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Social Equity and Transit-Oriented Development:

Selecting Transit Priority Areas in the
Sacramento Sustainable Communities
Regional Planning Process

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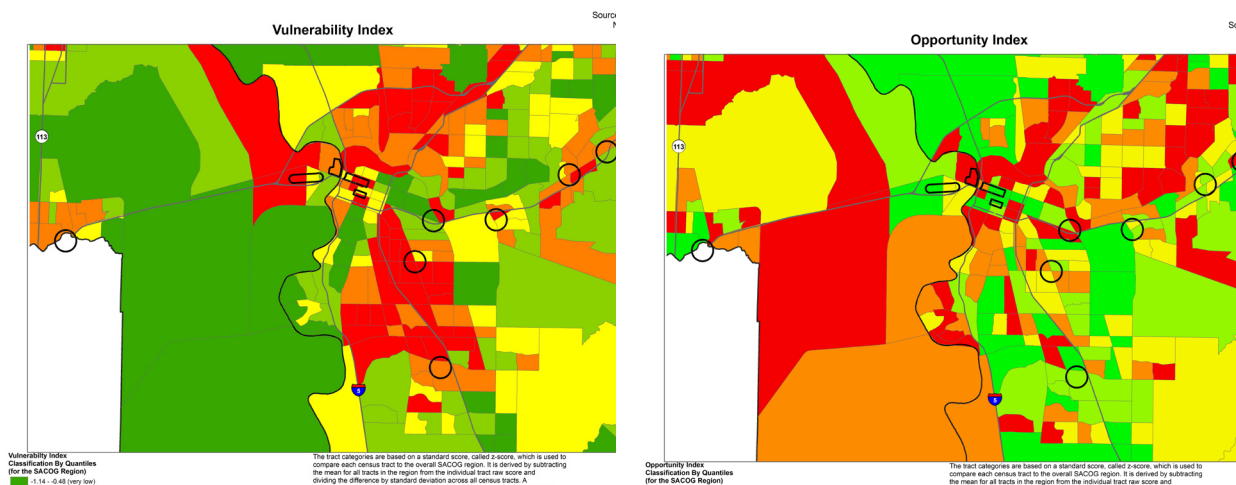
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Executive Summary

In the fall of 2010, the Sacramento Area Council of Governments (SACOG) and its partners received a grant from the U.S. Department of Housing and Urban Development for regional planning to accelerate transit-oriented development (TOD) in the Sacramento region. The first phase of the project, which ran from February through June 2011, involved assessing and selecting a limited number of Transit Priority Areas (TPAs) that would become the priority focus for SACOG's efforts to promote transit-oriented development in subsequent phases of the project.

The focus of the work involved developing two neighborhood indices—a vulnerability index and an opportunity index—that could be used to compare the social equity characteristics of specific neighborhoods to the region as a whole. A central goal of both indices was to design them in ways that could on the one hand incorporate the complex and multi-faceted nature of social vulnerability and opportunity in the region, but on the other hand provide decision makers with an intuitive and quick way of identifying neighborhoods with high levels of social vulnerabilities, and neighborhoods that showed characteristics of high social and economic opportunity. It was also important that the indices be developed in a broad participatory process, both to incorporate the wealth of knowledge of social equity advocates in the region, and to ensure that the final product had broad public support.

The resulting vulnerability index and opportunity index (see figures below), and the specific indicators that comprised these indices, became important tools in the TPA selection process, and are now forming the basis for on-going efforts to incorporate social equity into neighborhood strategic planning, in updates to the Metropolitan Transportation Plan and in developing a framework for tracking performance in attaining social equity goals in the long term. This is an ongoing process, shaped by a variety of lessons learned to date and recognition of the limitations of indicator initiatives alone in shaping equity outcomes. This report provides background on the initiative, details of the processes involved, discussion of the specific construction of the vulnerability and opportunity indices and what they revealed about neighborhoods near prospective TPAs, and reflections on the lessons learned and limitations encountered. Further details of the project and process are available online at <http://www.sacog.org/sustainable/>



1. Introduction

In fall of 2010, the Sacramento Area Council of Governments (SACOG) and its partners received a grant from the U.S. Department of Housing and Urban Development for regional planning to accelerate transit-oriented development (TOD) in the Sacramento region. The first phase of the project, which ran from February through June 2011, involved assessing and selecting a limited number of Transit Priority Areas (TPAs) that would become the priority focus for SACOG's efforts to promote transit-oriented development in subsequent phases of the project. Selected TPAs would become the focus of extensive SACOG-led community planning workshops and were eligible to receive streamlined environmental review under the provisions of California Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008 (Steinberg).

As one of the partners on the project, the Center for Regional Change (CRC) at the University of California Davis was primarily responsible for developing mechanisms for analyzing the social equity considerations in prioritizing transit-oriented development projects, and for promoting these considerations as a central part of the TPA selection process. The focus of the work involved developing two neighborhood indices—a vulnerability index and an opportunity index—that could be used to compare the social equity characteristics of specific neighborhoods to the region as a whole. A central goal of both indices was to design them in ways that could on the one hand incorporate the complex and multi-faceted nature of social vulnerability and opportunity in the region, but on the other hand provide decision makers with an intuitive and quick way of identifying neighborhoods with high levels of social vulnerabilities, and neighborhoods that showed characteristics of high social and economic opportunity. It was also important that the indices be developed in a broad participatory process, both to incorporate the wealth of knowledge of social equity advocates in the region, and to ensure that the final product had broad public support.

This report provides a summary of the process and products that resulted from these efforts. It begins in section 2 with some background on regional indicators in general and the more specific previous work of the Center for Regional Change that informed our work. We then turn to a discussion of the participation process that helped inform the index development. Section 3 provides a more detailed discussion of the various specific indicators that were discussed as potential components of the unified index, and the analytical and data considerations that went into our final selection. Section 4 discusses the insights on social equity in the Sacramento Region that were gained from the analysis, and how these insights were incorporated into the final TPA selection. The conclusion in section 5 provides some discussion of lessons learned from this process, including highlighting both the strengths and limitations of our work and available data, and highlighting important areas for further work. The appendices to this report provide detailed technical documentation, and the detailed specific maps and index data for the analysis.

2. Background and Process

Community and regional indicator projects of various sorts have been used over a long period of time to provide information on social, economic and environmental conditions. As early as 1910, for example, the Russell Sage Foundation initiated the development of local surveys for measuring industrial, educational, recreational, and other factors (Cobb and Rixford 1998). In Jacksonville, one of the longest-running annual community indicators efforts, providing valuable insights into quality of life trends in the region over time, has been operated by the Jacksonville Community Council Incorporated for over 35 years.¹ Widespread interest in the use of community indicator processes is evident in the creation of a number of associations and learning networks, such as the Community Indicators Consortium² and the National Neighborhood Indicators Partnership³, which are devoted to improving indicators initiatives, encouraging development of effective indicators, and fostering informed civic and media discourse about their use.

