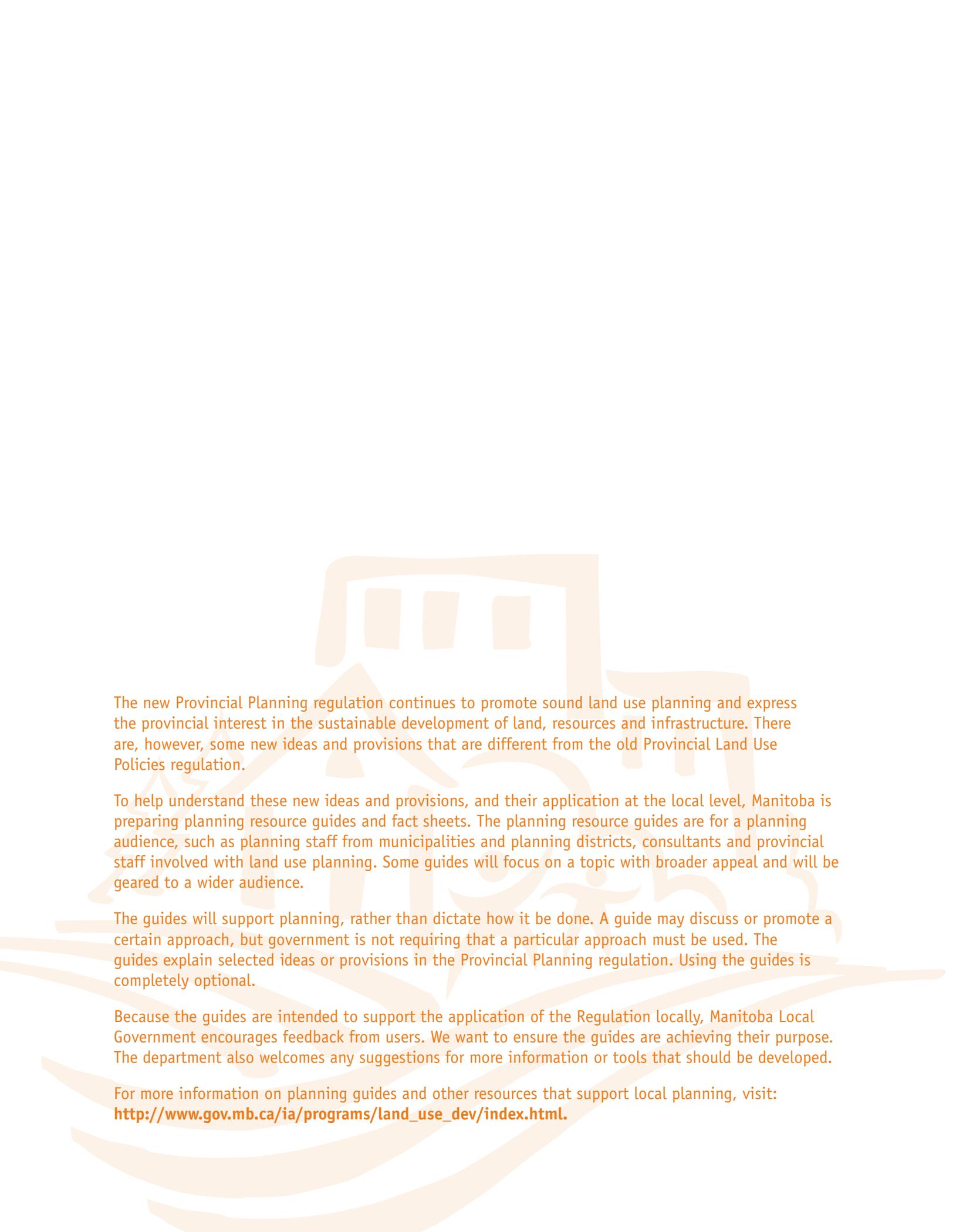




PLANNING RESOURCE GUIDE

Calculating Supply and Demand for Residential Lands





The new Provincial Planning regulation continues to promote sound land use planning and express the provincial interest in the sustainable development of land, resources and infrastructure. There are, however, some new ideas and provisions that are different from the old Provincial Land Use Policies regulation.

