



Alejandro Huerta <alejandro.huerta@lacity.org>

Re: Crossroads Project, 11-23-2015 comments in Initial Study

1 message

Richard Abrams <abramsrl@gmail.com>

Mon, Nov 23, 2015 at 1:24 PM

To: alejandro.huerta@lacity.org, Hollywoodians Encouraging Logical Planning <HwoodCA@gmail.com>, RSM <AbramsRL@gmail.com>

Dear Mr. Huerta:

Please find HELP's and CCLA's attachments:

2. The Relation Between Transit Availability and Automobile Ownership: the Case of Los Angeles County, University of New Orleans, School of Urban and Public Affairs, by Devajyoti Deka, 1-1-1999
3. December 30, 2010, Streetblog, Density, Car Ownership, and What It Means for the Future of Los Angeles, by Damien Newton
4. FHWA NHTS BRIEF 2014, Mobility Challenges for Households in Poverty
5. March 2014, URBAN INSTITUTE, Driving to Opportunity: Understanding the Links among Transportation Access, Residential Outcomes, and Economic Opportunity for Housing Voucher Recipients.
6. August 22, 2013, NewGeography, Mobility for the Poor: Car-Sharing, Car Loans, and the Limits of Public Transit, by Joel Kotkin
7. January 3, 2013, LA Weekly, Hollywood's Urban Cleansing 12,878 Mostly Latinos Are Pushed Out by City Hall, High Rents and Hipsters, by Patrick Range McDonald
8. Judge Chalfant Statement of Decision in the Millennium Project

On Mon, Nov 23, 2015 at 1:12 PM, Richard Abrams <abramsrl@gmail.com> wrote:

Dear Mr. Huerta:

Attached please find Hollywoodians Encouraging Logical Planning's [HELP] and Citizens Coalition Los Angeles' [CCLA] comments on the initial study for the Crossroad Project, 6665 Sunset Boulevard, Hollywood California.

As there are 18 enclosures - attachments, HELP's and CCLA's submission will require several emails. In addition to the initial comments, this email contains:

- (1) 1915 Study of Street Traffic Conditions in the City of Los Angeles

7 attachments

 **The relation between transit availability and automobile ownershi-1.pdf**
211K

-  **Density, Car Ownership, and What It Means for the Future of Los Angeles _ Streetsblog Los Angeles.pdf**
451K
-  **FHWA NHTS BRIEF 2014, Mobility Challenges for Households in Poverty.pdf**
1005K
-  **Driving-to-Opportunity-Understanding-for-Housing-Voucher-Recipients.PDF**
1669K
-  **Mobility for the Poor_ Car-Sharing, Car Loans, and the Limits of Public Transit _ Newgeography.pdf**
302K
-  **LAWeekly – January 3, 2013 _ Hollywood’s Urban Cleansing.pdf**
55K
-  **2015-4-30 Millennium Chalfant Decision.pdf**
3835K

1-1-1999

The relation between transit availability and automobile ownership: the case of Los Angeles County

Devajyoti Deka
University of New Orleans

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The Relation Between Transit Availability and Automobile Ownership:
The Case of Los Angeles County

Devajyoti Deka

1999

Introduction

The primary objective of this research is to examine the relationship between transit availability and automobile ownership of households, with special reference to the low-income population of Los Angeles. National data show that during the last few decades there has been a significant increase in automobile ownership among low-income households in general (Bureau of Transportation Statistics, 1990; Millar, Morrison, and Vyas, 1986). In fact, among all income groups, the increase in auto ownership has been the highest for the lowest income group (Millar, Morrison, and Vyas, 1986). Since low-income households have traditionally constituted a large segment of the transit market, the recent increases in their automobile ownership make one wonder whether, or to what extent, mass transit continues to serve the travel needs of these households.

The 1990 Nationwide Personal Transportation Survey reveals that approximately 61 percent of the households earning an annual income of less than

\$10,000 had at least one vehicle at their disposal in 1983 (Bureau of Transportation Statistics, 1990). By 1990, however, this proportion increased to more than 65 percent, indicating a rapid increase in vehicle ownership among the poor during the intervening period.

Since a majority of the carless households in the country are poor, the changes in the proportion of carless households also indicate to some extent the changes in automobile ownership among the low-income households (Bureau of Transportation Statistics, 1990; Lave and Crepeau, 1994). The number of carless households in the country decreased from 11.4 million in 1960 to 10.6 million in 1990 in spite of a significant increase in the total number of households during this period (Pisarski, 1996). In terms of percentage change, the proportion of carless households decreased from 21 percent in 1960 to 11.5 percent in 1990. When New York City was excluded, the proportion of carless households in the country amounted to only about 9 percent (Lave and Crepeau, 1994). The proportion of carless households in certain urban areas is even smaller. For example, in Los Angeles County, the study area for this research, less than 5 percent of the households are currently carless.¹

For empirical analysis, this research uses household-level data from the 1991 travel survey conducted by the Southern California Association Governments (SCAG). In addition to the household-level data from the 1991 travel survey, census tract-level data from various other sources have been used. The study area is restricted to Los Angeles County. The county was chosen as the study area because of several reasons. *First*, since the poverty population in the county is very large, transit policies are likely to affect a large number of the low-income households. The extent of poverty in the county is apparent from the fact that approximately 1.3 million of its inhabitants, or 15 percent of the total population, live below the poverty level. According to Wolch

(1998), about one in four of the county's residents received some form of welfare benefits in 1995. *Second*, mobility problems of low-income and minority populations in Los Angeles have historically attracted a lot of attention even at the national level, as evident from the federally organized reverse-commuting projects of the 1960s (Meyer and Gomez-Ibanez, 1981). *Third*, the economy of the region has been performing rather poorly in the 1990s (Lee, 1997). Since it is the poor who are most affected at times of economic distress (O'Sullivan, 1996), there is an increasing need to address the mobility problems of the region's low-income households, especially of the workers from these households. *Fourth*, there is a growing concern that mass transit in Los Angeles is becoming increasingly inequitable and detrimental to the travel needs of the low-income population (Rubin and Moore, 1996, 1997). *Finally*, there have been serious concerns in the recent past about environmental justice issues in the county in regards to provision of transportation infrastructure and services (Bullard and Johnson, 1997; Taylor et al., 1995). These issues led to litigation against the largest transit provider of the region.

Probit and logit analyses with instrumental variables were undertaken for empirical estimation of the model examining the relationship between transit availability and automobile ownership. The basic conclusion from the analyses is that automobile ownership is relatively low in areas with high transit level of service. However, the results indicate that the probability of automobile ownership decreases only slightly with increases in transit services. The analysis also shows that the low-income households in the study area have a low propensity to own automobiles, implying that transit availability may still have considerable importance fulfilling these households' mobility needs.

Income and Travel Mode

Household income is closely related to automobile ownership. For example, the 1990 Nationwide Personal Transportation Survey shows that the average number of automobiles for households with less than \$10,000 annual income is merely 1.0, whereas the average for households with income \$40,000 or over is 2.3 (Hu and Young, 1993, Table 3.18). One can also observe that 91 percent of the trips made by households with \$40,000 or more annual income are made by automobile, whereas only 70 percent of the trips made by households with less than \$10,000 are made by this mode (ibid., Table 4.33). The lower proportion of trips by automobile for the low-income households is matched by a higher proportion of trips by transit.

A similar relationship between income and mode can be observed in Los Angeles county also. Table 1 shows a cross-tabulation of household income and automobile ownership. It is evident from this cross-tabulation that the proportion of low-income households decreases drastically as the number of automobiles per household increases, indicating the possibility of a direct or positive relationship between income and automobile ownership. Table 2 shows the relationship between income and mode use. It is evident from the table that individuals from high-income households in the county have a far greater propensity to make trips by automobile than individuals from lower income households. The data also shows that individuals from lower-income households are more likely to use public transit than individuals from higher income households.

Table 1. Percent Distribution of Households by Household Income and Automobile Ownership in Los Angeles County (N= 5,626 Households)

Annual Household	Percentage Households with
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Income (in \$ '000)	0 Auto	1 Auto	2 Autos	3 Autos	4 or More Autos
Less than 7.5	28.67	43.01	17.83	5.59	4.90
7.5-15	18.23	54.51	19.74	5.08	2.44
15-20	7.94	47.89	32.01	7.94	4.22
20-30	3.62	48.94	34.08	9.11	4.24
30-40	2.03	34.82	48.54	10.29	4.32
40-50	0.83	26.14	52.01	15.08	5.95
50-75	0.46	13.00	56.92	20.15	9.47
75-100	1.04	9.88	53.38	21.14	14.56
100-150	0.31	5.96	50.78	26.02	16.93
150 or more	0.00	4.96	47.11	23.14	24.79
All Households	4.87	29.91	43.65	14.01	7.55

Source: Estimated from the SCAG travel survey, 1991.

Table 2. Percent Distribution of Trips by Mode and Household Income of Trip Maker in Los Angeles County (N= 35,591 trips)

Annual Household Income (\$)	Mode Used	
	Automobile	Local Bus
0-15,000	7.61	39.97
15,000-30,000	16.84	29.83
30,000-50,000	27.80	20.07
50,000-75,000	24.02	6.70
75,000-100,000	12.96	0.90
100,000 or more	10.77	2.53
Total	100.00	100.00

Source: Estimated from the SCAG travel survey, 1991.

The Increasing Rate of Automobile Ownership

Automobile ownership is an important factor determining individuals' mobility and accessibility because this mode is the fastest of all popular urban transportation modes. It is in fact quite common for researchers to heavily emphasize automobile ownership or use as one of the most important factors determining accessibility levels (Koenig, 1980; Morris, Dumble, and Wigan, 1979). In addition to being the fastest

mode, an automobile also provides a level of comfort and convenience unparalleled by other modes of urban transportation.

One of the indicators of mobility of an individual or a group is the amount of travel undertaken (Hanson 1995; Bureau of Transportation Statistics, 1997). The faster speed of an automobile provides a greater mobility than other modes. Data from Los Angeles (Table 3) show that workers from households with larger number of automobiles on an average make longer commuting trips. These longer trips are indicative of a greater level of mobility. Due to its ability to provide a greater level of mobility, the automobile is attractive to all individuals, including the poor.

Table 3. Commuting Distance of Workers Belonging to Households with Different Automobile-Ownership Rates in Los Angeles County

Household Automobile Ownership Rate	Average Commuting Distance (Miles)
No Automobile	5.30
One Automobile	7.14
Two Automobiles	10.97
Three or More Automobiles	11.14

Source: Estimated from the SCAG travel survey, 1991.

The increase in automobile ownership among low-income households may be due to several reasons. One reason could be the externalities arising from the extensive use of automobiles by higher-income and middle-income households. Automobile ownership and activity decentralization have aided each other for decades, leading to a dispersed activity location pattern that causes a serious accessibility problem for those without an automobile. It is likely that many of the low-income households have sought a solution to this problem by acquiring an automobile. To understand the relationship of

auto use among low-income households vis-à-vis auto use by higher-income households and activity location pattern, one has to undertake an analysis with temporal data. This study, being conducted with cross-sectional data for a one time period, is unable to examine this relationship.

Another reason for the increase in automobile ownership among low-income households may be the decreasing real cost of automobile ownership and operation during the last few decades. National data indicate that the consumer price index for motor vehicles and parts has increased significantly slower than the price index for commodities as a whole, indicating a decline in the real cost of auto ownership (US Department of Commerce, 1997).² At the same time, the consumer price index for gasoline and oil has remained constant since the early 1980s, again indicating a favorable condition for consumers of these products.

Although the consumer price indices indicate that the ownership and maintenance costs of automobile have remained fairly low over the years, when one contrasts these costs with the household income of the poor, the costs may appear rather high. In 1991, the American Automobile Association (1991) estimated the annualized cost of an average compact automobile at \$3,526. The Federal Highway Administration (1991) estimated the average annual cost of an intermediate-size automobile at \$3,560 for the same year. In contrast, the income threshold for a four-member poverty household was only \$13,359 in 1990 (Jennings, 1994). These figures indicate that in order to own an automobile, a four-member household in poverty would have to spend at least a quarter of its income. This may be quite burdensome for poor households. A 1993 Consumer Expenditure Survey by the Bureau of Labor Statistics (1996) indicates that the lowest-income quintile of households spends about 33 percent of their after-tax income on transportation while an average household spends only about 17 percent.

This also indicates that transportation costs impose a greater burden on the household budgets of the poor than the population at large.

Yet another reason for the increase in automobile ownership among low-income households may be the declining quality of transit services. In urban areas like Los Angeles, where mass transit has been accused of being apathetic to the travel needs of the poor, the high rate of automobile ownership among the low-income households may well be the result of inappropriate transit service provision.