Many indicators efforts have been developed based on extensive evidence-based research, but often these are developed in a top-down manner with little public participation, and as a result limited buy-in to the findings. A growing body of research is now documenting that the strength of community indicators measuring systems is directly related to the involvement of citizens. When broad-based constituencies of residents and other stakeholders are involved in identifying, calibrating, and using indicators, it provides more effective systems for driving change itself.⁴ One of the challenges in building this broad-based participation is that many indicator initiatives have such a wealth of data in their multiple indicators that it becomes difficult for the broad public—or even trained professional staff, much less busy elected officials and other decision makers—to absorb. Thus many efforts around the country have tried to integrate multiple indicators into a single, comprehensive index that can both reflect the complexity of the multiple processes represented in the component indicators, while also distilling the findings into a single index. The Kirwan Institute at Ohio State University, for example, has pioneered neighborhood opportunity mapping in ways that combines detailed measures of a range of factors shaping socio-economic opportunity (e.g education, economic, mobility/transportation, health and environment, and neighborhood quality factors) into a single measure of neighborhood opportunity.⁵ Similarly the Williams Institute developed an innovative “Wholeness Index” in Dallas, combining 12 quality of life indicators related to economic opportunity, self-sufficiency and civic engagement to measure disparities in community quality of life.⁶

In the Sacramento Region, the Center for Regional Change (CRC) at the University of California Davis was asked to be a partner with SACOG in the Sustainable Communities Regional Planning effort because of its previous work in examining social equity in the Sacramento Region and its work in developing social equity indicators with community groups in the region. The central goal of the CRC is to bring faculty and students at the University together with communities in California’s Central Valley and Sierra Nevada, to collaborate on innovative research that supports just, sustainable, and healthy regional change. One previous project that provided an important foundation for the current work was a collaboration with the Coalition on Regional Equity⁷ focused on analyzing patterns of social and economic opportunity throughout the metropolitan region. The product of these efforts was a detailed set of maps showing regional disparities on a range of demographic, economic, housing, education, transportation and health indicators.⁸ The method of standardization across categories in the various maps makes it easier to compare patterns of disparities across multiple indicators and time periods, and

a modification of this method was incorporated into the final indices for our work with SACOG (described in section 3 below).

The Center for Regional Change also had direct experience in developing indices in two other projects. As part of a project focused on youth development and pathways to opportunity in the Sacramento region, CRC researchers developed a detailed Index of Youth Vulnerability, which combined measures of low education, teen birth rates, foster care placement rates, juvenile felony arrest rates, and family income levels into a single index that facilitated identification of particularly vulnerable youth populations.⁹ Subsequent related efforts have focused on developing an Index of Youth Well-Being, which combines multiple measures of Physical/Health, Intellectual/Emotional, Psychological, and Social well-being in a way that can help highlight more positive indicators of youth development and opportunity.¹⁰ Finally, as part of an on-going project focused on environmental justice in the San Joaquin Valley, CRC researchers had also developed a combination of a Cumulative Environmental Hazards Index and a Social Vulnerability Index, that helped highlight linkages between hazard exposure and social vulnerabilities in the San Joaquin Valley.¹¹ These various indicator and index projects formed the basis upon which the work with the Sacramento Sustainable Communities Planning Project was built.

Process

The specific components of the vulnerability and opportunity index were developed through a broad consultative process that included input from a total of seven community meetings—4 large full consortia meetings, and 3 more in-depth working group meetings—with detailed input and feedback from community leaders and stakeholders. The meetings served to introduce the overall approach, help surface the most important factors shaping social vulnerability and opportunity at a neighborhood scale, further refine proposed indicators, validate the final analysis, and discuss how the analysis should be used in the TPA selection process.

The four large meetings, held on February 23rd, March 23rd, April 27th, and May 25th were full Sacramento Regional Consortium gatherings, open to anyone in the region interested in the Sustainable Communities Planning Process. Although the overall agendas of these meetings were not focused solely on social equity, but rather on the overall sustainable communities planning process, promoting social equity was considered one of the important goals of the overall process. These meetings provided an important forum for introducing the social equity analysis process to a large audience, for soliciting participation in the more focused working group meetings, for discussing how social equity considerations intersected with other important considerations in the TPA selection process, and for reporting back to and obtaining feedback from a larger group of stakeholders on the progress made in developing the social equity analysis. Attendance at the Consortium meetings totaled about 380, and 70 at the working group meetings.

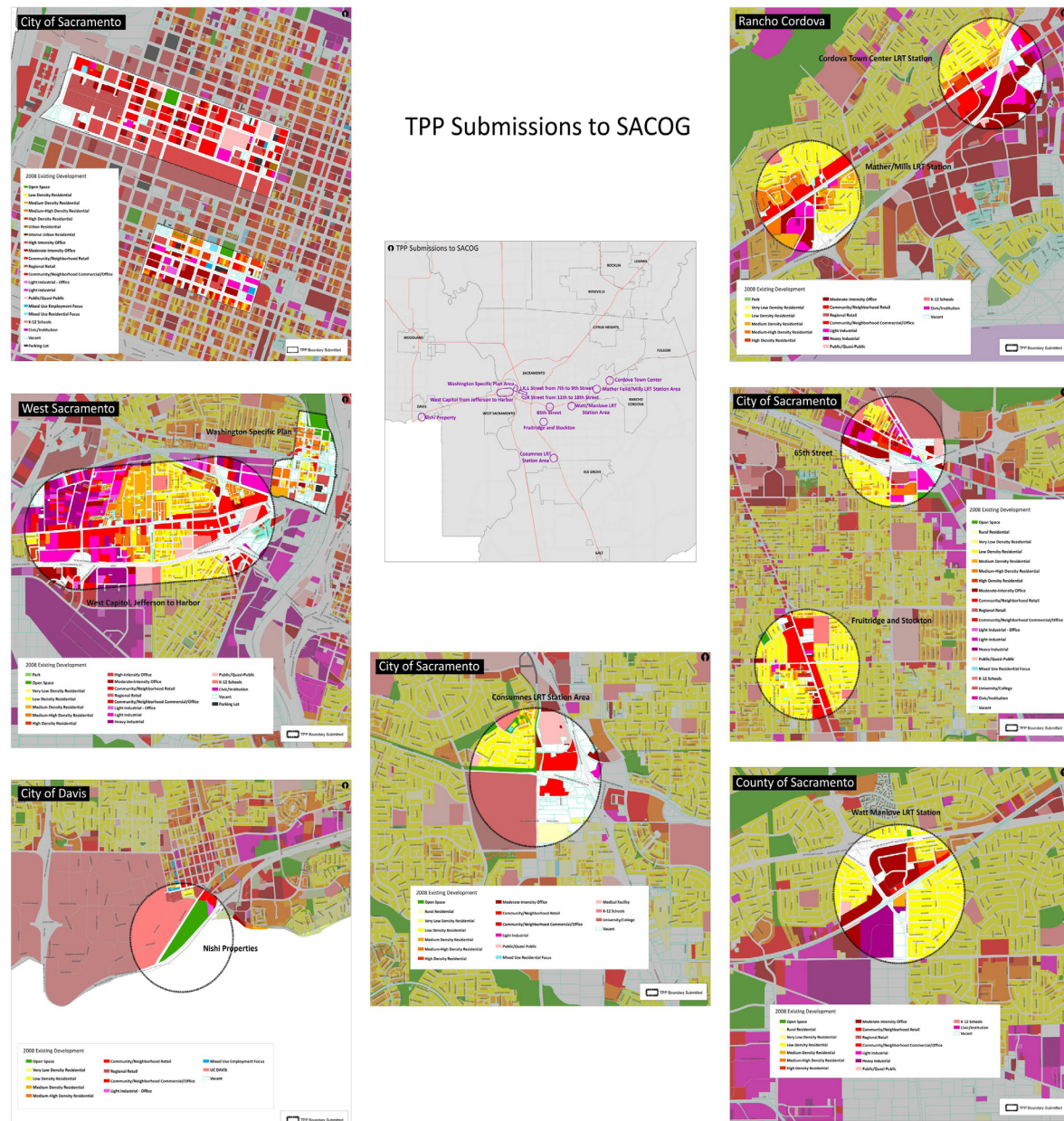
The more in-depth work of developing the social equity analysis was carried out with the assistance of the Equity, Housing, and Health Working Group of the Consortium. Co-chaired by the Center for Regional Change and the Sacramento Housing and Redevelopment Agency (SHRA), the working group met three times to discuss various aspects of the analysis:

- *Brainstorming:* The first meeting of the Working Group was held on **April 1st, 2011**, and included approximately 35 community leaders and advocates with a range of different areas of expertise, including affordable housing, public health, social services, neighborhood associations, labor unions, civil rights, community economic development, elderly services, youth development, transportation, walkability, and environmental protection. The meeting was focused on stimulating a discussion about the broad factors and processes that participants considered most important in explaining the vulnerabilities of populations in the region, and in building high-opportunity neighborhoods. Within each of these broad areas, participants also brainstormed indicators that might be useful measurements of these broad characteristics. (Specific broad areas and measures are discussed below, in section 3).
- *Refining:* The CRC took the detailed input from the previous meeting and considered each proposed indicator based on the extent to which it was directly linked to the values and goals identified by participants, its usefulness for a broad audience of both community stakeholders and SACOG's staff and Board, and the reliability and consistency of available data (to facilitate comparison over time and between places). The CRC developed a proposed set of final indicators for the index components which were presented at the next meeting of the working group on **April 26, 2011**. This meeting provided an opportunity to solicit feedback on these indicators and make final modifica-

tions, as well as to discuss the implications of the analysis for the TPA selection.

- *Applying:* The final step involved actually calculating the vulnerability and opportunity index for census tracts in the entire region and using this to characterize the neighborhoods in eleven proposed Transit Priority Areas that were submitted by local jurisdictions in the SACOG region for action planning and more detailed environmental review (see Figure 1). A meeting was held on **June 1, 2011**, with approximately 20 participants, in which each individual TPA was discussed in-depth, and the social equity considerations of selecting that TPA identified. It is important to emphasize that our goal in this working group was not to come up with specific recommendations of TPAs to select, but rather to identify what kinds of social equity issues faced each specific neighborhood, and the priorities that should be considered in any development plan for the neighborhood if it were selected as a TPA. Some neighborhoods, for example, faced severe deficits in economic opportunities, but seemed to have adequate housing, while other neighborhoods had substantial numbers of jobs but residents had high poverty levels and substantial challenges with linguistic isolation. Thus the goal was to be able to articulate these particular neighborhood characteristics in ways that could be effectively considered by decision makers in the TPA selection process.

Figure 1: Proposed Transit Priority Areas Submitted to SACOG



3. Proposed and Final Specific Indicator and Index Components

In the stage of brainstorming broad factors that help shape vulnerability and opportunity in neighborhoods, participants in the community workshops came up with a wide range of broad areas of interest and suggested measures that could help indicate both vulnerability and opportunity. Specific considerations included indicators in the following broad categories (see Appendix I for a full list of the originally proposed indicators):

Vulnerability

- *Inadequate housing:* Lack of affordability; lack of diversity of housing stock to meet current and future needs; inability for families to age in place; high housing costs.
- *Inadequate services:* Lack of grocery stores; high concentration of fast food chains; lack of access to medical care; lack of social services; lack of aging services
- *Poor neighborhood quality:* High crime; Poor school safety; vacant lots and homes; lack of neighborhood stability; lack of vitality; lack of equality; low walkability/bike-ability; lack of shade
- *Poor mobility and transportation:* Low frequency and quality of service; poor connectivity; few transportation choices; low knowledge of transportation options; low road safety
- *Poor education:* Low graduation rates; low test scores; poor quality teaching; few after-school programs; little availability of job training services
- *Low civic participation:* Low voter turnout; low involvement in neighborhood associations; low internet access
- *Poor health:* High asthma rates; lack of health insurance; lack of availability of parks and open space; high particulate emissions
- *Poor economic opportunities:* High un/underemployment; high poverty; poor job quality
- *Poor youth development:* High youth un/under employment; few recreational opportunities

Opportunities

- *Good environment:* Availability of parks and open space; high quality air; adequate and good quality drinking water; effective stewardship of green areas
- *Quality housing:* Affordable housing; diversity of housing types; high quality rental housing; significant wealth accumulation through home ownership
- *High neighborhood quality:* Safe; diverse
- *Good mobility and transportation options:* Walkable; bike-able; adequate structures and services for physical disabled
- *Educational opportunities:* Strong student performance; high school quality; accessible child care and pre-school; available adult education
- *Strong civic participation:* Available locations for neighborhood meetings; English as a Second Language resources; abundant information on community/neighborhood activities and services; high levels of volunteerism
- *Good health:* Good access to medical services; high levels of insurance coverage; culturally sensitive services at nearby hospitals and clinics; availability of physical activity
- *Economic opportunity:* Access to jobs; high quality job growth; strong business environment; adequate infrastructure to support new local businesses; good job quality; job training opportunities
- *Youth development:* Youth recreation activities/opportunities; youth employment and training.

In each of the suggested measures related to the broad areas of interest, we considered specific indicators to include in the final indices. There are a number of specific considerations that went into determining which specific indicators were eventually included. These included:

- *Availability and reliability of data:* One goal of developing these indices was to develop an on-going system to monitor progress of neighborhoods throughout the region, both over time, and in relation to regional trends. Thus, we needed data that was available and updated on a regular basis. We also wanted to minimize the costs that would be involved in updating the analysis, which essentially ruled out anything that would depend on costly proprietary data, customized surveys or other specialized data gathering processes. Thus, for example, as much as we liked the indicator “Percentage of public officials who ride transit on a regular basis” as an indicator of knowledge of transportation options, it was impossible to include this for further consideration. The requirement of relying on readily available secondary data sources meant that we were primarily limited to data released from public agencies, most notably the U.S. Census.
- *Scale:* Our goal was to develop an index that would provide information about neighborhood trends at as detailed a scale as possible. Our original hope was to be able to use Census Block Groups as the smallest level of our analysis, but given the data limitations of the American Community Survey, which has high levels of uncertainty (Margins of Error) at these small scales in many variables, it was not possible. We thus settled on Census Tracts as the smallest scale geography for our analysis. In focusing our analysis on Census Tracts, however, we ended up excluding from the index important indicators of social vulnerability and opportunity that are readily available at other geographies, but not at a census tract level. This has implications for specific broad areas of consideration:

- o *Education:* There are very useful measures of educational achievement and quality that are available for individual schools, or for entire school districts. While we were not able to incorporate them into our census-tract based index, we did provide a range of maps of specific indicators of educational quality, to assist in the analysis. These specific indicators include: Academic Performance Index (API) for both elementary and high schools; High school drop-out rates; Access to English instruction (for ESL students) in both elementary and high schools; Percentage of students receiving free and reduced price meals in elementary schools; High school truancy rates; and Violence and drug suspensions/expulsions rates.

- o *Civic Engagement:* Measures of voter registration and voter turnout are readily available for every election, but these measures are available primarily at a precinct level, whose boundaries shift quite frequently from election to election. Again, this makes it difficult to incorporate into a census-tract based index, but we did also provide maps of the Voter Turnout Rate in the 2008 general election, as an indicator of neighborhood civic participation.

