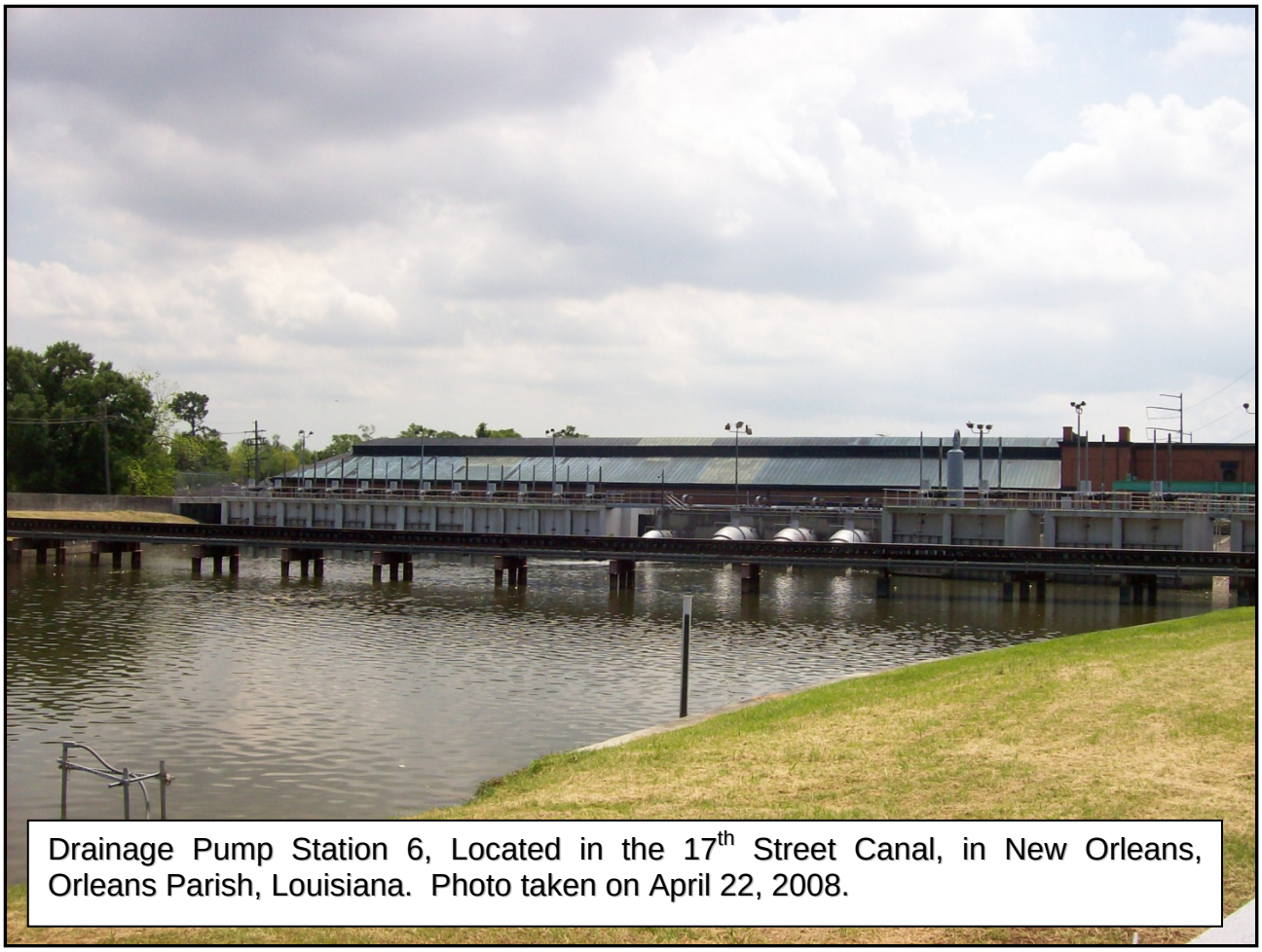
U.S. ARMY CORPS OF ENGINEERS
ORLEANS PARISH PUMP STATION
STORMPROOFING ACTIVITIES
ENVIRONMENTAL ASSESSMENT
EA# 474
(Amended May 15, 2009)



Drainage Pump Station 6, Located in the 17th Street Canal, in New Orleans, Orleans Parish, Louisiana. Photo taken on April 22, 2008.

Prepared by:
U.S. Army Corps of Engineers
New Orleans District
Hurricane Protection Office

Avenue and Prentiss Avenue Canals to the London Avenue Canal. The entire perimeter of the exterior wall of the original pump station structure would be coated with an approved water proofing material at least to the DFL on the exterior surface.

The wooden doors would be replaced with storm doors, and the rollup doors would be replaced with hurricane rated units. The doorways would be modified to accept an approved flood barrier. The entire roof system would be replaced. All windows would have manually operated hurricane shutters installed, and all exhaust fans and intakes would be modified or replaced with roll type shutters. Buttresses would be constructed to ensure the walls withstand the wind loading scenario.

The basement would be utilized as a leakage collection sump and would house a larger submersible leakage removal pump. A dike wall would be constructed around pumps C, D, E, and the Constant Duty pump, and dry run sump pumps would be placed within the proposed dike areas of the three horizontal pumps. The handrail around the Constant Duty pit would be replaced with a permanent masonry/steel plate wall. Access ways would be modified to accept inflatable seal barriers.

