**EM-10 Improvement of Water Quality through Reduction of Sewage Pollution**

**A. OBJECTIVE**

To reduce fecal coliform counts, pathogens, nutrients, and organic matter in BTES waterbodies attributable to discharges of human waste from inadequate or poorly-maintained sewage treatment plants, rural homesites, unsewered communities, commercial and recreational vessels and waterfront camps.

**B. BACKGROUND**

Throughout the BTES, improper disposal and inadequate treatment of sewage results in poor water quality in many of the basin’s bayous, lakes, and bays. The primary parameter for monitoring sewage pollution is fecal coliform count, as it indicates the possible presence of pathogens which can cause human illnesses. When counts exceed a threshold level in oyster grounds, harvesting of the oyster is halted to prevent the spread of disease through consumption of contaminated seafood. Such closures are occurring frequently within the BTES.

Other pollutants associated with sewage include nutrients and organic matter. Nutrients stimulate algal growth and can lead to excessive production. This, in turn, leads to oxygen depletion as the algae die and the decaying organic matter draws upon the dissolved oxygen in the water during decomposition. This process can cause severe depletion of dissolved oxygen in the sluggish bayous of the BTES which may cause fish kills. Over-production of algae in the bayous, canals, and lakes can also result in impaired fisheries.

The 1994 Water Quality Inventory shows that fecal coliform is at least a suspected or potential problem in 33 of 55 assessed waterbodies in the Terrebonne Basin and 18 of 27 assessed in the Barataria Basin. Analysis of LDEQ’s ambient water quality monitoring data revealed that 8 of 18 sampling sites in the BTES are not meeting the fecal coliform criterion for primary contact recreation. Additionally, 9 of the 18sampling sites are not meeting the dissolved oxygen criterion.

The 2016 Integrated Report shows fecal coliform impairment in the following areas: Barataria-2 of 28 subsegments; Terrebonne-11 of 58 subsegments. Dissolved oxygen impairment was shown in the following areas: Barataria-2 of 28 subsegments; Terrebonne-2 of 58 subsegments.

**C. DESCRIPTION**

The action plan will build on existing educational activities, incentives programs, regulation development, inspection and enforcement mechanisms, and capital improvement programs that work in unison to produce a regional reduction in both accidental and intentional releases of sewage into the waters within and bounding the BTES.

The primary source of sewage pollution in the BTES is runoff or discharge from inadequate or poorly maintained sewage treatment plants, rural homesites, unsewered communities, commercial and recreational vessels and waterfront camps.

The basin is largely rural with many unsewered communities. Rural residents use septic tanks, cesspools, or mechanical sewage plants for treatment of their wastewater while some of the camp owners discharge directly to the waterways. Many of the septic tanks are placed in soils that are not suitable, and even properly installed systems are not adequately maintained. Improper placement and poor maintenance of septic systems lead to runoff of untreated sewage.

Discharges from vessels, both commercial and recreational, also contribute to the fecal coliform pollution problem, as does runoff from pastureland and dense animal populations such as nutria, overwintering waterfowl, and feral hogs.

**D. LEAD AGENCY RESPONSIBLE FOR IMPLEMENTATION**

**Louisiana Department of Health (LDH)**

Region 3 (Assumption, Lafourche, St Charles, St James, St John, St Mary, Terrebonne, and Jefferson (Grand Isle only) maintains databases of size and types of sewage plants, both community and residential-type. Region 1 (Jefferson and Orleans), Region 2 (Point Coupee, West Baton Rouge, Ascension), and Region 4 (Iberia and St Martin) all maintain databases of residential-type plants. Plaquemines Parish is parish operated and does not maintain a database of community or residential-type sewage plants. All parishes in the BTES, except Plaquemines, have adopted ordinances to include the State Sanitary Code with LDH sanitarians inspecting, issuing permits, and conducting enforcement on residential, commercial, and vessel sewage systems.

LDH has regulations requiring perpetual maintenance on community and residential plants. Beach monitoring is conducted at 24 sites along the coast to determine whether the water quality meets Louisiana Department of Environmental Quality (DEQ) criteria for enterococci. The Molluscan Shellfish program collects samples at designated stations to determine whether the water quality meets National Shellfish Sanitation Program (NSSP) criteria for fecal coliform and *Karenia brevis* (red tide). LDH participates in educational workshops for property owners, oyster fishermen, and wastewater treatment system installers. The Beach Monitoring Program participates in outreach programs to the general public to provide information on sampling protocols and locations along with health concerns due to the potential exposure of enterococci bacteria.

-Posts advisories for high enterococci bacteria levels along coastal beaches

 **Louisiana Department of Environmental Quality (LDEQ)**

-Annual inspections of 50% of permitted Major dischargers (greater than 100,000gpd) and 20% of permitted Significant Minor dischargers (greater than 50,000gpd)

-Investigates citizen complaints and spill release incidents

-Watershed Based Inspection Projects target impaired watersheds

-Enforcement Program for dischargers that are not in compliance with regulations

-Ambient Water Quality Program

-Educational outreach programs.

