

bridge would continue to be available to local traffic. The railroad bridge will only be raised during passage of waterborne traffic.

### 5.3.12.3. Plan 2.

#### 5.3.12.3.1 Effects

Replacement of the existing St. Claude Avenue bridge with a mid-level structure would require that vehicular and pedestrian access over the canal at this location be interrupted for approximately two years. During the period of bridge closure, trans-canal vehicular traffic would be rerouted to the existing Claiborne Avenue bridge and the planned Florida Avenue vehicular bridge through the designation of detour routes on existing feeder streets. The level of vehicular traffic congestion that would result is expected to be severe even with the implementation of a detour plan.

Using the volume of traffic expected to exist in the year 2000, the RPC estimates that the temporary closure of the St. Claude Avenue bridge would cause total traffic through the IHNC corridor to drop from 93,490 to 84,170 vehicles, as some commuter traffic would divert to alternative links to the west (Paris Road and Interstate-10). The Claiborne Avenue bridge would experience an increase in traffic from 41,970 to 52,430 vehicles. Traffic on the new bridge planned at Florida Avenue would also increase, from 20,960 to 31,740.

Also during the construction period, pedestrian access across the IHNC would be virtually eliminated since the Claiborne Avenue bridge and the planned Florida Avenue vehicular bridge are not designed to accommodate pedestrian traffic. It is not certain whether the low-level, replacement railroad bridge at Florida Avenue will accommodate pedestrians. Even so, this bridge would be far less accessible to most area residents than is the St. Claude Avenue bridge.

After construction of the mid-level St. Claude Avenue bridge is completed, the incidence of bridge openings would be significantly reduced, thereby reducing vehicular traffic delays. However, this plan also assumes the bridge curfews now in effect would be removed. As a result, some bridge openings would probably occur during peak hours of commuter traffic, a situation that does not occur under existing conditions.

The completed mid-level bridge would include stairways for pedestrian traffic. However, pedestrians would be required to travel greater distances and along much steeper inclines than under existing conditions. As a result, pedestrian access would be diminished.

#### 5.3.12.3.2. Proposed Mitigation

a. Traffic signals in the vicinity of the IHNC would be re-programmed and synchronized to facilitate traffic flow. Also, a minimum of four computerized message

boards would be erected. The message boards would be located on both sides of the canal on St. Claude and Claiborne Avenues.

*b.* An incident management plan would be implemented. The plan would include a police detail and two tow trucks that operate on standby during peak traffic hours for accident reporting and response.

*c.* Shuttle van service would be provided to accommodate pedestrian traffic across the IHNC on St. Claude Avenue during closure of the St. Claude Avenue Bridge. The service would consist of two 12-passenger vans operating from 6 a.m. to 10 p.m., seven days a week. The service is designed to shuttle pedestrians between the eastern and western termini of the St. Claude Avenue Bridge approaches. The route would be non-stop and free of charge. The Corps would contract the service specifically to local companies that employ area residents.

*d.* A plan for hurricane/emergency evacuation during periods of bridge closure would be developed with appropriate agencies, especially the New Orleans Office of Emergency Preparedness.

*e.* Additional school crossing guards would be provided on each side of the IHNC along designated detour routes where crossing guards are not currently stationed.

*f.* A total of five miles of local streets would be resurfaced prior to project construction to serve construction-related traffic. Also, about 2 miles of streets that would have increased usage would be resurfaced.

*g.* Four additional traffic-control officers (two on each side of the canal) would be provided to facilitate the flow of traffic on detour routes. The officers would be on duty during peak traffic hours during periods of bridge closure.

*h.* The RTA would be reimbursed for lost revenues resulting from diminished ridership on affected lines during the period of bridge closure.

#### 5.3.12.4. Plans 3a through 3f.

##### 5.3.12.4.1. Effects

These plans incorporate a temporary bridge at St. Claude Avenue during construction of the permanent St. Claude Avenue bridge and modifications at the Claiborne Avenue bridge that would involve minimal disruptions to the existing level of service (four months of two lanes only instead of four at the St. Claude Avenue bridge, and two to four weeks of complete closure at the Claiborne Avenue bridge). As a result, adverse effects on vehicular transportation would be largely avoided during the construction period.

In addition, these plans would include other construction features intended to minimize negative impacts to vehicular traffic. These features are described as follows.

- a.* Interference of construction employee-related traffic with neighborhood traffic would be limited as much as possible. An offsite parking area would be provided on the east side of the IHNC for workers involved in constructing levees and floodwalls. The area would be fenced-in and patrolled by security personnel. A shuttle service would be provided to carry workers from the parking area to construction sites. For lock and bridge construction personnel, a cleared area on the west side of the IHNC at Galvez Street would serve as a dedicated parking area. This site would also serve as the staging area for lock construction.
- b.* Specific routes for construction-related traffic would be designated in order to minimize traffic congestion.
- c.* Appropriate detour signs would be erected to preserve access to local streets during periods when individual streets may be closed due to utility relocations.
- d.* Damage to roads caused by construction activities would be repaired.
- e.* Contract specifications would include requirements to move as much material and equipment by barge as is practicable, including all demolition debris from buildings on the east side of the IHNC, the Galvez Wharf, the U.S. Coast Guard station, and the existing lock.

