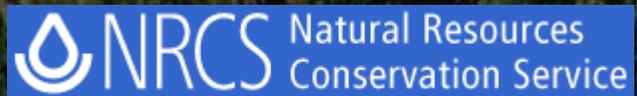
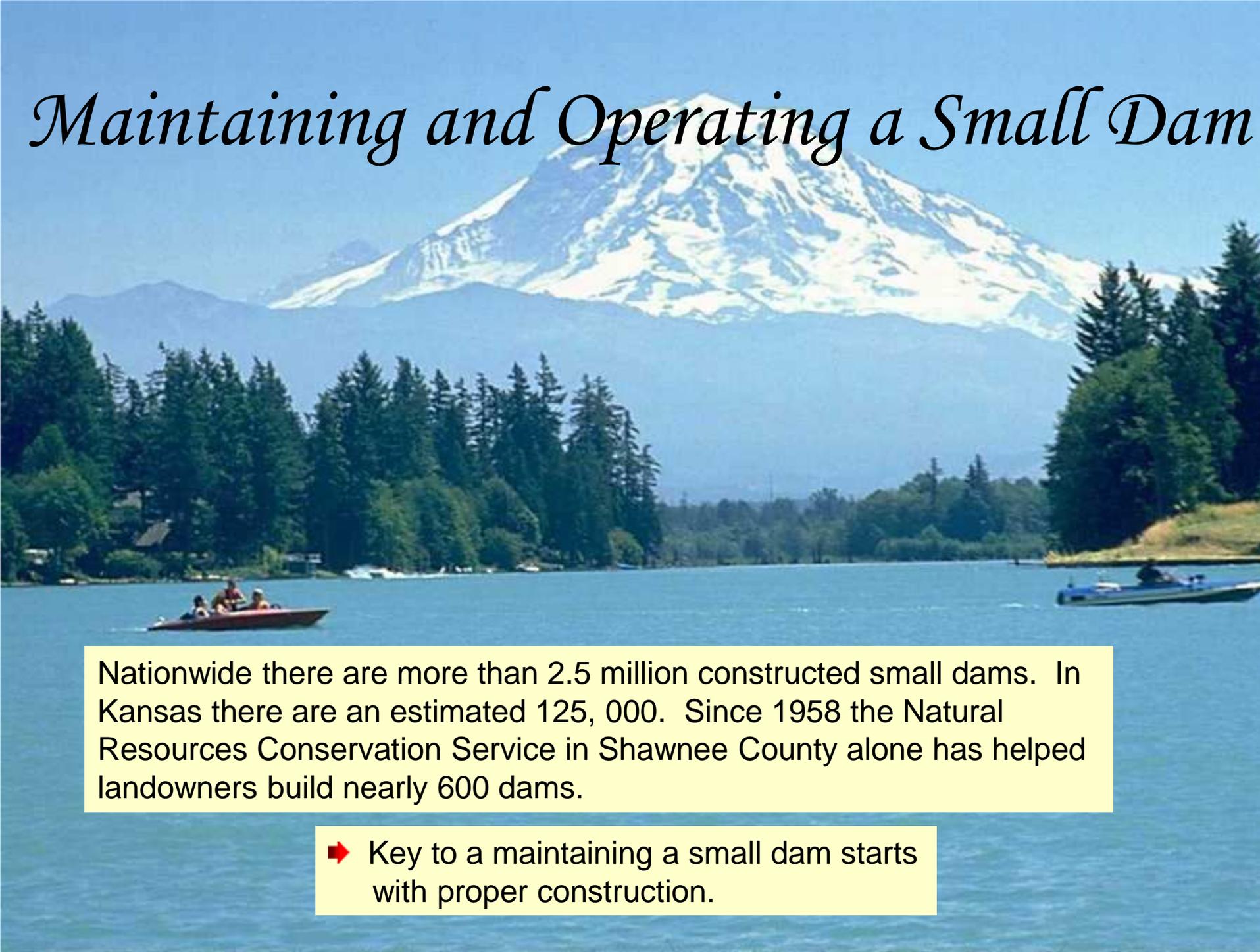


Maintaining and Operating a Small Dam

Christy Ronsse
Soil Conservation Technician



Maintaining and Operating a Small Dam



Nationwide there are more than 2.5 million constructed small dams. In Kansas there are an estimated 125, 000. Since 1958 the Natural Resources Conservation Service in Shawnee County alone has helped landowners build nearly 600 dams.

➡ Key to a maintaining a small dam starts with proper construction.

Before construction begins have you answered these questions:

Is there enough drainage to sustain the pond all year?