To help understand these new ideas and provisions, and their application at the local level, Manitoba is preparing planning resource guides and fact sheets. The planning resource guides are for a planning audience, such as planning staff from municipalities and planning districts, consultants and provincial staff involved with land use planning. Some guides will focus on a topic with broader appeal and will be geared to a wider audience.

The guides will support planning, rather than dictate how it be done. A guide may discuss or promote a certain approach, but government is not requiring that a particular approach must be used. The guides explain selected ideas or provisions in the Provincial Planning regulation. Using the guides is completely optional.

Because the guides are intended to support the application of the Regulation locally, Manitoba Local Government encourages feedback from users. We want to ensure the guides are achieving their purpose. The department also welcomes any suggestions for more information or tools that should be developed.

For more information on planning guides and other resources that support local planning, visit:
http://www.gov.mb.ca/ia/programs/land_use_dev/index.html.

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CALCULATING SUPPLY AND DEMAND: RESIDENTIAL LAND

INTRODUCTION

Land is a valuable resource that needs careful management. Every planning authority (municipality or planning district) in Manitoba is required to have a development plan with policies generally consistent with the Provincial Planning regulation to guide the use of land. The Regulation states that the designation of land should correspond to the changing land needs of a community and not be wasteful of land.

A development plan should ensure a balance between the amount of land designated for residential use and the demand for lots. An adequate supply of appropriately located and designated residential land encourages orderly development in a strategic, planned manner. A residential supply and demand study will inform a planning authority of the appropriate amount of land that should be designated for residential use in the short-term (five to 10 years) and longer-term (15 or more years) planning horizons.

The residential land supply and demand question can be simply put: how much land should be designated for residential use within a specific time-frame based on a reasonable projection of demand? Or: is there an adequate amount of land designated for residential use? If not, how much additional land needs to be designated? In many cases these questions will be easy to answer. In higher growth communities, a more complex analysis/approach may be required.



How to use this guide

Provincial Planning regulation identify the need for background studies and analysis when preparing a development plan. An analysis of residential land is a critical background document to support planning.

This guide provides important questions to consider when completing a residential land demand and supply analysis.

Questions and examples included in this guide will not apply to all supply and demand studies and are not the only methods available. Users of this guide should use their judgement and choose methods most appropriate for estimating the residential land requirements of their planning area. This guide provides a few suggestions.

Wherever possible, sources of free and readily available information for all planning areas in Manitoba have been suggested in this guide.

DEMAND FOR RESIDENTIAL LAND

Demand for residential land is based on two main factors: population and housing type. The questions in this section will help determine who you are planning for and the type and quantity of residential land required to accommodate future housing demand.

POPULATION ESTIMATES AND TRENDS

Answering these questions will reveal current population trends. This will help in estimating the future demand for residential land. The first step is to determine the target population that the development plan seeks to accommodate.

Information to answer these questions can be accessed on the Statistics Canada website for free. Look for the section on “community profiles” for community specific information.

Identify the population of the planning area for the last four census reporting periods:

CENSUS YEAR	CENSUS YEAR	CENSUS YEAR	CENSUS YEAR
Pop	Pop	Pop	Pop

- What is the past and current population?
- Has the population been increasing or decreasing?
- How much has the population changed?
- What factors have contributed to this change?

What are the five and 10 year averages or trends?

FIVE YEAR AVERAGE	TEN YEAR AVERAGE
Pop/year	Pop/year

What was the population when the current development plan was adopted? (use closest Statistics Canada census year if more accurate data is not available)

Development plan adopted in: _____

Population of planning area: _____ (year)

Identify development opportunities occurring on, or within close proximity to, the borders of your planning area. What is the nature of the development (type and size)? What effect will it have on the residential demand in the planning area?

