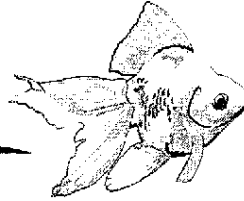


OZARK FISHERIES



Ozark Fisheries, Incorporated
1100 Ozark Fisheries Road, Stoutland, MO 65567
Phone: 573-765-3227 & Fax: 573-765-3166

October 3, 2011

Mr. Peter R. Foley
Foley, Foley & Peden
60 East Morgan Street
Martinsville, IN 46151

Dear Pete,

You will find enclosed a copy of the letter from our engineer, Civil Engineering Consultants, dated September 19, 2011. Their letter addresses the items referenced in the IDNR Visual Inspection Report dated June 22, 2011. I gave you a copy of the IDNR report during our meeting in your office on September 27, 2011.

The points involving brush clearing and cleaning out of the spillways have been addressed with one exception. At the south end of the dam on the downstream slope we still have some brush to clear. This should be completed within the next two weeks.

Now that we have a pretty good idea where the boundary line will be established, I suggest we simply drain and keep as dry as possible the two ponds at the toe of the dam on the downstream slope. By doing this it will be possible to observe the condition of the toe. Furthermore I can make another pass through this area to remove all brush along the pond bank at the toe which will allow for better observation.

As for the other items mentioned in Mr. Hughes letter, I leave it to you and Mr. Holloway to discuss. You will notice in the IDNR report that the items they are bringing to our attention are simply recommendations and not requirements. The overall condition of the dam and its various aspects were rated from Acceptable to Good.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Lawrence B. Cleveland". The ink is dark and the strokes are fluid.

Lawrence B. Cleveland

Cc: Mr. Joseph C. Cleveland

Koi - Butterfly Koi - Fantail Goldfish - Comets & Commons - Black Moors - Calicos - Rosy Reds - Crayfish - Tadpoles - Snails

September 19, 2011

Lawrence B. Cleveland, President
Ozark Fisheries
2195 SR 37 N
Martinsville, IN 46151

Re: Lake DeTurk Dam Inspection

Mr. Cleveland:

On Wednesday, August 17, 2011 I met with you and Joseph Cleveland at Lake DeTurk dam to discuss the June 22, 2011 IDNR Visual Inspection Report. The intent was to review the progress made toward satisfying IDNR recommendations. In addition, we were to evaluate wet areas on the downstream slope. This letter is intended to itemize our findings and describe recommendations to complete any necessary additional work. The letter will follow the sequence of Additional Comments on the IDNR Visual Inspection Report, page 2 of 4.

(D-10) The wet areas down slope of the spillway manhole were evaluated. It appears that the wetness may be from seepage along, or leakage of a nearby conduit. We would recommend the installation of a perforated drain tile above the wetness to a depth of about 4 feet to capture any flow. This will allow the surface to dry up. It will also facilitate observation of water quality and quantity exiting the drain. A drain tile detail is attached for reference.

(G-4) We discussed cleaning of the spillway pipes while at the site. You have reported that you were able to flush the pipes and that they are now clean.

(G-6) We discussed 2 areas needing clearing. First, you have successfully removed many of the trees along the right abutment. During our visit we discussed the removal of additional trees to facilitate future inspections. Any stumps over 6" in diameter should be removed and clay-type soil compacted back in their place. An IDNR Division of Water Fact Sheet, "Trees and Brush" is attached for reference. This work should be accomplished when a contractor comes to install a drain tile and other tasks. We recommend a cover crop of annual ryegrass and a permanent turf-type ryegrass be planted before October 15, 2011 to stabilize the slope for winter. An IDNR Division of Water Fact Sheet, "Ground Cover" is attached for reference.

The toe of this embankment ends in two hatchery cells. The slope of those cells should be extended and an additional drain tile installed to facilitate observation for wetness. Alternatively, the area should be kept dry to facilitate visual inspection. You had mentioned potentially building a maintenance drive along the toe of the slope. That would provide a fine opportunity to soften the slope into the hatchery cells, so that it can be regularly maintained. In the interim period, cattails and high grass along that slope should be cut /cleared because inspection is currently obscured.

