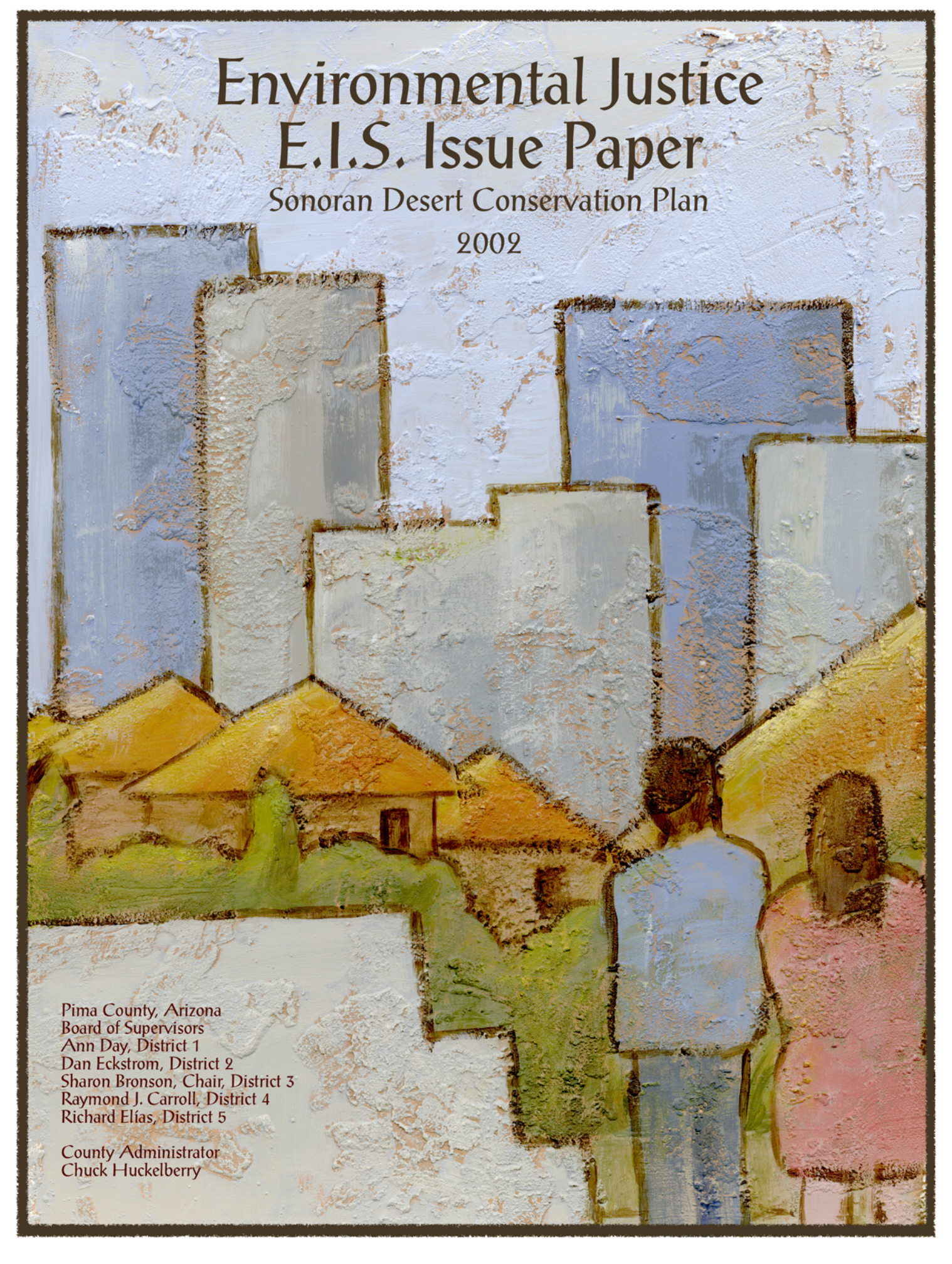


Environmental Justice E.I.S. Issue Paper

Sonoran Desert Conservation Plan

2002

An abstract painting with a textured, impasto style. The background is a mix of light blue, white, and beige. In the foreground, there are stylized, blocky shapes in shades of yellow, orange, and green, representing buildings or desert vegetation. Two figures are visible in the lower right: one in a light blue shirt and another in a pink shirt. The overall composition is layered and textured.

Pima County, Arizona
Board of Supervisors
Ann Day, District 1
Dan Eckstrom, District 2
Sharon Bronson, Chair, District 3
Raymond J. Carroll, District 4
Richard Elías, District 5

County Administrator
Chuck Huckelberry

Potential Impacts of the Sonoran Desert Conservation Plan on Environmental Justice in Pima County

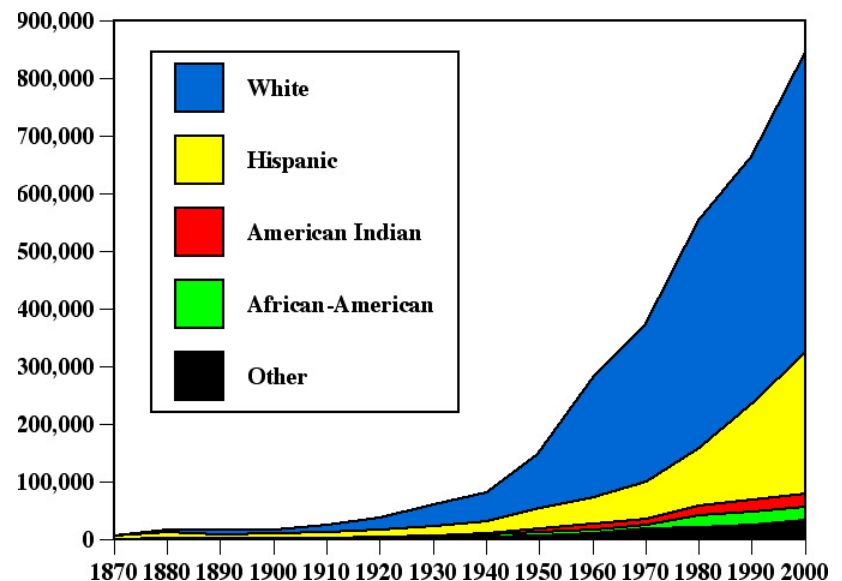
A Report for the Pima County Sonoran Desert Conservation Plan 2002

The Issues

The basic questions addressed in the environmental justice study are whether low income and/or minority neighborhoods are or have been disproportionately affected by the impacts of pollutants in air or water, whether they are or have been disproportionately affected by land use decisions, and whether they are or have been disproportionately affected financially by environmentally-related governmental decisions. Environmental justice examines disproportionate impacts on these populations, not environmental impacts that are experienced relatively equitably by all or most of the community.

