

Final Report of the
New York State Department of Environmental Conservation
Disproportionate Adverse Environmental Impact Analysis
Work Group

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I. Introduction

On March 19, 2003, the New York State Department of Environmental Conservation (DEC) released Commissioner Policy 29 Environmental Justice and Permitting (CP-29) to provide guidance on incorporating environmental justice concerns into the permit review process and various aspects of enforcement, grant programs and public participation programs. Upon the effective date of CP-29, April 18, 2003, the DEC established two work groups to develop and incorporate critical environmental justice information into the DEC environmental permit review process. One such work group was entitled the “Disproportionate Adverse Environmental Impact Work Group” (work group). The work group was asked to develop recommendations for conducting a disproportionate adverse environmental impact analysis as a component of the environmental impact statement. This report provides a summary of the work group’s deliberative process and presents various analytical methods for assessing disproportionate adverse environmental impacts that were discussed by the work group during their deliberations.

The work group deliberated over several months in an effort to determine the most appropriate approach to conduct a disproportionate adverse environmental impact analysis and to provide the DEC with a methodology and recommendations on how to assess disproportionate impacts in the context of the permit review process when an environmental impact statement is required. Despite intensive discussion, case study review and experiential analysis, a consensus on how to conduct a disproportionate impact analysis was not achieved. Additionally, a consensus was not achieved regarding whether or not or to what extent existing conditions or burdens should be incorporated into a project-specific disproportionate adverse impact analysis. However, the work group did agree upon the importance of accurately describing the existing environmental setting.

In order to conduct a disproportionate impact analysis, the work group believes that various tools are needed to identify the environmental and human health impact of a proposed action. The work group agreed that the DEC should work on developing tools for assessing existing environmental and human health burdens and consider the appropriateness of their use in environmental justice assessments.¹ As discussed during many work group sessions, an impact is often viewed as the effects of a specific project such as air emissions, truck traffic, and water quality. In contrast, a burden may or may not be directly related to or affected by a proposed project. A burden may be quantified using measurable criteria or may require subjective criteria in order to be measured. As example, consider the case of a community with elevated blood lead levels in its population, such levels may not be directly or even indirectly affected by project related impacts involving a specific permit application under review by the DEC (a water discharge for example). However, including such a burden in the description of environmental setting provides a more comprehensive description of the environmental setting such that this

¹The identification of reliable sources of existing health data and the incorporation of that data into the environmental review process is currently being addressed by a second work group established under CP-29, relating to health outcomes data.

information may be considered in proposing mitigation.

The development of an effective permit review method that will identify disproportionate adverse environmental impacts will depend greatly on the development of measures and goals that accurately describe the existing environmental setting for specific geographic areas and possibly all areas throughout New York State. The work group agreed that measures to assure a more complete description of the existing environmental setting will make the SEQRA process more effective, and will also enhance the state's ability to conduct disproportionate adverse environmental impact assessments.

This report provides recommendations to the DEC for continuing its work toward the development of a disproportionate adverse environmental impact analysis methodology. The work group's efforts described in this document are intended to provide insight on developing a disproportionate adverse environmental impact protocol and enhance the DEC's environmental permit review process so that it will be able to respond to environmental justice concerns. In addition to the impact methodologies this report contains definitions and some suggestions on how to develop a more complete description of the environmental setting.

II. Definitions

During many work group meetings, definitions were crafted and circulated for discussion to allow for common interpretation of environmental justice terminology. The definitions noted below are intended to provide clarity to the discussion presented in this report and to the various analytical methodologies discussed in section IV. The definitions and terms are intended for use in the context of identifying potential disproportionate adverse environmental impacts and may require further revision.

Burden: a negative adverse environmental and/or human health effect or attribute in an area; an existing baseline condition.

Community of Concern: defined as an area whose population is likely to be affected by at least one potentially significant adverse environmental and/or human health impact related to a proposed action for which a permit application has been submitted.

Disproportionate Adverse Environmental Impact: means a negative disproportionate significant environmental and/or human health impact on a defined geographic area. The disproportionate nature of a potentially significant adverse environmental and/or human health impact that is reasonably expected to result from the proposed action shall be determined on a case-by-case basis.

Environment: means the physical conditions that will be affected by a proposed action, including land, air, water, minerals, flora, fauna, noise, resources of agricultural, archaeological, historic or aesthetic significance, existing patterns of population concentration, distribution or growth, existing community or neighborhood character, and human health²

Environmental Setting: descriptive information that portrays or captures various aspects of the existing environmental condition including existing burdens relating to the environment and human health within the area subject to environmental review.