(G-8) You have done a good deal of work cleaning around the principal spillway outlet structure. In so doing, instabilities of the structure have been exposed. We recommend that the small basin at the end of the conduit be pumped out for inspection. The end of the existing conduit should be exposed to determine if it can be extended to the base of the slope. If so, that should be done. The current concrete cap can then be removed and the slope finished and secured with new turf.

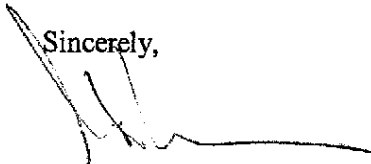
If the existing conduit cannot be extended, the existing concrete cap must be reconstructed with a proper foundation, so that it remains encapsulated until it daylights at the toe of the slope. The current cap was poured without a foundation or a floor. Over time it has eroded out and the bottom of its wall has fallen off.

(G-10) Since the last IDNR inspection, your crew has made improvement to the left contact area. At this time it appears to be adequate. We recommend that no further action be taken and, as always, monitor the area for future needs.

We concur with the IDNR Visual Inspection Report that the overall condition of this dam will be improved with the completion of these maintenance and repair items. As evaluation proceeds and modifications begin Civil Engineering Consultants should be made aware of the schedule. There are details and issues noted in the above items that should be evaluated and worked out as they progress. For instance, if the spillway pipe can be extended, we will want to specify the type of conduit and the connection to the existing.

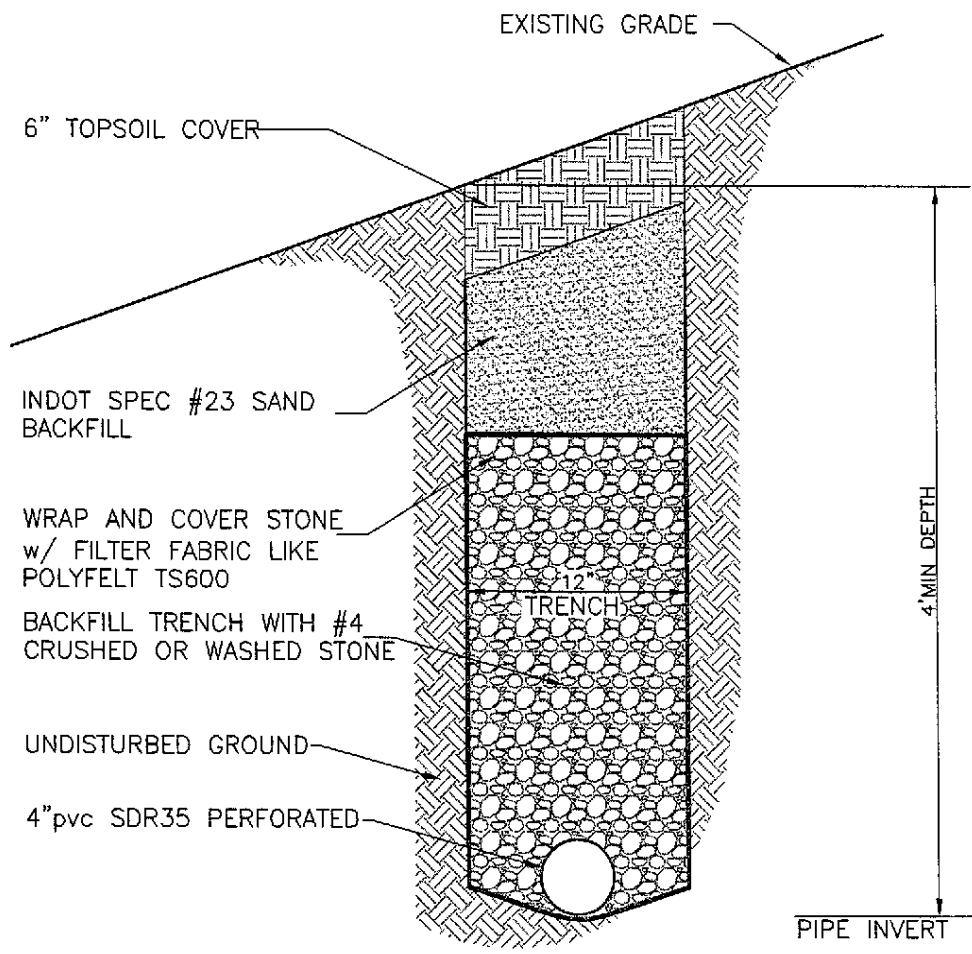
If you have any further questions, please call. We look forward to hearing from you.