Mass Transit for the Poor

The mode that receives the greatest attention as an alternative to the automobile is mass transit. This is in spite of the fact that mass transit carries only about 1.8 percent of all person trips and 5.3 percent of all commuting trips in urban areas of the country (Vincent et al., 1994). Although mass transit had historically been a self-sufficient industry, it has been heavily dependent on government subsidies since the 1960s. With declining fare box revenue and increasing reliance on subsidization, the welfare role of transit seems to have become more important since then.

Since a large section of transit riders belong to low-income and minority households, in certain quarters transit's primary objective is considered to be provision of welfare. According to the American Public Transit Association (1995), one of the major objectives of mass transit is to provide mobility to the transportation disadvantaged, of which the poor constitute the largest segment (Meyer and Gomez-Ibanez, 1981). Needless to say, one of the reasons for subsidization of transit is the expectation that it continues to perform this welfare function.

When society's expectations are growing about transit's role as a provider of welfare, there is also an increasing concern that much of the transit services are being

allocated in a manner that is detrimental, or at least apathetic, to the travel needs of the poor. For example, even though it has been pointed out that transit's most profitable routes are mainly in central cities, where low-income and minority households predominantly live (Cervero, 1990), there has been a growing tendency in the recent past to extend transit routes to suburban areas (Wachs, 1989). In addition, recent years have also seen substantial investments on rail transit projects, even though bus riders on an average have lower incomes than rail riders (Wachs, 1989; Pickrell, 1992; Rubin and Moore, 1996, 1997). The prevailing criticisms about transit's failure to perform its welfare functions provide an impetus to this study.

Location of Low-Income Households

Location of households may be an important consideration when estimating accessibility level of any particular group. The reason is that, all else being equal, if the location of homes is close to location of an activity, there is likely to exist a high accessibility for the population group in question for that particular activity. For example, when the location of a group of households is closer to jobs than another group of households, the former group is likely to have a higher job accessibility level than the latter.

In almost all metropolitan areas of the US, poverty is concentrated mainly in the central cities. The poor have concentrated in central cities for a variety of reasons, including availability of low-skilled jobs in nearby areas, their low wages, discrimination in the suburban housing market, and availability of smaller and low-quality housing units in central areas (Clark and Whiteman, 1981; Kain, 1968). Los Angeles is no exception in regards to concentration of poverty in central locations. In this county, the census tracts with extreme poverty concentration are located around the

downtown and along the Interstate-110 corridor in South-Central Los Angeles. Figure 1 shows the concentration of poverty in census tracts of Los Angeles County. The figure also shows a fair amount of poverty concentration in the City of Long Beach, a large regional center with port facilities.

Variations in Automobile Ownership Rate

A comparison of locational distribution of the poverty population with the locational distribution of automobile ownership rates provides an insight into the mobility of the low-income households in Los Angeles. Figure 2 shows the automobile ownership rates per individual 18 years or older in census tracts of Los Angeles county. It is evident that generally the tracts with central location have the lowest automobile ownership rates, while the suburban tracts have higher rates. Comparison of Figure 2 with Figure 1 shows that automobile ownership is generally the lowest in the areas with high poverty concentration, indicating a potential negative relationship between income and automobile ownership.

Variations in Transit Availability

A GIS-based transit availability index was developed to measure transit availability of census tracts in Los Angeles County.³ The transit availability index for the census tracts was obtained by using route density and frequency of services on each route. In order to account for walking trips to transit stations/stops outside the census tract of residence, the boundary of each tract was increased by 0.6 miles on all sides for

estimating the index. Transit routes within this extended area was considered accessible to individuals within the census tract. The index was estimated as follows:

$$\left(\sum_{r=1}^m L_r F_r \right) \div A_i$$

Where L is the length (miles) of a transit route r within the extended area of the census tract i , F is the hourly service frequency on route r within that area in AM peak period, m is the number of routes within the extended census tract, and A_i is the extended area of the tract (square miles). For the estimation of this index, route maps and frequency of services were collected from all the major transit providers in the county, including Los Angeles County Metropolitan Transportation Authority, Santa Monica Municipal Bus Lines, Culver City Municipal Bus Lines, Long Beach Public Transportation Company, Foothill Transit, City of Torrance Transit System, City of Gardena Municipal Bus Lines, Montebello Municipal Bus Lines, Norwalk Transit System, and City of Commerce Municipal Bus Lines.

In spite of the recent tendency towards suburbanization of transit services, in Los Angeles County transit continues to be provided predominantly in central city areas. This is evident from Figure 3, where availability of transit services in census tracts within Los Angeles County is shown. It is evident that transit availability is significantly higher in the City of Los Angeles than the suburban jurisdictions. Transit availability is particularly high in the east-west corridor along Interstate-10 as well as the Interstate-110 corridor south of downtown Los Angeles. The transit availability index shown in Figure 3 can be compared with the location of low-income populations within the county, as shown in Figure 1. This comparison shows that transit availability index is fairly high in most areas with high concentration of low-income populations. The Interstate-10 corridor west of downtown seems to be the only exception, where

transit availability is high without having a high concentration of low-income populations. A comparison of Figure 3 with Figure 2 indicates that transit availability is fairly high in most areas with low automobile-ownership rates. However, transit availability is also fairly high in some areas with reasonably high automobile-ownership rates, such as the areas along the western half of the Interstate-10 corridor.

The Relationship Between Transit Availability and Automobile Ownership

The foregoing discussion provides an insight into the locational distribution of low-income households, as well as locational variations in automobile ownership rates and transit availability. Although the information provided above gives a general picture of the relationship between transit availability and automobile ownership, it does not provide any objective measure of this relationship. The following analysis is meant to obtain an understanding of the relationship in an objective manner.

The analysis begins with a statement of the conceptual relationship between transit availability and automobile ownership. This statement is followed by a brief review of literature addressing similar issues. Subsequently the relationship between the two variables is empirically estimated using data from Los Angeles County. Finally, the implications of the empirical estimation are discussed.

The Conceptual Model

The hypothesis to be tested here is that household automobile ownership varies according to availability of mass transit in areas where the households locate. Thus, the number of automobiles owned by households is the dependent variable while the

availability of mass transit in the residence zones is the key policy variable. Since automobile ownership is likely to depend not only on transit availability, but also on several other variables, these other variables are to be included as controls. These control variables pertain either to the households or the zones. The household characteristics considered for the purpose of testing this hypothesis were household income, dwelling type, number of licensed drivers, number of workers, and household size. The control variables for locational characteristics included job density and dwelling density of census tracts. It is expected that household income, household size, number of workers in household, number of licensed drivers in household, and residence in single family dwellings will have a positive relationship with automobile ownership. It is expected that job density and dwelling density in residence zones will have a negative relationship with automobile ownership of households. Finally, it is expected that automobile ownership will have a negative relationship with transit availability.

Previous Studies on Auto Ownership

There are numerous examples in the existing literature where researchers have estimated automobile ownership of households in terms of household characteristics and zonal characteristics (Golob and Van Wissen, 1989; Golob, 1990; Golob, 1996; Train, 1980; Lerman and Ben-Akiva, 1976; Burns et al., 1976).

In terms of methodologies, most studies use some form of logit or probit models for estimating automobile ownership. Although there has been a reasonable consistency in using probit and logit models to estimate auto ownership, there is no consistency in

the selection of independent variables in the various models. While Golob and Van Wissen (1989) use only income as an independent variable, other studies, such as Train (1980), Lerman and Ben-Akiva (1976), and Golob (1996) use several independent variables in their models. Characteristics of households and zones have been used as independent variables in these studies. Models have included income, household size, and number of licensed drivers as household characteristics. For zonal characteristics, models have considered density of activities, transit accessibility, and certain dummy variables indicating whether a household is located in an urban area or a rural area, or whether household is located near CBD or far from CBD. Aside from these household and zonal characteristics, variables such as housing type and tenure status of dwellings have been used as independent variables in some of the models.

Among the aforementioned studies, the two that were specifically interested in identifying the relationship between transit availability/accessibility and automobile ownership were Train (1980) and Lerman and Ben-Akiva (1976). Although Train included the transit variable as one of the independent variables in his model, Lerman and Ben-Akiva refrained from including the variable in spite of conceptual consideration. One of the potential flaws in Train's model was that he did not consider the possibility of an endogeneity problem between transit accessibility and auto ownership.

Empirical Estimation of the Model

Empirical estimation of the model was undertaken with data for Los Angeles County. One of the potential problems in estimating the conceptual model was that of

endogeneity or simultaneity between transit availability and auto ownership. Although it is crucial for the study to determine auto ownership of households on the basis of transit availability in the areas of their residence, the relationship between the two variables is not uni-directional. That is, while auto ownership of households may be affected by transit availability in their residence zones, transit availability in different zones may be affected by the auto-ownership rates of households within the zones. In other words, while households' auto ownership decisions may be affected by zonal transit availability, transit agencies may provide services on the basis of auto ownership rates of residents. This bi-directional relationship between transit availability and automobile ownership may cause an endogeneity problem in the model. An endogeneity problem results in biased and inconsistent estimation of a model. To overcome the potential endogeneity problem, the instrumental variables method was used for estimation of automobile ownership. The instrumental variables method produces estimates that are biased but consistent. The theoretical underpinnings for simultaneous categorical models of the type adopted here are to be found in Amemiya, 1978; Rivers and Vuong, 1988; Heckman, 1978; Maddala and Lee, 1976; Lee, Maddala and Trost, 1980.

Considering that transit agencies are likely to provide services on the basis of certain zonal characteristics, in the first step of this modeling exercise, transit availability of zones was predicted by a regression model. The independent variables used in this model are listed in Table 4. The parameter estimates and the test statistics are provided in Table 5. The regression model in Table 5 provided the predicted values

of transit availability index for census tracts. These constitute the instrumental variable for the subsequent probit and logit models.

Table 4. Description of Variables Used for Estimating Transit Availability in Census Tracts

CBD	Dummy variable indicating whether the census tract is in CBD, yes=1, no=0
POVERTY	Percent population below poverty in census tract
NWHITE	Proportion of nonwhite persons in tract
JOBDENS	Density of jobs per square mile in census tract
DWDENS	Density of dwellings per square mile in census tract
MEDAGEST	Median age of structures in census tract

Source: 1990 Census of Population and GIS map for census tracts.

Table 5. Regression Model Estimating Transit Availability in Census Tracts

Variable	Mean	Std. Devn.	Parameter Estimate		Stdz. Parameter Estimate	Std. Error	Hetero-consist. Std. Error	Variance Inflation Factor
Intercept	18.77	33.91	- 23.3345	***	0.0000	2.04	1.79	0.00
CBD	0.01	0.11	105.9222	***	0.3261	6.13	42.54	1.28
POVERTY	0.14	0.12	21.5270	***	0.0749	6.78	7.00	2.01
NWHITE	0.41	0.27	11.1502	***	0.0886	2.81	2.54	1.79
JOBDENS	4696.00	10043.00	0.0008	***	0.2181	0.00	0.00	1.36
DWDENS	3758.00	3302.00	0.0039	***	0.3822	0.00	0.00	1.19
MEDAGEST	32.52	49.37	0.4733	***	0.1353	0.06	0.06	1.05
R ²	0.549							
Adj-R ²	0.547							
F-Stat	329.63							
Prob>F	0.0001							
N	1635							

*** Significant at 1% level.

The description of the variables used in the models estimating auto ownership of households is provided in Table 6. The empirical relationships obtained through the probit model are provided in Table 7.

Table 6. Description of Variables Used for Estimating Automobile Ownership of Households

I15	Dummy variable, if income below \$15,000 then 1, else 0
I15-20	Dummy variable, if income between \$15,000-20,000 then 1, else 0
I30-40	Dummy variable, if income between \$30,000-40,000 then 1, else 0
I40-50	Dummy variable, if income between \$40,000-50,000 then 1, else 0
I50-75	Dummy variable, if income between \$50,000-75,000 then 1, else 0
I75-100	Dummy variable, if income between \$75,000-100,000 then 1, else 0
I100-150	Dummy variable, if income between \$100,000-150,000 then 1, else 0
I150PLUS	Dummy variable, if income \$150,000 or more then 1, else 0
SFAMILY	Dummy variable, if single family then 1, else 0
DRIVERS	Number of licenses drivers in household
OWNER	Dummy variable, if lives in owned dwelling then 1, else 0
WORKERS	Number of workers in household
HHSIZE	Household size
TRANSIT	Predicted value of transit availability obtained from regression model in Table 5
DWDENS	Density of dwellings per sq. mile in tract
JOBdens	Density of jobs per sq. mile in tract

Under the simple circumstances of the model, a probit and a logit model are likely to provide similar outcome. As Ghareib (1996) points out, logit is a superior model than probit from an analytical standpoint, although probit has a deeper theoretical basis. A logit model is also recommended over probit for the purpose of prediction

(ibid.). To maintain a balance between theory and predictability, both a probit and a logit model were used for examining the relationship between transit availability and auto ownership. An additional advantage of the logit model is that it produces the odds ratios for different explanatory variables. These ratios are simple and easy to understand.

