

## **Appendix D**

# **Summary of Metropolitan New Orleans East-Bank Polders Demography and Community Resources**



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**DISASTERMAP.NET**

Independent Disaster Monitoring, Assessment, And Analysis



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## **1) Data and Methods**

This report presents a descriptive summary of the GNO East-Bank polders including select demographic attributes along with critical and essential facilities. This section describes data and methods used while the next two sections present the results. The final section provides a complete listing of data sources. In addition to the sub-basin polygons, the analysis utilized Census data at the tract level (polygons) and various point layers for facilities, such as schools, hospitals, and police stations. Naturally, the geoprocessing was slightly different for the two types of datasets, as described below.

### **Census**

The US Census Bureau provides a national level shapefile that provides basic population and housing information from the 2010 Census at the tract level. This shapefile includes attributes such as total population, population age 65 and over, total occupied housing units, etc. To summarize this data by sub-basin, the intersection of the sub-basins with the tracts was performed. Additional Census attributes, including income and disability status, from the 2012 American Community Survey were obtained a flat text files and then joined the tract shapefile using the tract FIPS code. Of note, the sub-basin boundaries did not all line up with the tract boundaries. To address this issue, the *intersection geoprocessing algorithm* creates a layer that includes all boundaries. So for example, if a tract is crossed by a sub-basin boundary, then the output from the intersection would include two polygons that would have all the attributes of the original tract but different attributes for the two sub-basins. After the intersection, the Census attributes were allocated proportional to area by multiplying the original value by the area of the new polygon divided by the area of the original tract. Following this step, the attributes were exported to Excel and then Pivot Tables was used to summarize the Census attributes by Sub-basins (see the tables in the next section.)

### **Critical and Essential Facilities**

Since facilities were included in point datasets, the steps for the facilities layers was much simpler. First a *spatial join* was used to join the sub-basins attributes to the point layers, and then the attribute table was exported into Excel to create summary tables.

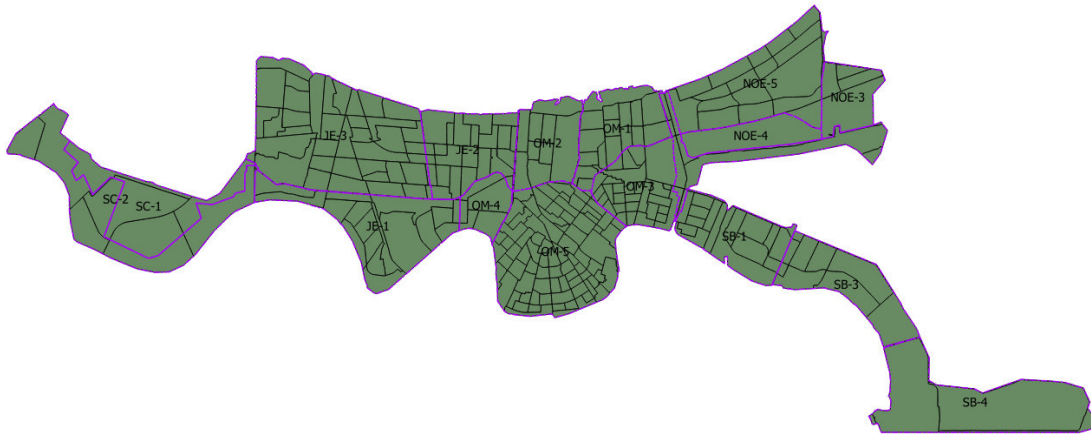


Figure 1: The Census tract boundaries (solid black line) and the sub-basin boundaries (purple dashed line.)

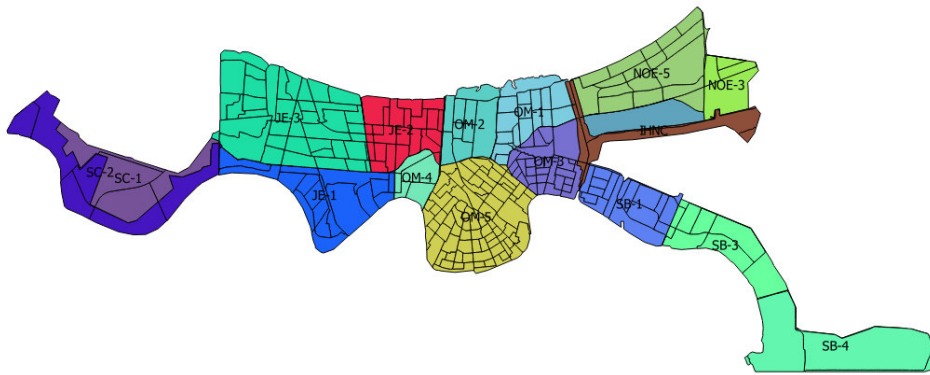


Figure 2: The intersection of the tracts and sub-basins. Each polygon feature is color coded by the sub-basin.