The 60 HZ and 25 HZ switchgear would either be water protected up to the DFL or be relocated on a new elevated platform. A pump station building generator is proposed to supply 60 HZ power for house lighting, communications, and to power the proposed station leakage removal pumps. This generator would be located inside the existing facility. An approximate 1,000 gallon fuel tank is proposed for the building generator. Earthen berms and/or fuel containment structures would be constructed in full compliance with applicable regulations to prevent fuel spills or leaks. The design details of the fuel containment structures would be determined during the design phase of the project.

A water well (approximately 200 – 700 foot deep) would be drilled to the north of the station within existing pump station property to supply backup water for equipment cooling and lubrication.

DPS #5

DPS 5 is located on the east side of the Inner Harbor Navigation Canal (IHNC) along Florida Avenue (see page A-6). This station pumps water from the Florida Avenue and Jourdan Avenue Canals to Bayou Bienvenue. Since the DFL projects nine feet of water on the existing older station pump floor, it was not deemed safe or feasible to provide enhanced water protection for the station superstructure to the full extent of the DFL. It is possible to protect against lower levels of flooding, and that level would be determined during the detailed design phase. DPS 5 is listed as historically significant and is eligible for nomination to the NRHP; therefore, specialized design measures may be required by the State Historic Preservation Office.

The doors would be replaced with storm doors, and the rollup door would be replaced with a hurricane rated unit. The entire roof system of the original station and expansion would be replaced, and the roof trusses would be secured to the foundation by a tethering system. All windows would have manually operated hurricane shutters installed, and all exhaust fans and intakes would be modified or replaced with roll type shutters.

DPS No. 5 is composed of two pumping configurations on this site. The first is the older station consisting of 1,260 cfs pumping capacity. The second is a single 1000 cfs horizontal pump. This second configuration was built later along with a siphon under the Inner Harbor

Dry run sump pumps would be installed in the walled Frequency Changer pits and on the lower floor levels.

Old River Intake Pump Station

The Old River Intake Pump Station is located along River Road at the intersection of Oak Street and Monticello Avenue (see page A-25). This station pumps water from the Mississippi River to the Carrollton Water Plant and Power Complex. The entire perimeter of the exterior wall would be coated with an approved waterproofing material at least to the DFL on the exterior surface. In addition, existing leaks in the pump drywell would be sealed by chemical grout injection.

The doors would be replaced with storm doors, and the rollup door would be replaced with a hurricane rated unit. The doorways and louvered openings would be modified to accept an approved flood barrier. The roof would be replaced, and the roof trusses would be secured to the foundation by a tethering system. All windows would have manually operated hurricane shutters installed, and all exhaust fans and intakes would be modified or replaced with roll type shutters. Buttresses would be constructed to ensure the walls withstand the wind loading scenario.

A pump station building generator is proposed to supply 60 HZ power for house lighting, communications, control instrumentation, and to power the proposed station leakage removal pumps. This generator would be located inside the existing facility.

As water seepage enters the facility it would drain to the Pump A through C drywell where existing sump pumps would be augmented with the addition of a new submersible pump.

New River Intake Pump Station

The New River Intake Pump Station is located inside the Mississippi River Levee along River Road at the terminus of Industrial Avenue (see page A-26). This station pumps water from the Mississippi River to the Carrollton Water Plant and Power Complex. The doors would be replaced with storm doors, and the roof would be replaced. All windows would have manually operated hurricane shutters installed, and all exhaust fans and intakes would be modified or replaced with roll type shutters. Buttresses would be constructed to ensure the walls withstand the wind loading scenario.

A pump station building generator is proposed to supply 60 HZ power for house lighting, communications, control instrumentation, and to power the proposed station leakage removal pumps. This generator would be located inside the existing facility.

Carrollton Water Plant and Power Complex

The Carrollton Water Plant and Power Complex is located at the corner of Claiborne Avenue and Monticello Avenue (see page A-27 and Photograph 3). Enhanced water protection would be accomplished by installation of approximately 2,500 feet of a 3 foot to 6 foot high concrete floodwall along the current perimeter fence. The floodwall would be extended around the perimeter of the facility and tied into the existing Monticello levee on the west side of the plant along Monticello Avenue. This proposed floodwall would protect all of the Power Complex and the Water Plant facilities from flood damage which produces clean cooling water for the turbine generators. Should the DFL occur, the barrier would allow continued operation of the power plant, as long as auxiliary facilities such as the Old River and New River Intake Pump Stations remain operational.

Main roadway accesses would be sealed with hinged flood barriers. Water inflated barriers would also be maintained on site for use in the event that flood gate damage prevents their proper operation.

To prevent further water intrusion from entering the Carrollton Water Plant and Power Complex through the existing stormwater drain and sewer lines, valves would be installed at all locations where these lines penetrate the protected perimeter. Select sewer lines would have small sewage stations installed with backflow prevention to allow continued use of bathroom facilities.

Photograph 3. Overall view of Carrollton Water Plant and Power Complex. Photo taken on April 23, 2008.

Leakage and rainwater removal from the site would be accomplished by the installation of self priming diesel engine or electrical driven pump units. These units would use existing drainage manholes for water collection and removal and would be located at numerous locations through the plant.

In addition to flood barrier protection of existing power generation equipment, a flood proof backup 15 MW 13.8KV 60 HZ gas/diesel turbine generator is proposed, along with completion of the 60 HZ feeder to DPS 1. The generator would be located within a new gas turbine building, which is proposed south of the existing gas compressor building along Leonidas Street.

A backup diesel driven water pump is also proposed. This unit would significantly decrease the time required to start the power plant steam generation process from a total plant cold start. This unit would be installed adjacent to boiler #1 and exhaust into the boiler forced draft duct system. A backup diesel drive potable water booster with priming capabilities is proposed in the A and B pump room to provide local water pressure during a total plant cold start.

