

Social Equity Research Project

Environmental Justice
Industrial Siting in the Richmond Metropolitan Area

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Introduction

Achieving social equity in governance is a perennial goal in the field of public administration, and ensuring environmental justice is essential to social equity. Though much progress has been made, there are still many problems yet to be solved. In an effort to further the social equity objective as well as the environmental justice components of those efforts, this essay attempts to elucidate you, the reader, about the nuances of these topics.

The first part of this essay addresses the broad area of social equity by answering the following questions: Why is social equity an important issue in the public sector? What are some of the current social equity issues, as well as the pros and cons of those issues? Furthermore, what are the legal aspects that address social equity, and how do they do that? The second part of the essay explains what environmental justice is, the relevant issues that it raises, and what are some indicators. The essay examines environmental justice in the Richmond metropolitan area and covers some legal aspects pertaining to that topic. We conclude with recommendations for improving environmental justice.

By way of introduction, we begin the essay with an explanation of what social equity is, followed by a brief synopsis of social equity's historical background.

Part 1

Social Equity Defined

Shafritz and Russell (2000) claim that social equity has become, as it should be, a guiding principle for public administrators (p. 403). Through legislation politicians and administrators attempt to guide behavior so that equitable conditions can be provided for all. Social equity can be forced up to a point but in the best of moments, social equity can be a beacon of light to guide people to safe harbor (Shafritz and Russell, 2000).

A productive dialogue of an issue must offer clear definitions of the principle ideas to be discussed. Ellis Cose in the book "Energy and Equity: Some Social Concerns," admits the difficulty of defining equity and likens it to the concept of love. We instinctively know what it means but it has different meaning to everyone. This paper will provide a working definition of social equity with the purpose of establishing parameters to guide the discussion and formulation of possible remedies to counter social inequity.

The ninth edition of Webster's Dictionary provides a basic definition of social as "of or relating to human society, the interaction of the individual and the group, or the welfare of human beings as members of society (institutions)...tending to form cooperative and interdependent relationships with one's fellows." Webster's defines equity as "justice according to natural law or right; specifically freedom from bias or favoritism." Shafritz and Russell (2000) define social equity as "fairness in the delivery of public services; it is egalitarianism in action-the principle that each citizen, regardless of economic resources or personal traits, deserves and has a right to be given equal treatment by the political system (p. 403)." Schaffer and Lamb (1981) concur by stating, "equity...is above all a political fact. It is an ideological construct about distribution, about the apportionment of

resources in society, and therefore political in the sense of an intervention in the struggle of political ideas (p. 2).”

Smith (1987) strives to make a clear distinction between equity and equality (p. 9). Certain areas and or people may receive unequal income but based on inputs and outputs this may be justified. Smith (1987) further states “the critical question is that of the circumstances in which a specific degree of inequality may be considered (in)equitable or (un)just.” John Rawls’ A Theory of Justice” as quoted by Cose (1979) departs from Smith (1987) by saying “it is not just that some should have less in order that others may prosper (p. v).”

The Historical Perspective

Since the conception of what we now refer to as the United States of America, its establishment has worked to achieve social equity. Social Equity has historically been defined in terms of what the establishment thought to be “right” or “equal”. Thus, with the change of the times, came the change in the perception of social equity.

The Declaration of Independence served as our nations first step in the quest for equality. It proclaimed, “all men are created equal, that they are endowed by their Creator with certain unalienable rights.” These are rights derived from natural law, which all people have and cannot be taken away. The Constitution soon followed, within it were the ideals to “establish justice, insure domestic tranquility...promote the general welfare”. The definition of “all men” or “all people” as stated in the Framers’ documents proved to be that which needed to be redefined.

After the Constitution came the idea of fairness for the individual and fairness as a citizen. The Bill of Rights was established in 1791 providing for the rights of the individual citizen (which at that time were defined as white, male, landowners). It was the first step in many to the development and understanding of the concept of social equity and our governments’ interpretation.

The development of the New Deal also played a role in the history of social equity. Roosevelt’s plan sought to provide all Americans with a new sense of “equity” and stability that they had not been provided with in Pre-Great Depression Era. The elderly were cited as needing specific governmental intervention to ensure that equitable services were provided to them, and as a result social security was established.

The Civil Rights Act of 1964 and the Voting Rights Act of 1965 played an important role in the next step toward social equality. The Civil Rights Act of 1964 declared that “it shall be the policy of the United State to ensure equal employment opportunities for Federal Employees.” The Civil Rights Act of 1964 prohibited sex discrimination in employment and established the Equal Employment Opportunity Commission. This later formed the basis for the development of affirmative action and to combat nonracial discrimination.

More recently the Americans with Disabilities Act of 1990 serves to try to further establish social equity in our nation. This act, which took effect in July 26, 1992, prohibits private employers, state and local governments, employment agencies and labor unions from discriminating against qualified individuals with disabilities in job applications procedures, hiring, firing, advancement, compensation, job training, and other terms, conditions and privileges of employment.

Shafritz and Russell state that “through time, just as well as now, governments can go only so far in forcing social equity. But there is not limit to the amount of inspiration it can provide to encourage people to do the right, decent, and honorable thing. This encouragement has a name. It is called moral leadership.” (p. 428).

Social Equity’s Legal Component

Equity under the law involves both statutes and judicial decisions. The goal of such legislation and court decisions is to eliminate unequal treatment of individuals based on factors such as race, national origin, religious practices, age, ethnicity, disabilities, and gender. Social equity laws often address issues relating to the discriminatory treatment of individuals within the workplace, the classroom, or the legal system itself. When the legal aspects of social equity are formulated and applied correctly, individuals who are members of certain classes of people are afforded protection from discrimination.

Over the course of history in the United States, an assortment of social equity issues have arisen and a range of legal approaches have been used in attempts to address them. Some were developed to correct existing inequities; others were attempts to rectify inequities caused by the law itself. All have had various degrees of success.

One of the most notable examples is that of African Americans. Unfortunately in this instance, the preeminent law of the land actually ensured inequity for a period of time -- the original text of the Constitution barred Congress from stopping the slave trade before 1808. Nevertheless, legally enforced equitable treatment for African Americans began at the end of the Civil War. With the passing of the Fourteenth Amendment to the Constitution, African Americans became citizens, yet were still denied their full political rights until well into the twentieth century.

Real legal progress was made by means of a Supreme Court decision in 1954. In *Brown v. the Board of Education*, the Court held that separate was “inherently unequal” and that school segregation violated the Fourteenth Amendment’s equal protection clause. Further advancement was made when Congress passed the Civil Rights Act of 1964. This landmark bill outlawed segregation in public accommodations and it barred tax dollars from going to organizations that discriminate on the basis of race, color, or national origin. Equal rights for all Americans was enhanced the following year with the passage of the Voting Rights Act of 1965, which outlawed most voting practices that discriminated against minorities.