Figure 1 shows the proportion of minority residents in Pima County over time. Pima County's low income and minority neighborhoods tend to be concentrated in and south and southwest of the downtown area, including the City of South Tucson and the Tohono O'odham Nation and the Yaqui Reservation. (Figures 2 and 3). There are some low-income neighborhoods on the near northwest side of Tucson, although these do not tend to be predominately minority with the exception of the Pascua Yaqui area.

Pima County is fortunate is not having a heavy industrial base that includes major polluters. There is nothing in Pima County today comparable to the water pollution of the Ohio River, for example, or the excessive air pollution of steel producing areas. There are no significant hazardous waste disposal sites in Pima County, nor are any projected. Tucson has definitely had problems in



the past, but few, if any, pollution problems that would disproportionately affect low/minority neighborhoods are anticipated in the foreseeable future. Policies in the past and present, however, that affect housing patterns, availability of public transportation have disproportionately affected and continue to affect low-income and minority neighborhoods.

Air Quality

Air quality in Pima County is generally very high. There have been very few exceedances of federal standards in the past few years. Copper smelters at San Manuel and Ajo, in Pima County, and Douglas, in Cochise County discharged high levels of pollutants, primarily sulfates. Acid rain posed a serious threat in areas downwind from the smelters. All

Figure 1. Pima County population growth. This graph is based on various U.S. censuses. Since racial categories have changed over time, this is an approximation of actual change. In the 2000 census, for example, Hispanic is treated as an ethnic group and other categories such as African-American may also be Hispanic.

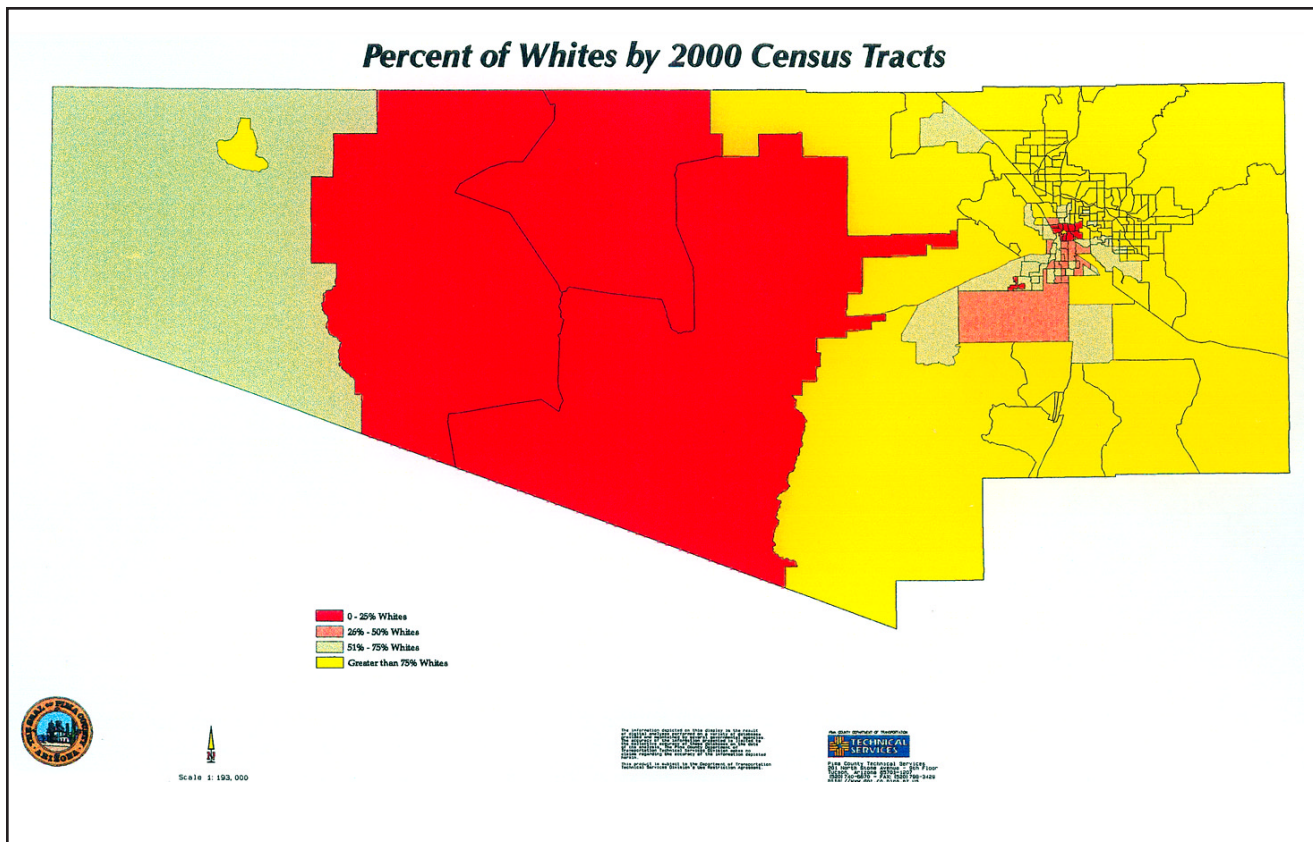


Figure 2. Racial distribution in Pima County according to the 2000 census.

of these smelters have been closed. In the past, air pollution from particulate emissions from the Rillito Cement Plant seriously impacted residents in the area, many of whom were minority or low income. Pollution control devices have corrected this problem.