Table 7. Probit Model Estimating Auto Ownership of Households
(Dependent Variable: Number of Autos=0, 1, or 2 or more)

Variable	Mean	Std. Devn.	Parameter Estimate	χ^2	
I15	0.14	0.35	- 0.3985	38.11	***
I15-20	0.07	0.25	- 0.1128	2.15	
I30-40	0.14	0.35	0.2263	11.46	***
I40-50	0.13	0.33	0.3937	29.46	***
I50-75	0.19	0.39	0.7192	98.70	***
I75-100	0.10	0.30	0.7887	67.99	***
I100-150	0.06	0.23	1.0194	56.66	***
I150PLUS	0.02	0.14	1.1931	25.86	***
SFAMILY	0.62	0.49	0.3388	54.55	***
DRIVERS	1.67	0.83	0.8603	568.23	***
OWNER	0.49	0.50	0.1988	17.45	***
WORKERS	1.20	0.89	0.0147	0.23	
HHSIZE	2.86	1.53	0.1589	124.88	***
TRANSIT	11.89	29.71	- 0.0027	5.14	**
DWDENS	3129.66	3199.40	- 0.0000	2.69	
JOBDENS	4225.66	10961.00	0.0000	0.12	
Intercept for 2 Autos			0.1705	4.66	**
Intercept for 1 Auto			- 1.9858	-	
Prob> χ^2 = 0.0000					
Total households= 5505 (0-car households=260, 1-car households=1644, and 2 or more car households=3601)					

** Significant at 5% level *** Significant at 1% level

It can be observed from Table 7 that almost all the independent variables relating to households are highly significant with expected signs. The only exception is the number of workers in households, a variable found to have an insignificant relationship with auto ownership. A positive relationship exists between income and automobile ownership. The empirical relationship between the two indicates the influence of income on automobile ownership. The empirical estimates also indicate that households in single family homes, households with a larger number of licensed drivers, households living in owner-occupied homes, or households of larger size have a greater likelihood of auto ownership. Among the variables representing zonal characteristics, transit availability is the only variable that has a significant relationship with automobile ownership. As expected, this variable has a negative relationship with automobile ownership. The relationship indicates that households having greater access to transit have greater automobile ownership rate.

Another way to look at the relationship between transit availability and automobile ownership is through the odds ratios of the variables. The computer software used for this research allows calculation of the odds ratios of automobile ownership through a logit procedure. Table 8 provides these odds ratios together with other relevant test statistics.

The parameter estimates and test statistics from the logit model are consistent with those from the probit model. The last column of Table 8 provides the odds ratios of auto ownership. An odds ratio lower than one indicates a lower likelihood of automobile ownership while an odds ratio greater than one indicates a higher likelihood of automobile ownership. The odds ratios for automobile ownership increases with increases income. The ratios are greater than one for households in single family homes and households in owner-occupied dwellings. The ratio for household size is also

greater than one, indicating a positive relationship between household size and auto ownership. The odds ratio for the transit variable is only slightly smaller than one, indicating that although transit availability has a significant negative relationship with automobile ownership, the likelihood of auto ownership of households will decrease only slightly with increases in transit availability in their residence zones. This may be interpreted as good news and bad news for the transit industry. While it is good news that transit continues to have a significant negative relationship with automobile ownership even in a dispersed area like Los Angeles, it is bad news that significant improvements in transit services will be required for bringing forth even a moderate decrease in automobile ownership.

**Table 8. Multinomial Logit Model for Household Automobile Ownership.
Dependent Variable: Auto-Ownership per Household
(Automobiles = 0, 1, 2 or more)**

Variable	Parameter Estimate	Standard Error	Wald χ^2	Pr> χ^2	Odds Ratio
I15	-0.728	0.116	39.27	0.0001	0.483
I15-20	-0.203	0.138	2.16	0.1417	0.816
I30-40	0.384	0.120	10.25	0.0014	1.468
I40-50	0.663	0.131	25.74	0.0001	1.940
I50-75	1.254	0.132	89.78	0.0001	3.505
I75-100	1.326	0.177	56.34	0.0001	3.765
I100-150	1.830	0.266	47.47	0.0001	6.235
I150PLUS	2.056	0.457	20.25	0.0001	7.812
SFAMILY	0.608	0.083	54.41	0.0001	1.837
DRIVERS	1.685	0.068	614.51	0.0001	5.391
OWNER	0.335	0.086	15.08	0.0001	1.398
WORKERS	0.023	0.056	0.17	0.6778	1.024
HHSIZE	0.314	0.027	140.26	0.0001	1.368
TRANSIT	-0.004	0.002	3.950	0.0469	0.996
DWDENS	0.000	0.000	2.89	0.0890	1.00
JOBDENS	0.000	0.000	0.02	0.8923	1.00
Intercept for 2 Autos	-3.508	0.149	557.41	0.0001	-
Intercept for 1 Auto	0.140	0.145	0.92	0.3364	-
Testing Global Null Hypothesis Beta = 0:					

Criterion	Intercept Only	Intercept and Covariates	χ^2 for Covariates
-2 Log L	8617.90	15514.12	3103.78 with 16 DF (p=0.0001)
Association of Predicted Probabilities and Observed Responses:			
Gamma = 0.769			
Total households= 5505 (0-car households=260, 1-car households=1644, and 2 or more car households=3601)			

Note: Descriptive statistics of variables identical with Table 7.

The odds ratio for the dummy variable representing the lowest income class (below \$15,000 annual income) is less than 0.5. It indicates that the likelihood of automobile ownership is extremely low for low-income households, irrespective of the increase in auto ownership among the poor. This empirical observation may have serious implications for developing transit policies. The fact that the odds ratio for the transit variable is only slightly less than one implies that auto-ownership decisions of households in general are affected by availability of transit service in their residence zones only to a very small extent. On the other hand, the extremely small odds ratio of auto ownership for the lowest-income category indicates that transit may be extremely useful for the poor because of their inability to obtain an automobile.

Conclusion

In view of the increasing automobile-ownership among low-income households, this paper examined the relationship between transit availability and household automobile-ownership rates with empirical data from Los Angeles County. One of the basic conclusions from the analysis is that household automobile-ownership rates are inversely related to transit availability in the census tracts of residence. However, the likelihood of automobile ownership decreases only minimally with increases in transit availability. Another significant conclusion from this research is that the low-income

households in the study area have very low likelihood of owning automobiles, even though there has been an increase in automobile ownership among these households nationally. Because of their low propensity for owning automobiles, it seems that mass transit continues to be an important means for providing mobility to these households.

The fact that low-income households have a low propensity to own automobiles in Los Angeles may indicate that such households have a low propensity to own automobiles in other metropolitan areas also. This is particularly likely because Los Angeles is normally considered more automobile-oriented than most other metropolitan areas of the country.

Finally, it seems that in spite of an increase in automobile ownership among low-income households, their propensity for owning automobiles continues to be low. Given this low propensity, it is possible that such households in general have continued to be highly dependent on mass transit into the 1990s. If such is the case, it would seem reasonable that transit agencies make it a top priority to provide services to low-income neighborhoods rather than making plans for general extension of services.

Notes

1. Estimated from the travel survey of the Southern California Association of Governments, 1991.
2. Spenser (1996) shows that the real cost of new cars has increased slightly over the years between 1975 and 1996. However, since new cars also have improved technology and safety features, it may be more appropriate to look at the consumer price index for all cars rather than the price of new cars alone.
3. For a survey of transit availability indices, see Henk and Hubbard (1996).

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Density, Car Ownership, and What It Means for the Future of Los Angeles

by Damien Newton



The number of cars per person in Greater Los Angeles. For a full copy of the map, [here](#).

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Density. Vehicle Ownership. The number of cars packed into a small area.

These are concepts that we discuss often on Streetsblog. Thanks to a UCLA research project undertaken by Professors Mike Manville and Donald Shoup, we can get an idea of some of the challenges Los Angeles’ planners face in trying to ween our city off the automobile.

This article will look at the population density, car ownership per person, and car ownership per mile maps and charts. At the top of each article will be a “Streetsblog sized” map for Los Angeles with links to maps for San Francisco and New York for comparison purposes. All maps are based on information from the 2000 Census.

A huge hat tip to Katie Matchett, without whom this article wouldn’t have been possible.

Population Density:

Click for population density maps of [Los Angeles](#), [New York](#) and [San Francisco](#).



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Our first set of maps show the population density for the region. The greater Los Angeles region is often portrayed as a giant suburb. When you look at the raw number for Los Angeles, as compared to New York and San Francisco, this characterization seems suspect. After all, Los Angeles exceeds New York when it comes to person per square mile.

	Population	Urbanized Area (sq. mile)	Population Density (person/sq. mile)
Los Angeles	11,874,000	2,980	3,990
New York	18,091,000	5,500	3,290
San Francisco	3,019,000	720	4,200

This table shows the total population, size of the urbanized area, and population density for each region. Note that while San Francisco has the highest population density, Los Angeles is more dense than New York. However, when you look at the maps you'll see that the population is spread relatively evenly throughout Los Angeles, while the other regions have dense centers with more sprawling suburbs.

In other words, when it comes to New York, our suburbs are denser than their suburbs; even though they have a much denser urban core.

It will be interesting to see in the 2010 census how much of a dense urban core has developed over the last ten years. I suspect those dark green areas will continue to grow, but that nobody is going to start mistaking the Downtown with those of San Francisco or New York.

Vehicles Per Person

Click for the vehicles per person maps for [Los Angeles](#), [New York](#) and [San Francisco](#)

The number of cars per person in Greater Los Angeles

It's no surprise that New York had the lowest rate of car ownership per person, but I think that many people will be surprised to see that Los Angeles actually has a lower rate of car ownership than San Francisco. As with population density, vehicle density is more evenly distributed in LA than in the other two regions.

	Total Vehicles In Urbanized Area	Population	Urbanized Area (sq. mile)	Vehicles per Person
Los Angeles	6,433,000	11,874,000	2,980	0.54
New York	7,771,000	18,091,000	5,500	0.43
San Francisco	1,769,000	3,019,000	720	0.59

Matchett provides a couple of other facts about Greater Los Angeles, which further illustrates what does and doesn't determine car ownership

The three tracts with the lowest vehicles per square mile and per person are located in Long Beach, downtown Los Angeles, and San Fernando. A closer examination of the demographics of each of these tracts reveals that while each has a fairly large population (between 300 and 1,000 residents), the tracts have hardly any workers or housing units. This suggests that they may contain institutional uses such as jails, where vehicle ownership rates would be very low. The downtown tract might also include homeless residents without vehicles.

The three census tracts with the highest number of vehicles per person are located in the cities of Beverly Hills, Newport Beach, and Norwalk. The Norwalk tract also includes primarily commercial uses and has only nine residents, so the high vehicle ownership rate is likely due to the tract's low population. The two other census tracts with a high number of vehicles per person are located in some of the wealthiest communities in the Los Angeles region. Given the strong correlation between income and vehicle ownership, this should come as no surprise.

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WORD ON THE STREET

“ I can't help but to read this and still feel utterly hopeless and pretty much confirm that there's no way these [L.A. City Council] people use the sidewalks and truly understand the problem. ”

– M

In response to "Muddled L.A. Sidewalk Repair Hearing

In other words, Los Angeles' surprising low rate of car ownership seems to have more to do with income than progressive transportation ideals.

Vehicles Per Square Mile:

Click for vehicle per square mile maps for [Los Angeles](#), [New York](#), and [San Francisco](#)



From a planning standpoint, this set of maps and statistics, combined with the first set of maps and statistics tells the most important story. What is the impact of population density on car ownership? As we try to provide alternatives to the automobile, it stands to logic that dense development is part of the key.

	Total Vehicles In Urbanized Area	Urbanized Area (sq. mile)	Vehicles per Square Mile
Los Angeles	6,433,000	2,980	2,161
New York	7,771,000	5,500	1,413
San Francisco	1,769,000	720	2,460

Oh, well this is embarrassing. Matchett explains.

The pattern of vehicles per square mile in each region basically mirrors the population density: tracts with high population density also have a lot of vehicles. This is true even in New York, with its lower vehicle ownership rates.

Honestly, I was surprised by this result. I wasn't exactly stunned that this was true for Los Angeles, because our transit system still needs some development, but that car ownership in New York and San Francisco was still high in their dense, transit rich areas? I didn't have a great explanation for this, but fortunately Matchett supplied an explanation from Professor Manville.

