

St. Charles Parish Department of Public Works

ENGINEERING SERVICES PROPOSAL  
for  
ADDRESSING PRESCOTT PS ENFORCEMENT ACTIONS

Evans-Graves Engineers, Inc.

February 2, 2021

**PERMITTING PHASE - DNR ENFORCEMENT ACTIONS**

*(Task includes coordination, site visit and measurements, preparation and production of NAJ and HMIA documents and revised drawings, submittals, and revisions, as required by DNR/OCM under previously-issued Enforcement Letters regarding non-permitted activities at the Prescott Pump Station in Montz. Task DOES NOT include payment of any required agency permit fees/fines/penalties or any compensatory mitigation that may be assessed.)*

Category	Manhours	Rate	Subtotal
Principal (P.E.)	24	\$185.00	\$4,440.00
Regulatory Specialist	56	\$110.00	\$6,160.00
Engineer Intern (E.I.)	56	\$90.00	\$5,040.00
CAD Technician	48	\$80.00	\$3,840.00
Administrative Asst.	8	\$55.00	\$440.00

**PERMITTING PHASE TOTAL** **\$19,920.00**

**GRAND TOTAL** **\$19,920.00**

**NOTES:**

- 1 Manhour Proposal based on Correspondence with DNR/OCM between 2018 and the present to address three separate enforcement notices regarding constructed pump structures along Airline Highway (U.S. 61) in Montz.
- 2 Scope of work is outlined on the attached pages from published DNR guidelines.
- 3 Rates are based on E-G 2013 Rate Sheet, as included in the current Administrative Services Agreement for this Project dated 11/7/2019.

# Hydrologic Modification Impact Analysis

## 1.0 Introduction

One of the goals of the Office of Coastal Management (OCM) is to achieve a balance between conservation of coastal resources and development within the coastal zone. Development in the coastal zone is encouraged but avoidance of unnecessary impacts to coastal resources is essential in order to protect those resources for future generations. To accomplish this goal, OCM reviews every Coastal Use Permit (CUP) application with the objective of avoiding and/or minimizing adverse impacts wherever possible. Pursuant to La. RS 49:214.27.B and C., OCM uses the Coastal Use Guidelines, found in LAC Title 43, Part I, Chapter 7, Subpart B, §701-719, to determine the type of information needed to fully evaluate a particular use and the adverse impacts that must be avoided to the maximum extent practicable. All coastal uses must be in conformance with all applicable Coastal Use Guidelines in order to receive approval from OCM.

Parts of these guidelines require that OCM minimize adverse impacts from proposed uses that modify existing hydrologic conditions (i.e., quantity, movement, distribution, and quality of water). OCM is responsible for ensuring that a proposed coastal use does not adversely affect other properties or waterways. Projects proposed in the coastal zone of Louisiana cannot, to the maximum extent practicable, increase the potential for flooding or adverse drainage, negatively impact water quality, or unnecessarily conflict with other uses in the vicinity. If a proposed use would, in OCM's opinion, modify existing hydrologic conditions, the modification must be reviewed to determine if adverse impacts will occur. **Adverse impacts** resulting from modified hydrology include, but are not limited to, an increase in drainage from or flooding to other properties or waterways and alteration of water quality that increases total suspended solids (TSS), pollutants, contaminants and other applicable water quality parameters of surface waters in the project area. Since 1998, the National Oceanic and Atmospheric Administration (NOAA) and the US Environmental Protection Agency (EPA) has required coastal states to implement New Development Management Measures in order to protect and enhance the water quality of coastal waters through the reduction of TSS in surface water runoff. A Hydrologic Modification Impact Analysis (HMIA) typically investigates the pre- and post-development surface water conditions at a site proposed for development and is used by OCM to determine if adverse impacts to adjacent lands and/or waterways will occur as a result of the proposed use.

Projects that may require a HMIA include those which reduce the stormwater retention capabilities (i.e. permeability, storage, etc.) of the property proposed for development. Permeability of the land will decrease as the amount of impervious surface (i.e., concrete, asphalt, foundations, roofing etc.) installed on the property increases. Projects involving fill that result in an overall increase in post-development ground elevation that meets or exceeds 6 inches above pre-development ground elevations also may require a HMIA. Projects that result in an overall increase in the quantity, frequency and/or duration of stormwater runoff into an adjacent property or waterway will require a HMIA.