One 250,000 gallon fuel tank would be constructed in the vicinity of the adjacent to the new gas turbine building in the corner of Spruce Street and Leonidas Street. Earthen berms and/or fuel containment structures would be constructed in full compliance with applicable regulations to prevent fuel spills or leaks. The design details of the fuel containment structures would be determined during the design phase of the project.

During further detailed site investigations and engineering analysis it was determined that the Carrollton Power Plant Complex could be provided with a Perimeter Water Protection system with a much more cost effective approach with all critical power production facilities protected. The location of this revised Perimeter Water Protection system is shown on the revised aerial drawing in Appendix A-27.

The following paragraphs outline specific details of the proposed action for specific buildings within the Carrollton Water Plant and Power Complex.

Central Control Building
The doors would be replaced with storm doors, and the rollup door would be replaced with a hurricane rated unit. The roof would be replaced, and all windows would have manually operated hurricane shutters installed.

Powerhouse #2, 5KV Building, Boiler Room, Low & High Lift Structure
The doors would be replaced with storm doors, and the roof would be replaced. All exhaust fans and intakes would be modified or replaced with roll type shutters. Buttresses would be constructed to ensure the walls withstand the wind loading scenario.

Gas Compressor Building
The doors would be replaced with storm doors, and the rollup door would be replaced with a hurricane rated unit. The roof would be replaced. All windows would have manually operated hurricane shutters installed, and all exhaust fans and intakes would be modified or replaced with roll type shutters. Buttresses would be constructed to ensure the walls withstand the wind loading scenario.

Plant Frequency Changer Building
The doors would be replaced with storm doors, and the rollup door would be replaced with a hurricane rated unit. The roof would be replaced, and all exhaust fans and intakes would be modified or replaced with roll type shutters. Buttresses would be constructed to ensure the walls withstand the wind loading scenario.

Construction Sequencing Plan
In order to minimize the impact on the drainage pumping capacity, the projects would be built in a phased construction approach. Due to the available funding limits these proposed projects would be awarded sequentially beginning at the top of the proposed list and proceeding until all appropriated funds have been expended. During the execution of the stormproofing program, this construction sequence plan could be adjusted if operational, engineering, or funding concerns developed. Within the projects currently programmed to be within available funding amounts, adjustments to bidding schedules may occur.

The 4th and 6th Supplementals provided discrete funding amounts. The current budget includes costs for planning, engineering, project management, and construction, as well as an allowance for escalation, inflation and unforeseen construction issues. However, based on actual costs during construction, all of the stormproofing projects currently identified may not be constructed. These projects have been sized to create projects that may appeal to more contractors in order to develop more interest and competition with the goal of achieving lower construction costs. These projects have also been sequenced in order to build as much if not all of the Orleans Parish identified stormproofing needs as possible within the funding constraints of the 4th and 6th Supplementals.

The proposed Construction Plan and associated sequencing was coordinated and developed in detail with the support and concurrence of the Sewerage & Water Board of New Orleans to maximize the amount of work that could be completed and the percentage of the area's drainage system that could be stormproofed given the discrete funding amount available. The following is the proposed Construction Plan in the order that these projects will be awarded and constructed.

The first four projects below primarily stormproof and increase the reliability of the S&WB power production and distribution system for the pump stations in Orleans Parish. The S&WB power

system provides the power to more than half of the pumping capacity in Orleans Parish and is the backbone of the drainage system.

OSP-01: 15 MW 60 Hz Generator at the Carrollton Power Plant

OSP-02: 60 Hz Underground Feeder

OSP-03: Carrollton Power Plant Perimeter Water Protection

OSP-04: Stormproofing Carrollton Power Plant Buildings, Old and New River Stations

The next seven projects (OPS-05, OPS-06, OPS-12/13, OPS-07, OPS-08, OSP 09 and OPS-10) completes the stormproofing of approximately 95% of all pumping capacity within Orleans Parish (see pump station capacities below.) Detail scope related to the stormproofing needs at each of the pump station sites is provided earlier in this section associated with the Proposed Actions.

OSP-05: Stormproofing DPS 5 and 60 Hz Generator: This project provides for the stormproofing of the sole pump station to drain the Lower 9th Ward. Because this system lacks redundancy, the need to complete this project is higher.

OSP-06: Stormproofing DPS 3, 6, and 20 and 60 Hz Generator: This project provides for the stormproofing of three large pump stations. DPS 3 and 6 both take drainage from other pump stations; therefore, stormproofing these stations helps safeguard the drainage capacity for the stations' respective basins. DPS 20 serves a large area of New Orleans East.

OSP-12/13: Stormproofing DPS 13 and 60 Hz Generator: This project provides for stormproofing of a large pump station serving the Algiers area of New Orleans.

OSP-07: Stormproofing DPS 7 and 60 Hz Generator: This project provides for the stormproofing of a large station that takes drainage from other pump stations. Stormproofing this station helps safeguard the drainage capacity of the station's entire basin, including the drainage areas of the smaller pumps that feed into the station.

OSP-08: Stormproofing DPS 1, 2, 4, 12, 19, and I-10: This project provides for the stormproofing of several larger stations serving the central portions of the older sections of New Orleans, Gentilly, Lakeview, and the Upper Ninth Ward. DPS I-10 helps ensure that the hurricane evacuation route of I-10 remains open and does not flood.

OSP-09: Stormproofing DPS 11, 14, and 16: This project provides for the stormproofing of stations serving the English Turn and Lakefront area of New Orleans East.