From a policy standpoint, this suggests that simply increasing density is likely to exacerbate rather than mitigate congestion—something we see borne out by most congestion data. (Increasing density and congestion can sometimes allow people to make more trips while avoiding congestion, but the congestion itself is still bad). So the trick for transportation and land use policy is to find ways to pull apart density and vehicle use. That's what pricing does, and that's what minimum parking requirements do the opposite of. Parking requirements make it very easy for increases in density to move in lockstep with increases in vehicles, because new dwelling units automatically include housing for cars.

So there's the challenge for our local planners and transportation engineers. As Los Angeles grows and becomes more transit diverse in the coming years, the city, county and Metro needs to get rid of parking minimums in dense, transit-rich areas and find other ways to encourage people to not feel the need to own cars. It sounds as though Metro ought to be urging cities to relax their parking requirements in the areas around their new rail lines or, at a minimum, get them relaxed for the developments on land that the agency owns.

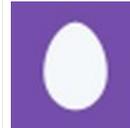
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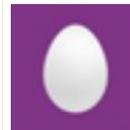
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Asher Of LA

I brought it up on a libertarian-ish urbanist facebook group (Market Urbanism), and the proposal...

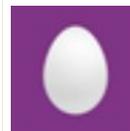
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The Wikipedia article on the topic lists other places where they're used (Japan uses them...

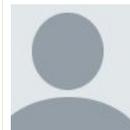
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Joe Linton

I wish - I certainly didn't give them the legitimacy of responding to them via full Streetsblog...

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EYES ON THE STREET



A driver blocks the crosswalk and bike lane at the intersection of 4th and Spring
From: [ubray02](#) February 24, 2012

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Matt • 4 months ago

Is there any way to access this data? I've been looking for vehicle ownership data in LA for a while, and all I've found from the census is the data that contains "0 cars per household" "one car per household" etc. I much prefer the "vehicles per person" and "vehicles per square mile" way of displaying the data.

^ | v • Reply • Share



ohnononono → Matt • 20 days ago

I actually think vehicles per person is a weird metric if it includes children, which I assume it does. A single mom with 2 kids now has 0.33 cars per person in her household? That's a bit misleading. The Census Bureau usually refers to workers over 16 in its commuting data, so I think that'd be the better denominator.

^ | v • Reply • Share



Stephen Hemenway • 5 years ago

Great post. This is really fascinating in a lot of ways. Another map that would be very helpful to have is how many miles are driven, or how many hours on the road per car. I own a car and live in Oakland, but after 8 1/2 years my car has 30,000 miles on it, since I don't need to drive very far for anything and I commute on Bart into SF. It's the driving I believe that adds the most to the pollution. Suburb x could have 30 cars that drive 3 miles a day. Suburb y could have a 5 cars that drive 30 a day. Which is worse environmentally?

^ | v • Reply • Share



Stephen Hemenway • 5 years ago

The borders of the San Francisco area do seem a little arbitrary.

@Carlton Glüb

"Likewise, but in reverse, if the City of San Francisco included the entire peninsula – Daly City, Atherton, M, and all the sprawling rest – it would probably look a lot more like LA."

The San Francisco map, and therefore the study I believe, does include Daly City and Atherton and even a little further south down to the borders of San Jose. I suppose San Jose could also be included in the map. It be interesting to see how this affects everything.

@Katie M

The map of the Bay Area does seem somewhat arbitrary in that it doesn't include Marin, which has a HUGE degree of social and economic integration with San Francisco. Much more percentagewise than the southern end of the peninsula which borders directly on San Jose.

^ | v • Reply • Share



Drew Reed • 5 years ago

Awesome data, thanks for the post. Despite all the analysis suggesting that this might actually be a bad thing, I couldn't help but be a bit proud to see LB with one of the lowest rates of cars per person. Also, I wonder what a bikes per person map would look like?

^ | v • Reply • Share



Alex → Drew Reed • 3 years ago

don't get too excited- a huge portion of Long Beach is covered by POLB, which doesn't have many cars!

^ | v • Reply • Share

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Mobility Challenges for Households in Poverty

2009 National Household Travel Survey

- Households in poverty spend a higher proportion of their income on transportation expenses and are disproportionately represented by race/ethnicity with African-Americans and Hispanics experiencing the highest poverty rates. Limited vehicle availability and fewer affordable transportation options afflict this cost-sensitive group.
- Households in poverty are limited to a shorter radius of travel compared to higher income households. They have the lowest rates of single occupancy vehicle use and the highest usage of less costly travel modes: carpool, transit, bike and walk.
- Households in poverty have lower vehicle ownership rates, which has led to an increased use of alternative modes of transportation and higher vehicle occupancy rates.
- The 2009 National Household Travel Survey shows that in the metropolitan areas of Atlanta and Los Angeles, those in poverty have a smaller radius of travel than those in the highest income group. In New York City, however, the working poor tend to have a larger radius of travel than workers with the highest incomes, which is likely indicative of its very affluent urban core.

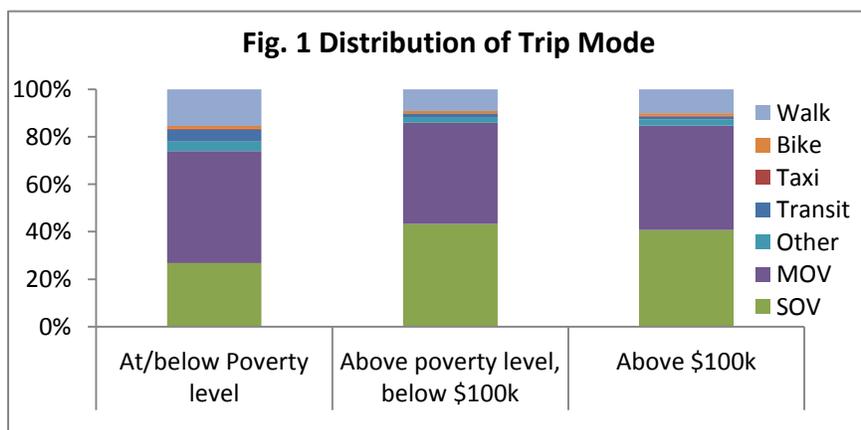
Studies have shown that rising transportation costs have a disproportionate negative impact on lower income households. The Bureau of Labor Statistic's Consumer Expenditure Survey has shown that transportation is the second highest American household expenditure, only exceeded by housing costsⁱ. The high sticker price of vehicles, increased prices at the pump, and transit fare hikes all pose a financial burden to the mobility of all households, especially those in poverty.

In 2009, the year of the most recent NHTS, the Census Bureau reported that the nation's official overall poverty rate was 14.3 percent whereas 25.8 percent of Blacks and 25.3 percent of Hispanics were in poverty. In 2012, the Census poverty numbers changed slightly with poverty rates of 27.2 percent and 25.6 for Blacks and Hispanics respectively.ⁱⁱ These vulnerable groups are in need of cost-effective transportation options that are affordable and provide them access to job opportunities.

2009 Poverty Status of Selected Groups

	People in Poverty	Percent in Poverty
White	29,830,000	12.3
White, not Hispanic	18,530,000	9.4
Black	9,944,000	25.8
Asian	1,746,000	12.5
Hispanic origin	12,350,000	25.3

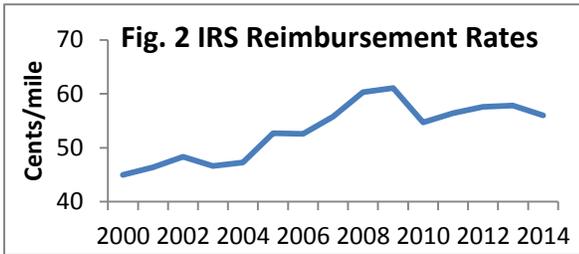
Data Source: www.census.gov



Data Source: 2009 FHWA NHTS

Figure 1 shows that individuals in poverty take about three times as many transit trips as those in the higher income groups. They also have the greatest rate of bike trips and take walk trips about 50% more than their higher income counterparts. When using personal vehicles, individuals in poverty are about twice as likely to travel in a multi-occupant vehicle

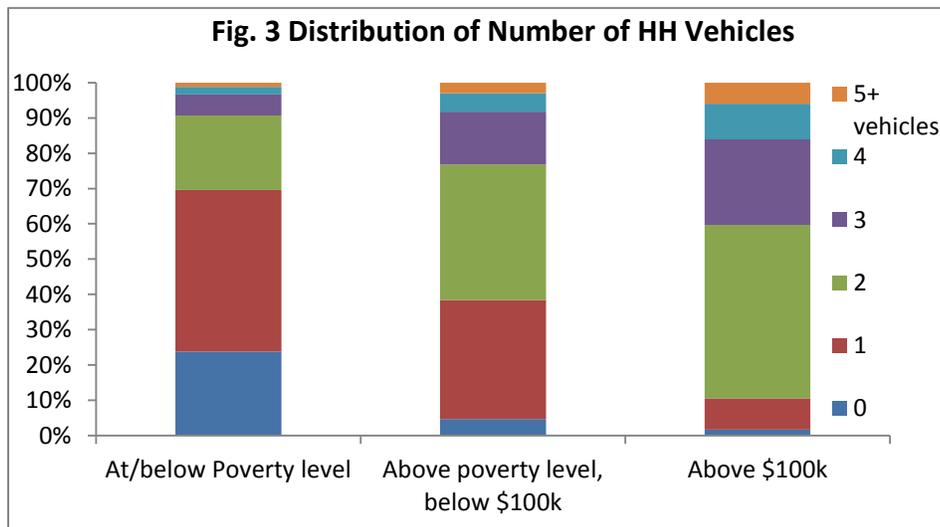
(MOV) than a single occupant vehicle (SOV). Average vehicle occupancy for those at or below poverty level is 2.37 persons per vehicle mile versus 2.07 for those with incomes above \$100,000.



Data Source: www.irs.gov

The Internal Revenue Service vehicle mileage reimbursement ratesⁱⁱⁱ since 2000 display an overall increase in the per mile cost of driving (Figure 2 - indexed to 2014 dollars), which is indicative of one of the cost obstacles to personal vehicle ownership and maintenance. 2009 NHTS data shows vehicle ownership increasing with household income as shown in Figure 3. About 24 percent of households in poverty do not own a vehicle while over 98 percent of \$100,000+ households own at least one vehicle.

Diversity-rich metropolitan areas can display even larger disparities in the travel trends between those in poverty and their higher income counterparts.



Data Source: 2009 FHWA NHTS

those in poverty and their higher income counterparts. In the cities of Atlanta, Los Angeles and New York City, individuals in the \$100,000+ income group travel 14, 12.8, and 3.36 more daily miles respectively than those in poverty (Figures 4a-c). For those who are workers and drivers, (Figure 5) the person

miles traveled told a different story. In New York City, wealthier worker-drivers traveled significantly fewer miles than those in poverty likely due to their ability to afford to live in the very expensive urban core. The greater sprawl in housing and employment in Atlanta and Los Angeles allowed for a smaller difference between income groups for worker-driver travel (Fig 5) and all person travel. (Fig. 4)