Developing a HMIA for water flow/volume/rate requires the establishment of the design storm. Storms are classified by intensity (inches of rainfall), duration (length of storm) and recurrence probability (what percent chance does the storm have to occur in a given year). The **design storm** is a storm that produces a certain amount of rainfall within a certain period of time and which has the probability of recurring with a certain frequency (ex. 5-year or 100-year storms). The design storm will allow for estimates of the quantity of stormwater runoff from the site, pre- and post-development. Once the volume of runoff is determined, the location and water quality of the runoff must be identified, and the capacity of the receiving land or water body must be determined. It is up to the applicant to select an appropriate design storm for the proposed development, however, the design storm chosen should represent a reasonable risk of flooding and address any potential changes to the 100-year flood zone as mapped. While OCM does not require a specific design storm, a minimum 10 inch/24-hour model or the model which meets local governmental requirements is recommended.

The ideal development would result in no net increase in quantity, frequency and/or duration of stormwater runoff pre- and post-development. This can be done with either a net zero change in permeability of the property or the addition of detention or retention ponds/basins designed to hold/store excess water until conditions are such that flooding or undesirable drainage is no longer a risk. **Detention ponds** are low lying areas that are designed to temporarily hold a set amount of water while slowly draining to another location. These areas eventually can be completely drained. **Retention ponds** are ponds designed to hold a specific amount of water indefinitely but partially draining to another location when maximum capacity is reached. These ponds consistently hold some volume of water.

Projects that may result in an adverse change in water quality also will require a HMIA. The LA Department of Environmental Quality (DEQ) is the state regulatory authority regarding water quality. Any known point or non-point discharge, including stormwater runoff, resulting from implementation and/or operation of a proposed coastal use must receive the necessary approval(s) from DEQ prior to initiation of the proposed use. If appropriate, OCM will condition Coastal Use Permits to include a requirement to obtain all necessary permits from DEQ. Please be advised however, that by granting approval for a proposed coastal use, OCM is not relieving the applicant of the requirement to obtain all other federal, state and local authorizations that may be required. OCM will initiate contact with DEQ for a Water Quality Certification but it is up to the coastal user to contact DEQ to initiate any other permit process(es) DEQ deems appropriate. OCM, through the authority of the Coastal Use Guidelines, must consider any adverse change in TSS and will require a HMIA for any proposed use that results in the permanent reduction of surface permeability at the proposed project site (See Section 3.0 below). Projects that do not require consideration of TSS include those occurring wholly in water, those that do not permanently change the extent of existing vegetative cover and/or ground permeability of the development area, and those which include bankline stabilization. All other proposed coastal uses may require a HMIA for TSS.

The ideal development would result in no adverse alteration of TSS at the development site. Sediment screens/fences used and maintained during and after construction, until such time as soil is stabilized, is one method of reducing sediment run-off. Vegetation buffers around ponds (if included) or along roads, ditches and waterways also is a method of reducing sediment run-off. Bankline stabilization also is a method of TSS reduction.

~~The Level 3 HMIA shall include, at a minimum, the following:~~

#### **2.4.1 Hydrology**

- ~~1. A map showing existing and proposed water flow patterns.~~
- ~~2. Identification of the design storm event and the drainage network to be impacted.~~
- ~~3. Information relative to the pre and post project volume/rate of runoff expected for the design storm event.~~
- ~~4. Information on the existing and post-project hydrologic conditions, including at a minimum, local topography, slope, surface condition, drainage pattern, response to storm event, etc.~~
- ~~5. A discussion of how the runoff identified in #4 above will affect adjacent properties and the existing drainage network.~~
- ~~6. Monitoring data which establishes background hydrologic conditions over a one-year period (i.e. rainfall data, tide data etc.).~~
- ~~7. An evaluation of the short- and long-term changes anticipated to the hydrologic system resulting from construction, operation and maintenance of the proposed activity.~~
- ~~8. A site-specific study predicting the response of the existing drainage network to the alteration under normal conditions and from the design storm, the 100-year storm and a Category 1 tropical storm event with associated storm surge. (Please note that a detailed regional study or model can be used in place of a site-specific study.)~~
- ~~9. Elevation details, capacity and operational schedule for all proposed water control structures (WCS) or pumps (if proposed).~~

