

DRINKING WATER SOURCE PROTECTION

Trent Conservation Coalition Source Protection Region



Drinking Water Issues

Trent Conservation Coalition (TCC)

Source Protection Region (SPR)

Source Protection Committee Meeting – November 23, 2009

Minden, Ontario



Expert People. Better Decisions.



Agenda



- § Memorandum re: Specific Issues
- § CKL 6 SW Sites - Issues
- § Update on 10 TCC SW Sites Issues
- § Update on 14 TCC GW Sites Issues
- § Questions

Memorandum on Issues



§ Issues are:

- parameters listed in Schedules 1, 2, or 3 of the ODWQS or Table 4 of the TSD
- present at concentrations that may result in the deterioration of the quality of the water for use as a source of drinking water (or increasing trend)

§ Implications:

- If anthropogenic or naturally occurring but also influenced by anthropogenic sources – need ICA and list of threats
- If ICA & threats cannot be identified, plan must be in place to ascertain this information.

Specific Parameters



§ Sodium:

- 200 mg/L AO in Table 4
- 20 mg/L notification level to PHU (mentioned in Table 4)
- Previous work used notification level – some identified issues at SW (3) and GW (6) sites
- Majority of consultants and SPAs are using the AO level
- Reassessed using AO level – NO issues for sodium at any of the XCG sites

Specific Parameters (cont'd)



§ Microcystin-LR

- One documented exceedance at Bayside
- Significant fluctuation annually and seasonally
- Growth requires carbon source, energy source, nutrient source at optimum levels as well as optimal environmental conditions: temperature, flow
- What makes a “harmful” algal bloom is unknown
- Nutrient is produced through anthropogenic activities
- Recommend a plan to identify source of available nutrients in cooperation with EC, DFO, MNR, QSPR, BQRAP

Specific Parameters (cont'd)