Fig. 4 Daily Travel Radius of all persons

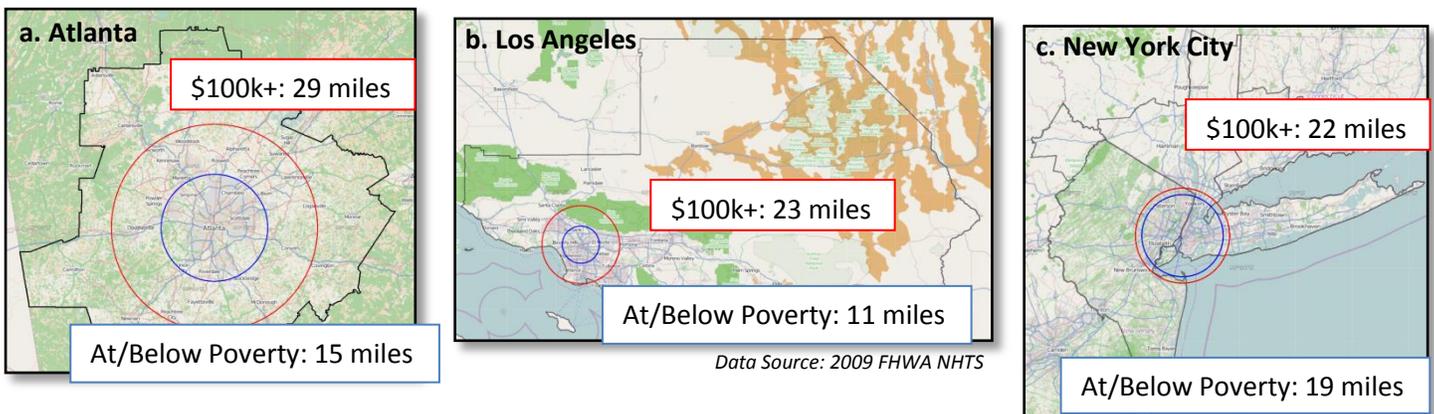
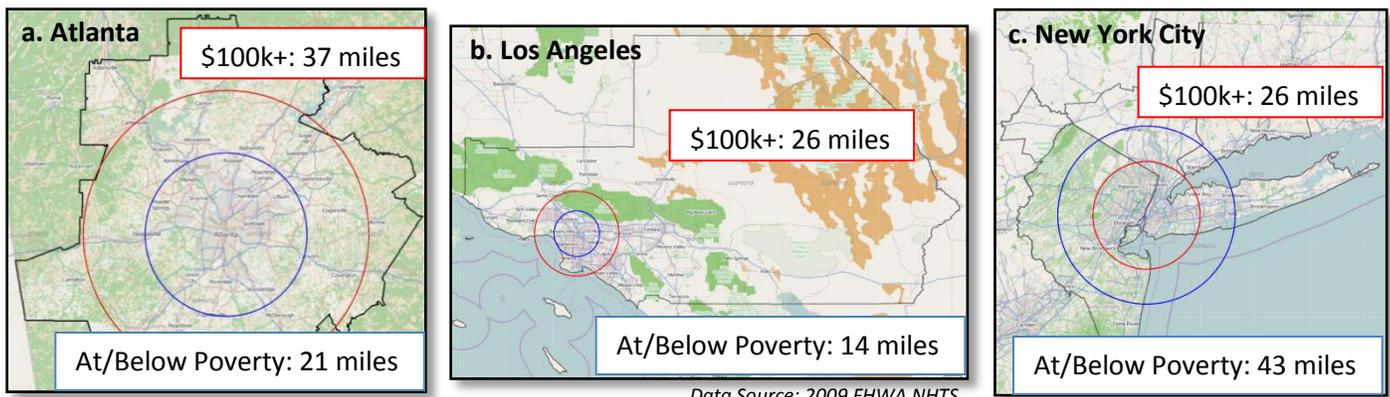


Fig. 5 Daily Travel Radius of Workers who are licensed drivers



The geography of poverty is also changing. More U.S. households in poverty live in suburbs than in big cities or rural communities. The concentrated poverty rate is still highest in big cities, where almost one in four poor residents (23 percent) lived in a distressed neighborhood between 2008-2012, compared to 6.3 percent in suburbs. Suburban communities, however, experienced the largest change in the number of residents living in concentrated poverty. Between 2000 and 2012, the number of suburban poor living in distressed neighborhoods grew by 139 percent—almost three times the pace of ^{iv} growth in cities. These suburban poor neighborhoods face many

Fig. 6 Statistics on Poverty

- Almost one out of sixteen people in the USA are living in deep poverty.
- Racial and ethnic minorities, women, children, and families headed by single women are particularly vulnerable to poverty and deep poverty.
- Blacks and Hispanics are more likely than whites to be poor, and to be in poverty and deep poverty. Poverty is a women's issue; female-headed families are more likely to be poor.
- Children represent more than one-third of the people living in poverty.
- Over one-fourth of adults with a disability live in poverty.

challenges: Poor health, high crime, low-performing schools, and low job density, which make it especially difficult to climb out of poverty and allow the community to develop and grow in sustainable ways. ^v Transportation becomes an even greater problem since

suburban neighborhoods have fewer transit options compared to more densely populated urban areas.

The suburbs have also historically been a draw for families with children, which leads to concerns about childhood poverty and children's travel needs. National 2009 NHTS averages show that households with children tend to travel over twice as much as those without children. Trips to daycare, school, doctor's appointments, and social activities add a significant number of miles to family households. In New York City, however, households in poverty who live with children travel significantly less than their childless counterparts. Improving mobility and job accessibility are very important factors for households to escape poverty. As transportation costs continue to rise, poor households will have an increasing burden with expenses that are necessary to meet basic needs and improve quality of life.

For more information, please visit our Website: <http://nhts.ornl.gov>

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About the National Household Travel Survey

Conducted periodically by the USDOT FHWA since 1969, the survey collects travel data from a sample of U.S. households. The information has been used to understand trends in the nation's trip making and miles of travel by mode, purpose, and time-of-day for use in policy, planning and safety.

Data is collected for household members and for each day of the year, yielding a rich demographic profile linked to daily travel and vehicle characteristics.

ⁱ "CONSUMER EXPENDITURES--2012." BLS Economic News Release 10 Sept. 2013. Web. 4 Sept. 2014. <<http://www.bls.gov/news.release/cesan.nr0.htm>>.

ⁱⁱ DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith. "Income, Poverty, and Health Insurance Coverage in the United States: 2012 Current Population Reports." United States Census Bureau P60-245 (2013). Web. <<http://www.census.gov/prod/2013pubs/p60-245.pdf>>.

ⁱⁱⁱ "Standard Mileage Rates." [Http://www.irs.gov/Tax-Professionals/Standard-Mileage-Rates](http://www.irs.gov/Tax-Professionals/Standard-Mileage-Rates). 1 May 2014. Web. 4 Sept. 2014. <<http://www.irs.gov/Tax-Professionals/Standard-Mileage-Rates>>.

^{iv} "Poverty in the United States: A Snapshot." National Center for Law and Economic Justice. 1 Sept. 2013. Web. 4 Sept. 2014. <<http://www.nclj.org/poverty-in-the-us.php>>.

^v Kneebone, Elizabeth. "The Growth and Spread of Concentrated Poverty, 2000 to 2008-2012." Brookings. 31 July 2014. Web. 4 Sept. 2014. <<http://www.brookings.edu/research/interactives/2014/concentrated-poverty#/M10420>>.



Driving to Opportunity:

**Understanding the Links among Transportation Access,
Residential Outcomes, and Economic Opportunity for
Housing Voucher Recipients**

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March 2014

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Executive Summary

In the 1990s and early 2000s, the Department of Housing and Urban Development (HUD) sponsored two major experiments to test whether housing choice vouchers propelled low-income households into greater economic security. The first of these was the Moving to Opportunity (MTO) for Fair Housing program, which was designed to move low-income families from high- to lower-poverty neighborhoods. The other was a tenant-based housing voucher program, the Welfare to Work Voucher program (WTW), initiated in 1999 to help families currently receiving or eligible to receive welfare transition from public assistance into the labor market.

Although slightly different, the two voucher programs' purpose was to assess whether low-income families benefitted from living in lower-poverty neighborhoods—either through improved neighborhood conditions or better economic and health outcomes. Research shows that households receiving vouchers choose to live in a wider range of neighborhoods than public housing residents and unassisted renters. However, voucher users still face hurdles when trying to secure housing in high-opportunity neighborhoods.

There is growing evidence that transportation—particularly access to automobiles—plays an important role in shaping the residential location choices and economic outcomes of low-income households. Automobiles and high-quality public transit services can enable participants to better search for housing as well as provide access to potential employment, services, and other opportunities within a reasonable travel time. To date, however, transportation has not been a major focus of the research related to housing voucher participants.

This study fills this gap. We examine the relationship between transportation, residential location, and employment outcomes. More specifically, our research focuses on three areas: (1) the sorting of housing choice voucher recipients into different neighborhoods and variation in neighborhood sorting by automobile ownership, (2) the role of transportation in voucher users' residential choices, and (3) how transportation access and residential location choice influence economic opportunity.

Overall, the findings from this study underscore the positive role of automobiles in outcomes for housing voucher participants. The following bullet points list our key findings in the three research areas.

- Neighborhood sorting
 - Families with access to cars found housing in neighborhoods where environmental and social quality consistently and significantly exceeded that of the neighborhoods of households without cars. Especially noteworthy, families with car access felt safer in their neighborhoods and were less likely to live in neighborhoods with high crime rates than those without car access.
 - Low-income households did make trade-offs with respect to neighborhood conditions. MTO households with cars lived in neighborhoods that were more spread out—with lower density of aggregate income and housing and less diverse housing stock—and with worse measured school performance than transit-dependent households. (School performance measures improved, however, by the final survey, as noted below.)
 - While most neighborhoods are not distressed, practically none with housing prices affordable to most families offers mostly positive attributes and few disadvantages.
 - Only a small minority of tracts in US metropolitan areas have crushing crime rates, failing schools, high levels of environmental degradation, and deep poverty; these distressed tracts also number among the most conveniently situated places in a nation.

- The two sets of metropolitan areas offer important contrasts with one another on one important dimension. The MTO metropolitan areas—Boston, Baltimore, Chicago, New York, and Los Angeles—offer many transit choices. The WTW metropolitan areas—Atlanta, Houston, Augusta, Spokane, and Fresno—have less-developed transit systems than the MTO areas.
- Transportation and residential location choice
 - Over time, households with automobiles experience less exposure to poverty and are less likely to return to high-poverty neighborhoods than those without car access.
 - Among those relocating from their baseline neighborhoods, program participants with access to automobiles moved to areas with lower concentrations of poverty, higher concentrations of employed adults, higher median rents, more owner-occupied housing, lower vacancy rates, greater access to open space, and lower levels of cancer risk.
 - When we control for other factors influencing residential mobility, program participants with access to automobiles move to neighborhoods with higher levels of school performance by the time of the final survey.
 - Access to vehicles positively influences neighborhood satisfaction, particularly in neighborhoods with low levels of transit.
 - Program participants with automobiles live in neighborhoods with lower levels of transit and in environments less conducive to walking.
- Effect of transportation access and residential location choice on economic opportunity
 - The neighborhoods where carless voucher users live offer access to larger numbers of jobs than those where driving voucher users live. However, voucher users with cars more than compensate for this by living in neighborhoods where fewer low-income people compete for available jobs.
 - Keeping or gaining access to automobiles is positively related to the likelihood of employment.
 - Improved access to public transit is positively associated with maintaining employment but not with transitions to employment.
 - On earnings, both cars and transit access have a positive effect, though the effect for auto ownership is considerably greater.

Our analyses point to many implications for future research and data collection efforts, voucher-enhanced mobility programs, and strategies for coordinating housing and transportation policies in ways that enhance economic opportunity for low-income households:

- All levels of government, philanthropy, and the private sector should continue to pursue efforts to strengthen coordination of transportation and housing programs.
- Policymakers should rethink vehicle asset limitations and state-level policies that limit the value of the cars that participants in safety-net programs may own.
- Combining rental vouchers with subsidies for automobile purchases may be one possible approach to expanding the location choices available to low-income households.
- Short-term car rental services such as ZipCar and Car2Go have the potential to address the travel needs of some low-income adults at a lower cost, because users pay only for the transportation that they use.
- Housing search services should be tailored to the transportation needs of households receiving assistance.
- Voucher recipients would benefit from greater coordination of housing voucher assistance and nonprofit car donation and rideshare services.
- HUD would be well-advised to collect data on assisted tenants and their access to working

automobiles.

- Because the importance of automobile access may also reflect the inadequacy of public transportation, policies to enable households to move to transit-rich neighborhoods can also help participants retain employment.

HUD's Sustainable Communities Initiative helps communities and regions improve their economic competitiveness by connecting housing with good jobs, quality schools, and transportation.¹ Given their numerous negative environmental externalities, automobiles tend to be ignored in these planning efforts. Yet, as our research shows, automobiles are important to achieving many elements of the sustainability agenda because they are associated with improved access to high-opportunity and more livable neighborhoods. In other words, pursuit of the broader sustainability agenda may require some difficult trade-offs in the types of neighborhoods in which families live and in the means (the travel mode) by which they access opportunities.

¹ "Sustainable Communities Initiative." US Department of Housing and Urban Development, accessed February 10, 2014, <http://portal.hud.gov/hudportal/HUD?src=/hudprograms/sci>.

Introduction and Overview

In the 1990s and early 2000s the Department of Housing and Urban Development (HUD) sponsored two major experiments to test whether housing choice vouchers propelled low-income households into greater economic security. The first of these was the Moving to Opportunity (MTO) for Fair Housing program. Authorized by Congress in 1992, MTO was a tenant-based housing voucher program that, coupled with housing and counseling services, was designed to move low-income families from high- to lower-poverty neighborhoods, neighborhoods with poverty rates under 10 percent in 1990. The other was a tenant-based housing voucher program, the Welfare to Work Voucher program, (WTW) initiated in 1999 to help families currently receiving or eligible to receive welfare transition from public assistance into the labor market. Combined, these two programs produced experimental data (treatment and control) for voucher participants in 10 major US metropolitan areas: New York, Los Angeles, Chicago, Boston and Baltimore (from MTO); and Atlanta, Spokane, Augusta, Houston and Fresno (from WTW).²

Although slightly different, the two voucher programs' purpose was to assess whether low-income families benefitted from living in lower-poverty neighborhoods—either through improved neighborhood conditions or better economic and health outcomes.³ Research on the linkages between tenant-based housing assistance and residential outcomes suggests that households receiving vouchers choose to live in a wider range of neighborhoods than public housing residents and unassisted renters (Schwartz, 2010). However, over the long term, they still face hurdles when trying to secure housing in high-opportunity neighborhoods (Turner et al. 2011). Among other characteristics, high-opportunity neighborhoods have low poverty and high labor force participation rates, quality public services (schools, public transit, and other services), access to employment opportunities within a reasonable travel time, and are safe and healthy environments in which to live.