Dust from new construction and unpaved roads continue to be the major pollutant in the area, along with pollution from the vehicles that drive those roads. Since low-income and minority neighborhoods are for the most part in areas where the streets are paved and where there is little soil disturbance from new construction, there is no disproportionate effect. Pollution from vehicles themselves has been greatly reduced by emissions control devices and inspection of vehicles. There is no evidence that low-income/minority neighborhoods experience more vehicular pollution than other areas. See Figure 4.

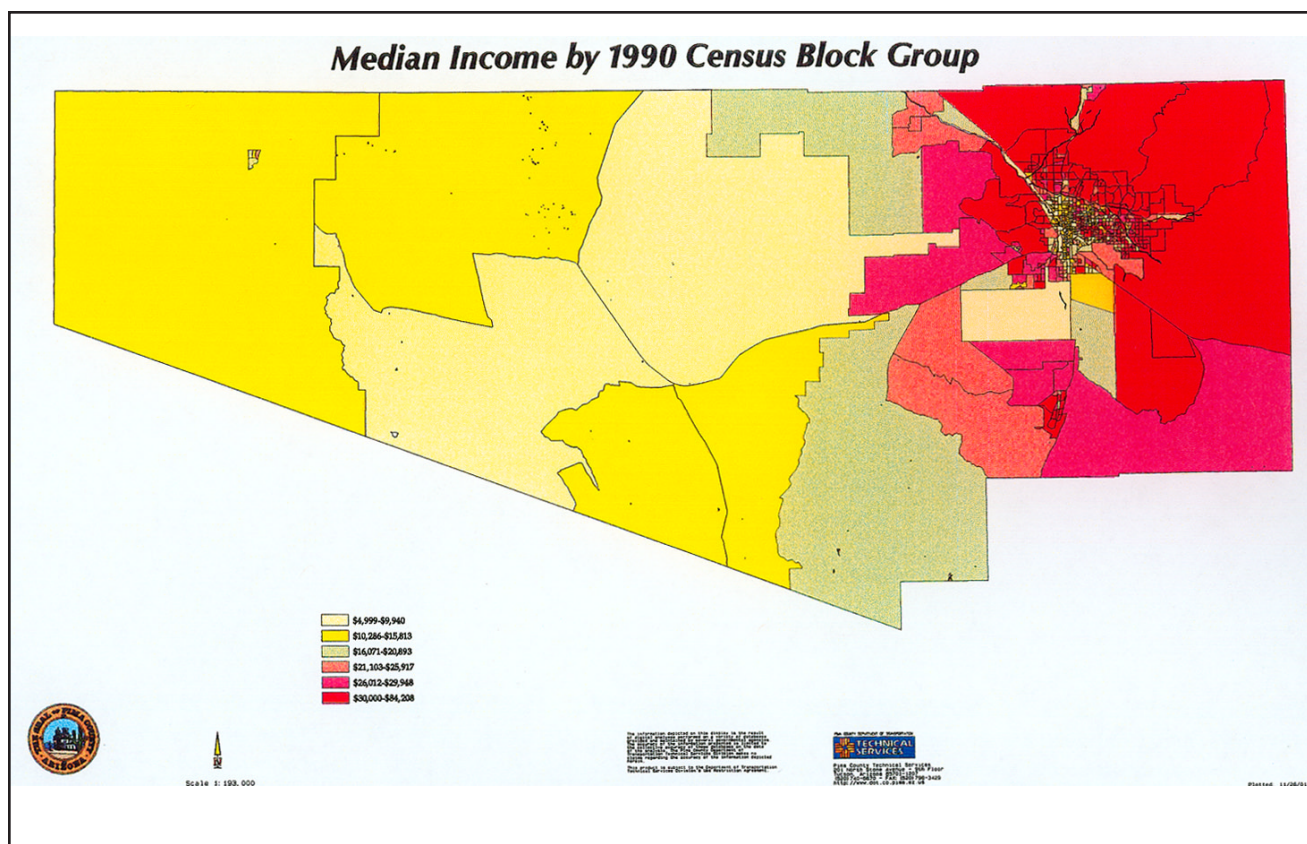
There have been isolated cases of discharges of toxic air pollutants in the

industrialized areas on the south side of town. One major offender was shut down. Another potential offender is still in operation and emissions have been meeting Environmental Protection Agency (EPA) standards. Since areas zoned for industrial use are primarily in low-income and minority areas, the potential for problems exists. See Figure 5.

Water Quality

Water quality is very high in almost all parts of Pima County. Surface water quality throughout the area meets water quality standards. There are a few areas with minor problems, but because there is so little surface water in the urban area there are no surface water quality problems that affect low-income and minority neighborhoods.

There are some serious groundwater quality problems, primarily in the urban area where a number of sites have been designated as Superfund sites by EPA or Water Quality Assurance Revolving



Fund sites by the Arizona Department of Environmental Quality (ADEQ). The most notorious problem was accumulation of TCE (Trichloroethylene) and other pollutants from aircraft processing plants near the Tucson International Airport, starting in the 1940s. (Figure 6.) By the 1980s pollutants had reached the groundwater in areas that were primarily Hispanic on the south side and numerous illnesses were attributed to use of that water. Since the problem was recognized, contaminated wells have been shut down and facilities have been built to clean up the contamination. The affected neighborhoods are within the Tucson Water service area, which now brings most of its water to that area from Avra Valley and the Central Arizona Project (CAP). Individual wells in the area were shut down and residents connected to the Tucson Water system. Leakage from an abandoned landfill at the base of Tumamoc Hill west of the downtown area poses a pollution threat,

but the water in this area is not used in the Tucson Water system. An examination of water quality served to Tucson Water customers throughout its service area shows that residents on the south side and downtown areas do not received poorer quality than others. Most of the lower quality water is in isolated areas not connected to the metropolitan system. In areas services by other water providers the water, too, is of high quality and meets federal drinking water standards. In isolated rural areas, especially those with a history of agriculture people with their own wells may have lower quality water, since their water is not regulated by the Environmental Protection Agency and is usually untreated.

None of the officially designated sites with major contamination problems are used for drinking water supplies, except possibly for some individual unregulated wells. In all cases, where a water provider was using water from a contaminated area, users in the area now get

Figure 3. Income distribution in Pima County according to the 2000 census.

