

**TECHNOLOGY-BASED PERMITTING: HOW CURRENT STANDARDS IMPOSE OBSTACLES TO
ACHIEVING ENVIRONMENTAL JUSTICE**

Much of the discourse surrounding the environmental justice movement is focused on the disproportionate share of environmental burdens minority and low-income populations bear, the negative effects of a disproportionate distribution of undesirable land uses, and the ways in which industry contributes to the adverse impacts suffered by the communities. The focus is a narrow one that is most often analyzed from a bottom-up approach: identify the negative impacts, usually health-related, suffered by the environmental justice community, establish the proximate cause of the problem and how/if this is related to a nearby facility, then focus on what the facility/corporation should do to improve these conditions.

Unfortunately, applying the bottom-up approach has yielded few legal victories for environmental justice communities. The majority of success in the environmental justice movement has come from grassroots organizing, not law, and the few statutory protections that exist are broad and rarely enforced. Thus, while it is important to remain focused on the ways in which environmental justice communities are disproportionately impacted by undesirable land uses, the analysis must shift to a top-down approach if the law is to provide any remedy for environmental justice communities.

The environmental justice movement has been unable to accomplish many of its goals because it is fighting against a legal framework that heavily favors industry and development over environmental protection, and all but ignores the negative impact that development can have on surrounding populations. Without absolving corporations of responsibility for their actions and the resulting environmental pollution, the reality is that industry operates pursuant to regulations established by the Environmental Protection Agency (“EPA”). While some corporations will go above and beyond existing minimum requirements to ensure the protection

of the environment and communities surrounding a facility, in a profit-driven market these corporations are often the exception, not the rule. Standards and regulations established by federal and state governments and the EPA set the minimum standards that industry must consider when building a new facility, or modifying an existing one. As these standards are the basis under which industry operates, the easiest way to affect real change for environmental justice communities is not to focus on the negative impacts of industry operation, but rather to focus on the cause of the negative impacts beginning at the very highest level: lax regulations that permit industry to pollute at current levels and to ignore the potential affects that a new or expanded facility will have on the surrounding communities.

The permitting process for the expansion of an existing facility is a primary example of the way in which industry can operate within all legally established guidelines and still negatively impact the surrounding communities. Changing the framework and moving away from the existing technology-based permitting is a way to provide communities with legal rights and remedies that are not currently available. Establishing a new permit application process that requires industry to take into account the impacts on the surrounding community will remove many of the current obstacles faced by environmental justice communities.

This paper will first examine the current framework and existing law by analyzing the technology-based permit application under the Clean Air Act (“CAA”), its background and requirements, and applicable exceptions. The second part of this paper will illustrate, through a case study, the implications of technology-based permitting for environmental justice communities. The final section of this paper will provide suggestions for ways to improve the current permitting process in order to facilitate the success of the environmental justice movement.

Current Framework: Technology-Based Permitting

The foundation for the current framework regulating air emissions is based on the CAA of 1963. ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE & POLICY (“ENVIRONMENTAL REGULATION”) 470 (5th ed. 2006). However, the CAA in its initial form scarcely resembles the modern law. The CAA has developed through a series of amendments, with the first significant amendment enacted in 1970. *Id.* The 1970 amendments marked a major shift for the role of the federal government with respect to environmental regulation and protection. *Id.* The 1970 CAA amendments established deadlines for the EPA to promulgate National Ambient Air Quality Standards (“NAAQS”) to be implemented by the states, national emission standards for hazardous air pollutants, auto emission standards, and authorized citizen suits. *Id.* Additional amendments were enacted in 1977 and 1990 to require the implementation of more rigorous controls in areas that had failed to achieve national standards. *Id.* at 91. The relevant provisions of the CAA for this paper are the NAAQS.

Implementation of NAAQS can be divided into two phases. In the first phase, the EPA “promulgate[s] a list of air pollutants that are emitted by ‘numerous or diverse’ sources and whose presence in the atmosphere ‘may reasonably be anticipated to endanger public health or welfare.’” Clean Air Act of 1990 §108, 42 U.S.C. §7401, *et seq.* (2008). *See also* ROBERT J. MARTINEAU, JR. & DAVID P. NOVELLO, EDS., THE CLEAN AIR ACT HANDBOOK (“HANDBOOK”) 14 (2004). The EPA is then required to issue air quality “criteria” for all pollutants designated for regulation under §108. MARTINEAU, JR. & NOVELLO, HANDBOOK at 15. This criteria is intended to “accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air.” *Id.* By the time the 1970 CAA Amendments

were enacted, the EPA had identified five major pollutants as criteria pollutants: particulate matter (“PM”), sulfur dioxide (“SO₂”), carbon monoxide (“CO”), hydrocarbons and photochemical oxidants (here, volatile organic compounds, “VOCs”). PERCIVAL, ENVIRONMENTAL REGULATION at 476. Although the EPA is required to review and revise its air quality criteria and the NAAQS at five-year intervals, only two pollutants have been added to those identified above. *Id.* at 482. Nitrogen oxides (“NO_x”) were added by the EPA in 1971, and lead was added in 1976 as a result of litigation.¹ *Id.* at 476.