There is growing evidence that transportation—particularly access to automobiles—plays an important role in shaping the residential location choices and economic outcomes of low-income households. Automobiles and high-quality public transit services can enable participants to better search for housing as well as provide access to potential employment, services, and other opportunities within a reasonable travel time. Participants in both voucher experiments were asked questions about their transportation resources and use. Depending on the survey, they reported whether they had a driver's license, their access to automobiles, their commute mode, and their proximity to public transit. To date, however, transportation has not been a major focus of the research related to housing voucher participants.

This study aims to fill this gap. In a series of papers currently under consideration or in preparation for peer review, we have examined the following three general topics: (1) the sorting of housing choice voucher recipients into different neighborhoods and variation in neighborhood sorting by automobile ownership, (2) the role of transportation in voucher users' residential choices, and (3) how transportation access and residential location choice influence economic opportunity. (In this report, we summarize our findings from this body of research.)

Our findings underscore the positive role of automobiles in outcomes for housing voucher participants. Automobiles increase the likelihood that voucher participants will live and remain in high-

² While Los Angeles also hosted a WTW demonstration, there were no follow-up data collected there, so we exclude it from our experimental sample.

³ For more information on both programs, see Briggs et al. (2010), Orr et al. (2003), Patterson et al. (2004), and Sanbonmatsu et al. (2011).

opportunity neighborhoods—neighborhoods with lower poverty rates, higher social status, stronger housing markets, and lower health risks than neighborhoods in which those without cars live. Cars are also associated with improved neighborhood satisfaction and better employment outcomes. The importance of automobiles arises not because of the inherent superiority of the mode, but because public transit systems in most metropolitan areas are slow, inconvenient, and lack sufficient metropolitan-wide coverage to rival the automobile.

HUD's Sustainable Communities Initiative intends to help communities and regions improve their economic competitiveness by connecting housing with good jobs, quality schools, and transportation.⁴ Given their many negative environmental externalities, automobiles tend to be ignored in these planning efforts. For example, the listing of FY2011 Sustainable Communities Grantees includes many references to transportation, particularly efforts to improve the linkage between affordable housing and public transit.⁵ Not a single grantee lists efforts to increase low-income households' access to automobiles. Yet, as our research shows, automobiles are important to achieving many elements of the sustainability agenda because they are associated with improved access to high-opportunity, more livable neighborhoods. In other words, pursuit of a sustainability agenda may require some difficult trade-offs.

Background

In this section, we briefly discuss the academic literature relevant to our study. We emphasize two major strands of literature: (1) theoretical and empirical works that examine the linkages among transportation, residential location decisions, and economic outcomes for low-income households, and (2) studies that focus specifically on those receiving federal housing assistance, emphasizing the role that HUD subsidies play in helping households secure housing in neighborhoods that provide access to social and economic opportunities.

Residential Location, Transportation, and the Poor

It is widely acknowledged that transportation plays an important role in shaping the residential location and economic outcomes of low-income households. Muth (1969) and Alonso (1964) were the first to examine the role that transportation costs play in household location decisions. These authors argue that utility-maximizing households will make trade-offs between housing costs and intra-regional accessibility, with more centrally located locations offering higher accessibility to employment and more suburban locations offering lower housing prices, all things else equal. If the income elasticity of demand for housing exceeds the income elasticity of demand for savings in commuting costs, higher-income households will choose more distant locations to consume a larger housing bundle, while lower-income households will choose smaller housing in more accessible central-city locations. LeRoy and Sonstelie (1983) expand upon this model to argue that the availability of a public transportation system may also induce centralization of low-income populations, if the costs of owning and operating an automobile are prohibitively high and public transportation is only accessible within more centrally located areas.

While subsequent research offers only mixed support for these initial models, many studies still find a relationship between transportation, housing search, and residential location choice (Abraham and Hunt

⁴ "Sustainable Communities Initiative," US Department of Housing and Urban Development, accessed February 14, 2014, <http://portal.hud.gov/hudportal/HUD?src=/hudprograms/sci>.

⁵ "HUD FY2011 Sustainable Communities Grantees" US Department of Housing and Urban Development, accessed February 14, 2014, http://portal.hud.gov/hudportal/documents/huddoc?id=FY2011RegGrantees_noDist.pdf.

1997; Levine 1998; Rodriguez et al. 2011). The literature on residential satisfaction also finds that various transportation-related factors, including measures of walkability and land use mix (Yang 2008), proximity to public transportation (Baum et al. 2009), access to walking and biking paths (Kearney 2006; Chapman and Lombard 2006), and more general measures of accessibility to jobs and social services (St. John and Clark 1984) are significant determinants of one's satisfaction with his or her residential environment. Schwanen and Mokhtarian (2004) find that automobile access interacts with geographic location in influencing the disparity between households' preferred and actual neighborhood choices.

Transportation also is a significant determinant of the economic outcomes of low-income families. Low-income, inner-city residents suffer from a "modal" mismatch, a drastic divergence in the relative advantage between those who have access to automobiles and those who do not (Blumenberg and Hess 2003; Blumenberg and Ong 2001; Grengs 2010; Kawabata 2003; Ong and Miller 2005; Shen 1998; Taylor and Ong 1995; Wyly 1998). In almost all metropolitan areas, individuals without reliable access to automobiles can reach far fewer opportunities within a reasonable travel time compared with those who travel by automobile (Benenson et al. 2010; Blumenberg and Ong 2001; Grengs 2010; Kawabata 2009; Kawabata and Shen 2006, 2007; Ong and Miller 2005; Shen 2001, 1998).

Given this access advantage, it is unsurprising that private automobiles are positively associated with employment outcomes for low-income and minority adults. Cars facilitate searching for and commuting to jobs and therefore increase the likelihood of finding and retaining employment. Conversely, employment can provide households with the necessary resources to purchase automobiles; income is one of the strongest correlates of automobile ownership (Blumenberg and Pierce 2012; Giuliano and Dargay 2006; Schimek 1996). The importance of automobiles to employment persists even in studies that control for the simultaneity of car ownership and employment decisions. In general, automobile ownership is associated with higher employment rates, weekly hours worked, and hourly earnings (Raphael and Rice 2002). Automobile ownership also reduces racial disparities in employment rates (Raphael and Stoll 2001) and unemployment duration (Dawkins et al. 2005).

Automobiles can be particularly important for low-income women who often juggle paid work with household-serving responsibilities and would benefit greatly from the flexibility offered by driving (Blumenberg 2004). Many studies have examined the effect of automobile ownership on outcomes for welfare participants—largely poor, female-headed households. These studies produce similar results: a positive association between household automobiles and employment rates, the likelihood of leaving welfare, and an increase in earned income (Baum 2009; Cervero et al. 2002; Gurley and Bruce 2005; Lucas and Nicholson 2003; Ong 2002; Sandoval et al. 2011).

For low-income households without access to automobiles, public transit is essential (Garrett and Taylor 1999), which is why many of them choose to live in dense, transit-rich urban neighborhoods (Glaeser et al. 2008). However, despite transit's importance, findings on the relationship between public transit and employment outcomes are mixed, likely because employment access by public transit—even in the transit-richest of urban areas—still pales in comparison to access by automobile. In their study of welfare recipients in six major US metropolitan areas, Sanchez and colleagues (2004) conclude that access to fixed-route transit and employment concentrations had virtually no association with welfare recipients' employment outcomes. Transit access appears to make a difference among households without cars. For this subset of the poor, transit-based employment accessibility can positively affect the probability of employment (Kawabata 2003; Yi 2006) and of working 30 hours or more per week (Kawabata 2003). Similarly, studies of welfare recipients show that higher levels of transit service increase the likelihood of finding jobs (Ong and Houston 2002) and reduce time on welfare (Alam 2009).

Residential Location, Transportation, and Subsidized Housing Residents

Despite this body of literature, few studies focus on the relationship among transportation resources, residential location, and employment outcomes of subsidized housing residents. Yet overcoming transportation barriers and improving access to employment were two of the underlying objectives of the voucher experiments. In part, vouchers were intended to facilitate families' moves to transit-rich neighborhoods in close proximity to employment and other destinations. For example, in early text about the WTW program, the authors wrote: "Search assistance can be an effective technique for educating families about and encouraging them to rent near high-employment areas, day care centers, public transportation, etc." (US Housing and Urban Development, 2000: 1-7.)

There are a few exceptions, largely using data from the MTO program. Both the interim and final MTO evaluations examine the effect of voucher access and living in a low-poverty neighborhood on "transportation access" (Orr et al. 2003 Sanbonmatsu et al. 2011). In these evaluations, transportation access is defined as the share of adults with a working car or the share that lives less than a 15-minute walk to public transit. Using this measure, almost everyone in both samples—95 percent of the interim sample and 94 percent of the final sample—had access to transportation. The combined measure conflates modes with very different characteristics. Thus, it is not surprising that the program at either point in time did not have a statistically significant effect on transportation access, perhaps because the measure was too broadly defined.

Transportation does not appear to factor into a family's decision to move. In the interim evaluation, participants were asked to state their most important reason for moving (Orr et al. 2003). Less than one percent (0.2%) of participants cited a desire to move to obtain "better transportation." Clampet-Lundquist and Massey (2008) find that access to automobiles did not influence the likelihood of using a voucher to move.

Once households decide to move, transportation can positively influence their successful use of a housing voucher. Shroder (2002) finds that access to a car or a driver's license increases the likelihood that MTO program participants successfully found and secured a lease using their housing voucher.

Transportation also affects the types of neighborhoods that participants considered and to which they moved. For example, Clampet-Lundquist (2004) studied households relocated from the DuBois HOPE VI project in Philadelphia and found that many were constrained in their housing search because of their lack of access to an automobile and their perception that suburban public transportation opportunities were limited (reviewed in Varady et al. 2010). Varady and Walker (2007) find that a major factor determining the location of moves is proximity to friends and relatives and the availability of public transportation. De Souza Briggs and colleagues (2010) find that families who relocated were also more likely to successfully lease up in a low-poverty neighborhood if, among other factors, they had consistent access to a car. Clampet-Lundquist and Massey (2008) find that households with automobiles were less likely to move to racially-integrated neighborhoods compared to households without cars.

Finally, two qualitative studies examined the relationship between lease-up locations and transit access. De Souza Briggs and colleagues (2010) used mixed research methods—interviews, ethnographic fieldwork and analysis of survey data—to produce the most extensive findings on the relationship between transportation resources and key outcomes for MTO participants. In Boston, New York, and Los Angeles, MTO participants who relocated tended to move from transit-rich inner cities to suburbs, which require the use of a car to take advantage of jobs and services. Moreover, about 15 percent of mothers interviewed by the authors identified giving up convenient access to transit as a price they had paid to live in safer neighborhoods. The lack of transit options in their new neighborhoods subsequently presented a major obstacle to those who had moved and did not have cars.

In their interviews with 67 MTO families in Baltimore, Turney and colleagues (2006) find similar results. MTO participants who relocated often lived further away from their jobs and in neighborhoods with less dense transportation networks. Turney's (2006) study also provides evidence suggestive of the importance of car ownership for capitalizing on economic opportunities. Half of those who were employed among those assigned to the experimental group—those obligated to move to a lower-poverty neighborhood in order to lease up—owned a car, as opposed to only one unemployed respondent in this subgroup. Still, the links between transportation assets and employment are few and indirect in studies utilizing MTO data.

Data

In this section, we describe the primary databases used to perform the analyses outlined in this report. In the 1990s and early 2000s HUD sponsored two major experiments to test whether housing choice vouchers propelled low-income households into greater economic security. These programs, Moving to Opportunity for Fair Housing (MTO) and Welfare to Work Vouchers (WTW), each produced a rich dataset describing households with housing vouchers. While both studies were experimental in nature—providing some households with a housing voucher while keeping others in a nonvoucher control group—there were key differences between the experiments and therefore the nature of the data they produced. This section provides a brief background on these two experiments and describes the datasets used to complete our analyses.