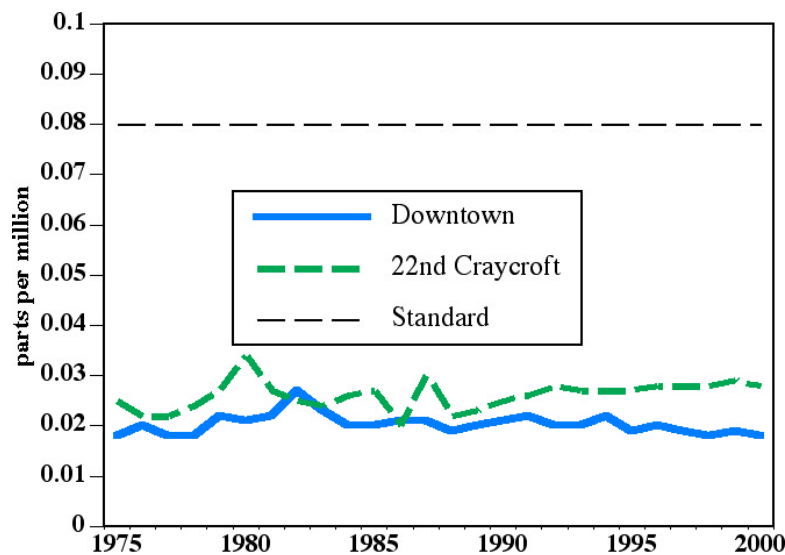


Fig. 4-5. Ozone One Hour Average Mean Levels.

Source: Pima County Department of Environmental Quality

Figure 4. Graph of ozone levels in the air at sites in the downtown area and at 22nd Street and Craycroft Boulevard. The pattern has remained similar at both locations for 25 years and shows no disparate impact in low-income/minority areas. Graphs for other air pollutants show a similar pattern. Source: Pima County Department of Environmental Quality.

their water from some other source. Private well owners were notified and urged to abandon their own wells and connect to a water provider.

There is no evidence that at the present time residents of low-income and minority neighborhoods get lower quality water than more privileged neighborhoods. See Figure 7.

Water Supply and Subsidence

More than one hundred different water companies, municipalities, and other entities provide water in the Tucson metropolitan area. The vast majority of Tucson metropolitan area residents get their water from Tucson Water. Other significant providers include the Metropolitan Domestic Water Improvement District and Flowing Wells Irrigation District. Tucson Water has the largest Central Arizona Project water contract in the area and most other water providers do not use CAP water, but depend on well water. All groundwater users in the area draw their water from a common underground supply, which has been severely depleted over the years.

The minority group most deeply affected by groundwater pumping is the San Xavier community where pumping by the City of Tucson, the mines, and agri-

culture lowered the water table to the point that a majestic mesquite south of San Xavier Mission died in the 1950s for lack of water to the deep roots. The springs had dried up because of pumping even earlier. This injustice was partially redressed through a lawsuit and settlement whereby the Tohono O'odham gained the right to a large amount of CAP water and treated effluent.

The most heavily pumped areas are in danger of subsidence, a lowering of the ground as the water is withdrawn. The threat of subsidence is most severe in the central part of Tucson and near the San Xavier District where Tucson Water and others have been pumping for many years. (Figure 8.) Tucson Water has shut down wells in the central area and plans to continue to manage pumping there to minimize subsidence, although wells are kept in condition to be reactivated at peak use times in the summer as needed. There are currently no plans to decrease pumping in the south side wellfield, however.

Land Use, Transportation, and Housing

Historically, Hispanic neighborhoods have been concentrated in and south and west of the downtown area, including South Tucson. African-American neighborhoods occurred south and southwest of downtown and northwest of the University of Arizona. These neighborhoods also tend to be lower in income than most other parts of town. This pattern has persisted for most of the twentieth century. There are many reasons for this. The town started with a Spanish presidio located near the site of a native American village and as it started to grow into an American town, Hispanic people still dominated the downtown area. Over time, the Hispanic population spread south and west from downtown while the Anglo population spread predominately north and east. In the 1950s Urban Renewal projects eliminated parts of some barrios in order to build the Tucson Community Center and government buildings.