Lamentably, African Americans have not been alone in their struggle for social equity; other groups have long endured official discrimination. In an 1886 case, *Yick Wo v.*

Hopkins, the Supreme Court overturned a San Francisco ordinance intended to prevent Chinese from operating laundries. Japanese Americans experienced social inequity during World War II when then President Roosevelt ordered the relocation of all people of Japanese ancestry living on the West Coast to detention camps. The Supreme Court upheld the legality of the relocation order (*Korematsu v. United States*, 1944) and it was not until 1988 that Congress passed a law that formally apologized for the internment and provided financial compensation to the survivors. Native Americans have also been victims of social inequity, the class of people was not even granted citizenship until 1924. In 1968, Congress passed the Indian Civil Rights Act, which finally extended most of the rights contained in the Bill of Rights to all Native Americans.

Other instances of social inequity issues the legal system has faced include experiences of American women. The Constitution did not originally guarantee women political rights and over the years women have experienced social inequity in many other ways as well. With the adoption of the Nineteenth Amendment in 1920, women gained the right to vote. The Equal Pay Act (1963) banned wage discrimination based on sex. The Civil Rights Act of 1964 included a section prohibiting job discrimination on the basis of sex. Title IX of the 1972 Amendments to the Elementary and Secondary Education Act of 1965 ensures equal educational opportunity regardless of sex.¹

Sexual harassment is an issue that has only recently begun to be addressed by the legal system. Sexual harassment is unwelcome sexual advances, requests for sexual favors and/or other verbal or physical conduct of a sexual nature that are either used as a basis for employment decisions and/or the conduct has the purpose or effect of creating an intimidating, hostile or offensive working environment. Some women have found legal protection under the law, though this equity issue is far from being solved, and is not limited to either females or heterosexuals. The Supreme Court ruled in the *Oncale* decision of 1998 that sexual harassment can occur between individuals of the same gender.²

Many disabled Americans have also struggled with social inequities. To help counteract such unfairness, the Americans with Disabilities Act was signed into law on July 26, 1990. Its overall goal is to prohibit discrimination in employment, programs and services provided by state law and local governments, as well as to prevent discrimination as to goods, services, and employment opportunities provided by private companies and commercial facilities on the basis of a disability. It is also to ensure that no covered entity under the statute shall discriminate against a qualified individual with a disability, because of the disability, in regards to job application procedures; the hiring, advancement, or discharge of employees; employee compensation; job training; and other terms and conditions of employment. The ADA applies to state governmental entities.

Social equity has been addressed in a number of other areas. Section 504 of the Rehabilitation Act of 1973 covers equal educational opportunity for the disabled.³ The Age Discrimination in Employment Act of 1967 makes it unlawful for an employer “to fail or refuse to hire or to discharge any individual or otherwise discriminate against any

individual ... because of such individual's age.”⁴ In 1998, the Supreme Court extended the ADEA to include States as employers.⁵

In spite of often well-intentioned legal efforts, social inequity still exists. As mentioned above, when the legal aspects of social equity are written and applied correctly, individuals who are members of certain classes of people are afforded protection from discrimination. Unfortunately all too often this is not the case. Legal remedies to social equity ills have their limits. Though there have been legal successes in combating social inequity, social equity problems persist into today's society and further progress needs to be made.

For instance some criminal law statutes impose larger burden on certain classes of individuals. The inequity of some drug laws is evident when considering the facts pertaining to cocaine. Mandatory sentencing for possessing crack cocaine is much more severe than mandatory sentencing for powder cocaine. Studies have shown that whites account for approximately 70% of powder cocaine use. Since approximately 80% of crack cocaine users are black, a harsher penalty is often imposed on that segment of society than is imposed on others for committing a similar offense.

Beyond racial inequity in the criminal system, financially poor individuals often face inequity. Since there is a direct correlation between presenting an adequate defense and a person's ability to pay, the poor frequently have no choice but to settle with an inadequate defense. Additionally, equity in civil cases is a problem since the poor often cannot afford the costs of a lawsuit to rectify a civil wrong.

Religious inequity also persists. Recently, Chesterfield County officials rejected a request by a Wiccan priestess to be added “to the list of ministers and priests who give invocations at county meetings.”⁶ The County policy has “prompted witches, other religious leaders and civil-rights activists to speak out” concerning the County's violation of religious freedom rights.⁷

Pros & Cons for Social Equity

Part of the problem with a concept such as social equity is that its meaning is rather nebulous. People may disagree with its definition, or they may have no clear definition in mind at all. Since social equity may mean different things to different people, it may be seen as having varying value. Moreover, to those who place value on their vision of social equity, the expected outcomes may vacillate along with the varying definitions.

A primary misconception regarding the definition of social equity concerns the latter half of the phrase – many people think of equity as being synonymous with *equality*. Though equality is often a component of equity, equity does not necessarily mean equality.⁸ There times when equality may actually be inequitable.

Equity also cannot be equated to *justice*,⁹ even though justice is usually a principal component of equity. One problem with the term is that it is nearly as difficult to define justice as it is to define equity.

Social equity for some may result in inequity for others. Limited resources may preclude certain groups from gaining equitable status. With many groups vying for attention, some are crowded out, for instance, the poor, women wages, minority exclusion (sexual orientation, AIDS housing).

In fits of enthusiasm and over-zealous efforts by political actors and activists, changes may be readily accepted, even without the benefits of full information. Often the politically active few (the vocal minority) wield influence disproportionate to their number and many fall into the category of “silent losers.”¹⁰

Summary

Historically, social inequity stemming from discrimination has slowly but steadily lost its legal tolerance. Yet, discrimination under the law still persists. Perhaps more vigorous enforcement of existing laws is required to ensure fairness. If, after careful analysis, it is determined that policy makers have not gone far enough to eradicate social inequity, perhaps new, stronger, legislation may be required. In any event, public administrators must remain vigilant in their efforts to ensure social equity in governance.

Some Current Issues

Social equity is an issue that will continue to evolve with the coming years. The public sector is faced with the dilemma of reinventing government in a manner which will promote the equitable and fair distribution of resources and services to the constituency. Upon this journey, issues and concerns form mole hills, or in some instances mountains, that may cloud the clear view that the issue of social equity itself can in fact be remedied.

A plethora of current issues bombard social equity in public administration. Justice, fairness, and equality are three particular areas of interest that go hand in hand. Before we can begin to solve these issues, all terms and conditions need to be operationalized so that we as administrators can begin to recognize social equity issues in government.

Is it the public administrators job to enforce and carry out this paradigm we call social equity? The laws are there – where is implementation? Policy and political rhetoric seem to be nothing but hype; the issues of social equity continue to fester, which correlates to the mountains and mole hills that make equity more and more difficult to attain. Policy makers are not defining the terms that are inclusive of equity, yet many claim to be ready to fix the problems that plague the poor, uneducated, and brown-skinned.

