DRAFT GUIDELINES FOR THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT FOR THE RED RIVER FLOODWAY EXPANSION PROJECT

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1. PURPOSE

The purpose of this document is to identify the information to be considered in an environmental impact statement for the Red River Floodway Expansion Project.

2. INTRODUCTION

2.1 BACKGROUND

The Province of Manitoba is currently considering the expansion of the Red River Floodway. The expanded floodway would provide flood protection to the City of Winnipeg for a flood event of approximately 1 in 700. A schematic showing the location of the proposed project is provided as Schedule 1 to these guidelines.

Discussions between Manitoba and Canada regarding the future Red River Floodway Expansion Project have been initiated, and it is anticipated that Canada will be involved with the project as a funding partner.

2.2 ENVIRONMENTAL ASSESSMENT REQUIREMENTS AND PROCESS

The Red River Floodway Expansion Project is a Class 3 development as defined in the *Classes of Development Regulation* under *The Manitoba Environment Act*, and will require environmental assessment under *The Canadian Environmental Assessment Act.*

Under the provisions of the *Canada-Manitoba Agreement on Environmental Assessment Cooperation*, Manitoba and Canada have agreed that, where both governments have an environmental assessment responsibility for a proposed project, a cooperative environmental assessment will be undertaken. A Project Administration Team (PAT) will be established to administer the cooperative environmental assessment process. Accordingly, these Draft Guidelines for the Preparation of an Environmental Impact Statement for the Red River Floodway Expansion Project have been developed to address specific issues and identify information to be considered in the environmental assessment of the project. The Project Administration Team will finalize the Draft Guidelines after consideration of public comments and input received from the Federal/Provincial Technical Advisory Committee (TAC).

Public hearings will be conducted for the floodway expansion project. The hearings will be conducted to review the public issues raised in the environmental assessment process, and to provide advice and recommendations in a report to be prepared subsequent to the

hearings on those issues to the provincial minister and the federal responsible authority (ies).

2.3 INTENT AND SCOPE OF THE ENVIRONMENTAL ASSESSMENT

2.3.1 INTENT:

The intent of preparing these Draft Guidelines is to identify the information to be considered in an environmental impact statement to be prepared for the project.

The intent of preparing the environmental impact statement (EIS) will be to:

- describe the Red River Floodway Expansion Project and identify and characterize the environment in which the project is to exist;
- provide a description of the regulatory framework within which the Red River Floodway Expansion Project will be planned, built and operated;
- identify potential bio-physical, socio-economic and cultural effects related to the Red River Floodway Expansion Project;
- describe the scientific analysis of ecosystem effects, local knowledge, and the experience of the public that was used by the study team in the assessment of environmental effects;
- describe how the analysis of potential effects to valued ecosystem components (VEC's) contributed to judging the significance of the effects on the well being of the environment and the communities within the area affected by the project;
- provide a summary of the regional, provincial or national objectives, standards, guidelines and relevant land and resource related agreements which have been used in the evaluation of the significance of the environmental effects;
- describe the consideration given to comments received from the public during the environmental assessment; and
- propose mechanisms for follow-up to identify and manage the effects of the project and to confirm the effectiveness of mitigation strategies employed.

It is intended that the Environmental Impact Statement for the Red River Floodway Expansion Project shall incorporate and reflect the ***Principles of Sustainable Development*** as contained in "***Towards a Sustainable Development Strategy for Manitobans"*** and the policies under ***The Land and Water Strategy*** as contained in ***"Applying Manitoba's Water Policies."*** The EIS should consider how the project relates to each of these principles and policies.

2.3.2 SCOPE:

The Project:

The environmental assessment for the Red River Floodway Expansion Project shall include consideration of the environmental effects of all undertakings associated with the site preparation, construction, operation and the final disposition of all components of the proposed Red River Floodway expansion, including any required infrastructure modification or development. The assessment must consider the purpose of the project and alternative means of carrying out the project that are technically and economically feasible.

