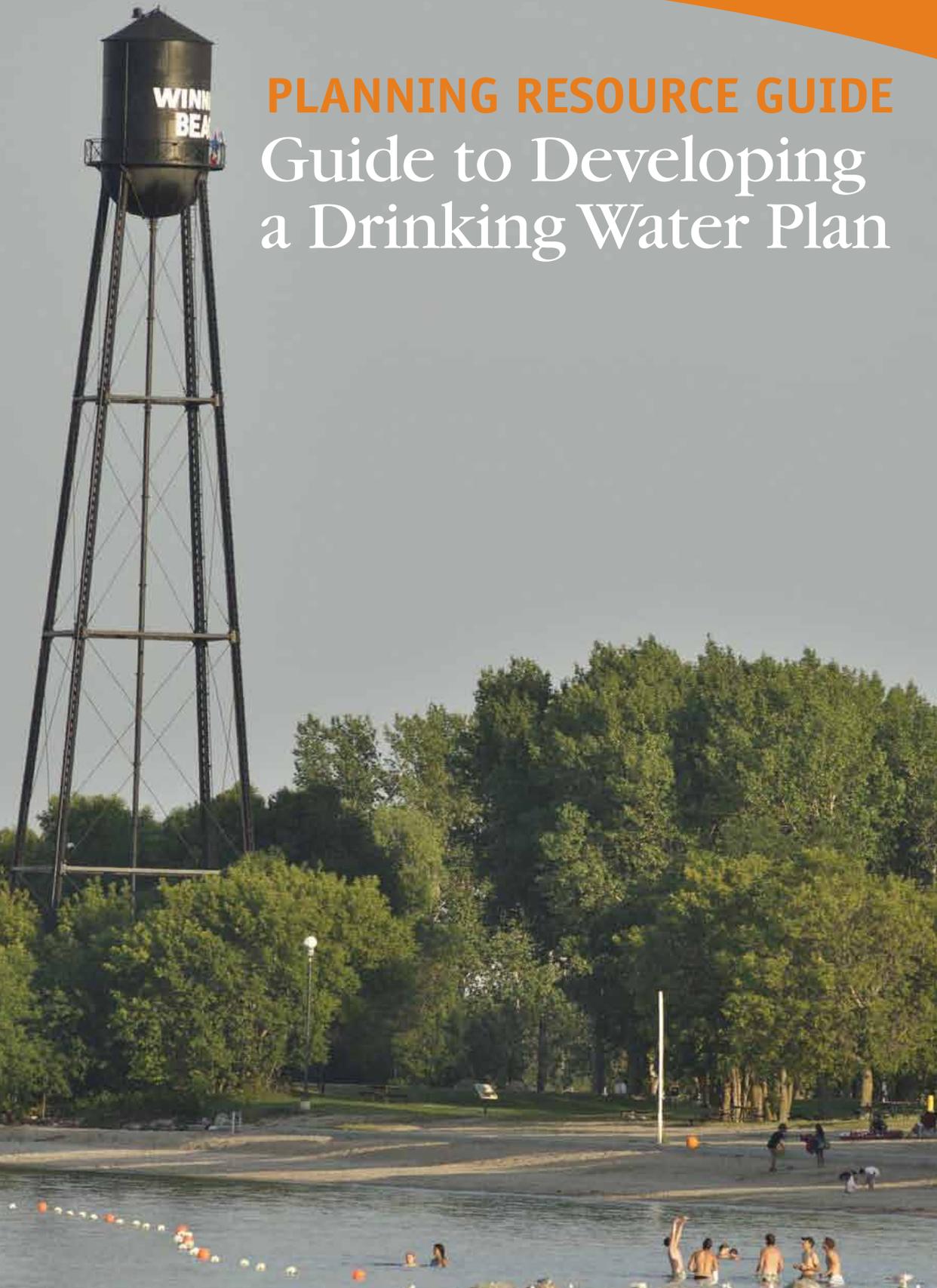
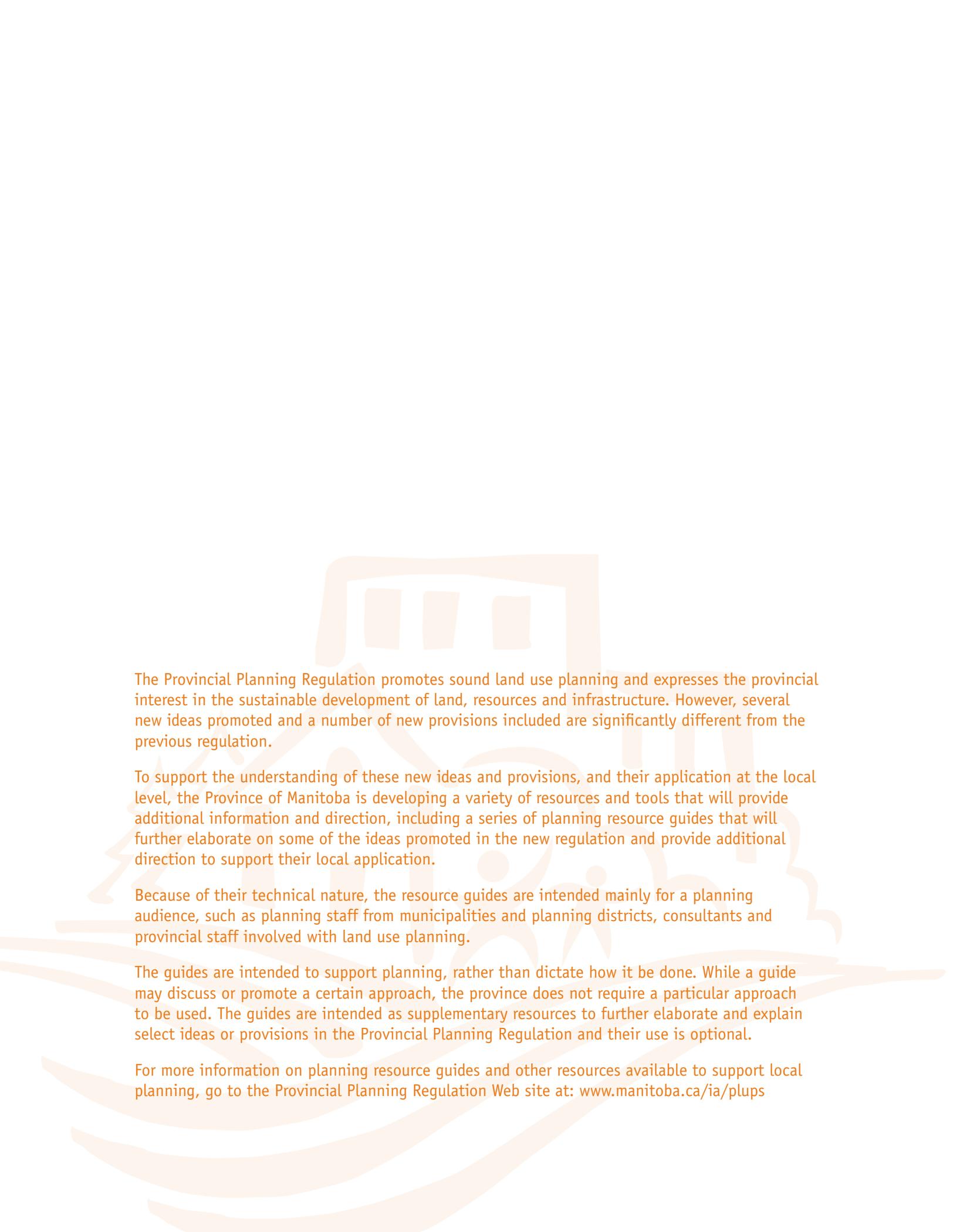