-Posts stream and swimming advisories

 **Louisiana Department of Wildlife and Fisheries (LDWF)**

-cosigns shellfish harvesting closures with LDH and enforces closures

-Scenic Rivers Program-involved in regulation of camp systems on designated streams/rivers

-Scenic Streams program – regulates point source discharges which have the potential to impact these streams, including sanitary discharges from houseboats and camps.

 **Louisiana Department of Natural Resources (LDNR)**

-Coastal Use Permit-applicants with residential, commercial, or industrial activity must ensure that sewage systems meet requirements of State Sanitary Code.

-Clean Marina/Vessels Program-encourages sewage pump out and dump stations at marinas in estuary

 **United States Coast Guard**

-Verifies compliance with 33 Code of Federal Regulations (CFR), Part 159, Marine Sanitation Devices, on all CG inspected vessels (domestic and/or foreign).

 **Local Governments**

-Municipal Separate Stormwater System (MS4) Permit Program: Deals with comingling of stormwater runoff and sewage, combined sewage overflow system, and overloading sewage treatment systems. Municipalities must seek and eliminate elicit discharges.

-All parishes in BTES, except Plaquemines, have adopted the State Sanitary Code; however parishes may have also more stringent regulations than the code.

 **South Central Planning & Development Commission (SCPDC)**

-SCPDC and LDH are currently working on adding LDH permit applications to SCPDC “My Permit” online program. Program will potentially be statewide and include other agencies.

**E. TIMELINES AND/OR MILESTONES**

LDH and LDEQ will continue with annual and need-based inspections, enforcement, and monitoring along with public education. BTNEP and the Management Conference will continue to support these ongoing activities that protect and promote human health and the environment.

**F. POSSIBLE RANGE OF COSTS AND SOURCES OF FUNDING**

 **LDEQ**

Administers the Clean Water State Revolving Fund (CWSRF) Program which provides financial assistance in the form of low interest loans to finance eligible projects, bringing them into compliance with the requirements of the Clean Water Act.

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-State Revolving Loan Fund

-Permit fees and Enforcement

 **LDH**

-State general fund/retail permit fee collection

-EPA: beach monitoring program

-Fees for installation of each residential-type sewage plant

-Fees for sewage installer certification

 **Capital Resource Conservation & Development Council, Inc (CRC&D)**

Administers the Home Waste System Initiative for low income households in the following BTES parishes: Pointe Coupee, West Baton Rouge, Iberville, Assumption, St James, and Ascension.

 **USDA Rural Development**

Administers Single Family Housing Repair Loans & Grants in Louisiana which provides loans to very low-income homeowners to repair, improve, or modernize their homes or grants to elderly very low-income homeowners to remove health and safety hazards.

Has a Community Facility Direct grant/loan program for local governments for public infrastructure including sewerage. The program is directed towards rural areas and is based on the size and income of the community.

 **Louisiana Community Development Block Grant Program**

Helps communities provide a suitable living ​environment and expand economic opportunities for their residents, particularly in low to moderate income areas. The block grants are awarded to the state annually by the U.S. Department of Housing and Urban Development, and the state’s program awards and administers the funds to units of local government for improvements to public facilities, economic development, demonstrated needs projects and LaSTEP projects, which funds materials for local community projects while citizens provide a portion of the labor.

 **South Central Planning & Development Commission (SCPDC)**

Assists communities in applications for and administration of grants. Also partners with BTNEP to apply for grants to offer education, infrastructure, etc.

 **United States Environmental Protection Agency**

Handles grants for waste water treatment.

 **United States Economic Development Agency (Department of Commerce)**

Offer grants to communities to extend sewer collection lines or increase treatment capacities when a new industry locates or when it becomes necessary to retain existing jobs.

**G. PERFORMANCE MEASURES**

 **a. Possible Data Gathered**

 **LDH**

Will maintain sewage system databases, beach monitoring and molluscan shellfish data.

 **LDEQ**

Collects water samples associated with the Ambient Water Quality Network Program.

-Ecoregion surveys

-TMDL Monitoring

-Special Watershed Project monitoring

-Incident investigations

-Compliance sampling projects

 **b. Monitoring**

 **i. Parties responsible**

LDH, LDEQ

 **ii. Timetable for gathering data**

 **LDH**

Sewage system databases are updated daily. Beach monitoring is done weekly from April 1st through October 31st. Molluscan Shellfish sampling is done year round.

 **LDEQ**

Monitors all Ambient Water Quality Network sites monthly within a four year rotation while other monitoring occurs as required.

-Monitors on a 5 year TMDL sampling rotation from basin to basin

-Ecoregion surveys

-TMDL Monitoring

-Special Watershed Project monitoring

-Incident Investigations

-Compliance sampling projects

 **iii. How data is shared**

 **LDH**

Beach monitoring information is on the Environmental Protection Agency (EPA) website. Molluscan Shellfish Program data must be obtained from staff in LDH Headquarters. Aerobic treatment plant and community sewage system databases are maintained at state and regional levels and are not available online.

 **LDEQ**

All monitoring data is available on the LDEQ public website.

 **iv. Possible data gaps**

 **v. If additional funding is needed**

-yes