The Assessment:

The scope of the environmental assessment shall include examination of:

- potential changes to the environment that may result from the Red River Floodway Expansion Project, including consideration of effects to:
    - land, water and air – including all layers of the atmosphere;
    - the biological environment, including terrestrial and aquatic ecosystems – all organic and inorganic matter and living organisms;
    - present and planned resource use, including land and water; and
    - human health, socio-economic and cultural conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes by aboriginal persons, or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance that will be affected by any changes to the environment caused by the project;
- the significance of the environmental effects;
- the implications of the Red River Floodway Expansion Project in terms of land and resource-related agreements;

- the environmental effects of potential malfunctions or accidents that may occur in connection with the project;

- the environmental effects of any alternative means of carrying out the project that will be considered as part of the assessment;

- cumulative environmental effects of the Red River Floodway Expansion Project that are likely to result from the project in combination with other projects or activities that have been or will be carried out;

- the effects of the influx of workers, equipment and materials on residents, land and resources of the region;

- the technically and economically feasible measures that would mitigate any significant adverse environmental effects of the project;

- the adequacy of measures proposed to mitigate adverse environmental effects of the project and to compensate for residual adverse effects, where appropriate;

- any change to the project that may be caused by the environment;

- the need for, and requirements of, any follow-up program in respect of the project; and

- the capacity of renewable resources, if any, that are likely to be significantly affected by the project.

The study area, i.e. the geographic scope of the investigations, shall include those local areas directly impacted by the undertakings associated with the Red River Floodway Expansion Project and also the zones within which there may be environmental effects that are regional or global in their nature.

3. REGULATORY FRAMEWORK

The environmental impact statement shall identify the legislation, policies, necessary approvals, land and resource related agreements and current planning initiatives applicable to the review of the Red River Floodway Expansion Project. The report shall discuss the primary focus of each regulatory or policy requirement, such as resource allocation, environmental protection, land-use designation or development control.

4. PUBLIC CONSULTATION AND INVOLVEMENT PLAN

Details of the overall public consultation process for the environmental assessment shall be described at the outset in a public involvement plan. The plan will recognize all interested members of the public and describe the various means to provide for their participation in the assessment process. Generally, the public shall include, but is not limited to: Aboriginal peoples; other local residents; community groups; environmental groups; the private sector; municipal governments; and other interested parties. The public involvement plan shall be included in the environmental impact statement (EIS) and the results of the public's input reported and evaluated.

The EIS shall describe the proponents' community consultation program that will have been undertaken with respect to the project, including the following:

- the role of community contacts in the consultation program;
- the use of any communication tools employed to provide information to affected communities, including newsletters, television broadcasts, and briefing documents;
- the frequency and outcome of open houses, community meetings, school presentations, and other meetings, that were employed to provide information to, and collect information from the communities consulted; and
- plans for ongoing consultation with the affected publics following completion of the environmental assessment.

The environmental impact statement shall describe how concerns and issues raised by the public were incorporated into the development of the project including its design, impact mitigation and monitoring. Any unresolved issues that were raised by Manitoba, Canada or stakeholders during the assessment process shall be discussed. In addition, efforts made to involve organizations and persons residing beyond the project area in issue identification and problem resolution shall be documented and evaluated in the EIS.

5. PROJECT DESCRIPTION

5.1 OVERVIEW OF MANITOBA'S FLOOD PROTECTION SYSTEM

The environmental impact statement shall provide an overall description of Manitoba's flood protection system. Emphasis in the description shall be on those components that relate to the selection of the Red River Floodway Expansion Project and the selected site.