PLANNING RESOURCE GUIDE
Guide to Developing
a Drinking Water Plan



The background features a faint, stylized illustration in shades of orange and brown. At the top, there is a building with three windows. Below it, several human figures are depicted in various poses, some appearing to be in motion or engaged in an activity. The overall style is minimalist and graphic.

The Provincial Planning Regulation promotes sound land use planning and expresses the provincial interest in the sustainable development of land, resources and infrastructure. However, several new ideas promoted and a number of new provisions included are significantly different from the previous regulation.

To support the understanding of these new ideas and provisions, and their application at the local level, the Province of Manitoba is developing a variety of resources and tools that will provide additional information and direction, including a series of planning resource guides that will further elaborate on some of the ideas promoted in the new regulation and provide additional direction to support their local application.

Because of their technical nature, the resource guides are intended mainly for a planning audience, such as planning staff from municipalities and planning districts, consultants and provincial staff involved with land use planning.

The guides are intended to support planning, rather than dictate how it be done. While a guide may discuss or promote a certain approach, the province does not require a particular approach to be used. The guides are intended as supplementary resources to further elaborate and explain select ideas or provisions in the Provincial Planning Regulation and their use is optional.

For more information on planning resource guides and other resources available to support local planning, go to the Provincial Planning Regulation Web site at: www.manitoba.ca/ia/plups

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1.0 INTRODUCTION TO DRINKING WATER PLANS IN MANITOBA

1.1 What is a Drinking Water Plan?

A drinking water plan (DWP):

- shows how water is supplied within a planning area (municipality or planning district)
- outlines plans for future development
- identifies appropriate levels of water service to support development goals
- suggests where planning and investment in water supply infrastructure is best directed
- estimates costs and describes financing for existing and planned water systems
- integrates elements of the development plan, integrated watershed management plans, financial plans and capital plans
- supports and informs decisions on land use, infrastructure funding and project approval processes

1.2 Which municipalities are required to prepare a DWP and what should the plan contain?

With the introduction of the *Save Lake Winnipeg Act*, all planning authorities (municipalities or planning districts) in the Capital Region are now required to prepare a DWP as part of a development plan review or major amendment. Other planning authorities may also be required by the minister of Local Government to prepare a DWP. These may include areas of high growth or where water quality is compromised or water supply is limited.