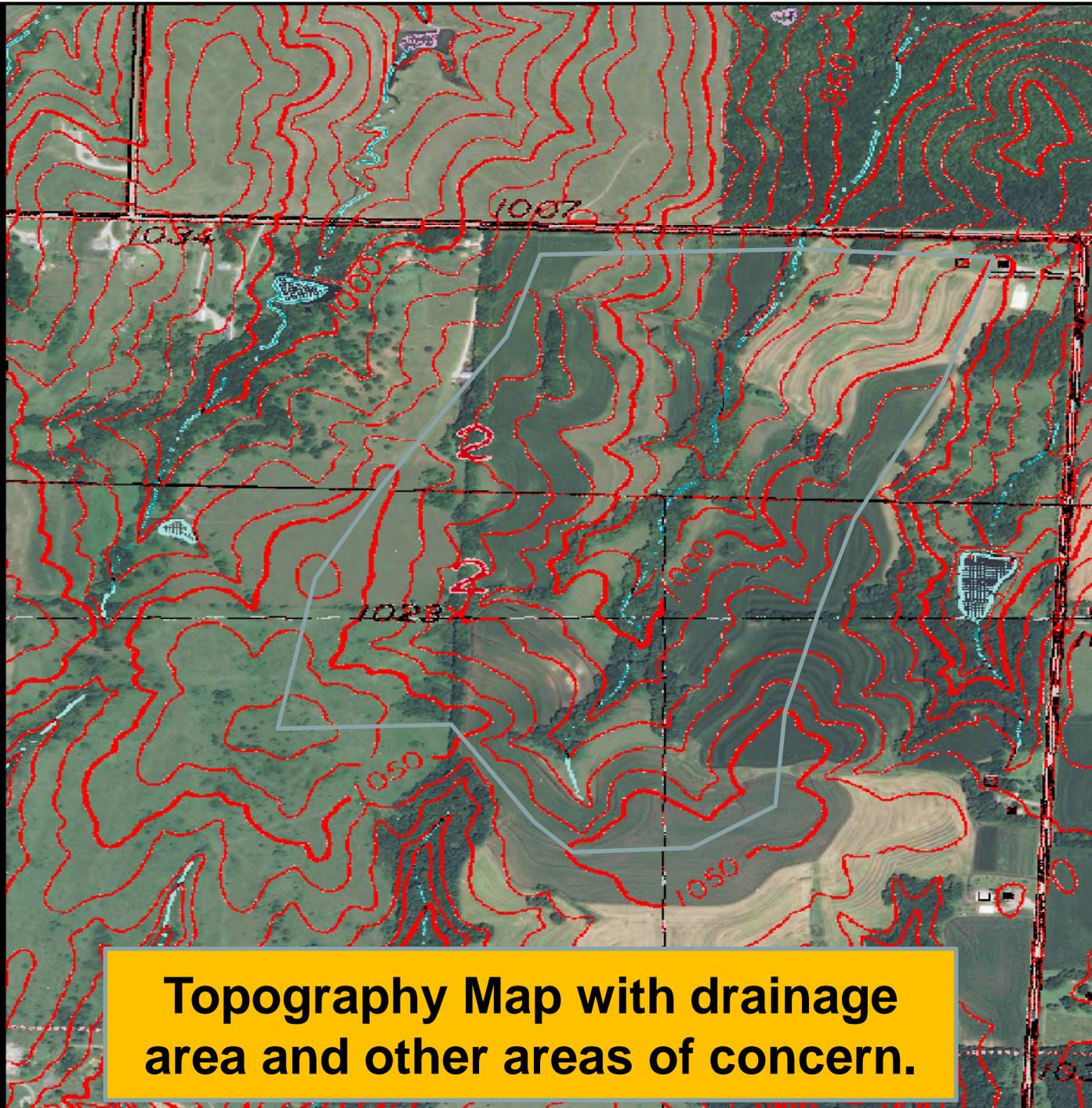
Is the soil appropriate for the pond site?

If large site or drainage, will it require a permit from DWR, COE or KDHE?

Are you affecting any wetland areas?

Are there any hazards below the dam if it were to breach?

Property lines location above and below site?



Topography Map with drainage area and other areas of concern.