5.2 PROJECT ALTERNATIVES AND SITE SELECTION

The environmental impact statement shall include a summary discussion of the alternative means of carrying out the project that were considered technically and economically feasible. A discussion of the potential environmental effects that were considered relative to any such alternative means shall also be included. Consideration of alternative means for achieving the goals of the project, for the purpose of the environmental impact statement, will include discussion of other processes that could have been implemented or locations that could have been chosen to achieve a similar end result. The purpose of and the rational for selection of the Red River Floodway Expansion Project shall be presented.

As well, the site selection process for all significant components of the project shall be discussed in the EIS. The information presented will include the rationale for selection of the proposed sites (routes) along with how the technical, geotechnical and environmental criteria were considered in the decision making.

5.3 OVERVIEW OF THE RED RIVER FLOODWAY EXPANSION PROJECT

The environmental impact statement shall provide an overview of the Red River Floodway Expansion Project, including a general description of the site selection process, construction, operation and maintenance of the facilities, and the final disposition of all components of the project. Included in this overview shall be the designed capacities of the project, location of all its components on a site-development plan, phasing and sequencing of the various undertakings associated with the components, and a description of activities relating to the project that have been undertaken to date.

5.3.1 SITE PREPARATION

The environmental impact statement shall describe all undertakings associated with preparing for construction at the sites. Detailed descriptions of timing and the methods associated with the various undertakings that were and are required including surveying, clearing, test drilling, establishing dump and borrow areas, setting up camps and work areas, and the development of the infrastructure requirements to access and service the sites. This will include providing:

- topographical maps and aerial mosaics of suitable scale showing the location of all proposed project components, including but not limited to related access roads, work camps, borrow and disposal sites, power sources and utility corridors with inclusion of the local topography, watercourses, wetlands and lakes; and

- a description of the extent of clearing, excavation, quarrying and earthworks required to prepare for construction of the control structure, channel, bridges, outlet structure and infrastructure modifications, identification of borrow sites for construction materials such as sand, gravel, clay and stone, and the proposal for removal of waste materials including transportation methods.

5.3.2 CONSTRUCTION

The environmental impact statement shall describe all elements of the construction of the proposed floodway expansion project. Detailed descriptions of timing and the methods proposed for the various undertakings related to the construction of the principal components and related facilities shall be required including the following:

- plans and descriptions of any existing works, temporary works including work areas, cofferdams, dewatering and control facilities, and the proposed permanent facilities including the control structure, dykes, channel, bridges, buildings and infrastructure.

- a description of the proposed construction methods that could have an effect on the environment such as those required for placement and removal of cofferdams, underwater or near-water blasting (if required), large scale clearing, grading or earth removal and disposal, including a discussion of possible alternative construction methods;

- an estimate of the size and composition of the workforce required during different times of construction;

- a description of measures that will be taken to protect the health and safety of workers and the general public in and around the construction areas;

- a description of the work staging areas and facilities provided for construction workers, including potable water supply and waste disposal;

- a description of the character and volumes of waste streams generated during the construction phase of the project and how each waste stream would be managed, consistent with best industry practices, with specific references to waste oil and other potentially hazardous or recyclable material;

- a description of the proposed environmental surveillance and monitoring proposed during construction along with proposed contingency plans that consider the effects associated with serious malfunctions or accidents;

- a description of the proposed construction schedule including sequencing of the various undertakings; and.

- subsequent removal of work staging areas and clean up of construction infrastructure.

5.3.3 OPERATION AND MAINTENANCE

The environmental impact statement shall describe how the floodway would be operated and maintained. Any differences in operating rules between the existing and expanded floodway should be discussed. A discussion of river flows and levels with and without the expanded project in place shall be provided. The description will include:

- discharges above and below the control structure, and in the floodway channel;

- water surface elevations at the same locations and at additional upstream and downstream affected locations under a range of flow conditions.

The environmental impact statement shall:

- describe how the proposed operation of the floodway would affect the existing operating regime along the Red River and its relationship to existing regulatory licences/approvals and agreements, including local zoning and land use approvals;

- describe the size and composition of the proposed labour force involved in the operation and maintenance of the floodway, along with a description of measures that will be taken to protect the health and safety of workers and the general public in and around the various facilities including spill prevention and contingency planning.

