in-suite upgrades in buildings with electrical heating or hot water are eligible for this BC Hydro program. The CleanBC Better Homes Energy Savings Program (ESP) Condo and Apartment Rebate also offers rebates for heat pumps and heat pump water heaters for condo and apartment customers. Data from the ESP is not included here. BC Hydro's Condo and Apartment Rebate Program is available to a broad range of electrically heated customers living in apartments and condos, regardless of income. In contrast, ESP is designed for income-qualified customers. ¹ -Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation in 2025)	BC				
<i>Multi-Unit Residential Building Retrofit Program</i>					The MURB program provides incentives to offset the cost of energy-efficient equipment retrofits in electrically heated buildings with centralized heating and hot water systems. Data available includes: participation per municipality per year, funding type (Opportunity Assessment, Custom Incentive, Rebate, or Feasibility Study), retrofit measure (Heat pumps - single-head, Heat pumps - multi-split, Heat pump - central system, In-suite heat pump water heaters, Central heat pump water heaters, Windows (high efficiency), Ventilation make-up air unit, Variable-speed drives, Parkade carbon monoxide (CO) controls, LED lighting (common areas), Lighting controls (common areas). Please note the sharing of more granular data will depend on participation levels being above 5 applicants for privacy reasons.	-The Multi-Unit Residential Building Retrofit Program, offered in partnership by BC Hydro and the Government of B.C., has been providing rebates and support since September 2024. This data only represents the BC Hydro funded incentives for electrically heated buildings and does not include fuel switching incentives. To participate in this program the retrofit measures must cover a substantial portion of the building suites. This offer is NOT for individual, in-suite upgrades which are covered by the Condo and Apartment Rebate Program. ¹ -Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation in 2024)	BC				
<i>Peak Saver</i>					The Peak Saver program rewards residential customers for reducing or shifting electricity use during short periods of high demand. Customers can either manually cut back during peak events or enroll eligible smart devices to adjust automatically, earning bill credits while helping reduce strain on the provincial electricity grid. Data available includes; participation by municipality by year, whether it is behavioral or through connected devices, and the type of smart device.	-Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation in 2022)	BC				
<i>Commercial Load Displacement</i>					The Load Displacement program provides custom financial incentives to business customers (industrial and large commercial) who install technologies that shift electricity use away from the grid by replacing electric loads with alternative energy sources such as solar, wind, micro hydro and waste heat recovery. Data available includes: number of projects per year per municipality, and whether it is a transmission or distribution customer.	-The load displacement program provides incentives for all generation above 100 kw with no upper limit (unlike net metering). The power generated through this program must be used on site and not fed back into the grid. -As the load displacement program is for large customers and the project and incentives are more custom, there may be more restrictions in Hydro being able to share aggregated (non-identifiable) data. ¹-Available data type: Aggregated participation	BC Hydro	Municipal level	2025 (Updated annually and available for all previous years of the programs operation)	BC				