Shawnee County Conservation District

MAIN MENU



Featured Page

Country Living

Things You Should Know Before You Buy

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About The District	Conservation Practices	Non-Point Source Pollution	Ethics
Other Home Pages	Education	Natural Resource Mgt	HELP !!
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District's Conservation Priorities	Pond Dams Built Right	History-Facts about Kansas
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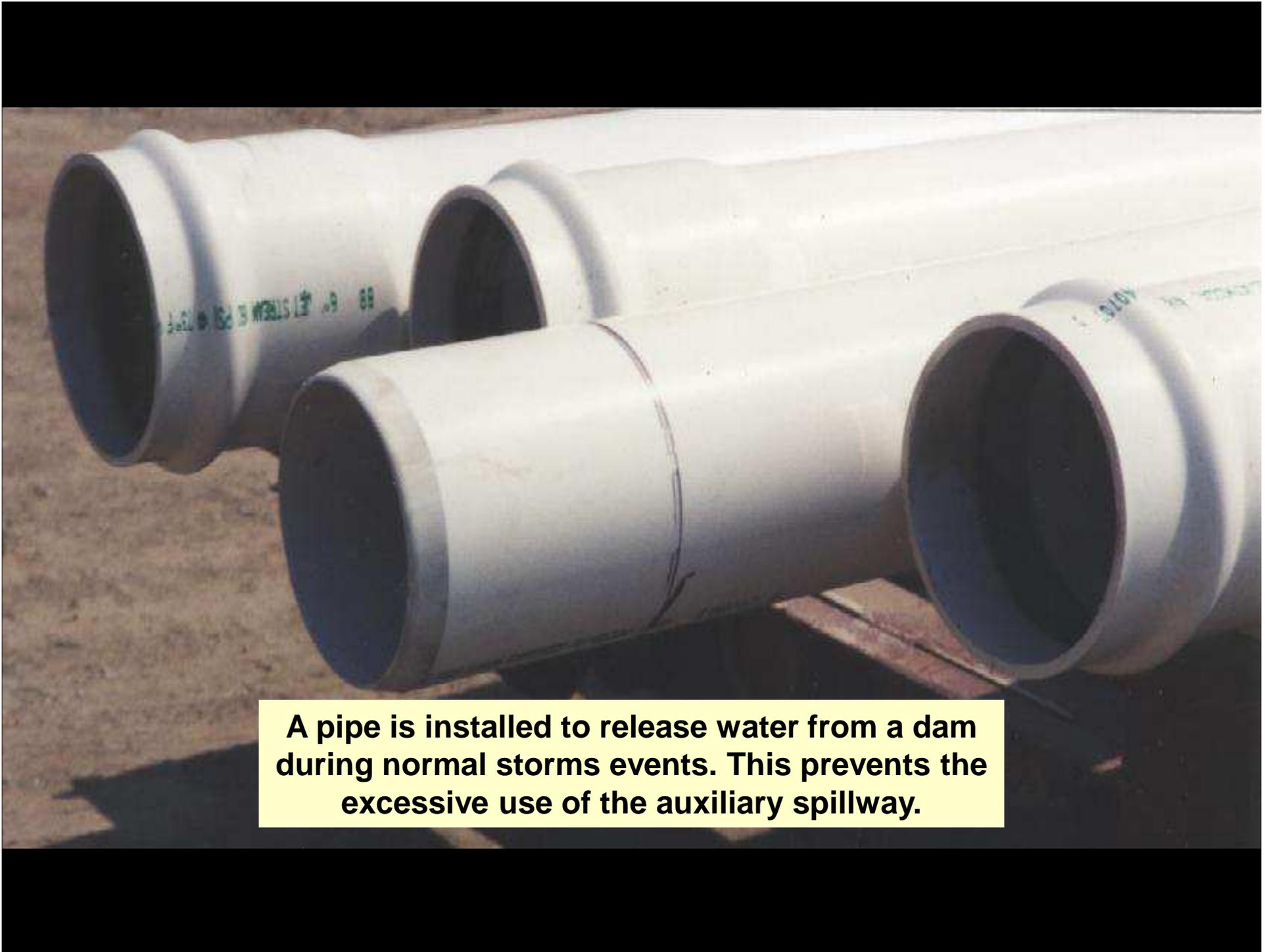




The core trench is filled in and compacted with heavy clay material.