5.3.4 FINAL DISPOSITION

The environmental impact statement shall provide a general description of plans for rehabilitating the operational components of the floodway at the end of their operational life.

6. DESCRIPTION OF THE EXISTING ENVIRONMENT

The environmental impact statement shall describe the existing environmental setting for the proposed project. This will include a broad overview of the local area and the zones within which there may be environmental effects that are regional or global in their

nature. This description is intended to provide a context for a detailed understanding of the potential effects of the project. A description of any deficiencies or limitations in the existing environmental database shall be reported.

The environmental impact statement shall provide a discussion of the rationale for the determinations taken regarding the spatial and temporal boundaries chosen for the study areas used for the assessment.

6.1 PHYSICAL ENVIRONMENT

The environmental impact statement shall describe:

- general climate conditions with sufficient data provided to predict the effect of the project on climate and the potential effects of climate on the project;
- local air quality potentially affected by the project;
- local and regional land and geology;
- existing range of flows and water levels in the context of the operation of the existing flood control system;
- ice conditions, including changes during the winter and variability from year to year;
- existing shoreline environment and the rate of shoreline erosion and recession based on long term monitoring programs; and
- nature and extent of existing sediment deposition and shoreline debris.

6.2 AQUATIC ENVIRONMENT

The environmental impact statement shall describe the existing aquatic biological resources and associated habitat in watercourses, wetlands and other water-bodies. The Environmental Impact Statement should establish a suite of biotic and abiotic indicators for the area including a discussion of the rationale for their selection. The environmental impact statement shall describe:

6.2.1 WATER QUALITY:

- sufficient detail regarding the pre-project water quality and temperature parameters to predict the effect of the project on water quality and how it would

relate to human consumption and to compare post-project water quality conditions shall be provided.

6.2.2 LOWER TROPHIC LEVELS:

- sufficient detail regarding existing primary producers and decomposers shall be included to provide a basis to predict the potential effect(s) of the project on energy (food) production.

6.2.3 AQUATIC INVERTEBRATES:

- sufficient detail respecting the existing species composition and abundance of aquatic invertebrates shall be provided in order to assess the overall productivity of the aquatic eco-system, biodiversity, and potential effects on fish populations and their range.

6.2.4 FISH HABITAT:

- sufficient data on bathymetric mapping, habitat classification and quantification within the study area shall be required to provide a basis for predicting project effects and to quantify the actual effects of the project on fish habitat.

6.2.5 FISH POPULATIONS:

- sufficient data regarding species composition and relative abundance, critical life stages and requirements of key fish species, movements and migration patterns, habitat use and fish quality (mercury and heavy metal levels/fish health/palatability) shall be provided to predict the effect of the project on fish populations within the study area.

6.3 TERRESTRIAL ENVIRONMENT

The environmental impact statement shall describe:

6.3.1 VEGETATION:

- information on plant communities, “Species at Risk”, and “Rare Species” that may be affected by the project, including; medicinal plants, riparian and wetland vegetation and type(s) of vegetation to be flooded and/or cleared shall be provided in sufficient detail to predict the effect of the project on vegetation in the study area.

6.3.2 WILDLIFE AND WILDLIFE HABITAT:

- animal species (birds, including waterfowl and non-waterfowl species, mammals, plus available data for microorganisms, insects, reptiles and amphibians), populations, habitat and seasonal use patterns shall be provided;

- threatened and endangered animal species common to the study area shall be identified;

- important ecological communities representative of the study area by key species shall be provided;

- a description of the seasonal use of wetlands by waterbirds for breeding and molting and spring and fall staging shall be included;

- migratory populations including migratory birds common to the study area shall be identified;

- known habitat and critical areas for deer and furbearers;

- any animal species common to the study area that is listed in Manitoba's *Endangered Species Act,* the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), or the federal *Species At Risk Act* shall be identified; and

- sufficient information on wildlife populations and wildlife habitat in the study area to predict, avoid and mitigate, to the extent practicable, the effects of the project on wildlife habitat and populations in the study area shall be provided.

