



Land Supply and Housing Projections

February 14, 2024

1. Overview

Analysis was undertaken to understand the amount of land needed to accommodate PEI's projected housing need for 26,000 more dwelling units by 2031, based on different levels of density, availability of servicing (water and sewer) and distribution between rural and urban areas.

2. Methodology

The first calculation involved gathering census data for PEI's CSDs and undertaking an analysis of the population and dwelling changes from 2016 to 2021. This outlined trends of each CSD's share of dwellings, area, and change/dwelling creation.

Density estimates were created for different levels of servicing and development patterns, such as on-site services in rural areas, low density residential, and local examples of existing multi-unit residential. Calculations considered lot size, projected population distribution, and density.

3. Density calculations

Multi-unit dwelling estimates have been based on an average of 1200 sq ft per unit. All of the estimates below are in the "3-storey multi-unit residential" category. As there are not many 3-storey buildings outside of the major urban municipalities, to estimate for 2-storey buildings, the assumption would be to take the density estimates below and subtract 33%.

Stratford

- Ducks Landing: average units/ac of 28.7
- Near Stratford Rd, close to the elementary school (10 apt buildings): average of 16.6 units /ac

Charlottetown

- Near corner of Belvedere and North River Rd (4 apt buildings): average of 24.6 units/ac

Summerside

- Summerside near Leger Park (3 apt buildings): average of 23.3 units/ac

Three Rivers

- Montague, near Pharmasave (4 apt buildings): average of 12.7 units/ac

For project purposes, the following were used for general density levels:

- 'Intense' multi-unit residential: an average of 20 units/ac
- 'Less intense' multi-unit residential: 12 units/ac (potentially more compatible for smaller municipalities).

4. Scenarios

The scenarios generated involved shifting where new development is directed in order to understand the amount of greenfield land required to accommodate the projected new housing to 2031. The scenarios looked at how shifts in where new housing is directed can reduce the amount of land transitioning out of other uses into housing.

The scenarios included:

- The current urban/rural ratio of dwelling units with the same ratio of housing density (status quo)
- The current urban/rural ratio of dwelling units with a slight increase in density to 12 units/acre in the non-rural area
- The current urban/rural ratio of dwelling units with a reasonable percentage going to 20 units/acre in the non-rural area

The same three density scenarios were repeated, but with a 25% and 40% increase in the share of dwelling units in the non-rural areas, based on:

- urban centres/rural,
- municipalities with central water/rural, and
- municipalities with central sewer/rural.

The same three density scenarios were repeated, but with a 25% and 40% increase in the share of dwelling units in the non-rural areas, based on:

- urban centres/rural,
- municipalities with central water/rural, and
- municipalities with central sewer/rural.

The urban areas noted in this analysis were based on Charlottetown, Summerside, Stratford, and Cornwall. The other splits involving municipalities with central water and with central sewer to reflect the fact that some of the province's smaller municipalities also have municipal sewer and/or water, making them also suitable for slightly higher density and/or smaller land requirements as compared to development with on-site services.

5. Limitations

The analysis and conclusions contained here are based on GIS and statistical analysis (Statistics Canada Census, 2016, 2021), and desktop calculations of existing density levels for a number of locations based in part on satellite imagery, building footprint and height data, and Google Streetview.

Actual land needs will differ depending on final density levels, including combinations of density levels, subdivision design, and distribution of new housing between different locations and servicing types.

6. Findings

Based on the analysis and an assumption of 26,000 dwelling units needed by 2031, the following estimates were generated:

- Based on current development patterns, an additional 20,678 acres will be needed by 2031 to meet the projected housing units needed.
- The highest level in savings of land used could be achieved by redirecting a percentage of new dwellings to municipalities with sewer services and increasing density in the non-rural area.

The key finding is that directing more growth to urban areas, to municipalities with central water, or to municipalities with central sewer would decrease the overall amount of land required for new housing. The ability to preserve resource and undeveloped land is greater in when shifting the new growth to municipalities with central sewer.

