ExxonMobil Refinery Proposed Expansion: Operational Review and Neigborhood Demographic Profile

Louisiana Democracy Project asked EBIC to examine the environmental track record of ExxonMobil's Baton Rouge Refinery and also provide a demographic analysis of the neighborhoods within 2 miles of the Refinery. The ExxonMobil Refinery, previously knows as the Exxon Refinery, is located at 4045 SCENIC HWY. in Baton Rouge, LA. It borders the Mississippi River to the West and a densely populated neighborhood to the East with additional refineries extending to the north from its property boundary. The facility itself borders another Exxon Chemicals America plant (4999 Scenic Hwy.) which is also a significant source of toxic environmental releases, workplace hazards and regulatory problems.

ExxonMobil is seeking a permit to expand its air pollution emissions at the Baton Rouge refinery. The company has claimed that even though the plant will produce more emissions, its overall operational effect on the environment would be make the air cleaner by producing a fuel that would lower automobile emissions.

> ExxonMobil is seeking permits to increase air pollution emissions at its Baton Rouge refinery. But, the company says the cleaner gasoline created by the project will mean fewer emissions from cars. The refinery wants to make changes so it can produce cleaner, low-sulfur gas as ordered by U.S. Environmental Protection Agency rules for 2004 model year cars and trucks. The new gasoline will mean that each year, vehicles in Baton Rouge's five-parish area will produce 2,238 fewer tons of nitrogen oxides and 842 fewer tons of volatile organic compounds. The new fuel will work in older cars, too. A major part of the project is the addition of another furnace, which will help the company reduce sulfur by 90% compared to today's blends of fuel. Construction on the new unit would begin in the second quarter of the coming year with plans to be operational by the third quarter of 2003. That's when 2004 model vehicles using the new fuel will begin to hit the road. Two public hearings on the permit request will be held at 6 p.m. January 17th in the state Department of Transportation and Development auditorium. (WAFB, ExxonMobil Seeks Permit on Pollution . December 21, 2001)

EBIC examined governmental document records regarding this facility's operations and activities in order to assess the plants current environmental impact, its record of compliance with environmental regulations and any apparent workplace safety problems. We found that the facility has a history of violations of environmental laws regulating hazardous waste handling. The facility has had multiple workplace safety violations and numerous fatalities. In addition the facility has had numerous accidental spills and releases of toxic chemicals. We also concluded that the facility was producing a large quantity of toxic chemical waste which was being released into the environment in a densely populated, predominantly African American community.

Discussion:

The facility's operational safety and performance are covered in the order as follows: RCRA compliance, hazardous materials spills, routine chemical emissions, chemical hazard health issues, workplace safety, and neighborhood demographic profile.

Problems with RCRA compliance:
Resource Recovery and Conservation Act regulations control the handling, storage and disposal of hazardous waste. Government records indicate at least 11 violations of RCRA permits at 3329, 4045 and 4999 Scenic Highway.

Table I

ExxonMobil RCRA Permit Violations at 4045 and 4999 Scenic Highway

Handler_na	Street_1	Num_viol
EXXON CHEMICAL AMERICAS BRCP	4999 SCENIC HWY	4
EXXON CO USA BATON ROUGE REFINERY	4045 SCENIC HWY	7
EXXON CO USA BATON ROUGE TERMINAL 5005	3329 SCENIC HWY	0

Problems with Hazardous Materials Spills and other accidental releases:
Facility operations have resulted in spills too numerous to list here. Federal records make it difficult to pinpoint the actual location of a given spill. In addition, reported spills typically contain different units of measure characterizing the size of the spill. These reports often appear to understate the size of the spill. These factors make it difficult to specify with any certainty the degree of risk posed by a reported incident. There is nonetheless substantial information to indicate a potential threat to workplace and public health and safety from accidental spills during the operation of the refinery and adjacent chemical plant.