What do you estimate the population will be in the planning area? Provide a range of estimates to cover a range of scenarios from the most optimistic (highest growth) to the pessimistic (low growth).

PROJECTED POPULATION IN...	LOW	MEDIUM	HIGH
5 years			
10 years			
15 years			
20 years			
25 years			

What major factors in the planning area or the region will influence the population (increase or decrease) in the future? (Ex: large infrastructure project, increasing immigration rates, natural population growth, economic downturn, large employer layoffs or shutdown)

How is the population changing? What are the demographic trends?

- Are there more or less school-aged children, working age people or retirees?
- What is the median age of the population? Has it changed from the last census period?
- Are the people living in the area long time residents or do they move in and out more frequently?
- What is the ratio of home owners to renters? Has this changed over time?
- Compare the age profile of the population from the most current census year to the census year five years previous. Have there been any changes? What are the trends?

Consider graphing the changes to reveal the trends and complete this analysis. (See the Resources section at the end of the document for an example of an age cohort population balance graph.)

In Canada, there is a general trend toward a decreased household size for a variety of reasons (Ex: couples having fewer children; increasing divorce rates). This trend can contribute to increases in the number of dwellings demanded.

- On average, how many people live in each dwelling in the planning area?
- Has the average number of people per dwelling changed since the last census? If so, by how much? What is the trend?

ASSESSING HOUSING TRENDS

Answering these questions will provide information on the type of housing demanded and any residential construction trends in the planning area. Along with population information, this may provide insight into the land requirements necessary to accommodate various types and forms of residential development both now, and in the future.

List the number of new dwelling building permits for at least the last 10 years or since the last development plan was adopted, by type (see example below).

DWELLING TYPE	YEAR									
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Single family	5	4	7	12	3	8	6	9	12	4
Semi-detached	-	8	-	-	-	4	-	-	1	-
Row	-	-	-	12	-	-	-	-	-	4
Multi-family	-	20	-	-	-	-	-	6	-	-
Other?										

Is the number of building permits increasing or decreasing? What are the five year and 10 year averages?

What factors have contributed to this increase or decrease? What factors may cause an increase or decrease in building permits in the future?

To get an idea of the development pressures in the planning area, how many residential subdivision applications were received since the current development plan was adopted? How many and what type (ex: urban residential, rural residential, farmstead) of lots were applied for?

serviced residential _____

unserviced rural residential _____

farmstead _____

How many of each type of residential lot have been approved since the current development plan was adopted?

- lots less than 15,000 square feet
- lots between 15,000 square feet and one acre
- lots between one and two acres
- lots between two and five acres
- lots greater than five acres

Information to answer these questions can be found from a variety of sources. For example: Statistics Canada Community Profiles, municipal building permits, community and regional planning offices, planning districts with subdivision approving authority.

ESTIMATING HOUSING TYPES AND LAND REQUIREMENTS

The population and housing profiles developed for the planning area can now be used to estimate the type and amount of housing required in the future. The profiles can also be used to estimate the amount of residential land required to accommodate this demand.

- Considering the demographic and housing trends of the planning area, what is the anticipated demand for various housing types?
- How many of each dwelling unit type will be required in 10 years? 20 years?

Analysis of demographic trends (from Section A) may reveal a future preference or need for a certain type of dwelling unit. For instance, an aging population may be an indicator of a future demand for senior's apartments. To accommodate this trend, a planning authority may consider increasing the number of multi-family dwelling units and decreasing household size in the analysis.

Building permits and/or subdivision applications are not likely to be uniformly distributed throughout the planning area. The analysis of building permits and/or subdivision applications (from Section B) may reveal trends that are important to the future residential needs of certain portions of the planning area. For instance, a concentration of housing development activity within the planning area may indicate a preference for houses near a certain amenity. To accommodate such a trend, a planning authority may consider ensuring sufficient residential opportunities exist nearby.



