

SOYBEAN BUILDING OPPORTUNITIES WORKSHOP

Fall 2017

BASE PLANT ASSUMPTIONS

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- To help gauge the effort and the impact of a soybean plant the WOLG has developed a 'model' facility
- Scale of opportunity
- Input requirements / support /civic capacity
- Impact assessment

What does a plant look like?

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Cost: \$200 - 450M+
(Est: 330M)

Capacity: 875 – 900,000t/year

Jobs: ~80+ jobs

Area: ~40 - 200+ acres

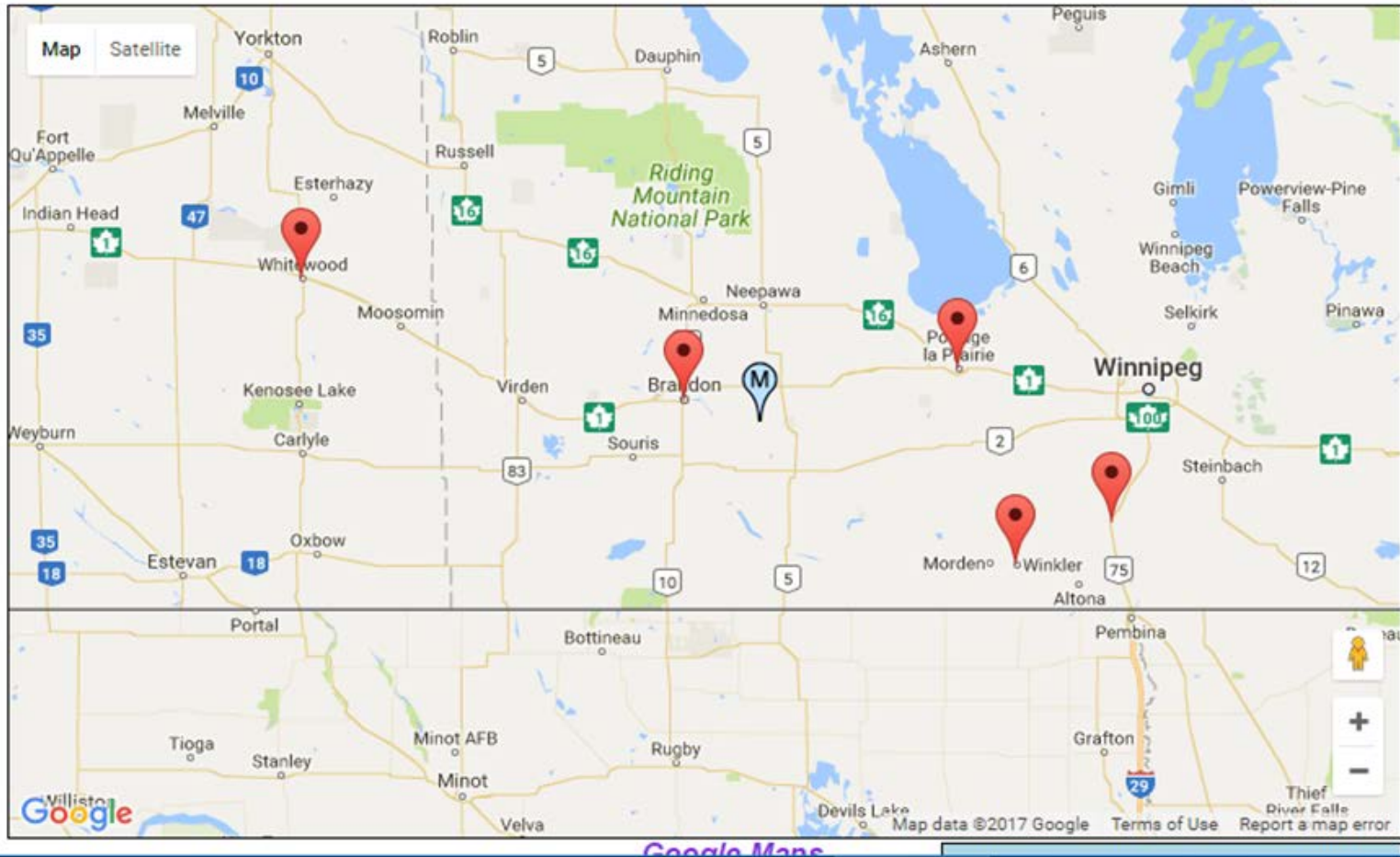
Makes: Soy meal, oil

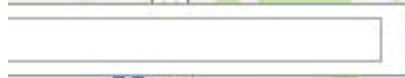
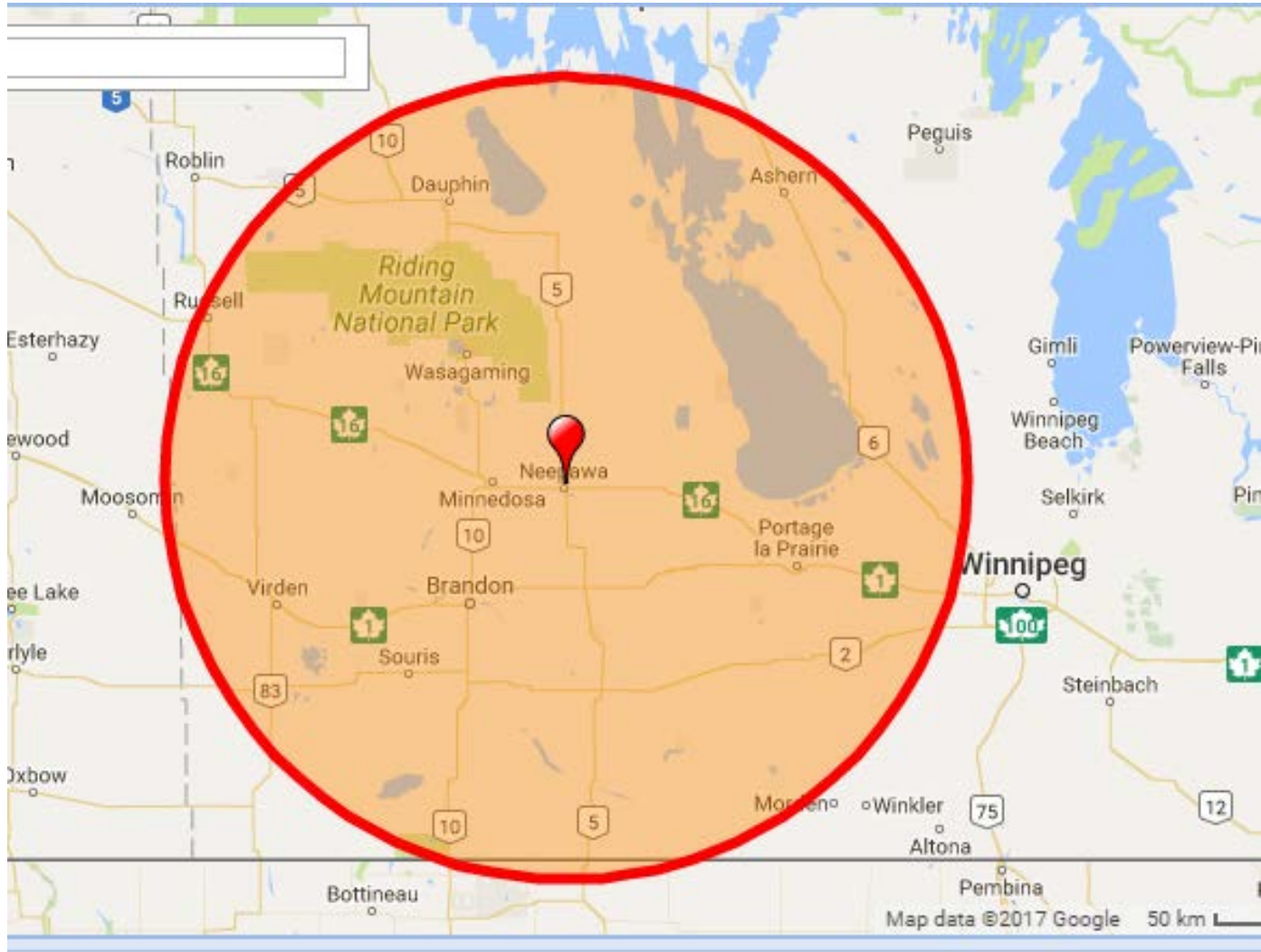
Uses: Animal feed
Bio-diesel input
Value added



Viterra Soybean / Canola Processing Plant, Becanour, Quebec (1.05 M tonnes/year)

2020 Projected Centre of Production





Map data ©2017 Google 50 km

SOYBEAN MEAL DEMAND

- Current Demand Supplied by US Plants
- Most Soybean Meal Imported to Western Canada Crosses Border at Pembina

Preliminary Facility Cost Estimate

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Item	Plant Estimate
Core Costs - Processing Plant, Storage, Site Preparation	\$125M - \$230M (Est: \$180M)
Oil-Refining / Bio-diesel	TBD