EPA records compiled under the Emergency Response Notification System (ERNS) cover 1248 incidents between 1987 and 1997 in which an accidental spill or release was reported at Exxon facilities in Baton Rouge, including the refinery and chemical plants on Scenic Highway, the plastics plant on Scotlandville-Zachary, the ExxonMobil Dock areas and other properties apparently controlled by ExxonMobil in Baton Rouge.

Approximately 836 of those emergency response notification records appear to describe spills associated with operations at the refinery, the adjacent chemical complex and the docks on or near 4045-4999 Scenic Highway. Of those, 7.1% (59 out of 836) were recorded by the number of barrels of chemicals spilled (16,556 barrels). 16.1% (135/836) of these releases were reported by the number of gallons spilled (5,535 gallons). 54.5% (456/836) of the 836 releases reported were recorded by the number of pounds spilled (1,470,840 pounds). This works out to be roughly 750,000 gallons of spilled chemicals reported over 11 years.

127 of the 836 reported accidental spills at the ExxonMobil Refinery complex reportedly involved the substance Benzene . Of those releases, 1 barrel plus 836 gallons, and an additional 12,696 pounds of Benzene were reported spilled under the ERN. This works out to be approximately 1300 gallons of spilled benzene. Another database, the Accidental Release Information Program (ARIP) lists accidental release incidents involving 710,977 pounds of chemicals. 600 pounds of that amount is listed as Benzene. While it is unclear whether any of the releases recorded by ARIP were also reported under the ERN, the simple fact is that these accidents and their persistence clearly indicate that plant operations pose and ongoing threat to workplace and public health and safety.

Routine Toxic Chemical Releases:

The ExxonMobil Refinery releases large amounts of toxic chemicals every year into the environment. The most immediate release medium for nearby residents is probably non-stack air, meaning emissions that leave the plant at or near ground level. Other release mediums may be of importance to residents as well but this type of release presents the greatest risk in terms of both emergency release situations and in terms of chronic long term exposure for the nearby population.

Exxon's Refinery released 5,645,686 lbs of toxic chemicals into the environment in 1999. Exxon's Chemical Plant released 2,097,608 lbs of toxic chemicals into the environment in 1999. Between 1987 and 1999, the ExxonMobil Refinery and Chemical plants at 4045 and 4999 Scenic Highway, Baton Rouge released 32,579,462 pounds of fugitive air emissions, 21,100,255 pounds of stack air emissions, 68,422,655 pounds emissions to waterways, and 2,353,250 pounds to other media. That gives a total over 13 years of 124,455,622 pounds of reported toxic chemical emissions from these facilities, 25% of which, as fugitive emissions, pose a substantial risk to nearby people because they could drift in and through their neighborhoods.

The top ranked chemical releases from the refinery in terms of health risk are Benzene, which is known to cause Leukemia and Lead which causes neurological damage and a number of other negative health effects. TRI records indicate a total of 20,002 lbs of lead were released from 1987 to 1999, 395 of those pounds as fugitive air emissions. TRI records indicate a total of 3,081,556 total pounds of benzene were reportedly released between 1987 and 1999 with 1,507,182 pounds as fugitive air emissions. Appendices IV through VIII contain information on routine emissions of toxic chemicals and some of those chemicals toxicity. Below is an extract from one of those documents describing the toxicity of Benzene.

HEALTH HAZARD INFORMATION

Acute Health Effects

The following acute (short-term) health effects may occur immediately or shortly after exposure to **Benzene**:

* **Benzene** can irritate the eyes and skin.
* Exposure can irritate the nose and throat.
* **Benzene** can cause symptoms of dizziness, lightheadedness, headache and vomiting. Convulsions and coma, or sudden death from irregular heart beat, may

follow high exposure.

Chronic Health Effects

The following chronic (long-term) health effects can occur at some time after exposure to **Benzene** and can last for months or years:

Cancer Hazard

* **Benzene** is a CARCINOGEN in humans. It has been shown to cause leukemia.
* Many scientists believe there is no safe level of exposure to a carcinogen.