In the second phase, states develop State Implementation Plans (SIPs), which are plans designed to satisfy the NAAQS within its borders. *Id.* at 471. A region can satisfy the NAAQS when the emissions in that area are below the significance level.² An effective way of achieving the goals of the CAA “. . . is through placing preconstruction review and permitting requirements on certain new and modified sources of air pollution to require control technology and to protect against degradation of air quality. These requirements are implemented through the new source review (“NSR”) program.” MARTINEAU, JR. & NOVELLO, HANDBOOK at 131. When a region satisfies the NAAQS it is designated as an attainment area (“AA”). *Id.* at 132. If classified as an AA, a project can only be subject to the Prevention of Significant Deterioration (“PSD”) Program, a subpart of the NSR program. *Id.* at 145.

The PSD program was designed to maintain healthy air and ensure economic growth, not as an extensive review standard, and therefore agency review is limited to whether an action will result in nonattainment. MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (“MDEQ”), AIR QUALITY DIVISION, PSD WORKBOOK: A PRACTICAL GUIDE TO PREVENTION OF SIGNIFICANT DETERIORATION (“WORKBOOK”) 1-1, 1-4 (2003),

¹ See *NRDC v. Train*, 545 F.2d 320 (2d. Cir. 1976).

² The significance level establishes the maximum allowable emission for each criteria pollutant.

<http://www.deq.state.mi.us/aps/downloads/permits/PSD%20Workbook.pdf> (“In these Attainment Areas, PSD attempts to prevent the degradation of air quality. To achieve this goal, PSD requires new major sources and major modifications at existing sources to implement stringent controls and to limit the impacts on ambient air quality to less than the NAAQS or PSD Increment Concentrations.”). PSD review applies to both new sources and to major modifications of existing sources *if* the modification “. . . will result in both (1) a defined ‘significant emissions increase’ of a [criteria] pollutant. . . and (2) a significant ‘net emissions increase’ of that pollutant from the major stationary source.” MARTINEAU, JR. & NOVELLO, HANDBOOK at 145. When a facility is subject to PSD review, that facility is required to utilize Best Available Control Technology (“BACT”). MDEQ, WORKBOOK at 1-5. The purpose of a BACT analysis is to identify the best control technology available for a specific project. *Id.* In this analysis all potential technologies are identified, technologically infeasible options are excluded, and a corporation is allowed to consider energy, economic and environmental impacts of the remaining technologies. *Id.*

An area is classified as a nonattainment area (“NAA”) when it exceeds the NAAQS. *Id.* When classified as a NAA, construction of a new source or the major modification of an existing source is subject to a much more comprehensive standard of review under the NSR process. *Id.* “PSD does not apply in these Nonattainment Areas. The federal NSR regulations require more stringent measures in these areas because the goal in a Nonattainment Area is to improve the air quality rather than preventing degradation.” *Id.* at 1-4. If subject to nonattainment review analysis, the operator of a facility is required to satisfy the much more rigorous Lowest Achievable Emissions Rate (“LAER”) standard for criteria pollutants. MARTINEAU, JR. & NOVELLO, HANDBOOK at 179. Under the LAER standard a facility is *not* permitted to take into

account economic, energy or environmental factors; the only factor considered is whether it would be unreasonably cost prohibitive. *Id.*

The designation of a region as either an AA or NAA will determine the level of government involvement and oversight of a new project, and is particularly significant for the permitting process. Under governing law in Michigan, technology-based regulations specify that when a corporation applies to modify or expand an existing facility, the facility must satisfy the technology-based requirements that coincide with area's designation as either in an AA or NAA. MDEQ, WORKBOOK at 1-1, *et seq.* However, under current laws, a facility may be able to exceed the required NAAQS and yet still be designated as an AA, and therefore capable of satisfying the permit requirements without being subject to the more stringent requirements. *Id.* at 3-6. This is possible due to an exception known as netting. *Id.*

When a facility has previously, and voluntarily, reduced its emissions below the NAAQS, future modifications may qualify for a netting calculation. *Id.* The net calculation is determined by subtracting a previous, voluntary decrease in emissions from the estimated emission level of a new project, and then comparing this number to the required significance level. *Id.* The concern is with the measured net effect and *not* whether the actual estimated level of emission satisfies the NAAQS. *Id.* If a facility's emissions qualify for netting, the project will not be subject to the PSD program unless the modification will result in both a significant emissions increase and a significant net emissions increase. *Id.* at 1-1.