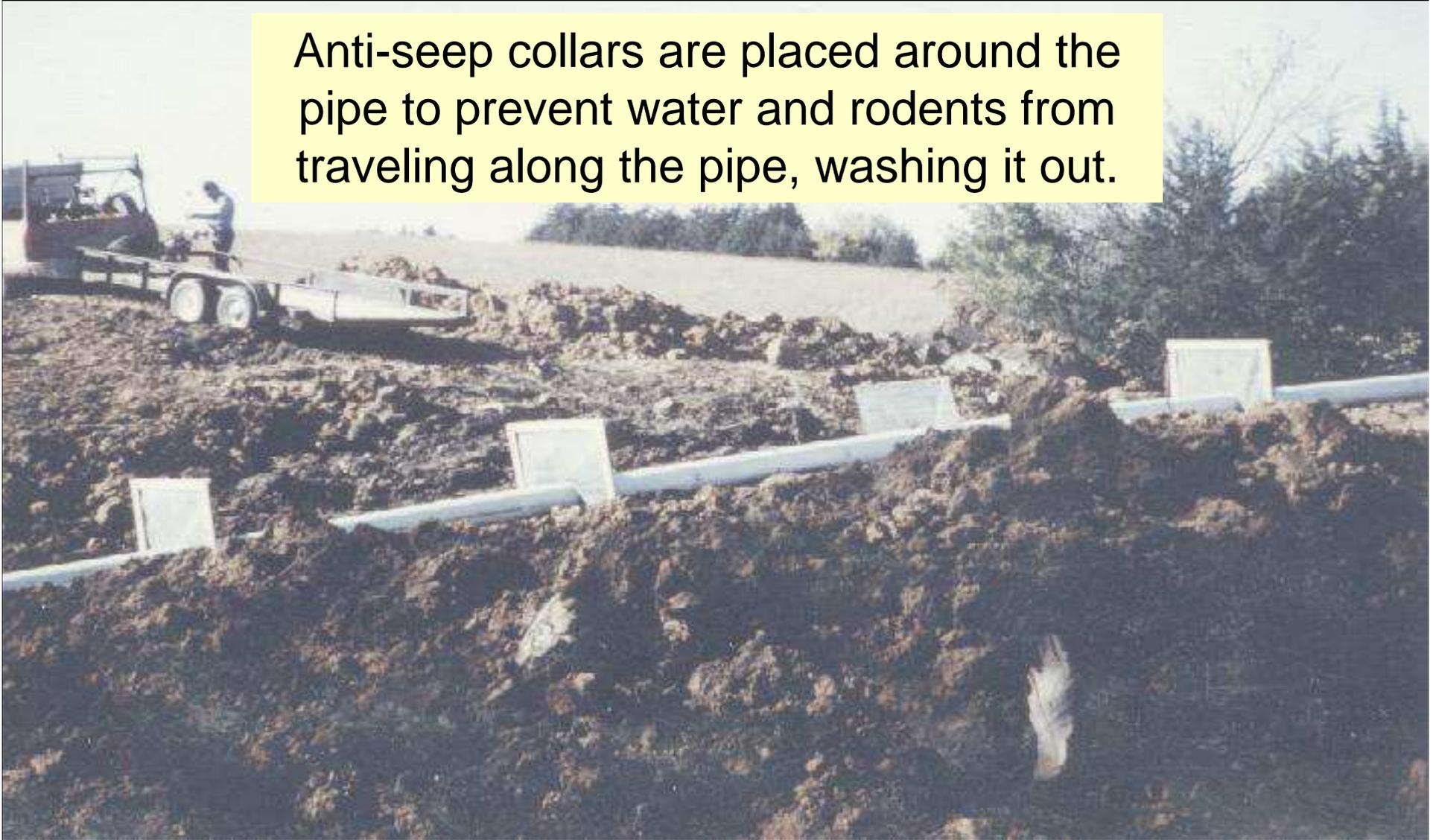


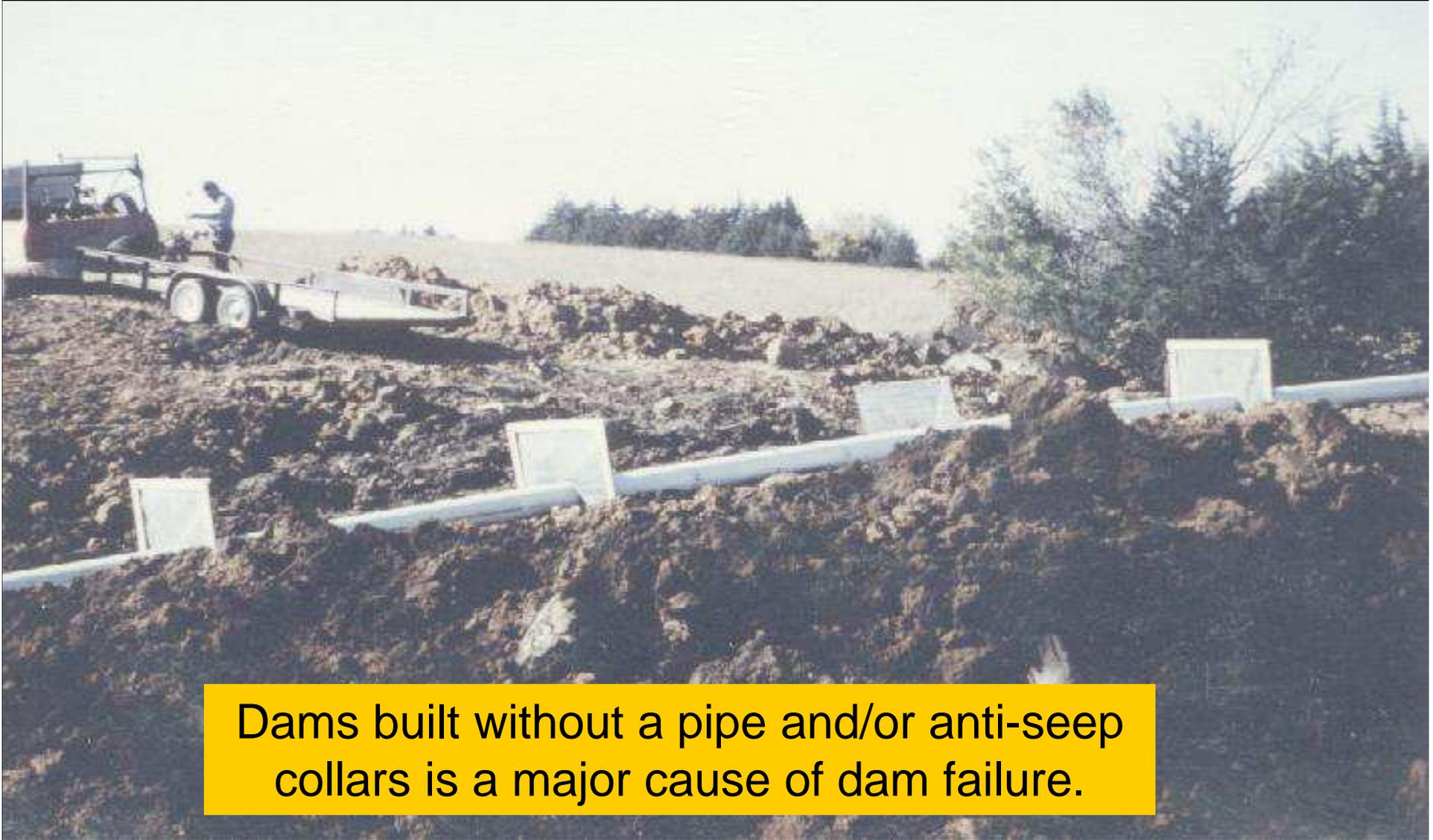
This detail of the core trench and sealing other potential areas of leakage such as exposed rock in the reservoir is critical. Fixing a leaking pond later is difficult and can be very expensive to landowner.