Reproductive Hazard

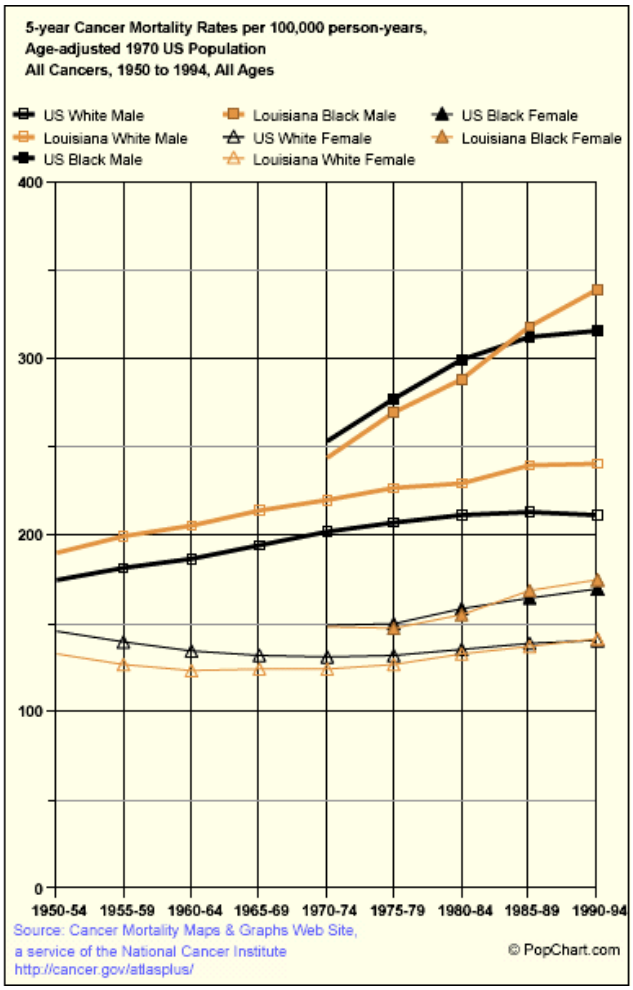
* There is limited evidence that **Benzene** is a teratogen in animals. Until further testing has been done, it should be treated as a possible teratogen in humans.

Other Long-Term Effects

* **Benzene** can cause drying and scaling of the skin.
* Repeated exposure can cause damage to the blood cells (aplastic anemia). ("Benzene," Hazardous Substance Fact Sheet, New Jersey Dept. of Health and Senior Services, November 1994 Revision: January 2001).

Health Issues:

The ExxonMobil Baton Rouge facilities are in the heart of what is called "Cancer Alley." Cancer Alley earned that name because high rates of cancer mortality. In fact Louisiana, between 1970 and 1994, has had one of the consistently highest rates of cancer mortality in the United States (per 100,000 persons). In general, cancer mortality rates in Louisiana are increasing at rates comparable to national cancer mortality rates. In terms of a cursory review of a few specific types of cancer, leukemia rates for black females in East Baton Rouge are higher than state and national rates. Brain and nervous system cancer mortality rates amongst white and black males and white females are higher than state and national rates.



This broad brush overview of cancer mortality is really insufficient to assess the health impacts of the ExxonMobil refinery. Without information on cancer rates in geographic areas smaller than Parishes, it is not possible to really gauge what might be going on in neighborhoods near the facility.

Workplace Safety:

The primary source of documentation for this section are Occupational Safety and Health Administration Inspection Reports (OSHIR). These documents are produced as a record of inspection and enforcement actions by the agency's employees. In reviewing this list, it should be noted that a person killed or injured on Exxon's property may not be an actual employee of Exxon but an employee of a subcontractor. This fact does not, however, minimize the risk to people of injury or death while carrying out Exxon's work. See Appendix I for a list of these reports.