§ Escherichia coli

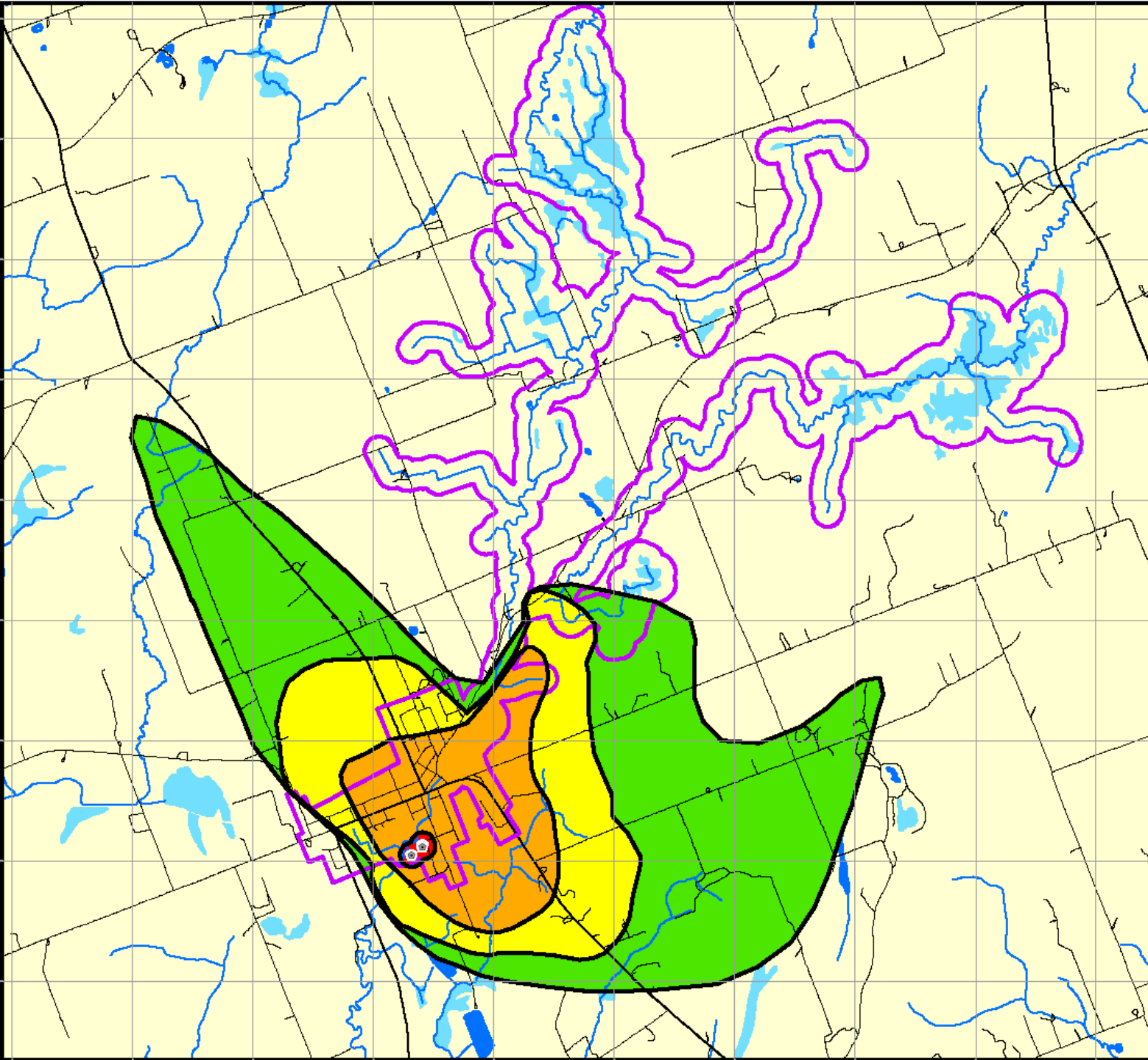
- Bacterium found in intestines of warm blooded animals
- Indicator of other fecal pathogens: crypto, giardia, etc.
- Naturally occurring in surface waters but also anthropogenic sources
- Not expected in groundwater – any presence is anthropogenic
- Treatment for surface water or GUDI: primary disinfection and chemically assisted filtration
- Treatment for GW: primary disinfection

Specific Parameters (cont'd)