The purpose of MTO was explicitly to test whether poor public housing households with children benefitted from living in low-poverty neighborhoods. (For more information about MTO, see Sanbonmatsu et al. 2011; Orr et al. 2003; and Briggs et al. 2010.) At the outset of the experiment, project guidelines stipulated that all households have at least one child present. In particular, HUD hypothesized that relieving part of a household's housing burden and requiring lease-up in a neighborhood with a poverty rate below 10 percent as of 1990 would improve many of the household's social and economic outcomes. Between 1994 and 1998, eligible (and willing) households in five metropolitan areas were randomly assigned into three groups. The MTO Treatment Group received Section 8 housing vouchers only useable in areas of less than 10 percent poverty as measured by the 1990 census. The Section 8 Comparison Group received identical Section 8 vouchers, but faced no geographic restrictions. The Control Group remained in project-based public housing. The use of three groups allowed causal analysis of the effect of vouchers versus no vouchers—that is, mobility choice versus no mobility choice—as well as the effect of moving into low-poverty neighborhoods.

Three MTO surveys were conducted. Between 1994 and 1998, baseline data were collected on 4,604 families when they were randomized into one of the three groups. An interim survey was conducted in 2002 including 4,252 of these households; the survey excluded 356 families in Los Angeles whose randomization occurred between December 1997 and the end of randomization in July 1998. A third and final survey was conducted in 2008, 10 to 15 years after randomization, on all the families randomly assigned in the MTO demonstration. Our analyses make use of data from the baseline survey, interim survey, and final surveys, along with a "residential spell file" that provides geocoded information linking each household to their residential location at baseline and following each residential relocation.

The WTW experiment targeted low-income households to learn the effect of receiving housing assistance on households' neighborhood locations, obtaining and retaining employment, and welfare dependency. (For more information on WTW, see Patterson et al. 2004.) All the recipients of WTW vouchers had already applied for housing vouchers from local public housing agencies but had been placed on the waiting list. The use of mobility vouchers was appealing because in theory, families could

choose to move into neighborhoods that optimized their ability to find or maintain employment. Another distinction between the experiments was that WTW households were not required to use their vouchers in low-poverty neighborhoods. For the most part, the housing agencies that implemented WTW did not provide counseling on mobility, housing search, or employment to experimental households beyond the level normally provided to their tenants (Patterson et al. 2004, 33).

Baseline WTW data were gathered in 2000 and 2001 at the time of the randomization in which 7,684 households were assigned to one of two groups: the treatment group that received housing vouchers and the control group that did not. Like MTO, WTW treatment and control group households came from five (non-MTO) metropolitan areas. The random assignment allows researchers to analyze WTW data to infer the effects of receiving a voucher on location choice, employment, and welfare dependency.

Together, there are voucher treatment and control data for people who began the experiments in 10 major US metropolitan areas: New York, Los Angeles, Chicago, Boston, and Baltimore (from MTO); and Atlanta, Spokane, Augusta, Houston, and Fresno (from WTW). While Los Angeles also hosted a WTW demonstration, there were no follow-up data collected there, so we exclude it from our analyses. (Participants in these experiments could move to other metropolitan areas; we did not include any households in our analysis that moved to locations outside the 10 case study regions.)

We also use Form HUD-50058 data describing housing choice voucher tenants as a comparison point to the voucher data. The housing choice voucher tenant data are gathered by housing agencies who report on households participating in public housing or Section 8 rental subsidy programs. Housing agencies collect and electronically submit information to provide HUD with a picture of people who participate in subsidized rental housing. We obtained an extract of 50058 data from HUD's Office of Policy Development and Research. This data concerned households with tenant-based vouchers for 2000 and 2002 for all the counties in all 10 of the metropolitan areas in which the MTO and WTW experiments took place. This allows us to describe the location of all voucher holders in these 10 metropolitan areas in relation to the households involved in the experiments.

The housing choice voucher tenant data provide basic demographic variables: age, race, household composition, and income. They also include a "project-based" flag, indicating that the household's subsidy is tied to a particular location. We exclude these from our sample in order to compare only voucher-eligible (mobile) households across the datasets. Throughout, we compare housing choice voucher tenant data and experimental data only from the same metropolitan areas.

In addition to these data sources, we rely on publicly available data provided for census tracts from many sources to characterize the sustainability dimensions of neighborhoods. We describe these data in more detail in a subsequent section of the report.

Research Questions

Using the data described above, we examine three primary research questions. Each question is informed by many separate analyses.

- *How do Housing Choice Voucher recipients sort into different neighborhoods?* Answers to this question extend work by Pendall (2000), Been and colleagues (2010), and Galvez (2010), identifying (1) the array of neighborhood social and built environments that HUD voucher recipients inhabit, (2) how the neighborhood characteristics of HUD voucher recipients compare to those of other HUD-assisted households, and (3) differences among HUD voucher recipients in their neighborhood environments. Information about current residential choices across a range of

metropolitan contexts (small to large, weak to strong economies, transit-rich to auto-dependent) provide valuable baseline information for ongoing and future Sustainable Communities research, planning, and policy efforts. To address this question, we (1) characterize the neighborhoods inhabited by MTO and WTW participants in terms of their sustainability dimensions, and (2) examine patterns of sorting across each of these dimensions, paying particular attention to the differences in sorting patterns between those with and without access to vehicles.

- *What role does transportation play in voucher users' residential choices?* Answers to this question identify the effect of transportation assets on the residential location decisions of HUD households, and for which households transportation appears to be most important. This research also contributes to Sustainable Communities efforts by enhancing our understanding of housing and transportation connections and how they vary across metropolitan areas. It also contributes to HUD's responsibility to affirmatively further fair housing by identifying transportation-related barriers to the integration of minority voucher users. To answer this question, we examine the influence of transportation access on three dimensions of location choice: (1) locational attainment, (2) neighborhood satisfaction, and (3) dynamic patterns of residential mobility. Each analysis, with the exception of the neighborhood satisfaction analysis, is conducted for a sample of MTO and WTW households.
- *How do transportation access and residential location choice influence economic opportunity?* As part of the Sustainable Communities agenda, HUD has funded initiatives intended to "enrich the social and economic health" of communities.⁶ Thus, it is important to understand not only the residential location choices of program participants, but also the effect of these choices on specific outcome measures. To address the above question, we examine the influence of transportation access on employment and earnings. For MTO participants, we examine the exposure of households to "access opportunity neighborhoods," which we define as census tracts in the top quartile of their metropolitan area for employment and public transit availability. Then we examine the influence of transportation access on employment transitions for those in the MTO and WTW program. We conclude with an analysis of the joint relationships among automobile ownership, residential location in transit-rich neighborhoods, and earnings for MTO participants.

The next several sections provide summaries of our findings, organized according to the three research questions posed above.

How Do Housing Choice Voucher Recipients Sort into Different Neighborhoods?

To answer the first research question we undertook two operations. First, we created a new multidimensional definition of neighborhood sustainability, applying it to the 10 metropolitan areas in the two experiments. Second, we analyzed the differences in neighborhood attainment between the experimental households that had access to cars and those who did not.

Defining Neighborhood Sustainability

In this section, we operationalize neighborhood sustainability with reference to six major dimensions: natural environment, functional environment, social environment, economic vitality, security, and access

⁶ See the announcement of the Sustainable Communities Research Grant program, "Transformation Initiative: Sustainable Communities Research Grant program," Grants.gov, accessed February 14, 2014, <http://www.grants.gov/web/grants/view-opportunity.html?oppId=230694>.

to opportunity. We assemble relevant indicators from available local and national data and construct measures that reflect key conceptual components of our dimensions, which we refer to as subdimensions. We then apply these dimensions to the 10 metropolitan areas in which the MTO and WTW experiments were carried out, showing important variations within and among metropolitan areas in desirable neighborhood characteristics.

Dimensions and Subdimensions of Neighborhood Sustainability

The task of measuring and classifying neighborhood sustainability began with defining six major dimensions of sustainability: natural environment, functional environment, social environment, economic vitality, security, and access to opportunity. We identified these dimensions based on a review of the neighborhood opportunity, livability, and sustainability indicator literature, grouping these into sets of characteristics that provide for a series of basic needs. Using these dimensions, we built a comprehensive database of neighborhood indicators, which we created by assembling a range of measures related to each dimension. We were able to develop indicators related to five of the six dimensions using national data; for the sixth, security, we collected data from local sources, but were able to obtain data only for central cities of most of the 10 metropolitan areas in our study area. The data sources included the 2000 US census, the National Land Cover Database, and indices produced by other organizations. Table 1 summarizes the various dimensions around which we assembled the data.

Table 1. Dimensions and Subdimensions of Neighborhood Sustainability

Dimension	Subdimension
Natural environment	<ul style="list-style-type: none"> • urbanization • highway proximity • health outcomes • environmental hazards
Functional environment	<ul style="list-style-type: none"> • housing market strength • housing diversity • transit access
Social environment	<ul style="list-style-type: none"> • level of household distress • socioeconomic status of residents
Economic vitality	<ul style="list-style-type: none"> • level of household distress • housing market strength • presence of neighborhood work opportunities • density of income
Security	<ul style="list-style-type: none"> • incidence of violent and property crime • public perceptions of safety
Access to opportunity	<ul style="list-style-type: none"> • access to high-quality elementary schools • job access

Source: Authors' data.

To reduce the list to a more manageable number for analysis and to assess underlying concepts, we followed two procedures. First, we produced correlation matrices of the indicators within each dimension. Where multiple indicators were clearly important for capturing the dimension and appeared largely independent of one another, we created subdimensions. Some sets of indicators were highly correlated and could be replaced by a single representative indicator. For others that were strongly related but not easily represented by a single measure, we used principal components factor analysis to produce a single factor score from all the component indicators within a subdimension. Each dimension includes between

two and four subdimensions.

In some instances, subdimensions can be a component of more than one dimension. The calculation of these subdimensions is the same across dimensions. Categorizing a subdimension within more than one dimension does not mean that a set of indicators is weighted more heavily in our analysis, but that we interpret any findings related to that subdimension through the lens of more than one broader dimension. For example, we do not weight our index for housing market strength more heavily than the other subdimension measures, but we consider what its relationship to other neighborhood characteristics and voucher household patterns suggests about functional environment and economic vitality.

Each neighborhood consists of a mix of these six dimensions, each of which will have different importance for different residents. Neighborhoods differ from one another in part because different kinds of households want and need different things from their residential environments. Young singles often want to live in lively places where they can meet each other and get easy access to work and nightlife. Families with kids usually value parks, playgrounds, good-quality schools, and convenient shopping. Everyone wants “security,” but people’s thresholds for what feels secure vary by age, gender, and other characteristics, and there is sometimes a trade-off between safety and liveliness. For these reasons, a single scale for neighborhood sustainability, livability, or opportunity may not apply to all households. Instead, it makes sense to develop scales for the different dimensions of neighborhood characteristics that people balance in different ways when they decide where to live.

We describe the indicators used to capture each of these dimensions below:

Natural Environment

Here, we consider both the amenity aspects of a neighborhood’s natural environment—access to nature and open space, most importantly—and the threats posed by the neighborhood environment from pollution and noise. We divided the natural environment dimension into four subdimensions. Three measures reflect environmental hazards of different kinds that are not well correlated with one another: percent of the tract’s area within one mile of a facility listed on the EPA’s 2000 Toxic Release Inventory (TRI);⁷ an index of cancer risk from the 2002 National-Scale Air Toxics Assessment;⁸ and proximity to major highways, calculated as the percent of land in a census tract lying within 200 meters of major highways as georeferenced in the 2000 Census TIGER files.⁹ The weak empirical relationship among these hazards was expected, given the many factors that may be associated with neighborhoods’ elevated cancer risk, proximity to highways, and proximity to registered toxic facilities. We include all of them in our analysis because there is a clear conceptual relationship among them, and each can have serious implications for a neighborhood’s livability and sustainability. In all three cases, a higher score indicates a living environment most people would consider lower-quality. While access to highways may represent opportunity for some households, exposure to a major highway within 200 meters has noise and air pollution impacts that can impair health, especially for children.

For the urbanization subdimension, the key indicators were percent of census tract that is open space,

⁷ Environmental Protection Agency. “2000 Toxics Release Inventory (TRI) Public Data Release Report: Executive Summary,” Environmental Protection Agency, last modified February 17, 2014, <http://www2.epa.gov/toxics-release-inventory-tri-program/2000-toxics-release-inventory-tri-public-data-release-report>.

⁸ Environmental Protection Agency. “2002 National-Scale Air Toxics Assessment (NATA),” EPA, accessed March 10, 2014, <http://www.epa.gov/nata2002/>.