After project completion, at a point significantly into the project life, the total open time for both St. Claude Avenue and Claiborne Avenue bridges would be greater compared to the no action plan. This would negatively affect traffic congestion.

#### 5.3.12.4.2. Proposed Mitigation

- a.* A new, permanent detour route would be constructed to link Florida Avenue to West Judge Perez and St. Bernard Highway in St. Bernard Parish. The new road would improve circulation of commuter traffic and relieve neighborhood traffic congestion.
- b.* Traffic signals in the vicinity of the IHNC would be reprogrammed and synchronized to facilitate traffic flow. Also, a minimum of four computerized message boards would be erected. The message boards would be located on both sides of the canal on St. Claude and Claiborne Avenues.
- c.* An incident management plan would be implemented. The plan would include a police detail and two tow trucks that operate on standby during peak traffic hours for accident reporting and response.
- d.* Additional school crossing guards would be provided on each side of the IHNC along designated detour routes where crossing guards are not currently stationed.

e. Local streets that would serve construction-related traffic would be resurfaced prior to initiation of project construction. Maintenance of these streets during project construction would also be provided.

f. Four additional traffic control officers (two on each side of the canal) would be provided to facilitate the flow of traffic on detour routes. The officers would be on duty during peak traffic hours during periods of bridge construction.

g. Accommodation for a light rail line would be built into the new St. Claude Avenue bridge. The Regional Transit Authority has long-term plans for implementing a streetcar service across the IHNC into the Lower Ninth Ward and Holy Cross neighborhoods.

h. A program of street resurfacing and drainage improvements within an area on each side of the IHNC, yet to be determined, would be implemented.

### **5.3.13. Housing**

5.3.13.1. Affected Environment. The residential structures within the study area vary from well-maintained single and double residences to vacant, abandoned houses and apartments. There are areas where homes, cottages, and streets are well-maintained and others where homes are deserted and vandalized, the yards overgrown and littered, and the streets in poor condition.

According to the 1980 Census, there were 20,412 residential units in the study area. However, the 1990 Census reported 18,986 units, a decline of 1,426 units, or 7 percent. Of the four neighborhoods comprising the study area, only Holy Cross showed a gain in the number of housing units, from 2,373 to 2,385. In contrast, the number of housing units during this period fell in the Lower Ninth Ward from 6,894 to 6,350, in Bywater from 3,171 to 2,899, and in St. Claude from 7,974 to 7,352.

Over the last decade, vacancy rates increased for each neighborhood. From 1980 to 1990, the vacancy rate increased in Holy Cross from 8.4 to 19.6 percent, in the Lower Ninth Ward from 8.9 to 16.4 percent, in Bywater from 14.7 to 23.1 percent and in St. Claude from 8.7 to 17.6 percent. The vacancy rate in 1990 for the study area as a whole was 18.3 percent. Of total housing units in the study area in 1990, renter-occupied units comprised 43.4 percent and owner-occupied units comprised 38.3 percent.

5.3.13.2. Plan 1 (No Action). The future inventory of housing in the study area is uncertain. The level of housing stock reflects both broad trends in migration, employment, income, and real estate trends and specific circumstances such as the age, quality, and degree of maintenance of individual structures. Prior discussion on future population, employment and property value trends serves as an indicator of the future of available housing.

5.3.13.3. Plan 2. The implementation of this plan would not require the acquisition of any residential real estate. Also, construction activity is not expected to result in any damage to residential structures.

5.3.13.4. Plans 3a through 3f. The implementation of any of these plans would not require the acquisition of any residential real estate. Also, construction activity is not expected to result in any damage to residential structures, as might be expected from vibrations emitted from pile drivers.

#### **5.3.14. Community Cohesion**

5.3.14.1. Affected Environment. The presence of a number of community organizations in the study area such as neighborhood associations, community development associations, neighborhood watch groups, parent-teacher associations, and community outreach groups indicate cohesive neighborhood group activity. These organizations have successfully worked to promote various improvements in the community including streets and playgrounds, and are actively engaged in renovation efforts to restore abandoned properties. Other, unofficial groups associated with schools and churches are also active. The listing of historic districts within the Bywater and Holy Cross neighborhoods in the National Register of Historic Places contributes to residents' sense of community and continuity. Most of the residential and commercial development within the study area occurred subsequent to the opening of the IHNC in 1923 and, as a result, the communities on each side of the canal were disposed to develop individual identities. Furthermore, the historic attributes of the Bywater and Holy Cross neighborhoods helps distinguish them as communities from most of the remaining portions of the study area that are located north of St. Claude Avenue. The existence of the Holy Cross, Bywater and Lower Ninth Ward neighborhood associations indicate separate, but strong, community identities.