Status Quo - up to 20,678 acres needed by 2031 to meet projected housing need based on an extrapolation of today's development patterns	Non-rural: Urban Centres	Non-rural: Municipalities with Central Water	Non-rural: Municipalities with Central Sewer
Scenario: Shift in new units to non-rural area			
Shifting 25% new units to non-rural (% reduction in land needed / acres saved)	16% 3,389 acres	18% 3,754 acres	22% 4,482 acres
Shifting 40% new units to non-rural (% reduction in land needed / acres saved)	26% 5,422 acres	29% 6,007 acres	35% 7,171 acres.

Status Quo – up to 20,678 acres needed by 2031 to meet projected housing need based on an extrapolation of today’s development patterns	Non-rural: Urban Centres	Non-rural: Municipalities with Central Water	Non-rural: Municipalities with Central Sewer
Scenario: Density increase in non-rural areas			
Ratio same, increasing non-rural density to 12 units/acre (% reduction in land needed / acres saved)	20%, 4,182 acres	49% 10,071 acres	54% 11,107 acres
Ratio same, increasing non-rural density to 20 units/acre (% reduction in land needed / acres saved)	23% 4,661 acres	51% 10,631 acres	57% 11,705 acres
Scenario: Shift and density increase in non-rural areas			
Shifting 25% new units to non-rural and increasing non-rural density to 12 units/acre (% reduction in land needed / acres saved)	42% 8,616 acres	67% 13,919 acres	74% 15,215 acres
Shifting 40% new units to non-rural and increasing non-rural density to 20 units/acre (% reduction in land needed / acres saved)	67% 13,806 acres	82% 17,012 acres	90% 18,516 acres

Shifts in Total Land Needed For New Housing

Estimated reduction in land needed for new housing, depending on each scenario is as follows:

Status Quo Density – change in ratio of new housing from status quo to non-rural:

- Urban/Rural: 20,678 acres to 17,289 acres (+25%) to 15,256 acres (+40%) needed
- Central Water/Rural: 20,678 acres to 16,924 acres (+25%) to 14,672 acres (+40%) needed
- Central Sewer/Rural: 20,678 acres to 16,196 acres (+25%) to 13,507 acres (+40%) needed

Changing Density in Non-Rural Areas:

- Urban/Rural: 20,678 acres to 16,496 acres (12 units/acre) to 16,017 acres (20 units/acre) needed
- Central Water/Rural: 20,678 acres to 6,759 acres (12 units/acre) to 6,060 acres (20 units/acre) needed
- Central Sewer/Rural: 20,678 acres to 9,571 acres (12 units/acre) 8,973 acres (20 units/acre) needed

Shifting Non-Rural Density and Ratio of New Housing – Primary Urban/Rural Split:

- Urban/Rural: 20,678 acres to 16,496 acres (12 units/acre) to 16,017 (20 units/acre) needed
- Urban/Rural + 25%: 17,289 acres to 12,062 acres (12 units/acre) to 11,463 (20 units/acre) needed
- Urban/Rural + 40%: 15,256 acres to 7,544 acres (12 units/acre) to 6,873 (20 units/acre) needed

Shifting Non-Rural Density and Ratio of New Housing – Central Water/Rural Split:

- Central Water/Rural: 20,678 acres to 10,607 acres (12 units/acre) to 10,048 (20 units/acre) needed
- Central Water/Rural+25%: 16,924 acres to 6,759 acres (12 units/acre) to 10,048 (20 units/acre) needed
- Central Water/Rural+40%: 14,672 acres to 4,450 acres (12 units/acre) to 3,667 (20 units/acre) needed

Shifting Non-Rural Density and Ratio of New Housing – Central Sewer/Rural Split:

- Central Sewer/Rural: 20,678 acres to 9,571 acres (12 units/acre) to 8,973 (20 units/acre) needed
- Central Sewer/Rural+25%: 16,196 acres to 5,463 acres (12 units/acre) to 4,716 (20 units/acre) needed
- Central Sewer/Rural+40%: 13,507 acres to 2,999 acres (12 units/acre) to 2,162 (20 units/acre) needed

A visualization of the amount of land needed to accommodate the projected new housing based on different density and servicing scenarios is shown in Appendix A.