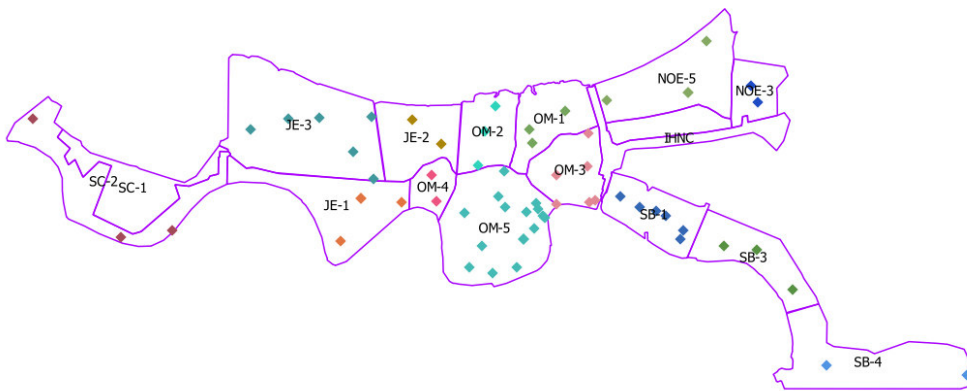


Figure 3: The police and fire stations with the sub-basin boundaries. The points are color coded by sub-basin.

## **2) Census Data**

This section provides summaries of basic 2010 Census attributes for each of the sub-basins. It includes tables for population, housing, and income/poverty.

The last section provides details on the sources and definition of each Census attribute.

**Population:** The table below lists the total population, the population 18 and under, and the population 65 and over for each of the sub-basins.

| <b>Sub-Basin</b>   | <b>Total Population</b> | <b>Population 18 and Under</b> | <b>Population 65 and Over</b> |
|--------------------|-------------------------|--------------------------------|-------------------------------|
| IHNC               | 2,702                   | 715                            | 279                           |
| JE-1               | 41,427                  | 7,752                          | 6,856                         |
| JE-2               | 58,444                  | 10,405                         | 10,231                        |
| JE-3               | 133,613                 | 28,935                         | 19,725                        |
| NOE-3              | 7,468                   | 1,966                          | 705                           |
| NOE-4              | 433                     | 75                             | 70                            |
| NOE-5              | 54,814                  | 15,546                         | 4,615                         |
| OM-1               | 28,978                  | 6,279                          | 3,853                         |
| OM-2               | 16,810                  | 3,371                          | 1,898                         |
| OM-3               | 38,916                  | 8,397                          | 4,870                         |
| OM-4               | 10,385                  | 2,213                          | 1,704                         |
| OM-5               | 135,171                 | 21,936                         | 14,509                        |
| SB-1               | 17,399                  | 4,396                          | 1,722                         |
| SB-3               | 17,310                  | 4,583                          | 1,415                         |
| SB-4               | 8,232                   | 1,917                          | 1,067                         |
| SC-1               | 8,438                   | 2,360                          | 696                           |
| SC-2               | 17,585                  | 4,717                          | 1,727                         |
| <b>Grand Total</b> | <b>598,125</b>          | <b>125,562</b>                 | <b>75,941</b>                 |

**Housing:** The table below lists the total households, the total housing units, the total occupied housing units, the owner occupied housing units, and the renter occupied housing units for each of the sub-basins.