Sincerely,



Garth Hughes, PE
Civil Engineering Consultants

Attachments: Trench Drain Detail
Fact Sheets: Trees and Brush
Ground Cover



DETAIL

NO SCALE

TRENCH DRAIN DETAIL

Lake DeTurk Dam
 Ozark Fisheries
 1100 Ozark Fisheries Rd
 Stoutland, MO 65567

Shireman Estates Subdivision
 Martinsville, IN
 Sheet 1 of 1
 Sep 15, 2011
 ref no: 11.041

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 e-mail: cecon@ccrtc.com



FACT SHEET 03-09

8-28-07

Dam Safety: Trees and Brush

The establishment and control of proper vegetation is an important part of dam maintenance. Properly maintained vegetation can help prevent erosion of embankment and earth channel surfaces, and aid in the control of groundhogs and muskrats. The uncontrolled growth of vegetation can damage embankments and concrete structures and make close inspection difficult. Thick brush and weed growth can obscure seepage problems which can get progressively worse if left un-noticed.

Trees and Brush

Trees and brush should not be permitted on embankment surfaces or in vegetated earth spillways. Extensive root systems can provide seepage paths for water. Trees that blow down or fall over can leave large holes in the embankment surface that will weaken the embankment and can lead to increased erosion. Brush obscures the surface limiting visual inspection, provides a haven for burrowing animals, and retards growth of grass vegetation. Tree and brush growth adjacent to concrete walls and structures may

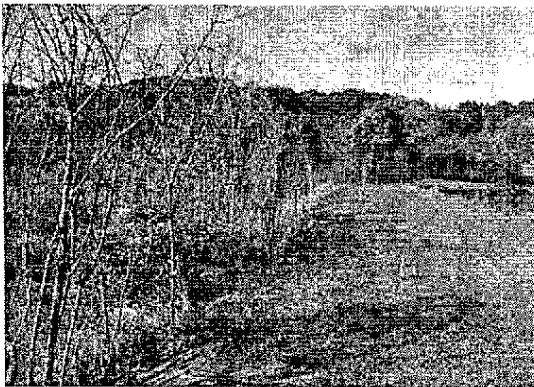


Figure 1 – Trees and brush on dam embankment

eventually cause damage to the concrete and should be removed.

Stump Removal & Sprout Prevention

Stumps of cut trees should be removed so

vegetation can be established and the surface mowed. Stumps can be removed either by pulling or with machines that grind them down. All woody material should be removed to about 6 inches below the ground surface. The cavity should be filled with well-compacted soil and grass vegetation established.

Stumps of trees in riprap cannot usually be pulled or ground down, but can be chemically treated so they will not continually form new sprouts. Certain herbicides are effective for this purpose and can even be used at water supply reservoirs if applied by licensed personnel. For product information and information on how to obtain a license, contact the Indiana Department of Agriculture at the following address:

Indiana Department of Agriculture

1931 Liberty Drive
Bloomington, IN 47403
(812) 334-4323

These products should be painted, not sprayed, on the stumps. Other instructions found on the label should be strictly followed when handling and applying these materials. Only a few commercially available chemicals can be used along shorelines or near water.

Tree Removal

The following guidelines are recommended when removing trees from dams (see Figures 2 and 3):

Zone 1: Remove all trees, stumps, rootballs, and root system; clean rootball cavity; and backfill with properly placed and compacted soil backfill. Install tree and woody vegetation and wave erosion protection system on the upstream slope from about four feet below normal pool elevation to about three feet above normal pool elevation.