Once definitions and laws of social equity are made relative to the methodology current government factions use for everyday business, we as a union can begin to examine our failure to treat all equally. To follow, it must be examined whether it is always possible to treat *everyone* the same. All of us have different needs and wants, different cultural

specifications. The needs of all individuals cannot be met using the same methodology or practice.

Part 2

Environmental Justice

According to a 1992 study by National Law Journal, “the nation's environmental laws, regulations, and policies are not applied uniformly---resulting in some individuals, neighborhoods, and communities being exposed to elevated health risks.” Chavis concurs by saying “discrimination in environmental policy-making, enforcement of regulations and laws, and targeting of communities of color for toxic waste disposal and siting of polluting industries [can result in] environmental racism and classism [which] can hinder the pursuit of environmental justice.” Ringquist (1997) asserts “minority neighborhoods generally suffer from worse air quality, more landfills, more sources of toxic pollution, more hazardous waste sites, and weaker enforcement of environmental regulations than did wealthier neighborhoods with smaller minority populations.”

Environmental Equity Definition

Equity may be defined as fundamental fairness.¹¹ For that fairness to be *social* it must be extended to all parts of society – no groups may be excluded.¹² Thus, social equity includes fairness (not necessarily equality) for all groups of society. *Social equity* means ensuring fairness for all citizens regardless of race, financial status, age, or sex. Furthermore, for true social equity to exist, fairness must be evident in all aspects of society’s institutions, including its laws, policies, and judicial decisions.

In matters of environmental¹³ equity, fairness can be manifested in a number of ways – for instance, ensuring that no group of society bears a larger risk from pollution than does the rest of society, or attempting to protect all groups of society from future environmental harm. Conversely, the lack of fairness, or environmental inequity, can also be apparent in a variety of ways – cases of environmental racism, environmental classism, or environmental injustice, for example. As a consequence, a number of definitions exist for environmental equity. Some focus on the racial aspect, some on inequity among classes, and some on environmental justice.

Since environmental inequity can and does occur in several ways, we have attempted to include the essential elements of the various definitions by distilling them down into a single, simplified explanation. Our definition for environmental equity, like social equity, concerns fundamental fairness. Thus, *environmental equity* is fairness in environmental practices, so that no group of society shares an unfair burden, either due to formal policies or to informal practices.

Environmental Justice Definition

To fully examine this issue it is important and necessary to define the term environmental justice. Ringquist (1997) defines environmental justice quite simply as “unequal distribution of environmental risk.” University of Michigan broadens the definition of environmental justice to include:

“the right to a safe, healthy, productive, and sustainable environment for all, where "environment" is considered in its totality to include the ecological (biological), physical (natural and built), social, political, aesthetic, and economic environments. Environmental justice refers to the conditions in which such a right can be freely exercised, whereby individual and group identities, needs, and dignities are preserved, fulfilled, and respected in a way that provides for self-actualization and personal and community empowerment. This term acknowledges environmental "injustice" as the past and present state of affairs and expresses the socio-political objectives needed to address them.”

For our purposes we will use the definition of environmental justice as set forth by the United States Environmental Protection Agency:

“the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.”

Environmental Justice and Siting of Industry

Our sub-policy area focuses on industry siting – where manufacturing is located within a community – and how it relates to environmental justice. To clarify what we mean by industry, it is helpful to understand some of the terminology used by most regulatory agencies. Many agencies classify pollution by where the pollution originates.

Sources of air pollution like factories or cars are usually categorized by regulatory agencies into one of three groups: mobile, area, or point. Mobile sources include both on-road vehicles (such as cars, trucks and buses) and off-road equipment (such as ships, airplanes, agricultural and construction equipment). Area sources include small pollution sources like dry cleaners, gas stations, and auto body paint shops.

Point sources include major industrial facilities like chemical plants, steel mills, oil refineries, power plants, and hazardous waste incinerators – those producers of pollution which emit substantial amounts of toxins into the community. Industry siting issues are generally related to point source pollution.

Industrial siting has an impact on environmental justice. We hear a lot about global warming and acid rain since chemical pollutants may cause environmental damage that is global in scope. But they can also cause adverse effects in the community where they are released. Thus, where industry is sited is an important issue.

We are able to determine generally the amount of toxics that a community has to endure via the Toxics Release Inventory. The Toxics Release Inventory (TRI) is a public database of annually reported toxic chemical releases from certain manufacturing or processing facilities. Established in 1986, the inventory was instituted to provide information to the public about the presence and release of toxic and hazardous chemicals in communities. Currently the reportable TRI chemical list contains over 600 chemicals and chemical categories.

Certain manufacturing or processing facilities that produce, process, or otherwise use a TRI chemical in excess of a certain threshold level must report TRI information to the U.S. Environmental Protection Agency (EPA) and to the state in which the facility is located.

One of the main issues concerning industrial siting is how toxic chemicals are concentrated in a community. American industry produces enormous quantities of pollution and toxic waste each year. According to the Toxic Release Inventory for 1998 some 23,000 facilities reported a total of 7.3 billion pounds of chemical pollutants released into the nation's air, water, land, and underground. The vast majority of these pollutants – some 93.9 percent (or 6.9 billion pounds) – were released into the environment directly on-site.

Thus, citizens who work and reside in the communities in which these facilities are located typically bear much greater exposure rates to industrial pollutants. There are a number of examples that can be cited of areas where there are a greater number of industries, emitting a larger amount of toxins; nearly invariably we also find a higher population of lower income citizens and people of color.

For instance, using the Toxics Release Inventory, a study was done on industry siting by researchers at Massachusetts Northeastern University compared the amount of toxins released in a community by industry to the demographics of the community.¹⁴ It found that lower-income families and people of color face a “triple unequal exposure effect” to toxic pollution and other environmental hazards in comparison with higher-income residents. For lower-income communities and communities of color, this takes the form of exposure to: (1) greater concentrations of polluting industrial facilities and power plants; (2) greater concentrations of hazardous waste sites and disposal/treatment facilities, including landfills, incinerators, and trash transfer stations; and (3) higher rates of “on the job” exposure to toxic pollutants inside the factory. Unequal exposure to environmental hazards is thus experienced by lower-income and people of color populations in terms of where they *work, live, and play*.

Issues and Concerns of Industrial Siting

Given these disparities in the location of hazardous industrial facilities and sites of all kinds, it is almost inevitable that people of color and working-class whites are exposed to significantly greater environmental risks than are wealthier, predominately white communities.

Such exposure caused by industry siting is clearly a health issue. Exposure to industrial pollution -- especially air pollution -- is proving deadly to tens of thousands of citizens. Human exposure to hazardous air pollutants (HAPs) can result in both acute and chronic health effects. Short-term, acute effects can include eye irritation, nausea, difficulty breathing, asthma, or even death. Long-term, chronic effects include damage to the respiratory or nervous systems, birth defects and damage to reproductive systems, neurological disorders, as well as cancer.