EXXON CHEMICAL AMERICAS, 4999 SCENIC HWY:

Reported Inspection Closure Date 02/06/1995 - Failure to Abate Penalty: $ 120,000.00

Reported Inspection Closure Date 01/28/1987 - Fatality/Catastrophe: VERNON LOCKHART Age: 44, Degree of Injury: FATALITY, Nature of Injury: FRACTURE, Body Part: MULTIPLE Source of Injury: BOILER/PRESS VESSEL, Event Type: CAUGHT IN OR BETWEEN - 2 other employees ages 35 and 37 were reported injured in this report.

EXXON COMPANY, USA, 4045 SCENIC HIGHWAY

Reported Inspection Closure Date 02/01/1994 Fatality/Catastrophe:
JANET J. INZENGA, Age: 28 Degree of Injury: FATALITY, Nature of Injury: BURN/SCALD(HEAT), Body Part: MULTIPLE, Source of Injury: PETROLEUM PRODUCTS
Name: TERRENCE M. COBURN, Age: 37, Degree of Injury: FATALITY, Nature of Injury: BURN/SCALD(HEAT), Body Part: MULTIPLE
Multiple serious violations and penalties listed ($1000 - $10,000).

Reported Inspection Closure Date 11/23/1993 - Name: GEORGE CURTIS, Gender: MALE, Age: 58, Degree of Injury: FATALITY, Nature of Injury: FRACTURE, Body Part: HEAD, Source of Injury: BODILY MOTION, Event Type: FALL(FROM ELEVATION), Human Factor: MALFUNC IN SECURING/WARNING OP

Reported Inspection Closure 03/17/1993 - Multiple serious violations listed - Multiple penalties ($500-$1000)

Reported Inspection Closure Date 02/21/1991 - Category - Health - Multiple Serious Violations: Multiple fines ($700 - $3000)

Reported Inspection Closure Date 04/25/1990 - Fatality/Catastrophe:
ALVIN A DOMINGUEZ JR, Age: 41 Degree of Injury: FATALITY, Nature of Injury: OTHER, Body Part: MULTIPLE, Source of Injury: BUILDINGS/STRUCTURES. 3 other individuals were reported injured in this report.

Reported Inspection Closure 04/25/1990 - Multiple serious violations listed, Multiple penalties ($300-$700).

Reported Inspection Closure 01/16/1987 - Multiple Injuries from flying debris.

Reported Inspection Closure 03/10/1984 -
Name: WILLIAM T CLARK, Degree of Injury: FATALITY, Nature of Injury: OTHER, Body Part: HEAD, Source of Injury: WORKING SURFACE, Event Type: FALL(FROM ELEVATION).

Reported Inspection Closure 10/05/1982 - Name: MATTHEW BRANDON II, Degree of Injury: FATALITY, Nature of Injury: FRACTURE, Body Part: HEAD, Source of Injury: BOILER/PRESS VESSEL, Event Type: STRUCK BY, Environmental Factor: FLYING OBJECT ACTION

Reported Inspection Closure 07/01/1983 - Name: EDDIE J FAIRCHILD, Degree of Injury: FATALITY, Nature of Injury: ELECTRIC SHOCK ,Body Part: BODYSYSTEM, Source of Injury: ELEC APPARAT/WIRING, Serious violations and fines listed.

Reported Inspection Closure 07/20/1982 - Name: LESLIE MERRILL JR, Degree of Injury: FATALITY, Nature of Injury: FRACTURE, Body Part: HEAD, Source of Injury: WORKING SURFACE, Event Type: FALL(FROM ELEVATION)

Reported Inspection Closure Date 07/28/1982 -
Fatality/Catastrophe: JAMES W SMITH - Degree of Injury: FATALITY, Nature of Injury: AMPUTATION, Body Part: LEGS, Source of Injury: MATERIALS HANDLG EQ., Event Type: CAUGHT IN OR BETWEEN SHEAR POINT ACTION.

