SECTION 2

2.0 INSPECTION

2.1 Visual Inspection

Waitsfield Town Pond Dam was inspected on ***April 16, 2008***. At the time of the inspection, the weather was clear with a slight breeze. The temperature was in the low 50's (deg. F). There had been no significant precipitation in the days previous to the inspection. Photographs to document the current conditions of the dam were taken during the inspection and are included in Appendix A. The level of the impoundment was approximately 7 inches below the riser crest. Underwater areas were not inspected as part of this inspection. A copy of the inspection checklist is included in Appendix B.

2.1.1 General Findings

In general, Waitsfield Town Pond Dam was found to be in ***POOR*** condition. The specific concerns are identified in more detail in the sections below:

2.1.2 Dam

- ***Abutments***

The right and left abutment contacts appeared to be in satisfactory condition. No erosion, cracking, or settlement was observed.

- ***Upstream Face/Slope***

The upstream slope of the dam exhibits minor wave cutting at the water line. No sinkholes or exposed embankment soils were observed. No unusual movement was detected. In general the upstream slope is in fair condition.

- ***Crest***

A sinkhole was observed on the crest. The sinkhole measured 3 in depth, approximately 10 feet long and 6 feet wide. This is evidence of internal erosion from a piping condition within the embankment. The sinkhole is located along the alignment of the outlet pipe. This is the specific reason for an ***POOR*** condition at the dam.

In general, the crest appears to be settled and lower in elevation at the maximum section. This is evidenced by the observation that the crest is not level across the embankment. The minimum elevation of the crest appears to be lower than the auxiliary spillway.

- ***Downstream Face/Slope***

The downstream slope of the dam is in satisfactory condition. No sinkholes or exposed embankment soils were observed. No unusual movement was detected.

- ***Access Roads and Gates***

There is free access to the dam. There are no security devices or fences preventing pedestrian access. This area is used for recreation and therefore security devices are not part of the design.

2.1.3 Appurtenant Structures

- ***Primary Spillway***

The primary spillway is in poor condition. The riser and pipe consist of corrugated metal installed 30 years ago. These pipes are nearing the end of their service life. This is evident to the corrosion observed on the riser crest and the discharge end of the outlet. There are also perforations in the riser pipe below the water line.

A visual inspection of the interior of the outlet pipe was conducted. A separation of the first joint was observed. This separation facilitated the internal erosion causing the sinkhole seen on the crest. Seepage was able to flow though the separation eroding the embankment material in the process. In addition, a pipe collar was not observed when inspecting the separation. This causes speculation that the pipe has been progressively separating since its installation. This directly contributes to the ***POOR*** condition of the dam. All other joints, however, are not separated.

- ***Low Level Outlets***

The LLO is in poor condition. It is assumed that the upstream end of the LLO pipe is covered with accumulated silt. The LLO reportedly has a flap gate valve. This valve has never been operated and therefore its condition is unknown.

- ***Auxiliary/Emergency Spillway***

The auxiliary spillway is in satisfactory condition. The spillway is grassed and regularly mowed. There are no obstructions or woody vegetation in the spillway. The approach and departure paths are clear to allow free flow though the spillway.

2.1.4 Downstream Area

The downstream area is a wetland complex. This area was formerly a bear pond. The dam that had impounded the pond was removed thus changing the wetland from a pond area to an emergent wetland. A concerted effort was made to stabilize this area and reseed the exposed pond bottom soils with a wetland seed mixture. It is anticipated that over the next few growing seasons this vegetation will take hold and the area will fully recover.

2.1.5 Reservoir Area

The Town Pond has a surface area of 0.75 acres at normal pool and is located south of the dam. The depth of the reservoir was not obtained. Reports indicate that the depth is approximately 15 feet at its deepest. The reservoir shoreline is grassed with mild slopes. The drainage area is largely undeveloped. No steep areas were identified along the shoreline and

therefore there is a low probability of slides or other occurrences that could impact the water surface level in the reservoir and perform as needed maintenance.

2.2 Caretaker Interview

There are no formal operating procedures and therefore a specific caretaker has not been assigned to the dam.

2.3 Operation and Maintenance Procedures

There are no formal operations and maintenance procedures for this dam.

2.4 Emergency Action Plan

Town Pond Dam is a non-jurisdictional dam and therefore an Emergency Action Plan is not required under the Vermont Dam Safety statutes. However, it is recommend that the Town have a formal action plan in the event of a dam safety issue arises at the dam.

2.5 Hydrologic/Hydraulic Data

A hydrologic and hydraulic analysis of the dam and watershed is beyond the scope of this report. A brief check of the spillway capacity was conducted to estimate the overtopping potential of the dam under a severe precipitation event, 100-year storm.

A summary of the brief check is provided below:

A. Spillway Design Flood (SDF) Return Period:	100-yr
B. SDF Inflow (CFS) (500cfs/sm of DA):	205 cfs
C. Spillway Capacity (CFS) @ Top of Dam:	100 cfs
D. Auxiliary Spillway Capacity (CFS):	150 cfs
E. Total Outflow Capacity (CFS):	250 cfs
E. Depth of Overtopping (FT)(if applicable):	N/A

2.6 Structural Stability/Overtopping Potential

2.6.1 Structural Stability

Based on visual observation and evidence of internal erosion, the Town Pond Dam is not structurally stable. Continued hydrostatic pressure at or above normal level will exacerbate the internal erosion and accelerate degradation of the embankment. This may lead to a sudden release from the pond and pose a hazard to the downstream channel. Engineering analyses of the static and dynamic stability were not available for review and have not been conducted for this inspection.

2.6.2 Overtopping Potential

Based on the limited review of the hydrologic and hydraulic characteristics of the dam and watershed, the potential of overtopping is unlikely.