What Michigan law does not require under the current permitting process is for corporations to conduct an analysis that goes beyond the technology-based factors, even when the construction of a new facility, or the expansion of an existing one, may pose environmental justice issues. Under current law, the Michigan Department of Environmental Quality

(“MDEQ”) cannot legally deny a permit because of a failure to conduct an environmental justice analysis, or due to the results of an environmental justice analysis voluntarily completed by a corporation. Telephone Interview with Bryce Feighner, Chemical Process Unit Supervisor, Michigan Department of Environmental Quality, in Lansing, MI (Mar. 31, 2008).³

In fact, the only legal basis for requiring some consideration of the human impact that a facility expansion has on an environmental justice community is found in the requirements of Title VI of the Civil Rights Act of 1964. 42 U.S.C. § 2000d et seq. Section 601 of Title VI provides that “[n]o person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” 42 U.S.C. § 2000d. EPA regulations further state that

No person shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving EPA assistance on the basis of race, color, [or] national origin A recipient shall not use criteria or methods of administering its program which have the effect of subjecting individuals to discrimination because of their race, color, national origin, or sex, or have the effect of defeating or substantially impairing accomplishment of the objectives of the program with respect to individuals of a particular race, color, national origin, or sex.

40 C.F.R. §§ 7.30 & 7.35(b). Therefore, under the requirements of Title VI and EPA rules and regulations, a corporation is not permitted to intentionally site a facility in an area because the area has a significant minority and low-income population. However, the current standard of proving a legal claim of discrimination requires a plaintiff to show either facial discrimination⁴ or a disparate impact resulting from an intentional act.⁵ Under these requirements few plaintiffs,

³ Date of interview approximated and may have occurred one week prior.

⁴ See *Yick Wo v. Hopkins*, 118 U.S. 356 (1886).

⁵ See *Washington v. Davis*, 426 U.S. 229 (1976).

particularly those bringing environmental justice claims, are successful at demonstrating to courts that they are suffering discrimination because of a facility's emissions.

In addition to the legal difficulty that plaintiffs have in successfully bringing environmental justice claims based on facial discrimination or disparate impact, the permitting process itself poses additional obstacles to environmental justice advocates. Because the technology-based permitting scheme does not require an environmental justice analysis, even when a corporation chooses to voluntarily conduct the analysis, the MDEQ will make no judgment or decisions about the analysis because the constraints of current laws do not allow that to be a factor in permitting decisions. Telephone Interview with Bryce Feighner, Chemical Process Unit Supervisor, Michigan Department of Environmental Quality, in Lansing, MI (Mar. 31, 2008). Consequently, it is quite possible that a corporation could conduct an environmental justice analysis and identify multiple environmental justice issues. Yet, the identification of these problems will not assist the environmental justice community, nor will it affect the corporation's ability to receive a permit. Effectively, Michigan law has adopted as the basis for its permit application process the standard established by the *Select Steel* Complaint: if a facility is able to satisfy the permit and health-based requirements, then the permit will be issued regardless of other possible impacts. EPA File No. 54-98-R5.

Thus, the current framework and permit requirements are fairly lenient unless an area is designated as a NAA and a facility is subject to the more stringent standards of review. With the exception of Title VI, there is presently no legal requirement in Michigan for government agencies to consider the impact that a project will have with respect to environmental justice issues. Therefore, if the technology-based standards are satisfied the MDEQ must issue the permit.

Implications of Technology-Based Permitting on Environmental Justice Communities

The problem with utilizing a technology-based permitting scheme as the basis for granting applications for industry projects is that this method ignores the significant impacts that a facility may have on surrounding communities. The disconnect between the current legal framework and its analysis of the potential impacts of a project, as compared with the actual impact on environmental justice communities, can be illustrated by examining a recent application for a facility expansion submitted in Detroit, Michigan.

On November 26, 2007, Marathon Oil Refinery in Detroit submitted a permit application for the Detroit Heavy Oil Upgrade Project (“HOUP”). Marathon Petroleum Co. (“MPC”), Permit to Install No. 388-07 (“Permit No.1”) (2007). The purpose of the HOUP is to install new equipment at the existing facility, allowing the refinery to process a new source of crude oil and increase capacity by 15%. MPC, Permit No.1: Environmental Justice Analysis (“*EJ Analysis*”) at 1. This application was withdrawn on February 20, 2008, and replaced with a second permit application for the HOUP, filed on March 13, 2008. MPC, Permit to Install No. 63-08 (“Permit No.2”) (2008). The goals of the second HOUP permit application remain substantially the same as those stated in the first application, although there were some significant changes made to the estimated levels of emissions for the criteria pollutants and to the method of calculating emissions and net differences. MPC, Permit No.2: Fact Sheet at 2.