- o *Health:* Indicators of health are obviously very important measures of vulnerability and opportunity. Unfortunately, due to confidentiality concerns, most public health statistics are reported only at a county level. In the Sacramento area, the major health care providers in the region have partnered together with Valley Vision to conduct a Community Needs Assessment, and share

their health data to improve health care services in the area. One important component of the project has been the release of data on important health indicators at a zip code level, including the creation of an interactive web-based mapping site.¹² Since such a good source of data was only available on a zip code level for two thirds of the counties in the SACOG region, and we were not able to identify appropriate health data at a tract level, health variables were excluded from our final indices.

o *Economic*: The economic data that is readily available at a tract level is gathered from individuals, and includes such useful indicators as unemployment rates, income levels, and industry and occupation of employment for those people who are employed. It was also important for our analysis of the economic climate to have some measure of business growth and decline. Unfortunately, most publicly available data from businesses is reported only at the County or City level, making it impossible to do neighborhood level analysis. One notable exception to this is the Longitudinal Employer-Household Dynamics (LEHD) dataset¹³, an innovative program of the U.S. Census Bureau which combines federal and state administrative data on employers and employees with core Census Bureau censuses and surveys, to provide the most detailed picture of local employment dynamics that is publically available. Data on industry, earnings, age of worker and commuting patterns are available, with additional data on race and educational levels of workers available in more recent years. For this project, the Center for Regional Change also had access to much more detailed employer-based data from the National Establishment Time-Series (NETS) database. This database was developed by Walls & Associates in collaboration with Dun and Bradstreet, and provides over 300 fields of detailed establishment level data, including sales and employment, since 1990.¹⁴ Since this is individual establishment data, rather than the aggregated data reported from public sources, it allows for a more detailed analysis of neighborhood business dynamics. We thus used this dataset to develop indicators on overall jobs, overall business growth and decline, and specialized indicators related to small businesses and businesses in industries paying above average wages. The database is proprietary, and thus has a substantial cost associated with using it, but the value of the information provided is also substantial.

After sifting through the detailed input from our community workshops, and investigating various data sources, we ultimately settled on a proposed set of basic demographic indicators, and a range of indicators of vulnerability and opportunity, some of which could be incorporated directly into the indices, and some of which could be considered independently as part of the social equity analysis. These indicators are shown in tables 1-3 below, which show the broad areas of interest, the suggested measures that emerged from the public participation process, the specific indicators, comments on why the indicator was selected, and the original data source (note that ACS stands for American Community Survey).

Table 1: Basic Neighborhood Demographics

Broad Areas	Suggested Measures	Specific Indicator	Comments	Data Source
Race	Suggested Measures	Percentage of the population non-Hispanic white	Racial composition of neighborhood population is an important indicator for equity and civil rights	Census
		Percentage of the population Hispanic		Census
		Percentage of the population non-Hispanic black		Census
		Percentage of the population non-Hispanic American Indian and Alaskan native		Census
		Percentage of the population non-Hispanic Asian		Census
		Percentage of the population non-Hispanic Native Hawaiian or Other Pacific Islander		
		Percentage of the population non-Hispanic some other race		Census
		Percentage of the population non-Hispanic Two or more races		Census
Age	Youth and Elderly Population	Percentage of the population seventeen years and younger	Youth and elderly populations are particularly transit dependent	ACS
		Percentage of the population 65 years and older		ACS
Education	Both low and high education levels	Percentage of the population 25 years and older with a Bachelors' Degree or higher	Education is a key indicator of social and economic opportunity	ACS
		Percentage of the population 25 years and older with less than a high school degree		ACS
Immigrants	Percentage immigrants (of total population)		Immigrants are more likely to use transit than non-immigrants	ACS

Table 2: Indicators of Social Vulnerability¹⁵

Social Vulnerability Index			
Broad Areas	Suggested Measures	Specific Indicator	Comments
Inadequate Economic Opportunities	Low Labor Force Participation	Proportion of adult population unemployed or out of the labor market	Growing body of research has found that social networks are the most important way people find work. Living in a neighborhood with low labor force participation levels suggests that local and neighborhood social networks are not well connected to employment opportunities.
		Percent of Families with incomes at or Below 200% of the Poverty Level	High poverty levels are a primary indicator of inadequate economic opportunities. 200% of the official poverty level is a more realistic assessment of adequate income levels than the official poverty level, which underestimates real deprivation.
Poor Business Opportunities	Shrinking businesses	Proportion of businesses with lower sales in 2008 than 2001	Shrinking sales is a sign of business decline. The years 2001 and 2008 are both in the midst of recessions, so they are good years to compare.
	Dying businesses	Proportion of businesses that closed between 2001 and 2008	Establishments going out of business is an important indicator of neighborhood economic stress
Inadequate housing opportunities	Substandard Housing (overcrowded)	Percentage of Owner and Renter-Occupied units with 1.01 or more occupants per room	The U.S. Department of Housing and Urban Development (HUD) defines overcrowding as more than one persons per habitable room.
	Affordability	Percent of renter and owner-occupied housing units paying more than 0.5 of household income in housing costs	30% of income is considered an affordable amount to pay for housing. 50% of income is considered an extremely high proportion for housing costs, providing a better measure of neighborhoods where families are exceptionally vulnerable to financial stress.
Social Vulnerabilities	Single parent households	Percentage of Family Households with own children under 18 years with single householder	Single parent households tend to have much higher poverty rates and tend to have fewer opportunities for educational achievement
	Linguistic Isolation	Percentage of households linguistically isolated	Linguistic isolation contributes to lack of social and economic opportunities
Insufficient transportation options	High transit dependent population	Percentage of occupied housing units with no vehicle available	
Poor neighborhood quality	Vacant housing	Percentage of housing units vacant	Vacant properties are associated with many detrimental impacts to the surrounding neighborhood, including higher crime and greater public safety risk to children.

Other indicators of vulnerability			
Broad Areas	Suggested Measures	Specific Indicator	Comments
Inadequate Economic Opportunities	Extensive Free and Reduced Lunch program	Number of students receiving free and reduced price lunch in elementary schools	This is the most common indicator for the extent of low socio-economic status amongst the student body, a key sign of vulnerable populations.
Poor educational opportunities	High drop-out rates	Grade 9-12 4-year Derived Drop-out Rate	This is the most common indicator of poor educational performance in high schools
	Unsafe schools	Violence/Drug Suspensions	High levels of violence and drug related suspensions is an important indicator of unsafe school conditions.
Low civic engagement	Low Voter Rates	Proportion of registered voters who voted in most recent election	Low voter turn-out is an indicator of low civic engagements
Poor Health	Incidence of Asthma	Asthma related emergency department visit*	Asthma is considered an ambulatory care sensitive condition - conditions for which hospitalization can usually be prevented when they have been effectively managed in outpatient settings. High rates of ER Asthma related visits indicates poor access to outpatient health care.
	Overall health condition	Percentage of Births with Low Birth Weight	According to the World Health Organization, the proportion of babies with a low birth weight is an indicator of a multifaceted public health problem that includes long-term maternal malnutrition, ill health, hard work and poor health care in pregnancy. On an individual basis, low birth weight is an important predictor of newborn health and survival.