7. Conclusions

There are a number of considerations when determining where to locate or direct new housing, including local housing need, land availability, cost of development, and local community preferences and values. However, policies that support more density in areas with central services offer the following benefits:

- Protection of agricultural and other resource lands
- Decreased per unit cost of housing due to economies of scale
- More housing variety to meet a greater range of housing needs and preferences

- Greater service affordability due to economies of scale and/or proximity of service users, such as transit, sidewalks and active transportation options
- Greater health and financial security outcomes due to walkability, ability to find housing near places of work and education, decreased travel costs and ability to meet household housing needs
- Greater ability to achieve climate goals such as net zero through reducing greenhouse gases emissions related to transportation

To achieve a concerted shift in housing location and density in order to protect resource lands and meet housing needs, actions on a number of parts would be required:

- Provincial land use policies for areas under provincial planning jurisdiction, particularly for housing with on-site services
- Municipal land use policies supporting increases in density
- Favourable land development economics, coupled with public investment in non-market housing.

Other efforts, such as enabling accessory dwelling units and supporting infill development will also limit the amount of land required for greenfield development.

While ultimately, the location and type of new housing will fall somewhere in the middle of all the various scenarios, taking proactive actions to deliberately direct new housing to areas with shared services, while ensuring the local development rules permit sufficient flexibility to enable the needed density will serve all islanders over time.

Appendix A – Visualization of New Land Needed for Housing to 2031



Appendix B – Tables – Land Required to Accommodate New Housing

Status Quo Density by 2031, Shifting Ratio of New Housing

Primary Urban/Rural Split	Primary Urban/Rural Split, with 25% shift of units to urban	Primary Urban/Rural Split, with 40% shift of units to urban
• Urban: 5,380 acres	• Urban: 5,380 acres	• Urban: 7,533 acres
• Rural: 15,298 acres	• Rural: 15,298 acres	• Rural: 7,724 acres
Total: 20,678 acres	Total: 17,289 acres	Total: 15,256 acres

Primary Urban/Rural Split +25% Urban	Increase to 12 units/acres in non-rural areas, retained density in rural + 25% shift of units to urban	Increase to 20 units/acres in non-rural areas, retained density in rural + 25% shift of units to urban
• Urban: 6,725 acres	• Urban: 1,498 acres	• Urban: 899 acres
• Rural: 10,564 acres	• Rural: 10,564 acres	• Rural: 10,564 acres
Total: 17,289 acres	Total: 12,062 acres	Total: 11,463 acres

Primary Urban/Rural Split +40% Urban	Increase to 12 units/acres in non-rural areas, retained density in rural + 40% shift of units to urban	Increase to 20 units/acres in non-rural areas, retained density in rural + 40% shift of units to urban
• Urban: 7,533 acres	• Urban: 1,678 acres	• Urban: 1,007 acres
• Rural: 7,724 acres	• Rural: 5,866 acres	• Rural: 5,688 acres
Total: 15,256 acres	Total: 7,544 acres	Total: 6,873 acres

Increase in Non-Rural Density by 2031, Primary Urban/Rural Split:

Primary Urban/Rural Split Status Quo	Increase to 12 units/acres in non-rural areas, retained density in rural	Increase to 20 units/acres in non-rural areas, retained density in rural
• Urban: 5,380 acres	• Urban: 1198 acres	• Urban: 719 acres
• Rural: 15,298 acres	• Rural: 15,298 acres	• Rural: 15,298 acres
Total: 20,678 acres	Total: 16,496 acres	Total: 16,017 acres

Primary Urban/Rural Split +25% Urban	Increase to 12 units/acres in non-rural areas, retained density in rural + 25% shift of units to urban	Increase to 20 units/acres in non-rural areas, retained density in rural + 25% shift of units to urban
• Urban: 6,725 acres	• Urban: 1,498 acres	• Urban: 899 acres
• Rural: 10,564 acres	• Rural: 10,564 acres	• Rural: 10,564 acres
Total: 17,289 acres	Total: 12,062 acres	Total: 11,463 acres