Impact: means to have a change or an effect on any aspect(s) of the environment³

Indicator: an objective or measurable value that shows the presence of specific environmental conditions.

Media: specific environments, including air, water, soil, etc. which are the subject of regulatory concern and activity.

²6 NYCRR 617.2(l)

³6 NYCRR Part 617.2(r)

Reference Community: a defined geographic area used to analyze and compare impacts on a community of concern. The boundaries of the “reference community” should be based on the nature of the project, the area or population to be served by the project and the practicable location/ siting options.

III. Developing a Comprehensive Description of the Environmental Setting

SEQRA'S BASIC PROCESS

New York's State Environmental Quality Review Act (SEQRA), Article 8 of the Environmental Conservation Law, declares “. . . a state policy which encourages productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and enhance human and community resources; and to enrich the understanding of ecological systems natural, human and community resources important to the people of the state.”⁴

In order to fulfill this policy, SEQRA requires all state and local government agencies to balance environmental impacts with social and economic factors when deciding to approve or undertake an action. This means agencies must assess the environmental significance of all actions they have discretion to approve, fund or directly undertake, unless exempt or excluded by the SEQRA statute or regulation.

The full Environmental Assessment Form (EAF) is designed to help applicants and agencies determine whether a project or action may be significant.⁵ Based upon information contained in the EAF, the lead agency makes a determination of significance whereby the agency decides whether the proposed action may include the potential for at least one significant adverse environmental impact.

If the lead agency determines that the action will not have a significant adverse environmental impact, a determination of non-significance (Negative Declaration) is prepared. If the lead agency determines that the action may have one or more potentially significant adverse environmental impacts, an Environmental Impact Statement (EIS) is required. “An EIS is a detailed statement that . . . [enables] agencies, project sponsors and the public to systematically consider significant, adverse environmental impacts [of a project], alternatives and mitigation.”⁶

As stated in CP-29, the purpose of the work group is “to develop recommendations for conducting a disproportionate adverse impact analysis as a component of the environmental impact statement.” A disproportionate adverse environmental impact analysis is intended to determine whether potentially significant adverse environmental impacts as determined under SEQRA disproportionately affect low-income and minority populations. With this in mind, the work group reviewed the SEQRA provisions and several environmental justice assessment models that

⁴ECL § 8-0101

⁵Pursuant to regulation and CP-29, a full EAF is required for Type I and certain Unlisted actions where DEC is the lead agency and a potential environmental justice area is identified by the preliminary screen.

⁶NYCRR Part 617.2(n)

proposed to analyze adverse environmental impacts, including a geographic information tool currently under development by U.S. Environmental Protection Agency, Region II and a burden assessment protocol that carry a presumption that any project in an already burden area must take steps to avoid, minimize and mitigate adverse impacts. The models and assessment tools were considered during the work group's deliberations.

Consistent with the work group's mandate this report includes discussion and recommendations concerning a disproportionate adverse environmental impact analysis as a component of a project-specific environmental impact statement. The work group recognized, however, that there are also concerns about the disproportionate, adverse impact of existing facilities and ambient conditions in minority and /or low income areas that are the subject of DEC Permit that does not require the completion of an EIS. Through its deliberations the work group determined that the DEC should continue to develop environmental impact and burden analysis tools, and as they are developed, consider whether these tools are appropriate for use in assessing existing environmental justice concerns.

ENVIRONMENTAL SETTING

The work group believes that in order to produce a complete EIS, a comprehensive description of the environmental setting is needed. Pursuant to 6 NYCRR 617.9(b)(5)(ii), an EIS requires a "concise description of the environmental setting of the areas to be affected [by the proposed action], sufficient to understand the impacts of the proposed action and alternatives."

The description of the existing setting should capture various elements of the land, air, and water and provide a comprehensive description of the environmental and human health conditions within the area(s) to be affected by the proposed action. The description of the existing setting should be appropriately detailed so as to provide the DEC permit analyst with a vivid mental picture of the physical, socioeconomic and human condition of the areas to be affected. This comprehensive description can then be used as the basis for the environmental analysis of impacts including those impacts which may have a disproportionate effect.