Table 3: Opportunity Indicators

Opportunity Index				
Broad Areas	Suggested Measures	Specific Indicator	Comments	Data Source
Good & balanced economic opportunities	Proximity to employment	Total Number of Jobs in 2008	This is a measure of jobs in the immediate neighborhood (census tract). Having jobs close to transit lines is a critical component of encouraging transit use.	NETS or LEHD
	Job growth in high-paying sectors	Job Change 2001-2008 in Industries with Above Average Wages	This is a broad measure of where industries with above average wages are growing in the region.	NETS, QCEW
	Large middle-class population	Proportion of households in middle-income brackets	Higher proportions of the populations in middle-income categories suggests less concentration of either poor or wealthy populations	ACS
Good neighborhood business climate	Small business growth opportunities	2001-2008 change in total sales of businesses with 50 or fewer employees in 2001	Strong sales growth in small businesses indicates substantial neighborhood growth opportunities	NETS
Affordable and decent housing	Home ownership	Home ownership rate	Home ownership has historically been an important means of economic security in American society	ACS
Diverse, accessible and affordable transportation opportunities	High non-auto commute	Percent of workers using other means of transportation to work beside drive alone	High proportions of non-auto commuters suggests multiple transportation options	ACS
Other indicators of opportunity				
Broad Areas	Suggested Measures	Specific Indicator	Comments	Data Source
High quality educational opportunities	Student Performance	overall academic performance index	Most common measure of school quality	CA Dept of Education
	Access to programs to learn English		Important for students with limited English access	CA Dept of Education

The values for all of the components of the vulnerability and opportunity index were calculated for every census tract within the 6-county SACOG Region.¹⁶ In order to create the combined indices, these values were then converted to standardized z-scores, based on the regional average and standard deviation for each variable. Tracts in the region are then categorized into one of five different categories for each of these variables (with the maps of these variables shown in Appendix III):

- Much lower than average: more than 1.5 standard deviations below the regional average;
- Lower than average: between 1.5 and 0.5 standard deviations below the regional average;
- Average: between 0.5 standard deviations below to 0.5 standard deviations above the regional average;
- Higher than average: between 0.5 and 1.5 standard deviations above the regional average; and
- Much higher than average: More than 1.5 standard deviations above the regional average.

The final Vulnerability and Opportunity Index scores for each census tract are calculated as un-weighted averages of the Z-scores of the individual indicator components. Since these scores already combined standardized measures, in these maps, all tracts in the region are divided into 5 quintiles, with 20% of tracts in the region falling into each of the same five categories identified above. Figure 1 and Figure 2 below show the resulting maps for the central portion of the SACOG region, with the 11 proposed Transit Priority Areas outlined.

Figure 2: Vulnerability Index

Source: ACS 2005-09,
NETS 2008

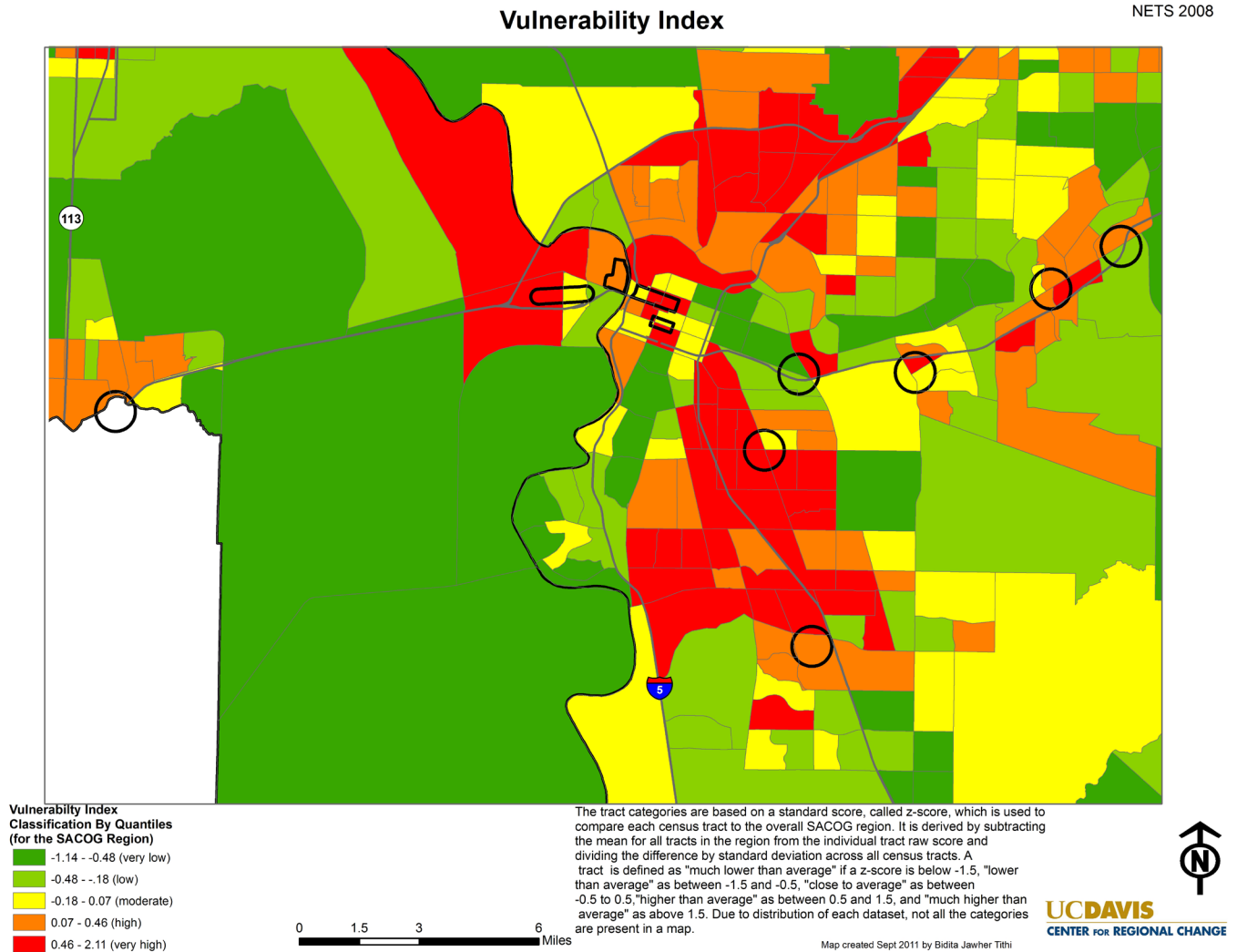
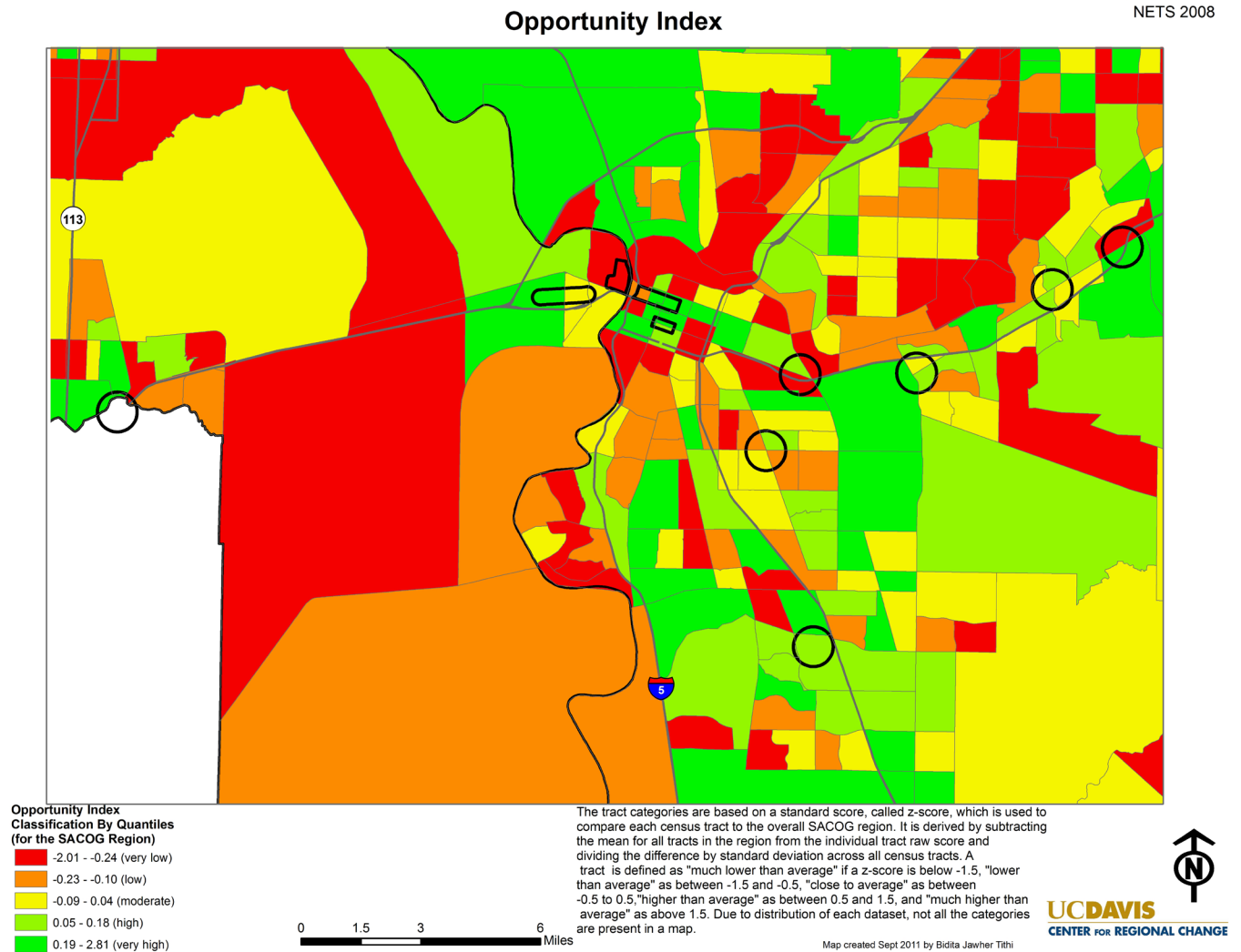