Reported Inspection Closure 06/20/1979- Name: RODNEY C LANGRIDGE, Degree of Injury: FATALITY, Nature of Injury: CONCUSSION, Body Part: HEAD, Source of Injury: MATERIALS HANDLG EQ., Event Type: STRUCK BY

Demographic Profile of neighborhoods within 2 miles of the ExxonMobil Facility:

Over 28000 people live in the densely populated neighborhoods within 2 miles of the ExxonMobil Refinery. This population is predominantly African American (92.23%) as compared to East Baton Rouge Parish as a whole (40.09%) and Louisiana (32.49%). The population around the refinery is younger than parish and state rates. 33.93% of the population, is under the age of 18 as compared to 26.18% in East Baton Rouge and 27.29% statewide.. This refinery operation presents a clear case of environmental injustice with young people being exposed at rates in excess of parish and state levels.

	Persons	Children 5 - under	Under 18	65 and over
.5 Miles	945	96	304	91
1 Mile	6260	565	2274	409
2 Miles	28406	2421	9639	2244

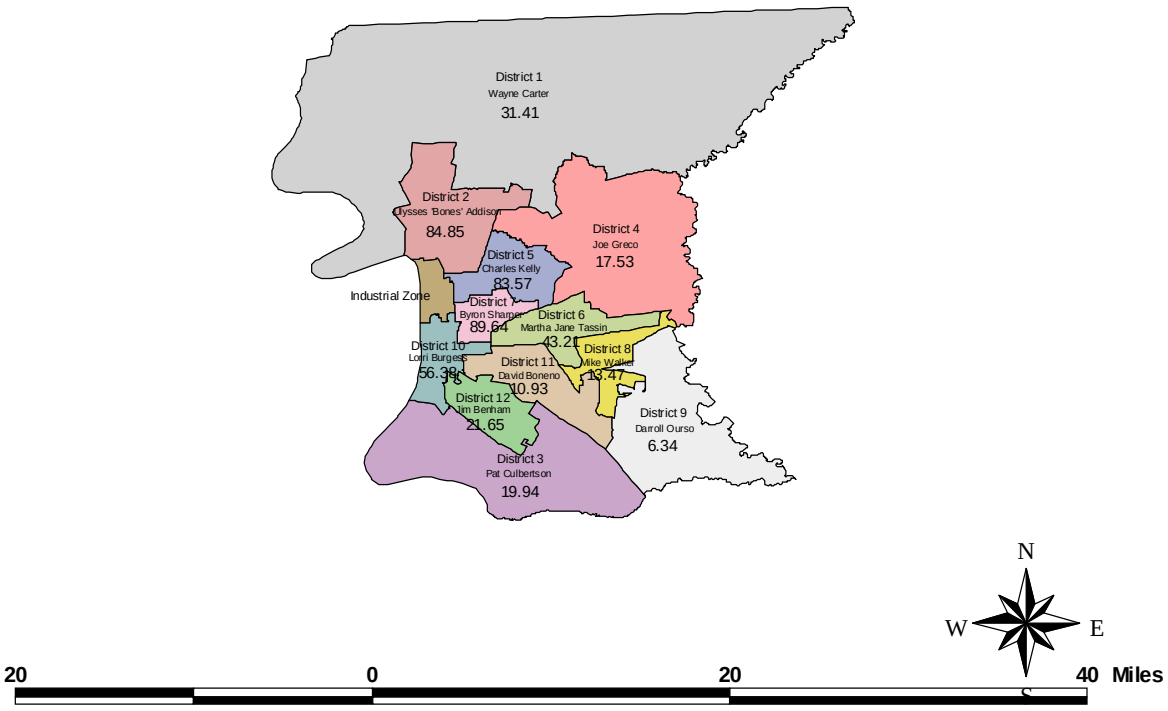
	Pc Black	Pc Minority	Pc White	Pc Under 5 Up	Pc Under 18	Pc 65
.5 Miles	97.35	97.78	2.22	10.15873	32.17	9.63
1 Mile	93.37	94.71	5.38	9.025559	36.33	6.53
2 Miles	92.23	93.64	6.48	8.522847	33.93	7.90
E Baton Rouge	40.09	44.91	56.17	7.048773	26.18	9.91
Louisana	32.49	37.47	63.91	7.102119	27.29	11.57

