

LAFAYETTE IN A CENTURY **DRAINAGE ELEMENT – STOMRWATER MANAGEMENT PLAN**

1.0 Policy Alternatives

As currently mapped, the floodway along bayou and coulees occupies 22.8 square miles in Lafayette Parish. There are 2,475 structures in the floodway with an estimated worth of \$249.2 million. Although they represent only 2.8% of all structures in the parish, they represent the structures most likely to be flooded.

There are two broad policy options:

Alternative 1(Current Plan): Under current regulations, development in the floodways is tightly controlled. Over time, perhaps 30 to 50 years, these existing structures will be become uninhabitable and gradually demolished over time. In the Lafayette Consolidated Government (LCG) 2009 budget, the Public Works Drainage Division employs 82 people with an overall budget of \$5.7 million of which \$2.2 million is expended on capital items. All of these expenditures are directly or indirectly affected by the floodways because these low lying lands border all major bayous and coulees in the parish.

The goal of the current system is to utilize, maintain, and improve existing drainage ways so as to provide good drainage to persons both inside and outside of the floodways. This system has evolved over nearly a hundred years as the various municipal governments, the former police jury, and the LCG has dealt with drainage. By and large, the system is successful in providing drainage services within the Parish. On the other hand, there is no long term plan to evaluate the future needs of the parish.

Alternative 2 (Mitigation Bank Plan): A parish wide detention and wetland mitigation bank plan is proposed in Lafayette Parish. Basically, the plan seeks to purchase homes and business in areas subject to flooding and convert these areas to a mitigation bank.

What is a mitigation bank? When a developer needs to convert a low lying area to a high land, he is required by the US Corps of Engineers to set aside land of a similar size as a permanent wetland. A mitigation bank sells this set aside land to the developer. However, the developer does not purchase the land, but only certain rights associated with the land. The original owner still retains title to the land while the developer owns only the mitigation credits necessary for the approval of his Corps of Engineers' permit.

The potential location of land to be converted into the land bank has been mapped by the Federal Emergency Management Administration (FEMA) as part of the National Flood Insurance Program. On these maps, floodways are shown. The floodway is composed of water courses and adjacent areas in which inundation occurs. A related concept used by the Corps of Engineers is wetlands which are areas that are inundated or saturated by surface or ground water to support of vegetation typically adapted for life in saturated soil conditions. Although distinct under federal regulations, floodways and wetlands are similar because both areas are subject to periodic flooding. The two concepts are used on the federal level to guide regulations of what and where construction can occur.

It should be emphasized that the FEMA maps are subject to an ongoing appeal by the local governments in Lafayette Parish. The purpose of this plan is to establish policies that can be implemented once the appeal process is complete and the location of the floodways is known. As such, the locations shown should be considered preliminary.

2.0 Floodway Patterns

There are three floodway patterns in Lafayette Parish: extensive wooded areas, extensive agricultural areas, and narrow strips of low-lying land along drainage ways.

A large floodway is located in the northeast corner of the parish north of I-10 and along the Bayou Vermilion. There are about 900 structures (or about one-third of all structures in the floodway) are located in this area with 5,357 acres (8.3 square miles). This area, located primarily in the Bayou Saint Claire Watershed, has more than 1,100 acres of wetland as identified by the National Biological Service. A study of the 1998 land cover map indicates that most of the area is covered by deciduous wetland forest and agricultural fields. This area was settled by the French and Spanish in colonial times as indicated by the long narrow sections laid out along the bayou. The area is low lying. The current ground elevation to the calculated elevation where no flooding occurs can be defined as the depth of the floodway or how low lying an area is. In this area, the floodway varies from 1 to 14 feet.

In contrast, the second area is located in the western portion of the parish between Scott and Duson in the Ile des Cannes Watershed. Approximately 544 structures have been located in this secondary area of 2,641 acres (4.1 square miles). Almost no wetlands have been located in this area by the National Biological Service. A land cover map indicates that it is almost entirely devoted to agriculture. The area was settled in the nineteenth century with the introduction of mechanized rice agriculture. The roadways are laid out in large one mile grids. The floodway is shallow, being between 1 and 3 feet deep. Since this area was converted prior to the establishment of the wetland regulations and converted to agriculture, the area is not considered a regulatory wetland, but probably was a low lying prairie area before settlement.