Figure 3: Opportunity Index

Source: ACS 2005-09,
NETS 2008



4. Equity Considerations in Prioritizing Transit-Oriented Development

The process of developing the vulnerability and opportunity index for this initiative, along with detailed considerations of the specific components of the indicators, raised a number of important issues related to how equity can be incorporated into efforts to prioritize transit-oriented development initiatives in the region. Some of these issues related to the overall process of prioritizing areas, and some related to the specific areas being considered.

Overall Perspectives

Across the country, social equity advocates are generally supportive of transit-oriented development (TOD) initiatives, since many of the most vulnerable populations are also those that are most dependent on public transit and TOD initiatives can play an important role in expanding access to transit and building public support for expanding transit services. At the same time, there are many examples of TOD initiatives that have contributed to gentrification, displacing marginalized populations while improving transit access for middle-class and professional populations. The difference in impacts of TOD initiatives is related in part to the characteristics of the neighborhoods in which they are undertaken and the related potential pressures for gentrification, and in part to the way in which they are undertaken and the extent to which efforts to prevent displacement of existing residents is prioritized.

Amongst the equity advocates who participated in the Working Group workshops in the Sacramento region, there was a keen awareness of both the opportunities and threats associated with SACOG's efforts to streamline transit-oriented development in the region. While there was some skepticism about the extent to which social equity would be prioritized in the TPA selection process, overall there was strong support for the initiative. This support was strengthened once the results of the Vulnerability Index had been released, since it was clear that nearly all of the proposed TPA sites were in relatively vulnerable neighborhoods and participants expressed hope that the TPA planning process would contribute to renewed attention to disadvantaged neighborhoods of the region with the potential to generate more support for expanded transit services as well. At the same time, participants recognized that the extent to which these hopes for neighborhood development could be reached would be more dependent on the specific planning process in each neighborhood itself, rather than the actual TPA selection process. Also, it was clear that whatever areas received initial priority attention, they would serve as models—or perhaps more accurately learning laboratories—for future development efforts in the region.

From these perspectives and discussions emerged two overarching principles that guided the TPA selection process:

- *Market viability:* Given that nearly all of the proposed TPA sites were in relatively vulnerable neighborhoods, Working Group participants thought that the market viability of projects in the proposed areas should be an important criteria. It would do little good, after all, if the mobilization of a substantial amount of public and community resources to promote TOD in an area resulted in a failed development that might end up reinforcing social marginalization of the neighborhood while undermining public support for transit-oriented development. Conversely, successful development in any of the proposed TPA sites would contribute to regional equity by orienting new resources to disadvantaged areas.

- *Maximize learning opportunities:* Given that the selected TPA sites would serve as models for future efforts in other areas, Working Group participants thought that TPA sites shouldn't be considered in isolation, but rather considered as a whole in a way that the final mix of selected TPA sites would provide a maximum diversity of learning opportunities. This might include diversity of jurisdictions in the region, range of socio-economic circumstances, diversity of racial and income composition of the neighborhood, and diversity of proposed land uses and developments in the proposed sites.

One way to think about these considerations is through a two-by-two matrix. One dimension of the matrix considers the potential success of development initiatives in the area, ranging from low to high. The other dimension of the matrix considers the extent to which a new development in the neighborhood would have an impact on the social conditions of residents of the neighborhood, and contribute to improved social equity in the region as a whole. The most favorable areas would fall in box 1 in the matrix in Table 4 below—in those areas where economic success was considered a high likelihood, but would also be in those especially vulnerable neighborhoods where new developments could make a major difference. At the same time, projects that fall in boxes 2 (high market success but limited social impact) and 3 (high social impact but more risky market potential) are also important to include in the mix of priority sites, since they each might provide significant lessons for future efforts as well. Projects that might be characterized as falling in box 4 (risky projects with limited social impact) were considered low priority.

Table 4: TPA Selection Considerations

		Potential Success	
		Low	High
Social Impact	High	3	1
	Low	4	2

Specific TPA Considerations

As part of the TPA selection process, the Center for Regional Change prepared summary documents of the vulnerability and opportunity characteristics of each of the proposed Transit Priority Areas. These documents highlighted the neighborhoods' relative vulnerability and opportunity compared to the regional averages, emphasized the key components of the indices that were driving the overall rating, and raised potential priorities for the types of development in the area that could contribute to social equity. Below are the basic summaries for the five TPAs that were ultimately selected (with the full documents for these five TPAs, along with the other six, included in appendix II):

- *City of West Sacramento-Washington Specific Plan Area:* The Washington neighborhood is disproportionately Hispanic, with higher than average youth and immigrant populations, and with

lower than average education levels. The neighborhood has a much higher than average vulnerability score, driven by high levels of renter overcrowding, poverty, linguistically isolated populations and high proportions of single parent households. The opportunity index is slightly below average, driven by low home-ownership rates and low proportion of middle income households. Priorities for equity-oriented development in this area might include more affordable home choices and expanding job opportunities accessible to residents, especially in decent paying industries.