Existing Datasets	Information Covered by the Dataset				Description	Key Considerations	Data Owner	Data Granularity	Coverage Period and/or Cadence*	Geographic Coverage	Prevalence of Use	Ease of Access	Ease of Processing	Link
	Building Identifiers	Building Attributes	Energy System	Energy Performance										
BC Hydro Residential End Use Survey					BC Hydro has undertaken this housing stock and end-use saturation survey with its residential customers every 2-3 years for the past 23 years. The study data helps facilitate and inform the corporation's demand side management strategy, including planning functions around its load forecast, business case and program development, rate design and codes & standards development. The specific objectives of this study are to collect – and track over time – detailed information about the characteristics and features of customers' homes, as well as the saturation of electrical and non-electrical end-uses. A total of 9,248 surveys were tabulated for inclusion in the completed sample, representing a response rate of 33.5 percent. At the data processing stage, the data was statistically weighted to align the collected sample to the true composition and distribution of the population. The estimated maximum margin of error for the overall sample of 9,248 surveys is ± 1.0 percent at the 95 percent level of confidence. Survey design, sampling, analysis and reporting were conducted by BC Hydro's Evaluation team. All printing, mailing, survey hosting and data entry services were facilitated by the Mustel Group in Vancouver and their sub-contractor Dufferin Research in Ottawa.	-Data from customer responses is available for CEM communities in the following categories: customer attitudes, energy consumption, energy habits and behaviours, EV, heat pumps, space cooling, space heating and water heating. A self-administered, print survey – with option to complete online – was administered in January through March of 2023 among a random sample of 28,000 BC Hydro residential customers. Customer households were reached by up to three separate print mailings sent via Canada Post. -Aggregated survey data	BC Hydro	Municipal level	Updated every 3 years (most recent year 2023)	BC				
EnerGuide	✓	✓	✓	✓	EnerGuide is the Government of Canada's official energy rating and labelling system for homes, appliances, heating equipment, air conditioners, and vehicles. In the housing context, the EnerGuide Rating System provides a standardized assessment of the energy performance of new and existing homes. Home evaluations are carried out by qualified energy advisors, who assess the dwelling and use energy-modelling software to estimate energy use and produce an EnerGuide label and report. For building policy work, EnerGuide can provide a useful bottom-up source of information on home energy performance, retrofits + retrofit opportunities, and participation in incentive programs across the single-family and low-rise residential building stock.	- Limited building stock coverage as EnerGuide evaluations are primarily conducted for Part 9 buildings, and availability depends on homeowner participation. - Limited public accessibility; the full dataset is not openly available due to privacy and program constraints. - EnerGuide results are based on a standardized evaluation and modelling process, which supports comparability, but do not reflect metered household energy consumption or realized post-retrofit outcomes. - Primarily focused on the residential sector, with limited applicability to commercial or institutional buildings.	Natural Resources Canada	Building-level	~2017-current	Canada	2	2	2	EnerGuide Rating System Open Data - Open Government Portal
Community Energy and Emissions Inventory (CEEI)	✗	✗	✗	✗	The CEEI is a province-wide dataset that provides estimates of energy consumption and greenhouse gas emissions from buildings, on-road transportation, and solid waste at the community level. It currently includes data for 2007 through to 2022 (bar 2008, 2009 and 2011 in some sectors). For buildings, the data is provided by utilities and includes energy use from electricity, natural gas, renewable natural gas, and piped propane for residential and CSMI buildings. It also includes estimated energy use from wood, heating oil, and delivered propane in residential buildings.	- As the CEEI is reported at the community level and includes limited breakdown by building type, it is less suitable for building level analysis, but it can serve as a useful validation or benchmarking source at the community scale. - The dataset is released with a time lag, with the most recent year currently available being 2022, which may limit its ability to reflect recent changes or track progress.	Province of British Columbia	Municipal level	2007-2022	BC	1	1	2	https://www2.gov.bc.ca/gov/content/environment/climate-change/data/ceei
Ecopia	✓	✓	✗	✗	Ecopia is a paid service, AI-derived geospatial data source that converts high-resolution aerial or satellite imagery into vector map data, including building footprints, land cover, and, in some products, building height attributes and 3D representations. Ecopia's products are designed to create consistent, large-area mapping layers that can support urban analysis, land-use mapping, change detection, and digital twin applications. For local governments, Ecopia can be useful as a scalable source of building footprint and built-form information, particularly where administrative building data is incomplete, inconsistent, or unavailable.	- Ecopia is a synthetic, model-derived dataset generated from imagery rather than direct administrative records; while useful at scale, outputs may contain classification or geometry errors and should be validated for high-stakes or parcel-level applications. - Strongest for physical built-form and land cover analysis. - Building type or land-use inferences may rely on modelling and linked context rather than confirmed use from administrative records, so care is needed when using the data for regulatory, compliance, or program-targeting purposes. - Access and reuse conditions may vary by product; some Ecopia data is licensed, although certain datasets have also been released through public channels.	Ecopia AI	Building-level	Varies by imagery inventory	Broad/Scalable	2	3	3	https://www.ecopiatech.com/