- Based on the above analysis, what type of housing will be required in the next 25 years to meet the needs of the population? (Ex: single-family, semi-detached, row houses, mobile homes, multi-family apartments, assisted living, care homes)
- What is the anticipated demand for various residential lot types? (Ex: serviced lots in settlement centre; unserviced rural residential lots)
- How much land is needed to accommodate the estimated demand?

Information to answer these questions can be found from a variety of sources. For example: Statistics Canada Community Profiles, municipal building permits, community and regional planning offices, planning districts with subdivision approving authority.

Present the results of your analysis in a table.

Table 1 below is a hypothetical example of how this may be done. The table presents estimates of the number of dwelling units and amount of land required to accommodate shifting the population from single family unserved lots (rural residential two acre lots) to smaller serviced lots (note the increasing number of single family serviced dwelling units compared to unserved). This example assumes a current starting population of 6,793 with a cumulative annual growth rate of 1.7 per cent and a steady 2.7 persons per dwelling unit.

TABLE 1: ESTIMATED NEW DWELLING UNITS & ACREAGE REQUIRED											
Year	Population Change (Cumulative)	Un-served		Serviced						Totals	
		Single Family		Single Family		Semi-Detached		Multi-Family			
		New Dwelling Units (Cumulative)	New Acres (Cumulative)								
0	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
5	597 (597)	35 (35)	70 (70)	78 (78)	19 (19)	24 (24)	4 (4)	18 (18)	1 (1)	155 (155)	94 (94)
10	650 (1,247)	35 (70)	71 (141)	119 (197)	30 (49)	29 (53)	5 (9)	18 (36)	1 (2)	203 (358)	107 (201)
15	707 (1,954)	36 (106)	72 (213)	160 (357)	40 (89)	33 (86)	5 (14)	18 (54)	1 (3)	247 (605)	119 (320)
20	769 (2,724)	37 (143)	73 (286)	214 (572)	54 (143)	37 (123)	6 (20)	18 (72)	1 (4)	307 (912)	134 (454)
25	837 (3,560)	37 (181)	75 (361)	288 (859)	72 (215)	42 (165)	7 (27)	18 (90)	1 (5)	385 (1,297)	155 (609)

It is important to base calculations on the minimum lot sizes of the zoning by-law.

ANALYSIS: SUPPLY AND DEMAND

Ensuring a sufficient supply of dwelling units exists within the planning area to meet the short and longer term demands of a changing population requires an understanding of the existing supply of residential lots. To estimate the supply of residential lots, it is important to consider any potential factors that may limit the development of land designated for residential development now, and in the future. An understanding of the existing supply of residential lots will help determine how much additional residential land is required in the planning area to properly house the population in the long term.



DEVELOPMENT CONSTRAINTS AND AVAILABILITY

The physical attributes of the land itself may pose significant constraints to residential development. Development for residential purposes may also be limited by restrictions imposed by non-compatible uses (Ex: livestock operations). It is useful to consider when a portion of land will be available for residential use.

Development constraints can be identified and recorded using a map with an aerial photograph. Shade in all of the residentially designated land in the planning area that is not available for new residential development due to:

- existing development (Ex: already contains development)
- physical constraints that would provide significant challenges to developing land for residential purposes, such as:
 - watercourses
 - flood prone or other hazard areas
 - poor drainage
 - sensitive environmental areas (Ex. riparian areas, wetlands)
 - hydro or road rights of way or easements
 - mineral resources
 - land with significant slope
- restrictions to residential development including land in proximity to, or within buffer areas of, certain land uses, including:
 - intensive livestock operations
 - heritage areas
 - lagoons
 - solid waste disposal grounds
 - industrial uses
 - airports

- land with a development plan designation permitting residential development that is not likely to be developed for residential purposes, including
 - land held by a landowner not interested in developing or selling (these parcels are not available for residential development so consider designating them for other purposes)

Some constraints will be difficult to see on an aerial photograph. Some may be most easily identified and recorded by those who know the land best: local residents.