Zone 2: Cut trees in overlap area of Zone 2 and Zone 3 having stump diameters of twelve inches or less flush with the ground and treat the stump with a waterproof sealant to prolong stump decay.

Completely remove trees having stump diameters of about twelve inches and greater, and backfill rootball cavity with properly compacted backfill soil.

Zone 3: Cut trees having stump diameters of about eight inches and less level with the ground and treat the stump with a waterproof sealant to prolong stump and rootball decay.

Completely remove all trees having stump diameters greater than about eight inches and backfill the cleaned rootball cavity with compacted backfill soil.

Zone 4: Cut all trees having stump diameters of six inches or less flush with the ground and treat the stump with a waterproof sealant to prolong stump and rootball decay.

Remove all trees having stump diameters greater than about six inches, install subdrain and/ or filter systems and backfill with properly compacted soil around the filter/ drain system.

Zone 5: Cut all trees having stump diameters of about four inches and smaller flush with the ground and treat the stump to prolong stump and rootball decay.

Install a major embankment toe drain or subdrain system to lower the phreatic surface, filter, collect, and discharge embankment seepage. Incorporate major subdrain with tree rootball and stump removal where possible.

Remove all trees located beyond the toe of the downstream slope having stump diameters greater than about four inches. Install weighted filters and/ drain systems in rootball cavities where

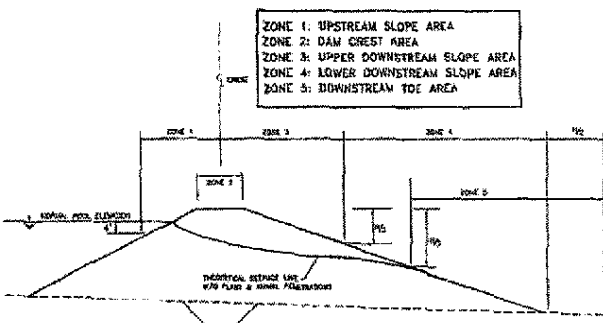
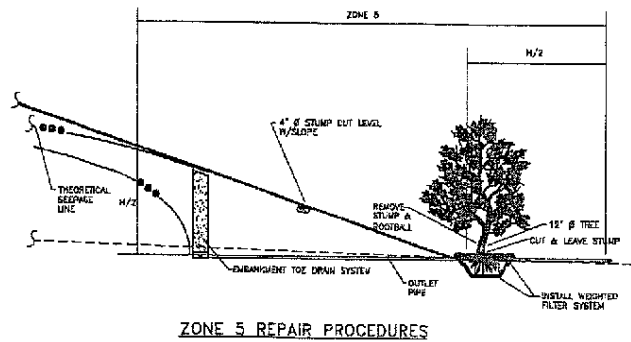
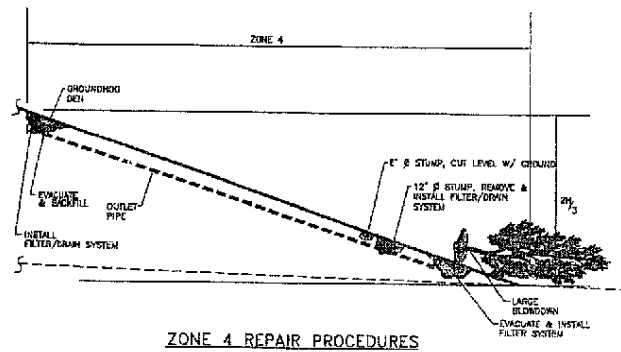
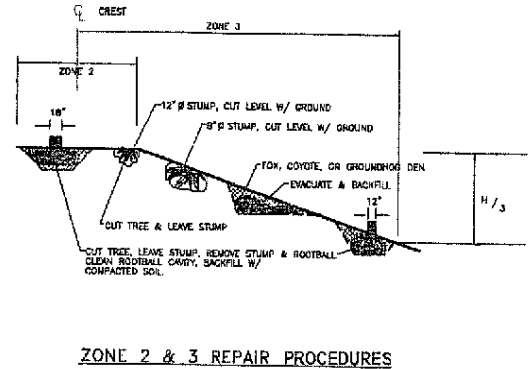
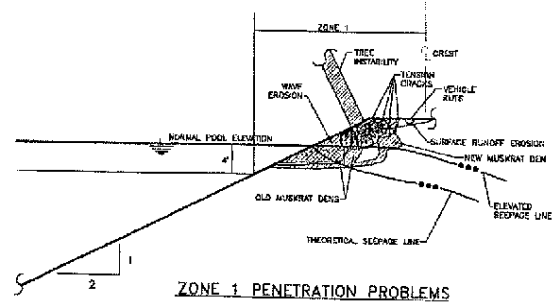