The first HOUP application estimated that emissions of CO would increase by 199.8 tons per year, resulting in an exceedance of the significance level by nearly 100 tons per year.⁶ MPC, Permit No.1: Fact Sheet at 2. This level was dramatically reduced to an estimated increase of only 84.6 tons per year in the second permit application, resulting in estimated emissions in

⁶ See Appendix, Table 1.

compliance with the significance level of 100 tons per year. MPC, Permit No.2: Fact Sheet at 2-3. However, with the new method of calculating the emissions and net differences, the level of CO was not the only criteria pollutant to change between the first and second permit applications.⁷ While the netting calculation results in all criteria pollutants satisfying the significance level, reviewing the *actual* HOUP emission increases shows that NO_x, SO₂, PM and H₂SO₄ are all estimated to exceed the significance level by a substantial amount. *Id.* at 9.

The permitted exceedance of the NAAQS for the previously listed criteria pollutants could have a particularly devastating impact in Detroit, and is a concrete example of problems with anticipated effects evaluated under the current legal framework versus the actual impact on surrounding communities. Detroit has been designated by the EPA as an a NAA for ozone. Michigan Department of Environmental Quality, *Attainment/Nonattainment By County of Criteria Pollutants*, <http://www.deq.state.mi.us/documents/deq-aqd-air-aqe-attainment-by-county-map.htm> (click on “Wayne County”) (last visited May 1, 2008). Classification as a NAA means that, at present levels of emissions, Detroit is unable to meet the standards established for safe levels of ozone emissions. Because netting allows for increased emissions when there have been previous decreases, the particular risk is that Marathon will be legally permitted to emit significantly higher levels of various criteria pollutants than would otherwise be allowed by law, and it can do so in an area that is presently incapable of satisfying EPA limits for ozone.

While it was not required to do so, in its permit application Marathon conducted an environmental justice analysis that considered the potential impacts the facility expansion would have based on: populations of the surrounding communities; religious denominations of

⁷ See Appendix, Table 2.

surrounding populations; community health indicator analysis; environmental impacts from existing facilities; and, mitigating factors. MPC, Permit No.2: EJ Analysis at 3-5.

In this analysis, Marathon rejects the notion that the facility expansion will add to the ozone problems in Detroit. First, Marathon avows that its contribution to the overall percentages of air pollution in the Detroit metro area is small in comparison to other facilities. *Id.* at 22-23. Marathon then concludes that “[t]he proposed project represents a net reduction in emission rates of both NO_x and VOC Due to a reduction in emission rates of ozone precursor compounds, the proposed project should not cause an increase in ambient ozone concentrations.” *Id.* at 22. While Marathon’s argument is mathematically accurate- the net effect of the emissions will be well below the significance level, the fact that emissions of ozone precursor pollutants were previously reduced does *not* mean that present, increased emissions will result in no harm to the ozone levels in Detroit.

Another example of how the present framework ignores substantial threats to surrounding communities is found in the requirements for analyzing toxic air contaminants. In addition to the estimated increases of the criteria pollutants, Marathon’s permit application includes a Toxic Air Contaminants Summary. The Summary identifies ninety-one different pollutants that will be affected by the facility expansion, including many chemicals known to have acute and/or chronic and/or carcinogenic effects, such as benzene, chromium, cadmium, formaldehyde and silica. MPC, Permit No.2: Fact Sheet at 10-11. The toxic air contaminants standards are health-based and require dispersion modeling to be conducted for each chemical, individually. MDEQ, WORKBOOK at 9-1, 10-3. Only when an individual pollutant is estimated to exceed the significance level must the corporation install Maximum Achievable Control Technology (“MACT”). *Id.* at 11-16.

Under the current framework, a facility is not required to evaluate the potential cumulative or synergistic effects of the toxic air contaminants if the estimated levels of emission satisfy the significance level, despite the potentially hazardous effects of these pollutants. Interview with Stuart Batterman, Ph.D, Professor, Environmental Health Sciences, School of Public Health, University of Michigan, in Ann Arbor, MI (Mar. 28, 2008). Furthermore, the monitoring is conducted at various intervals; there is no continuous monitoring or testing, nor are there established standards that can be relied upon as a measure for comparison. *Id.* Because Marathon's application states that all ninety-one chemicals individually satisfy the significance levels, no additional reviews of the pollutants are necessary under the permit application.

Although the law in this area is insufficient, in that it does not require a comprehensive analysis of the potential harms of *all* pollutants that will be affected in a facility expansion, it is not nonexistent. Rule 228 in the Michigan Air Toxics Rules allows the MDEQ to consider both cumulative and synergistic effects of toxic air contaminants if there appears to be substantial health risks. Michigan Air Pollution Control Rules Pertaining to Air Toxics, R 336.1228 ("Rule 228") (1998). In reviewing Marathon's permit application the MDEQ toxicologist determined that there was such a risk and she took the following actions: (1) required Marathon to meet a *combined screening level* for some petroleum byproducts, (2) conducted a quick cumulative impact screening by combining various compounds and entering them into a hazard index, and (3) tested the results of the cumulative impact screening in a target organs hazard index. Telephone Interview with Mary Lee Hultin, Air Quality Division Toxicologist, Michigan Department of Environmental Quality, in Lansing, MI (Mar. 31, 2008).⁸ Even though such efforts contribute to ensuring that the potential environmental effects of a facility expansion do