The third floodway area is located in the southeastern portion of the parish bounded by the Bayou Vermilion and Highway 90. The floodways are found along narrow strips of land that adjoin the coulees that slice through regular sections and square agricultural fields. There are only 152 structures located here in a number of watersheds in this area including Coulee Isaac Verrot, Coulee Anselm, and Bayou Petit Anse. The depth of these floodways is as much as 12 feet with very few wetland areas.

3.0 Plan Goals

The creation of wetlands and their conversion into mitigation banks, as will be discussed below, is important in flood control, toxicant removal, wildlife diversity, and improvement in the public health and education.

The goal of this long term mitigation bank project is to create large contiguous areas of protected wetland habitats by enhancing selected existing wetlands like Bayou Saint Claire Watershed and by creating new wetlands. These new wetlands can be created from prior converted areas like Coulee Ile de Cannes and from upland areas that adjoin low lying areas. These goals can be accomplished by carefully planning wetland construction and development to

make use of natural topography, soils, vegetation, and available hydrology to create a passively functioning wetland system that will be sustainable for many years.

These wetlands can be designed with the toxicant removal function as an additional objective. Specific wetland plant species with a documented high water purification function can be planted into the proposed wetland system. In order to maximize the aesthetic potential of this wetland creation, special attention can be made to the selection of those species that have high ornamental and flowering qualities. To further enhance the public benefit of this project, the wetland site topography is proposed to be recontoured to create a series of swales and islands. These created islands will allow for maximum diversity in wildlife habitats and also the ability to introduce aesthetically pleasing hardwood trees whose form and food production will add another biological strata to the wetlands system.

The preservation of wetlands, flood protection, and the removal of pollutants from runoff provides obvious environmental benefits. The high quality wildlife habitat that will provide is another direct benefit that this wetland creation project will have for the environment. The interpretation of wetlands and their functions can be presented to the public through a series of pedestrian trails and bikeways that will be planned as part of the project. One potential option is to connect the project areas through a parishwide system of trails built along existing electric utility right of ways and pipelines. The public participation may have a significant impact on the improvement of public health through encouraging exercise and public education by providing an understanding of the ecology of Lafayette Parish.

Mitigation banks may increase property values in areas that are neither in the floodway nor in wetlands, but adjoining the mitigation bank. In order to maximize the impact of increased property values, compact high density residential option that might be considered. Four story residential buildings may provide views of the mitigation banks with lakes, ponds, walking trails, and wildlife areas. A separate plan is being developed to present this option as part of an overall drainage element for the comprehensive plan. Additionally, the land use plan presents options in floodplains with some additional mitigation or in upland areas where development is being encouraged.

4.0 Regulatory Hurdles

There are two sets of federal regulations that guide the implementation of the plan from FEMA and the US Corps of Engineers.

Under the National Flood Insurance Program (NFIP), fill or other construction in the floodway is prohibited in the floodway except in very restricted circumstances. Other alternatives must be evaluated so construction would not increase the water surface elevation (WSEL) during a flood. All affected property owners must be notified of these changes. If the WSEL is increased, then all effected structures must be purchased by local government. Moreover, FEMA must review the engineering plans and issue for a fee a Conditional Letter of Map Revision (CLOMR) which approves the changes. Once approved and constructed, the FEMA flood maps are revised and reprinted.¹

¹ As stated by FEMA "A CLOMR is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective Base Flood Elevations (BFEs), or the Special Flood Hazard Area (SFHA). The letter does not revise an effective National Flood Insurance Program (NFIP) map. It indicates whether the project, if built as proposed, would be recognized by FEMA.

A mitigation bank may be created when a government agency, corporation, nonprofit organization, or other entity undertakes these activities under a formal agreement with US Corps of Engineers. Mitigation banks have four distinct components:

(1) The physical acreage must be surveyed and defined as the area where restoration, enhancement, or preservation is to occur.

(2) The service area is the geographic area in which permitted impacts can be compensated for a given bank.

(3) The Interagency Review Team (IRT) is usually chaired by the Corps of Engineers and provides regulatory review, approval, and oversight of the documents needed to create the bank. Typically, membership includes the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, Louisiana Department of Natural Resources, Coastal Management Division, the Louisiana Department of Environmental Quality, Office of Water Resources, and the Louisiana Department of Wildlife and Fisheries. FEMA does not usually participate in the IRT, but in this case, FEMA probably would need to participate.