#### **2.4.2 Water Quality**

- ~~1. Identification of water quality parameters to be affected by the proposed development (TSS and other applicable parameters.).~~
- ~~2. An evaluation of the short- and long-term point and non-point source impacts to water quality resulting from construction, operation and maintenance of the proposed activity.~~
- ~~3. Identification of the necessary permits to be obtained from other federal, state and local authorities.~~
- ~~4. Identification of the steps, procedures and/or BMPs to be used to lessen point source and non-point source impacts on surface water quality (see Section 3.0 below).~~

### **2.5 Level 4 – Significant Modification**

Level 4 alterations have the potential to affect large quantities of water over large areas. For this reason, projects determined by OCM to result in Level 4 hydrologic modifications must provide an extensive level of information to demonstrate how the proposed coastal use will affect regional surface water.

The Level 4 HMIA shall include, at a minimum, the following:

- New or expanded drainage features, new pump stations, re-establishment of existing drainage features that have ≥80% filled in
- New levees and re-establishment of existing, degraded levees that impact and/or impound ≥150 acres or more (≥300 acres or more if impact/impound agricultural lands)
- New inland access channels
- River diversions and restoration projects that significantly alter the flow of surface water to adjacent lands
- New roads constructed at grade and elevated roads with new access channel

### **2.5.1 Hydrology**

1. A map showing existing and proposed water flow patterns.
2. Identification of the design storm event and the drainage network to be impacted.
3. Information relative to the pre-and post-project volume/rate of runoff expected for the design storm event.
4. Information on the existing and post-project hydrologic conditions, including at a minimum, local topography, slope, surface condition, drainage pattern, response to storm event, etc.
5. A discussion of how the runoff identified in #4 above will affect adjacent properties and the existing drainage network.
6. Monitoring data which establishes background hydrologic conditions over a multi-year period (i.e. rainfall data, tide data etc.).
7. An evaluation of the short- and long-term changes anticipated to the hydrologic system resulting from construction, operation and maintenance of the proposed activity.
8. Elevation details (including geoid used if available), capacity and operational schedule for all proposed water control structures (WCS) and/or pumps (if proposed).
9. A site-specific study predicting the response of the existing drainage network to the alteration from the design storm, the 100-year storm and a Category 1 tropical storm event with associated storm surge.

### **2.5.2 Water Quality**

1. Identification of water quality parameters to be affected by the proposed development (TSS and other applicable parameters.)
2. An evaluation of the short- and long-term point and non-point source impacts to water quality resulting from construction, operation and maintenance of the proposed activity.
3. Identification of the necessary permits to be obtained from other federal, state and local authorities.
4. Identification of the steps, procedures and/or BMPs to be used to lessen point source and non-point source impacts on surface water quality.

**OFFICE OF COASTAL MANAGEMENT**

**COASTAL USE PERMITS**

**GUIDE TO DEVELOPING  
ALTERNATIVES AND JUSTIFICATION  
ANALYSES  
FOR  
PROPOSED USES WITHIN THE  
LOUISIANA COASTAL ZONE**

# Introduction

One of the goals of the Office of Coastal Management (OCM) is to achieve a balance between conservation of coastal resources and development of the coastal zone. Development in the coastal zone is encouraged but avoidance of unnecessary impacts to coastal resources is essential in order to protect those resources for future generations. To accomplish this goal, OCM reviews every Coastal Use Permit (CUP) application with the objective of avoiding and/or minimizing adverse impacts wherever possible. Pursuant to La. RS 49:214.27.B and C., OCM uses the Coastal Use Guidelines, found in LAC Title 43, Part I, Chapter 7, Subpart B, §701-719, to determine the type of information needed to fully evaluate a particular use and the adverse impacts that must be avoided to the maximum extent practicable. All coastal uses must be in conformance with all applicable Coastal Use Guidelines in order to receive approval from OCM.