⁸ Date of interview approximated and may have occurred one week prior.

not pose a health risk to the public, the MDEQ toxicologist made sure to add that her review was “conservative” because she conducted her analysis with the assumption that Marathon accurately estimated the emissions levels for all of the toxic air contaminants. *Id.*

Despite the significant differences between the ways in which environmental justice communities and the MDEQ understand the impact of netting in an a NAA and the testing methods used to evaluate the risks of toxic air contaminants, most precarious of all is the way in which the current legal framework disregards the importance of requiring an analysis of potential environmental justice issues in permit applications. Under Executive Order (“EO”) 12898, issued by President Clinton, federal agencies, “to the greatest extent practicable,” are required to make the achievement of environmental justice part of the agency mission “by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.” Section 1-101 (Feb. 11, 1994).

Acting pursuant to EO 12898, Michigan Governor Granholm enacted Executive Directive (“ED”) No. 2007-23: Promoting Environmental Justice (Nov. 21, 2007). ED No. 2007-23 requires the MDEQ to develop and implement an environmental justice plan for all state agencies.⁹ The directive is broadly phrased and gives the MDEQ sufficient latitude to enact any plan or policy it believes would further the goals of the directive- ensuring that all state agencies take into consideration potential environmental justice risks when performing agency duties. Notwithstanding clear policy directives intended to address environmental justice issues, the HOUP permit application illustrates the divide between policy declarations and actual practices.

⁹ The current deadline for establishing guidelines pursuant to ED No. 2007-23 is June 2008.

Although the federal government and the State of Michigan have made public commitments to furthering the goals of the environmental justice movement, the practical reality is that there exist few legal consequences, and even fewer enforcement mechanisms, when an environmental justice issue is identified. In its environmental justice analysis Marathon conducted a comprehensive review of the primary indicators of an environmental justice problem, and the results of this analysis revealed significant disparities.

1. POPULATION DATA

The analysis provided for the population data examined the minority population, poverty level, income, and rate of unemployment in the geographic areas located within one mile, two miles, four miles and six miles from the facility.¹⁰ MPC, Permit No.2: EJ Analysis at 3-12. The results of the data indicate that the communities located closest to the facility are overwhelmingly composed of minority and low-income populations, and have some of the state's highest unemployment rates. *Id.* When compared with data compiled for Michigan as a whole, the percent of: minorities living closest to the facility is 61.2% compared to the average minority population in Michigan equaling only 21.4%; low-income individuals represent 22.5% of the surrounding population, compared with the state average of 10.5%; unemployed individuals constitute 10.5% of the population in communities immediately surrounding the facility, while the state average is only 5.8%. *Id.* Despite such a significant disparity between the state averages and the communities located in close proximity to the refinery, Marathon dismisses the notion that there is any actual environmental justice problem. *Id.* at 15-16, 25.

¹⁰ See Appendix, Table 3.

Although the population data clearly indicates that the communities most significantly impacted by the facility expansion are primarily low-income and minority individuals,¹¹ because all emissions under the second permit application satisfy the significance levels, the MDEQ has no authority to deny the permit. Additionally, there is no standard of review applicable in this situation; the estimated emissions satisfy the significance levels and therefore no impact analysis is required. This paved the way for Marathon to conclude that “the future operations of the HOUP are not expected to lead to or cause disproportionate adverse impacts to low-income and minority persons in the vicinity of the refinery as the result of the significant emission control and mitigation/offset activities that are planned.” *Id.* at 25.

2. RELIGIOUS DENOMINATIONS OF SURROUNDING POPULATIONS

The religious composition of the populations living in geographic proximity to the facility, as compared with general state data, did not evidence any environmental justice concerns. MPC, Permit No.2: EJ Analysis at 12.

3. COMMUNITY HEALTH INDICATOR ANALYSIS

The community health indicator analysis was a less comprehensive analysis than that conducted with respect to population data. In the initial report submitted with its first permit application, Marathon restricted its focus to comparing various health indicators of two communities nearest to the facility (Melvindale and River Rouge), the City of Detroit, and Wayne County. MPC, Permit No.1: EJ Analysis at 10. Data for other communities that are located in close proximity to the facility were not included in this analysis, nor was data for the state of Michigan. Additionally, the health indicators examined were limited in scope and did

¹¹ In its environmental justice analysis Marathon cites to EPA “Interim EJ Guidelines” as providing a definition of what factors should be identified when evaluating whether there is a potential environmental justice case. However, the citation is improper and I was unable to find any reference or link to the guidelines on the EPA website.

not take into account some of the more serious health problems that often correlate with, or are directly affected by, the presence of a nearby facility, such as cancer or lead poisoning.¹²