A pipe is installed to release water from a dam during normal storms events. This prevents the excessive use of the auxiliary spillway.

Anti-seep collars are placed around the pipe to prevent water and rodents from traveling along the pipe, washing it out.



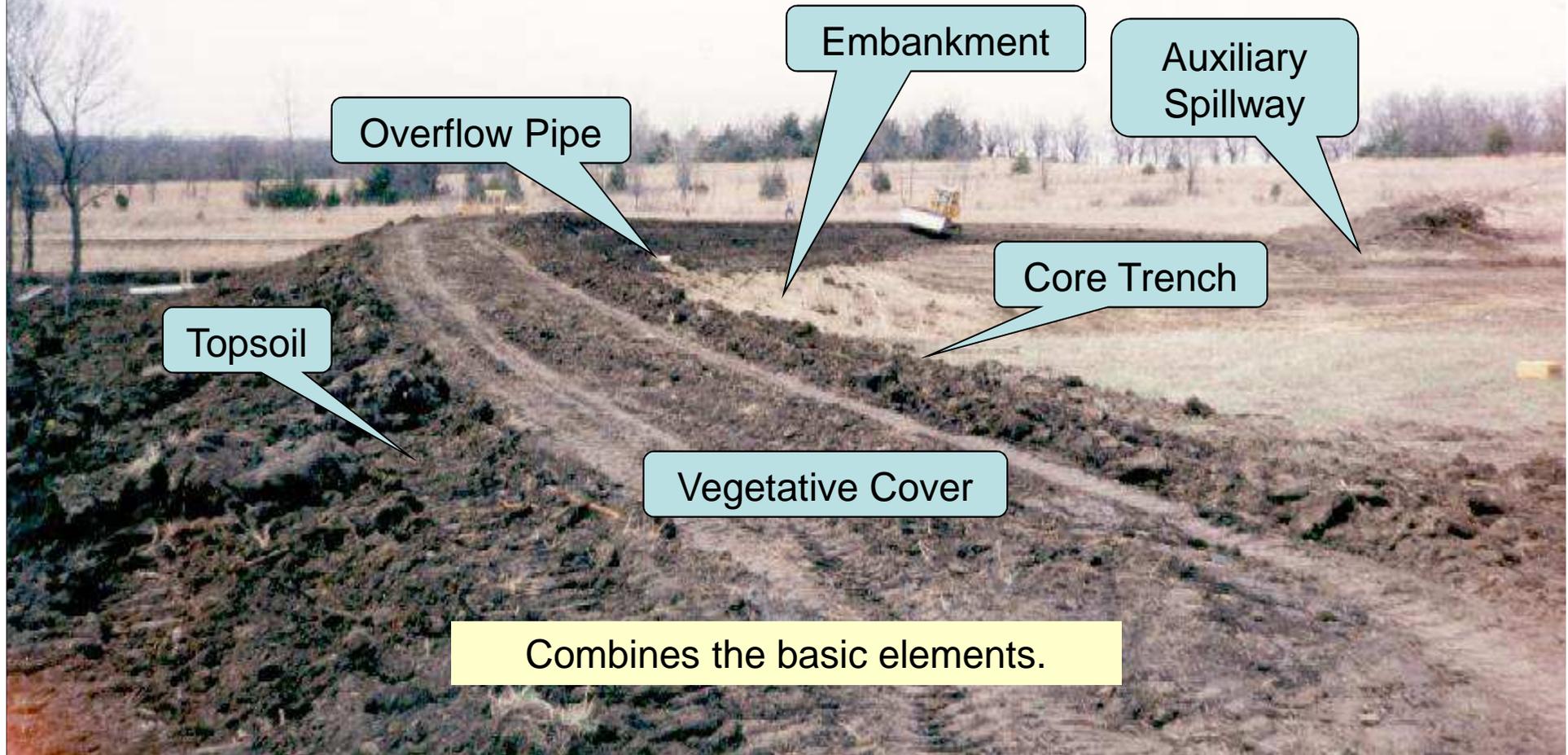


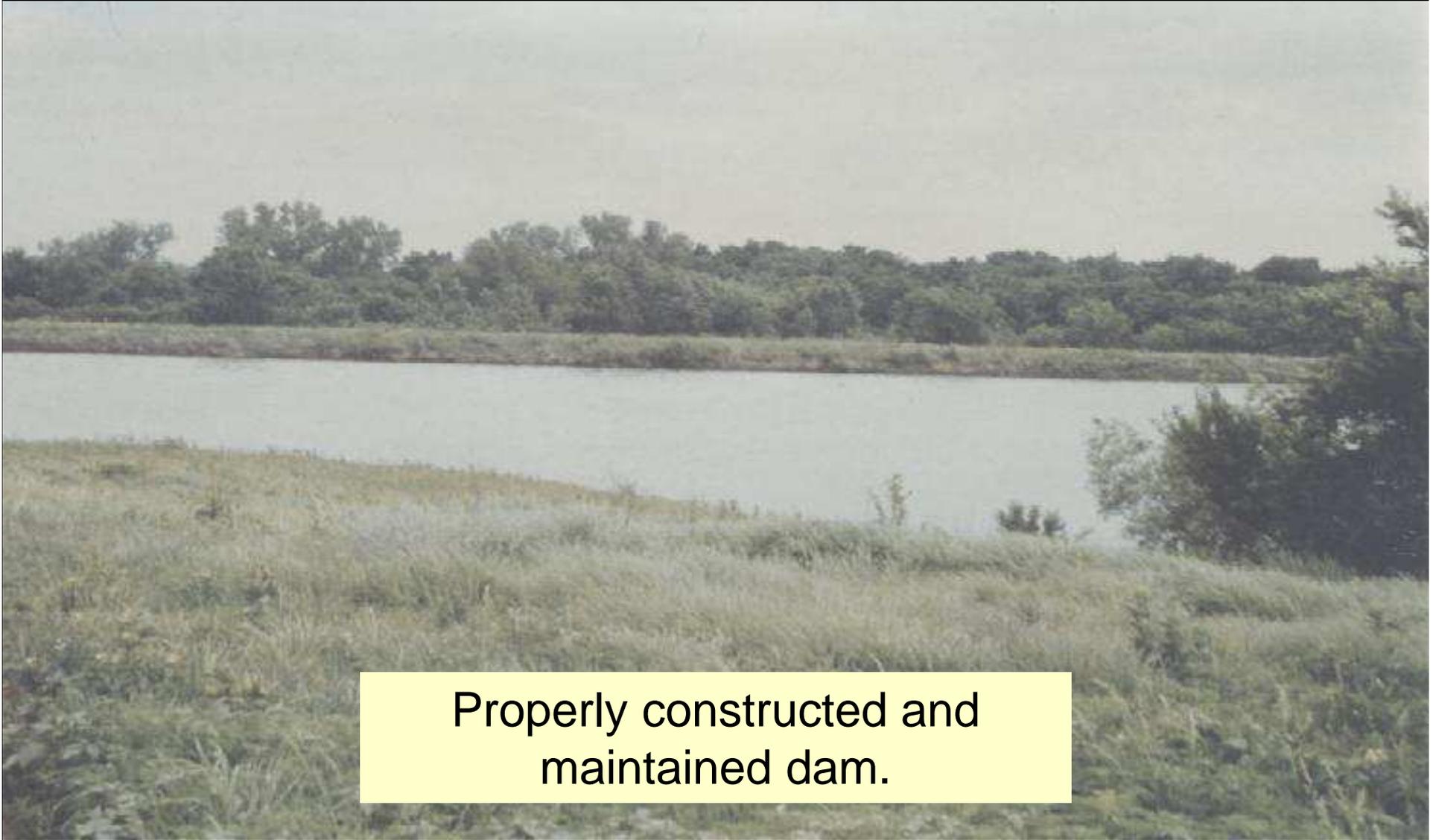
Dams built without a pipe and/or anti-seep collars is a major cause of dam failure.