The work group sought to develop a descriptive list of items identified as indicators that should be included in the description of the environmental setting. Indicators can help to accurately describe the environmental setting. Existing indicators that describe environmental and human health conditions include: a Facility Density Indicator, Toxic Release Inventory (TRI) Air Emission Indicator, and the Air Toxics Impacts indicator as developed by U.S. EPA Region 2 for its Environmental Load Profile (ELP)⁷; other indicators of air quality such as criteria pollutants (for

⁷ Through the use of geospatial software and environmental databases, the ELP provides a representation of the environmental load (i.e. relative burden) within a selected community. Further, it serves as a screening tool for identifying communities that may bear disproportionate environmental loads on a statewide level.

example PM 10 and PM 2.5); indicators of health status⁸; indicators of truck traffic generated by cumulative sources in the affected area; presence of inactive hazardous waste sites⁹; presence of impaired water bodies; indicators of land use including variances from established land use; and amount of accessible open space. Other indicators which could be included are population density: percentage of minority or low-income populations and vulnerable populations such as children and the elderly. These indicators could help provide a comprehensive picture of existing physical conditions and a consistent basis for comparison. Corresponding web-based links to many of the indicators listed can be found in Appendix B and C.

The use of geospatial software and environmental databases should also be used to produce maps that show the location of burdens and quantify impacts using many of the indicators referenced above. The maps, charts and other information produced will serve as a visual aid and provide further detail to the environmental setting.

The description of the environmental setting should be compiled from existing sources including existing inventories and databases as well as information from local, state and federal agencies, universities and similar information repositories. The work group recognizes that the ability to develop a complete and comprehensive description of the environmental setting is limited by a number of factors including incomplete data, imprecision of existing environmental analysis tools, and regulatory approaches that focus on the regional impacts versus the local impacts. Therefore, as recommended in section IV of this report, additional inventories and databases should continue to be developed and the appropriateness of their use determined by the DEC, including methods to quantify environmental burdens.

In addition to identifying various indicators, field characterization of the area of proposed concern is essential. Such field work may include walking all publicly accessible areas, as applicable, in the project area and making observations as they pertain to the environmental setting, including representative photographs.

Once the physical conditions of the affected area are known, the project sponsor, the DEC and the public can work together to develop the scope of the EIS. Pursuant to 6 NYCRR §617.8(e), scoping must include an opportunity for public participation which may be done through the use of public meetings, exchanges of written material or other means. The scope will identify the impacts and burdens relative to the proposed action which should be addressed in the EIS. The scoping process may also serve to identify additional indicators of environmental impact and burden which can be used to enhance the description of the existing setting.

While the descriptions of the existing setting, resulting maps, the EIS and the disproportionate

⁸The Health Outcome Data Work Group, established pursuant to CP-29, is currently developing protocol for describing the health status of a geographic area.

⁹An inactive hazardous waste site is an area or structure that has been contaminated with hazardous waste as defined in Part 371 of Title 6 of the New York Code, Rules and Regulations, or any site listed on the USEPA's National Priorities List (NPL).

analysis, are intended for use on a project-specific basis, these items may also provide useful information to be considered by the DEC, to assess the potential adverse impact of existing facilities and ambient conditions on minority and /or low income areas.

IV. Methods for Assessing Disproportionate Adverse Environmental Impacts

The work group reviewed six different methods for assessing disproportionate impacts. Four of the analytical methods reviewed by the work group were derived from permit applications that actually employed that method. Another method was developed as a hybrid of the discussed analytical methods. A sixth method was submitted by a work group member as a wholly different approach, whereby indicators are used to identify burdens throughout the State, and a determination is made of those areas where disproportionate impacts already occur. The work group discussed and debated the methods over several weeks. The objective was to determine whether a preferred methodology could be selected by the group.

The work group spent considerable time discussing whether it was appropriate to have a single methodology for assessing disproportionate adverse environmental impacts, but could not agree to recommend just one at this time. Discussions on whether it was appropriate for the DEC to provide analytical options that could be applied based on case specific circumstance was also discussed. Methods A and B were discussed in some detail by the work group. Other methods were discussed generally, but are included in this report to reflect the range of discussions. The work group did not reach a final consensus on which analytical methods were most appropriate and did not make specific recommendations on any single methodology. Each approach presented for discussion relies on various levels of quantitative and qualitative information, as well as objective and/or subjective analysis of what is considered adverse. The work group did conclude that, whether a single methodology or multiple methodologies are eventually chosen, any methodology selected by the DEC must have information that is: readily available; of appropriate quality; appropriate for the application being reviewed; up-to-date; generally understandable to those using it; and encompassing enough to be able to characterize and compare the impacts of issue. These methods may require further definition, development and refinement prior to implementation by the DEC.