Shared Capital Investment* - Electrical connection, Water / Wastewater, NG Supply, Rail Access, Waste Management	\$30 - \$120 (Est: \$75M)
Contingency (30%)	\$50 - \$100M (Est:\$75M)
TOTAL (not including bio-diesel facility)	\$200M - \$450M (Est: \$330M)

Source: Prairie Practitioners Group

- US General Accounting Office (GAO) cost exercise.
- Class 5 provides order of magnitude screening for projects.
- Definition to come in feasibility study.

Preliminary Facility Operations

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Base Parameters		Inputs (Crushing & Refining)	
Input Capacity	2,500 t/day	- Soybeans	2,500 t/day
	~875-900,000 t/year	- Total Water	885,000 kg/day
Output/Products		- Total Electricity	92,000 kWh/day
- Meal	1,962 t/day (79%)	- Total Steam	735,000 kg/day
- Oil	481 t/day (19%)	- Total NG	~1800 mmBTU
- Soap/Lecithin	21 t/day (~2%)	- Hexane	1.4 t/day
		Refining:	
Land, Jobs, Impact:		- Bleaching Agent	2,596 kg/day
Land Area:	40 – 200+ acres	- Phosphoric acid	481 kg/day
Jobs (direct):	40 – 80 (60 est.)	- Sulphuric Acid	962 kg/day
Jobs (indirect):	~646	- Activated C	96 kg/day
Build Time:	3 - 4 years	- Sodium Hydroxide	1,346 kg/day

- Source: Prairie Practitioners Group;
- SJ Research Services
- Soybean Crush Operating Parameters, EU Environmental Study

QUESTIONS

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