6.4 SOCIO-ECONOMIC ENVIRONMENT

The environmental impact statement shall describe:

6.4.1 RESOURCE USE:

- sufficient detail regarding domestic and commercial use of resources, including fish, wildlife, vegetation and recreation shall be provided to predict project related effects.

6.4.2 ECONOMY:

- a general description of the economic base of communities potentially affected by the project shall be provided including the state of the labour force, employment, unemployment, and a profile of existing economic sectors; and

- sufficient detail regarding the existing economy of the region shall be provided in order to predict the effect of the project on the economy of affected communities.

6.4.3 INFRASTRUCTURE AND SERVICES:

- a general description of the infrastructure and services of communities affected by the project shall be provided in sufficient detail to predict the effect of the project on infrastructure and services of affected communities.

6.4.4 PERSONAL, FAMILY AND COMMUNITY LIFE:

- a general description of the personal, family and community life of communities potentially affected by the project shall be provided, including a population and demographic profile, outdoor recreation and travel, aesthetics, health status and health issues, way of life, culture and spirituality and community cohesion and organization; and

- sufficient detail on the noted items shall be provided to predict the effect of the project on personal, family and community life.

6.5 HERITAGE RESOURCES

The environmental impact statement shall describe:

- historic land use and occupancy in the study area;

- archaeological sites and culturally important sites in the study area, including shoreline sites that could potentially be affected by erosion;

- location of potential burial sites in the study area (if any);

- archaeological sites and culturally important sites located on or near shoreline areas in the study area that could potentially be affected by erosion. Identification of these sites shall be provided using the work of Historic Resources Branch as the basis for this description;

- any structure, site or thing that is of historical, archaeological, paleontological or architectural significance in the study area that will be affected by any changes to the environment caused by the project; and
- a ranking of any archaeological sites identified in order of importance.

7. ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS AND MITIGATION

The environmental impact statement shall provide information on all environmental, social and economic effects associated with the Red River Floodway Expansion Project. Both positive and adverse effects shall be described. The following criteria will be used to evaluate the significance of adverse effects:

- nature of the effect;
- magnitude of the impact;
- duration of the impact;
- frequency of the impact;
- reversibility of the impact;
- temporal boundaries (short or long term);
- spatial boundaries (project site, local area or regional); and
- ecological context (sensitivity of valued ecosystem components (VEC) to environmental disturbance – for environmental effects).

The following criteria will be used to determine the likelihood of significance of the effects:

- probability of occurrence; and
- scientific uncertainty.

The environmental and socio-economic effects and associated mitigation shall relate to each phase of the project including site preparation, construction and post construction, operation, maintenance and final disposition, and shall assess all components of the environment in the context of section 6. DESCRIPTION OF THE EXISTING ENVIRONMENT of this document. The assessment shall consider scientific analysis of ecosystem effects, along with local knowledge and available experience in determining the significance of potential effects. Mitigation and habitat enhancement measures to

manage or avoid adverse effects shall be described for these components and for each undertaking in relation to the project.

Cumulative effects assessment (CEA) shall form an integral part of the environmental and socio-economic assessment. The cumulative effects assessment shall look at all effects that are likely to result from the project when they are anticipated to occur in combination with other projects or activities that have been, or will be carried out. The environmental impact statement shall explain the approach and methods used to identify and assess the cumulative effects and provide a record of all assumptions and analysis that support the conclusions, including the level of confidence in the data used in the analysis.

All assessment conclusions shall be supported by technical information based on experience in Manitoba and elsewhere as well as local knowledge. Any deficiencies in the information about potential effects shall be clearly noted and addressed as stated in section 9. ENVIRONMENTAL MONITORING of this document.

