



# Managing Dam Easements in a Digital Age

Land easements are necessary documents in the construction and operation of watershed dams built by local watershed project sponsors with the assistance of the USDA Natural Resources Conservation Service (NRCS) Watershed Programs (Public Law 78-534 and Public Law 83-566).

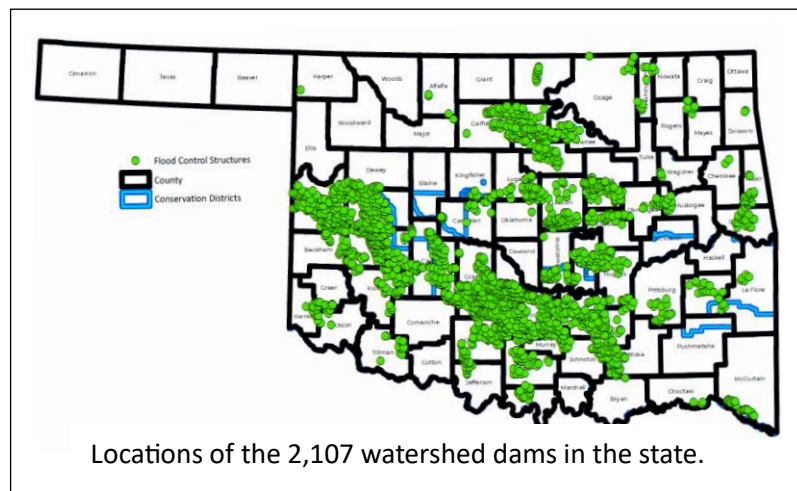
The easements are also important in future years to protect the integrity of these measures (preventing construction of buildings, fences, pipelines, etc. that could affect the dam and auxiliary spillway).

They also become important if a dam is rehabilitated and for new landowners and real estate agents when land changes ownership since the easements are part of the land title.

Oklahoma has constructed 2,107 flood control dams with assistance of the NRCS Watershed Program. Seventy-nine percent of Oklahoma's counties have at least one dam. This means there are thousands of easements that have been obtained from landowners since 1948, with many of them now over 50 years old.

The Oklahoma Conservation Commission (OCC) has initiated an effort to build a Geographic Information System (GIS) to better store and manage these easements.

The new database will be more accessible and will include more detail such as clearer boundaries of the easements and of the areas that might be covered with water based upon top of the dam elevation.



Locations of the 2,107 watershed dams in the state.

Some Oklahoma easements are block easements which were easy to define when obtained, but sometimes do not actually show areas of land that would be affected by water stored based on top of the dam or auxiliary spillway elevations. While a landowner may see an easement listed on the deed they may not understand or know what the boundaries of the easement are without actually looking at the easement document and maybe getting a land survey.

Wendie Sharp, OCC GIS Specialist is in charge of the project which she estimates it could take up to two years to complete due to the large number of easements to digitize.

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first step in the process is gathering the easements from project sponsors (which in most cases in Oklahoma are conservation districts). Once the easements are obtained they are scanned into PDFs and placed in a coordinating folder structure. With new employees and easements that may be 50+ years old easements may be difficult to find or they may be faded and unreadable. This often means a trip to the County Clerk's office to find the recorded easement.

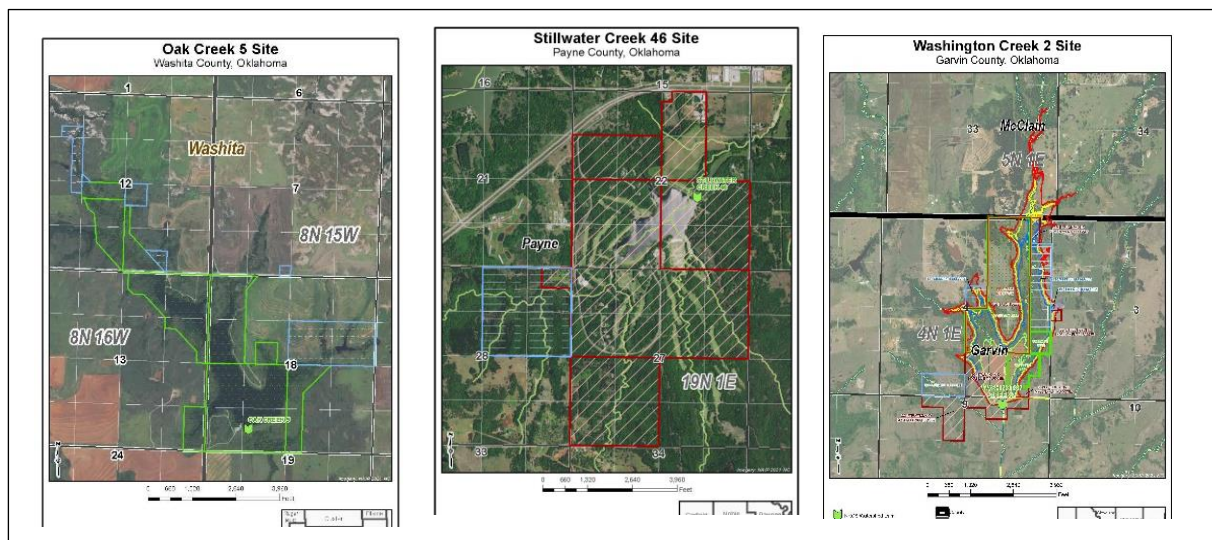
Once OCC has the easement document digitized, they start building the spatial layers including easements and access areas by mapping an easement's legal description (PLSS Quarter calls, Metes and Bounds). Other information such as missing easements and any questions about easements are collected via spread sheets for further assessment.

After a spatial record is added to the GIS database, key attributes are captured including easement type, legal description and county, key dates, high hazard status, special provisions, ingress/egress, and standardized information such as Federal ID, National ID and dam name.

Elevation contour lines are then built in GlobalMapper by utilizing digital elevation models (DEMS). Information is gathered from NRCS As-built drawings of dams that show the principal and auxiliary spillway and effective top of dam elevations. An additional elevation contour is created for effective top of dam plus five feet to give additional insight into areas that could potentially be flooded.

After these steps are completed maps web maps and additional datasets can be created to show areas covered by the easements.

The Oklahoma Conservation Commission feels this effort will be a way to permanently store easements where they can easily be accessed and it will be much easier for watershed project sponsors to utilize with landowners, real estate agents, potential land purchasers, and others, plus it will be a valuable tool when rehabilitating a dam.



For more information about the project contact Wendie Sharp, [wendie.sharp@conservation.ok.gov](mailto:wendie.sharp@conservation.ok.gov)

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