Reservoir Options Discussion Paper

The following describes the current situation regarding the Arlington Reservoir derived from public documents and meetings. This is an attempt to identify key issues and to provide a framework for further investigations. The consultant's report from Weston and Sampson and other documents can be found at the Reservoir website: arlington2020.org/reservoir

Chronology

Jun '98	State DEM investigates Reservoir dam and sends a notification letter to the town.
Jun '99	Town hires consultant to study dam and make recommendations.
Feb '00	Consultant issues report and presents recommendations.
Jun '00	Dam gate breaks and creates a mini-flood in Colonial Village.
Sep '00	New consultant presents more drastic recommendations.

Key Issues

Although the consultant's report focuses on dam safety, there are a number of other important issues regarding the Reservoir as well. In fact the report recommends further studies on two of these issues (section 6.0).

- **Dam Safety -** The most serious and pressing problem.
- **Swimming Area -** If the Reservoir water level is lowered as recommended, the swimming area will need to be made water tight and filled with outside water.
- **Environmental Impacts -** The current recommendation is to remove all trees and shrubs from a several hundred yard stretch along the dam top and replace with mowed grass. This will significantly change the wildlife habitat and affect adjacent wetlands. It will also remove the screening between the Res and built-up areas along Mass Ave. If the water level is kept low all year, that would drastically change the Summer appearance and would have a significant impact on the ecology of the Reservoir.
- **Mill Brook Flooding -** The Reservoir has been used to retain water in major storms to reduce flooding in Mill Brook. Any change in the Reservoir or its operation should consider the possible downstream impacts.

It would appear reasonable to consider all of these issues before proceeding with a plan that just addresses one of them.

For the sake of completeness, dam decommissioning should be seriously looked into. If the water level needs to be kept low and the swim area sealed off, why maintain a dam at all is an obvious question to ask.

A temporary interim plan could be put in place while the options are being more fully considered. For example, keeping the Res at its lowest water level along with basic repairs to the gate and overflow spillway, and regular leakage monitoring.

David E. White - 10/28/00

The options from the February '00 Weston & Sampson report are extracted and summarized below. The most recent consultant recommendations (September '00) are to both keep the Reservoir at its lowest level and also to remove trees from along the dam - an Option 3½. Discussions are still ongoing about the specifics of such a plan.

Reservoir Dam Options from the Consultant's Report					
	Option 1	**Option 2**	**Option 3**	**Option 3 ½**	**Option 4**
Description	Do nothing.	Comply with MADEM.	Limited Repairs with O&M Plan	Limited Repairs with O&M Plan Isolate Swim Area	Minimal Repairs Isolate Swim Area
Design Flood	none	1/2 PMF [a]	500-yr Storm	500-yr Storm.	500-yr Storm
Reservoir Height (above mean sea level)	159' / 153'	159' / 153'	159' / 153' (lower pre-storm)		153' only
Trees (on dam top)	Nothing	Remove	Remove	Remove	Keep
Dam Top	Nothing	Raise several feet.	Repair	Repair	Nothing
Upstream Slope	Stabilize	Stabilize	Stabilize	Stabilize	Repair
Downstream Slope	Nothing	Stabilize	Stabilize	Stabilize	Repair
Spillway	Nothing	Expand to 180 ft.[b]	Repair	Repair	Repair
Downstream Channel	Nothing	Clean	Clean	Clean	Clean
Swimming Area	Unchanged	Unchanged	Unchanged	Isolated & Sealed	Isolated & Sealed
Monitoring Program	Yes	Yes	Yes	Yes	Yes
Emergency Plan	Yes	Yes	Yes	Yes	Yes
O&M Plan	Yes	Yes	Yes	Yes	Yes
Monitor & Control Seepage	Yes	Yes	Yes	Yes	Yes
Estimated Cost - Dam Only [c]	$150,000 [c]	$586,000 [c]	$328,000 [c]	$328,000 [c]	$160,000 [c]
Liability	High	Lowest	Mid	Low	Mid

Notes: (a) PMF = Probable Maximum Flood, (b) Extending the spillway would sever the perimeter trail around the Res. (c) Does not include design or permitting costs, or landscaping, or beach isolation.