Figure 2 – Embankment Zones Related to Tree Removal

Figure 3 – Repair Procedures for Embankment Zones

seepage boiling and soil piping are likely to occur.

When cutting the trees for removal, at least 2 to 3 feet of the stump should be left above the ground leaving a well-defined stump that can be used in the stump removal process. The stump and rootball should then be removed by pulling the stump upward with a track-mounted backhoe (or similar equipment) after loosening the rootball by pulling on the stump from different directions.

The rootball cavity should be cleaned to remove loose soil and the remaining roots in the cavity using a backhoe, cutting cavity sideslopes to no steeper than 1:1 and cutting a horizontal cavity bottom.

Compacted soil should be a cohesive material, compacted in lifts no greater than 8-inches loose lift thickness. Compaction is usually accomplished with manually operated compaction equipment or equipment attached to a backhoe.

Embankment Maintenance

Embankments, groins, areas adjacent to spillway structures, vegetated channels, and other areas associated with a dam require continual maintenance of the vegetal cover. Grass mowing, brush cutting, and removal of woody vegetation (including trees) are necessary for the proper maintenance of a dam, dike, or levee. All embankment slopes and vegetated earth spillways should be mowed at least twice per year. Trees and brush should be removed in all areas within 25 feet of the embankment. Aesthetics, unobstructed viewing during inspections, maintenance of a non-erodible surface, and discouragement of groundhog habitation are reasons for proper maintenance of the vegetal cover.

Methods used in the past for control of vegetation, but are now considered unacceptable, include chemical spraying, and burning. More acceptable methods include the use of weed whips or power brush-cutters and mowers. Chemical spraying to first kill small trees and brush is acceptable if precautions are taken to protect the local environment.

It is important to remember not to mow when the embankment is wet. It is also important to use proper equipment for the slope and type of vegetation to be cut. Also, always follow the manufacturer's recommended safe operation procedures.

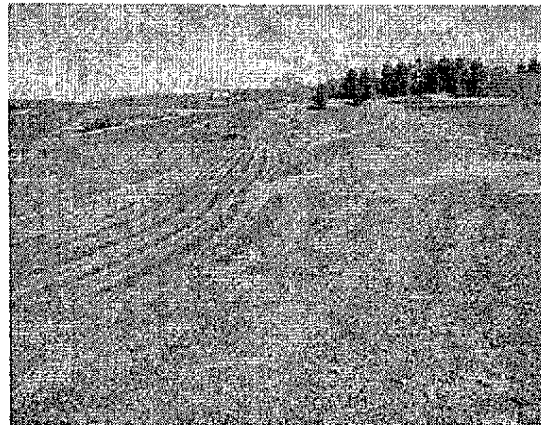
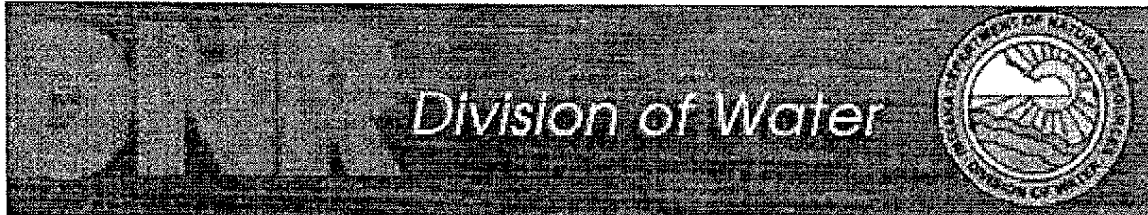