The DWP must demonstrate to the minister of Local Government that there is sufficient capacity to accommodate any projected development set out in the development plan. If increased capacity will be required, the DWP must explain the infrastructure investments necessary to accommodate the projected development, ensuring that the proposed infrastructure investments will be planned for in an environmentally and economically sustainable manner, with implementation timelines that are co-ordinated with population projections.

More than an Engineering Report

The DWP is different from an engineering report. The engineering report may describe in detail the state of existing infrastructure, capacity and potential engineering solutions to specific problems. The DWP projects infrastructure, supply and capacity needs, reviews potential servicing options and builds a course of action or approach for the next five to 25 years.

The DWP is a municipality or planning district's plan, not a consultant's report, so it must do more than identify options for the planning authority to consider. The final DWP submitted to the Technical Advisory Committee (TAC) must specify the planning authority's selected approach and course of action, including financing, to support the updated or amended development plan.



The DWP must also demonstrate that the responsible local authority will address any existing or anticipated environmental or public health issues, such as bacterial contamination.

A DWP will support and direct the preparation of a Capital Plan, which should reflect any capital expenditures that are identified because of the DWP process. Manitoba Local Government's Municipal Finance and Advisory Services can provide informal advice on the contents and preparation of a Capital Plan.

A DWP will also inform the Water System Approval and Licensing processes. Preferably, a DWP will be in place, or be in the process of being prepared, prior to submitting any major project proposals to the Office of Drinking Water.

Finally, the DWP must indicate how new development will strive to pay for itself. The DWP makes the link between planned development and the financing of related services. This is achieved by integrating the capital plan into the planning process, ensuring an adequate budget for any new services, and proper allocation of fees to users of new infrastructure.

Details of the contents of a DWP are provided in Part 3 of this guide. All DWPs are reviewed by a Technical Advisory Committee (TAC). See Appendix A for information on the regulatory process and what the TAC will look for when reviewing DWPs.

1.3 Who should be involved in preparing a DWP?

Drinking water is a key municipal service that can influence land development patterns. Because of the significant land use implications of drinking water infrastructure, planning authorities should lead the drinking water planning process.

Depending on the complexity of local drinking water issues and the amount of data already collected through various studies, the DWP may need to be carried out by a professional engineer. At a minimum, consultation with engineers, as well as planners and other professionals, is recommended in all cases.

Begin by setting up a small committee to ensure the various components of a DWP are examined from a broad perspective. Involving the following individuals (either as committee members or for consultation as needed) will ensure a smooth planning process and result in a thorough DWP:

- chief administrative officer/office manager (to help facilitate the overall process and provide information on capital costs)
- finance department

Regionalization

The benefit of sharing human, technical and financial resources has led a number of areas to invest in regional water systems where water supply and treatment are provided using a single (or multiple) larger water treatment plants and then distributed through a large regional water pipeline network. In some areas, water supply may be through individual wells or cisterns, or through small co-operatively owned or privately owned water systems.

Water Supply and Development Patterns

Water supply is a critical service that can influence development patterns. Higher densities of development are more easily accommodated in areas where centralized (piped) water systems are developed to provide treatment that meets drinking water standards and to provide the amount of water required to meet local needs including fire fighting or commercial development.

- council members
- professional planners
- development officer
- operations engineer or technologist
- consulting engineer (if no full-time engineering staff)
- representatives from local water co-operatives
- regional office of Manitoba Local Government's Community and Regional Planning Branch
- local environmental health inspector
- Manitoba Conservation and Water Stewardship: Office of Drinking Water, Groundwater Management

2.0 USING THE GUIDE

This guide assists planning authorities through the process of collecting the appropriate information and using that information to:

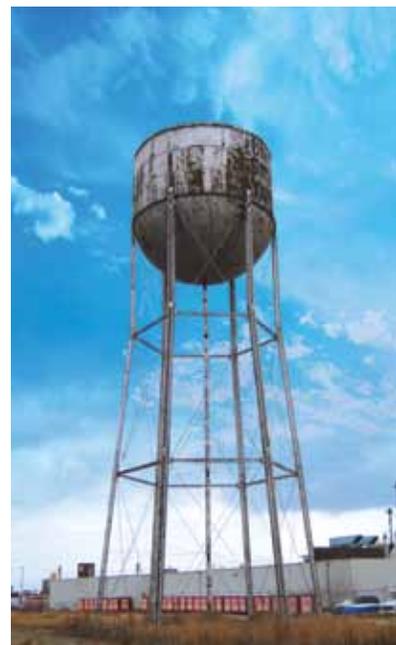
- produce an inventory of the water systems in the planning area
- determine the current and future water needs of the planning area
- identify options for addressing those needs and select an approach
- outline how the selected approach will be implemented and financed, including phasing and timelines

How a planning area addresses its needs depends on a combination of factors including the following:

- current and anticipated water demands
- population change
- industrial, commercial and institutional growth
- land use types
- water service standards
- fiscal capacity
- availability of water
- water quality