It is estimated that industrial air pollution kills over 60,000 Americans each year. Half a million people living in the most polluted areas in 151 cities across the country face a risk of death which is some 15 to 17 percent higher than in the least polluted areas. And, as already noted, communities with lower median incomes, as well as those with higher population of people of color are subjected to larger amounts of environmental risk due to industry siting.

Physical health is a primary concern but so is the quality of life that certain groups face when located near an industrial facility. Property values are virtually guaranteed to stay low and community pride is nearly non-existent in areas that are often aesthetically disturbing. As one scholar put it: "There is a growing belief that that which is offensive to the view, an eyesore, a landscape-blight, may attain such significance as to warrant an equitable interposition."¹⁵

Ill effects caused by industry siting for certain groups of society is also a legal issue. The Virginia Constitution guarantees nondiscrimination in government. To avoid hypocrisy and injustice, governmental policies must likewise be fair to all segments of society. This legal component of equity makes environmental justice an issue for public administration. Thus policies that are equitable on their face, as with industry zoning, must result in equitable outcomes.

Psychologists tell us that individuals from low- income and minority groups are at a disadvantage because of their exposure to a greater number of risk factors than other groups.¹⁶ Although the type of risk factor is important when considering deleterious outcomes, the amount of risk factors play a much more salient role. With one or two risk factors, for example single parent households and lower income, are usually not that serious – children are resilient enough to handle that. But when more risk factors are added, say toxics from local industry, which affect mental capacity especially in developing brains of children, the chances increase tremendously that the child will not do as well in school, thus not get as well-paying job as he or she could have, thus not be as a productive citizen as he or she could have been if subjected to fewer risks. Current industrial siting practices thus contribute to a less viable society.

When researching the subject of environmental equity, it is striking that so little information is to be uncovered. The lack of information found on the subject (generally, and specifically in the Richmond area) may lead one to assume one of two possibilities: 1) either there are so few problems (perhaps due to appropriate government regulations sufficiently enforced) that no effort to gather information is warranted; or 2) there are equity problems, but there is such lack of interest (perhaps due to insufficient concern by society of certain groups of citizens, such as the poor) that no effort has been made to gather information.

If the former is true, then let's keep up the good work. Unfortunately, the small amount of information that does exist concerning environmental equity problems with industrial siting indicates that they are serious and pervasive, pointing toward the latter explanation. And that is an issue because of the fact that few studies have been done may contribute to perpetuating the problem: without adequate information policy makers, public administrators, and citizens unaffected by injustices may not even be aware that there are issues and concerns. Lack of interest thus perpetuates lack of interest; therefore little has been done to address these inequities. Further research is required to deepen our understanding of the role played by racism and class-based discrimination in creating disparities, particularly in reference to the siting of environmental risks.

Indicators and Scorecards needed to track Social Equity Issues in Environmental Justice, in terms of siting of industry

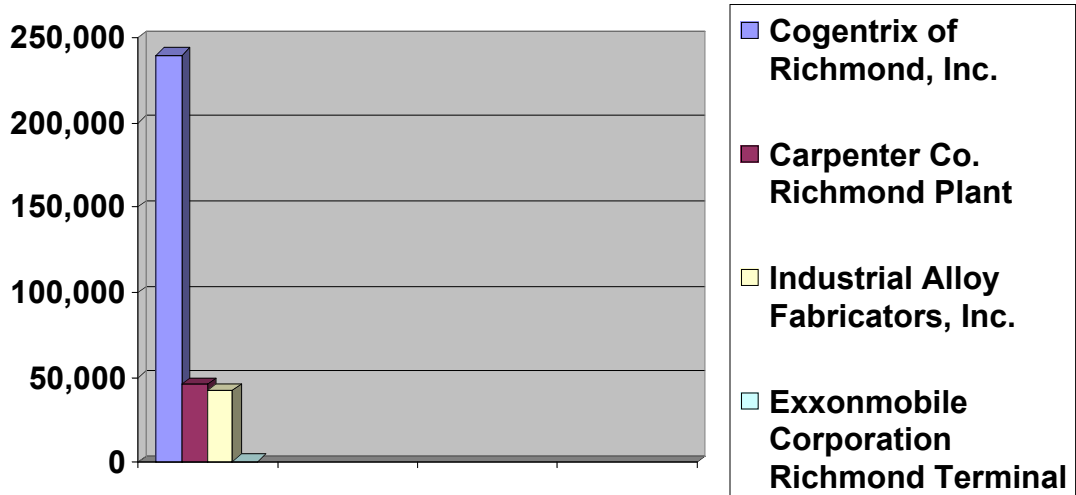
Environmental Justice can be tracked by issues like health effects from toxic chemicals, air pollution, and soil contamination. All issues are insurmountably important to the topic of environmental justice because as industries work in manufacturing of so-called goods, the environment and its inhabitants are taking a beating. This can become a tremendous problem in any community; making an atmosphere inclusive of silent losers and the bombardment of transparent community development.

Health Effects: Cancer Hazards

Over 6.5 billion pounds of toxic chemicals are released by industry into the nation's environment each year. Of this, nearly one hundred million pounds of recognized carcinogens are included. The health condition related to the exposure of carcinogens is chemical carcinogenesis. This condition is defined as the induction of neoplasm or cancerous growths, which result from the exposure to toxic substances. Exposures to these chemicals also cause the inducement of malignant tumors in epithelial tissue, malignant tumors in connective tissue, as well as benign tumors in human beings.

A plethora of well-known chemicals, often produced by industry production facilities, cause cancer and cancer related illness. The fumes of metals such as cadmium, nickel, and chromium have been proven to cause lung cancer. Vinyl chloride has been associated with malignant tumor growths in the liver. Another example includes exposure to arsenic. This can cause an increased risk of skin and lung cancer. Leukemia has also been linked to the exposure of harsh chemicals and toxic releases. Leukemia, which results from chemically induced changes in bone marrow, can stem from exposure to chemicals like benzene and cyclophosphamide.

In the Richmond Metropolitan area, four facilities have been cited as the top producers contributing to environmental disparities in regard to the expense of cancer hazards. These facilities are shown here in the production of pounds of benzene equivalents. Benzene is a chemical which is ranked as one of the most hazardous; it takes fifth place in a list of six hundred and fifty.



Health Effects: Developmental Toxicity

Developmental toxicity is the condition in which the exposure to chemical substances adversely affects the developing child. The components of developmental toxicants induce birth defects like structural malformations, low birth weight, biological dysfunction, and psychological or behavioral problems in children. Maternal exposure to harsh chemicals not only causes the risk of developmental toxicity, it can also result in the death of a fetus. Other conditions as a result of this may also include severe brain damage, central nervous system dysfunction, sterility, and spontaneous abortion.