The first four methods all begin by defining and delineating the area around a proposed project site based on potential adverse impacts from the project. These methods refer to the area encompassed by this delineated boundary as a Community of Concern (COC). (For purposes of this report, a COC must have a minority and/or low income area within it in order to proceed with any disproportionate impact analysis.) These methods compare impacts within either the COC or the area selected outside the COC. The area outside the COC is referred to as the Reference Community (RC).

If a methodology is selected that uses an RC in its analysis, parameters will need to be developed for selecting the RC(s). Such parameters must consider the nature of the project and the geographic area in which it can be realistically built. Particular consideration should be given to the project's service area and infrastructure, water, etc. In other words, a project not limited by a service area or any particular physical needs could use the whole state as an RC. A municipal waste transfer station, on the other hand, would be limited to the area within the municipality or service area including the roads needed to get to the facility, and so the RC would have to be selected recognizing those constraints. Such parameters must also be articulated with a level of

specificity that ensures that defining the RC does not alter the goals of the assessment process.

All of the methods listed can be viewed within the context of the existing environmental setting and are adaptable to a Geographic Information System (GIS) application, some to a greater extent than others. The last two methodologies (E and F) include an analysis of burden, or existing background conditions into the assessment. Method E has a comparison built into the analysis tool that utilizes GIS, but to a lesser extent than the preceding methodologies. Method F, does not require individual applicants to determine existing environmental burdens in a project area. Instead, it uses a uniform method of assessment to determine the location of burdens throughout the state, independent of a specific permit application. The methods listed contain generalized steps to conducting each analysis and formed the frame work for discussions in the work group. Detailed procedural steps for each method, with the exception of Method D and E can be extracted from references found in Appendix D of this report. Each methodology is followed by a list of considerations. The considerations represent work group member feedback on the particular assessment method and may present conflicting opinions and outcomes on the use of that method.

A. COMPARATIVE COMMUNITY OF CONCERN ANALYSIS:

This method compares project impacts on a COC with a RC which receives minimal or no impacts from the proposed project. This method can be used to collectively compare all project impacts on one common COC, or it can be used to compare individual mediums of impact (air emissions, traffic, noise) on COC's drawn to reflect those individual impacts.

1. Identify a COC based on potential adverse impacts from a project. Depending on the nature and knowledge of the impact(s) this can be a boundary drawn to reflect actual impacts or it can be identified as a fixed radius from the project location that encompasses the potential extent of project impacts.
2. Determine whether the COC includes any minority and /or low income areas. If not, discontinue the analysis.
3. Determine whether adverse project impacts in the COC are potentially significant and would affect a minority and /or low income area. If not, discontinue the analysis.
4. Identify a RC(s).
5. Determine whether the potential significant adverse impacts in a COC are disproportionate when compared to the RC, using quantitative tools and a qualitative analysis.

Considerations : The method must account for varying levels of exposure or impacts when defining the COC and the RC(s). This Method may not present a clear comparison of the

differences in impacts to a COC and an RC in a case where a community may be vulnerable to a specific type of impact or has an underlying burden that relates to or contributes to the impact under consideration. Analysis is based on project related impacts and gives no consideration to existing baseline conditions.

B. PROPORTIONAL IMPACT ANALYSIS BY DEMOGRAPHICS

This method compares impacts within the COC itself. After the COC is mapped, minority and/or low income areas are identified within the COC, and then impacts in these areas are compared to impacts in the remaining non minority and /or non low income area within the COC. Any determination of disparity would be based on measurable, disproportionate differences in impact(s) between the two areas.

1. Identify a COC based on the potential adverse impacts from a project.
2. Determine whether the COC contains any minority and /or low income areas and delineate those areas. If not, discontinue the analysis.
3. Identify and map all potential adverse environmental impacts, discerning where possible, varying levels of impact through isopleth maps or other tools.
4. Quantify relative environmental impacts between the minority and/or low income area(s) within the COC and the remaining COC area.
5. Determine whether significant adverse impacts disproportionately affect minority and/or low income areas.

Considerations: This method eliminates the need to identify a separate RC. The analysis is based on project-related impacts and gives less emphasis to existing baseline conditions than other methods. Disproportionate impacts may not be found where the degree of impact, as measured, is uniform throughout the COC, regardless of whether a disproportionately high number of low income and/or minority residents are adversely impacted by the proposed project. This method assesses the relative distribution and magnitude of impacts and may be helpful when selecting mitigation. Analysis is based on project related impacts and gives no consideration to existing baseline conditions.