Community Planning Assistance Grant Program

Community Planning Assistance Grants are available to fund the services of a qualified consultant to prepare studies required to address important planning and land use issues in the planning area, including DWP's that have been ordered by the minister. Funding of up to 60 per cent of the costs to a maximum of \$40,000 per plan for a planning district and up to 50 per cent to a maximum of \$20,000 for a municipality that is not part of a planning district is available. Visit our website for more information: www.gov.mb.ca/ia



- proximity to, and relationships with, neighbouring jurisdictions

Every planning area's water supply needs are different. Because of these differences, no two DWPs will be the same. This guide is intended to be used by planning authorities of all sizes, with drinking water systems of varying complexity. To meet these varied needs, the guide is not intended to be read as a strict recipe. Use it instead as a basis for a plan that meets the specific needs of the planning area.

3.0 ELEMENTS OF A DRINKING WATER PLAN

This section of the guide will walk through the process of preparing a DWP, indicating what information to obtain and include. The final document should contain an executive summary outlining the DWP highlights, findings and course of action. Each section should conclude with observations that summarize the key points of that section. Appendix B provides a sample table of contents showing all the sections of a complete DWP. Appendix C is a glossary of water supply terms and can be used as needed.

3.1 Context: Current water supply situation

This section of the DWP identifies available water sources, current water supply needs and existing water supply systems.

3.1.1 Describe the sources of water that are available in the planning area (municipality or planning district):

- On a map, identify major potential water supply sources including surface water bodies such as lakes, reservoirs, rivers, streams (intermittent streams and drains should not be included) and the boundaries of local groundwater supply aquifers.
- Summarize, in a table, for each water supply source:
 - assumed capacity for increased water use (ex: ample, moderate, limited, severely limited)
 - currently used, potential use and never to be used
 - water quality issues, both health-related and aesthetic (ex: high turbidity, high organic content, elevated arsenic, high hardness)
 - level of treatment required to meet provincial health standards and to meet other aesthetic goals (ex: advanced, moderate, basic)
 - potential vulnerability of communal water sources to contamination

Water Treatment

Treating surface water typically requires more advanced levels of treatment than groundwater. Basic treatment for groundwater is disinfection; however, many aquifers in Manitoba have elevated water hardness, iron or manganese levels that result in aesthetic issues such as scaling and staining. Some aquifers are located close to the surface and are vulnerable to contamination. Some aquifers have elevated levels of arsenic or other metals that will require advanced treatment for removal.

3.1.2 Describe the current water supply needs:

- On a map, identify communities and settlement areas (ex: higher density development), campgrounds or resort areas (seasonal development), rural housing lot areas and any large industrial, commercial or institutional (ex: hospital, correctional facility) water users located outside of communities or settlement areas.
- Estimate current annual water supply needs:
 - Use existing water use data, if readily available, including average day, peak day and annual water use.
 - Select an appropriate size descriptor for each of the water users or areas such as current population, number of lots, number of campsites or number of hospital beds.
 - Estimate per capita/site/bed/etc. water use factors.
- Summarize water use information, in a table, including water system, community or area, current size, assumed water use rate, and average day, peak day and annual water use.

3.1.3 Describe the existing piped water systems, the boundaries of their service areas and their current conditions and capabilities (ex: an asset inventory – what does the region have?):

TYPE OF SYSTEM	SIZE	WATER USE	AVERAGE DAY	PEAK DAY	AVERAGE ANNUAL USE MEGALITRES (ML)
Community W (piped system)	1,000 people	300 lpcd	300,000 l	600,000 l	110 ML
Community X (private wells)	100 people	200 lpcd	30,000 l	90,000 l	11 ML
School Y	250 staff plus students	50 lpcd	12,500 l	12,500 l	2.5 ML
Campground Z	300 sites	300 l per day per site	90,000 l	360,000 l	33 ML

Note: lpcd = litres per capital per day; ML = mega (million) litres

- On a map, identify the locations of municipally owned, provincially owned (ex: provincial campgrounds) and co-operatively owned centralized (piped) water systems. Use labels that distinguish different ownership types. Most water systems serve a community, settlement area, campground, resort or large facility. For larger rural or regional systems, indicate the service area boundary.

Public Utilities Board

Visit the Public Utilities Board website for information on leak rates, cost, financing and utility rates: www.pub.gov.mb.ca

Provide a description of the main characteristics of each of the water systems. This helps identify systems that can be expanded to support additional development and shows where water supplies are inadequate or unsuitable.

- For centralized water systems, provide:
 - the water source
 - the type of treatment system
 - the number of people served
 - the annual volume of water currently produced
 - a list of the major assets (ex: two wells, water treatment plant, 60 km of water mains)
 - a rating of the condition and remaining life of the infrastructure
 - the remaining water supply and water treatment capacities available
 - whether the system is meeting provincial drinking water standards and operational requirements (ex: whether major upgrading or investment may be required)
- If any water supplied within the planning area originates from a water system managed outside the area, identify the water system, service arrangements with the system (ex: agreements/contracts), whether additional water supply is available and whether the system is meeting provincial drinking water standards.
- For rural areas with individual water supplies, provide the most common type of water supply (ex: private well, truck haul and cistern, individual surface water intakes), the name of the water source if applicable and an indication of any local water supply issues (ex: bacterial contamination, older or poorly maintained wells, high hardness).
- For large industrial, commercial or institutional water users, provide the type of water supply, water source name if applicable and an indication of any water supply issues.
- Summarizing key information from the water system inventory on maps (ex: water system service areas) and in table form (ex: water system rating of conditions, available capacity, ability to meet standards) may assist in relating this information to information gathered in other steps of the planning process.