5.3.14.2. Plan 1 (No Action). No change in community cohesion would be expected to occur in the absence of Federal action.

5.3.14.3. Plan 2. Bridge closure and a limited amount of construction noise would disrupt routine daily activities of study area residents such as shopping, visiting with neighbors, and walking in the area.

5.3.14.4. Plans 3a through 3f. Traffic congestion and construction noise would disrupt routine daily activities of study area residents such as shopping, visiting with neighbors, and walking in the area.

#### **5.3.15. Noise**

5.3.15.1. Affected Environment. Traffic noise serves as the primary source of ambient noise in the study area. The principal corridors generating traffic noise in the IHNC

area include the IHNC, the Southern and Illinois Central Railroad lines, and the major arterials – St. Claude Avenue, North Robertson Avenue, Claiborne Avenue, Florida Avenue, Franklin/Almonaster Avenues, Chartres Street and Poland Avenue. Noise created by the movement of tows and ships within the IHNC is not normally great enough to intrude into the adjacent neighborhoods, with the exception of blasts from horns and sirens. Railroad passage on the west side of the IHNC is a more likely source of industrial noise, although little, if any, rail traffic is associated with facilities terminating at the Galvez Street wharf. Nevertheless, the volume of local and commuter automobile and truck traffic is the most direct source of ambient noise to residents in the study area.

In this assessment, sound or noise measurements are expressed in terms of the day-night sound level (DNL) and expressed mathematically (in decibels) as Ldn. Thus, 50 Ldn means a day-night sound level of 50 decibels (dB). The expression DNL is defined as the A-weighted equivalent sound level for a 24-hour period with 10 dB added for nighttime sounds (10:00 p.m.-7:00 a.m.). The day-night sound level is used to characterize average sound levels in residential areas throughout the day and night. The A-weighted sound level is the momentary magnitude of sound weighted to approximate the human ear's frequency sensitivity, which is better in the 500 Hz to 8,000 Hz range. The DNL sound level includes a 10 dB penalty because people are more disturbed by noise at night but no construction would occur at night for any of the alternatives evaluated. In evaluating noise impacts, the U.S. Department of Housing and Urban Development (HUD) has set down noise standards to be used in evaluating new housing construction assisted or supported by HUD financing. These standards are as follows:

- ▶ 65 Ldn or less is considered acceptable;
- ▶ >65 Ldn but not >75 Ldn is considered to be normally unacceptable;
- ▶ >75 Ldn is considered unacceptable.

Although HUD participation in this project is not anticipated, noise impacts for this effort are appropriately evaluated utilizing HUD standards.

5.3.15.2. Plan 1 (No Action). Under this scenario, where no Federal action is taken, the State of Louisiana will construct a new mid-level or high-level bridge at the Florida Avenue crossing. This project will not include connections to existing interstate highways or expressways on either side of Florida Avenue. However, the Regional Planning Commission expects that this new corridor will capture a significant share of trans-canal traffic (see Transportation). When compared to the current configuration of traffic flows, the redistribution of traffic through the St. Claude Avenue, Claiborne Avenue, and Florida Avenue corridors will increase vehicle-generated noise in some areas and decrease vehicle-generated noise in other areas. Residents adjacent to feeder streets, such as Franklin/Almonaster, Caffin and Tupelo, will most likely experience an increase in traffic and associated noise.

5.3.15.3. Plan 2. The most severe noise associated with the construction of a mid-level St. Claude Avenue bridge would occur as piles are driven for the bridge piers. It is expected that the pile drivers that are required for this task would emit "normally unacceptable" levels of noise within a distance of approximately 800 feet from the source (Rigamer, 1991). While field tests have not yet been conducted to obtain empirical data, preliminary calculations suggest that approximately 315 housing units, with a total population of 759, are located within 800 feet from the source of construction (Plate 25). It is important to note that the 800-foot estimate represents a worst-case scenario: no factors that would contribute to the buffering or suppression of pile driving noise (such as levees, floodwalls, below-water hammering, and modified construction equipment) are taken into account.

In an effort to limit the amount of unacceptable noise, pile tests would be performed using a variety of pile drivers at selected locations, prior to lock and bridge construction, in order to measure noise levels and delineate the area exposed to an unacceptable level of noise which is defined as the 65 Ldn contour or comparable measure.

Residents would also be exposed to noise generated by vehicular traffic to and from the construction site. The construction plan includes the designation of dedicated routes for construction traffic which is isolated, to the maximum extent possible, from neighborhood streets and residences.

Traffic-generated noise would increase for those residents that live on streets that motorists would use as detours to alternative routes during the period of bridge closure. These streets include, but are not limited to, Caffin Avenue and Tupelo Street.

Because the replacement of the current low-level bridge with the mid-level structure would facilitate traffic flow along the St. Claude Avenue corridor, it would be expected that the volume of traffic would also increase, and with it, the level of traffic-related noise.

