

**Grand River Dam Authority**  
**Construction Guidelines for Flowage Easements & GRDA Property**  
**Approved by GRDA Board of Directors on April 6, 2021**

**PURPOSE AND PREFACE**

These guidelines apply to all construction projects on GRDA property and the flowage easement for Grand and Hudson lakes. These guidelines were developed to provide consistency in the project approval process, while safeguarding the flood storage pool. Section 1321(c) of the Water Infrastructure Improvements for the Nation Act of 2016 conveyed flowage easements from the Corps of Engineers to GRDA.

**DEFINITIONS**

**Allowable Materials:** Allowable materials include, but are not limited to the following, stone, concrete blocks, poured concrete or any materials acceptable to GRDA.

**Approved Environmental Consultant:** An environmental consultant approved by the U.S. Army Corps of Engineers. A list of approved environmental consultants may be found in the GRDA dredging permit application packet.

**Boundary Survey:** Survey performed by an Oklahoma licensed surveyor, which formally defines the boundaries of a parcel of land, all points along the GRDA taking line, flowage easement elevations, location and elevations of existing structures, etc.

**Clean Water Act (Section 404 Regulatory Review):** Project review performed by the Regulatory Division of the U.S. Army Corps of Engineers governing the discharge of dredged or fill materials into the navigable waters at specific disposal sites. A regulatory review is required for activities proposed below the 745 MSL (NGVD 29) elevation on Grand Lake, and the 619 MSL elevation on Lake Hudson.

**Compensatory Storage:** Artificially excavated volume of storage used to balance the loss of natural storage capacity, due to fill or structures placed inside the flowage easement.

**Flowage Easement:** Privately owned land on which the Grand River Dam Authority has acquired the right to flow and store water. The easement is based on an elevation or a metes and bounds description. The easement must be consulted for the exact easement area and can be found in your abstract or through county land records. Generally, on Grand Lake the flowage easement begins at the 745 MSL elevation (NGVD 29) and may extend to the 761 MSL (NGVD 29) elevation. On Lake Hudson the flowage easement begins at the 619 MSL elevation and extends to the elevation shown in the flowage easement.

**GRDA Taking Line:** Determined by a Metes and Bounds survey description contained in the deed where GRDA acquired the property. The taking line is the boundary between property owned by the Grand River Dam Authority and privately owned property. The GRDA taking line can only be determined on the ground by a boundary survey.

**Mean Sea Level (MSL):** Elevation datum referenced to average sea level observations over an extended period of time. The vertical datum used to determine elevations on Grand Lake and Lake Hudson.

**Metes and Bounds:** A surveyor's description of a parcel of land resulting in a legal description of the property. This is the method used by surveyors to determine the location and legal description of GRDA property.

**National Geodetic Vertical Datum 1929 (NGVD 29):** Datum used to measure elevations in the Pensacola Project on Grand Lake and is 1.07 feet higher than Pensacola Datum (PD). NGVD 29 is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. NGVD 29 is to only be used as the datum for flowage easements.

**Oklahoma Licensed Surveyor:** Surveyor or Engineer licensed through the Oklahoma Board of Licensure for Professional Engineers and Land Surveyors.

**Pensacola Datum (PD):** Datum used to measure elevations in the Pensacola Project on Grand Lake. Pensacola Datum is approximately 1.07 feet lower than the National Geodetic Vertical Datum 1929 (NGVD 29). Pensacola Datum is 1.40 feet lower

than the North American Vertical Datum 1988 (NAVD 88). PD will only be used as the datum for 1/3 of the cove measurements for dock permitting.

**Prohibited Materials:** Prohibited materials include, but are not limited to the following, railroad ties, rubber tires, broken concrete, brick, creosote timbers, and asphalt.

**Project Boundary:** The boundary defined in the license issued by the Federal Energy Regulatory Commission (FERC) for the Project as needed for project operations.

**Wetland Delineation Study:** Thorough on-site investigation performed by an approved environmental consultant, to determine the horizontal limits and size of a wetland area, documented through mapping and flagging.

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## **GUIDELINES**

- A. No construction shall commence on GRDA property or within the Flowage Easement until the applicant receives a letter from GRDA approving such construction. Upon completion, it is the applicant's responsibility to notify GRDA for final inspection.
- B. Prior to any construction activities, the applicant must submit the appropriate application (i.e., Application for Permit to Construct Retaining Wall, Boat Ramp, Tram System, and Rip Rap), fees, and a detailed letter to GRDA outlining the proposed project using the GRDA Construction Guide Sheet.
- C. The letter shall include the following items listed in the guide sheet.
  1. Description of work being requested.
  2. Applicant's name, mailing address, lake address, email address, telephone number(s), and legal description of property where construction will occur.
  3. Contractor's name, phone number(s), and email.