Water Use

Where water is metered, water systems can calculate average day, peak day and annual water use rates. If data are not available, assumed water use factors can be applied. For example, 300 litres per person per day is a commonly assumed community water use rate. A peak factor of between 1.5 and three is commonly assumed. These water use parameters can be calculated from local data or from drinking water references. Average day and peak day water use are important because they affect sizing of critical water system components such as water treatment plants and water storage reservoirs.

Estimates may also be made. Using typical per capita daily volume figures is an example. Ideally, volumes can be calculated and compared using both measurements and estimates. This provides insight into unusual patterns of water use in a community. It may indicate problems with large generators or with the distribution system (ex: leaks).

- Provide background on how the current situation for water supply came to be (ex: why were these types of water supply approaches adopted?) and how decisions on the level of water service (ex: municipal piped supply versus private developer supply versus individual supply) within the planning area are made.

3.1.4 Outline the costs associated with current municipal water system(s) and how costs are currently paid for (describe the financing mechanisms):

- Annual Costs
 - replacement cost as an amortized annual capital cost
 - operating and maintenance costs including service charges, upcoming major upgrading or investment
- Financing Mechanisms
 - borrowing
 - grants from senior levels of government
 - reserve funds, capital levies
 - property taxes
 - user fees and utility rates
- Provide a summary of the annual budget for each system including debt financing.
- Describe any shortfalls with the current financing mechanisms (ex: inadequate cost recovery, depleted financial reserves, inadequate system maintenance) and how these will be addressed.

3.1.5 Describe how well the existing water supply approaches are meeting current needs:

- Compare the current functioning of the various water supply systems to their design capacities (for supply, treatment and storage). Which of the water systems have reached or are rapidly approaching their design capacities?
- Describe how the current systems meet drinking water standards (operating licence conditions). Which of the current water supply systems are meeting standards? Which of the water systems require significant upgrading to meet standards?

Sources of Information on Water Supply

Regulated public and semi-public drinking water systems are inspected and their operations reviewed regularly. These systems will have an operating licence, water quality data, reports and correspondence identifying operating conditions and any water quality, compliance or operational concerns. These systems are regulated under *The Drinking Water Safety Act* through the Office of Drinking Water: www.manitoba.ca/drinkingwater

Other sources of information include integrated watershed or aquifer management plans, provincial water management experts, local water systems and residents (ex: service agreements, water quality issues).

InfraGuide

See the Federation of Canadian Municipalities website for InfraGuide materials on asset management, dedicated funding models and more:

<http://fmv.fcm.ca/Infraguide/>

- Describe any real or potential public health concerns for the current water supply systems.
- Describe any action in progress to protect water supply sources from contamination (ex: wellhead protection).
- Describe the general condition of the current systems. Which of the water systems require significant investment to replace or rehabilitate existing infrastructure?
- Describe the adequacy of existing water system funding mechanisms. Are adequate funds available to support the ongoing sustainable operation of these systems?
 - As in Part 3.1.3 above, summarizing key information from the water system inventory on maps and in table form may help relate it to information gathered in other steps of the planning process.

Sources of Information for Projected Needs

Sources of information to help determine projected needs include Statistics Canada profiles, local supply and demand studies, watershed or aquifer management plans, wastewater management plans, development plans, water system studies and water use licensing specialists.

3.2 PROJECTED WATER SUPPLY NEEDS AND CONSIDERATIONS

This section of the DWP should estimate what the planning area's drinking water supply needs are over the next 25 years (identifying short term and long term needs).

3.2.1 Describe the anticipated growth rate and development pattern:

- Provide population estimates and expected growth rate trends for the various communities, settlement areas, campgrounds, resort areas and rural areas of the planning area. Describe any relevant demographic trends over the next 25 years (ex: aging population).
- Based on these estimates and trends, describe the anticipated rate of development over the short (next 5 to 10 years), medium (11 to 20 years) and long (20 plus years) terms.
- On a map, identify anticipated development rates for the various communities, settlement areas, campgrounds, resort areas and rural areas (ex: negative growth, no growth, slow growth, rapid growth). Also indicate the anticipated direction of development for these areas on the map.
- Identify any anticipated large industrial, commercial or institutional developments and any major residential developments that might have significant water supply needs in the next 25 years. Indicate the anticipated location of these developments on a map.



