



TECHNICAL REVIEW COMMITTEE

**A TECHNICAL REVIEW REPORT
PREPARED FOR**

**THE MUNICIPALITY
OF SOURIS-GLENWOOD**

HOGS IS BEAUTIFUL

SE 1/4 23-7-22 WPM

TRC 12-079

March 16, 2021

A. INTRODUCTION – THE TEAM

The Technical Review Committee (TRC) is supported by the following department personnel:

Agriculture and Resource Development (ARD)

- Aggregate Resource Planner
- Agricultural Engineer
- Business Development Specialist
- Crown Lands Manager
- Fish Habitat Specialist
- Groundwater Specialist
- Habitat Mitigation and Wildlife Land Specialist
- Land-Water Specialist
- Livestock Environment Specialist
- Nutrient Management Specialist
- Veterinarians

Conservation and Climate (CC)

- Environmental Engineer
- Environment Officer
- Water Rights Licensing Technologist

Infrastructure (MI)

- Senior Development Review Technologist
- Senior Flood Protection Planning Officer

Municipal Relations (MR)

- Community Planners

And any other specialist or department that may have an interest, which may be consulted during the process.

THE TECHNICAL REVIEW COMMITTEE (TRC) REPORT

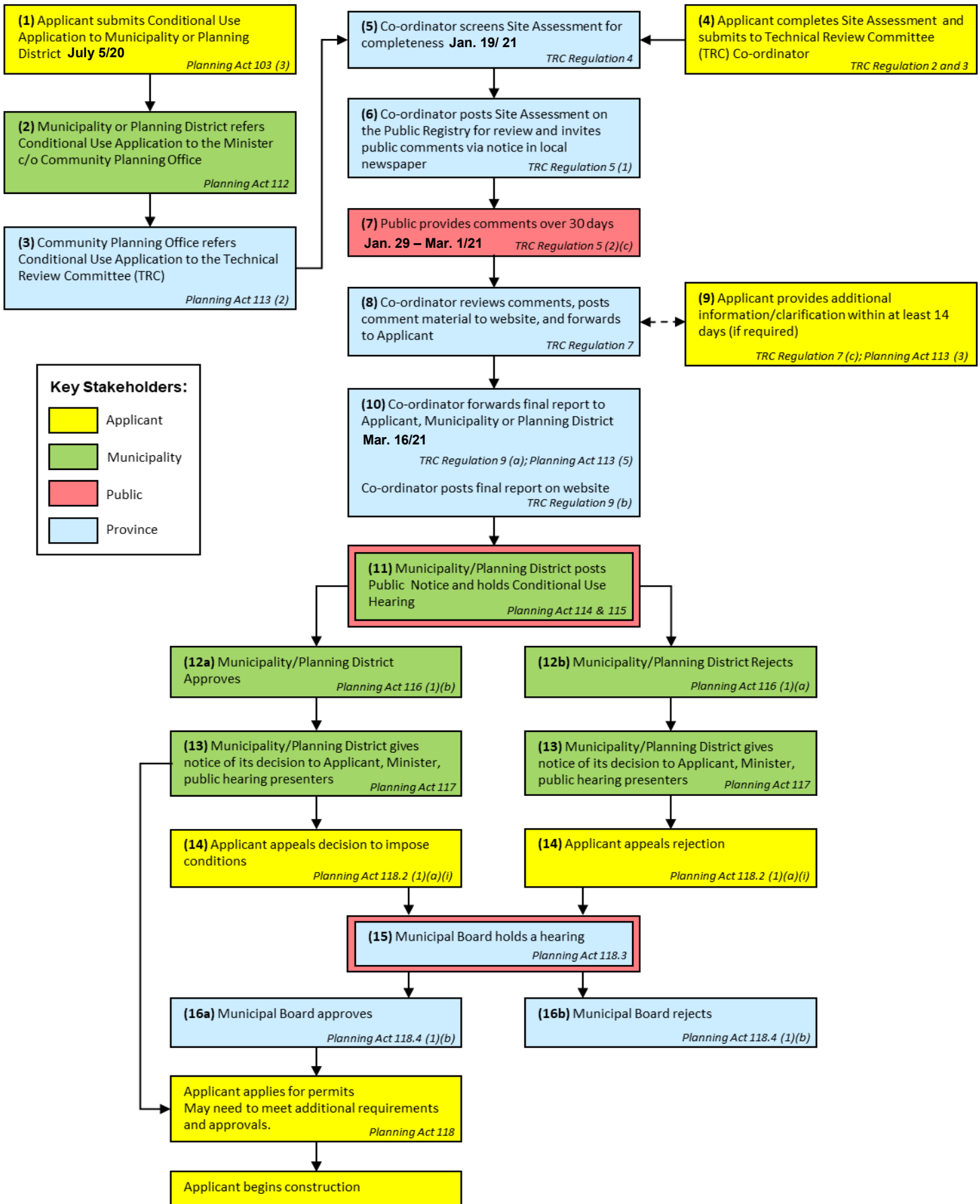
Purpose of TRC Reports

To provide objective, credible, technically-based assessments that:

- a) Enable municipal councils or planning districts to make informed Conditional Use Permit decisions;
- b) Create a common stakeholder understanding of a livestock proposal, potential impacts and related regulatory requirements and safeguards;
- c) Provide a vehicle/forum that enables the sharing of public concerns and proponent responses;
- d) Offer recommendations to both municipal councils, planning districts and proponents; and
- e) Represents the fulfillment of the TRC's role as per 116(1)(b)(i) of *The Planning Act* – to determine, based on available information, that the proposed operation will not create a risk to health, safety or the environment, or that any risk can be minimized through the use of appropriate practices, measure and safeguards.

Should the municipal council provide conditional approval of the proposal, the project proponent may be required to obtain various permits and licenses from the province to address in greater detail environmental aspects of the proposal. As of November 1, 2019, a proponent may appeal a municipal council's rejection of their application or appeal a condition imposed related to municipal council's approval. Appeals are made to the Municipal Board.

Livestock Technical Review Process (November 1, 2019)



B. DESCRIPTION OF PROPOSED LIVESTOCK OPERATION

Further information can be found at https://www.gov.mb.ca/mr/livestock/public_registries.html

Applicant: Hogs is Beautiful

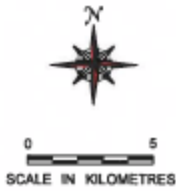
Site Location: SE ¼ 23-7-22 WPM. Refer to map below.

Proposal: To expand a pig operation from 1,600 to 2,700 farrow to weanling sows (400 to 675 Animal Units).

This will involve the following:

- Renovating existing facility and construction of barn addition.
- Expanding earthen manure storage facility
- Consuming a maximum of 16,335 imperial gallons of water per day from a proposed well
- Composting mortalities
- Truck haul routes as shown in map below

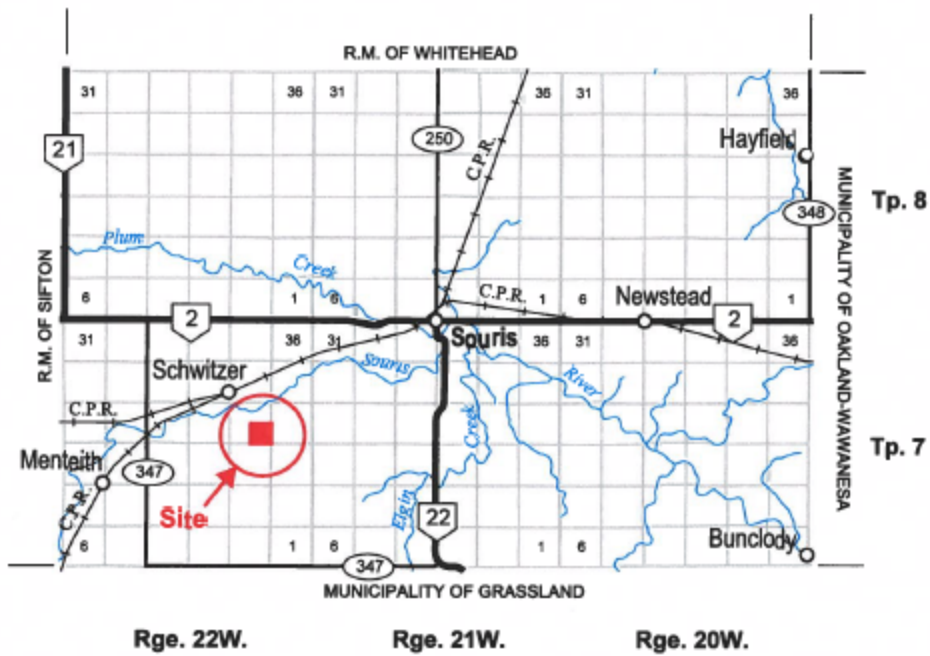
MUNICIPALITY OF SOURIS-GLENWOOD



PROVINCE OF MANITOBA
INFRASTRUCTURE
HIGHWAY PLANNING AND DESIGN BRANCH
GEOGRAPHIC & RECORDS MANAGEMENT SECTION
WINNIPEG
JANUARY 1, 2015