- *City of Sacramento-R Street Corridor:* This area has a strong contrast between tract 12, in the Midtown area, and the other three tracts. Tract 12 has a relatively highly educated population with a low proportion of immigrants. It has a lower than average vulnerability score, driven largely by low unemployment, low renter crowding, and low single-parent households. Tracts 20 and 21, in contrast, have very high proportions of Asians and immigrant populations, with low education levels. While employment is high, poverty levels are also high, with high levels of linguistic isolation as well. Tract 9 in the downtown area has high levels of renter-over-crowding amidst high vacancy rates. The opportunity index in all four tracts is above average, driven by a high number of jobs (especially in tracts 9 and 12) and high proportions of people using other means of getting to work beside driving alone. Overall home ownership rates in this area are low. Priorities for equity-oriented development in the area might focus on improving the job mix in the area, and expanding opportunities for affordable home ownership.
- *City and County of Sacramento-Fruitridge and Stockton:* This area has a high proportion of immigrants and a strong Asian concentration, particularly in tracts 46.01 and 32.02. There is also a high Hispanic concentration, especially in tracts 31.02 and 44.01. Overall education levels are quite low, with a very high proportion of people with less than a high school degree in 4 out of 5 of the tracts in this area. The southern and eastern census tracts in this area (tracts 32.02, 44.01 and 46.01) have some of the highest vulnerability levels of any TPA areas under consideration, driven by high poverty levels, high proportions of people who are unemployed (or out of the labor market), high proportions of linguistic isolation, and high proportions of businesses with declining sales. In terms of the opportunity index, tract 31.02 is the only tract with a higher than average score, driven primarily by high proportions of people not driving alone to work—the other tracts all have average or below average scores. Priorities for equity-oriented development in the area might include focusing on employment opportunities.
- *Sacramento County-Watt/Manlove Light Rail Station:* The neighborhoods in the seven census tracts that are near the proposed Watt/Manlove LRT Station TPA site are quite mixed in their demographic and social characteristics. Tract 52.02 has the lowest vulnerability score, with low levels of poverty, linguistic isolation, renter over-crowding and businesses closing. That tract is 71% non-Hispanic white, the highest of the seven tracts. At the other extreme is tract 91.10, which has a much higher than average Black population and much higher than average youth population. This tract has a very high vulnerability index score, driven particularly by high levels of poverty and single-parent households. Tract 52.03 is a major job center for the region, with more than 12,000 jobs in 2008, and showed large-scale growth in sales in small businesses as well, which drove its very high opportunity index score. Priorities for equity-oriented development in the area might include focusing on the challenges in tract 91.10, with particular attention to job opportunities for the high concentration of families in poverty in

that neighborhood.

- *Rancho Cordova—Mather/Mills Light Rail Station:* Demographically, this area has a relatively mixed population. Tract 90.07 has a very high proportion Black population, but the other tracts have racial proportions not far from the regional average, with some higher proportion of Hispanic population. In general the neighborhoods have a higher proportion of youth population, particularly tract 90.07. Education levels are generally lower than the regional average, and there is a higher proportion of immigrants. The most vulnerable tract in this area is tract 90.08, which has high levels of linguistically isolated households, and high proportions with more than 1.5 occupants per room, especially in owner-occupied homes. The vulnerability indices for the other tracts are generally higher than average for the region, but not dramatically so—with these levels driven more by linguistic isolation and poverty levels, rather than absolute unemployment (or those out of the labor market). Opportunity index values for this area are not far from average for most tracts. Priorities for equity-oriented development in this area might focus on tract 90.08, and particularly efforts to expand job opportunities and provide opportunities for the linguistically isolated populations there.

Of the five final TPAs selected, four different jurisdictions are represented (West Sacramento, City of Sacramento, Sacramento County, and Rancho Cordova). The neighborhoods surrounding the TPA projects all have substantial social vulnerabilities, although the particular challenges in each area differ, with varying levels of unemployment, income, linguistic isolation, housing costs, and differing business climates. There is also substantial variation in our Opportunity Index across the TPA sites. It is interesting to note that most (though not all) of the neighborhoods around the TPAs rank either average or above average on our opportunity index, indicating at least some level of neighborhood well-being to build from. Some neighborhoods have a strong contrast between vulnerability and opportunity indices—here the R Street Corridor stands out as a neighborhood with high levels of vulnerability, but also among the highest levels of opportunity in our index.

Of course these indices were simply one input for the TPA selection process. Like all indices, there are many aspects of vulnerability and opportunity that are not captured in the basic statistics that comprise the vulnerability and opportunity index. There are also many other considerations besides social equity that must go into selecting sites to promote transit-oriented development, ranging from infrastructure quality to local government capacities. But the complex and detailed information captured in these relatively simple-to-understand indices provided a useful tool for decision makers. We now turn to a discussion of these strengths, and limitations, of this process and the indices that emerged from it.

5. Conclusions

There were two central goals of this component of the Sacramento Sustainable Communities Regional Planning process:

- *Develop regional equity indicators with consortium stakeholders that can be used in the process of selecting transit priority areas; and*
- *Conduct a social equity analysis specifying the distribution of opportunities and vulnerabilities across the range of neighborhoods related to the transit priority areas.*

In the process of achieving those goals, a number of positive lessons and limitations emerged. In this conclusion, we try to honestly assess the most significant positive lessons and limitations, and finish by discussing their implications for the next steps in the sustainable communities strategy development process. We offer these insights at this point, not as the result of a formal evaluation, but in the spirit of self-reflectively considering what we learned in the process and sharing these insights with the field.

Positive Lessons

There were a number of lessons that emerged in this effort, both in the process of development and in the character of the vulnerability and opportunity indices as tools for decision-making:

- *Institutional commitment to equity:* The first and perhaps most important point to highlight is that the Sacramento Area Council of Governments had a fundamental commitment to social equity from the very beginning of this process, and that commitment was absolutely critical in ensuring the success to date. Furthermore, this commitment was reinforced through HUD's financial support of the initiative, reflecting the value of strong Federal-local partnerships. Social equity was written into the original funding proposal and there was time and space for discussion of social equity issues in all of the full consortia meetings. SACOG staff devoted substantial time to working with the Center for Regional Change, to organizing meetings of the Equity, Housing, and Health Working group, and to sharing their own knowledge and expertise in the index development process. This strong institutional support was important for strengthening the legitimacy of social equity in all major discussions related to the planning process, and in strengthening the final product.
- *Substantial community capacity:* The high level of discussion in the three community workshops held in this process reflected an impressive level of capacity of participants in understanding regional land use issues. Regional land use and planning processes are often highly technical and frequently dominated by professionals with extensive training and experience. In the Sacramento region, however, there are a substantial number of community leaders without formal planning training who have a substantial knowledge of complex land use and regional planning issues. The broad participatory planning process implemented in SACOG's Blueprint Process certainly contributed to this. The creation of the Coalition on Regional Equity, specifically devoted to increasing community involvement in promoting equity in these regional planning processes, has also been an important factor. The Working Group meetings that were held to develop the indices and review the 11 TOD Area areas were not designed to engage community residents —rather they were designed to engage community leaders and advocates from a range of constituencies. The grant project hopes to continue that level of

sophistication in discussing land use issues, and how they shape community vulnerability and opportunity, in the community workshop process that is a next phase of the grant project.

- *Process as important as product:* The final product developed from this effort definitely has value, and it was clear that Working Group participants and SACOG staff found the ultimate indices and their components to be valuable. But as important, and perhaps more so, is the collective learning that occurred in the process, and the strengthened ties that were built between social equity advocates and SACOG staff. There are frequently vast difference between the cultures and perspectives of social equity organizing and advocacy on the one hand and formal planning professionals on the other. While there are frequently shared goals around social equity, there are substantial differences in institutional pressures, organizational opportunities and constraints, perspectives and priorities.¹⁷ This process certainly didn't erase those differences, but did contribute to strengthened ties between community organizers and planners in the region, and was important for building broad acceptance of the indices as useful tools in SACOG's equity planning processes.