Political District Analysis:

East Baton Rouge Parish has 12 Council Districts. Of those districts, four are majority black and 8 are majority white. In East Baton Rouge Parish council districts, the population of other racial categories ranges from .5% to just under 4%. The parish as a whole has a Census 2000 population of 412,852 persons. 231,886 are white (56.17%), 165,526 are black (40.09%) and 15440 are of other racial backgrounds (3.74%). Research indicates that the entire parish is in line for redistricting. The ideal 2000 population for a council district in East Baton Rouge is 34,404 persons. Based on our analysis of the existing council districts, council district 4 is the only one which comes within 1000 persons of that ideal level, with a deviation of 1.57%. All other council districts are in greater need of redistricting in order to achieve equal apportionment goals.

It is worth noting that all 4 of the East Baton Rouge council districts with majority black

East Baton Rouge Council Districts: Pc Voting Age Black



populations have populations which are below the ideal number. In addition, every council district in East Baton Rouge Parish with the exception of Council District 10 (-4.32%), gained black population (between 1.6 and 25% gains). Of course, race is not sufficient in and of itself as a basis for creating council districts. Political affiliation, communities of interest and other matters are important considerations in deriving political districts. Census population variables that may be helpful in assessing communities of interest include housing conditions, home ownership, income, poverty, age, and educational attainment. At this stage, economic and educational variables for year 2000 are not yet available (June to Sept. 2000), but housing and age information is available.

Recommendations:

It is understood that groups concerned about the proposed expansion of the ExxonMobil Refinery on Scenic Highway in Baton Rouge will be developing a door to door canvas operation in order to alert and mobilize people in the community. In order to maximize the effectiveness of this

campaign, we suggest that citizens utilize GIS information to plan and carry out the survey, to design information for canvassers to bring to people and to collect and compile information from people at the door and from various petition and survey instruments that canvassers will be using.