A mitigation plan for noise impacts, comparable to that described in Section 5.3.15.4.2., would be an integral component of this alternative.

#### 5.3.15.4. Plans 3a through 3f

##### 5.3.15.4.1. Effects

The most severe noise associated with the construction of a replacement, low-level St. Claude Avenue bridge would occur as piles are driven for the bridge piers. It is expected that the pile drivers that are required for this task would emit "normally unacceptable" levels of noise (Rigamer, 1991) within a distance of approximately 800 feet from the source. While field tests have not yet been conducted to obtain empirical data, preliminary calculations suggest that approximately 315 housing units, with a

total population of 759, are located within 800 feet from the source of construction. It is important to note that the 800-foot estimate represents a worst-case scenario: no factors that would contribute to the buffering or suppression of pile driving noise (such as levees, floodwalls, below-water hammering, and modified construction equipment) are taken into account. Pile tests would be performed using a variety of pile drivers at selected locations, prior to lock and bridge construction, in order to measure noise levels and delineate the area exposed to an unacceptable level of noise which is defined as the 65 Ldn contour or comparable measure.

Approach ramps for the Claiborne Avenue bridge would not be replaced under this plan, but the bridge would require modification. Current construction plans call for the replacement of the bridge lift-span and towers. The new bridge components would be prefabricated off-site and floated on barges into position next to the existing bridge. No pile driving or other re-enforcement of the bridge piers is expected to be necessary. Therefore, noise impacts from modifications to the Claiborne Avenue bridge are not expected in the adjacent neighborhoods.

Noise generated by lock construction is expected to intrude into the neighborhood on the east side of the IHNC. The severity of this impact is uncertain. Under a worst-case scenario, pile driving activity at the construction site, which is situated near the center of the canal, has the potential to emit "normally unacceptable" levels of noise into a residential area that lies one or two blocks east of the IHNC and within 1280 feet of the construction site. This area encompasses 286 housing units and 689 residents (Plate 25). However, the construction techniques used would require only a nominal number of piles, far fewer than required for the St. Claude Avenue bridge, indicating a minimal pile driving program.

In contrast to the lock site, the location of the new floodwall on the east side of the IHNC between the St. Claude Avenue and Claiborne Avenue bridges is more immediate to the local residents. An undetermined number of residents would be exposed to noise associated with general construction and in particular with the noise generated by pile driving. The severity of the pile driving noise that is expected to encroach into the neighborhood has not been determined. The explanation for this lies in the fact that the sheet piles that are required for floodwall construction would only require the smallest and hence, quietest pile drivers available. Furthermore, it is known that "ultra-quiet" pile drivers have been recently designed for "light" or "small" construction projects that take place within dense, urban environments. The availability and applicability of this technology for this construction plan is not currently known. However, the potential exists that "normally unacceptable" levels of noise emitted may not extend far from the floodwall construction site. Pile driving activity along any section of the floodwall would occur only during a portion of the time scheduled for floodwall construction which is not expected to last longer than one year.

Several features are included in the project plan to avoid and minimize noise impacts from construction of the lock, St. Claude Avenue bridge, and floodwalls. These items are as follows:

- a.* Contract specifications would include limitations on noise levels at a given distance from the construction site. Unacceptable noise levels attributable to lock construction or bascule bridge construction would generally not be allowed to invade residential areas. With respect to the St. Claude Avenue Bridge approaches, exposure to unacceptable noise levels would be limited to those receptors adjacent to the construction site if the total elimination of unacceptable noise levels is not possible. While the contractor would be given discretion in the manner of compliance with the standard, the form of compliance would likely include the employment of specialized, quieter equipment, remote deployment or isolation of some equipment and the placement of baffle walls.
- b.* Contract specifications would require verification of the noise level containment. Contractors would be required to use noise monitoring equipment to verify adherence to contract specifications that limit unacceptable levels of noise at given distances from construction sites.
- c.* Wherever possible, the use of the vibratory hammers or other pile driving equipment that is designed to minimize noise emissions would be required by contract specifications. Recognizing the adverse impacts associated with pile driving with standard equipment within an urban environment, the construction industry and construction equipment manufacturers have in recent years modified pile driving technology. These specialized pile drivers significantly reduce noise, particularly for jobs that require relatively smaller piles as is typically required for the construction of floodwalls and bridge approaches.

Residents would also be exposed to noise generated by vehicular traffic to and from the construction sites. The construction plan would include the designation of dedicated routes for construction traffic would be isolated, to the maximum extent possible, from neighborhood streets and residences.

Traffic-generated noise would increase for those residents that live on streets used as detours during the period of bridge closure. With the proposed bridge replacement and modification plan, this impact is expected to be minimal. These streets include, but are not limited to, Caffin Avenue and Tupelo Street.