C. PROPORTIONAL IMPACT ANALYSIS BY PROJECT IMPACT

This method uses impact zones based on direct project impacts and compares these zones by their demographics. Disproportionate impacts are demonstrated when the most adversely affected zone or zones contain a minority and/or low income area.

1. Identify area affected by the project.
2. Develop an isopleth or similar mapping results showing the zones of the varying impacts within an affected area.
3. Determine demographics within each zone of comparable impact.
4. Determine the extent to which disproportionate impacts coincide with a minority and/or low income area.

Considerations: This method eliminates the need to identify a separate RC. Analysis is based on project related impacts and gives less emphasis to existing baseline conditions than other methods. The considerations are the same as those expressed under method B above. Analysis is based on project related impacts and gives no consideration to existing baseline conditions.

D. ALTERNATIVE SITE ANALYSIS

This method provides for the comparison of an applicant's preferred site with alternative sites, offering a comparative analysis of disproportionate impacts for consideration. There are several ways to apply alternative site analysis to environmental justice concerns: (a) compare the demographic distribution of impacts at two or more alternative project sites; (b) evaluate environmental and human health impacts of two or more sites (evaluate the various environmental trends, e.g., in cases where impact-causing activities will be shifted from one site to another), and provide criteria established in 6 NYCRR 617.9(b)(5)(v), expanded to include detailed environmental setting of the locally impacted communities as specified in Section IIIA of this report. Steps include:

1. Identify alternative sites.
2. Identify and map significant adverse environmental impacts, of the proposed project, at each site and the map range of impacts for each alternative location.
3. Assess the demographics at each alternative location and determine the relative impact on the minority and /or low income area(s).
4. Develop a comparison of each alternative location and range of significant impacts presented by the project.
5. Identify the alternative which poses least opportunity to result in disproportionate impacts on minority and /or low income area(s). [Results should identify the alternative with the least adverse impact on a minority or low income community]

Considerations: Criteria for determining a reasonable alternative site(s) may require clarification

and specificity to ensure their selection does is consistent with the goals of the environmental review. This method must consider how its conclusions will be adopted into EIS discussion of alternatives. This method may be useful for large scale municipal projects or projects involving multiple political boundaries. This method is similar to the SEQRA discussion of alternatives and may not provide any further information for decision making.

E. GIS BURDEN ANALYSIS

Using a GIS tool, this method will assess the existing environmental burden of the project area and compare it, along with project related impacts, to the existing burden of a Reference Community (RC). The approach is the same as Method A above except that it emphasizes existing burdens and allows a comparison of the total environmental burden and project related impacts of a COC and RC. The tool would use a formulation of various, specific environmental and human health indicators to assess burdens so that comparisons can be articulated and/or measured.

1. Identify a COC based on the potential adverse impacts from a project. Depending on the nature and knowledge of the impact(s) this can be a boundary drawn to reflect actual impacts or it can be identified as a fixed radius from the project location that encompasses the potential extent of project impacts.
2. Determine whether the COC includes any minority and /or low income areas. If not, discontinue the analysis.
3. Quantify the burdens of the COC (which could be limited to those burdens that relates to specific project impacts).
4. Determine whether the adverse project impacts in a COC include any impacts that might add to an existing burden, are potentially significant, and would affect a minority and /or low income area. If not, discontinue the analysis.
5. Identify and quantify the burdens on a RC(s).
6. Using quantitative tools and a qualitative analysis, determine whether the potential significant adverse impacts in a COC would be disproportionate when compared with the RC.¹⁰ Determine whether the project's impacts would result in an additional significant burden on the COC.

¹⁰See Appendix B for Resource list of analysis tools.

Considerations: This method may be useful in assessing disproportionate effects of land use decisions and/or facility siting. Requires a determination of what burdens are to be included in the analysis, which may be limited by available data sets. Requires development of a method for rating burdens, which could be complicated depending on the number and the nature of the data sets.

F. BURDENED AREA ANALYSIS

Using GIS, this method, in effect, determines whether an area is currently burdened. A project proposed in a mapped Burdened Area is presumed to have a disproportionate impact, were it to be constructed. To go forward, a project must show that it avoids, minimizes and mitigates impacts to the maximum extent possible.