The likelihood that any portion of available land will be developed for residential use in the short or long term will depend on a number of different factors. Factors influencing the timing of the residential development of land include the willingness of landowners to develop, proximity to a serviced settlement centre and the development plan designation.

- Estimate when each of the portions of land identified as being available for residential development (ex: areas which have not been shaded in) are most likely to be ready for development. Categorize these areas according to five year time horizons and indicate the result on a map.
- Estimate the number of new residential lots that could potentially be accommodated in each of the available areas (based on the minimum lot size requirements in the zoning by-law). It is useful to estimate how much new serviced and unserved land (and how many new dwelling units of various types) will likely be available for development in each five year time horizon (See Table 2)

TABLE 2: ESTIMATED AREA OF LAND AVAILABLE FOR NEW RESIDENTIAL DEVELOPMENT BY TIME HORIZON						
Time Horizon	Un-serviced		Serviced		Total	
	Newly Available Acres	Potential New Dwelling Units	Newly Available Acres	Potential New Dwelling Units	New Acres Available	Potential New Dwelling Units
Less than 5 yrs	58	29	14	56	72	85
5 to 10 years	0	0	7	28	7	28
10 to 15 years	0	0	0	0	0	0
15 to 20 years	0	0	12	48	12	48
More than 20 years	0	0	0	0	0	0

Land is regularly required for other public uses when it is subdivided. This should be taken into account when calculating residential land supply. For serviced residential development, up to 25 to 30 per cent of the land being subdivided may be required for public use. For unserviced residential development, up to 10 to 15 per cent of the land may be required. Some examples of public uses are:

- roads
- rights of way and easements (Ex: hydro, telephone device)
- drains
- retention ponds
- public reserve

Estimating the potential residential supply available may be easier and more accurate using a geographic information system (GIS) such as ArcGIS or MapInfo.

The Community and Regional Planning branch may be able to provide information about property boundaries, existing development plan designations and hazard lands to help determine your residential supply. Consult with the regional office of community and regional planning in your area to see which relevant GIS datasets are available for your planning area.

EXISTING SUPPLY OF RESIDENTIAL LAND

Compare the projected demand for land in the planning area with the number of potential residential lots currently designated in the development plan. Answering the questions in this section will determine how well the current supply of land available for residential development meets the demand.

One way to accommodate a changing population is by recognizing infill opportunities within the existing housing stock. This is often referred to as infill development.

How many of each type of dwelling unit currently exist in the planning area? How many of each type are vacant?

TYPE	TOTAL UNITS	VACANT UNITS
Serviced		
Single family		
Semi-detached		
Row		
Multi-family		
Other...?		
Unserviced		
Rural residential		
Farm related		

How many vacant lots currently exist in the planning area? What type of lots are they? What size are they?

TYPE	TOTAL	VACANT
Seviced		
Less than 15,000 sq ft		
Between 15,000 sq ft & 1 acre		
Between one and two acres		
Unserviced, non-farm		
Less than two acres		
Between two and five acres		
Greater than five acres		
Farm related		

Intensification of, and reinvestment in, existing development should be considered before expanding into new areas. Accommodating demand for residential development within existing settlement areas where services already exist will maximize existing investment in services and reduce the need to develop agriculturally productive lands.

The potential for new residential lots may also exist within the current development plan. Be sure to consider development constraints, as discussed in Section 3. A, as part of the analysis.

- How many new residential lots could be created by subdividing existing lots into two or more parcels? What type of lots are they? What size are they?
- Estimate when the supply of vacant land and available dwelling units will not be able to meet demand. How many years of residential land supply are currently designated?
- Compare the demand for residential units (see sample Table 1) with the existing supply (see sample Table 2). Table 3 demonstrates an example of the demand balance for residential dwelling units using information from Tables 1 and 2. Note that the example provided does not account for existing vacant dwelling units and relies on population projections rather than building permits.