| <b>Sub-Basin</b>   | <b>Total Households</b> | <b>Total Housing Units</b> | <b>Occupied Housing Units</b> | <b>Owner Occupied Housing Units</b> | <b>Renter Occupied Housing Units</b> |
|--------------------|-------------------------|----------------------------|-------------------------------|-------------------------------------|--------------------------------------|
| IHNC               | 1,013                   | 1,384                      | 1,013                         | 560                                 | 453                                  |
| JE-1               | 18,626                  | 20,658                     | 18,626                        | 11,045                              | 7,581                                |
| JE-2               | 27,113                  | 30,260                     | 27,113                        | 14,769                              | 12,344                               |
| JE-3               | 52,225                  | 57,383                     | 52,225                        | 33,755                              | 18,470                               |
| NOE-3              | 2,262                   | 2,665                      | 2,262                         | 1,334                               | 928                                  |
| NOE-4              | 176                     | 239                        | 176                           | 38                                  | 138                                  |
| NOE-5              | 19,754                  | 25,769                     | 19,754                        | 11,374                              | 8,380                                |
| OM-1               | 11,896                  | 15,749                     | 11,896                        | 7,187                               | 4,709                                |
| OM-2               | 7,369                   | 9,378                      | 7,369                         | 4,963                               | 2,406                                |
| OM-3               | 16,781                  | 25,114                     | 16,781                        | 7,447                               | 9,334                                |
| OM-4               | 4,473                   | 5,018                      | 4,473                         | 2,990                               | 1,483                                |
| OM-5               | 60,117                  | 80,605                     | 60,117                        | 22,808                              | 37,309                               |
| SB-1               | 6,582                   | 9,530                      | 6,582                         | 3,671                               | 2,911                                |
| SB-3               | 6,277                   | 7,749                      | 6,277                         | 4,590                               | 1,686                                |
| SB-4               | 3,012                   | 3,988                      | 3,012                         | 2,636                               | 376                                  |
| SC-1               | 2,953                   | 3,137                      | 2,953                         | 2,214                               | 739                                  |
| SC-2               | 6,254                   | 6,634                      | 6,254                         | 4,975                               | 1,279                                |
| <b>Grand Total</b> | <b>246,883</b>          | <b>305,260</b>             | <b>246,883</b>                | <b>136,356</b>                      | <b>110,527</b>                       |



**Total Income:** The table below lists the estimated total personal income for each of the sub-basins.

*Note:* The total income for each tract was estimated based on breakdowns for the tract for certain income levels and is only an estimate.

| <b>Sub-Basins</b>  | <b>Total Income</b>     |
|--------------------|-------------------------|
| IHNC               | \$35,348,638            |
| JE-1               | \$1,043,494,111         |
| JE-2               | \$1,780,147,807         |
| JE-3               | \$3,380,059,820         |
| NOE-3              | \$98,270,500            |
| NOE-4              | \$983,551               |
| NOE-5              | \$694,783,409           |
| OM-1               | \$584,157,233           |
| OM-2               | \$613,099,230           |
| OM-3               | \$610,828,646           |
| OM-4               | \$396,233,041           |
| OM-5               | \$3,737,326,716         |
| SB-1               | \$269,192,641           |
| SB-3               | \$276,279,060           |
| SB-4               | \$87,874,048            |
| SC-1               | \$206,500,466           |
| SC-2               | \$311,309,069           |
| <b>Grand Total</b> | <b>\$14,125,887,986</b> |

**Poverty and Disability:** The table below lists the total number of persons with income below the poverty rate and the total number of people who reported a disability for each of the sub-basins.

| <b>Sub-Basins</b>  | <b>Total Number of Persons in Poverty</b> | <b>Total Number of Persons with Disabilities</b> |
|--------------------|---|--|
| IHNC               | 707                                       | 281  |
| JE-1               | 4,154                                     | 5,816  |
| JE-2               | 6,999                                     | 6,292  |
| JE-3               | 15,922                                    | 17,298   |
| NOE-3              | 2,962                                     | 779  |
| NOE-4              | 40  | 28   |
| NOE-5              | 12,244                                    | 5,051  |
| OM-1               | 6,681                                     | 4,330  |
| OM-2               | 993                                       | 1,240  |
| OM-3               | 13,012                                    | 6,226  |
| OM-4               | 915                                       | 994  |
| OM-5               | 34,179                                    | 16,563   |
| SB-1               | 3,653                                     | 1,985  |
| SB-3               | 1,567                                     | 1,636  |
| SB-4               | 1,058                                     | 1,048  |
| SC-1               | 834                                       | 937  |
| SC-2               | 1,425                                     | 1,814  |
| <b>Grand Total</b> | <b>107,345</b>                            | <b>72,318</b>                                    |

### **3) Critical and Essential Facilities**

This section summarizes the various types of critical and essential facilities by each sub-basin. For each type of facility, such as hospital or school, the tables below list the number of facilities within each sub-basin.

The last section provides details on the sources and definition of each type of facility.