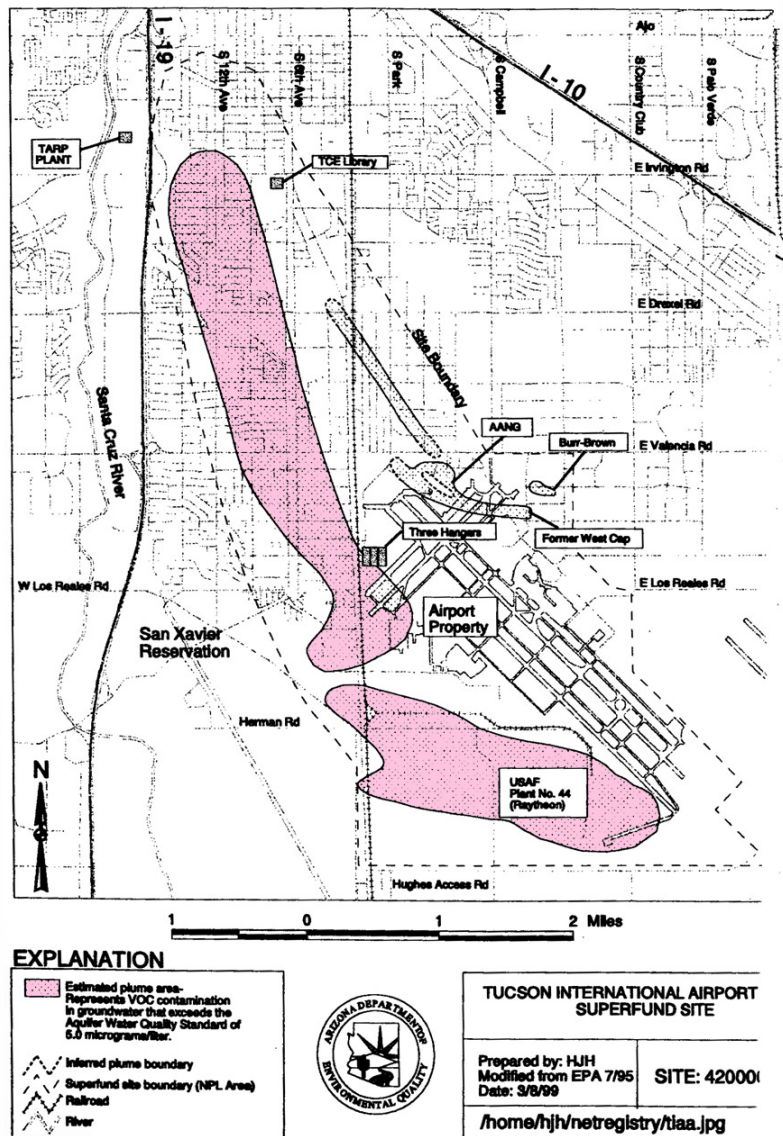
Through the decades racial and ethnic

prejudice was an important factor in maintaining these neighborhood demarcations. During the 1950s the Civil Rights Movement began to change attitudes and laws were passed making discrimination in education, employment, and housing illegal. Some significant Supreme Court cases were pivotal in gaining equality in these areas. Neighborhoods gradually became somewhat more integrated, but even today some census tracts have predominately minority populations while others have highly non-minority populations. Much of this can be traced to Federal Home Administration loan policies that from the beginning in the 1930s favored racial and ethnic segregation as well as economically homogenous neighborhoods. Today's FHA loan approvals no longer allow racial or ethnic segregation, but do still prefer economic homogeneity in neighborhoods as being less risky for loans.

FHA policies, in turn, influenced local zoning policies. Zoning in most growing communities in the United States favors neighborhoods with similar lot sizes and uses. Large lot subdivisions are in one type of zoning, while multi-family dwellings tend to be in different locations. Areas zoned for categories such as industrial tend to be away from the upper scale residential areas. Commercial zoning is usually clustered or placed on the outside of subdivisions along major thoroughfares. This approach to land use tends to segregate people by income because only people of a certain income level can afford to live or will choose to live in areas with a particular zoning.

This is different from the land use patterns in many large cities or in many other countries. In a city like San Francisco, for example, many neighborhoods combine commercial and residential in the same block, in which people live above small stores. Few people there live in single-family detached homes with yards, although this is the case in suburban communities near San Francisco.

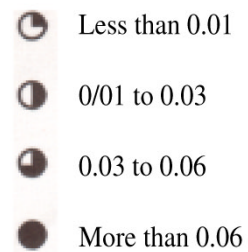
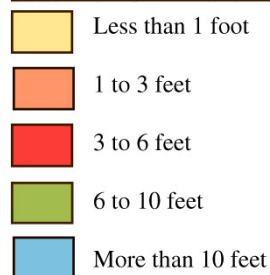
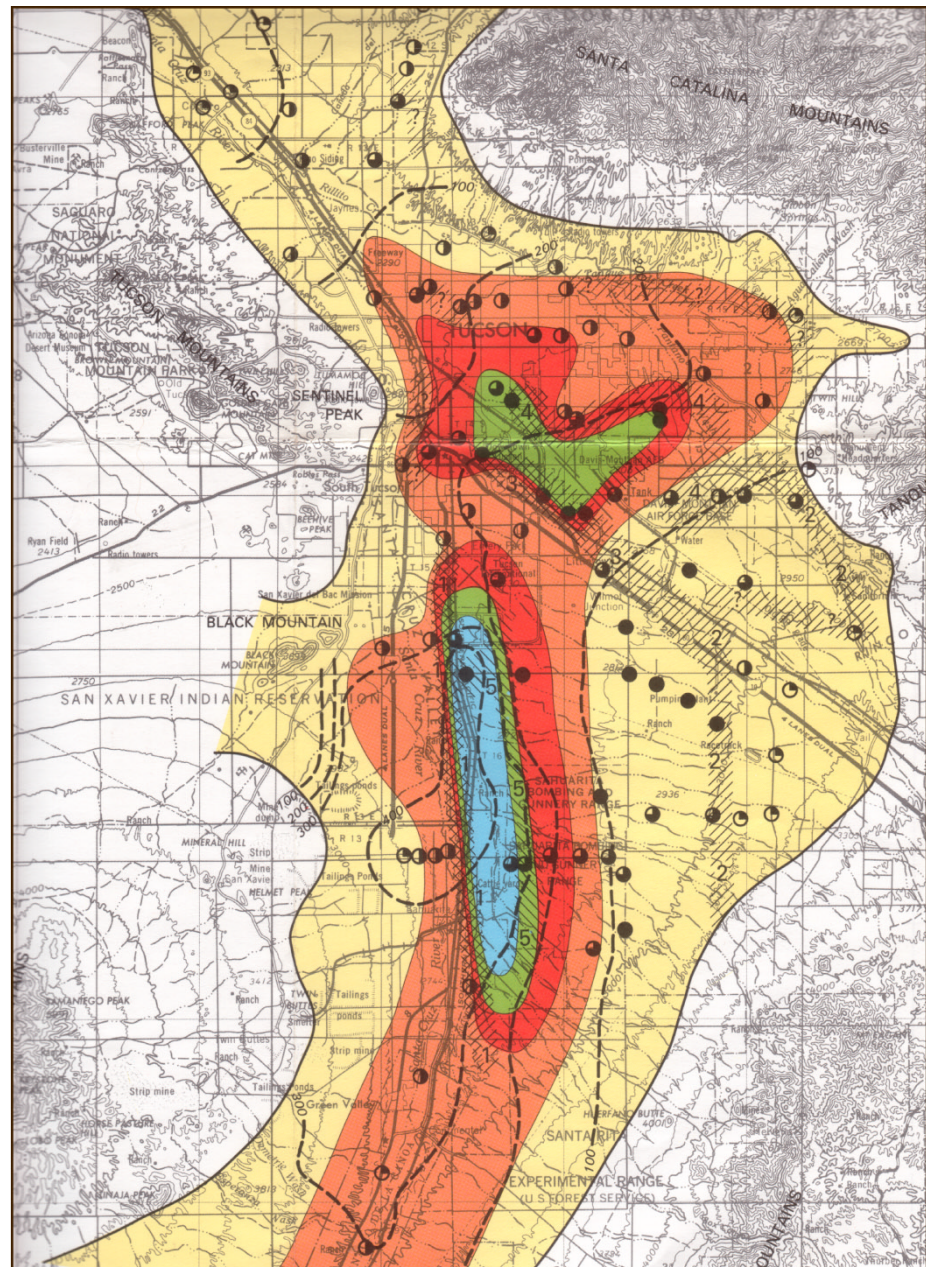
Public transportation is much easier and more economical to provide under