3.2.2 Based on current water supply needs in the planning area (as determined in Section 3.1.1), and the anticipated growth rate and development pattern (as determined in Section 3.2.1), estimate long-term water supply needs and the ability of current water supply systems to accommodate these needs:

- Estimate the water supply needs from anticipated development as designated in the development plan over the short, medium and long term planning horizons for the various communities, settlement areas, campgrounds, resort areas and rural areas in the planning area.
- For each of these development areas, estimate the water supply, treatment and storage capacity needed to meet these water supply needs.
- Describe the ability of the current water supply systems to accommodate the anticipated change in water supply needs over the short, medium and long terms.

Describe the ability of water supply sources in the planning area (ex: lakes, rivers, aquifers) to support additional water use.

- Identify areas where anticipated growth and development may require a change from individual (private) water supplies to a piped water supply, and areas where establishing a regional water supply network may be required to ensure sustainable water system operations.
- The maps produced in previous DWP steps can be used to identify areas where water supply need and water supply arrangements do not readily support growth and development. They can also identify areas where expansion is best accommodated based on the condition and quality of the water supply systems. Use this information to guide land use designation from a drinking water perspective in the development plan.

Mapping

Mapping is an important tool for preparing a DWP. Mapping can help identify areas where anticipated growth and development are best accommodated and areas where water supply challenges or limitations would make it difficult or financially unsustainable to support growth or development. For example, a map can show where piped water supplies currently exist and where they are planned.

A DWP map can also support policies in a development plan. If the plan contains policies that require new developments to connect to existing services, the map shows where those services are and where expansion would require capital investment.

3.3 Water supply options and costs

This section of the DWP should identify water supply options to meet anticipated growth and development, and show the level of investment required in current or new water supply systems over the long term. Where water supply limitations, treatment challenges and operational complexities occur, establishment of regional (shared) water systems should be considered.

3.3.1 Describe water supply options best suited for current and future needs:

- Explore the different types of systems and solutions available to address water supply needs.
- Compare feasibility of different options based on size, geography, rate of growth and development, and financial capacity of the planning area.
- Examples of different options:
 - regional water systems
 - service sharing agreements with nearby communities
 - expansion of existing water supply systems
 - municipal purchase or takeover of small water co-ops
 - constructing new municipal piped water systems
 - individual (private) water supplies



Identify areas that accommodate growth and development best from a drinking water supply perspective.

- Describe the selected water supply approach and any limitations it may have.
- Describe how planning area representatives were or will be consulted on the selected approach.
- See Appendix D for more details.

3.3.2 Based on the water supply approach selected, describe the infrastructure expansions or improvements necessary and the associated costs including:

- upgraded technology or facilities to meet water supply requirements and water quality standards for treatment and storage requirements
- new facilities or systems to meet water supply requirements
- service agreements



3.4 IMPLEMENTATION AND FINANCING

This section of the DWP should identify where and when water systems are expected to be implemented in the community. Information in this section will help serve as a guide to direct future development on land as it is designated in the development plan. The contents of the DWP should be reflected in and support the development plan and servicing bylaws.

New development that requires water supply arrangements should ensure that the capital costs associated with the development and related servicing requirements are built into a system of lot levies and charges established by the municipality. By linking to the capital planning process, the costs of extending the services can be budgeted appropriately and users adding to the cost of extending services can be charged appropriately.

3.4.1 Describe how the selected water supply approach will be put into operation:

- Indicate on a map where upgrading, expansion or takeover of existing water supply systems is a selected approach, the proposed boundaries of the service area if applicable and the reasons for selecting this approach as part of the long-term plan for the planning area.
- If a new central or regional water system is selected, indicate on a map where the water treatment facility will be located, proposed service area boundaries and the reasons for selecting this approach.
- If other options such as connecting to a nearby or regional water system or relying on individual water supplies are selected, indicate the proposed boundaries of the service area and describe the reasons for selecting this approach.
- Outline phasing of any major capital projects and identify factors that may influence timing.
- Describe strategies or programs that are or will be in place to reduce water use including:
 - metering
 - volume-based water rates
 - public education
 - water audits
 - rebates on water saving devices
 - watering bans
 - leak detection
 - water main renewal
- Where water reduction strategies that may pose a risk to the water supply are being considered (ex: grey water recycling), programs must ensure compliance with regulatory requirements or codes. They must also ensure the water supply is protected from contamination (ex: through backflow prevention).
- Describe any source water protection measures to be used to ensure critical water sources have the best possible protection from contamination, for instance, source water protection zones, as identified in an integrated watershed management plan.

Information on Water Quality Protection

Groundwater management can help minimize the risk of contamination to water supplies with general information on maintenance and protective practices. This type of information is also routinely included in an IWMP.

mwsb@mb.gov.ca



3.4.2 Describe the short and long term projected costs of the selected approach, including maintenance, repair and renewal, and how these costs will be fully recovered:

- Estimate the capital and operating financing needed to construct, operate and maintain the water supply system including any planned upgrading or expansion.
- Estimate the capital and operating financing needed for water conservation programs including source water protection measures.
- Identify methods of financing that will be used including:
 - property tax increase
 - capital borrowing
 - capital lot levies
 - special levies
 - gas tax rebate funds
 - utility rates
 - building permit fees
- how costs to expand or construct new infrastructure will be recovered by the developer (ex: lot levies).
- Explain the cost-sharing formulas of any regionalized approach, if applicable. Manitoba Water Services Board may be able to assist with this.
- Consider any recently updated regulatory requirements and their long-term cost implications.