Health Effects: Endocrine Toxicity

The endocrine system is made up of the organs that secrete hormones directly into the bloodstream. This system is tremendously complex; therefore the exposure of it to toxic chemicals may cause interference in hormone production, regulation, and action. Some chemicals may even aid in the destruction of the glands that synthesize and secrete hormones. Diseases associated with this condition include diabetes mellitus, hypoglycemia, and cancer.

Health Effects: Gastrointestinal or Liver Toxicity

Gastrointestinal or liver toxicity is a condition where toxic chemicals affect the structure and functioning of the gastrointestinal tract, liver, and gall bladder. Since the liver processes chemicals exposed by the human body, the liver and gastrointestinal tract is subject to injury induced by the consumption of toxic chemicals. The chemical type most frequently associated with this condition is hepatotoxin. Examples of this chemical type are urethane, beryllium, and phosphorus.

Health Effects: Kidney Toxicity

The adverse effect of toxic chemicals on the kidneys, urethra, or the bladder is Nephrotoxicity. Since the kidneys receive twenty-five percent of cardiac output, any chemical in complete circulation is delivered to them in large amounts. This action causes susceptibility to the toxic effects of chemicals.

Health Effects: Musculoskeletal Toxicity

Musculoskeletal toxicity involves the malfunction and/or disintegration of bones, muscles, and joints directly correlated to the exposure of toxic chemical substances. Toxic substances most closely associated with this condition are coal and cadmium. Bone disorders associated with musculoskeletal toxicity are arthritis, fluorosis, and osteomalacia.

Health Effects: Neurotoxicity

The central nervous system is composed of the brain and spinal cord, while the peripheral nervous system includes all nerves not in the brain or spinal chord. Neurotoxicity is a condition where the structuring and functioning of both of these systems are adversely affected by the exposure to toxic chemicals. Toxicants associated with neurotoxicity are methyl mercury and lead.

Health Effects: Reproductive Toxicity

Reproductive toxicity affects the male and female reproductive organs. The pejorative results of this condition include alterations in sexual behavior, decreases in fertility, and the loss of a fetus during pregnancy. When exposed from puberty, reproductive toxicants can alter the sexual functioning or reproductive ability of individuals. Toxicants associated here are mercury, carbon disulfide, and polychlorinated biphenyls.

Health Effects: Respiratory Toxicity

When the respiratory system is affected negatively by chemical toxicants respiratory toxicity occurs. The structural and functional abilities here are impaired. Respiratory toxicants produce an array of acute and chronic pulmonary conditions. These conditions are produced primarily through air that may contain toxic gases, vapors from solvents, aerosols, and particulate matter.

Health Effects: Skin or Sense Organ Toxicity

Skin and sense organs may be injured by a variety of physical, chemical, and biological agents. These agents can cause hearing loss, skin inflammatory disease, and eye irritation. Toxicants that may be attributed to skin and sense organ toxicity include sulfuric acid, sodium hydroxide, hydrofluoric acid, and hydrogen sulfide.

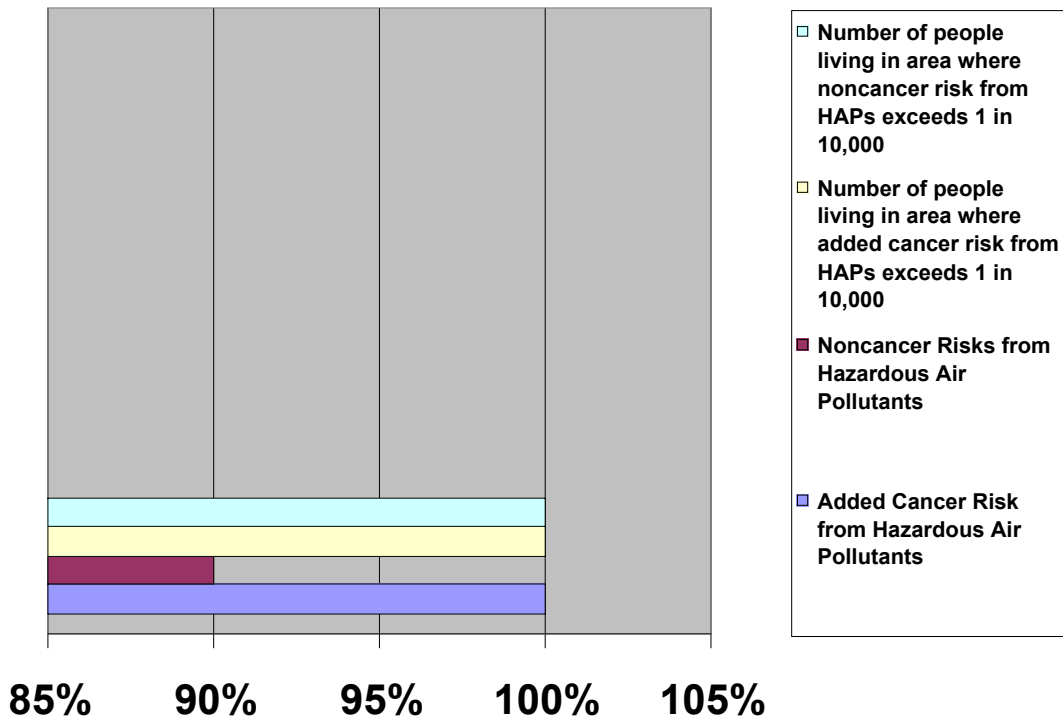
Conclusion of conditions resulting from Exposure to Toxic Chemicals

The list of health effects associated with the exposure to toxic chemicals is endless. The consistent exposure to these chemicals is not safe for families or individuals who live or work within the vicinity of industry production plants; these families or individuals are at an increased risk of not only exposure to toxic chemicals, but also the development of deadly health conditions and life threatening diseases. In many