**State Owned Lands:** The table below lists the total number of properties owned by the state of Louisiana for each the sub-basins.

Note: This “catch-all” layer that includes all state owned properties, including hospitals, colleges, parks, etc. So this table partially overlaps with other tables.

| <b>Sub-Basins</b>  | <b>Total Number of<br/>State Owned Lands</b> |
|--------------------|--|
| IHNC               |  |
| JE-1               | 7  |
| JE-2               | 2  |
| JE-3               | 2  |
| NOE-3              | 2  |
| NOE-4              |  |
| NOE-5              | 4  |
| OM-1               | 6  |
| OM-2               | 6  |
| OM-3               | 5  |
| OM-4               | 1  |
| OM-5               | 23   |
| SB-1               | 4  |
| SB-3               | 1  |
| SB-4               | 2  |
| SC-1               | 1  |
| SC-2               |  |
| <b>Grand Total</b> | <b>66</b>                                    |

**Hospitals and Adult Care Facilities:** The table below lists the total number of hospitals and adult care facilities for each the sub-basins. Adult Care facilities include Adult Day Health Cares, Hospices, Nursing Homes, and Traumatic Brain Injury Facilities.

| <b>Sub-Basins</b>  | <b>Total Number of Hospitals</b> | <b>Total Number of Adult Care Facilities</b> |
|--------------------|----------------------------------|--|
| IHNC               |                                  |  |
| JE-1               | 5                                | 16   |
| JE-2               | 1                                | 9  |
| JE-3               | 6                                | 33   |
| NOE-3              |                                  | 2  |
| NOE-4              |                                  | 2  |
| NOE-5              | 3                                | 12   |
| OM-1               |                                  | 3  |
| OM-2               |                                  | 1  |
| OM-3               |                                  | 8  |
| OM-4               | 1                                | 8  |
| OM-5               | 10                               | 35   |
| SB-1               | 1                                | 5  |
| SB-3               |                                  | 2  |
| SB-4               |                                  | 2  |
| SC-1               |                                  |  |
| SC-2               |                                  | 3  |
| <b>Grand Total</b> | <b>27</b>                        | <b>141</b>                                   |

**Schools and Colleges:** The table below lists the total number of schools (pre-K through 12) and colleges (universities, community colleges, and technical colleges) for each the sub-basins.

| <b>Sub-Basins</b>  | <b>Total Number of Schools</b> | <b>Total Number of Colleges</b> |
|--------------------|--------------------------------|---------------------------------|
| IHNC               |                                |                                 |
| JE-1               | 15                             | 1                               |
| JE-2               | 17                             |                                 |
| JE-3               | 38                             |                                 |
| NOE-3              | 2                              |                                 |
| NOE-4              |                                |                                 |
| NOE-5              | 20                             |                                 |
| OM-1               | 14                             | 3                               |
| OM-2               | 7                              | 1                               |
| OM-3               | 28                             | 1                               |
| OM-4               | 5                              |                                 |
| OM-5               | 99                             | 4                               |
| SB-1               | 17                             | 1                               |
| SB-3               | 8                              |                                 |
| SB-4               | 5                              |                                 |
| SC-1               |                                |                                 |
| SC-2               | 11                             |                                 |
| <b>Grand Total</b> | <b>286</b>                     | <b>11</b>                       |

**Child Care Facilities and Day Care Facilities:** The table below lists the total number of childcare facilities (After-School Care, Day Care, Nursery School, Preschool, etc.) and day care (such as pre-school, head start, and early learning centers) for each the sub-basins.

| <b>Sub-Basins</b>  | <b>Total Number of Day Care Facilities</b> | <b>Total Number of Child Care Facilities</b> |
|--------------------|--|--|
| IHNC               |  |  |
| JE-1               | 3  | 21   |
| JE-2               | 6  | 29   |
| JE-3               | 4  | 46   |
| NOE-3              |  | 1  |
| NOE-4              |  |  |
| NOE-5              |  | 4  |
| OM-1               |  | 4  |
| OM-2               |  | 2  |
| OM-3               |  | 11   |
| OM-4               | 1  | 4  |
| OM-5               | 3  | 52   |
| SB-1               |  | 1  |
| SB-3               |  |  |
| SB-4               |  |  |
| SC-1               | 1  | 1  |
| SC-2               | 6  | 9  |
| <b>Grand Total</b> | <b>24</b>                                  | <b>185</b>                                   |