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## **CONSTRUCTION PLANS**

- A. Scaled diagram of the proposed construction project.
- B. Dimensions (height, length and width) of proposed construction project.
- C. Elevations for the top and bottom of proposed construction project.
- D. Types and volume (cubic yards) of material to be added within the flowage easement in the construction area.
- E. Types and volume (cubic yards) of material to be removed from the flowage easement.
- F. Include dimensions of any existing structures the proposed project is designed to replace.
- G. List any mitigation plans to control runoff (i.e., silt fence, straw bales, etc.)

- H. No structures shall be constructed in the flowage easement, with the exception of sidewalks, retaining walls, or other structures for which a permit application is available.
- I. Construction plans must only include approved construction materials as outlined in the definition above.
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### **BOUNDARY SURVEY**

Boundary survey from an Oklahoma licensed surveyor which must include the following elements marked on the survey, and staked on the ground:

1. GRDA Taking Line (metes and bounds property description)
  2. Applicant's property boundaries.
  3. On Grand Lake the 745 MSL (NGVD 29) elevation and elevation for top of the flowage easement.
  4. On Lake Hudson the 619 MSL (NGVD 29) elevation and elevation for top of the flowage easement.
  5. Any existing structures (retaining walls, buildings, decks, etc.) located in the flowage easement. Survey shall include elevations for ground level and top of existing structures.
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### **PHOTOGRAPHS**

Photographs of the area where work will occur shall be submitted to document need for construction activities. If erosion exists, photographs of work area prior to the erosion will be helpful in determining the need for the proposed activities.

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### **ADDITIONAL SUPPORTING DOCUMENTS**

- A. Copy of flowage easement (can be found in property abstract or through county land records).
- B. Copy of warranty deed or other recorded documents showing ownership of property.
- C. Subdivision survey plat showing easements and/or restrictions, if applicable.
- D. Department of Environmental Quality (DEQ) certification of septic system.
- E. Diagram including location of septic system, tanks and lateral lines, in relation to GRDA property, and flowage easement.

### **U.S. ARMY CORPS OF ENGINEERS SECTION 404 REGULATORY REVIEW**

- A. Regulatory review is required if work is to be performed below the 745 MSL elevation (NGVD 29) on Grand Lake.
  - B. Regulatory review is required if work is to be performed below the 619 MSL (NGVD 29) elevation on Lake Hudson.
  - C. Regulatory review is also required if there are potential impacts to waterways or wetlands. For a regulatory review contact the U.S. Army Corps of Engineers at (918) 669-7534.
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## **COMPENSATORY STORAGE REQUIREMENT**

No construction project shall be approved, which adds material to the flood storage pool without compensatory storage removal, unless;

1. The proposed project is new construction designed to follow the contour of the shoreline for bank stabilization and erosion control (ie, rip rap or comparable construction methods). This only applies to projects where there are no existing bank stabilization measures in place.
2. The proposed project is the same height, length, width, and location as the existing project the construction is designed to replace. (ex. retaining walls, rip-rap, etc.)
3. If there is a need to compensate for the material being added to the flowage easement, removal of material outside of the proposed project area shall be calculated at a 2:1 ratio.
4. Removal of material inside the proposed project area, or other property owned by the applicant will be calculated at a 1:1 ratio.
5. Compensatory storage shall only be taken from areas where the shoreline classification is Responsible Growth.
6. If the proposed area for the removal of compensatory storage material (ie, excavation) is on GRDA property, then a wetland delineation study and a heavy metals evaluation shall be required. If the proposed area for removal of compensatory storage material (ie, excavation) is NOT on GRDA property, but within the flowage easement, then only a heavy metals evaluation shall be required. GRDA's Dredging Management Plan must be adhered to for these evaluations.
7. If the proposed area for compensatory storage removal has a shoreline classification which is Responsible Growth-Wetland or Sensitive, then a wetland delineation study shall be performed by an approved environmental consultant.
8. If the delineation indicates there are no wetlands present, the request will be sent to Oklahoma Department of Wildlife Conservation and U.S. Fish & Wildlife Service for a 30-day comment period. If comments are received they may be incorporated into the approval process. If no comments are received compensatory storage activities may be approved and the classification will be changed to Responsible Growth.
9. If the delineation indicates wetlands are present, the shoreline classification will be changed to Stewardship and the compensatory storage request shall be denied.
10. Material removal shall be accomplished in a manner which allows for the natural ingress and egress of flood storage waters. Ponds, small lakes, etc. will not be approved for the purposes of compensatory storage.
11. Material shall not be removed in a manner that would result in a change to the project boundary of the lakes.

## **Additional Guidelines**

Construction projects which add materials to the flood storage pool without compensatory storage removal, may be approved under the following circumstances.

1. The proposed project by its design would allow for more flood storage than is currently provided. (ex. replacing a conventional vertical retaining wall with rip-rap or interlocking blocks which follow the contour of the shoreline.)
2. There is an imminent danger of a structure being damaged or compromised due to shoreline erosion.

3. The proposed construction project can be moved above the GRDA Taking Line, which would provide additional flood storage capabilities and eliminate the encroachment.
4. Cantilevering over the GRDA Taking Line will not be permitted. Cantilevering over the flowage easement will only be permitted if the bottom of the proposed structure is above the top of the flowage easement.