#### 5.3.15.4.2. Proposed Mitigation

- a.* Soundproofing any residential or commercial structure that lies within the area of unacceptable levels of noise would be accomplished to the extent that it is not possible to entirely eliminate unacceptable noise levels under normal procedures.

b. Pile driving for the new St. Claude Avenue bridge would be done only during the summer to avoid impacts to children in neighborhood schools.

### 5.3.16. Air Quality

5.3.16.1. Affected Environment. The Clean Air Act of 1970, as amended, requires the establishment of National Ambient Air Quality Standards (NAAQS). Both primary and secondary standards are now in effect. Primary standards define levels of air quality that the Administrator of the Environmental Protection Agency (EPA) judges to be necessary, with an adequate margin of safety, to protect the public health. Secondary standards define levels of air quality that the Administrator of the EPA judges to be necessary to protect the public from any known or anticipated adverse effects of a pollutant. The NAAQS pollutants are monitored in Louisiana by the Louisiana Department of Environmental Quality (LDEQ) include carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, total suspended particulate, particulate matter less than 10 microns, and lead. The current ambient air quality standards for these pollutants and yearly summaries of data collected at sites in Orleans and St. Bernard Parishes are included in Appendix D, Section 7.

Orleans and St. Bernard Parishes are designated as ozone attainment parishes operating under a full maintenance plan. As such, these areas are monitored for violations of NAAQS, and any Federal actions that could affect ozone levels in these parishes must be in compliance with the State Implementation Plan. At the regional level, motor vehicle emissions can have a significant effect on the ambient air quality. Motor vehicles directly emit carbon monoxide (CO) and nitrogen dioxide (NO<sub>2</sub>) and contribute to ozone levels in the atmosphere by emitting two precursors to ozone: volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>). In the atmosphere, these two pollutants can react in a series of photo-chemical reactions to produce ozone. The ozone standard at monitoring sites located in Orleans and St. Bernard Parishes has not been exceeded since 1984. All other pollutants measured in Orleans and St. Bernard Parishes are within the established standards.

5.3.16.2. Plan 1 (No-Action). The study area would likely continue to be in attainment for all ambient air quality standards except ozone. With a new Florida Avenue bridge to be constructed by other parties, traffic flow patterns within the study area are expected to improve, resulting in somewhat less overall emissions from motor vehicles. Localized, non-significant increases in air pollutants emitted from internal combustion engines would be expected along the Florida Avenue and Tupelo Avenue corridors due to increases in the number of vehicles using these routes after completion of the Florida Avenue bridge.

5.3.16.3. Plan 2. Bridge replacement at St. Claude Avenue could create localized increases in levels of air pollutants during the construction period from the exhaust of construction equipment. Additionally, more traffic congestion on detour routes and on

the Claiborne and Florida Avenue bridge approaches would be expected during the closure of St. Claude Avenue. Motor vehicle emissions are higher under low-speed, congested traffic conditions, particularly when idling is involved. After the construction period, a decrease in the number of bridge openings with the mid-level bridge would cause a decrease in the emissions associated with vehicular traffic.

A mitigation plan for air quality impacts, comparable to that described in Section 5.3.16.4.2., would be an integral component of this alternative.

#### 5.3.16.4. Plans 3a through 3f

##### 5.3.16.4.1. Effects

Construction activities would increase air pollutant levels in and near the construction sites. Lock and channel excavation, demolition of structures, replacement of bridges, construction equipment exhaust, and motor vehicle exhaust would cause particulate matter to be released into the air. Engine exhausts would introduce such substances as carbon monoxide, lead, and nitrous and sulfur oxides.

An analysis of the volatile organic compound emissions from equipment to be used for project construction was conducted to determine if the proposed action conforms to the State Implementation Plan. Tables showing the details of this analysis are included in Appendix D, Section 7. The analysis was conducted for the most intense four-year period of project construction. The amount of VOC emissions during the intense period of new lock, levee, floodwall, and channel construction would be 18.6 tons. The amount of VOC emissions during any typical year of relocations and bridge construction would be 32.3 tons. The total amount of VOC emissions during the most intensive period of project construction is obtained by adding these two emission estimates together. The result is 50.9 tons.

The temporary bridges to be constructed at the St. Claude Avenue and Claiborne Avenue crossings of the IHNC would provide a level of traffic flow comparable to the existing bridges. There would be no significant increase in traffic delays, and associated increases in vehicular emissions, during construction of the new St. Claude Avenue bridge and retrofitting of the Claiborne Avenue bridge. The total amount of VOC emission during project construction would therefore be limited to the emissions from construction equipment.

The State Implementation Plan requires Federal agencies to conduct conformity determinations for actions in maintenance or non-attainment areas that would result in a release of pollutants equal to or exceeding certain specified limits. For Orleans Parish, the threshold level of VOC emission is 100 tons per year. Since the maximum estimated total VOC emission during any year of project construction is 50.9 tons, a conformity determination is not required.