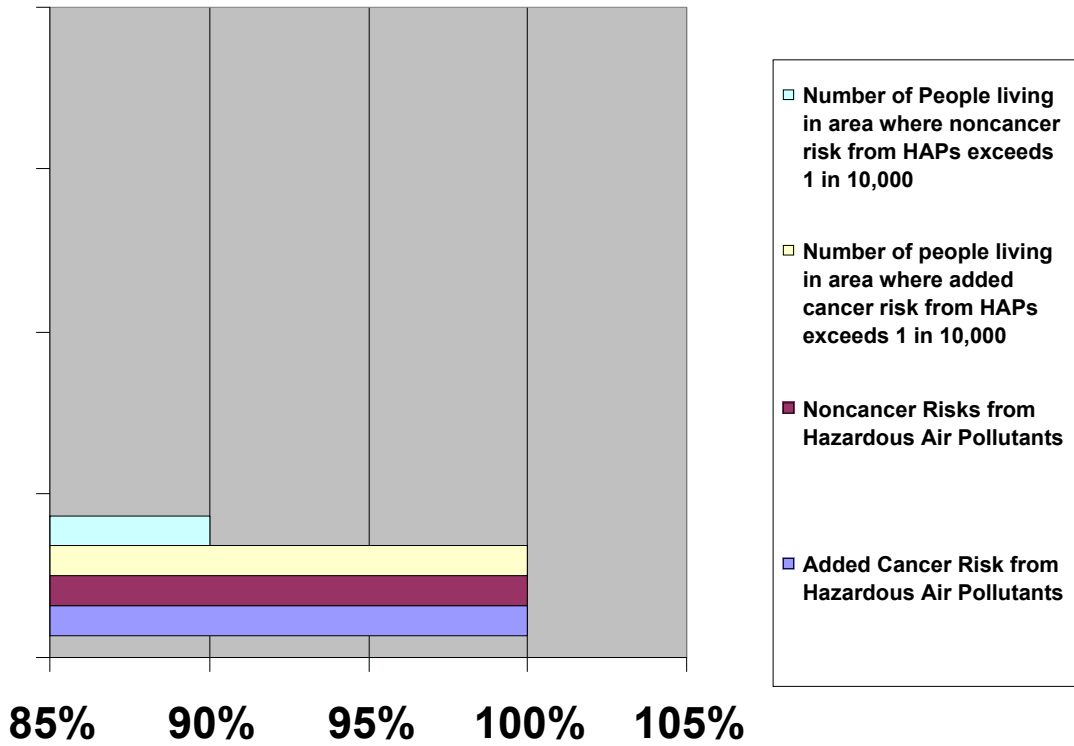
instances, those in the most danger of pejorative reactions to these chemicals are the least aware of the problems they may endure.

Air Pollution & Hazardous Air Pollutants--Scorecards

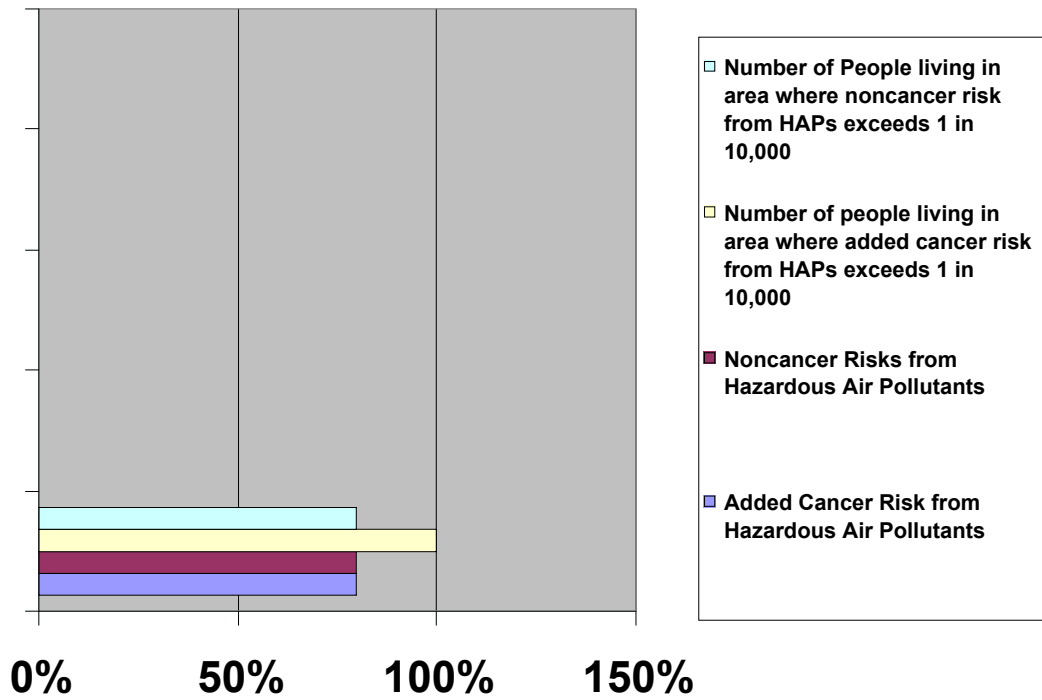
Hazardous air pollutants are chemicals which can cause adverse effects to human health and the environment. Almost two hundred of these chemicals have been identified, including those that cause cancer or birth defects. Added cancer risk is estimated by the individual risk of getting cancer due to a lifetime exposure to these outdoor air pollutants. This estimate accounts for every 10,000 individuals. Henrico County ranks nineteenth in Virginia amongst the dirtiest and worst counties. This county is also amongst the dirtiest and worst counties in the United States. This graph is a display of important indicators associated with air pollution and health risks in any given area. All of the values here are indicative of the area's position amongst the dirtiest and worse areas in the Virginia—this is a graph of Henrico.



This graph displays the position of Richmond in the rankings. Richmond ranks fourteenth in Virginia amongst the counties/areas with the greatest health risks from hazardous air pollutants.



This graph displays the position of Chesterfield County. Chesterfield was not ranked on the list of the dirtiest counties/areas in Virginia.



It should be noted that data available to measure environmental conditions at the local level have many limitations and cannot give a complete and accurate picture of those conditions.

Soil Contamination

Soil contamination occurs when hazardous waste is dumped into landfills or any type of burial area. In most instances, the population around these areas is inhabited by low-income members of the community, as well as minorities. A major toxicant that can be found in soil is lead. The Environmental Protection Agency aids in the clean up of infected soil by first taking samples, upon the approval of related residents, and then removing lead from all soil contaminated.

The Legal Aspects of Richmond Area Environmental Justice

To determine if legal elements of the public sub-policy area of industry siting support environmental justice Richmond metropolitan area, we explored zoning code and policy. For the purposes of this portion of the paper, we worked from the premise that inequities may be present in the method through which areas are zoned and looked for confirmation to support or negate that position. Sections of Virginia code, Henrico zone policy, and the City of Richmond zoning policy were considered.

The basis for all local government zoning policy in Virginia is found in Title 15.1 of the Code of Virginia. The sections of the code that apply to that may to the issue of industrial citing are sections one, two, three four seven and nine. (See Appendix 1). The code dictates that the State has no zoning or planning authority, but provides a basis for the counties and municipalities to establish a regional or local planning commissions and dictates that a strategic planning and development plan be in place. The county of municipality then holds sole responsibility for maintaining the strategic plan and are free to proceed in a manner deemed most sufficient for the locality (pursuant to the provisions provided in the Virginia Code).