1. Map minority and/or low income areas throughout New York State by using the most recent census data. Draw the boundaries of communities by neighborhood.¹¹
2. Map environmental burdens throughout New York State. Information on environmental burdens should come from major facilities, mid-size facilities, small facilities, dense highway infrastructure, truck routes, long-term construction impacts, distribution centers, the urban air toxic's database, information concerning known-levels of pollutants, health status of local population (emphasizing health information particularly relevant to a minority and /or low income area and health information that may have environmental relevance), paucity of open space/recreational space, population density, and levels of vulnerable populations such as children, elderly and the ill. Provide for full community participation in the mapping of the communities.
3. Overlay the maps depicting minority and /or low income areas with the map depicting environmental burdens.
4. Review the impact maps and designate areas that house significant and multiple environmental insults as Burdened Areas. The DEC should seek input from the local community when determining burdened status of the community. As this designation process may take some time, the mapping should be conducted first in those areas that have claimed environmental justice problems in the past. Next, mapping should be conducted in those areas that are deemed as minority and /or low income areas (referring to the GIS maps

¹¹A clear basis for defining the parameters of a neighborhood must be determined prior to mapping.

created in Step 1).

5. If an applicant desires to take action that adversely impacts a Burdened Area, then the applicant must complete a full environmental impact statement (EIS), implement an enhanced public participation process in which the community truly participates in the impact analysis, and conduct comprehensive cumulative environmental impact analysis and cumulative health impact analysis. The applicant must also prove the following:
 - any negative impact from the project must be minimized to the greatest extent feasible;
 - any remaining negative impacts will be offset (through an in-kind, localized offset in an amount that is equal to or greater than the negative impact-- for example in a ratio that is 25% greater than the impact);
 - the cleanest technology will be used;
 - the cleanest sources of energy or fuel will be used, and
 - the action is consistent with existing and proposed community-based plans.

If the applicant cannot meet the requirements of Step 5, the project may not be approved. If the project entails particular categories of actions (e.g. SPDES permits), the applicant may be permitted to apply for an exemption of Step 5. The list of project categories potentially eligible for exemptions must be narrowly tailored to allow for a minimal amount of projects. This list must also be subject to public review and comment.

6. Proof that the applicant has met their burden outlined in Step 5 must be presented to the public with appropriate notice and the opportunity to be heard. A public hearing must be conducted and the public must have the ability to appeal the agency's approval of the project in the Burdened Area to an administrative law judge.
7. If DEC allows the project in a Burdened Area and then the project violates its guarantees, substantial fines will be sought. DEC will notify the public as to the violations. The fines will then be spent in the local area most affected by the project with a formal public participation process regarding the use of those funds.
8. The DEC will provide incentives for sustainable and clean activities to be sited in Burdened Areas. So that business and government entities will not be deterred from cleaning up existing polluting sources and developing new green activities in Burdened Areas, DEC will develop financial and regulatory incentives for green buildings and green manufacturers in Burdened Areas. DEC will provide for public involvement in the development and

implementation of these incentives. DEC will also partner with other agencies, such as the Empire State Development Corporation, to develop the incentives.

9. Areas designated as Burdened Areas will have heightened enforcement provisions for polluting sources. DEC should actively work to clean up existing sources in these neighborhoods so that in the future, they may be un-designated as a Burdened Area.

Considerations: This method does not require the identification of a COC and RC. Does require adoption of criteria to identify Burdened Areas and the mapping of such areas. May require a substantial amount of up-front time by the DEC to identify neighborhoods, (and possibly develop) appropriate data sets and to develop a formula for assessing burdens from the data sets. May reduce the amount of time applicants are required to assess burdened areas for specific applications. Useful in assessing disproportionate effects of land use decisions and/or facility siting. The mapping of neighborhoods may result in the avoidance of potential development in those neighborhoods, given the depiction of additional regulatory requirements.

V. Recommendations

The Disproportionate Adverse Environmental Impact Work Group was unable to reach consensus on a recommendation regarding an acceptable methodology for assessing disproportionate environmental impacts on minority and/or low income areas that are identified as a potentially impacted area in an environmental review. However, the work group does recommend the following to ensure that the DEC's environmental permit review process is responsive to environmental justice concerns. The recommendations offer direction to the DEC and are based on currently available information and resources. The recommendations provide for permit specific analysis as well as additional tools and resources to help further the development of a disproportionate adverse environmental impact analysis.