Primary Urban/Rural Split +40% Urban	Increase to 12 units/acres in non-rural areas, retained density in rural + 40% shift of units to urban	Increase to 20 units/acres in non-rural areas, retained density in rural + 40% shift of units to urban
• Urban: 7,533 acres	• Urban: 1,678 acres	• Urban: 1,007 acres
• Rural: 7,724 acres	• Rural: 5,866 acres	• Rural: 5,688 acres
Total: 15,256 acres	Total: 7,544 acres	Total: 6,873 acres

Increase in Non-Rural Density by 2031, Central Water/Rural Split:

Central Water/Rural Split Status Quo	Increase to 12 units/acres in non-rural areas, retained density in rural	Increase to 20 units/acres in non-rural areas, retained density in rural
• Central Water: 8,037 acres	• Central Water: 1,749 acres	• Central Water: 1,959 acres
• Rural: 12,642 acres	• Rural: 5,010 acres	• Rural: 2,491 acres
Total: 20,678 acres	Total: 12,062 acres	Total: 7,544 acres

Central Water/Rural Split + 25% central water	Increase to 12 units/acres in non-rural areas, retained density in rural + 25% shift of units to central water	Increase to 20 units/acres in non-rural areas, retained density in rural + 25% shift of units to central water
• Central Water: 10,046 acres	• Central Water: 1,749 acres	• Central Water: 1,050 acres
• Rural: 6,878 acres	• Rural: 5,010 acres	• Rural: 5,010 acres
Total: 16,924 acres	Total: 6,759 acres	Total: 6,060 acres

Central Sewer/Rural Split + 40% central water	Increase to 12 units/acres in non-rural areas, retained density in rural + 40% shift of units to central water	Increase to 20 units/acres in non-rural areas, retained density in rural + 40% shift of units to central water
• Central Sewer: 11,251 acres	• Central Sewer: 1,959 acres	• Central Sewer: 1,175 acres
• Rural: 3,420 acres	• Rural: 2,491 acres	• Rural: 2,491 acres
Total: 14,672 acres	Total: 4,450 acres	Total: 3,667 acres

Increase in Non-Rural Density by 2031, Central Sewer/Rural Split:

Central Sewer/Rural Split Status Quo	Increase to 12 units/acres in non-rural areas, retained density in rural	Increase to 20 units/acres in non-rural areas, retained density in rural
• Central Sewer: 8,685 acres	• Central Sewer: 1,494 acres	• Central Sewer: 896 acres
• Rural: 11,993 acres	• Rural: 8,077 acres	• Rural: 8,077 acres
Total: 20,678 acres	Total: 9,571 acres	Total: 8,973 acres

Central Sewer/Rural Split + 25% central water	Increase to 12 units/acres in non-rural areas, retained density in rural + 25% shift of units to central water	Increase to 20 units/acres in non-rural areas, retained density in rural + 25% shift of units to central water
• Central Sewer: 10,856 acres	• Central Sewer: 1,867 acres	• Central Sewer: 1,120 acres
• Rural: 5,340 acres	• Rural: 3,596 acres	• Rural: 3,596 acres
Total: 16,196 acres	Total: 5,463 acres	Total: 4,716 acres

Central Sewer/Rural Split + 40% central water	Increase to 12 units/acres in non-rural areas, retained density in rural + 40% shift of units to central water	Increase to 20 units/acres in non-rural areas, retained density in rural + 40% shift of units to central water
• Central Sewer: 12,159 acres	• Central Sewer: 2,091 acres	• Central Sewer: 1,255 acres
• Rural: 1,348 acres	• Rural: 908 acres	• Rural: 908 acres
Total: 13,507 acres	Total: 2,999 acres	Total: 2,162 acres



Analysis by Contour Consulting
& SJ Murphy Planning & Consulting
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