The effect of the project, after all new bridges are in place (including a new Florida Avenue bridge), would be an improvement in traffic flows, and a long-term reduction in vehicle emissions (compared to without project condition). The traffic flow patterns with a project in place have been modeled by the Regional Planning Commission and have been found to be in compliance with the Traffic Implementation Plan.

Earth-moving equipment, hauling, and concrete mixing activities could create large amounts of dust in the vicinity of the IHNC. Mitigation measures are proposed to avoid and minimize this potential problem.

#### 5.3.16.4.2. Proposed Mitigation

Construction contract specifications would include requirements to maintain dust levels within specified levels. Contractors would be required to monitor dust levels in order to verify compliance. Measures to minimize dust generated by construction equipment may include the wetting of levees and access roads and installation of mesh barriers. Also, contractors would be required, through contract specifications, to properly maintain all equipment used for project construction, so that emissions of airborne pollutants are minimized.

### 5.3.17. Wooded Lands

5.3.17.1. Affected Environment. Wooded lands occur in remnant tracts in the biological study area. There are two remaining tracts of undeveloped wooded land within the forced drainage area of St. Bernard Parish, upriver of Paris Road (Louisiana Highway 47). One tract is about 24 acres and the other is about 155 acres. The area around the lock construction site is highly urbanized and industrialized, hence no wooded areas occur adjacent to this site. Although the proposed graving site has been designed to avoid wooded land, this habitat does occur in its vicinity.

The dominant species of trees in the wooded lands are sugar-berry, live oak, water oak, sweet pecan, green ash, black willow, red maple, cypress, American elm, box elder, and roughleaf dogwood. Chinese tallow, an exotic species, often out-competes native species during early successional stages in regenerating areas. Understory species in the woods include elderberry, Japanese honeysuckle, blackberry, roughleaf dogwood, ligustrum, palmetto, hawthorn, and poison ivy. Groundcover species include Virginia creeper, peppervine, goldenrod, trumpet creeper, day flower, eastern false-willow, smartweed, and ferns. This habitat supports some avian species, including wrens, buntings, vireos, warblers, woodpeckers, and predatory birds such as hawks and owls. Mammals include rabbits, opossums, squirrels, armadillos, and raccoons.

Wooded land also occurs along the south bank of the MRGO where dredged material has been deposited. The dominant vegetation in this area is Chinese tallow and black willow. Most other trees are unsuited to the saturated soil conditions of this area. In some of the more chronically saturated areas, even the tallows and willows remain

stunted, and they could be considered as scrub/shrub wetlands. These habitats are of particularly low quality for most species of wildlife. Groundcover is usually low. These areas are elevated to the point where tidal waters, even during storm events, do not inundate them, but the soils remain saturated because of the nearly flat surface. Surface waters are restricted to borrow ditches excavated to construct dredged material retention dikes. Fisheries usage of this habitat is restricted to small, freshwater species tolerant of shallow, isolated ditches and pools.

5.3.17.2. Plan 1 (No-Action). The remaining wooded land within the leveed and drained part of the study area would continue to be developed for commercial and residential use. Terrestrial wildlife living in these areas would be killed when these areas are developed since no escape corridors are left for emigration. Some avian species would also be lost because of the loss of suitable nesting and foraging habitat. It is expected that the two remaining undeveloped tracts of land in the forced drainage area of St. Bernard, upriver from Paris Road (Highway 47), would be developed during the next 50 years. Exactly when these areas would be developed would depend on the goals of the individual landowners. Development plans are being formulated for the larger tract of land which is owned by a single landowner.

Wooded land along the MRGO would remain mostly undisturbed due to isolation and poor soil conditions. The reach of the MRGO above Paris Road would not likely need to be dredged in the foreseeable future, therefore no dredged material would likely be placed in these areas anytime soon.

5.3.17.3. Plan 2. Same as no-action. No project-induced effects are expected.

5.3.17.4. Plans 3a through 3f. Approximately 240 acres of previously-used disposal area along the south bank of the MRGO would be used for disposal of sediment and soil dredged from the new lock site and from the top 5 feet of soil in the alignment of the north bypass channel. The disposal site contains early successional stage woods consisting mainly of Chinese tallow and black willow. No mitigation is proposed for the use of this site because of its low habitat quality for wildlife and minimal quality habitat value for fisheries. The area to be impacted would be minimized, and any restriction or conditions imposed by the LDEQ to prevent the degradation of coastal water quality as a result of effluent from dredging operations would become part of the disposal plan. After dredged material deposition, these areas would revert back to habitat similar to what currently exists.

A proposed motor vehicle detour route, which is a component of these plans, would skirt the western edge of an undeveloped tract of woods within the leveed and drained area of St. Bernard Parish. This 155-acre tract, located between Patricia Street and the Florida Walk Canal, is the largest remaining tract of undeveloped wooded land in St. Bernard Parish, upriver of Louisiana Highway 47. The road is planned as a permanent route to alleviate traffic congestion on existing residential roads and would connect St.