1. The DEC should adopt one or more methods, to assess disproportionate adverse environmental impacts and a corresponding policy for assessing mitigation which could include pollution prevention measures that address disproportionate impacts.
2. The DEC should further explore the statewide identification of existing environmental burdens in the implementation of CP-29. Using GIS, the DEC should develop a statewide interactive map containing indicators of environmental burdens throughout New York State. The interactive map should include information maintained by the DEC as well as reliable information from other state, local and federal sources and include the identification of various indicators found to be important to the analysis of disproportionate impacts. Public involvement and consultation to identify impacts, burdens, and receptors should be included in the development of this tool. The interactive map should be made accessible to DEC staff and the public in order to assist the DEC and the regulated community in assessing environmental burdens.
3. DEC should expand upon the field of readily available indicators that are descriptive of media impacts and burdens. Areas such as land, air, water, mineral, flora, fauna, odor, noise, historic or aesthetic significance, existing community character, toxics, human health, facility density, truck and transportation routes, open space, recreation and aesthetics should be considered for further investigation. Once indicators are developed, the DEC should consider whether they are appropriate for use in conducting a disproportionate impact analysis in the environmental review process.
4. The DEC should evaluate the existing authority provided under SEQRA for conducting a disproportionate adverse environmental impact analysis and consider revisions to 6NYCRR Part 617 to incorporate the disproportionate adverse environmental impact analysis concept; whether regulatory amendments are necessary to assure a more complete description of environmental setting; and consider incorporating a requirement to conduct environmental justice analysis as part of the environmental review of permit applications.
5. The DEC should require that Environmental Impact Statements prepared pursuant

to SEQRA and CP-29 contain a detailed description of environmental setting that characterizes the existing burden in the project area. At a minimum, the DEC should consider the indicators specified in Section III of this report for the environmental setting.

VI NYSDEC Disproportionate Adverse Environmental Impact Analysis Work Group

The work group consist of appointed members and advisors, inclusive of federal, state and local governments, environmental justice advocates, business representatives, and an academician. Some members elected to name substitutes. Each member, advisor and substitute brought expertise in a particular area that contributed toward the development of the report and the recommendations contained in this report. The professionalism and dedication of each member, advisor and substitute enabled the group to identify and discuss complex environmental justice concepts contained in this report and devise recommendations to address environmental justice concerns when evaluating disproportionate adverse environmental impacts. Other individuals participated in the report development but were unable to continue throughout the entire development process. The contributions of the work group members, advisors, substitutes and contributors are acknowledged.

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VII. Appendices

APPENDIX A: RESOURCES

The resource list noted below identifies information reviewed during the work group deliberations, results from the work group discussions and information found to assist the development of indicators (consisting of both impact and burden) for projects subject to an environmental justice analysis. This product of work group discussions should only be considered as a resource and not considered exhaustive.

1. Indicator List
 - a. Impact Indicators
 - i. Air
 - ii. Economics
 - iii. Noise
 - iv. Safety
 - v. Toxics
 - vi. Traffic
 - vii. TRI Emissions
 - viii. Truck and transportation routes
 - ix. Waste
 - x. Water
 - b. Environmental Setting Indicators
 - i. Demographics
 - ii. Odor
 - iii. Land Use
 - iv. Quality of Life
 - v. Population Density/ Facility Density
 - vi. Health data
 - vii. Aesthetics
 - viii. Open Space & Recreation
 - ix. Subsistence Fishing
 - x. Historical growth trends in project area
2. Assessing and Mitigating Visual Impacts - Program Policy #DEP-00-2, NYSDEC, 7/31/01
3. Assessing and Mitigating Noise Impacts - Program Policy #DEP-00-1, NYS DEC , 10/6/01

APPENDIX B:

GIS TOOLS TO ASSIST DISPROPORTIONATE ADVERSE ENVIRONMENTAL IMPACTS ANALYSIS

1. GIS tools should be used to establish the setting utilizing information compiled from research projects and data sets managed or directed by agencies as part of an environmental review. The information that is gathered to determine the existing environmental setting and, ultimately, an analysis of environmental impacts and burdens should come from a number of sources including facility density identifiers, highway infrastructure data, truck route information, long-term construction impacts, urban air toxics database, pollutant tracking systems, health status of local population, availability of open space/recreational space, population density, and levels of vulnerable populations such as children, elderly, and the ill.