A canopy inlet, a beveled cut to the front of the pipe with a lip at the top, allows the pipe to flow full with water and not pull in air.

Maintaining and Operating a Small Dam





Properly constructed and
maintained dam.

Maintaining and Operating a Small Dam



➡ Maintaining good vegetation on structure.

➡ Protecting the dam from sedimentation.

➡ Replacing the pipe.

➡ Fish management.

➡ Controlling trees and invasive vegetation.

➡ Managing livestock access.



- ☑ Trees should be kept off the embankment.
- ☑ Vegetation on the dam and spillway must be maintained to no less than 6 inches.
- ☑ Livestock access must be controlled.





Soil erosion from urban and agricultural areas above the dam will impact water quality.

Left unchecked it will have a negative impact on the usefulness and longevity of the structure.

- ▶ **Water Supply**
- ▶ **Fish habitat**
- ▶ **Swimming**
- ▶ **General Enjoyment**

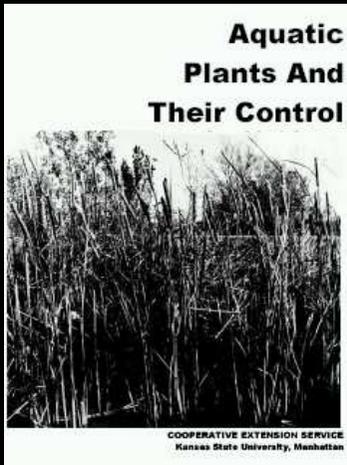




Excess vegetation is due to elevated levels of nutrients in the water.

Nutrients from animal waste, fertilizer application and soil erosion all contribute.

Other times, shallow or clear water ponds allow sunlight to reach the bottom adding to the problem.



Aquatic Plants And Their Control

COOPERATIVE EXTENSION SERVICE
Kansas State University, Manhattan



This is an example of the pipeline thru dam that is failing and washing out the pipe and back side of dam.

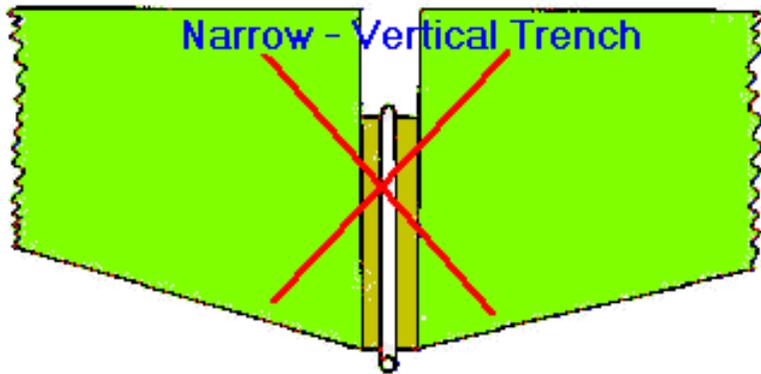


Metal pipe generally lasts about 20 years. This is a 16 gauge corrugated metal drop inlet type pipeline, that has rusted out.