the big city or European model than under the land use model developed in the American West. In the big city model, there are numerous transportation corridors used by large numbers of people and there are often limited parking spaces. In the western model, distances are great and neighborhoods are usually far from work and shopping destinations. In the big city model rail transit is economical and often easier than driving, while in the western model, driving is the fastest and least costly. This in turn means that a large percentage of residents in towns like Tucson are

Figure 5. A large underground region is contaminated with TCE and other pollutants on Tucson's south side. This problem developed over many years as a result of industrial activities and disproportionately affected low-income and minority groups. The pollution is being cleaned up and people in this area now get their drinking water piped in from elsewhere.

Figure 6. Potential areas of land subsidence in the Tucson Metropolitan Area. One such area is on Tucson's south side, including the San Xavier District of the Tohono 'odham Nation. Source: U.S. ecological Survey



Potential land subsidence 1940-2030

Potential land subsidence rate in feet per foot of water level decline in excess of the threshold water level decline.

dependent on driving a car most places. People who do not have cars find it very difficult to live in neighborhoods outside the center of town, which further engenders economic discrimination.

Fiscal Considerations

The land use policies discussed above also have the impact of requiring greater public expenditures for infrastructure to serve outlying areas than would be the case under policies favoring a more compact growth pattern. The methods of financing infrastructure such as roads and schools are complex and it is difficult to determine whether people in the core part of the city are bearing more than their share of the burden. It is clear, however, that overall costs are higher because of the sprawled land use pattern predominant in the Tucson area. Since a significant percentage of the costs of paying for roads, water and sewer lines, schools, and other facilities is paid by existing residents rather than by newcomers, the overall cost burden per person is higher under the sprawled pattern than under a more compact growth pattern.

Operating costs to serve growth in outlying areas are also higher. All other things being equal, the per incident cost of sheriff's protection is generally greater for service in the less densely populated areas than in the urban area and response times are longer because of greater travel distances. These costs are generally shared by all residents, so the residents in the urban area help subsidize costs for those in outlying areas. A detailed economic study was not part of the Environmental Justice study, but still needs to be done.

Cultural values and places

The importance of cultural values and places to certain groups of people is significant. The Native Americans, in particular, tend to value certain places, many of which have been destroyed, disturbed, or desecrated by the predominant population. Many of these most important places are on the Tohono O'odham Nation or on federal or state

protected lands. SDCP studies have documented the existence of hundreds of archaeological and historic sites, but many cultural sites are kept secret or are so general they cannot be specifically identified. Cultural preservation is an important element of environmental justice and as such plays an important role in SDCP. See the Issue Paper on cultural matters for much more information.

Nature-related values

Traditional cultures often value wildlife and natural places, especially those associated with water. Many ethnic groups bemoan the loss of traditional hunting grounds and of plants and wildlife as the predominant culture has significantly diminished those elements. The SDCP approach of identifying large contiguous areas for the benefit of wildlife and vegetation fits in well with recognizing these values. See the issue papers on riparian areas and wildlife habitat for much more information.

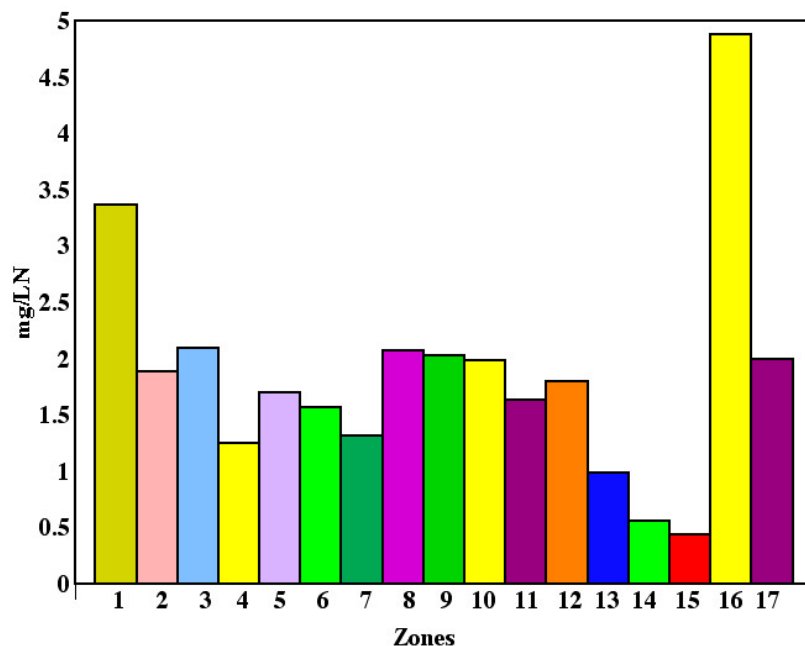


Figure 7. Graph of nitrate levels in various parts of the Tucson Water service area. 8 and 9 are on Tucson's south side and downtown, while 2 is in the Catalina foothills and 1 on the northwest side. Similar graphs for other water quality parameters show no disparate water quality in the major low income/minority areas and all drinking water meets federal standards. Source: Tucson Water.