**Law Enforcement and Fire Stations:** The table below lists the total number of law enforcement facilities (police, sheriff, and state police stations) and fire stations for each the sub-basins.

| <b>Sub-Basins</b>  | <b>Total Number of Fire Stations</b> | <b>Total Number of Police Stations</b> |
|--------------------|--------------------------------------|--|
| IHNC               |                                      |  |
| JE-1               | 4                                    |  |
| JE-2               | 2                                    |  |
| JE-3               | 4                                    | 2                                      |
| NOE-3              | 2                                    |  |
| NOE-4              |                                      |  |
| NOE-5              | 3                                    | 1                                      |
| OM-1               | 2                                    | 1                                      |
| OM-2               | 3                                    |  |
| OM-3               | 5                                    | 1                                      |
| OM-4               | 2                                    |  |
| OM-5               | 12                                   | 5                                      |
| SB-1               | 5                                    | 1                                      |
| SB-3               | 3                                    |  |
| SB-4               | 2                                    |  |
| SC-1               |                                      |  |
| SC-2               | 3                                    |  |
| <b>Grand Total</b> | <b>52</b>                            | <b>11</b>                              |

## **4) Sources**

### **Sub-Basin Polygons**

A map of sub-basins was obtained from the IPET report as a plain graphic file. This image was provided by the client along with a spatial layer (.kml format) depicting the sub-basin boundaries as line features. Using these, a polygon layer (shapefile) was manually drawn with snapping enabled, which snapped the vertices of the polygon layer to the vertices of the line features.

### **Population Attributes**

#### Population and Housing

The 2010 Census Demographic Profile 1 was obtained in shapefile format from the Census website. It included attributes on population (population, 18 years and over, population 65 years) and housing (housing units, occupancy, etc.)

<https://www.census.gov/geo/maps-data/data/tiger-data.html>

#### Income, Poverty, and Disability

Census 2008-2012 American Community Survey:

American Community Survey 5-Year Estimates — 2008 - 2012 Detailed Tables: join geography from the TIGER/Line Shapefiles to the 2008-2012 American Community Survey 5-year estimates.

<https://www.census.gov/geo/maps-data/data/tiger-data.html>

### **Community Assets**

#### Police and Fire Stations

A listing of 73 police, sheriffs, state police, and fire stations was compiled by the authors using local government websites and Google Maps. The list was geocoded using the Google Maps services via the MMQGIS plugin in QGIS.

The following facilities datasets were obtained from the 2007 La RS/GIS DVD. Note includes 87 that have closed due to Hurricane Katrina.

#### Schools (2007)

Schools in the State of Louisiana, Geographic NAD83, LDHH LDOE (2007)  
[schools\_idoe\_2006\_07\_LDHH\_2007]

#### Colleges (2006)

Colleges in the State of Louisiana, Geographic NAD83, LDHH (2006)  
[colleges\_06\_07\_full\_idoe\_LDHH\_2006]

#### Hospitals (2007)

Hospitals in the state of Louisiana, Geographic NAD83, LDHH (2007)  
[hospitals\_06\_07\_pub\_LDHH\_2007]



#### LDHH Care Facilities (2006)

Care Facilities Licensed by LDHH, Geographic NAD83, LDHH (2006)

[LDHH\_care\_facilities\_06\_07\_full\_LDHH\_2006]

A portion of the facilities licensed by the Louisiana Department of Health and Hospitals, Health Standards Section. This database includes Adult Day Cares, Adult Day Health Cares, Hospices, Intermediate Care Facilities for Persons with Mental Retardation, Nursing Homes, Respite Cares (that have a capacity of greater than 0), and Traumatic Brain Injury Facilities.

#### LDSS Care Facilities (2006)

Care Facilities Licensed by LDSS, Geographic NAD83, LDHH (2006)

[LDSS\_care\_facilities\_full\_LDHH\_2006]

Facilities licensed by the Louisiana Department of Social Services (excluding Child Placing Adoption Agencies and Child Placing Foster Care).

#### Day Care Facilities

Statewide Day Cares, Geographic NAD83, LDSS (2006) [statewide\_day\_care\_LDSS]

Statewide Day Cares in the LDSS database.

#### SLABS: State owned lands (2007)

Louisiana State Lands and Buildings, Geographic NAD83, LA State Land Office (2007)

[slabs\_slo\_2007]

This dataset represents land and/or building areas for the state of Louisiana. This dataset was compiled by the State Land Office from Historical Records (SLABS) source data.