Part of these guidelines, §701.H, charges OCM with ensuring that the public benefits of a proposed coastal use clearly outweigh any adverse impacts to public resources resulting from that use. **Public benefits** include providing goods and/or services to users that currently do not have reasonable access to such goods and/or services, increasing permanent employment opportunities and increasing public revenues. **Coastal resources** include coastal waters, wetlands, fisheries, wildlife and unique ecological/coastal features such as ridges, cheniers, salt domes, beaches and dunes. These resources provide value to the public in the form of storm and flood protection, nursery grounds for commercial and recreational fishing, critical habitat for endangered species and improved water quality. Public resources also include existing structures and infrastructure. **Adverse impacts** are direct or indirect loss and/or negative alteration of a public resource as well as negative impact on concurrent and neighboring coastal users and include such things as increased intensity or frequency of flooding, accelerated erosion and salt water intrusion.

Review of a proposed coastal use using the Coastal Use Guidelines includes asking questions such as:

1. Can adverse impacts from a proposed use on coastal resources and/or user groups be avoided by moving the use to an area which results in less adverse impact to coastal resources and/or users?
2. If the use cannot be moved, can demand for the proposed goods and/or services in the area to which they will be introduced be documented?
3. If a use cannot be moved and demand can be demonstrated, can the use be redesigned/reconfigured, or can different methods be used to accomplish the use, which results in less damage to coastal resources?

To answer these questions, OCM requires that the applicant provide Alternatives and Justification Analyses in sufficient detail to demonstrate a thorough consideration of the respective subjects. In an effort to recognize the differences between small and large projects, and/or low and high coastal resource impact projects, OCM has developed a tiered approach to Analysis development. Factors such as, but not limited to, the complexity of the development, surrounding land use, type and level of resource impact and coastal use objective(s) are used to determine the range of alternatives to be considered in the Alternatives Analysis and the information and level of detail required for the Justification Analyses. This guide was developed to assist applicants for Coastal Use Permits with

determining, in general, the type of information and level of detail needed to fully evaluate a proposed coastal use's potential impacts and benefits and therefore it's conformance with the Coastal Use Guidelines. Any combination of analyses may be required depending on the nature of the proposed coastal use and the potential adverse impacts that may occur from that use.

## **Alternatives and Justification Analyses**

To fully evaluate a proposed coastal use's benefits and impacts, Alternatives and/or Justification Analyses are required during review of a use from which adverse impacts to coastal resources are, in OCM's opinion, likely to occur. The Alternatives Analysis should address several options for project siting that are compared equally for feasibility and will allow OCM to determine the least damaging feasible site for the proposed use. The Alternatives Analysis should provide documentation that clearly demonstrates that reasonable efforts were made to find less damaging sites and should provide an explanation for why each less damaging site was not feasible. The Alternatives Analysis also should address alternate site configuration, alternate methods of construction, and how adverse impacts to coastal resources will be minimized. Appendix 1 provides some available sources of this information.

The Justification Analysis should include sufficient detail to clearly demonstrate demand for the proposed use and will allow OCM to determine the public need the proposed use. The Justification Analysis should explain the goods and/or services that the proposed coastal use will provide and include documentation that clearly demonstrates a public demand for, or public benefit resulting from, the proposed use. The analysis should provide enough information for OCM to determine that there is a reasonable chance that the project will be successful and not result in a situation where large scale destruction of resources is permitted for a project that fails economically, floods, causes flooding on adjacent areas or in some other way fails the public. Appendix A provides some available sources of this information.

In general, the greater the resource or user group impacts, the more detail required for both the Alternatives and Justification Analyses. If reviewing this guide prior to submission of a JPA, the information presented herein should be taken into consideration and addressed while developing the project. In most cases, alternatives, or the lack thereof, are evident and a simple discussion of the options considered is sufficient. This information can be provided in steps 11b-c of the Joint Permit Application. If the information is not provided in or attached to the JPA, the OCM permit analyst will review the project and determine if any less damaging alternatives are evident. Additional information may be requested by the permit analyst in order to address the less damaging options he/she identified. Using the information contained in these analyses, OCM can effectively evaluate the proposed coastal use's conformance with the applicable Coastal Use Guidelines (specifically §701.F.3, 5, 7, 8, 10, 13, 16 and 19; §701.G.2 and 6; §701.H; §701.I; and all applicable Use Specific Guidelines).