TABLE 3: ESTIMATED SUPPLY OF RESIDENTIAL UNITS IN EXISTING DEVELOPMENT PLAN VERSUS DEMAND					
DEMAND	Time Frame (Years)				
	5	10	15	20	25
Serviced:					
Single family	78	197	357	571	859
Semi-detached	24	53	86	123	165
Multi-family	18	36	54	72	90
Total Serviced	120	286	497	766	1114
Total Unserviced	35	70	106	143	180
Total Demand	155	356	603	909	1294
SUPPLY	Time Frame (Years)				
	5	10	15	20	25
Serviced	56	84	84	132	132
Unserviced	29	29	29	29	29
Total Supply	85	113	113	161	161
BALANCE	Time Frame (Years)				
	5	10	15	20	25
Serviced	-64	-202	-413	-634	-982
Unserviced	-6	-41	-77	-114	-151
Total	-70	-243	-490	-748	-1133

From the example provided in Table 3, the cumulative demand for new residential dwelling units exceeds supply in the short-term (five year) time frame. A total of 70 new residential dwelling units are required to meet the estimated five-year demand and 243 new residential dwellings units are required to meet the estimated 10-year demand.

- Is there a need to designate more land for residential purposes in the development plan? If so, what type(s) of residential development should be provided for?

DESIGNATING NEW RESIDENTIAL AREAS

Land is a limited resource. Any land development should take place in a sustainable, integrated and co-ordinated way. It is recommended that careful examination of residential land supply and demand be carried out to justify the conversion of any agricultural or natural area lands to residential uses.

If it has been determined that the existing residential supply is not sufficient to accommodate demand, the following questions should be carefully considered before designating new lands in a development plan.

- What types of dwelling need to be provided to meet demand in each five-year time frame?
- How much additional residential land is required to meet the projected demand for each five-year time frame?
- New growth areas should be located near compatible, existing development. Where are the best opportunities to provide a logical expansion or densification of an existing settlement centre area?
- Where in the planning area will the demand for residential dwellings be accommodated for each five-year time frame?
- Consider development constraints when evaluating new areas to designate for residential development in the planning area. Are any undeveloped areas designated for residential development in the development plan that cannot be used for residential development in the short term?
- Are there locations in the planning area that are better suited for residential development than other areas from a municipal cost and service availability perspective? Consider:

A development plan will take into consideration the regional supply and demand for residential land uses when designating land. New directions for growth will be identified to accommodate the long-term planning horizon.

Large open parcels of agricultural land may exist near an existing serviced residential area. If the landowner intends to continue farming the land in the future, consider designating the area as an urban hold. This will allow existing agricultural, natural or open space activities to continue on the land until the land is needed to accommodate the expansion of the nearby serviced residential area

- current and future servicing costs
- capital improvement plans and costs
- transportation plans
- climate change action plans
- proximity to schools and other community services
- commercial services
- environmental protection areas or plans