Limitations

In addition to the positive lessons highlighted above, there were clearly a number of limitations that emerged in this process. Some of these limitations were ones that we expected at the beginning of the process, while others emerged as the process unfolded. Some of the most important ones, in increasing scales of importance, include:

- *Data availability:* Obviously in order to develop an equity indicators initiative, availability of data is a crucial consideration. Beyond some of the data issues described in section III above, it is important to point out that the loss of the long form in the decennial census creates some substantial challenges for neighborhood-level equity research. The American Community Survey (ACS), which was implemented as the substitute for the long form in the decennial census, has the advantage of providing more timely data than the decennial data, but for most of the detailed indicators that we considered and used for our indices, the data simply isn't reliable for analysis at a block group level. Even at a census tract level, the margins of error in some indicators mean that the data is unreliable. Some of these limitations are likely to be reduced with the release of the 2006-2010 ACS datafile, which will be benchmarked against the 2010 decennial census and thus is likely to have lower margins of error than the 2005-2009 dataset that we used for the analysis here. Nonetheless, there has clearly been a sacrifice made of spatial detail in the interest of timely data at a larger geographic scale.
- *Ambiguous indicators:* Some of the indicators that were included in the vulnerability and opportunity indices, as the result of the community input process and careful research consideration, still have somewhat ambiguous interpretations. For example, the indicator "Percent of workers using other means of transportation to work besides driving alone" is sometimes used as a proxy for 'transit dependent population'. In our work, we included this indicator as part of the opportunity index, clearly trying to indicate that high use of alternative means of transportation should be considered a positive indicator. At the same time, it is difficult to distinguish between choice riders and dependent riders in this indicator—a distinction that has important implications for determining levels of service under budget

constraints. Similarly, our original vulnerability index included an indicator that combined the population unemployed with the population out of the labor market. Our intent here was to try to capture those areas that had high numbers of discouraged workers, as well as those areas that had high proportions of dependent populations. At the same time, there are clearly many people who are voluntarily out of the labor market, which makes the interpretation of this variable difficult. Thus, we ended up using simply the unemployment rate. While this fails to count the levels of underemployed and discouraged workers, hopefully the relative differences between tracts on this variable are similar.

- *Outcomes, not inputs or causes:* The difficulties in interpretation discussed above point to a much larger problem with most indicator initiatives, including this one. Typically indicator initiatives are measuring outcomes, because this is often the data that is available. But from a policy and planning perspective, it is at least as important to measure the inputs that might help explain those outcomes. Our indicators, for example, can measure the levels of home ownership in individual census tracts, but can't provide any insights into the combination of individual income, housing availability, mortgage products, and formal/informal biases that might explain these outcomes. Determining the appropriate set of input indicators also requires some level of agreement on the causes that lead to any particular outcome. The vulnerability and opportunity indices do this to some extent—the indicators selected were collectively determined (through community consultation and review of academic research) to be important factors shaping social vulnerability and opportunity. But they still just touch the surface of the underlying processes that shape outcomes.
- *Implementation and sustainability:* One thing that was unclear throughout this whole process, and remains unclear, is how the social equity analysis will actually be used in shaping transit-oriented development. As participants in our Working Group meetings reinforced, the extent to which transit-oriented development projects contribute to social equity or contribute to displacement and gentrification is determined both in the nature of the possible projects selected for consideration, and in the actual implementation of those project . This is highly dependent on local authorities themselves and the nature of their relationship with developers and neighborhood residents. SACOG can provide important advice and technical assistance, but has weak statutory power at best in actually influencing the selection of development options and the implementation of neighborhood projects.

Next steps

The process of selecting transit priority areas was only one component of incorporating social equity into the sustainable community planning process. SACOG, in partnership with the appropriate local authorities and a range of other stakeholders, is currently developing processes for creating neighborhood action plans in each of the selected TPAs to help guide future development, which will be partially informed by the social equity indicators. SACOG is also modifying these indicators to incorporate them into the environmental justice analysis of their Metropolitan Transportation Plan (MTP) update. Finally, CRC and SACOG will continue to work together, along with other stakeholders in the Regional Consortium, to develop longer-term frameworks for tracking social equity performance as SACOG's MTP/Sustainable Communities Strategy is implemented. Further details of the projects efforts are available online at: <http://www.sacog.org/sustainable/>

Endnotes

¹ See <http://www.jcci.org/jcciwebsite/pages/indicators.html>

² <http://www.communityindicators.net/>

³ <http://www2.urban.org/nnip/about.html>

⁴ A good source is the 5-book series on best practice in community quality of life indicator projects edited by M. Joseph Sirgy, Don Rahtz and their colleagues:

Sirgy, M. Joseph, Rhonda Phillips, and Don Rahtz, Eds. (2011). *Community Quality-of-Life Indicators: Best Practices V*. Dordrecht, Netherlands: Springer Publisher.

Sirgy, M. Joseph, Rhonda Phillips, and Don Rahtz (2009). *Community Quality of Life Indicators: Best Cases IV*. Dordrecht, The Netherlands: Springer Publishers.

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⁵ See <http://www.kirwaninstitute.org/research/opportunity-communities/gis-mapping/>

⁶ See <http://fcdallas.org/TheWilliamsInstitute/TheWholenessIndex/tabid/2220/language/en-US/Default.aspx>

⁷ <http://equitycoalition.org/>

⁸ SCORECARD: The Sacramento Coalition on Regional Equity Collaborative Assessment of Regional Development: Baseline Regional Report. Available at: http://regionalchange.ucdavis.edu/publications/Report_Final.pdf

¹⁰ Nancy Erbstein and Este Geraghty (2011) “*Putting Youth On the Map: A Pilot Instrument for Assessing Youth Well-Being*”. Unpublished manuscript available from Center for Regional Change.

¹¹ Ganlin Huang and Jonathan London (2011) “*Cumulative Environmental Impact and Social Vulnerability in the San Joaquin Valley, California*”. Unpublished manuscript available from Center for Regional Change.

¹² See <http://healthylivingmap.com/zipmap.php>

¹³ See <http://lehd.did.census.gov/led/>

¹⁴ For more information, see: <http://www.youreconomy.org/nets/?region=walls>

¹⁵ Note that in the original index, we included separate measures for overcrowded housing—one for renter-occupied and one for owner-occupied—and the threshold we used was 1.51 (HUD’s definition for severe overcrowding), rather than 1.01, HUD’s definition for overcrowding. Subsequent investigation of data reliability led to the combination lower threshold and combined total presented here.

¹⁶ El Dorado, Sacramento, Placer, Sutter, Yolo and Yuba Counties

¹⁷ For an analysis of these differences, and some of the challenges and opportunities of bringing them together, see: Pastor, Manuel and Chris Benner (2011) “*Planning for Equity, Fighting for Justice: Planners, Organizers and the Struggle for Metropolitan Inclusion*” in Ethan Seltzer and Armando Carbonell, (eds) *Regional Planning in America: Practice and Prospect* (Cambridge, MA: Lincoln Institute for Land Policy), pp. 83-115.

Appendices

- I. Detailed maps of Vulnerability and Opportunity Index, the index components, and related maps.**
- II. Full list of originally proposed measures, from workshop of the Equity, Housing and Health Working Group Meeting, April 1, 2011.**
- III. TPA Vulnerability and Opportunity Summary Sheets**
- IV. Technical Methodology**