Rural Matrix: Summary

Authors: Sarah-Patricia Breen & Danika Hammond
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Background

Hammond, Breen and Gibson conducted research with the goal of creating a replicable and pragmatic approach to defining rural that could be 1) tailored to the context where it is being applied, and 2) easily applied in practice. This work was conducted as part of Hammond's Master's Thesis through the University of Guelph, as well as a deliverable for a co-op with the Government of British Columbia. This report summarizes the methods used to construct the matrix and outlines current considerations for First Nations communities with this approach.

Limitations of Traditional Approaches

Most rural definitions take one of two approaches.

The first is a binary approach in which communities below a certain population size are labelled "rural," and those above are labelled "urban." This method oversimplifies the diversity within both groups. There are differences between small and large rural communities, as well as differences due to location. For example, remote communities of a few hundred people function very differently from both a similarly sized community adjacent to an urban centre and a larger rural community. Grouping them together masks important differences that matter for service delivery, economic development, and infrastructure planning.

The second uses a continuous index, such as Statistics Canada's Index of Remoteness. While this index captures detailed variation in accessibility, each community is plotted individually on the index, resulting in hundreds of unique categories. This level of complexity is not practical for most government funding programs or policy decisions, which require manageable groupings.

A literature review identified four best practices for defining rural:

1. Use multiple measures
2. Avoid a binary approach
3. Ensure that it is practical for implementation
4. Incorporate place-based factors

Developing the Matrix Approach

To overcome the limitations of the two traditional approaches and incorporate the best practices identified, the research team drew on work by Agyepong, Gibson and Bollman, who proposed combining two measures in a matrix-grid format. The rural matrix approach was developed to use two measures to identify clusters of communities, allowing for rural classifications to be developed – acknowledging the variation across rural, while remaining easy to apply.

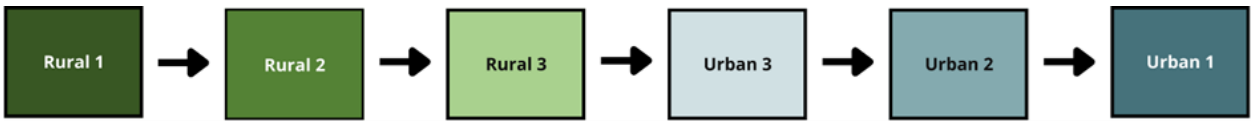
For application of the approach in British Columbia, the two variables selected were population (Y-axis) and the Statistics Canada Index of Remoteness (X-axis), which was applied at the census subdivision level, which is a unit of analysis widely used across government and administratively understood by communities. Both measures are available at the census subdivision level and are commonly associated with rural. This satisfied the first identified best practice of using multiple measures.

The second objective was to avoid a binary, while also meeting the third objective of making it practical. To achieve this, the two measures were split into categories. The remoteness categories were taken directly from classification structure put forward by Statistics Canada, which divides the Index of Remoteness into five levels ranging from "easily accessible" to "very remote." For population thresholds, the team conducted a jurisdictional scan of common rural definitions in similar jurisdictions and also performed a scatter-plot analysis of census subdivisions to identify natural clusters. A jurisdictional scan ensured alignment with common standards, while the statistical analysis ensured that thresholds reflected the actual distribution of community sizes in British Columbia.

Once thresholds for both measures were established, they were combined into a matrix, which was then applied to all BC census subdivisions.

Six final categories were created: three rural and three urban. Six categories were chosen because this number provides meaningful differentiation while remaining workable for government program design. More categories would risk overwhelming users; fewer would collapse important distinctions.

These categories range from Rural 1 (the most rural, with high remoteness and low population) to Urban 1 (the largest and most accessible communities).



Rural communities

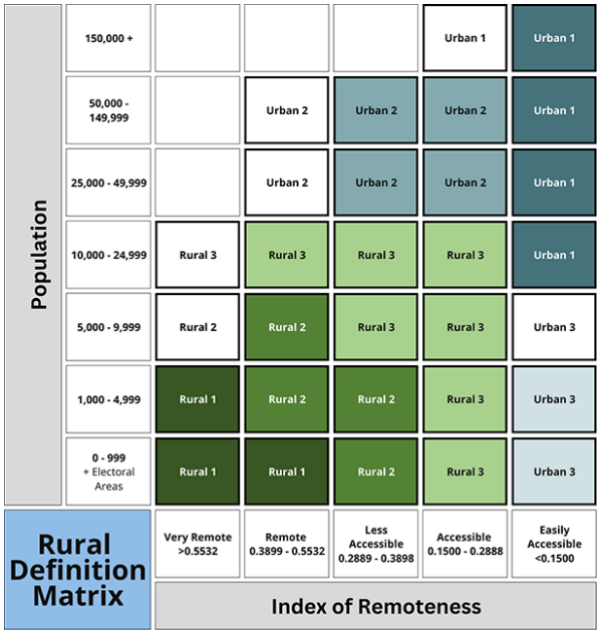
Population < 25,000 AND not easily accessible

- **Rural 1**: The smallest and most remote
- **Rural 2**: Medium sized and less accessible
- **Rural 3**: Larger and accessible

Urban communities

Population > 25,000 OR easily accessible

- **Urban 1**: Cities
- **Urban 2**: Regional hubs
- **Urban 3**: Small and easily accessible



Some cells in the matrix remained empty (white) because no communities in currently meet those combinations of population and remoteness.