Existing Datasets	Information Covered by the Dataset				Description	Key Considerations	Data Owner	Data Granularity	Coverage Period and/or Cadence*	Geographic Coverage	Prevalence of Use	Ease of Access	Ease of Processing	Link
	Building Identifiers	Building Attributes	Energy System	Energy Performance										
MyHEAT Rooftop Solar Potential Map	✓	✗	✓	✗	The tool maps and provides an estimate of rooftop solar potential using high-resolution 3D modelling that accounts for rooftop elevation, orientation, size, and shading. The embedded calculator also provides cost and savings estimates, including payback period, for the recommended solar install size to support decision-making.	- The tool provides building-level estimates of solar generation and potential savings, which can support the identification of buildings or neighbourhoods with high solar potential and inform targeted incentive programs outreach. - Results are modelled and based on assumptions, and may differ from actual performance.	MyHEAT	Building-level	No defined base year	Project-based	2	3	1	https://myheat.ca/solar-potential-maps/
OpenStreetMap	✓	✓	✗	✗	Building-level data are created and updated by contributors, providing information on location, building type, and geometry (footprints). The dataset is used as a base layer for mapping, spatial analysis, and integration with other datasets.	- Data quality and completeness vary by update quality and frequency, thus the dataset requires validation and integration with other data sources to ensure reliability.	OpenStreetMap contributors (open-source community)	Building-level	Continuously updated	Global	1	1	2	https://www.openstreetmap.org/
Canadian Census of Population	✗	✓	✗	✗	The Census of Population in Canada is conducted every five years by Statistics Canada to collect information on population and housing through short-form questionnaires (core demographic data), which provide the most complete population-level coverage, and long-form questionnaires (detailed socio-economic and housing information), from which population-level estimates are generated. The most recent available data is from 2021, and the 2026 Census is currently underway. Household characteristics from Census include tenure (home ownership), housing suitability (whether a private household is living in suitable accommodations), period of construction, and condition of dwelling (e.g., major repairs needed).	- As census data is collected through self-enumeration, data availability and accuracy depend on response rates and the reliability of self-reported information. - Census Mapper, a web application, allows users to create interactive, custom maps using 2021 Census data	Statistics Canada	Census tracts, dissemination areas (DA), and dissemination blocks, with granularity varying by community and variable	2021	Canada	1	1	2	https://www12.statcan.gc.ca/census-recensement/index-eng
BC Centre for Disease Control, SPEAK Round 3	✗	✗	✓	✗	The dataset is based on the British Columbia Survey on Population Experiences, Action, and Knowledge (SPEAK), a web-based population health survey. Data for Round 3 were collected between April 24 and July 31, 2023, with approximately 90,000 residents across British Columbia participating. The survey includes 108 questions covering a range of topics. The climate adaptation category includes two relevant questions: whether the home provides a cool space and whether an air conditioner or heat pump is installed. Responses to these questions are reported as a percentage of respondents.	- The data represent a specific point in time (2023) and can not capture changing conditions. - Data were collected directly from participants through a self-administered online questionnaire. As a result, the dataset may be subject to selection bias and response bias.	BC Centre for Disease	Community Health Service Areas	2023	BC	2	1	1	https://www.bccdc.ca/health-professionals/data-reports/bc-covid-19-speak-dashboard

Existing Datasets	Information Covered by the Dataset				Description	Key Considerations	Data Owner	Data Granularity	Coverage Period and/or Cadence*	Geographic Coverage	Prevalence of Use	Ease of Access	Ease of Processing	Link
	Building Identifiers	Building Attributes	Energy System	Energy Performance										
CRD Regional Heat Map - Building Vulnerability Index	✕	✓	✕	✕	The dataset provides a Building Vulnerability Index, derived from factors impacting indoor thermal conditions, including building age, dwelling type, roof albedo (as a proxy for thermal performance reflecting solar radiation absorption and emission), building height, solar insolation, and heat pump presence. The index is presented on a scale from 1 (very low) to 5 (very high).	- Assesses building vulnerability through a localized analysis at the building footprint scale, using factors that influence indoor temperatures to provide an additional lens for evaluating building vulnerability - The dataset does not provide information on how individual variables are weighted and contribute to the final index values	Capital Regional District	Dissemination areas (~ 400 to 700 people)	2021	Capital Regional District	2	1	1	https://heat.preparevourself.ca/pages/regional-heat-map

***Note:** Dataset years are documented for reference. Please note that building stock characteristics and socioeconomic trends generally evolve gradually over longer timeframes, allowing older datasets to continue providing valuable insights.

Evaluation Criteria	Prevalence of Use	Ease of Access	Ease of Processing
1	Widely used across jurisdictions and commonly referenced in practice	Publicly available	User-friendly and readily usable
2	Used in certain contexts but not widely adopted	Accessible through data requests	Requires minor cleaning or processing
3	Niche applications or emerging datasets	Requires data sharing agreements or membership	Significant processing required, often requiring external expertise

Appendix B: Dataset Inventory – Indexes and Data Sources on Occupants and Neighbourhoods