2. Environmental Load Profile (ELP): A screening tool, developed by USEPA Region 2 that uses of geospatial software and environmental databases, to identify communities that may bear disproportionate environmental loads relative to a statewide comparison. The ELP takes into account the TRI air emissions, Estimated Risk of Air Toxics from the National Air Toxics Assessment, and the facility density of the minority and /or low income areas. The product serves to identify salient characteristics (e.g., indicators of air quality, environmental well-being) as indicators of environmental burden, and further provide the user with a consistent basis for comparison. Specifically, the indicators of an area are compared to statewide-derived benchmarks when deciding whether a selected geographic area bears a higher relative environmental load than the rest of the state.

3. U.S. EPA Enviromapper: an interactive GIS application which provides information on the U.S. EPA permitted facilities and their surrounding communities. Internet based application <http://www.epa.gov/compliance/environmentaljustice/assessment.html>

4. Map DEC: Geographic information available on line, includes DEC's Environmental Navigator, Benthic Mapper, Tidal Wetlands Mapping, and Recreational Mapping. <http://www.dec.state.ny.us/website/map/index.html>

APPENDIX C: INTERNET DATA SOURCES

- U. S. EPA's Air Data website: <http://www.epa.gov/air/data/>
Provides yearly reports and maps of air pollution data for criteria pollutants and access to emissions trends for criteria and hazardous air pollutants (HAPs).
- Toxics Release Inventory (TRI): <http://www.epa.gov/triexplorer/>
Provides access to the TRI database for major sources. Reports can be generated per state, chemical, facility type and for air, water and land releases.
- National Emission Inventory Data: <http://www.epa.gov/ttn/chief/net/index.html#dwnld>
Including separate HAPs and mobile source data. Reports and data bases can be accessed.
- U.S. EPA's Science Inventory: <http://cfpub.epa.gov/si/>
A searchable catalog of more than 4,000 science activities such as research, technical assistance and analysis.
- U.S. EPA's Environmental Justice Took Kit:
http://www.epa.gov/compliance/resources/publications/ej/ej_toolkit.pdf
Toolkit provides a conceptual and substantive framework for understanding EPA's environmental justice program and a systematic approach and reference tools that can be used and adapted to assess and respond to potential allegations of environmental injustice as they occur.
- U.S. EPA's Research History Archive: <http://www.epa.gov/history/index.htm>
- U.S. EPA's Environmental Justice Bibliography Database: <http://cfpub.epa.gov/ejbib> A fully indexed bibliography of published materials relating to environmental justice.
- DEC Supported Near Real Time Air Monitoring Data:
<http://www.dec.state.ny.us/website/dar/bts/airmon/index.htm> Provides near real-time air monitoring data at all DEC monitors in graphical and tabular format. The data is available per monitor site or parameter (pollutant). Hourly data can be depicted. Site also provides the Air Quality Index for the day and the Ozone Health Advisory.
- DEC Issued Title V Permits:
http://www.dec.state.ny.us/website/dar/boss/afs/issued_atv.html Provides data on issued (final) DEC Title V permits for major sources pursuant to 6 NYCRR Part 201. Site includes emission limits and available stack information.
- NYS Department of Health: <http://www.health.state.ny.us/nysdoh/research/research.htm>

Access to publicly available health research data.

APPENDIX D: REFERENCES

- Consideration of Cumulative Impacts in EPA Review of NEPA Documents, May 1999 (USEPA).
- Consolidated Edison of New York, Inc., East River Repowering Project, Article X, Environmental Justice Analysis, May 2000 and December 2000.
- NYS Department of Environmental Conservation, Commissioner Policy 29, Environmental Justice and Permitting, 2003.
- EJ Policy Steps/SEQRA Flow Chart, D. Ruzow, June 2003.
- Mirant Bowline Unit 3, Article X , PSD Environmental Justice Analysis, June, 2000.
- NY LPI and NYC EJA proposal to Monica Abreu, NYSDEC OEJ, dated 9/3/03.
- NYPA Astoria , Article X, PSD Environmental Justice Analysis, January, 2001.
- NYSDEC Environmental Justice Advisory Group Recommendations Report, January 2, 2002.
- Report of the Cumulative Impact Working Group, November 4, 1998 (NYSDEC).
- Sunset Energy, Article X, PSD Environmental Justice Analysis, December 2002.
- Trans Gas Energy in Greenport-Williamsburg; Article X application for PSD Environmental Justice Analysis, March 2003.
- U.S. EPA Region 2 “Final” Interim EJ Guidance, December 2000.
- U.S. EPA: “Framework for Cumulative Risk Assessment”, May 2003.

APPENDIX E:
DAEI WORK GROUP SUPPLEMENTAL LETTERS