## **Proposed Coastal Uses**

All of the above analyses are not required for every type of coastal use and the type of information and level of detail required to address potential concerns varies within and between uses. OCM has taken a tiered approach to these analyses and has graded the level



of detail required to be reflective of the extent of potential resource impacts. In general, the greater the risk to coastal resources, the more detailed the required analyses must be.

Several types of coastal uses are addressed in this guide however exclusion from this guide does not mean that other types of coastal uses do not require Alternatives and Justification Analyses. Likewise, all types of coastal uses will be reviewed on a case-by-case basis using the Coastal Use Guidelines to determine which, if any, of the analyses are required and to what level of detail they should be developed. Depending on the nature of the proposed use and the type and extent of adverse impact that may occur, information in addition to that suggested in a particular guide may be required, if in OCM's opinion, such additional information is necessary to fully evaluate the proposed coastal use. An explanation for the need for any additional information OCM may request will be provided with the request for information.

Guides have been developed for the following types of coastal uses:

[Commercial Developments](#)  
[Drainage Projects](#)  
[Industrial Developments](#)  
[Levees](#)  
[Marinas](#)  
[Oil & Gas Facilities](#)

[Pipelines](#)  
[Ports](#)  
[Recreational Developments](#)  
[Residential Developments](#)  
[Transportation Projects](#)  
[Utility Projects](#)

Multiple-use developments will require submission of information related to each type of development so multiple guides may be needed for a single overall project. OCM encourages potential applicants to avoid adverse impacts to coastal resources to the maximum extent practicable and will provide assistance with identifying alternate sites and developing a Justification Analysis. Pre-application coordination meetings with the regulatory and resource agencies provide a good starting point for project development. These meetings can be used to identify potential alternate sites, outline information that should be included in the Justification Analysis and provide suggestions for avoidance and minimization of adverse impacts. To arrange a pre-application meeting, please contact our office at [OCMinfo@la.gov](mailto:OCMinfo@la.gov) or 800-267-4019.

~~each option identified using the same criteria. If using economics as a deciding factor, provide cost comparisons of all options considered.~~

## ~~Justification Analysis~~

~~The Justification Analysis for maintenance activities should be a narrative that explains why the maintenance work is required (i.e., identify the consequences of not performing the maintenance activities).~~

## **Expansion of Existing Drainage Features**

Expansion of existing drainage features includes deepening and widening of currently existing, maintained channels, canals or ditches; and increasing capacity at existing pump stations and water control structures. For the purposes of this guide, maintained channels, canals and ditches are defined as those which require no more than 80% cross sectional excavation from original design specifications. If more than 80% of the cross sectional area of the channel, canal or ditch has filled in, reestablishment of the drainage feature will be considered a new feature for the purposes of Alternatives and Justification Analyses. Expansion activities that have adverse impacts on coastal resources will require Alternatives and Justification Analyses.

## **Alternatives Analysis**

OCM recognizes that existing drainage feature expansion activities are limited to the location of the existing drainage feature, therefore, an Alternatives Analysis need not address alternate alignments. The Alternatives Analysis instead should address the methods and equipment to be used to perform the maintenance activity, the method of access to the maintenance site, the size of the work area around the maintenance site, the siting of staging area(s) and other options for protecting structures that minimize adverse impacts to coastal resources to the maximum extent practicable. The analysis can take the form of a narrative that identifies all practical options for performing the work (including water- versus land-based access). Only those aspects of the proposed maintenance activity that result in adverse impacts to coastal resources need be addressed. The analysis can take the form of a brief narrative that identifies all practical options for performing the work and siting the staging areas.

## **Method(s) and Equipment**

OCM understands that the methods and equipment used to perform the expansion activity may be limited. If the methods and/or equipment used to perform the maintenance activity will result in adverse impacts to coastal resources, and options exist, the Alternatives Analysis should include:

1. An explanation of the method(s) and equipment to be used to access the site and perform the expansion work, including source of fill. The narrative should identify and discuss all practical options for performing the work and explain why each option was eliminated or chosen. If using economics as a deciding factor, provide cost comparisons of hauled in fill versus fill excavated on site for all options considered.
2. An explanation of any limiting factors and special equipment requirements.