LEGEND

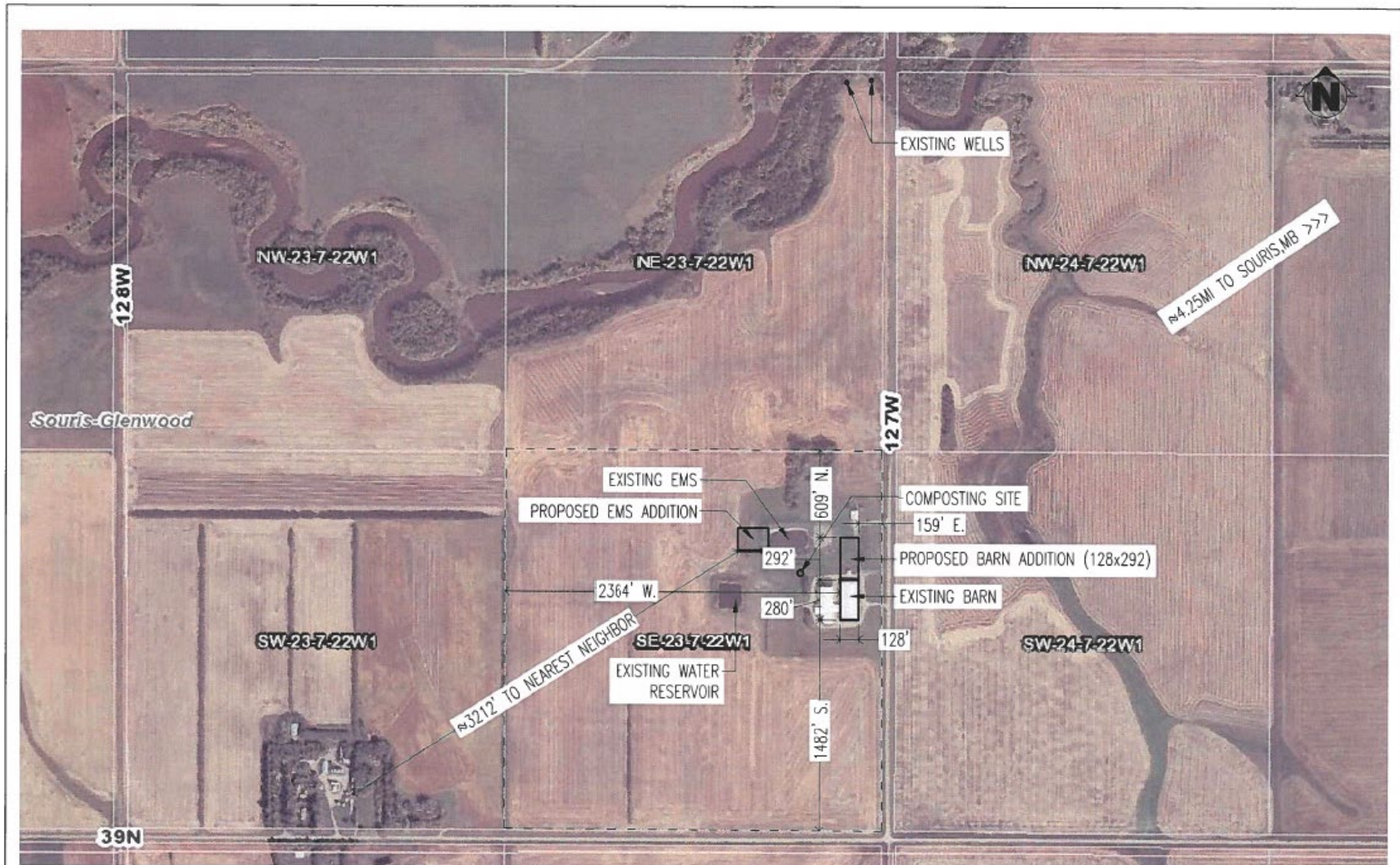
- PROVINCIAL TRUNK HIGHWAYS
- PROVINCIAL ROADS
- RAILWAYS



Hogs is Beautiful
SE 23-7-22W
RM of Souris-Glenwood

FORMERLY RM OF GLENWOOD

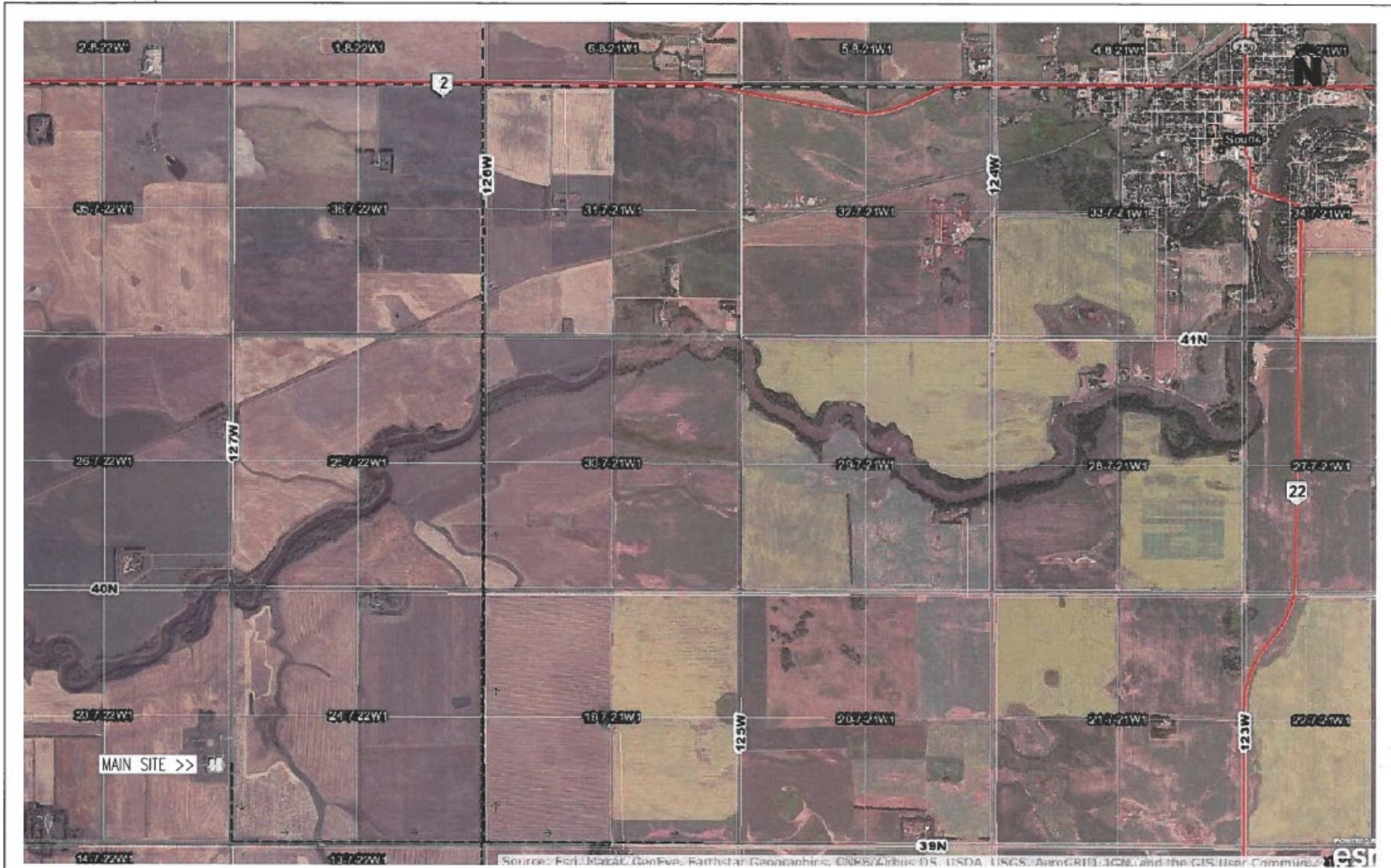
SHEET 1 OF 1



0-851 Laproducts Blvd., Winnipeg, Manitoba | R3J 3K4
 PH: (204) 668-9652 | FAX: (204) 668-9204


PROJECT NAME HOGS IS BEAUTIFUL		BUILDING AREA N/A
SHEET TITLE SITE PLAN		DRAWN BY R. FLORES SOUTH-MAN ENGINEERING
DATE DRAWN AUGUST 2020	DRAWING SCALE SCALED TO FIT	SHEET NUMBER SP-1
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.		

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Source: Esri, DigitalGlobe, GeoEye, Earthstar, Globalstar, CNRS, Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



 <p>South-Man Engineering</p> <p>9-851 Lagimodiere Blvd Winnipeg, Manitoba R2J 3K4 Tel: (204) 664-9032 Fax: (204) 668-9334</p>	PROJECT NAME HOGS IS BEAUTIFUL	BUILDING AREA N/A
	SHEET TITLE TRUCK HAUL ROUTE	DRAWN BY R. FLORES SOUTH-MAN ENGINEERING
	DATE DRAWN AUGUST 2020	DRAWING SCALE SCALED TO FIT
	SHEET NUMBER SP-3	
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.		

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C. SITE ASSESSMENT OVERVIEW

Provincial Technical Overview of TRC 12-079 – Hogs is Beautiful				
Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
1	Submitted complete site assessment	X	Technical Review Committee Regulation 119/2011 requires an applicant to submit a completed site assessment.	MR
2	Clearly identified the current and proposed type and number of animals and animal units	X	Hogs is Beautiful is currently seeking Conditional Use approval to expand an existing 1,600 sow (farrow to wean) operation to 2,700 sows, equivalent to 675 animal units (AU).	ARD ¹
3	Project clearly defined as:	X	The project is clearly defined as an animal confinement facility.	CC
	<u>675 AU animal confinement facility / confined livestock area</u>	X	The existing barn houses 1600 head (400 AU) farrow /weanling hogs. Proposed addition to existing barn will add 1,100 head 275 AU) farrow/weanling hogs to operation resulting in a 2,700 head (675 AU) farrow/weaning hog operation.	MR