(4) There are two formal documents written by the applicant and reviewed by the IRT to create and establish a mitigation bank. The first is a prospectus which analyzes both the physical and legal planning requirements. The second document is a wetland mitigation agreement in the form a contract that allows the actual transmission of mitigation credits between a developer and the owner of the mitigation bank. These agreements between the bank owners, regulators, and purchasers establish the liability, performance standards, management and monitoring requirements, and the terms of wetland credit approval.

The compliance and coordination of FEMA and the US Corps of Engineers permits will require extensive effort. As these permits are being evaluated, an environmental impact study (EIS) will probably be required so that the best alternative for the social and biological environment is selected. As part of the EIS, public participation is required. Each one of these variables (permits, EIS, and public participation) will present major challenges to the project.

5.0 Policy Alternatives

If the decision is made to develop the floodways preservation plan, then a series of policy alternatives should be reviewed and then selected as guidance for the staff in the development of the implementation plan.

5.1 Scale

The proposed plan is parish wide requiring a master drainage plan. The plan combines drainage, mitigation, and recreational planning within an urbanizing area. The nearest, both conceptually and by distance, to a similar plan is in Greens Bayou comprising 14,000 acres (21.9

Building permits cannot be issued based on a CLOMR, because a CLOMR does not change the NFIP map. NFIP regulations do not require conditional approval for all projects in the regulatory floodway or SFHA. A CLOMR is required only for those projects that will result in an increase in the base flood water-surface elevation (WSEL) of greater than 1.00 foot for streams with BFEs specified but no regulatory floodway designated, or any base flood WSEL increase from proposed construction within a regulatory floodway. Once a project has been completed, the community must request a revision to the Flood Insurance Rate Map to reflect the project. "As-built" certification and other data must be submitted to support the revision request. The request should be accompanied by the appropriate portions of the MT-2 application/certification forms package, entitled Revisions to National Flood Insurance Program Maps (FEMA Form 81-89 Series), and the required supporting information." See FEMA web site as existing on June 30, 2009 at http://www.fema.gov/plan/prevent/fhm/fq_genfp.shtm

square miles) along Route 8 in the eastern Houston Metropolitan area. In this Texas example to comply with FEMA and Corps of Engineers guidelines, a team of consulting engineers, hydrologists, landscape architects, and ecologists was needed to develop a master drainage plan. Much preparatory work here in Lafayette Parish has been completed in the form of computer modeling of the parish, but the actual plan will be costly, perhaps amounting to over \$1 million in consulting fees.

On the other hand, the project can be planned and implemented through a series of discreet projects each carried out to handle the particular needs of vicinity. The plan preparation cost will be manageable, but the end product will not be known. The result may be competing projects that have contradictory goals because no overall plan guides the development of the parish.

5.2 Coordination

The coordination of these efforts may require a full time staff person trained as civil engineer with significant project management experience. In addition, the engineer will require staff support in terms of a GIS technician and a regulatory compliance specialist. However, project coordination can be carried out by existing staff, especially in the early phases of the project.

5.3 Funding

Although costly, buying out willing sellers is less expensive in the long run than continuing to pay repetitive insurance claims and providing disaster relief. Insurance claims and relief are generally not paid by local government, but by the federal government. However, local government bears the brunt of decreased tax revenues as well as repair and maintenance of infrastructure costs. Case studies have shown that by implementing a buyout program, communities would pay \$1 for every \$2 saved in future insurance claims, provided a large natural disaster occurs. A study completed by the National Wildlife Federation lists Lafayette Parish as one of the top 300 communities that would benefit greatly from a buyout program considering the number of repetitive loss properties and the total payments made to these properties over an 18 year study period.

5.3.1 Federal Government Funding

Other communities have received significant federal funding for large scale drainage projects. The New Orleans metropolitan area received \$430 million with a \$50 million local match in the ten years before Hurricane Katrina and Rita beginning in 1995. These funds were part of the Southeast Louisiana Urban Flood Control Project (SELA).² Of these monies, the Slidell area in Saint Tammany, a planning area much like Lafayette, was budgeted \$92 million. A similar effort might be made to receive congressional funds in the Lafayette region.

FEMA funds are made available for buyouts annually with a national total of only \$10 million under the Repetitive Flood Claims (RFC) grant program. Because it is a national program, the total funding of only \$10 million is relatively small. However, during periods of disaster

² This funding was received by special congressional authorization in Section 108 of the Energy and Water Development Appropriations Act for Fiscal Year 1996 and Section 533 of the Water Resources Development Act (WRDA) of 1996.

relief, Lafayette Parish received \$___ million as part of the Katrina and Rita Hurricane Hazard Mitigation Grant Program (HMGP). For Hurricanes Gustav and Ike, the parish received \$___ million. As the date of this plan, all of these funds have been expended.