In this analysis, Marathon compared the incidence of infant and adult mortality, rates of asthma for children and adults, and life expectancy for men and women.¹³ *Id.* The results of the data indicate that the health of people living in Detroit is worse than Wayne County residents. The incidence of infant and adult mortality and the prevalence of asthma are significantly higher in the Detroit metro area, and the life expectancy for women living in Detroit is significantly lower than women living in Wayne County as a whole, although the life expectancy for men is greater in the Detroit area. *Id.*

In connection with the second permit application, Marathon expanded its health analysis to include data for the state of Michigan and rates of lead poisoning. MPC, Permit No.2: EJ Analysis at 12-14. The additional information further confirms that individuals living in the Detroit metro area have much poorer health than those living in other parts of Michigan. *Id.* The rates of infant and adult mortality, asthma and confirmed cases of lead poisoning are significantly higher in the Detroit area compared to Michigan averages, while female life expectancy is noticeably lower. *Id.* Marathon attributed the disparate impact of the health data to the fact that “inner cities” have more unemployed or working poor and therefore have less access to adequate health care and coverage, and that low income population means lower participation in health insurance programs. *Id.* at 14. Marathon also explained that the high incidence of lead poisoning was likely a result of building materials used to construct housing in the metro area. *Id.* at 12.

¹² While the incidence of lead poisoning was not addressed in its first environmental justice analysis, Marathon incorporated this factor into the analysis submitted with the second permit application.

¹³ See Appendix, Table 4.

4. ENVIRONMENTAL IMPACTS FROM EXISTING FACILITIES

The next component to the environmental justice analysis was an evaluation of the environmental impacts that Marathon's existing facilities have on the air quality in the Detroit area. In the first analysis conducted by Marathon, the data provided shows that, within a one mile geographic study area, existing facilities in 2005 contributed to just over 1% of total CO emissions, 14.6% of total SO₂ emissions, 17.2% of PM emissions, 20.1% of all NO_x emissions, and 56.7% of all VOCs' emissions. MPC, Permit No.1: EJ Analysis at 14. This was a significant reduction from 2001, where Marathon contributed to over 43.1% of NO_x, 82.5% of SO₂ and 71.7% of VOCs emitted into the general area. *Id.* In conjunction with its second permit application Marathon did not provide the same detailed data for emissions within one mile of the facility, but instead referred to its previous reductions in emissions and provides a table illustrating the "Relative Contributions of Major Emission Sources within 2 Miles of the Marathon Refinery." MPC, Permit No.2: EJ Analysis at 18.

The most significant impact that the increase in HOUP emissions will have for Detroit relates to the city's designation as a NAA for ozone. Of all eight criteria pollutants, the two pollutants that directly and most significantly affect ozone are NO_x and VOCs; at present emission levels, Marathon's emission of NO_x and VOCs constitute a substantial portion of the total amount of these pollutants emitted in Detroit. MPC, Permit No.1: EJ Analysis at 14. Because Marathon's second permit application indicates that all criteria pollutants are below the significance level once the net calculation is considered, Marathon is legally entitled to emit an additional 200 tons per year of NO_x,¹⁴ despite a significance level of 40 for this pollutant. The increased emission of a criteria pollutant that is also an ozone precursor chemical will likely further contribute Detroit's

¹⁴ Marathon estimates that the HOUP increase for VOCs is -34.7%, and therefore should not substantially add to the problem addressed here.

excessive ozone levels. Despite such a significant risk, the current legal framework does not allow the MDEQ to take such a factor into consideration when issuing the permit if the net calculation indicates that the estimated emission for an individual pollutant falls below the significance level.

5. MITIGATING FACTORS

The final part of Marathon's environmental justice analysis was the incorporation of mitigating factors into its permit application. Taking into consideration the concerns of the community, with no legal obligation to do so, Marathon agreed to: (1) conduct an enhanced air monitoring program at the facility to address citizen concerns. The program will consist of installing, operating and maintaining at least four air monitoring stations in and around the Refinery and providing emissions data from the air monitoring to the City of Detroit to be available for the public; and, (2) an enhanced street sweeping program for paved roads in the vicinity of the refinery to reduce dust. MPC, Permit No.2: Draft Permit Terms at 82, 84; *see also* Permit No.2: EJ Analysis at 24-25. Listing these factors within the permit application is significant because a failure to follow through with the implementation of the specified mitigating factors constitutes a permit violation and gives the community the legal authority to bring an enforcement action against Marathon.

In addition to the factors guaranteed within the permit application, Marathon has made several other promises to local communities to address concerns of potentially negative impacts that the facility expansion may have on these communities. In its description of the HOUP, Marathon stated that the expansion would create 135 new permanent jobs and an additional 800 short-term construction jobs. MPC, Permit No.2: EJ Analysis at 3. Marathon then declared that "to the greatest extent possible" it would hire individuals from Detroit neighborhoods to fill the

new positions. *Id.* (However, no guarantees were made as to the number of new employees who would be hired from the communities surrounding the facility, nor was there any discussion of what positions these individuals would be hired to occupy.)