¹ Agri-Resource Branch

Provincial Technical Overview of TRC 12-079 – Hogs is Beautiful

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
4	Identified all existing and proposed buildings and structures and related separation distances	X	<p>Rural Municipality of Glenwood Zoning By-law No. 2-07 – The SE-23-7-22WPM is zoned “AG” Agricultural (General) Zone. Livestock operations 300AU or more in size in the “AG” zone require conditional use approval from Council.</p> <p>The proposed earthen manure storage must be setback 3,280 feet from the nearest un-related dwelling and the site plan shows 3,397 feet provided. A minimum of 1,640 feet of distance is required between the livestock confinement facility and the closest un-related dwelling with the site plan showing +/-3,600 feet.</p> <p>The earthen manure storage must also be setback a minimum of 9,842 feet from the nearest designated area. The site plan provides 22,320 feet of separation to the nearest designated area – the community of Souris. The animal confinement facility is required to be setback a minimum of 6,546 feet from the closest designated area (community of Souris) and the site plan provides +/- 22,320 feet of separation.</p> <p>Table 3-2: Minimum Setback Distances for Livestock Confinement Facilities From Property Boundaries in the RM of Glenwood Zoning By-law requires a minimum of 330 feet of separation between a livestock confinement facility and all property lines of a livestock operation 10 AU or more in size. It appears the existing and proposed barn will require a variation order reducing this setback to the 159 feet actually provided. (NOTE: 159 feet is the distance the existing and proposed barns are setback from the easterly property line).</p>	MR
5	Demonstrated project site is not located within Nutrient Management Zone N4 or any Nutrient Buffer Zone	X	The project site is not located within Nutrient Management Zone N4 or any Nutrient Buffer Zone	ARD ²
6	Identified suitable water source: existing well and a water consumption rate of 16,335 imperial gallons per day	X	This project currently holds a valid Water Rights Licence issued under The Water Rights Act; however due to the increase in water demand to support the expansion, an amendment application to the Licence will be required.	CC

² Water Science and Watershed Management Branch

Provincial Technical Overview of TRC 12-079 – Hogs is Beautiful

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
7	Proposed project site meets development plan, zoning by-law	X	<p><i>The Planning Act</i> requires that development plans must include a livestock operation policy that guides zoning by-laws dealing with livestock operations.</p> <p><i>The Planning Act</i> requires municipalities to issue development permits for any development on a site. All development must comply with the Zoning By-law and Development Plan. Any proposed development that does not meet the separation distances or setbacks requires Council approval and a public process to vary those requirements.</p> <p>Designation The proposed livestock operation, located in the SE ¼ 23-7-22WPM in the Municipality of Souris-Glenwood is designated GENERAL AGRICULTURAL AREA (Souris-Glenwood Planning District Development Plan By-law No. 13) and the proposal complies with Development Policies Part 3 B. (Livestock Operation Policies).</p> <p>Zoning The proposed site is zoned “AG” Agricultural (General) Zone (RM of Glenwood Zoning By-law No. 02-07 and has a minimum site area requirement of 80 acres with a minimum site width requirement of 2,000 feet. The proposed project complies with the RM of Glenwood Zoning By-law No. 02-07.</p>	MR
8	Identified any unsealed abandoned wells on the project site or spread fields	Pending	<p>The proposal identifies that the water use for the proposed livestock operation is from the existing two wells located on the NE 23-7-22W. The provincial water well database contains information for these wells associated with the proposed livestock operation. The database indicates that there are wells present within the proposed spread field locations. If any of these wells are in use then a minimum buffer as outlined in regulations must be maintained during spreading. These wells should be located and properly sealed if they are still present and not in use and a sealed well report must be filed with the Groundwater Management Section of Agriculture and Resource Development for each well sealed. Information on well sealing and well sealing reports are available from Agriculture and Resource Development (204-945-6959) or: https://gov.mb.ca/water/groundwater/wells_groundwater/index.html. A well drilling professional should seal all but the most basic wells. A list of currently licensed well drilling professionals can also be accessed from the above web page.</p>	ARD ³

³ Water Science and Watershed Management Branch

Provincial Technical Overview of TRC 12-079 – Hogs is Beautiful

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
9	Identified suitable manure storage methods	X	A permit to expand the existing manure storage facility must be obtained, prior to initiating any of the proposed expansion work, in accordance with the Livestock Manure and Mortalities Management Regulation. An application for a permit to expand the manure storage facility must be submitted to Environmental Approval Branch of Conservation and Climate (EABDirector@gov.mb.ca). Design guidelines and application forms are available at: https://www.gov.mb.ca/sd/waste_management/livestock_program/index.html .	CC
10	Identified acceptable manure application methods	X	The proponent must submit and adhere to a manure management plan approved for the facility per the Livestock Manure and Mortalities Management Regulation (MR 42/98).	CC
11	Mortalities disposal methods identified (composting)	X	The proponent has indicated that mortalities will be dealt with by composting. This is an acceptable disposal method under the LMMMR (MR 42/98). More specific information is included in the Livestock Manure and Mortalities Management Regulation and at: https://www.gov.mb.ca/sd/waste_management/livestock_program/index.html .	CC
12	Proposed suitable setback distances from water and property lines for manure, livestock and mortalities	X	The proponent indicates that setback distances meet minimum requirements set out in the Livestock Manure and Mortalities Management Regulation MR 42/98.	CC
13	Indicated if proposed project site is within designated flood area or is otherwise at risk of flooding	X	The site is not within a designated flood area. It will also not be flooded by the design flood extent on the Souris River.	MI