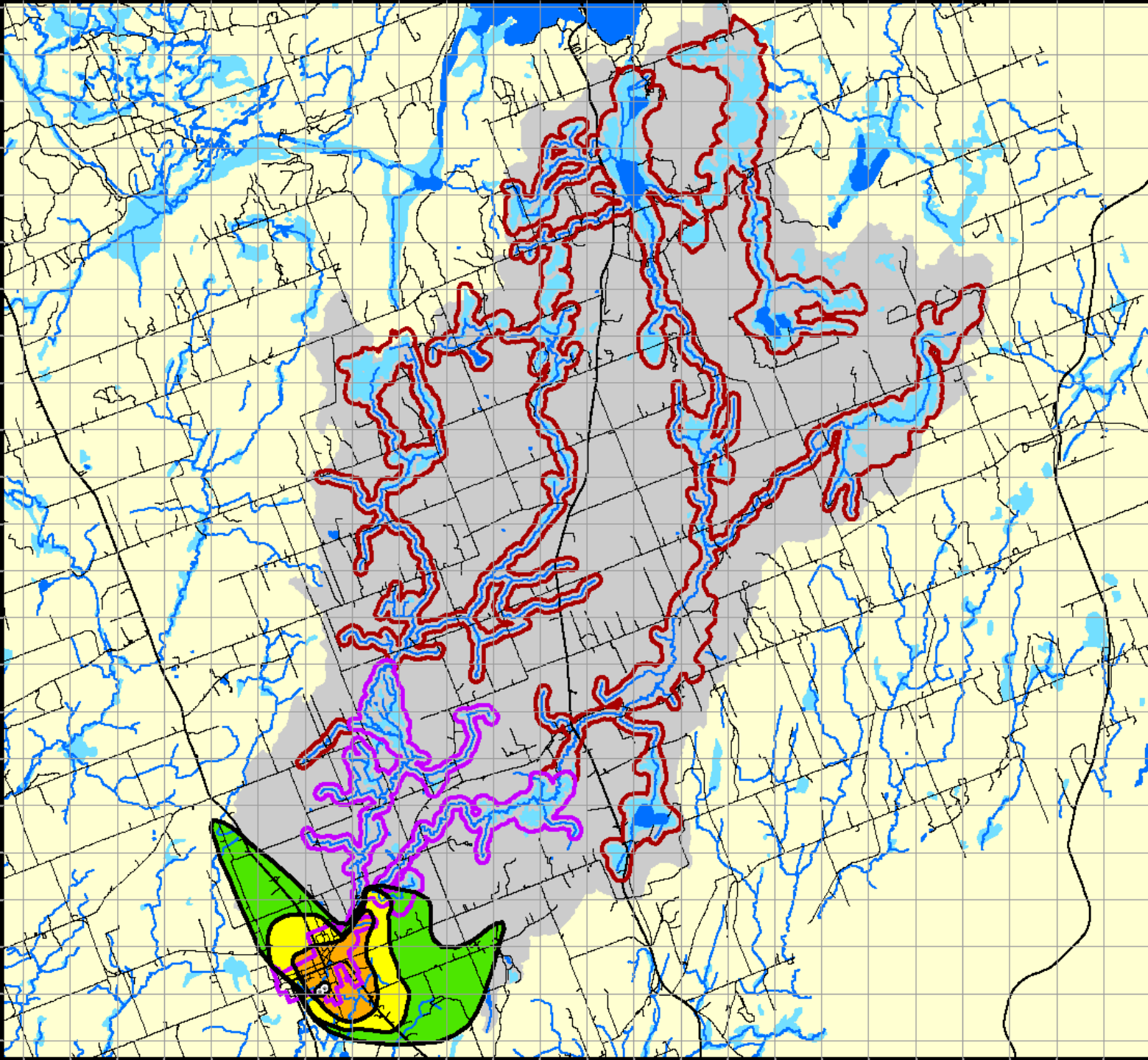


§ E.coli (cont'd)

- If EC present and GUDI/SW treatment – EC is NOT issue
- If EC present with only GW treatment – EC is issue
- If EC issue – all contributing lands (WHPA-A to D) and waters (WHPA-E) (WHPA-F??) are part of the ICA
- Any land activities, conditions from past land activities or naturally occurring conditions would be identified as threats