The County of Henrico has developed the following zoning and planning policy which contains environmental justice features. The county code states:

“This chapter is for the general purpose of promoting health, safety, and the *general welfare* of the public and of further accomplishments and objectives of the code of Virginia. The these ends that chapter is designed to: Provide adequate air, light, convenience, access and safety from fire, flood, and other dangers; reduce or prevent congestion in public streets; facilitate the creation of convenient, attractive and harmonious community; facilitate provision of adequate police and fire protection, disaster evacuation, civil defense, transportation, water, sewerage, flood protection, schools, parks, forest, playgrounds, recreational facilities, airports, and other public requirements; protect against destruction for encroachment upon historic areas; protect against one or more of the following: overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light or air, danger and congestion in travel and transportation or loss of life, health and property from fire, flood panic, or other dangers; encourage economic development activities that provide

desirable employment and enlarge the tax base; provide for the preservation of agricultural and forestall lands and other lands of significance for the protection of the natural environment; protect approach slopes and other safety areas of licensed airports, including United States government and military air facilities; promote affordable housing; and protect surface water and groundwater.” (Italics added).

The City of Richmond has developed the following zoning and planning policy which contains environmental justice aspects:

“The purpose of this chapter is to adopt a comprehensive zoning plan designed to lessen congestion in streets; secure safety from fire, flood, panic and other danger; promote health, sanitation and *general welfare*; provide for adequate light, air and convenience of access; prevent the overcrowding of land; avoid undue concentration of population; facilitate the creation of a convenient, attractive and harmonious community; protect against destruction of or encroachment upon historic areas; encourage economic development activities that provide desirable employment and enlarge the tax base; and to expedite the provision of adequate police and fire protection, disaster evacuation, civil defense, transportation, water, sewerage, flood protection, schools, parks, forests, playgrounds, recreational facilities, airports and other public requirements pursuant to and in accordance with the applicable provisions of Title 15.1 of the Code of Virginia.” (Italics added).

Since the goal of zoning seems to general welfare, it raises the question: are the practices established with respect to zoning complying with the spirit of the law?

Henrico County is primarily focused on the controlled expansion and development of the county. Ben Blankenship, Principal planner for Henrico states that “We are really happy with the current rate of growth and development within the county right now. The residential areas are being developed at a pace comparable wit other counties of our size and demographic makeup and we have a wide range of commercial development and supports services to accompany the growth in population.”

When asked what procedures were in place to make sure that low income areas were not unfairly targeted, as when industry moved into the area, he responded that wasn’t really an issue for them. “Private sector determines where industry will go,” he said. “Land is zoned for a particular use in advance and categorized. There is fair amount of M1 and M2 and not so much M3 , and these areas are typically around railways, airports, and highways.” (See Appendix 2) If this type of reasoning is to be used, then Henrico should take a closer look at the policies that outline the zoning process.

The city of Richmond addresses the duties of zoning and planning with emphasis on a different area than that of Henrico County. According to Roger York, senior planner for the City of Richmond, Department of Community Development “the city is pretty much built out. Our master plan hasn’t changed much in the last ten years.” The planning officials main focus to not expansion and proper growth rates, but rather maintain the

withering tax base and exploring initiatives to encourage growth in trouble spots, such as the empty areas designated commercial in the Downtown area of the city.

The senior planner also highlighted the recent developments to rezone areas of the Shockoe area from M1 and M2 to R and RO types (see City of Richmond Zoning Codes). Other areas currently under consideration to be rezoned are in Shockoe as well and will be changed from M1 to B5. He sees this as a positive move on the part of government and active proof that the city is interested in revitalizing lower income and depressed areas. Areas zoned for light and heavy industry, in essence, is being reduced within the city limits. This raises an indirect issue. Is the rezoning of the aforementioned areas truly beneficial to the current community? There is a failure to see the connection between rezoning to allow for upscale multi-family units in a depressed area and the benefits that are gained by the current members of that community?

The result of the research compiled on the Richmond Metropolitan area (City of Richmond and Henrico County) determine that we are unable to determine any situations of environmental justice with respect the industry citing.

The “gray areas” within state and local law give way to the inequity within industry citing as an unintended consequence. When top state and local officials state that environmental justice is more of a private sector issue there is an indication that the voice of the public is not always adequately heard.

Recommendations

Unfortunately, citizens have to be their own advocates and strong organization is essential. Although individuals can protest an existing industrial site or persuade the relocation of an industrial facility on behalf of a community, a unified front lends strength to their voice of opposition. Leadership must be defined and full participation of the community must be encouraged.

There are a number of recommendations that citizens can use to improve social equity issues in their communities. Both the Environmental Justice Fund (EJF) and Center for Health, Environment and Justice (CHEJ) organizations have posted guidelines on their websites that other organizations can use to garner support. A connecting thread in these recommendations is information; accessing, analyzing, utilizing, and providing information to fellow citizens, politicians and the community at large. Henrico county Principal Planner Ben Blankenship concurs by saying that the citizenry’s best protection is educating themselves about planned development and how it may affect their communities.

CHEJ encourages organizations to present a clear message. The message must state what the objectives are and be framed so that it is easy to understand. Do the citizens want the industrial facility to close, relocate or reduce operating hours? It is also helpful to use words that invoke values, create a sense of urgency and spur action when communicating the message.

For a message to have support, it must have a strong, united organization behind it. Neighbors and concerned citizens will now have to become activists. Training of participating members is essential to successful opposition to the siting of unwanted industry. Concerned members may need to be trained in the manner of gathering information about local representatives, ordinances and laws. Armed with this information, the organization will know what the private sector can and cannot do and what the responsibilities of the governing agencies are. The local community also needs to know which politicians support the questionable siting of industrial facilities and if so why. It is necessary to identify possible that politicians may have a hidden agenda.

In addition to strong leadership, trained activists and information, consensus should be developed as to the message presented to the community and methods of protest should be determined. Will letters be written or demonstrations staged? If so, it will be necessary to relay to the members the appropriate content of the letters or the how and when demonstrations will be conducted. It may also be necessary to train activists in the use of cameras or video equipment to document their efforts.

As quickly as possible, develop open lines of communication with the local radio, newspaper and television stations. The media can be a valuable tool for the organization to use to get their message across if it is properly utilized.

Possible obstacles for implementation

Unfortunately, the impetus is on the individual to be aware of zoning conditions and not many people know that a comprehensive plan exists for their area nor do they know how to access the plan. Community members should know what comprises the local comprehensive zoning plan. Before making a real estate purchase, residents should examine the zoning plan for their area. This plan indicates what areas are zoned for residential, commercial or industrial use. The plan also represents how the area will develop over the next ten or twenty years. Although industrial zoned areas are predetermined, developers can request a change and with enough support rezoning can take place. It is important for the citizens to know what how a change in zoning can occur so that they are better prepared to fight the location of potentially harmful industry in their neighborhood.