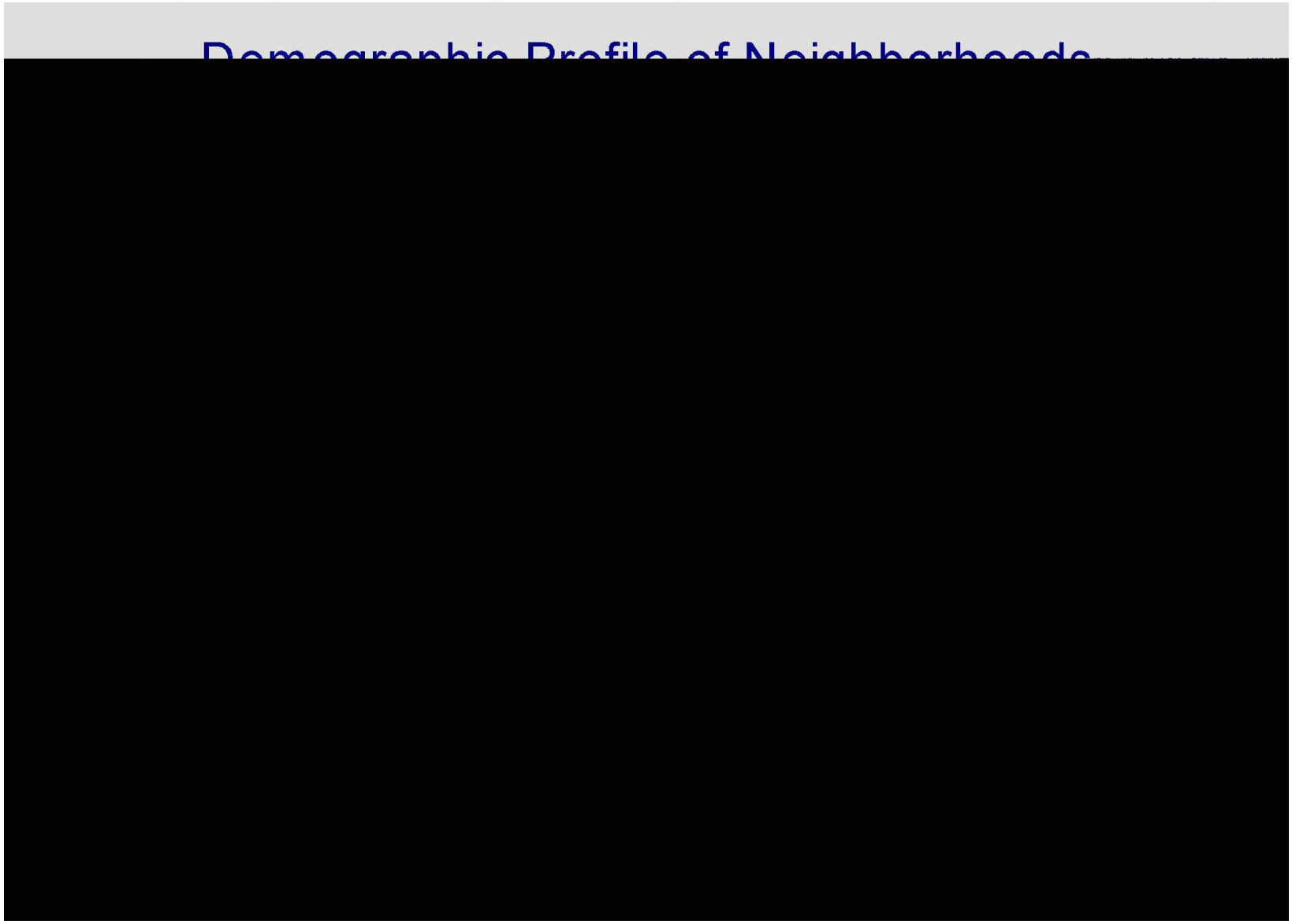
In neighborhoods adjacent to the facility, it will be completely feasible to utilize census block boundaries in order to deploy canvassers and compile survey and petition information. The U.S. Census designs census blocks for this very purpose, to facilitate the work of census takers and because the census block is the smallest unit of geographic space (short of actual street addresses), a considerable body of information can be mapped and used to plan and prepare canvassers and subsequently manage phone trees, block captains and other mobilization tools.

In addition, the census blocks can be used to tie to and/or build council districts, voting precincts, state legislative districts, school districts and U.S. Congressional Districts. That means that in carrying forward with a door knocking campaign based on Census Blocks, it is entirely reasonable to bring information specific to which county, state and federal elected officials represent people in a given area and generate that material from computerized records, complete with block maps and neighborhood assignments for each canvasser, on a day to day basis, as the canvassers go out into the neighborhoods.

Lastly, the canvas could also be collecting information on issues that people see as important beyond ExxonMobil. We submit that this approach would tend to maximize the effectiveness of the canvas, bringing people in, broadening the agenda, and putting elected officials on notice about the emerging concerns of an organized and informed community.

Table II: Sample Data Tally Sheet with some Questions that could be used in Canvas/Survey in East Baton Rouge

	# of Persons	# Households	# of Housholds with Multiple Victims	# of Households with Single Victim
Primary Respondents with Asthma				
Number of Other Persons with Asthma in households where primary resp. reports Asthma (of 154 persons in				
Other Members with Asthma in households where primary resp. doesn't report Asthma				
Asthma Totals (%)				
Primary Resp. with Colds or Sore Throats Lasting More than 1 Week				
Other Members with Cold/Sore Throat Lasting More than 1 week where primary resp. reports same				
Other Members with Cold/Sore Throat Lasting More than 1 week where primary resp. doesn't report same affliction				
Cough/ Sore Throat Totals (%)				
Primary Respondent with Allergies				
Other Household Members with Allergies in households where primary resp. reports allergies				
Allergies in households where primary resp. does not report allergies				
Allergy Totals (%)				
Primary Resp. with Respiratory Problems Lasting more than one Month				



Demographic Profile of Neighborhoods