

## Pines Springs Site Compared to Treatment Options

Municipal Class EA - Part C Municipal Wastewater Projects

Source: 1993 Class EA for Municipal Water and Wastewater Projects

Typical Effects on the Environment caused by construction activities

\* likely positive or negative effect

	Constructed Wetland	Advanced Treatment Option	Ponds and Lagoons	Pine Springs Site
<b>AESTHETICS</b> removal of vegetation or landscape features change of compatibility with landscape residents, non-residents, recreationalists and tourists exposed to new view	*	*	*	negative impact - removal of vegetation negative impact - may not be compatible with existing landscape minimal - far enough way from existing residents that exposure would be minimal
<b>CLIMATIC EFFECTS</b> vegetation removal or snow accumulation, wind screening and shade on adjacent buildings and activities  change in air quality	*	*	* *	minimal - adjacent building and activities are far enough away there should be no impact moderate - possible odours
<b>ECONOMIC AND SOCIAL EFFECTS</b> change to tax base change in employment opportunities change in tax rate or cost of service	* * *	* * *	* * *	negative - potential increase in taxes positive - possibility of an employment opportunity negative - potential to increase taxes or to charge for service
<b>GROUNDWATER</b> change in quality interference with flows or levels	*	*	* *	high - potential to change water quality minimal - potential to increase flows and levels
<b>HERITAGE RESOURCES</b>  disruption and/or destruction of sites, cultural heritage landscapes and structures having archaeological, historical, architectural or cultural/heritage significance	*	*	*	negative - potential to disrupt a natural heritage wetland area
<b>PUBLIC HEALTH</b> effects on quality of life e.g. decreased sewage back- up	*	*	*	positive - knowledge that residents septage is being handled properly
<b>NOISE &amp; VIBRATION</b> changes in existing noise and vibration levels	*	*	*	minimal during construction
<b>RESIDENTIAL, COMMERCIAL, INDUSTRIAL, INSTITUTIONAL</b> temporary disruption during construction nuisance odours	*	*	* *	minimal - may impede traffic negative - potential for odours
<b>SOIL AND GEOLOGY</b> erosion or compaction during construction contamination of soils mixing of topsoil with subsoil scarring of unique landforms	* * * *	* * * *	* * * *	negative - soil will be compacted during construction activities negative - possibility of soil contamination i.e. spills negative - possibility of mixing of soils negative - possibility to disturb significant wetland
<b>SURFACE DRAINAGE</b> increased surface runoff decreased surface water drainage	*	*	*	negative - potential for increased surface water runoff negative - potential for a decrease in surface water drainage
<b>TERRESTRIAL VEGETATION AND WILDLIFE</b> mortality/stress of vegetation due to sediment deposition, construction equipment movement or changes in soil moisture conditions resulting in reduction and/or deterioration of wildlife habitat changes in vegetative composition as a result of environmental changes removal or disturbance of significant trees and/or ground flora new or increased exposure of trees leading to increased loss of habitat for wildlife effect on wildlife habitat effect of contaminants on vegetation and wildlife	* * * * * * * *	* * * * * * * *	* * * * * * * *	high - vegetation will be impacted due to construction. minimal impact due to increased soil moisture high - vegetation will be removed resulting in the the reduction of wildlife habitat  minimal - no significant changes in vegetation composition high - a significant amount of trees and/or ground flora will have to be removed  high - new areas of trees will be exposed leading to loss of habitat high - some habitat will be lost minimal - contaminants may act as a fertilizer for vegetation
<b>UTILITIES</b> effects on other utilities e.g. relocations		*		negative - would have to bring in hydro to site

At this point the Advanced Treatment Option will be divided into two (2) different treatment systems: The Waterloo Biofilter and the Fast System