Provincial Technical Overview of TRC 12-079 – Hogs is Beautiful

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
14	Proposed acceptable odour control measures	X	The proponent has indicated that a shelterbelt will be established. Should odour become a problem for neighbouring residents, there is a complaints process under The Farm Practices Protection Act. A person who is disturbed by any odour, noise, dust, smoke or other disturbance resulting from an agricultural operation may make a complaint, in writing, to the Manitoba Farm Industry Board. The Act is intended to provide for a quicker, less expensive and more effective way than lawsuits to resolve nuisance complaints about farm practices. It may create an understanding of the nature and circumstances of an agricultural operation, as well as bring about changes to the mutual benefit of all concerned, without the confrontation and the expense of the courts.	ARD⁴
		X	Section 116(1) of <i>The Planning Act</i> allows municipal councils to require a manure storage cover and the planting of a shelter belt as a condition of approval. Note: The proponent indicates that a shelterbelt will be planted.	MR
15	Proposed sufficient and suitable land for manure spreading with minimum setbacks from water sources	X	The required land base for Hogs is Beautiful is 1,157 acres. Hogs is Beautiful has satisfied the land requirement by demonstrating that they have access to 1,492 suitable acres with soil tests. They have demonstrated access to an additional 642 acres without soil tests, for a total land base of 1,799 acres. Additional information is provided in Appendix A.	ARD⁵
		X	During manure spreading, setback distances to all groundwater and surface water features as prescribed under the Livestock Manure and Mortalities Management Regulation should be considered as a minimum distance.	CC
16	Indicated if spread fields are located in the Red River Valley Special Management Area or any other regularly inundated area	X	This project is not located in the Red River Valley Special Management Area or any other regularly inundated area.	CC

⁴ Agri-Resource Branch

⁵ Agri-Resource Branch

Provincial Technical Overview of TRC 12-079 – Hogs is Beautiful

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
17	Proposed spread fields that meet development plan and zoning by-law requirements	X	All lands identified for manure spreading are designated “GENERAL AGRICULTURAL AREA” and zoned “AG” Agricultural (General) Zone. Said land use designation and municipal zoning district (above) allow spreading of manure associated with newly siting and/or expanding livestock operations.	MR
18	Proposed acceptable manure transportation methods	X	The transport of livestock manure is subject to Section 9 of the Livestock Manure and Mortalities Management Regulation. The proponent has indicated a dragline as means of manure transportation. This is considered acceptable under the Livestock Manure and Mortalities Management Regulation.	CC
		X	There are no Provincial Waterways in the immediate area. No Concerns. Please be advised that any structures placed within the controlled area of PTH 2, 21, PTH 22, and PR 347 (125 feet from the edge of the right-of-way) requires a permit from our office. The contact is Sheena del Rosario at (204) 945-3457 or Sheena.Delrosario@gov.mb.ca . The placements of temporary drag lines or any other temporary machinery/equipment for manure application within the right-of-way of PTH 2, 21, PTH 22, and PR 347 requires permission from our regional office in Brandon. Please contact the Regional Planning Technologist, Brian Hickman at (204) 726-6822 or Brian.Hickman@gov.mb.ca . In addition, please notify the Regional Planning Technologist for the placement of temporary draglines or other temporary equipment for manure application within the controlled area of PTH 2, 21, PTH 22, and PR 347 (125 feet from the edge of the right-of-way).	MI
19	Identified suitable trucking routes and access points	X	The primary proposed truck haul route will utilize an existing municipal road connecting onto PTH 2. We do not anticipate a significant increase in use.	MI
20	Identified proposed trucking routes – local roads	X	The proposed site is accessed by a municipal road south from the site intersecting with municipal road 39N heading east until it intersects with municipal road 125W which runs into P.T.H. No. 2. No alternate route is identified. As per Section 116(2) of <i>The Planning Act</i> , municipalities as a condition of approval may require proponent to enter into a development agreement regarding the condition and upkeep of local roads used as truck haul routes.	MR