3. For gravity drainage features, an explanation of how tidal surges and other storm events will affect reverse flow and flooding in the area the drainage feature is designed to protect.

## **Access**

Access to the expansion site should be selected to minimize adverse impacts to coastal resources. If adverse impacts to coastal resources will occur during access, the above narrative should include:

4. A map showing location, length and width of proposed and alternate access routes considered. This can be displayed on the project vicinity map or plan view plat.
5. An explanation of why each route was eliminated or chosen. Routes should be compared using the same criteria and should include a consideration of coastal resource impacts. Access equipment identified in #1 above should be route appropriate and should be selected to minimize adverse impacts.

## **Staging and Work Areas**

The staging and work area(s) needed to perform the expansion activities should be of the minimum size necessary to safely store and access equipment and perform the expansion activity. The staging area should be located on a site that avoids adverse impacts to coastal resources. If coastal resources will be impacted adversely by staging and/or work areas, the above narrative should include:

6. A discussion of all practical staging area locations and an explanation of why each was eliminated or chosen. The narrative also should explain the need for the size(s) of the staging and work area(s), any limitations that may be present on site and any special equipment requirements. Maps, illustrations and site layout plans may helpful in demonstrating space requirements and limitations.

## **Other Options**

Other options, such as the “no-build” option should be considered in lieu of expansion activities that adversely impact coastal resources. Structures in the protected area can be relocated or elevated to eliminate the risk of flooding. An Alternatives Analysis for expansion activities that may result in adverse impacts to coastal resources should address these options. The analysis can be a narrative that includes:

7. The type of structures and number of each type of structure in the protected area.
8. A comparison of costs for expansion activities versus relocating or raising of protected structures. The cost of the expansion activities should include the frequency and cost of anticipated future maintenance work.

## Justification Analysis

The Justification Analysis should clearly demonstrate a public need and/or demand for the proposed drainage feature expansion. The analysis should include data that identifies the existing and proposed capacity of the drainage feature; the entire area to be affected; the number and type (houses, businesses, churches, etc.) of structures located within that area; the current water flow patterns into and out of that area; and the frequency and severity of historic flooding events in that area. The analysis also should explain why the existing drainage capacity is not sufficient and what capacity is needed. The Justification Analysis can take the form of a feasibility study done during the normal course of project planning and should be provided in its entirety. If a feasibility study has not been done, please refer to the outline for a Justification Analysis in the New Drainage Features section below.

## New Drainage Features

New drainage features include lengthening existing channels, canals and ditches; excavating previously non-existent channels, canals and ditches; and installing new pump stations or water control structures. If, in OCM's opinion, adverse impacts to coastal resources may occur during or after construction, Alternatives and Justification Analyses will be required. A formal feasibility study done during the course of project planning can be submitted as the Alternatives and Justification Analyses. OCM recognizes that drainage features are designed for a specific purpose and affect areas much larger than the footprint of construction. Because of this OCM recommends that justification be addressed first, with alternatives addressed after the project objective(s) and area(s) of impact (direct and indirect; adverse and beneficial) are identified.

## Justification Analysis

The Justification Analysis should clearly demonstrate a public need/demand for the proposed drainage feature. The analysis should include data that identifies the entire area to be affected; the number and type of structures (houses, businesses, churches, etc.) located within the affected area; the current water flow patterns into and out of the affected area; the frequency and severity of historic flooding events in the affected area; and historic habitat information and salinity patterns (if applicable to the project objective) in the affected area. The most appropriate form of Justification Analysis for new drainage features is a feasibility study done during the normal course of project planning and should be provided in its entirety, if available. Hydrologic studies may be required depending on the size of the area to be affected by the drainage feature and the extent of direct and indirect adverse impacts to coastal resources.

If no formal feasibility studies have been done, this section offers an outline of the information OCM requires to document the need/demand for the proposed drainage feature. Table 1 can be used to determine the level of detail required in the Justification Analysis. The affected area land use refers to the type and level of usage of the area to be affected by the drainage feature. The need for drainage features may be easily justified in high development areas, however as the type and level of land use in the affected area changes, the justification for the drainage feature likewise will change.