Figure 4 – Well-maintained embankment

Any questions, comments, concerns, or fact sheet requests should be directed to the Division of Water at the following address:

Indiana Department of Natural Resources
Division of Water
402 West Washington Street
Indianapolis, Indiana 46204
(317) 232-4160 (Voice) (317) 233-4576 (Fax)
<http://www.in.gov/dnr/water>



FACT SHEET 03-12

8-28-03

Dam Safety: Ground Cover

The establishment and control of proper vegetation are an important part of dam maintenance. Properly maintained vegetation can help prevent erosion of embankment and earth channel surfaces, and aid in the control of groundhogs and muskrats. The uncontrolled growth of vegetation can damage embankments and concrete structures and make close inspection difficult.

Grass vegetation is an effective and inexpensive way to prevent erosion of embankment surfaces. If properly maintained, it also enhances the appearance of the dam and provides a surface that can be easily inspected. Roots and stems tend to trap fine sand and soil particles, forming an erosion-resistant layer once the plants are well established. Grass vegetation may not be effective in areas of concentrated runoff, such as at the contact of the embankment and abutments, or in areas subjected to wave action.

The purpose of keeping a healthy stand of grass at an appropriate height year round on the embankment and spillway is to: 1) protect the surface from extreme runoff events, 2) create a continuous, stable, near surface soil layer, 3) minimize woody/animal penetrations, 4) allow visual monitoring for early detection of safety deficiencies (seepage, wet spots, cracks, settlement, bulges, misalignment, sloughs, rills, holes, etc.) by the owner, 5) prevent deterioration of the deeper compacted soils of the embankment.

A uniform, vigorous, turf forming grass stand that can tolerate stressful conditions (drought to very wet), survive high flows from runoff, provide protection to the underlying soil and allows for visual inspection of the structure is acceptable. A turf-type tall fescue would be an acceptable seed to use. Other grasses included in the mixture should be suitable for erosion control and steep slopes.

Grasses that are substantially clumpy, extremely deep-rooted, matt, spread or intertwine on the

surface are not acceptable. Extremely deep-rooted grasses may compromise the integrity of the compacted embankment fill. A dense matted grass that creates a tangled mass will hide surface deficiencies and cause difficulty for the owner to routinely inspect and monitor the structure.

Common Problems

Bare Areas

Bare areas on an embankment are void of protective cover (e.g. grass, asphalt, riprap, etc.). They are more susceptible to erosion which can lead to localized stability problems such as small slides and sloughs. Bare areas must be repaired by establishing a proper grass cover or by installing other protective cover. If using grass, the topsoil must be prepared with fertilizer and then scarified before sowing seed. Types of grass vegetation that have been used on dams in Ohio are bluegrass, fescue, ryegrass, alfalfa, clover, and redtop. One suggested seed mixture is 30% Kentucky Bluegrass, 60% Kentucky 31 Fescue, and 10% Perennial Ryegrass. Once the seed is sown, the area should be mulched and watered regularly.

Erosion

Embankment slopes are normally designed and constructed so that the surface drainage will be spread out in a thin layer as "sheet flow" over the grass cover. When the sod is in poor condition or flow is concentrated at one or more locations, the resulting erosion will leave rills and gullies in the embankment slope. The erosion will cause loss of material and make maintenance of the embankment difficult. Prompt repair of the erosion is required to prevent more serious damage to the embankment. If erosion gullies are extensive, a registered professional engineer may be required to design a more rigid repair such as riprap or concrete. Minor rills and gullies can be repaired by filling them with compacted cohesive material. Topsoil should be a minimum of 4 inches deep. The area should then be seeded and mulched. Not only should the eroded areas be

repaired, but the cause of the erosion should be addressed to prevent a continued maintenance problem.



Figure 1 – Rill and gully erosion

Footpaths

Paths from animal and pedestrian traffic are problems common to many embankments. If a path has become established, vegetation in this area will not provide adequate protection and a more durable cover will be required unless the traffic is eliminated. Gravel, asphalt, and concrete have been used effectively to cover footpaths. Embedding railroad ties or other treated wood beams into an embankment slope to form steps is one of the most successful and inexpensive methods used to provide a protected pathway.