OSP-10: DPS 17 60 Hz Generator: This project provides for back-up power at a station serving portions of Gentilly and the Upper Ninth Ward.

Based on current construction cost estimates, the generator for DPS 10 described below is within the available funding and that portion of OSP-11 could be constructed. The stormproofing portion of OSP-11 (DPS-10) and the last three projects (OSP-14, OSP-15, and OSP-16) of the program provides for stormproofing of six smaller pump stations that total

approximately five-percent (5%) of the total pumping capacity in Orleans Parish (See pump station capacities below). If construction costs do not escalate and the bidding environment is favorable these projects can be constructed within the available funding. However, if actual costs come in above the current estimates, funding may not be available for a portion if not all of these projects below. The need to stormproof these pump stations is less in comparison to the needs of the other pump stations in the New Orleans pump station system.

OSP-11: Stormproofing DPS 10 and 60 Hz Generator:
This project provides for stormproofing DPS 10 and provides for 60 Hz generator power. DPS 10 is one of three stations that serve the Lakefront area of New Orleans East. This station receives partial back-up power from DPS 14 and DPS 16. Drainage flow along the New Orleans East lakefront area is shared by DPS 10, 14, and 16. Flow to any of these stations can be diverted to the other two stations. Therefore the need to stormproof DPS 10 is less than the stations stormproofed in OSP-01 through OSP-10.

OSP-14: Stormproofing DPS 17:
This project provides for stormproofing DPS 17. DPS 17 serves portions of Gentilly and Upper 9th Ward. A generator will be added to DPS 17 as part of OSP 10 which is currently projected within the available funding. Flow from DPS 17 can be diverted to DPS 19 that was stormproofed earlier in this sequence and therefore the need to stormproof DPS 17 is less.

OSP-15: Stormproofing Carrollton Frequency Changer Building:
This project provides for stormproofing the Carrollton Frequency Changer Building. This 25 Hz frequency changer building distributes power to many pump stations requiring 25 Hz power. This is a back-up secondary distribution system for the 25 Hz power and therefore the need to stormproof this facility is less critical.

OSP-16: Stormproofing DPS 15, 18, Grant, Monticello, and Pritchard:
This project provides for stormproofing DPS 15, 18, Grant, Monticello and Prichard. These five pump stations are run automatically and house no operational personnel during a storm event. DPS 15 serves the industrial areas in the extreme eastern portion of New Orleans East and was not flooded during Hurricane Katrina. DPS 18 is a small open-air pump station that serves a portion of extreme eastern portion of New Orleans East. Flow from DPS 18 can be diverted to DPS 15 and therefore the need to stormproof this pump station is reduced. Also DPS 15 and 18 were operational after Hurricane Katrina. DPS Grant is a newer small station that serves a portion of lower New Orleans East. Grant pump station was restored to functional capacity quickly after Hurricane Katrina. Elaine pump station has not been included in the stormproofing program because the two pumps for this station are being completely replaced in the USACE pump station repair program. Flow from Grant pump station can be diverted to DPS 20 and Elaine pump station and therefore the need to stormproof Grant pump station is less than Elaine and DPS 20. Monticello and Pritchard pump stations serve the Hollygrove area of New Orleans. Pritchard pump station is a robust new station that was constructed under the SELA program. Monticello pump station is also a newer pump station that was constructed to more recent stronger design standards. Monticello and Pritchard pump stations sustained only minor damage during Hurricane Katrina. Drainage flow can be diverted from Monticello pump station to the Pritchard pump station and therefore the need to stormproof Monticello pump station less than Pritchard. Pritchard pump station has back-up generator power and because this station was recently constructed, the need to stormproof this station is less others in the system.

The table below shows the total drainage pumping capacity for Orleans Parish by area and pump station.

Capacity of Orleans Parish Pump Stations

Pump Station	Number of Pumps	Horizontal Pumps	Vertical Pumps	Constant Duty Pumps	Design Capacity (cfs)	25 Hz Capacity (cfs)	Diesel Capacity (cfs)	60 Hz Capacity (cfs)
Metro Orleans East Bank Total Pumping Capacity 36,327 cfs								
PS #1	11	7	2	2	6,825	4,625		2,200
PS #2	7	4		3	3,190	3,190		
PS #3	9	5		4	4,260	4,260		
PS #4	6	3	2	1	3,720	3,080		640
PS #6	15	9	4	2	9,480	6,280		3,200
PS #7	5	3		2	2,690	1,690		1,000
PS #12	1	1			1,000	1,000		
PS #17	2		2		300			300
PS #19	5	3	2		3,650			3,650
I-10	4		4		860			860
Monticello	3		3		99			99
Prichard	2		2		253			253
Lower Ninth Ward Total Pumping Capacity 1,860 cfs								
PS #5	8	2	2	4	1,860	1,260		600
Lower Algiers/English Turn Total Pumping Capacity 1,670 cfs								
PS #11	5	4		1	1,670	500		1,170
Algiers Total Pumping Capacity 4,650 cfs								
PS #13	7	4	2	1	4,650		2000	2,650
New Orleans East Total Pumping Capacity 4,862 cfs								
PS #10	4		4		1,000			1,000
PS #14	4		4		1,200			1,200
PS #15	3		3		750		++ 500	750
PS #16	4		4		1,000			1,000
PS #18	2		2		150			150
PS #20	2		2		500			500
Grant	6		6		172			172
Elaine	2		2		90			90
Total	117	45	52	20	49,369	25,885	2,500	21,484

disturb and suspend soils, such as vehicle trips on unpaved roads, bulldozing, compacting, truck dumping, and grading operations. Operation of construction equipment, pump station generators, and support vehicles would also generate VOCs; PM-10, NOx, CO, ozone and SOx emissions would be generated from diesel engine combustion.