In addition to the above-mentioned factors, on October 9, 2007, Marathon signed a Development Agreement under which it voluntarily committed to: install PM controls on trucks used to transport coke from the facility; participate in the city's reverse 911 system to alert individuals living in the surrounding communities of emergency information; assist the city in its development of evacuation plans in the area around the refinery; and, hold regular meetings with the Detroit Refinery Community Advisory Panel. *Id.* at 24. Although Marathon has made a substantial number of concessions to the community, none of the factors promised offers any solution that will adequately address the likely health impacts of the facility expansion. Despite this apparent flaw, Marathon's efforts in this area go so far beyond what the current framework requires that its efforts have been described as "precedent setting" by officials at the MDEQ. Telephone Interview with Terry Wright, Chemical Process Unit Engineer, Michigan Department of Environmental Quality, in Lansing, MI (Mar. 31, 2008).¹⁵

Issues Ignored Under Current Permitting Scheme

Marathon's environmental justice analysis was comprehensive and well beyond the scope of what is required for a technology-based permit application. The analysis nonetheless revealed many significant environmental justice issues, despite Marathon's conclusions that compliance with significance levels is sufficient evidence that surrounding communities will suffer no "disproportionate adverse impacts." MPC, Permit No.2: EJ Analysis at 25. Regardless of the

¹⁵ Date of interview approximated and may have occurred one week prior.

existence of these problems, the current framework does not permit the MDEQ to take such issues into consideration when evaluating a permit application.

In addition to issues mentioned in the preceding pages, the current legal framework also rejects the need for source monitoring. While Marathon has agreed to conduct ambient air monitoring as a mitigation factor in its permit application, ambient air monitoring only calculates the prevalence of pollutants in the atmosphere surrounding a facility, whereas source monitoring “involves the measurement of emissions directly from a fixed or mobile emission source, typically at the point of exhaust, vent, stack or chimney.” The National Association of Clean Air Agencies (NACAA), *Measuring Air Pollution: Monitoring*, <http://www.4cleanair.org/TopicDetails.asp?parent=20> (last visited April 30, 2008). Source monitoring is more reliable than data calculated through ambient air monitoring because most stationary sources use continuous emissions monitors (“CEMs”) rather than relying on interval reports. *Id.* Additionally, the data collected from stationary sources is significant because it can be used to determine both whether the permit standards are satisfied and “as input to ozone and/or health risk prediction models.” *Id.*

Finally, because the current legal framework ignores additional impacts when the technology-based standards are satisfied, there is no consideration of other significant environmental harms that will almost certainly result from the expansion of the Marathon Refinery, including: the potential for accumulation of toxic build-up on cars, homes and food/farmed goods consumed within the community; the significant risk of decreased visibility due to an increase in emissions of ozone precursor chemicals combined with the fact that Detroit is presently in non-attainment for ozone; and, other qualitative factors such as increased traffic and noise in the surrounding communities.

Alternatives Proposed: Changing our Understanding of the Current Framework

For the environmental justice movement to achieve any measurable success, environmental justice communities can no longer be forced to fight against both the industry responsible for the environmental harm in their community and the legal framework that supports the industry's practices. As long as the current framework is interpreted and applied in the permitting process such that industry and progress take precedence over the human impacts of development the law will continue to be an obstacle for environmental justice communities. However, there are ways to work within the current framework to produce a new and improved permit application process.

The statutory basis for the permitting requirement, the CAA, leaves the EPA with more than enough authority to insist upon more stringent standards, allowing the EPA the flexibility to: (1) increase the number of criteria pollutants that must be evaluated in a permit application, (2) recalculate the significance level for criteria pollutants; and, (3) omit exceptions, such as netting, that allow for legally permitted exceedances of NAAQS. Additionally, EO 12898 and ED No. 2007-23 provide sufficient grounds within the existing legal framework for Michigan to require the consideration of environmental justice issues when evaluating a permit application.

Taking seriously these directives, MDEQ has the authority to impose a variety of changes to the current method of technology-based permitting. The first alternative proposal, which would be relatively minor, would be for MDEQ to require corporations to offer concessions to surrounding communities when a new facility is to be constructed, or when an existing facility will be expanded. Additionally, these concessions should be included in the permit application to guarantee to the community that any mitigating factors offered will be made as a permit condition, subject to enforcement provisions. With respect to Marathon, the state could require

that a set number of jobs that result from the facility expansion must be reserved for individuals living in the affected areas. The obvious drawback to requiring concessions, and that those concessions be included in the permit application, will be that corporations choose not to offer anything at all.

A second alternative, and one that would have a greater impact on the permitting process than the first alternative, would be for MDEQ to require a comprehensive environmental justice analysis be conducted as a part of the permit application, and that the results of the analysis will be considered by the MDEQ when making a decision whether to grant the permit. ED No. 2007-23 certainly grants the MDEQ sufficient authority to adopt such a change. The effect of this permitting scheme would be a requirement that when a corporation plans a new project it must at least consider the human impact of the project. However, under this proposed alternative satisfying the technology-based standards is still likely to be the MDEQ's primary basis for granting or denying a permit application.