Bernard Highway and Judge Perez Boulevard with Florida Avenue. A wetland determination conducted by the New Orleans District in response to a request by a private party found that the wooded area is not a jurisdictional wetland subject to Section 404(b)(1) of the Clean Water Act.

A local drainage canal (the Guerenger Canal) separates the wooded tract and the residential development to the west. A cleared strip of land, strewn with municipal trash and construction debris, lays between the wooded area and the Guerenger Canal. The detour route would be built on the western edge of the wooded area, through the cleared strip of land adjacent to the drainage canal. The cleared strip is approximately 100 feet wide and extends the full length of the wooded tract. A 90-foot right-of-way is needed for construction of the detour road. The road would be constructed as close to the canal as possible, while leaving enough space for safety. Depending on the final alignment of the road, a very narrow strip of woods may have to be removed to allow sufficient right-of-way for the road. In addition, a minor amount of clearing may be necessary to remove or trim trees leaning over the proposed roadway. Assuming that, at most, an additional 50-foot strip may be needed, 2.8 acres of wooded land would be cleared. No compensatory mitigation is planned for the potential loss of this wooded land. The mitigation plan for the graving site would over-compensate for those impacts. The excess mitigation would provide out-of-kind mitigation for the loss of this wooded land.

The proposed graving site has the potential to affect adjacent wooded lands if care is not taken to prevent draining. The adjacent wooded land remains very wet throughout the year and supports a variety of plant and animal species tolerant of, or requiring, saturated soil conditions. No draining of adjacent wooded lands would be allowed for site preparation.

### **5.3.18. Coastal Wetlands**

5.3.18.1. Affected Environment. The biological study area contains extensive freshwater and brackish marsh and shallow, open water areas. Some of the wetlands are located within a hurricane levee protection system, but normal tidal flows are allowed through floodgates and the areas remain part of the tidal system. Most of the freshwater wetlands are located within the Bayou Sauvage National Wildlife Refuge and are maintained through water control structures and pumps. Some small freshwater wetlands are scattered throughout the remaining undeveloped areas within the hurricane protection systems. One such wetland would be affected by the proposed graving site.

Although within a forced drainage area, the graving site is isolated from drainage canals by filled land and the area remains flooded by rainwater. The area was once had its own pumping facility, but it has fallen into disrepair. The general area of 103 acres, within which the graving site would be built, contains a variety of wetland types

including aquatic bed (floating aquatic vegetation), wooded ridges (remnant canal banks), bottomland hardwood forest, herbaceous wetlands dominated by sedges, and scrub/shrub areas dominated by buttonbush and eastern baccharis. The direct impact site is restricted to the south-west corner of the wetland, which includes mainly aquatic bed and wooded ridges. Details are shown on Plate 28.

Field investigations of the graving site wetland show that a variety of wildlife utilize the area. Species observed include swamp rabbits, nutria, mottled ducks, wood ducks, alligators, black-crowned night herons, great egrets, great blue herons, snowy egrets, little green herons, tricolored herons, little blue herons, glossy ibis, white ibis, snakes, and frogs. Fish resources are limited by the high coverage of floating aquatic vegetation and the shallow nature of the site.

In the brackish marsh of the study area is saltmeadow cordgrass or wiregrass. Other species in the brackish marshes of the study area include saltmarsh cordgrass or oystergrass, saltgrass, black rush, and leafy three square. Scrub/shrub habitat occurs along canal and bayou banks that are slightly higher in elevation than the areas dominated by marsh species. Freshwater wetlands contain a variety of annual plant species including sedges, rushes, alligatorweed, deerpea, rattlebox, coffeeweed, and cattail. The scrub/shrub areas are dominated by eastern baccharis.

The tidal wetlands of the study area provide habitat for populations of recreationally and commercially important species of wildlife, including nutria, muskrat, raccoon, mink, otter, and alligator. Wintering and resident waterfowl, shorebirds, wading birds, and songbirds are common. The tidal wetlands also function as nursery areas for important fishery species, such as blue crab, brown and white shrimp, menhaden, striped mullet, Atlantic croaker, spotted and sand seatrout, black and red drum, and southern flounder.

The tidal wetlands within the study area are being lost to open water. A variety of factors contributes to this problem. Subsidence and compaction of underlying sediments, the lack of sediment input from river systems, saltwater intrusion, and wave erosion are likely the main reasons for the loss of marsh in the study area.

Prominent features in the biological study area are three large bodies of shallow open water. A triangular area of about 400 acres, and two square areas, each covering about 500 acres, are located just north of the Back Protection Levee protecting Orleans and St. Bernard Parish, east of the IHNC. Although these areas are now open water, they were covered by cypress swamps not long ago. Photos from the 1960's show most of the trees were still alive, although they were standing in water and no understory or groundcover was present. Hundreds of dead cypress trees and cypress stumps are still noticeable in these areas. The water depth of these areas ranges from less than one foot to about four feet. Some of the open water areas contain aquatic vegetation, mainly widgeongrass. Widgeongrass, which is common in brackish water, is normally

considered to be a desirable aquatic plant. It is a sought-after food by many species of waterfowl and provides forage and shelter for estuarine fish and shellfish.