Land and Water Conservation Fund (LWCF) provide a federal block grant to states. The administration of the \$300,000 annual program in Louisiana is by the Dept of Culture, Recreation and Tourism. The project sponsor pays the total cost; after which, half of the cost will be repaid to the sponsor from Federal funds up to the LWCF allowable amount, minus an administrative processing fee.

Recreational Trails Program is also a federal block program administered by the Louisiana Department of Culture, Recreation and Tourism. This program provides federal funding through the Federal Highway Administration for the purpose of development and maintenance of recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. In 2008, the program was allocated \$1.5 million.

The Forest Legacy Program (FLP), a United States Department of Agriculture - Forest Service (USDA-FS) agency, administers a forest legacy program that may fund up to 75% of program costs, with at least 25% coming from private, state or local sources. The program pays property owners for conservation easements (servitudes) that require that the land be held as a forest in perpetuity and managed under certain conditions. The program also buys the land itself in fee title. In 2008, the program funded 182,000 acres for \$54 million. There were no Louisiana projects receiving funding.

The North American Wetlands Conservation Act provides 50% funding with the remaining 50% costs coming from local sources to preserve wetlands that serve as habitat for migratory waterfowl and other bird species. The funding for 2008 was \$77.2 million.

5.3.2 State Government Funding

The Executive Order on Capital Outlay Reform by Governor Bobby Jindal dated April 8, 2009 set new standards for inclusion of state funding under the capital outlay program in the Louisiana legislature. Among these reforms are requirements that a minimum 25% local match is required, a needs based formula is used to determined eligibility, and a feasibility study is conducted. Additionally, constraints are placed on the total level of indebtedness.

The legislative coordination of \$400 million in Louisiana federal drainage funding is administered by the Public Works and Water Resources Section of the Louisiana Department of Transportation and Development (DOTD). This section of DOTD acts as the non-federal sponsor for flood control, hurricane protection, navigation, and water resources development projects. Funding for construction cost sharing is normally provided by line item in the Capital Outlay Bill. Cost sharing percentages vary with project authorizing legislation.

5.3.3 Local Government Funding

Local government funding may be required in some form to augment project income as discussed below.

5.3.5 Sale of Assets Funding

A significant source of local funding is the sale of mitigation credits. An estimate as of 2005 showed that an acre of mitigated wetland cost sells for \$3,000 to \$10,000 in non-coastal Louisiana. A recent purchase by LCG in March of 2009 placed the cost at the midpoint of that range at \$7,000.

Because the size of the project may be parish wide, many thousand yards of dirt may be excavated. Perhaps not all excavated dirt will be required for the project and the excess dirt may be sold. The current cost of a yard of fill is \$12 per yard. That same acre converted not to a mitigation bank, but to a detention pond with a depth of three feet would currently bring \$174,240 per acre in sales.

Properties may be purchased in fee simple without the retention of oil and gas mineral rights by the original owner. Over time, these properties may generate income in the form of oil and gas royalties.

5.3.4 Private Funding

There are various non-profit organizations which provide modest financial assistance in the form of local matching funds for state and federal grants. Among these organizations are Bikes Belong and American Hiking Society. Additionally, the Trust for Public Land can provide large transitional temporary loans for the purchase of properties that are to be converted into public parks. The Nature Conservancy actively purchases and manages conservation areas some of which are then transferred to local and state governments.

Local landowners may forgo the selling of their property as part of the plan. Instead, land owners may donate their property to a land bank at a loss for federal and state tax purposes.

5.4 Administration

There are several options of land ownership used for the mitigation bank:

- (1) The City Parish Council can create a gravity or levee district with a board of five commissioners as established in state enabling legislation. The district is not parish wide, but only those areas actually converted to mitigation banks.
- (2) The state legislature can create a parish wide special district providing drainage services with a board of commissioners who are also the city-parish councilmen or other board appointed by the councilmen.
- (3) The land may be held by a local non-profit corporation like the land bank with a board of commissioners appointed directly or indirectly by the city-parish council.
- (4) The land may be held by a national non-profit corporation like The Nature Conservancy or the Trust for Public Land permanently or transitionally.