Existing Datasets	Information Covered by the Dataset			Description	Things to Consider	Data Owner	Data Granularity	Base Year*	Geographic Coverage	Prevalence of Use	Ease of Access	Ease of Processing	Link
	Exposure	Vulnerability	Coping Capacity										
Canadian Census of Population				The Census of Population in Canada is conducted every five years by Statistics Canada to collect information on population and housing through short-form questionnaires (core demographic data), which provide the most complete population-level coverage, and long-form questionnaires (detailed socio-economic and housing information), from which population-level estimates are generated. The most recent available data is from 2021, and the 2026 Census is currently underway.	- As census data is collected through self-enumeration, data availability and accuracy depend on response rates and the reliability of self-reported information. - Some important topics (e.g., health, wealth, or perceived well-being) are not captured and require complementary datasets. - Census Mapper, a web application, allows users to create interactive, custom maps using 2021 Census data across various census aggregation levels	Statistics Canada	Census tracts, dissemination areas (DA), and dissemination blocks, with granularity varying by community and variable	2021	Canada	1	1	2	https://www12.statcan.gc.ca/census-recensement/index-eng
				The dataset is based on the British Columbia Survey on Population Experiences, Action, and Knowledge (SPEAK), a web based population health survey. Data for Round 3 were collected between April 24 and July 31, 2023, with approximately 90,000 BC residents participating. The survey includes 108 questions covering a range of topics, including general and mental health status, behavioral and risk factors, access to medical services, socio demographic characteristics, and the availability of cool spaces and AC or heat pumps.	- The data represent a specific point in time (2023) and can not capture changing conditions. - Data were collected directly from participants through a self-administered online questionnaire. As a result, the dataset may be subject to selection bias and response bias.	BC Centre for Disease	Community Health Service Areas	2023	BC	2	1	1	
ClimateData.ca				ClimateData.ca provides access to historical and projected climate data at the Census Subdivision level. Data is available as both annual values and 30-year averages, supporting comparison and identification of long-term climate trends. Climate records are available from 1951, with projections extending to 2100 under three emissions scenarios (RCP 2.6, 4.5, and 8.5), ranging from lower to higher emissions scenarios. It currently includes 39 variables across categories such as cold, freeze and thaw, heat, temperature, and wet and dry conditions. Key variables related to extreme heat include the hottest day, mean temperature, days above Tmax, cooling degree days, and tropical nights (days with Tmin above a defined threshold).	- Data is provided at the grid cells/Census subdivision levels, which may be less useful for site-specific or neighbourhood-level analysis. - The dataset is primarily used to understand long-term climate trends and is based on modeled projections, and may therefore be less suitable for indicating actual year-to-year conditions.	ClimateData.ca	Grid cells (~6–10 km resolution) and census subdivisions	1971–2000 (modeled projections compared to a 1971–2000 baseline)	Canada	1	1	1	https://climatedata.ca
				An interactive online mapping tool illustrates community vulnerability and exposure to heat waves. The six geospatial data layers produced, including sensitivity, coping capacity, vulnerability, exposure, vulnerability and exposure, and urban heat islands, are mapped using a five scale rating to present the results.	- Based on engagement, the exposure map has been highlighted by multiple stakeholders as providing high value and has been used in their studies. - The results shown on the maps do not represent the risk of a heatwave occurring in a given area, as the methodology does not quantitatively assess the number of people affected, or the intensity, frequency, and duration of the hazard in the final calculation of the indices. - The dataset does not provide information on how individual variables contribute to the final index values. In addition, the indices are developed using a standardized national methodology, which may not fully capture community-specific conditions. Adjustments to variable selection and weighting may therefore be needed.	Université Laval	Dissemination areas (~ 400 to 700 people)	2021 (varies by layer; sensitivity index based on 2021 Census data, exposure index derived from satellite imagery)	Canada	1	1	1	
Canadian Index of Social Resilience and the Canadian Index of Social Vulnerability				The Canadian Index of Social Vulnerability (CISV) and the Canadian Index of Social Resilience (CISR) are derived from 2021 Census data, but use different sets of variables. The CISV assesses social vulnerability based on indicators that may increase the impacts of disasters on populations, while the CISR measures a community’s capacity to respond to and recover from natural hazards such as wildfires, floods, earthquakes, and severe storms.	- The dataset does not provide information on how individual variables contribute to the final scores, and results are based on a standardized national methodology that may not fully capture local context. - Detailed underlying data or model outputs require paid access (~\$20,000), but, due to privacy restrictions, these datasets cannot be publicly disclosed.	Statistics Canada	Dissemination areas (~ 400 to 700 people)	2021	Canada	2	1	1	https://www150.statcan.gc.ca/n1/pub/45-20-0001/452000012025002-eng.htm
				Climate Insight is a web-based platform that aggregates and visualizes selected climate metrics from ClimateData.ca and socio-economic datasets, including the Canadian Index of Multiple Deprivation (CIMD) and the Energy Poverty Index, presented on a relative rating scale from 1 to 5. The CIMD includes an overall index rating and ratings for four dimensions: residential instability, economic dependency, ethno-cultural composition, and situational vulnerability. The Energy Poverty Index is defined as the percentage of a household’s total annual after-tax income spent on electricity and other fuels such as oil, gas, coal, and wood, based on 2021 Census data.	- The Energy Poverty Index provides an additional socioeconomic lens, based on custom data requests to the Census. - Climate layers enable the exploration of future climate trends, supporting forward-looking scenario-based analysis. - The dataset does not provide information on how individual variables contribute to the final scores, and results are based on a standardized national methodology that may not fully capture local context.	ICLEI Canada	Varies by source datasets, including grid cells and census subdivisions for climate layers, and DA for socio economic layers.	2021 (varies by layer; sensitivity index based on 2021 Census data, exposure index derived from satellite imagery)	Canada	2	1	1	