These open water areas receive a significant amount of urban storm water runoff from two pumping stations. One pumping station, which drains most of the lower Ninth Ward of Orleans Parish, discharges into the headwater of Bayou Bienvenue. The other pumping station, which drains a large portion of Arabi and Chalmette in St. Bernard Parish, discharges into a canal that separates the two large square-shaped areas of open water. Two major landfills and a sewerage treatment plant are also located in this area.

5.3.18.2. Plan 1 (No-Action). The existing condition of the biological study area is not expected to change significantly. No development of the graving site is projected for the future without project condition, and only minor changes in the habitat values of the area were predicted. The tidal marshes would continue to be lost to open water due mainly to land subsidence and erosion but much of the existing marsh would likely still exist at the end of the project life. Significant urban expansion into the tidal wetlands is not likely because of inadequate flood protection, low elevation, and lack of drainage. The freshwater wetlands of Bayou Sauvage National Wildlife Refuge will be affected beneficially by pumping facilities which will allow increased water level manipulation.

The operator of the sewage treatment facility, mentioned under Existing Conditions, has been granted a Section 404(b)(1) permit to deposit biosolids and ash generated at the facility in the open water immediately west and north of the facility. As much as 45 acres of the open water could be used for disposal. The disposal would serve a dual purpose: to dispose of the waste product and to determine if the material is suitable for wetland development. Test plantings and treatments would be undertaken to determine the best methods for vegetating the material.

5.3.18.3. Plan 2. This plan would have no effect on coastal wetlands.

5.3.18.4. Plans 3a through 3f

5.3.18.4.1. Effects

The graving site impact area was evaluated with the U.S. Fish and Wildlife Service's Habitat Evaluation Procedures (HEP). HEP is a species-based evaluation system, wherein habitat quality is determined for key species that are representative of the habitat. The suitability of a habitat or Habitat Suitability Index (HSI) is determined for each species evaluated. HSI ratings range from zero to 1.0, with zero meaning that the habitat is worthless and 1.0 meaning that the habitat is optimal. One acre of the best possible habitat would therefore yield one habitat unit. Habitat units annualized for the life of the project are referred to as average annual habitat units (AAHU's).

The species chosen for use in the HEP were great egret (feeding) and mink. Both of these species are common in the study area. Models for other species were not applicable because of the isolated nature of the wetland, its permanently flooded nature, and proximity to disturbance. The area was found to have an HSI value of 0.61 for great egret and 0.28 for mink. The AAHU's provided by the impact site under future without project conditions would be 17.0 for great egret and 13.9 for mink.

#### 5.3.18.4.2. Mitigation

The use of material from lock and bypass channel excavation has been evaluated for use in wetland restoration. Most of this material has been found to be unsuitable for wetland restoration because of contaminants. However, the soil along the east bank of the IHNC below a depth of 5 feet has been determined suitable for aquatic disposal and wetland restoration. This material would be used beneficially as mitigation for impacts attributable to the graving site. Dredged material would be discharged into a confined site within a large triangular-shaped area of open water located northeast of the new lock site (Plate 26). Shallow-draft lock plans would require less excavation than deep-draft plans, hence less material would be available for mitigation and wetland restoration. Shallow draft lock plans would generate enough material to create about 31 acres of marsh, whereas about 41 acres could be developed with the deep-draft plans. Wetlands in excess of those necessary for mitigation of graving site impacts would be developed because there would be ample dredged material available and there would be no incremental cost involved. This is because once the dredging operation is setup for discharge into the mitigation site, the cost of disposal would be comparable to the cost of depositing the material in the least costly, environmentally acceptable manner (in confined MRGO disposal areas). Additional information on the graving site and mitigation plan are presented in Appendix D, Section 10.

The goal at the mitigation site would be to create emergent wetlands in an area which now contains shallow brackish water. The site would be built adjacent to the perimeter of the large triangular area so that the existing land would act as a corridor for animals to colonize the mitigation site, and so that the site would not be isolated. The dredged material would be deposited so that, after a period of settling, the elevation would be suitable for colonization by marsh plant species. Low-level dikes constructed to contain the material would be higher in elevation, and would be colonized by scrub/shrub and pioneer tree species. An overflow structure or spill-box would be placed in the containment dike for excess water discharge. The ideal situation for evaluated species would be for the dredged material to vary somewhat in settled elevation so that most of the area develops into marsh, and some of the area remains shallow water suitable for foraging. Scrub/shrub and trees growing on the containment dike would provide escape cover for terrestrial animals during storms and perching and nesting sites for avian species.

Use of uncontaminated soils as mitigation for the deep-draft lock plans, including the tentatively selected plan (Plan 3F) would provide 30.5 AAHU's for great egret and