Vehicle Ruts

Vehicle ruts can also be a problem on the embankment. Vehicular traffic on the dam should be discouraged especially during wet conditions except when necessary. Water collected in ruts may cause localized saturation, thereby weakening the embankment. Vehicles can also severely damage the vegetation on embankments. Worn areas could lead to erosion and more serious problems. Ruts that develop in the crest should be repaired by grading to direct all surface drainage into the impoundment. Bare and eroded areas should be repaired using the methods mentioned in the above sections. Constructed barriers such as fences and gates are effective ways to limit access of vehicles.

Improper Vegetation

Crown vetch, a perennial plant with small pink flowers, is commonly used on steep slopes to prevent erosion. However, it is not recommended on dams since it hides the embankment surface, thus preventing early detection of cracks and

eroded areas.



Figure 2 – Animal footpaths and vehicular ruts



Figure 3 – Crown vetch

Vines and woody vegetation such as trees and brush also hide the embankment surface preventing early detection of cracks and erosion. Tall vegetation also provides a habitat for burrowing animals. All improper vegetation must be removed from the entire embankment surface. Any residual roots that are larger than 3 inches in diameter must be removed. All roots should be removed down to a depth of at least 6 inches and replaced with a compacted clay material; then 4 inches of topsoil should be placed on the disturbed areas of the slope. Finally, these areas must be seeded and mulched to establish a proper grass cover.

Maintenance

Maintaining a good, thick grass cover on an embankment dam at an appropriate height is one aspect of maintaining and keeping a dam safe. A dam is like any other man-made structure that

creates a hazard; it needs to be maintained for safety and proper performance.

Proper, routine maintenance is essential to keep the "design/spec" grass cover in a healthy condition to obtain the expected performance. Poor care and maintenance allow undesirable grasses, weeds and woody growth to overcome the acceptable grass. To develop good grass cover requires proper establishment and maintenance techniques such as fertilizer applications, mowing, spraying, cutting of brush and reseeding bare spots.

Listed below are some considerations in maintaining the grass cover on the dam and spillway. There may be other site-specific factors that need to be considered.

- Grass on significant or high hazard dams or on dams that are a valuable resource should be mowed, not burned. Burning a dam leaves the surface of the ground exposed to erosion for an extended period of time. Further, burning may overstress the design/spec grass and allow undesirable vegetation to establish. Mowing frequency will depend on what the turf can stand. Mowing just after seed has formed but before maturity will slow the growth of the turf for the rest of the summer. This would allow for good inspection and not cause as frequent of mowing. However, all embankment slopes and vegetated earth spillways should be mowed at least twice a year.
- Mowing to six (6) inches is acceptable if the above item is followed. Mowing off no more than 1/3 of the leaf blade is standard for good turf management. By mowing off more, the turf is stressed and its growth slowed. Care must be taken not to stress the turf unduly by improper maintenance.
- Proper mowing equipment should be used to minimize rutting the slope, reduce damage to the grass, and provide safety for the operator.
- Slope trash (logs, stones, etc.) should be removed and ruts filled with compacted similar soil material to provide a uniform cut and minimize equipment damage and injury to the operator.
- Thick grass clippings or large clumps should be removed to keep the underlying grass from dying.
- After each mowing, the dam owner should thoroughly inspect the dam for deficiencies. If there are new deficiencies or significant changes in previous deficiencies, the dam

owner's engineer and the Division of Water should be contacted.

- Bare spots should be seeded and fertilized. Weeds and woody growth should not be allowed to establish.

Common methods for control of vegetation include the use of weed trimmers or power brush-cutters and mowers. Chemical spraying to kill small trees and brush is acceptable if precautions are taken to protect the local environment. Some chemical spraying may require proper training prior to application. Additional information can be found on the Trees and Brush Fact Sheet.

Any questions, comments, concerns, or fact sheet requests should be directed to the Division of Water at the following address:

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