Due to the short duration and limited activities of the construction project, any increases or impacts on ambient air quality would be expected to be short-term and minor. No significant impacts to air quality would be expected to occur as a result of implementing the Proposed Action.

Standard construction BMPs, such as routine watering of access roads, would be used as a primary means of fugitive dust control during the construction phases of the Proposed Action.

Future Conditions with Alternative 1
The impacts from implementation of Alternative 1 would be greater than those described for the Proposed Action because additional construction would occur and additional equipment would be operated.

SOCIAL AND ECONOMIC RESOURCES

Compliance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, is institutionally important. Evaluating all actions to determine if they disproportionately affect low income or minority populations is technically important. The displacement of substantial numbers of existing housing or people is publicly important.

Existing Conditions

Population and Demographics
According to the 2000 U.S. Census, the population of Orleans Parish in 2000 was 484,674 and in 2006, it had dropped to 223,388 after Hurricane Katrina. The 2006 American Community Survey lists the percentage of race of Orleans Parish as White (36.7 percent), followed by African-American (58.8 percent) and Asian (2.8 percent), with the remaining 1.6 percent of the population divided between American Indians and Alaskan Natives, Native Hawaiians and other Pacific Islanders, and other races (Table 7).

Table 7.
Demographics of Orleans Parish

Year	Total Population	White (%)	African-American (%)	American Indian and Alaska Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Hispanic* (%)	Some other race (%)	Two or more races (%)
2000	484,674	28.1	67.3	0.2	2.3	0.02	2.9	0.9	1.3
2005	437,186	28.1	67.5	0.2	2.4	0.0	3.1	0.7	0.9
2006	223,388	36.7	58.8	0.1	2.8	0.04	4.0	0.7	0.5
2007 **	301,016	31.6	63.5	0.2	2.7	0.0	4.0	1.1	1.0

Source: U.S. Census 2008; *Hispanics may be of any race. **Estimates.