3.4.3 Identify policy guidance to include in the development plan, as related to the drinking water planning approach to be implemented. The following are examples of guiding policies that could be included in a development plan, as appropriate:

- New development must be connected to piped drinking water systems, either where they exist now or where they will exist.
- Unless it is physically impractical, existing unserved development must eventually be connected to piped drinking water systems using a phased approach. (Identify the amount of time until existing development will connect.)
- New development will not be approved unless a sustainable onsite supply of drinking water is identified or there is sufficient capacity in the local drinking water system to support it.
- Extension of piped services beyond the boundaries of a settlement area must occur in a planning context that takes into consideration the broader region that may be affected by the extension.

- Piped water will not be extended beyond the boundaries of an urban centre in a way that supports the expansion of new development on the periphery of the urban centre.
- Where the drinking water supply is overburdened, domestic uses will be given priority over other uses.
- Demand management strategies A/B/C will be undertaken with all new development to ensure efficient use of water resources.

3.5 CONCLUSION

The concluding section should summarize the information, and approach to be taken, and it should highlight the next steps for the planning area regarding land use, financial planning and water infrastructure and servicing.

See Appendices A - I for additional information.



APPENDIX A: REGULATORY PROCESS FOR DRINKING WATER PLANS

The DWP is now a requirement of all capital region municipalities and planning districts, and other planning authorities as deemed necessary, under Section 62.2 of *The Planning Act*.

The Community and Regional Planning Branch of Manitoba Local Government will help determine whether a DWP must accompany a development plan review or major amendment. A DWP should be prepared before or at the same time as the planning area's development plan. The development plan should be reviewed every five years. Preparing the documents together will ensure land use decisions reflect the DWP, and that wastewater management investments reflect the development plan. This is also in keeping with Part 4 of the *Provincial Planning Regulation*, which requires plans to be co-ordinated.

Once the DWP is complete, the proponent submits it to the province for review by a technical advisory committee (TAC) with representation from various government departments. The review process will take approximately 30 days, plus additional time to address TAC comments or questions, and further time for approval. The review and approval process can occur concurrently with other regulatory processes.

The TAC will use the information in this guide as a standard. Questions the TAC will ask when reviewing the DWP include the following:

- Does the DWP provide evidence that there is sufficient drinking water capacity to accommodate the projected development proposed in the development plan?
- Is the approach selected in the DWP to provide additional capacity appropriate? Are there other options that should be considered?
- Does the DWP indicate how the water system (existing and proposed) ensures the health and safety of residents, protection of the environment, provision of adequate, safe and sustainable water supply, and overall efficiency of the system?
- What are the land use and development implications of the water system approach selected? Does the approach fit with development as it is planned?
- Is the plan for addressing future capacity requirements realistic and sustainable?
- Are there other financing mechanisms the municipality or planning district should consider?
- Are data used in the DWP accurate and consistent with data used in other plans?

Submit the complete DWP to this address:

DWP TAC Co-ordinator

Planning Policy and Programs Branch
Manitoba Local Government
607 – 800 Portage Avenue
Winnipeg, MB R3G 0N4
cpdppb@gov.mb.ca

Please note that the DWP supports existing regulatory processes, but does not replace them. In many cases, the DWP is a background planning document that supports and rationalizes proposed water supply capital investments and development patterns. Regulated drinking water systems must still meet their obligations for periodic assessments of their water systems, for issuing annual reports to customers (where required) and for obtaining a permit prior to undertaking any upgrading, expansions or major alterations to their systems.

APPENDIX B: SAMPLE TABLE OF CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

Methodology: Methods used, individuals involved, documents referenced

CONTEXT – CURRENT SITUATION

Sources of water

Current needs

Current water supply system (including private systems)

Costs and financing of current water supply system

Functionality of current water supply system

PROJECTED WATER SUPPLY NEEDS

Anticipated growth and development patterns in area

Anticipated water demand and impacts on current system

WATER SUPPLY OPTIONS AND COSTS

Water supply options available

Selected approach and necessary improvements

Probable costs associated with selected approach

Potential for future regionalization (facilities and services shared with other communities) if applicable

WATER SUPPLY IMPLEMENTATION AND FINANCING

Staged implementation of upgrades (timing and location)

Capital costs, ongoing utility operating costs and financing mechanisms

Related policy guidance for development plan

SUMMARY AND CONCLUSIONS

APPENDICES, TABLES, FIGURES, GLOSSARY

APPENDIX C: GLOSSARY

Aquifer — a water-bearing geological formation capable of providing water to wells or springs in sufficient quantities to serve as a source of water supply.

Demand management (as relates to water use) — controlling consumption and consumptive demands through a variety of practices, policies or laws, to achieve efficient water use of existing supplies to postpone or avoid the need to develop new water supply sources or infrastructure.