Pipe Replacement

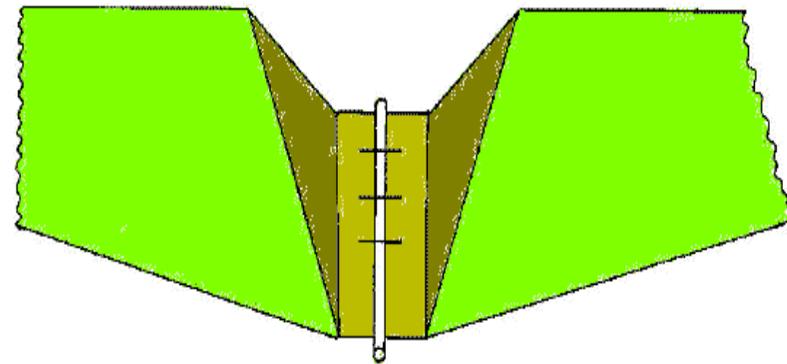
View From Back Of Dam

Narrow - Vertical Trench

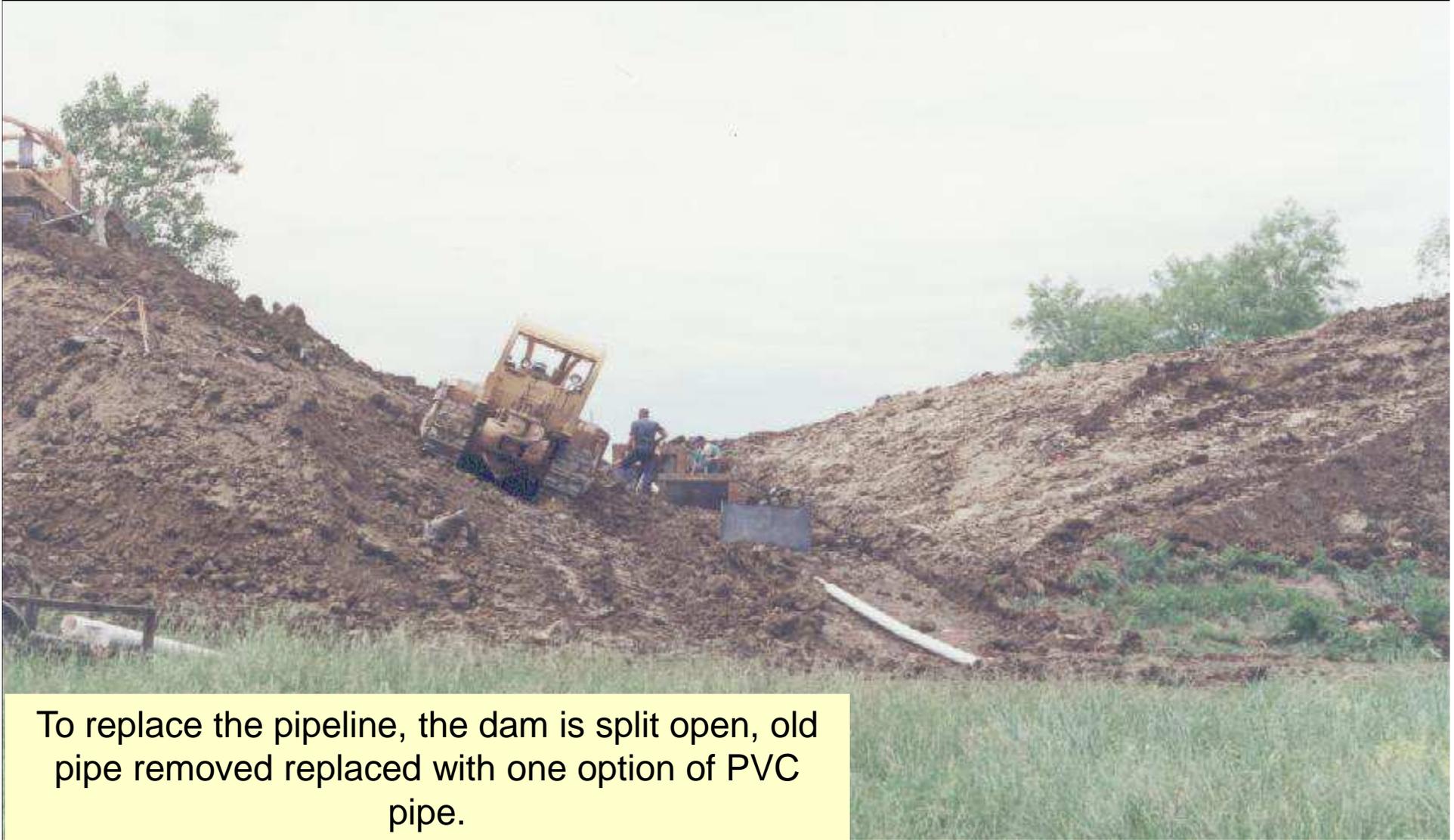


Incorrect Method

View From Back Of Dam



Correct Method



To replace the pipeline, the dam is split open, old pipe removed replaced with one option of PVC pipe.



A coffer dam is created to keep the water from running down the open trench while working on replacement.

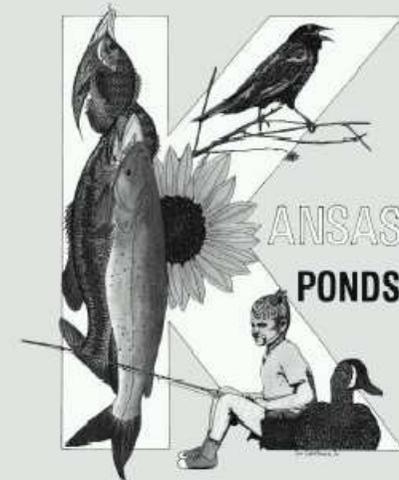
Pond dam is compacted and over built to allow for settlement and reseeded to original vegetation.



If dam is in good condition before pipe replacement, then a minimal amount of reseeding and repair is necessary and less costly when project is completed.



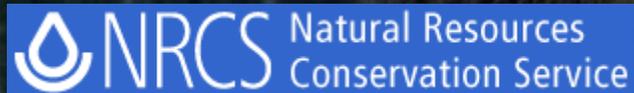
**PRODUCING
FISH AND WILDLIFE
FROM**



**ANSAS
PONDS**

Maintaining and Operating a Small Dam

**Thank You
Any
Questions?**



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