The fourth objective was to make place-based adjustments. Many rural electoral areas (a form of regional government in British Columbia) contain very low population density spread over large geographic regions. Treating them in the same way as municipalities would exaggerate the role of population and underrepresent their spatial realities. For this reason, electoral areas were classified using only the Index of Remoteness. This

adjustment ensures that their unique characteristics are properly reflected without forcing them into inappropriate population thresholds.

Considerations for First Nations Communities

Throughout the development of the matrix approach, the team sought to understand how First Nations fit within rural definitions. Two focus groups were held with two separate First Nations communities. In both sessions, participants emphasized that population was not an appropriate measure for defining rural in First Nations contexts. This was because population counts at the CSD level are often inaccurate or incomplete, and the CSD unit itself does not represent the Nation as a whole. Participants also noted that their sense of community is grounded in Nation membership rather than in the number of people living on reserve at a particular moment.

Based on the above we identified 3 options. The first was to classify First Nations communities using remoteness only, similar to electoral areas. The second was to treat First Nations the same as municipalities and apply both population and remoteness. Neither approach was considered appropriate at this time: the first required broader consultation to be legitimate, and the second relied on a measure (population) that may not reflect First Nations realities. The final option was to exclude First Nations communities from the BC Rural Matrix while continuing research and consultation. This allows time to explore a more suitable approach that acknowledges Nation-level structures, cultural considerations, and the impacts of colonization on access to services.

Current Use of the Matrix in British Columbia

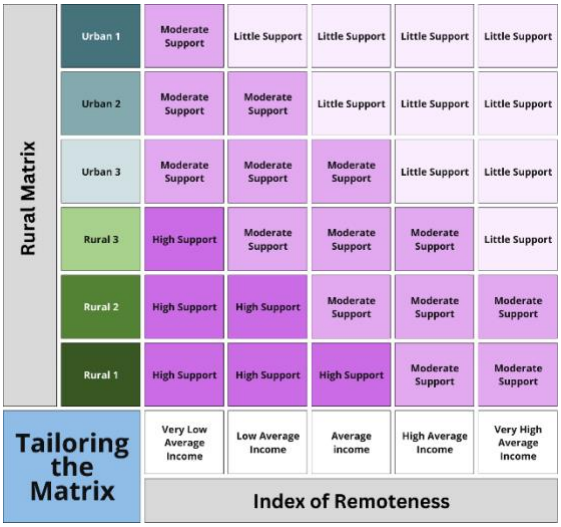
The matrix is currently being used in British Columbia's Rural Economic Diversification and Infrastructure Program (REDIP). All rural categories (Rural 1, 2, and 3) can apply for the infrastructure funding stream, while Rural 1 and 2 have access to a specialized stream focused on economic capacity development. First Nations communities may apply to REDIP, reflecting the program's recognition that First Nations communities often face distinct accessibility barriers rooted in ongoing colonial structures, which are not captured by population or geographic measures.

Application of the Matrix Approach Outside BC

The approach described above was designed to be flexible to application to different places and contexts. Following the process allows for selection of the two variables and setting of thresholds that best suit the context where application is proposed.

Tailoring the Matrix by Adding Additional Measures

A common misconception is that rural automatically implies higher need. While many rural communities experience lower socioeconomic outcomes on average, this is not universal. Because of this, the rural matrix alone is not designed to measure need or vulnerability. It is a classification tool that reflects geographic and demographic characteristics. For policy and program development, it can be used in combination with other measures that reflect topic specific data, as well as assess need, equity, and structural barriers.



The researchers call the concept of adding additional measures "tailoring" the matrix to fit any given policy objective. To tailor the matrix, the rural and urban categories can be combined with additional measures such as income levels, to assess an intersection of communities that may be eligible for particular policy or program support. This could be done through a matrix approach, or through simpler tailoring methods such as whether or not a community has access to a given service or not.

Conclusion

The BC Rural Matrix provides a more nuanced and practical way to classify communities by combining population and remoteness. It offers a middle ground between overly simple binary definitions and overly complex index-only approaches. Place-based adjustments were made for electoral areas, and significant care was taken to understand

and respect the unique circumstances of First Nations communities. The approach used to create the BC Rural Matrix can be replicated for a First Nations context using the same or alternative community units, measures and thresholds.