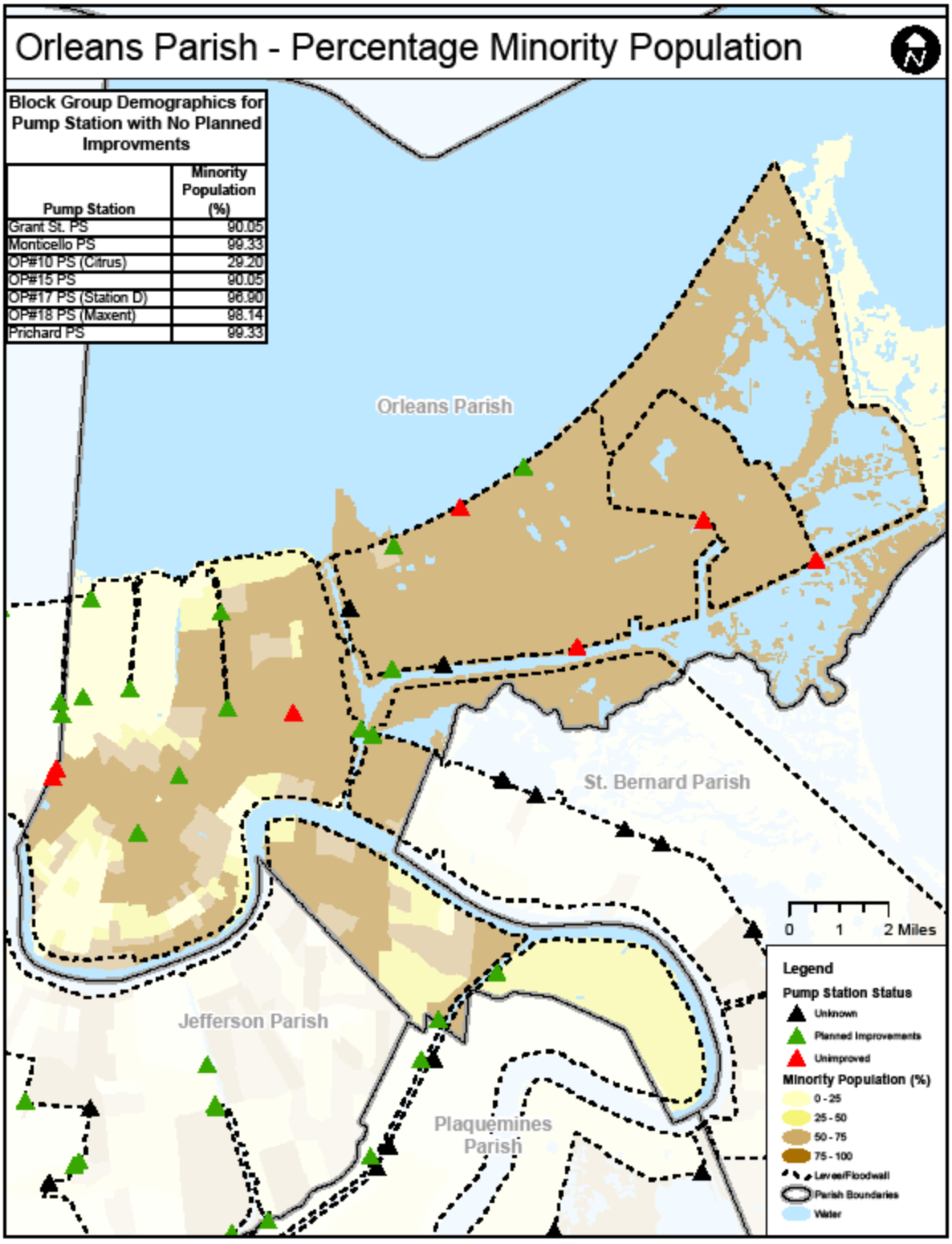


Figure 4. Orleans Parish Polders and Demographics

Economic

In 2000, Orleans Parish had a median household income of $27,133 and a median family income of $32,338. The percent of individuals below poverty level was 23.7 percent. After Hurricane Katrina, the median household income was $35,859 and the median family income was $47,754. The percent of individuals below poverty level in 2007 was 22.6 percent. The Health and Human Services state that the 2008 poverty threshold for a family of four is $21,200. See Table 8 for more economic information for Orleans Parish.

Table 8.
Economic Information for Orleans Parish

Year	Total Population.	Median Family Income	Median Household Income	Individuals Below Poverty Level (%)	Pop. Over 16 Yrs.	In Labor Force	Individuals in Workforce (%)
2000	484,674	$32,338	$27,133	23.7	370,138	213,819	57.8
2005	437,186	$39,428	$30,711	21.8	336,748	214,525	63.7
2006	223,388	$47,754	$35,859	16.0	179,325	105,853	59.0
2007**	301,016	$43,661	$35,409	22.6	-	-	-

Source: U.S. Census 2008. **Estimates.

Housing

According to the 2000 U.S. Census Bureau, Orleans Parish had a total of 188,251 occupied housing units (Table 9). The Federal Emergency Management Agency and the Small Business Administration estimate that of these units, 29,241 suffered minor damage, 26,405 suffered major damage, and 78,918 suffered severe damage from Hurricanes Wilma, Katrina, and Rita (U.S. Department of Housing and Urban Development 2006a and 2006b). The SBA estimates that the median verified loss for major damage was $80,884 and for severe damage was $107,815 for these three hurricanes.

Table 9.
Housing Information for Orleans Parish

Year	Total Housing Units	Occupied Units	Vacant Units
2000	215,091	188,251	26,840
2005	213,137	163,334	49,803
Post Hurricane Katrina			
2006	105,661	73,516	32,145

Source: U.S. Census 2008

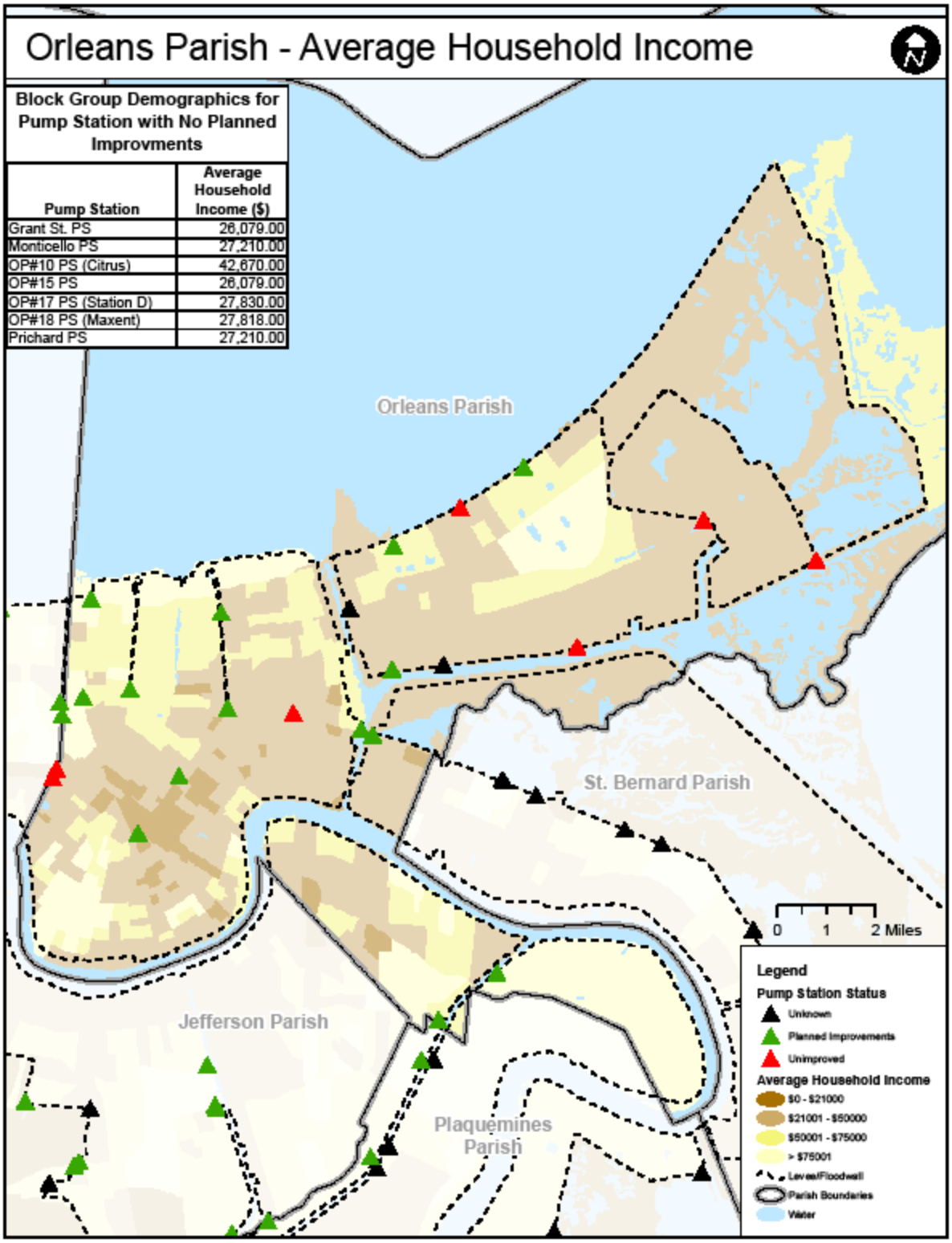


Figure 5. Orleans Parish Polders and Income.