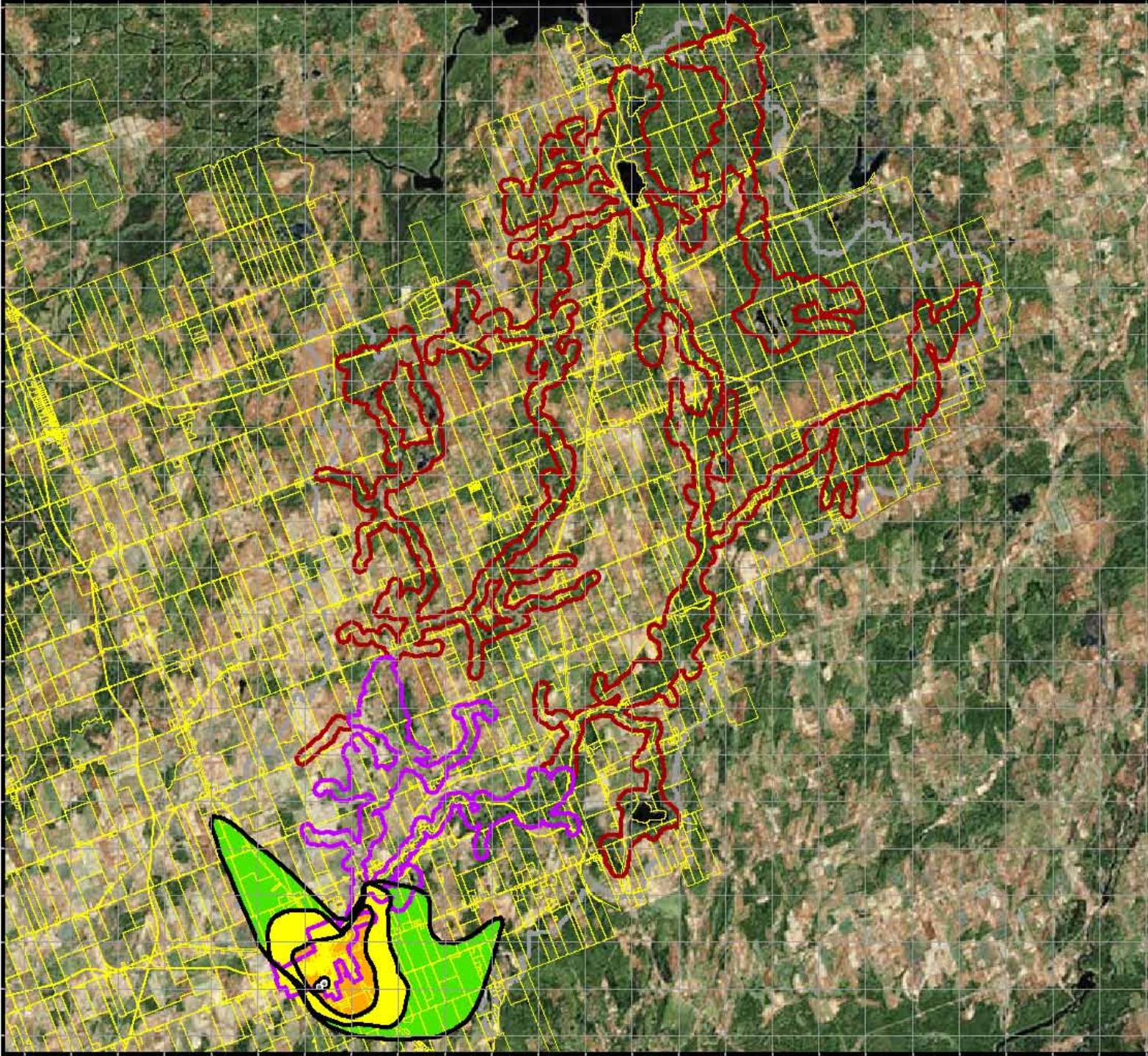
Example
Stirling
WHPA-A
to
WHPA-E



Example

Stirling

Adding
WHPA-F



Example
Stirling
Adding
WHPA-F
Parcels



Issues Update – TCC SW Sites



Site	Sch. 2	Table 4								
	Microcystin-LR	Aluminum	Colour	DOC	Hardness	Iron	Manganese	pH	Temperature	Turbidity
Lakefield				N	N				N	N
Peterborough			N	N	N				N	N
Hastings			N		N		N		N	N
Marmora			N	N	N				N	N
Campbellford		N			N	N	N		N	N
Warkworth								N		
Frankford			N		N				N	N
Batawa			N		N				N	N
Trenton		N	N	N	N				N	N
Bayside	N/A		N	N	N		N	N	N	N

Note:
 N – Naturally Occurring Source
 A – Anthropogenic Source

Issues Update – TCC GW Sites



Site	Schedule 1		Schedule 2	Table 4		
	Total Coliforms	E.coli	Uranium	Hardness	Iron	Manganese
Minden					N	N
Lutterworth Pines			N			N
Cardiff						N
Dyno Estates						
Alpine Village						
Buckhorn Lake Estates						
Norwood	N					
Stirling	N	A				
Keene Heights					N	N
Crystal Springs	N					
Millbrook					N	
Brighton				N		
Colborne				N		
Grafton	N			N	N	