

C4. ENVIRONMENTAL ENGINEERING.

C4.1 Design of Positive Environmental Attributes into the Project. Construction methods that will eliminate or minimize environmental impacts to the maximum extent practicable will be incorporated into the design of Bayou Sorrel Lock. The plan for dredged material disposal makes use of existing borrow pits and existing disposal areas for dredged material. Additionally, proposed project construction will be phased so that material from dredging of the re-aligned East Access Channel is placed in the old lock chamber and connecting channels. By doing this, impacts to cypress swamps and bottomland hardwoods forests have been eliminated. Mitigation for project impacts consists of re-vegetating most of the project lands.

C4.2 Inclusion of Environmentally Beneficial Operations and Management for the Project. When conditions warrant, the lock will be operated for the environmentally beneficial diversion of water from the Atchafalaya Floodway. Such water diversion helps alleviate water quality problems during low rainfall periods. An Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) Manual and a Water Control Manual written specifically for the new lock will contain guidelines for water diversion. Additional discussions on water diversion are presented in Section C2, "HYDRAULICS AND HYDROLOGY" of this Engineering Appendix.

C4.3 Beneficial Uses of Spoil or Other Project Refuse. The spoil (dredged material) disposal plan has been carefully designed to minimize adverse impacts to the environment. Some dredged material will be deposited in existing borrow pits and will be available for use as commercial fill material. No other beneficial uses of the dredged material have been identified. However, the plan for disposal of dredged material has avoided and minimized adverse impact to the maximum extent practicable.

C4.4 Maintenance of the Ecological Continuity in the Project with the Surrounding Area and Within the Region. The proposed new lock will replace an existing lock and will function similarly. The landscape of the project site will be altered by the addition of the new lock, but the abandoned lock site and connecting channels will be filled-in with dredged material and returned to forested habitat. In this way, the long-term change in the ecology of the area is minimized. No long-term significant changes to the ecology of the area are expected.

C4.5 Consideration Of Indirect Environmental Costs And Benefits. The indirect environmental effect of the project consists of an increase in vessel traffic along the IWW system, especially the Morgan City to Port Allen Alternate Route. The potential impact of increased traffic is bank erosion along certain sections of the waterway. This effect has been considered, but is not expected to be significant.

C4.6 Integration of Environmental Sensitivity. Environmental sensitivity has been incorporated into all aspects of project design, and is especially evident in the proposed plan for disposal of dredged material. Dredged material disposal has, by far, the largest potential for adversely affecting the local environment. Avoidance and minimization of adverse impacts have been incorporated into the project construction and maintenance plan to the maximum extent practicable.

C4.7 Incorporation of Environmental Compliance Measures into Project Design. Environmental compliance measures are related solely to the timing and methods used for dredged material disposal during both project construction and project maintenance. The plan for dredged material disposal and subsequent reforestation of some areas used for disposal is contained in the project Environmental Impact Statement (EIS). The EIS will be referred to during Preconstruction Engineering and Design (PED) phase of this project. Additionally, a detailed description of the long-term dredging, disposal, and reforestation plan will be included in the project OMRR&R Manual.

C4.8 Hazardous and Toxic Materials. As part of this study, New Orleans District personnel conducted an "Initial Hazardous, Toxic and Radioactive Waste Assessment" (IHTRWA) of the site of the proposed lock. This assessment, which was based on analysis of existing literature, agency records, land use research, historical aerial photographs, site visits, and helicopter overflights, did not reveal any areas of HTRW concern. As a result, New Orleans District personnel determined that the risk of encountering HTRW during construction of the proposed lock was minimal, and that no further investigations were warranted. A complete copy of the aforementioned IHTRWA is included in Section 7 of the Environmental Appendix to this report.

C4.9 Construction Procedures And Water Control Plan. Care will be taken to protect adjacent waters from contamination from runoff from the construction site. Plans to accomplish this during construction call for installation of erosion protection such as hay bales and screening. Costs for these items have been included in the construction costs estimates included in Annex 1.

C4.10 Corrosion Mitigation. Based on OMRR&R records for the existing Bayou Sorrel Lock, extensive corrosion of the sector gates is not anticipated. To prevent corrosion of the proposed sector gates, the gates will be prepared, primed and painted according to Corps of Engineers painting guide specifications developed for the applicable climate and conditions of the proposed site.