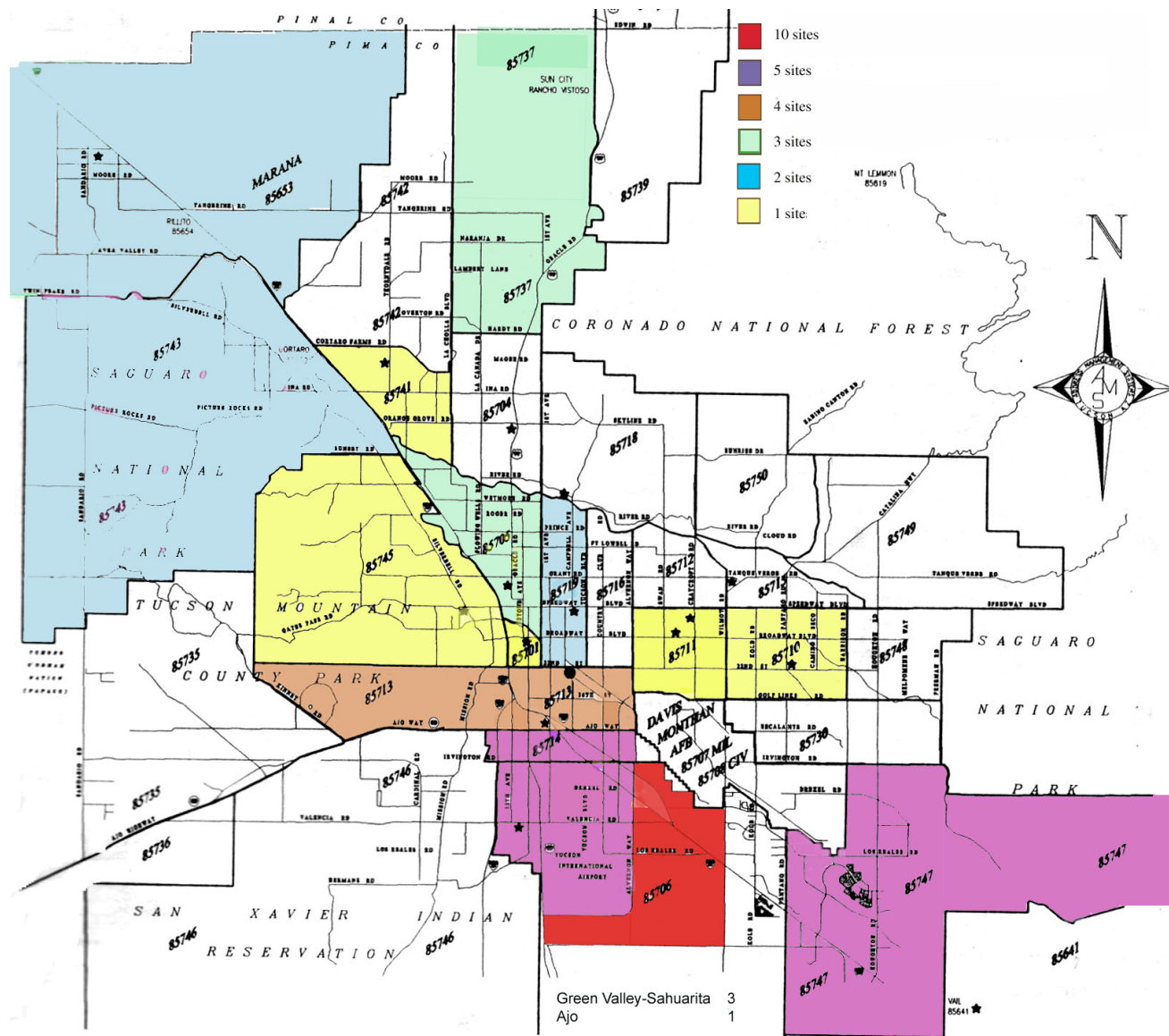


Figure 8. Locations of facilities with hazardous materials permits by zip code. Having a permit does not imply that the facility is emitting hazardous materials, but that the facility is regulated for proper use of hazardous materials. Facilities such as gas stations that are located throughout the community are not shown. This pattern reflects industrial zoning. Source of information: Pima County Department of Environmental Quality.

Brief summaries of SDCP Reports

Reports were produced on air quality, water quality, water resources, housing, land use, transportation, cultural places, and a multitude of subjects related to environmental justice. These are all cited in the Environmental Justice report discussed below. These subjects are also discussed in more detail in the various issue papers.

Environmental Justice in Pima County (2002)

This study examined questions related to whether minority and low income neighborhoods in Pima County suffer disproportionately from air quality problems, water quality or water supply problems, waste disposal sites, industrial facilities, land use decisions, and fiscal impacts of governmental actions. It concluded that Tucsonans are fortunate in not having severe pollution problems common in other areas of the country, that low income and minority neighborhoods do not currently suffer disproportionately

from poor air or water quality, do not disproportionately have problems related to waste disposal, although some specific instances of problems in the recent past were cited. It did, however, identify some areas where low income and minority populations have been disproportionately affected. The San Xavier District of the Tohono O'odham Nation has been affected by groundwater pumping by the City of Tucson, mining companies, and agricultural businesses. Some central and south side neighborhoods suffered from poor water quality and industries are disproportionately located in that part of town. The most significant impacts came from land use policies at the federal and local levels that have influenced the availability of low cost housing and growth patterns that encourage development at the fringes, often at the expense of central neighborhoods. These in turn present related problems such as difficulty of providing cost-effective public transportation and other services.

SDCP Proposed Actions

SDCP does not have proposals specifically aimed at Environmental Justice matters, but many of the proposals in the plan will have a positive impact on low-income and minority groups. SDCP has no proposals that are intended to have a negative impact on low-income and minority groups.

The new Neighborhood Conservation Plan as an adjunct to SDCP promises to help preserve cultural values as well as improve quality of life for low-income and minority residents as well as many others.

SDCP proposes more flexible neighborhood design that will encourage more integration of low-income/minority residents.

SDCP proposes increased preservation of important archaeological, historical, and cultural sites including many of value to certain minority groups.

SDCP proposes preservation of important wildlife habitat and riparian areas.

SDCP proposes increased intergovernmental agreements and activities (federal, state, tribal, municipal) that will involve diverse cultural and ethnic interests in a positive manner.

SDCP Proposed Actions

SDCP does not include any proposals for new facilities that would increase air or water pollution or disposal or use of hazardous materials. Nor does it propose any major new construction projects such as roads outside the framework of general community growth. There will be little or no impact from this type of construction on any population and specifically not on low-income and minority populations.

