

Land Use – Golf Course

Scenario: An 18 hole golf and country club is located partially within the IPZ-2 of a great lake intake. The vulnerability assessment on this intake has identified a vulnerability score within IPZ-2 as 6.3. The club includes a clubhouse with locker rooms, showers and a dining room, maintenance garage/cart storage, pro shop. The clubhouse and pro shop each have septic systems. A large paved parking lot is available between the pro shop and club house. Water for irrigation of the greens, fairways and tees is drawn from ponds which are fed by local runoff supplemented by water pumped from the lake as needed.

Case Study preparation

A) Identify any of the 21 Activities which are applicable to this site

	Operation of Waste Disposal Site	x	Sewage treatment facilities
	Handling and storage of road salt		Application of road salt
	Storage of snow	x	Handling and storage of fuel
	Storage of agricultural source material		Management of agricultural source material
	Application of agricultural source material to land		Handling and storage of non-agricultural material
	Application of non-agricultural source material		Handling and storage of organic solvents
	Use of land for livestock grazing or outdoor confinement area or yard		Handling and storage of dense non-aqueous phase liquid (DNAPL's)
x	Handling and storage of fertilizer	x	Application of commercial fertilizer
x	Handling and storage of pesticide	x	Application of pesticide
	Any activity which reduces the recharge of an aquifer		Any activity which takes water from an aquifer or surface water body without returning to the same aquifer or surface water body
	Management of runoff that contains chemicals used in de-icing aircraft		Other

B) Vulnerability

Location: IPZ-2

Vulnerability Score: 6.3 (Great Lake Intake)

Case Study 1- Application of pesticides to greens, fairways and tees

The treats tables identify about a dozen pesticides which pose a risk to surface drinking water sources. The application of most of these pesticides constitutes a low risk when applied to any area of land with a vulnerability score of 6.3 as identified in the scenario being considered.

Risks are between 43 and 59. There are 2 pesticides which when applied to land >10 ha result in a moderate threat with scores of approximately 62.

A) Policy Approach – Identify the policy approach(es) that could be applied to this land use/activity

Policy Approach	May be Applied To	
	significant threats	Moderate and Low Threats
Education & Outreach Programs		X Audubon Program
Incentive Programs		
Monitoring Activities		X As per pesticide license
New or Amended Provincial Instruments (only those to be prescribed)		X pesticide licensing
Land Use Planning Approaches (e.g. official plans, zoning by-laws, site plan controls)		Existing, not new
Risk Management Plans (s. 58 of CWA)		
Prohibitions (s. 57 of CWA)		
Restricted Land Uses (s. 59 of CWA)		

Others that you might propose:

B) Identify any provincial instruments which may apply to this scenario

Pesticide licensing (permits would apply and seem suitable for 1st scenario (monitoring happens at point of purchase and training for applicators during certification))

C) Proposed Policy – Draft a policy based on one or more of the approaches identified above to address the risk posed in this scenario.

Education and outreach - promoting BMPs and programs like Audubon that certifies courses for their BMPs - promote and market good work. Try to use existing provincial instruments and make them stronger if necessary. Risk Management plan that includes monitoring and a contingency plan, e.g., monitoring wells paid for by municipality or WSP as an incentive for the risk management plan.

D) Consider whether the policy may be applied to the same activity occurring in a WHPA-B with a vulnerability score of 10 or identify a different policy which should apply. In this zone the application of most of the identified pesticides to land greater than 10 ha would result in a significant risk of between 80 and 90. There are 2

pesticides where it is also significant (82) if applied to between 1 and 10 ha. Consider a policy which might apply to these significant risks.

Move to Risk Management Plan developed by both course owner and municipality. Plan to include incentives for the course owner (use ODWSP funds); monitoring and contingency measures if a problem occurs.

Case Study 2 - Irrigation of the course

Water for irrigation of the greens, fairways and tees is drawn from ponds which are fed by local runoff supplemented by water pumped from the lake as needed. The watershed is has a moderate potential for stress on the surface water systems and a low potential for stress on the ground water systems, based on the results of the Tier 1 water budget work. The municipal source of drinking water is a Great Lakes intake in an adjacent sub-watershed. The golf course has had an increasingly difficult time keeping their ponds full and has requested an increase in their Permit to Take Water. There is an active Low Water Response program in the area.

E) Policy Approach – Identify the policy approach(es) that could be applied to this land use/activity

Policy Approach	May be Applied To	
	significant threats	Moderate and Low Threats
Education & Outreach Programs		x
Incentive Programs		
Monitoring Activities		X associate with PTTW
New or Amended Provincial Instruments (only those to be prescribed)		PTTW
Land Use Planning Approaches (e.g. official plans, zoning by-laws, site plan controls)		
Risk Management Plans (s. 58 of CWA)		
Prohibitions (s. 57 of CWA)		
Restricted Land Uses (s. 59 of CWA)		

Others that you might propose:

F) Identify any provincial instruments which may apply to this scenario

Permit to take water (MOE). Low water response team - motivate voluntary actions.

G) Proposed Policy – Draft a policy based on one or more of the approaches identified above to address the risk posed in this scenario.

Education and Outreach - educating course and neighbouring permit holders of the need for conservation. Using low water response team, local media to promote conservation. Use larger ponds to capture surface water rainfall, store rainwater.

H) Consider how the policy might change for a golf course requesting to shift to groundwater in an area having a significant potential for stress of municipal drinking water wells in the area.

Under current PTTW program a new permit would not be issued in an area of significant stress. Many older permit holders are not metric - MOE is catching up on this. New, better information may allow for more flexibility in granting permits. Need to make sure MOE checks that the land use is permitted before permit is granted. People have received permits without timelines and in this way “reserve” their right to take water.