Provincial Technical Overview of TRC 12-079 – Hogs is Beautiful

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
21	Known rare species will not be impacted on new sites/lands	X	The information provided in the assessment suggest that there will not be any conflicts with species protected under the <i>Endangered Species and Ecosystems Act</i> and/or <i>Species at Risk Act</i> , or designated as rare or uncommon by the Manitoba Conservation Data Centre (MBCDC). This review is based on existing data known to the MBCDC of the Wildlife and Fisheries Branch at the time of the review. These data are dependent on the research and observations of our scientists and reflects our current state of knowledge. An absence of data does not confirm the absence of any rare or endangered species. Many areas of the province have never been thoroughly surveyed, however, and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should, therefore, not be regarded as a final statement on the occurrence of any species of concern. All future observations of rare or endangered species made by the proponent should be reported to the MBCDC for further review.	ARD ⁶

Provincial Departments: Agriculture and Resource Development (ARD), Conservation and Climate (CC), Infrastructure (MI), Municipal Relations (MR)

⁶ Wildlife and Fisheries Branch

D. PUBLIC COMMENTS AND DISPOSITIONS

Public Comment Summary	
K. Wayne Williams Souris, MB	SUPPORT Commenter supports the expansion of the barn and have agreed to provide access to their land to accommodate manure disposal from the expansion.

A full copy of the public comments as well as the proponent's response may be viewed on the public registry at: https://www.gov.mb.ca/mr/livestock/public_registries.html

E. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The information contained in the Site Assessment submitted by the proponent generally meets provincial requirements. In addition, based on available information it has been determined that the proposed operation will not create a risk to health, safety or the environment, or that any risk can be minimized through the use of appropriate practices, measures and safeguards.

Recommended Actions to Council

1. As per Section 114(1) of *The Planning Act*, at least 14 days before the date of the hearing, Council must:
 - a) send notice of the hearing to
 - i. the applicant,
 - ii. the Minister (c/o the Brandon Community Planning Office),
 - iii. all adjacent planning districts and municipalities, and
 - iv. every owner of property located within three kilometres of the site of the proposed livestock operation, even if the property is located outside the boundaries of the planning district or municipality;
 - and
 - b) post a copy of the notice of hearing on the affected property in accordance with Section 170 of *The Planning Act*.
2. Council should specify the type(s) of operation, legal land location, number of animals in each livestock category and total animal units in its Conditional Use Order.
3. As per Section 117 of *The Planning Act*, Council must send a copy of its Conditional Use Order to
 - a) the applicant,
 - b) the Minister (c/o the Brandon Community Planning Office), and
 - c) every person who made representation at the hearing.
4. According to the Rural Municipality of Glenwood Zoning By-law No. 2-07, the required minimum separation distance between a livestock operation of 10 Animal Units or more and all property lines is 330 ft. As a result, Council will require the proponent to apply for a variance.
5. As per Section 169(4)(b) of *The Planning Act*, a copy of the notice of hearing to vary the separation distance involving a livestock operation must be sent to every owner of property located within the separation distance that is proposed to be varied.
6. As per Section 174(1) of *The Planning Act*, Council can hold all required hearings together in a single combined hearing. It is recommended that during the course of this public hearing, Council first deal with the conditional use order followed by the variance order.
7. As per Section 174(2) of *The Planning Act* the notice of hearing for each matter to be considered at a combined hearing may be combined into a single notice of hearing.

8. Councils are requested to include in their resolution and/or Conditional Use Order, notification that the applicant may appeal council's decision to reject the application or appeal a condition imposed by council related to its approval as per Section 118.2 of *The Planning Act*.
 - As per Section 118.2(2)(b), an applicant may appeal the following decisions of a board or council to the Municipal Board:

for an application for approval of a conditional use made in respect of a large-scale livestock operation,

 - (i) a decision to reject the application,
 - (ii) a decision to impose conditions.
9. As per Section 118, no development or expansion of a livestock operation that is the subject of an application under this Division may take place until
 - (a) the application is approved and the applicant complies, or agrees to comply, with any condition imposed on the approval under this Division; and
 - (b) the applicant obtains every approval, including any permit or licence, required under an Act, regulation or by-law in respect of the proposed operation or expansion, and complies with, or agrees to comply with, any condition attached to the approval.
10. Council is welcome to contact Manitoba Conservation and Climate, Environmental Approvals Branch or Regional Environmental Compliance and Enforcement staff with respect to the Livestock Manure and Mortalities Management Regulation (M.R. 42/98) including compliance and enforcement issues.

Recommended Actions to Proponent

1. That a variance be applied for prior to the Conditional Use Hearing to vary the separation distance between the livestock confinement facility and the eastern property boundary to 159 feet. This will provide council with the option of holding a combined Conditional Use and Variance Hearing.
2. That the proponent request the municipality hold a combined hearing.
3. That any additional measures identified through subsequent provincial licencing or permitting in order to minimize any identified risks to health, safety and the environment be undertaken.
4. That as per Section 118.2(2)(b), an applicant may appeal the following decisions of a board or council to the Municipal Board:
 - (i) a decision to reject the application,
 - (ii) a decision to impose any condition on the approval.