Another key element to recognize is that it is necessary to train both the private sector and public sector to act socially responsible. One local planner indicated that social equity is not a factor in the decision making process for the public sector in the location of industry (Blankenship, 2002). The planner indicated that the location of industry was a private sector decision. The location of industry can affect the quality of life and the value of real estate for nearby residents and both government and private sectors should have these factors in mind when considering zoning and development issues. With pressure from the public, both government and private sectors should recognize that the siting of industry is a people issue as much as it is an economic issue, if not more so.

Above all it is crucial to realize that fatigue of the public, media, government agencies and private sector can deter efforts. Interest has to remain fixed on the issue. It is important to communicate to all involved that resolution of an issue can take years and set backs are likely. Disinterest, distrust and despair of the local community are likely to be the more difficult obstacles to overcome. A community with few resources may be overwhelmed and intimidated by large private companies or bureaucratic procedures.

The CHEJ organization has coined the acronym SLAPP to represent Strategic Lawsuits Against Public Participation. Companies use these lawsuits as an offensive tactic as a means to redirect the focus and finances of the organized citizenry. Either by claiming defamation or interference, opponents can intimidate organizations with complicated legal action.

Companies and government agencies will also take steps to diffuse the focus and downplay an issue by requesting meetings with only some individuals versus all of the interested parties. Meetings will also be scheduled at times that are inconvenient for all members. These moves are used to dilute the power base of the interested parties by separating the members. Controlling the participants in the meeting as well as the scheduled time and place allows for the filtering and containment of pertinent information.

Appendix 1

Title 15.1 Code of Virginia (applicable sections)

Section 1:

Virginia vests the majority of its planning functions at the county or local level. Most of the Commonwealth's regional agencies address environmental concerns, such as the Chesapeake Bay. Local governing bodies have the option of joining together and creating a regional or joint planning commission, to carry out joint planning goals.

Section 2: State Planning

Virginia has no state planning agency *per se*. Virginia's Department of Economic Development, however, does hold some planning-oriented duties.

Section 3: State Development Control

The Virginia legislature vests no development control powers at the state level.

Section 4: Regional and Interstate Planning

Planning district commissions (regional planning commissions) have, as duties: 1) to study issues of regional significance; 2) study opportunities for efficiencies through coordinated local government efforts; 3) review local government aid applications; 4) conduct strategic planning for the region; 5) develop regional functional area plans, either for the commission, or for member local governments; 6) participate in a statewide geographic information system (the Virginia Geographic Information Network); and, 7) to collect demographic, economic, and other data concerning the region. Each planning district commission (hereinafter "commission") must prepare a regional strategic plan to guide the district, and the municipalities within the district. The commission must seek input from "a wide range of organizations," including local governments, the business community, and citizen groups.

Once the strategic plan becomes effective, the planning commission cannot act contrary to the plan. When the strategic plan becomes effective within a municipality within the district, the municipality cannot act contrary to the strategic plan.

Section 7: Local Planning

The Planning Commission

A local planning commission is appointed by the governing body. The commission may have advisory members, consisting of members of planning commissions for either contiguous municipalities or the surrounding county. If a county has a planning commission, a municipality within that county may designate that the county commission act as the local planning commission

The Comprehensive Plan

The local commission must prepare a comprehensive plan for the physical development of the territory within its jurisdiction. The plan must be general in nature, designating the general location, character, and extent of each feature shown on the plan. It shall also indicate where existing lands or facilities are proposed to be extended, abandoned, relocated, or otherwise changed.

Zoning

The governing body of any county or municipality may classify the territory under its jurisdiction in zoning districts. Within each district, it may regulate: the use of land, buildings, structures, and other premises for specific uses; the size, height, area, bulk, location, erection, construction, reconstruction, alteration, repair, maintenance, razing, or removal of structures; the areas and dimensions of land, water, and air space to be occupied by buildings, structures and uses, and open spaces; and, the excavation or mining of soil and other natural resources.

Section 9: Specialized Adjudicatory Procedures

Board of Zoning Appeals

Once a municipality has enacted a zoning ordinance, it must create a board of zoning appeals, having between five and seven members, inclusive. The board does not have the power to rezone. A party adversely affected by a decision of the board may petition the circuit court to review the board's decision.

Appendix 2

City of Richmond

Zoning Codes

Code	Zoning Type
<u>R-1</u>	Single-Family
<u>R-2</u>	Single-Family
<u>R-3</u>	Single-Family
<u>R-4</u>	Single-Family
<u>R-5</u>	Single-Family
<u>R-5A</u>	Single & Two-Family
<u>R-6</u>	Single-Family Attached
<u>R-7</u>	Single & Two-Family Urban
<u>R-43</u>	Multi-Family
<u>R-48</u>	Multi-Family
<u>R-53</u>	Multi-Family

<u>R-73</u>	Multi-Family
<u>R-MH</u>	Mobile Home
<u>RO-1</u>	Residential-Office
<u>RO-2</u>	Residential-Office
<u>RO-3</u>	Residential-Office
<u>HO</u>	Hotel-Office
<u>I</u>	Institutional
<u>UB</u>	Urban Business
<u>B-1</u>	Neighborhood Business
<u>B-2</u>	Community Business
<u>B-3</u>	General Business
<u>B-4</u>	Central Business
<u>B-5</u>	Central Business
<u>B-6</u>	Central Business
<u>B-7</u>	Central Business
<u>CM</u>	Coliseum Mall
<u>DCC</u>	Downtown Civic & Cultural
<u>OS</u>	Office Service
<u>M-1</u>	Light Industrial
<u>M-2</u>	Heavy Industrial

Endnotes and References

¹ 20 U.S.C.A. §§ 1681

² *Oncale v. Sundowner Offshore Services, Inc.*, 83 F.3d 118

³ 29 U.S.C.A. §§ 701

⁴ 29 U.S.C. § 623

⁵ *Kimel v. Florida Board of Regents*, 139 F.3d 1426

⁶ Richmond Time-Dispatch, October 5, 2002, p. B1

⁷ Richmond Times-Dispatch, October 9, 2002, p. B1

⁸ Equality – the quality or state of being equal. Equal – of the same measure, quantity, amount, or number as another.

⁹ Justice – the administration of what is just. Just – reasonable; morally or legally right. Right – being in accordance with what is just.

¹⁰ Silent losers – those who fail to voice protest against the policies causing their losses. Losers fail to protest because: they unexpectedly suffer losses as individuals (at the time of adoption of the policy they do not anticipate being losers); they do not connect their losses to the policy; they are not yet born. From David L. Welmer and Aidan R. Vining, *Policy Analysis: Concepts and Practice*, 3rd ed., Prentice-Hall, New Jersey, 1999.

¹¹ Equity – actions, treatment of others, or a general condition characterized by justice, fairness, and impartiality.

¹² Social – relating to human society and how it is organized. Society – the sum of social relationships among groups of humans or animals.

¹³ Environmental – relating to the natural world. Environment – the natural world, within which people, animals, and plants live.

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