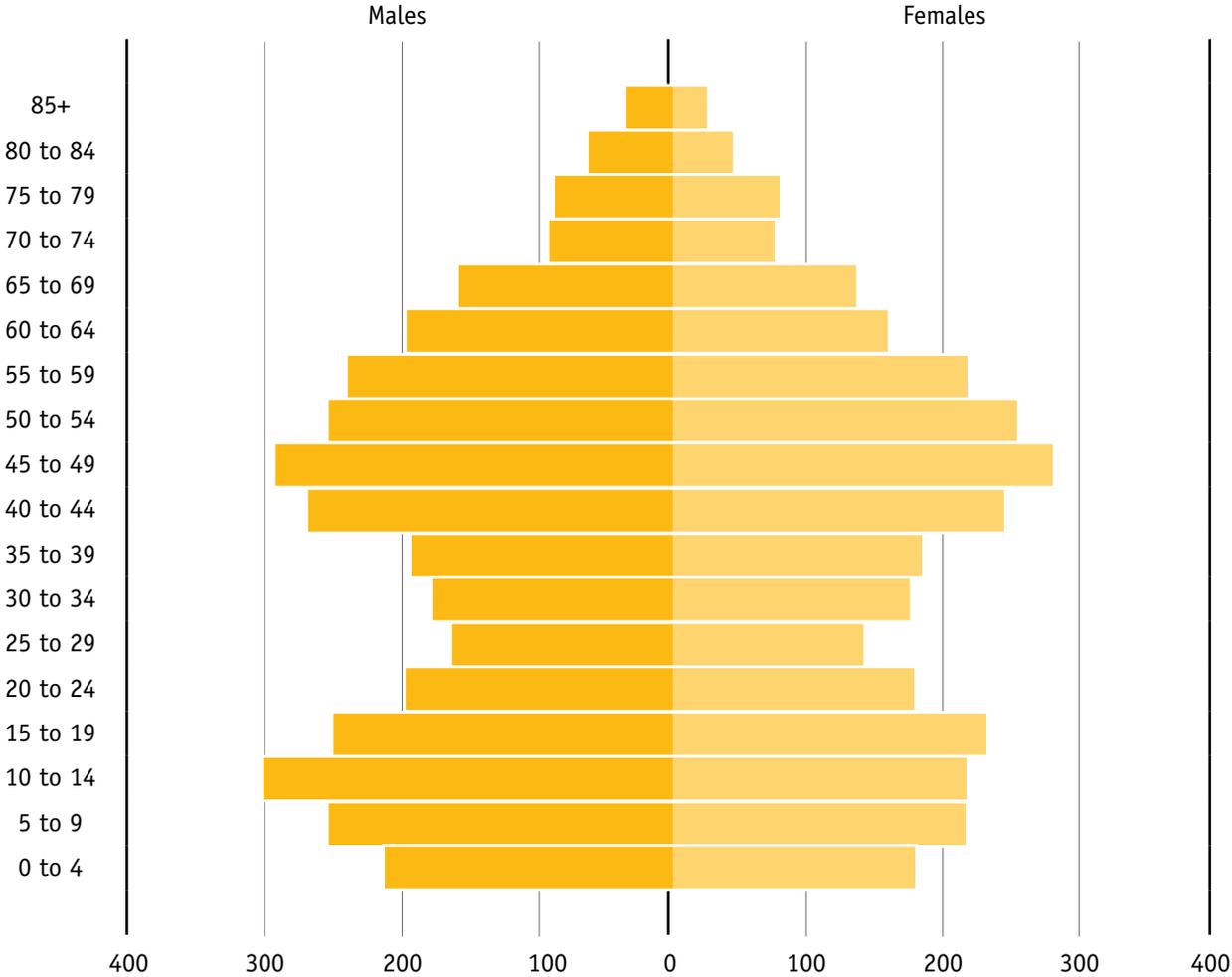
RESOURCES

Sample Land Area to Lot Conversion Table

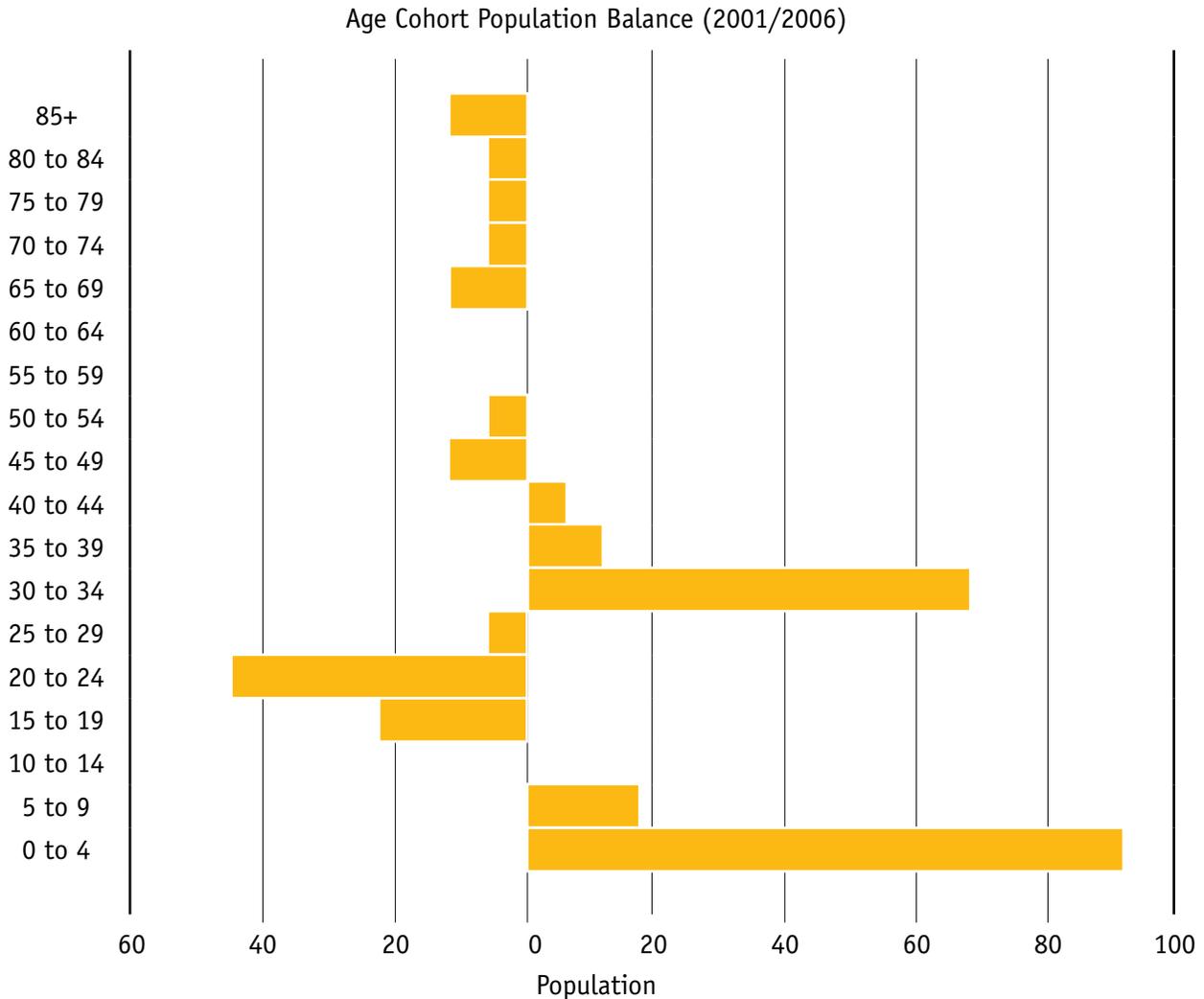
GROSS ACRES	NET ACRES UNSERVICED	LOT YIELD UNSERVICED (2 ACRE LOTS)	NET ACRES SERVICED	LOT YIELD SERVICED (4 LOTS PER ACRE)
1 (note a)	1	Nil	1	4
2 (note a)	2	1	2	8
5 (note a)	5	2	5	20
10 (note a)	10	5	10	40
40	36	18	30	120
80	72	36	60	240

Note A: Assumes that the parcel is infill and no land is required for public uses.

RESOURCES



Sample Graph Showing Age Cohort Population Balance Between Census Years



Redevelopment: The Federation of Canadian Municipalities (FCM) has tools and resources available on their website. FCM’s Green Municipal Fund provides loans and grants to municipalities to help brownfield redevelopment. Visit: sustainablecommunities.fcm.ca/capacity_building/brownfields/default.asp.

Manitoba Land Inventory: The Manitoba Land Initiative (MLI) is a provincial program to develop, manage and maintain a land information framework necessary to harmonize and share government’s geospatial databases, and make them available. Visit: mli2.gov.mb.ca/index.html.

Statistics Canada Community Profile: Statistics Canada presents community-level information on the age of the population, households, dwellings, immigration and labour force from the census. Visit: 12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E.



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