F. TECHNICAL REVIEW COMMITTEE MEMBERS

Name	Department	Title Branch	Contact
Don Malinowski	Municipal Relations	Senior Planner <i>Community Planning Branch</i>	204-945-8353
Petra Loro	Agriculture and Resource Development	Livestock Environment Specialist <i>Agri-Resource Branch</i>	204-918-0325
Shannon Beattie	Conservation and Climate	Policy Analyst <i>Legislation, Policy and Coordination Branch</i>	204-792-6269
Jeff DiNella	Infrastructure	Senior Development Review Technologist <i>Highway Planning and Design Branch</i>	204-945-2664

Appendix A

Agri-Resources Branch:

Hogs is Beautiful has met the land requirements for 2,700 sows (farrow to wean) as follows:

In areas of lower livestock intensity such as the RM of Souris-Glenwood, it is currently the Province of Manitoba's policy to require sufficient suitable land for all of the nitrogen and half of the phosphorus generated by the livestock. This policy assumes that more land is available in the region to balance manure phosphorus with crop phosphorus removal, should it be necessary in the future.

Typical, modern feeding practices for pig production were used to estimate nutrient excretion for Hogs is Beautiful. Realistic, long-term 10-year crop yields from the Manitoba Agricultural Services Corporation (MASC) for the RM of Souris-Glenwood were used to estimate crop nitrogen uptake and phosphorus removal rates for the crop rotation specified in the proposal.

Land suitability is determined using soil testing for phosphorus and soil survey to establish the agriculture capability. All of the lands with soil tests were below 60 ppm Olsen P, as required to be considered suitable. Reconnaissance soil survey is available to determine the agriculture capability of the land. The agriculture capability of the land included in the proposal is primarily Class 2 to 4. The main limitations are lack of moisture (M), salinity (N) and wetness (W).

The required land base for Hogs is Beautiful is 1,157 acres. Hogs is Beautiful has satisfied the land requirement by demonstrating that they have access to 1,492 suitable acres with soil tests. They have demonstrated access to an additional 642 acres without soil tests, for a total land base of 1,799 acres.

Water Branch:

Proper nutrient management applications that avoid excess loss of nutrients to surface waters are needed on lands receiving manure in southern Manitoba because long-term trend analysis of total phosphorus and total nitrogen has shown significant increases in these nutrients in the Assiniboine and Red rivers (Jones and Armstrong 2002).

The proponent plans to inject all manure. Injection of manure at appropriate rates poses lower environmental risk than other manure application methods. A portion of the manure will be injected in spring which further reduces risk of nutrient loss to waters.

The addition of a second cell to the current earthen manure storage is proposed. A multi-cell lagoon allows for better utilization of manure nutrients than a single-cell lagoon. When application of nutrients is closely matched to crop requirements, there is a reduced risk of nitrogen and phosphorus loss to surface and groundwater.

For most crops, manure contains an excess of phosphorus (P) compared to nitrogen (N) and as a result, application at N-based rates causes a buildup of soil P. Practices which reduce N losses from the manure improve the N:P ratio in the manure and help slow P buildup when manure is applied at N-based rates. The proponent is planning to apply liquid manure with full injection that will reduce N losses compared to other application methods.

The proponent has acknowledged the setback areas for all water features have been observed and excluded from land base calculations. Setbacks should be clearly communicated to and observed by those involved in manure application to minimize the risk of nutrients entering surface and groundwater.

Manitoba has included phosphorus as a nutrient by which fertilizer application through manure, synthetic fertilizer, and municipal waste sludge to agricultural lands may be limited. To remain environmentally sustainable over a long-term planning horizon of 25 years or more, the proponent must be able to balance phosphorus inputs from applied manure and other nutrient sources such as commercial fertilizers with crop removal rates to avoid further build-up in soils. Consequently, sufficient land base must be available such that manure can be applied at no more than 1 times crop P removal rates (P balance). For long-term planning purposes, the proponent needs to have sufficient land available to ensure that manure can be applied at 1 times crop P removal. The proponent acknowledges that 2,313 acres may be required for the long-term environmental sustainability of the operation. The proponent has identified 1,492 acres for manure application. Application to meet crop N requirements is estimated to use 814 acres. Application at 2 times the crop removal of P is estimated to use 1,157 acres (2,313 acres is estimated to achieve P balance (phosphorus removal equal to phosphorus application) with current crop choices and yield potential).

As phosphorus levels build up in soils, the concentration of phosphorus in runoff to surface waters increases. It is important to rotate manure application across all spread fields and whenever possible focus manure applications on fields with low Olsen-P soil test levels so as to prevent excessive P buildup when applying manure at rates above P balance (P removal by harvested crops).

During manure spreading, setback distances to all groundwater features as prescribed under the Livestock Manure and Mortalities Management Regulation should be considered as a minimum distance.