Environmental Justice

This resource is important because of Executive Order 12898 of 1994 and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. The Environmental Protection Agency (EPA) defines Environmental Justice as the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.

In 2007 the Census Bureau estimated that 18.6% of families in Orleans Parish lived at or below the poverty level. That year, the poverty threshold was $10,590 for an individual and $21,203 for a family of four. Demographic estimates for Orleans Parish totaled 31.6% White and 68.4% Minority.

The demographics of the project area were evaluated in detail using Census block group statistics from 2000 and the 2005 - 2007 American Community Survey estimates. The proposed action does not disproportionately occur in low-income or minority neighborhoods, however the locations of the facilities that receive storm proofing later in the construction sequence fall predominantly within minority or low-income communities when compared to the greater average.

According to the November 2005 CRS Report for Congress, *Hurricane Katrina: Social-Demographic Characteristics of Impacted Areas*, Hurricane Katrina disproportionately impacted poor and minorities, mostly African-Americans (Gabe *et al*. 2005). A total of 272,000 African-Americans were displaced by flooding or damage, accounting for 73 percent of the population affected by the storm (Gabe *et. al*. 2005). Sixty-seven percent of the total population of Orleans Parish prior to Hurricane Katrina was comprised of African-Americans (U.S. Census Bureau 2008). Because of the USACE's commitment to fair and equitable treatment this current proposed action has been evaluated for consistency with Executive Order 12898.

The pumps within Orleans affect a greater basin area than the immediate community block group in which they are located. The impacts that would occur due to pump station failure due to inadequate storm proofing are compared at a basin or polder level for this analysis. Information on the names and locations of these stations are detailed in table 10.

Future Conditions with No Action

Under the No Action alternative, no stormproofing would take place. As a result, several pump stations would need to be abandoned during a severe tropical storm event and would not be able to operate through the entire storm event. Therefore, there is the potential for flooding in Orleans Parish and associated costs in damage to housing units and other public and commercial structures.

Future Conditions with the Proposed Action

With the implementation of the proposed action, short-term beneficial economic impacts would occur during construction activities from the associated construction costs and purchase of materials. The improvements at each DPS and the power complex would allow the facilities to operate throughout a storm event and would reduce the possibility of large-scale flooding in Orleans Parish. As a result, a reduction in the costs resulting from flooding damage would be expected from the implementation of the proposed action.

The additional hurricane, storm, and flood damage risk reduction resulting from implementation of the proposed action would benefit the entire parish.

The stormproofing work for installations in the New Orleans East and Orleans East Bank polders (figure 4) which is scheduled later in the Construction Sequencing Plan may not occur due to funding constraints. The pump stations that are scheduled for stormproofing later in the Construction Sequencing Plan and fall within low-income and/or minority communities are the Carrollton Frequency Changer, DPS 10, DPS 15, DPS 17, DPS 18, Grant, Monticello, and Pritchard. The rationale for sequencing these projects later in the plan was based on system pumping capacity, risk, current conditions, and elevation, among other criteria. If this stormproofing is not conducted at these stations it would not disproportionately affect any communities within the respective polders because the stations handle only five percent of the pumping capacity in Orleans Parish, and would be able to either run automatically during a storm event, or the flow could be diverted to adjacent pump stations. In contrast, failure to stormproof the major stations in these basins (DPS 1, 2, 3, 6 and 7) could increase the risk of flooding for all neighborhoods in their drainage basins, including the neighborhoods surrounding the eight facilities listed above.

The impacts of sequencing the stormproofing of these facilities are not disproportionately high in nature and are borne by other community groups affected by a particular pump capacity in a given area. Based on this analysis the proposed action would not disproportionately negatively impact minority or low-income populations in Orleans Parish.

Table 10. Environmental Justice Stormproofing Data

Zip Code	Minority Community (25%+)	Low-Income Community (to $21K)	Polder	PS Name	Improved?	Basin	Design Capacity (cfs)
70127	x		New Orleans East	OP 10	Conditional	Eastern NO	1000
70128	x		New Orleans East	OP 14	Yes	Eastern NO	1200
70126	x		New Orleans East	OP 16	Yes	Eastern NO	1000
70126	x		New Orleans East	OP 20	Yes	Lower Eastern NO	500
70129	x		New Orleans East	Grant	Conditional	Lower Eastern NO	172
70129	x		New Orleans East	OP 15	Conditional	Maxent	750
70129	x		New Orleans East	OP 18	Conditional	Maxent	150
70122	x		Orleans East Bank	OP 17*	Conditional	Bywater	300
70126	x		Orleans East Bank	OP 19	Yes	Bywater	3650
70119	x		Orleans East Bank	OP 3*	Yes	Bywater	4260
7-----	x		Orleans East Bank	Carrollton Frequency Changer	Conditional	Carrollton	n/a
70124			Orleans East Bank	I-10 UP	Yes	Carrollton	860
70118	x		Orleans East Bank	Monticello	Conditional	Carrollton	99
70118	x		Orleans East Bank	Pritchard	Conditional	Carrollton	253
70005			Other	OP 6	Yes	Carrollton	9480
70124			Orleans East Bank	OP 12	Yes	Lakeview/Gentilly	1000
70122	x		Orleans East Bank	OP 4	Yes	Lakeview/Gentilly	3720
70124			Orleans East Bank	OP 7*	Yes	Mid-City	2690
70125	x	x	Orleans East Bank	OP 1*	Yes	Uptown	6825
70119	x		Orleans East Bank	OP 2*	Yes	Uptown	3190
70126	x	x	Other	OP 5*	Yes	Lower 9th Ward	1260
70131	x		Other	OP 11	Yes	Lower Algiers	1670
70131	x		Other	NOSWB 13	Yes	Upper Algiers	4650