A final alternative would be for Michigan to institute a dramatic change to the current permitting process, and give equal weight to technology-based factors and the human impact of a project. While significant, this is a change that could be accomplished within the current legal framework. The new permitting process could be structured so that the decision to grant a permit is partially based on findings in the environmental justice analysis, including qualitative health impacts. Under the current framework, communities must prove that they are suffering a harm that is directly related to, and caused by, a nearby facility. The state could shift this burden onto the corporation applying for a permit and require it to demonstrate that the new project will not have an adverse effect on the community. Simply satisfying a lack of discriminatory intent under Title VI, and compliance with NAAQS, will no longer be sufficient for a corporation to be

awarded a permit. Because the new permitting application is equally concerned with the human impacts of a new project, Michigan and the MDEQ could require an analysis of cumulative and synergistic effects of toxic air contaminants, as well as source monitoring of existing and proposed new facilities. Finally, with the human impact given significant, if not equal, weight in the permitting process, one component could be to ensure that the people who will be affected are properly informed of the project and its potential effects. The most effective way to do this would be to use the flexibility granted under current laws and require corporations to increase the public participation of the affected communities.

Conclusion

In spite of the criticisms listed above, Marathon's environmental justice analysis, the mitigating factors it included within its permit application, and the additional agreement with the City *are* "precedent setting." This makes it all the more appropriate as an illustration of what is wrong with the current framework and with technology-based permitting scheme. As Marathon stated in its draft permit and in the environmental justice analysis, the additional measures taken were done so voluntarily and were *not* required for the permit application. Therefore, under existing law most corporations can get away with only meeting the bare minimum requirements of Title VI and never taking into account the substantial risks that a new project poses to the individuals living nearby a facility. Yet, even when a corporation voluntarily conducts such a comprehensive analysis and the results reveal that the populations to be affected by the facility are overwhelmingly composed of minority and low-income populations, and that the project poses *real* risks to that community, the MDEQ is unable to use this data when making its decision about whether to grant or deny the permit application.

The current framework of technology-based permitting is blind to the concerns and burdens of environmental justice communities. In order to give these communities a voice, and ensure that the legal system is able to provide the same protections for them as it does for corporations involved in the construction of a new facility, or expansion of an existing one, the state must use its authority under the CAA, EO 12898, and Michigan's ED No. 2007-23 to incorporate the human impacts of a new project into the permitting process.

Table 1: Permit Application No. 1

Pollutant	HOUP Increase (Tons/Year)	Previous Decrease (Tons/Year)	Net Emissions (Tons/Year)	Significance Level
VOC	6	19	-13.01	40
NO ₂	113	606	-82.13	40
SO ₂	204	785	-7.95	40
PM	35	132	-1.86	25
PM ₁₀	-3	13	-15.62	15
CO	199.8	n/a	+199.78	100
H ₂ SO ₄	13	63	-50.45	7

Table 2: Permit Application No.2

Pollutant	HOUP Increase (Tons/Year)	Previous Decrease (Tons/Year)	Net Emissions (Tons/Year)	Significance Level
VOC	-34.7	33.2	-1.5	40
NO ₂	200	611	-0.5	40
SO ₂	210	784	-0.8	40
PM	33	127	+0.01	25
PM ₁₀	-11	10	-11.1	15
CO	85	n/a	+84.6	100
H ₂ SO ₄	14	63	-3.3	7

Table 3: Population Data

Proximity to Facility	Minority Population	Low-income Population	Unemployed Residents
1 Mile	61.2%	22.5%	10.5%
2 Miles	51.7%	22.3%	10.8%
4 Miles	39.0%	20.0%	8.8%
6 Miles	42.3%	19.0%	8.9%
Wayne County	50.1%	16.4%	8.5%
Michigan	21.4%	10.5%	5.8%

Table 4: Community Health Indicator Data

	Melvindale	River Rouge	Detroit	Wayne County	Michigan
Infant Mortality (per 1000)	DNP*	19.1	16.3	7.3	7.4-8.5
Adult Mortality (per 100K)	996	746	1040	936.1	812
Life Expectancy at birth (women)	DNP	DNP	76.7	79.2	79
Life Expectancy at birth (men)	DNP	DNP	73.6	70.1	74
Asthma Rate, child (0-17 yrs)	DNP	DNP	29	1	Less than 1 person
Asthma Rate, adult (18+ yrs)	DNP	DNP	14	1	DNP
Asthma Rate, average all ages	14.8-22.8	14.8-22.8	14-29	DNP	DNP
Lead Poisoning (% of children with confirmed elevated blood levels)	DNP	DNP	6.4%	1.7% (Excluding Detroit)	3.2%

*DNP- data not provided