Grey water — liquid waste drainage from a dwelling or other building produced by activities like bathing, laundering or food preparation and specifically excluding sewage.

Groundwater — all water under the surface of the ground, whether in solid or liquid form.

Intermittent stream — a stream that carries water a considerable portion of the time, but which ceases to flow occasionally or seasonally.

Municipal purposes — use of water by a municipality or a community for:

- supplying a municipal or community water distribution system for household and sanitary purposes
- industrial use or uses related to industry
- watering streets, walks, paths, boulevards, lawns and gardens
- protecting property
- flushing sewers
- other purposes usually served by a municipal or community water distribution system

Public water system – a drinking water supply system that has 15 or more service connections or has been designated as a public water system under *The Drinking Water Safety Act*.

Semi-public water system – a drinking water supply system with 2-14 service connections or an individual water supply for a facility that serves the public such as a school, restaurant or hospital.

Water body — any body of flowing or standing water, whether naturally or artificially created; whether the flow or presence of water is continuous, intermittent or occurs only during a flood; including, but not limited to, lakes, rivers, creeks, streams, sloughs, marshes, swamps and wetlands, including ice on any of them.

Water quality management zone — any area of the province designated as a water quality management zone for the purpose of protecting water, aquatic ecosystems or drinking water sources by regulating or prohibiting any use, activity or thing in any or all parts of a water quality management zone.

Well — an opening made by drilling or digging into the ground and installing a permanent well casing to obtain groundwater or information on groundwater or an aquifer. Types may include:

- a test well
- a monitoring well

- a production well
- a dewatering well
- an open loop geothermal well
- a flowing artesian well
- a closed loop geothermal well
- a geotechnical well
- an injection well

Related equipment, materials and accessories are included in the definition of a well.

APPENDIX D: CONSIDERATIONS FOR WATER SUPPLY OPTIONS

When selecting water supply options for a planning area, factors to consider include the sizes of communities, local geography and regional opportunities.

1. Community Size

Larger communities, and those in fast growing areas, will generally require a centralized, piped water supply system to ensure adequate safe water. For small, sparsely populated communities with little to no growth, it may be difficult to maintain their own water treatment plant over the long term. In these situations, connecting to a nearby water system or supporting a regional water supply solution may be viable. Municipal officials and residents must decide, however, on the relative costs and benefits of individual water supplies versus installation of piped water supply systems. Additionally, if rural water lines are installed, pressure for development along these lines must also be considered in light of the policy guidance in a development plan.

2. Local Geography

Local soil conditions (ex: bedrock at shallow depths) may have a significant impact on the cost of installing water piping. The location and availability of suitable water supply sources may also be limited in some areas (ex: no groundwater available at suitable depths or of suitable quality).

3. Regionalization

Opportunities for regional co-operation should be considered because amalgamating resources leads to overall improvement of drinking water quality and more sustainable water systems. Neighbouring communities may be considering upgrading or constructing new water systems, as well. In some cases, a regional approach may not be feasible because of the distance between communities. Municipalities may also consider purchasing or taking over small water co-ops that lack the resources to operate a centralized water system.

4. Technical Advice

For advice on long-term solutions for water supply, please contact consulting/engineering experts or technical experts with provincial agencies such as The Manitoba Water Services Board. Staff can provide advice regarding water supply options including regional solutions. mwsb@gov.mb.ca.

The Office of Drinking Water can provide information on local water quality issues, water supply options and treatment requirements to meet drinking water standards. www.manitoba.ca/drinkingwater

APPENDIX E: GUIDANCE FOR SMALL OR RURAL PLANNING AREAS

For some rural areas without existing municipal water service, the long term approach for water supply may be to rely on individual water supplies (ex: private wells or cisterns). This water supply can be suitable in areas where the rate and density of development is low enough to allow the well or cistern to be protected from contamination (ex: away from septic tanks), and where little or no treatment is required to make the water safe for use.

In this case, a DWP would identify how this approach would be sustained, with the following considerations addressed:

- development as indicated in the development plan
- water supply capacity
- water quality factors
- lack of services for industrial, commercial and institutional development
- effects of poor system maintenance or upgrades

Although such water supplies are privately owned and operated, regular maintenance is required to minimize the risk of contaminating the water supply and water source. Any health or environmental problems arising from private systems would ultimately be the responsibility of the local and provincial governments. As part of the DWP, the planning authority could decide to have qualified contractors carry out and establish scheduled inspection and maintenance of individual water and wastewater systems, rather than leaving it to private owners.

APPENDIX F: LEGISLATIVE FRAMEWORK

The following acts and regulations set the parameters and requirements of a WWMP and should be consulted and referenced in the DWP where applicable.

- *Planning Act*
- *Provincial Planning Regulation*
- *Drinking Water Safety Act*
- *Environment Act*
- *Onsite Wastewater Management Systems Regulation*
- *Water Protection Act*
- *Groundwater and Water Well Act*
- *Water Rights Act*
- *Municipal Act*

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