*NRHP Eligible

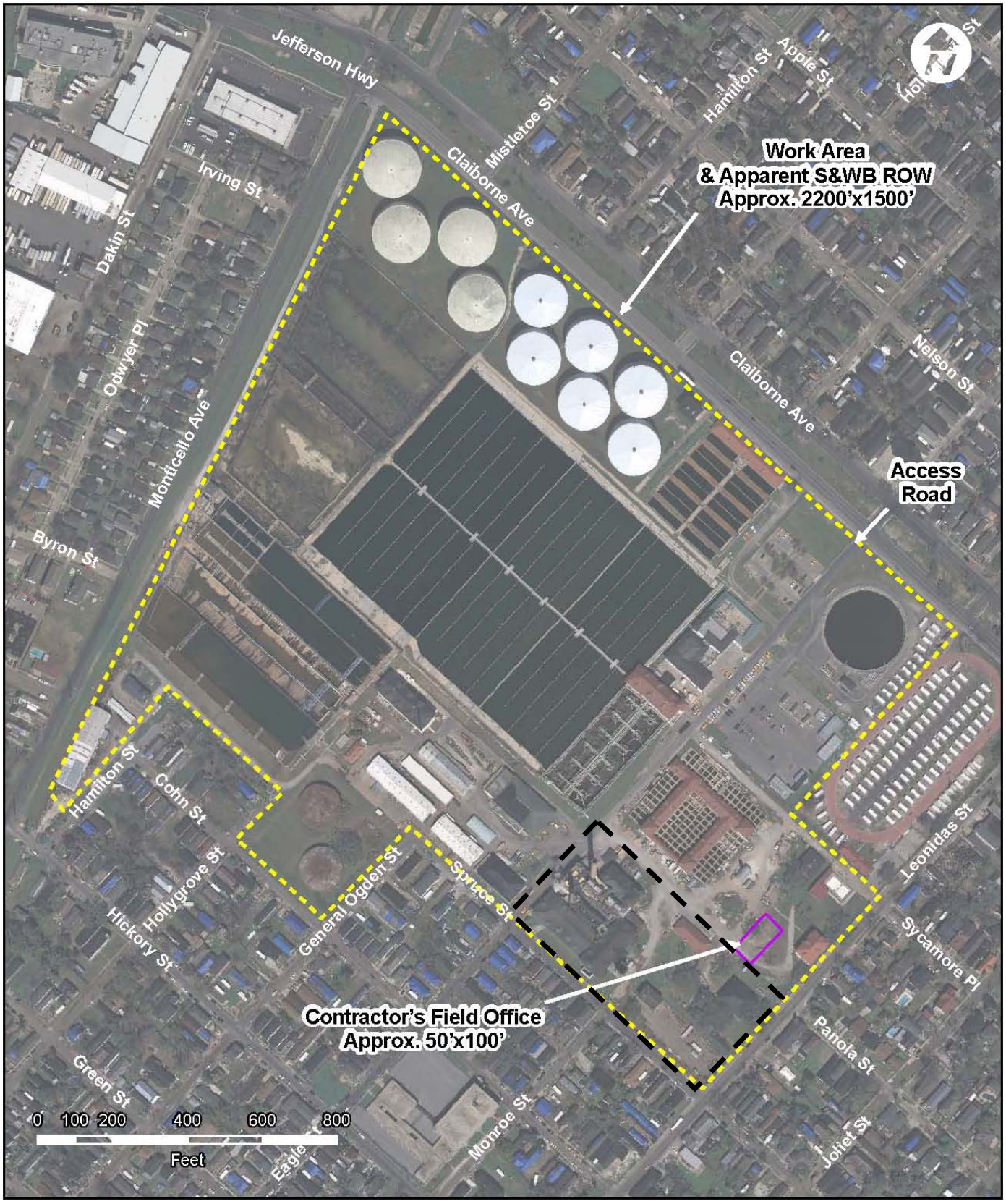
Future Conditions with Alternative 1

The beneficial impacts from implementation of Alternative 1 would be greater than those described for the Proposed Action because additional construction would occur. The adverse impacts would be similar to those described for the proposed action.

TRANSPORTATION

Existing Conditions

Access to the facilities for construction is provided by Interstate 10 (I-10) on the east bank and the West Bank Expressway (US 90) on the west bank (see Figure 1). Both I-10 and US 90 are limited access, divided highways. Secondary roads, such as State Highway 23 (Belle Chasse Highway), State Highway 47 (Hayne Boulevard), and local 2-lane street networks provide access to the pump facilities. Generally, the level of service for 1-10 and US 90, as well as



Carrollton Water Plant and Power Complex

Legend

- **Previous Perimeter**
- **Revised Perimeter**