Infrastructure planning that will direct growth rather than be reactive to the demands of developers should reduce overall community costs of accommodating growth. Limiting sprawl to these areas would have a positive economic benefit for existing residents, including the low-income/minority ones. This will reduce total community costs and thus impacts on low-income groups. Increase in the connection and impact fees to pay for growth should also benefit all current taxpayers and ratepayers, including the low-income and minority populations. It will, however, increase the cost of housing for the new homebuyer, which could impact some low-income/minority buyers. Increased impact fees will not generally affect the price of a pre-owned home, however.

There will be a cost in acquiring land under the last four alternatives. If these costs are offset at least to some degree by reduced costs of providing infrastructure, of providing public services and other costs of serving expanding populations, they will not negatively affect low-income/minority populations. Further study is needed of the total cost/benefit

of specific land acquisitions and how the net costs or savings will affect various parts of the community.

Continuation of Present Growth Patterns (No Action)

This alternative would have the greatest negative impact on low income and minority neighborhoods. If growth continues as it has in the past, total community expenditures for infrastructure and services will continue to increase, affecting the low-income and minority populations. Continuation of present zoning patterns that encourage economic segregation and discourage public transportation will disproportionately affect low-income and minority populations. Continuation of the present growth patterns will also mean less preservation of cultural places and values or wildlife habitat valued by some minority groups.

Emphasis on Riparian Area Protection

This alternative will have little positive or negative impact on low-income or minority populations except as it preserves environmental, archaeological, and cultural sites and values and possibly increases low-cost recreational opportunities. Acquiring more floodprone land will not affect the availability of “affordable housing” and where such acquisition reduces flood control and damage costs, it may reduce costs for the community as a whole.

Emphasis on Limiting Development in the Unincorporated Areas on the Northwest Side of the Metropolitan Area

There are no predominately low-income or minority neighborhoods in the unincorporated areas on the northwest side of the metropolitan area. Subdivisions in the nearby incorporated areas presently are predominately non-minority and relatively high-income areas. It is unlikely that if development here were allowed to proceed unchecked that any significant amount of low-income housing would be built. Therefore, limiting new construction in this area will have little or no effect on the availability of “affordable housing.”

There are significant cultural sites and habitat for the cactus ferruginous pygmy owl and other species the preservation of which could have value for some minority populations.

Emphasis on Ranch Conservation

There are no predominately low-income/minority neighborhoods in existing ranching areas. It is unlikely that if ranches in the Avra Valley, Altar Valley, middle San Pedro Valley or elsewhere were turned into subdivisions, that they would be occupied in any significant numbers by low-income/minority populations. These remote areas are not ideal for cost-effective provision of services such as public transportation. Limiting growth in these areas, then, would have little or no negative or positive impact on these groups. Ranchland preservation might offer low cost recreational opportunities and preserve cultural sites and wildlife habitat. Limiting sprawl to these areas would have a positive economic benefit for existing residents, including the low-income/minority ones.

Emphasis on Expansion of County Parks

Limiting sprawl to these areas would have a positive economic benefit for existing residents, including the low-income/minority ones. Limiting new construction on the fringes of the public lands on the west, north and east sides of town would

have little impact on low-income/minority populations since almost all the land use on the outskirts of those parks is relative high income, whether near the Tucson Mountains, the Tortolita Mountains, or the Rincon Mountains. The cost of land is relatively high on the periphery of existing county natural parks, Saguaro National Park and the Coronado National Forest. These areas have not been prime locations for low-cost housing in the past, except for wildcat development in some areas. Building construction in these areas is relatively costly as is cost of providing infrastructure. The cost of providing services such as public transportation to these areas is high. Limiting construction in these areas, therefore, would not limit the availability of “affordable housing.” It would have the benefit of reducing the total costs of growth, benefiting all including existing low-income/minority residents. There are cultural and environmental elements in these areas whose preservation some minority groups would value.

Summary

SDCP will not create any new air or water pollution or hazardous materials problems for anyone in the community, including low-income/minority groups and thus will not negatively impact environmental quality in minority/low income neighborhoods. SDCP may reduce the costs of subsidies to new growth in outlying areas and thus have an economic benefit for existing residents. It offers some benefits for those minority groups for whom cultural and environmental protection is important. Upon completion and implementation of the associated Neighborhood Conservation Plan there should be considerable benefit to existing neighborhoods. It offers some benefits for those minority groups for whom cultural and environmental protection is important and may increase low-cost recreational opportunities. Of the three alternatives, Continuing Present Growth Patterns is the least beneficial to environmental justice.

References

The Environmental Justice report for the Sonoran Desert Conservation Plan contains many references to materials related to environmental justice issues in Pima County. The ones listed below are the most significant for this summary paper.

- Anderson, J. 2001. American Indian Literature, Environmental Justice and Ecocriticism. University of Arizona Press. Tucson
- Anderson, S.R. 1997. Potential for Aquifer Compactions, Land Subsidence, and Earth Fissures in the Tucson Basin. U.S.G.S. Hydrological Investigations Atlas 713. Tucson
- Anon. 2000. Sprawl Costs Us All. Sierra Club. San Francisco.
- Arizona Department of Commerce web site. www.des.state.az.us.
- Environmental Justice Research Center web site www.ejr.cau.edu
- Bryant, Bunyan. 1995. Environmental Justice: Issues, Policies, and Solutions. Island Press. Washington D.C.
- Duane, Andres. et al. 2000. Suburban Nation: The Rise of Sprawl and the Decline of the American Dream. Northpoint Press. New York.
- Hampson, F and J. Reppy. Ed. Earthly Goods: Environmental Change and Social Justice. Cornell University Press. Ithaca.
- Ladd, Helen. 2000. Effects of Population Growth on Local Spending and Taxes. Research in Urban Economics 9:181-223.
- Nash, Gerald. 1999. The Federal Landscape: An Economic History of the Twentieth Century West. University of Arizona Press. Tucson.
- Pima County Department of Environmental Quality. Annual Reports for various years.
- Robinson, SG. 1990. Financing Growth: Who Benefits? Who Pays? And How Much? Government Finance Officers Association. Chicago.
- Tucson Water. 2000. Water Quality Reports and web site. www.ci.tucson.az.us