8. RESIDUAL EFFECTS

The environmental impact statement shall describe the nature and extent of any residual environmental effects of the project, and include a characterization as to whether residual environmental effects are significant or insignificant, and the rationale for such characterization. It shall provide a detailed plan for responding to any known or predicted residual effects, and provide a procedure for identifying and responding to effects that were not predicted or foreseen.

9. ENVIRONMENTAL MONITORING

The environmental impact statement shall provide a detailed description of the proposed monitoring activities of effects of the project on the physical, aquatic, terrestrial and socio-economic environments arising from the site preparation, construction and operation of the Red River Floodway Expansion Project. It shall describe the equipment to be used, the parameters to be measured, the methodology and frequency of measurement and the mechanism for reporting results of proposed monitoring of the environmental conditions affected by the Red River Floodway Expansion Project.

The environmental impact statement shall describe how the proposed monitoring activities will help to verify and manage environmental effects, confirm the performance of mitigation and habitat enhancement measures to be employed, and/or contribute to the resolution of compensation issues.

If regulatory approval for the project is provided, and prior to construction, a project-specific Environmental Protection Plan (EPP) shall be developed. The EPP will be designed to commit the proponent to a long term monitoring program, including accountability and reporting requirements, that would encompass both the construction and operational phases of the project in order to confirm predictions of effects and to determine whether unexpected effects are occurring. The EPP shall be developed to accomplish the following goals:

- to facilitate the mitigation of environmental effects throughout the full-life cycle of the project by providing field construction and operating personnel with clear instructions on the mitigation measures to be implemented and on the appropriate lines of communication and means of reporting to be followed;

- to identify modifications to construction methods or schedules, summarize environmental sensitivities and mitigation actions, list emergency response plans and reporting protocols, describe a closure plan for aggregate quarries, including mitigation of potential hazards to public safety and mitigation to address land reclamation concerns;

- to provide specific information on waste management practices to be utilized during the construction phase of the project, including consideration of all liquid and solid wastes generated; and

- to monitor construction practices to ensure that the work proceeds in accordance with the EPP.

10. PROJECT SUSTAINABILITY

An assessment shall be provided of the balance between the environmental/ecological, social, economic, cultural and human health benefits and impacts of the Red River Floodway Expansion Project. Indicators and methodologies used in this assessment shall be explained.

11. SOURCES OF INFORMATION

All assessment conclusions shall be backed up by credible technical information and local knowledge. The environmental impact statement shall describe the primary sources of information used to conduct the environmental assessment of the proposed project. This information shall include:

- technical studies of similar facilities and processes which are operating elsewhere;

- original studies performed by qualified engineers or scientists commissioned by the proponent specific to the Red River Floodway Expansion Project;
- identification of facility design documents prepared by qualified engineers as they become available;
- scientific reports and papers on topics relevant to the Red River Floodway Expansion Project; and
- local knowledge.

Credible analysis and documentation shall support all conclusions of "no or insignificant effect".

12. REPORT FORMAT

The Environmental Impact Statement for the Red River Floodway Expansion Project shall include an executive summary to be written with a minimum of technical terminology and to include a glossary of terms used throughout the document. Deficiencies in scientific evidence shall be identified, including areas where there is no evidence specific to Manitoba.

The information in the environmental impact statement shall maximize the use of maps, charts, diagrams and photographs for presentation. To the extent possible, maps and diagrams shall be presented at a common scale, appropriate to represent the level of detail considered, and where possible, allowing for direct overlay for ease of reference. Specifically, maps indicating zones of effect on land and water use and habitat areas shall be on maps of a common scale.

For clarification of these Guidelines please contact PAT through Mr. Bruce Webb at:

Telephone: 204-945-7021
Toll Free: 1-800-282-8069
E-mail: bwebb@gov.mb.ca