⁹ US Census Bureau. “Census 2000 Tiger/Line Shapefiles,” US Department of Commerce, accessed March 10, 2014, <http://www.census.gov/geo/maps-data/data/tiger-line.html>.

percent of tract that is water, and percent of tract that is developed for urban uses, calculated from the 2001 National Land Cover Database.¹⁰ Percent of urban developed land was strongly correlated with the other indicators, and most fully represents the concept of urbanization, so we use that indicator alone as our measure of urbanization. We do not infer a clear relationship between level of urbanization and quality of life, though a higher score would indicate a more urbanized environment and a lower score a more suburban or rural one.

Functional Environment

This set of characteristics conveys those features of the neighborhood's built environment that make it livable for residents, even if they have financial, mobility, and other limitations. We consider three subdimensions of functional environment: housing market strength, housing diversity, and transit access. Our initial list also included a walkability subdimension, but we dropped walkability due to data availability constraints.

We group together vacancy rate, percent owner-occupied housing units, and median gross rent as indicators of neighborhood housing market strength. All three measures are from the 2000 decennial census summary file 3.¹¹ To control for variation in the rental market across our sites, we standardized median gross rent by metropolitan area and used the resulting z-score as the indicator. The standardization process means that the resulting indicator reflects a given neighborhood's median rent relative to other neighborhoods in that metropolitan area. Each indicator reflects a unique aspect of housing market strength and we thus relied on factor analysis to construct that subdimension. As expected, vacancy rate had a negative coefficient (meaning higher vacancy rates suggest lower sustainability), while the other two indicators had positive coefficients. Thus, a higher score on the housing market strength dimension indicates a stronger housing market and usually a more attractive or appealing neighborhood. See appendix A for more details on the factor analysis.

We used a similar process to create a single measure of housing diversity, composed of diversity of residential structure type, average of residential density, and percent of very old and very new housing. We again relied on factor analysis, and the resulting score serves as our measure (see appendix A for more details on the factor analysis). A higher score on the housing diversity dimension indicates a more diverse housing stock. As discussed in the background chapter, housing diversity is valued strongly by some contemporary urban designers and city planners. Individual satisfaction levels are somewhat higher, however, in exclusively single-family neighborhoods than in neighborhoods with diverse housing stock even after adjusting for individual and housing-unit characteristics. We thus do not associate this dimension with either a more or a less desirable outcome.

We examined transit access as a unique subdimension of functional environment. Our single indicator of transit access is the FHEA (Fair Housing Equity Assessment) transit access index created by HUD.¹² This index used data from public transit agencies to assess relative accessibility to amenities

¹⁰ Multi-Resolution Land Characteristics Consortium. "National Land Cover Database 2001 (NLCD2001)," Multi-Resolution Land Characteristics Consortium, accessed March 10, 2014, <http://www.mrlc.gov/nlcd2001.php>.

¹¹ US Census 2000, "Summary File 3," US Census Bureau, last modified October 13, 2011, <http://www.census.gov/census2000/sumfile3.html>.

¹² In 2012, HUD created a database to support grantees of the Sustainable Communities Regional Planning Grant program in the preparation of their FHEAs. The data file included indicators for a wide array of neighborhood conditions at the block-group level, using 2010 census tract boundaries. HUD provided a readable version of the national file to the research team for use in this project. We imputed

within metropolitan areas. Higher values indicate greater access to transit; values of one indicate no transit availability. Because of uniformly low index values for almost all tracts in three of the five WTW metropolitan areas (Atlanta, Augusta, and Spokane), we chose not to use this indicator for the neighborhood analysis for the WTW group.

Social Environment

These characteristics express important aspects of the social and demographic makeup of the neighborhood, including the level of household distress and the socioeconomic status of residents. Our measures for this dimension all came from the 2000 decennial census summary file 3.¹³

Our conception of social environment includes two subdimensions: household distress and social status. We selected four measures to indicate household distress: labor market participation rate, number of households on public assistance, poverty rate, and median household income (converted to z-scores within each metropolitan area to account for variation among metropolitan areas). These were all highly correlated with one another. We chose poverty rate as a single measure of this subdimension because it has the strongest relationship with the other indicators and is most clearly associated with household distress in the literature.

We considered social status a conceptually separate subdimension of the social environment. We collected three indicators of social status. The first is a single variable meant to encapsulate the variation of racial composition: the percent of white households, standardized by metropolitan area to control for variations in racial composition across our sites. The second indicator is the percent of population age 25 and over with a high school diploma. The third is the percent of female-headed households. We performed a factor analysis because we believed each was relevant to social status. All three indicators were positively associated with the resulting factor score, in which higher values associate with higher levels of social status. See appendix A for more details on the factor analysis.

We placed racial composition in this social status subdimension rather than the household distress subdimension because although mostly black and mostly Latino neighborhoods continue to have high levels of household distress, the correspondence between race and distress is complex. Neighborhoods with higher percentages of whites, college-educated residents, and two-parent households usually have low levels of household distress. Conversely, however, neighborhoods with low socioeconomic status are not always seriously distressed. We decided not to consider racial composition separately so as to highlight the aspects of racial composition that associate with social status and to separate it from those that correlate with household distress.

Economic Vitality

A neighborhood's economic vitality comes from a composite of characteristics that include both the presence of work opportunities in the neighborhood and the density of population and income in that area. Our best available measures for this dimension come from the 2000 decennial census Summary File 3.¹⁴

For the dimension of economic vitality, we include two previously considered subdimensions, household distress and housing market strength, as well as economic activity and income density. The additional subdimensions are each represented by a single indicator. For economic activity, we calculated

these values to 2000 Census Tract boundaries.

¹³ US Census 2000, "Summary File 3."

¹⁴ Ibid.

job density as total jobs per square mile, as reported in the 2000 Census Transportation Planning Package.¹⁵ We also included aggregate income density, computed using the estimated aggregate income from Summary File 3 of the 2000 census,¹⁶ and then standardized the results by metropolitan area to control for differences among sites.

Security

A neighborhood's sense of security is measured by the incidence of violent and property crime and public perceptions of safety in the neighborhood. Reported crime data are unavailable for full metropolitan areas, because each county or city individually decides whether or not to make data available to the public. Where data are available, they may not be available for the time periods needed. Finally, jurisdictions that do report data apply different standards for the crime records to be included, the information to be reported, and how the crimes are reported, making aggregation and comparison difficult.

We collected crime data in various ways in each of the case-study areas. For Atlanta, Baltimore, and Chicago, we utilized publicly available point-level crime records for varying years. Each crime incident contained address or coordinates that we then mapped to 2000 census tract boundaries. We calculated the number of violent crime incidents in a given year for each census tract and divided by the estimated population of the tract in the year the crime data was collected, using a linear interpolation between 2000 and 2010 census population figures to create a measure of number of violent crimes per 100,000 inhabitants on the census tract level. Finally, within each metropolitan statistical area, we ranked the census tracts by violent crime rate and categorized them by quartile to establish low, low to moderate, moderate to high, and high crime neighborhoods. For three other sites of our study (Boston, Houston, Los Angeles), we used data from the National Neighborhood Crime Study (Peterson and Krivo 2010). The study provided census tract-level statistics for these three sites, including the sum of violent crimes over 1999–2001. We used this figure and 2000 census population statistics to create a violent crime rank and quartile categories consistent with the assignments for the sites with public crime records. We were unable to secure reliable crime data for the central cities of the other four metropolitan areas or for suburban areas of these six metropolitan areas.

To gauge perceptions of neighborhood safety, we used questions from the interim and final surveys for MTO and WTW, respectively. Like the crime data, the survey data were available for only some of the tracts in the metropolitan area; unlike the crime data, however, survey responses were available beyond the central cities and in all 10 metropolitan areas.

Access to Opportunity

The neighborhood's access to opportunity, unlike the other dimensions, is a function mainly of what the neighborhood is close to rather than what it contains. The availability of jobs is important here, as is access to high-quality elementary schools. Access to opportunity is characterized by the availability, proximity, and quality of educational and employment opportunities and critical public service functions. We include only one subdimension for this dimension, school quality, as represented by HUD's FHEA school quality index. The school quality index uses elementary school data on the performance of students in state exams to produce a score for each tract, based on the closest elementary schools. Job access is a second critically important measure of access to opportunity. We were unable to obtain reliable data on this measure for all metropolitan areas and therefore do not include it in this report.

¹⁵ Federal Highway Administration. "Census Transportation Planning Products 2000 Data Products," US Department of Transportation, accessed March 10, 2014, http://www.fhwa.dot.gov/planning/census_issues/ctpp/data_products/2000dataproduct.cfm.

¹⁶ US Census 2000, "Summary File 3."

Neighborhood Sustainability Dimensions for MTO and WTW Metropolitan Areas

The MTO and WTW metropolitan areas differ in a series of important ways that stand out when reviewing the sustainability dimensions (table 2). First, the MTO metros have many more tracts than the WTW metropolitans. Three of the MTO metropolitan areas—Chicago, LA, and New York—each have more tracts than the 1,893 tracts in all five WTW metros combined. The diversity within these large metropolitan areas is also substantial, but a full review of that diversity is beyond the scope of this report. The smallest WTW metropolitan areas, Augusta and Spokane, have only 95 and 104 tracts respectively, and the largest, Houston, has fewer tracts than all but the smallest MTO metropolitan area, Baltimore.

Table 2. Mean Levels of Sustainability Subdimensions and Their Factor-Score Contributors, Moving to Opportunity and Welfare to Work, 2000–2001

	MTO					WTW				
	Baltimore	Boston	Chicago	LA	NYC	Atlanta	Augusta	Fresno	Houston	Spokane
Number of tracts	601	832	1,958	2,564	4,307	675	94	154	864	104
Natural environment										
Land within buffer of TRI site (%)	16.6%	64.6%	65.5%	24.2%	57.3%	28.9%	24.9%	26.2%	38.4%	37.2%
Log of cancer risk score	3.8	3.8	3.8	4.1	4	3.8	3.4	3.5	3.7	3.5
Land within 200m of major highway (%)	27.5%	24.0%	17.5%	13.4%	22.7%	17.30%	16.9%	10.30%	11.0%	10.2%
Land developed as urban uses (%)	68.6%	72.4%	87.7%	93.2%	87.5%	57.20%	45.9%	66.90%	75.3%	71.4%
Functional environment										
Housing market strength factor	0.1	0.1	0.1	0	-0.1	0.1	-0.1	0	-0.1	0.1
Vacancy rate (%)	7.9	4	6.4	4	5.4	5.9	10.2	6.1	7.9	6.6
Owner-occupied housing units (%)	66.8%	59.9%	61.6%	52.7%	51.2%	66.1%	69.1%	57.7%	62.5%	67.7%
Median gross rent (\$)	669	803	700	857	836	727	505	572	637	582
Housing diversity factor	-0.3	0.2	-0.1	-0.3	0.2	-0.1	-0.2	0.1	0.1	0.2
Diversity index of structure type	0.5	0.6	0.6	0.6	0.6	0.4	0.4	0.5	0.4	0.4
Housing density (dwellings/acre)	7.9	8.8	9.3	8.2	21.2	3	2.3	3.3	3.9	3.4
Housing 50+ years old (%)	12.4	7.6	10.2	7.9	6.3	25.5	20.3	17.5	17.5	16.9
Housing <11 years old (%)	30.6	45.5	36.3	21.5	42.8	10.4	13.6	15.2	10.5	27.4
FHEA transit index	45.4	41.2	52.6	49.4	32.8	1.8	1.0	1.0	36.2	44.2
Social environment										
Poverty rate	12	10	13.5	16.2	14.5	12.1	17.9	22.5	14.9	13.1
Social status factor	0.02	0.09	0.02	-0.05	-0.01	0.02	-0.06	-0.11	-0.01	0.15
Non-Hispanic white (%)	63.4	78.4	52.9	36.6	50.8	56.3	58.2	41.1	46.9	89.4
Female-headed households (%)	34.5	31.7	32.9	28.4	33.4	31.4	33.7	28.2	27.5	28.9
Adults with college degree (%)	25.9	36.1	26.3	24.7	27.6	28.6	19.3	16.9	23.9	24.4
Economic vitality										
Aggregate income/square mile (in millions of dollars)	113	194.6	218	195.7	629.3	51.1	21.8	52.9	75.1	50.2
Nat log of job density/sq mi	6.65	7.19	7.25	7.5	7.9	5.84	4.99	6.1	6.25	5.98
Job density per square mile	2,570	4,179	4,188	3,521	12,403	1,754	951	1,460	1,726	1,631
Access to opportunity										
FHEA school performance index	48.6	50.2	44.2	49.7	49.1	50.3	43.8	39.6	51.4	54

Source: Authors' calculations. For details on variable construction, see appendix A.

Notes: TRI is Toxic Release Inventory. FHEA is Fair Housing Equity Assessment.

Of the natural environment indicators, the WTW metropolitan areas stand out for being generally less urban than the MTO metropolitan areas. Boston, Chicago, and New York also have high exposure to TRI sites, while Los Angeles has a level closer to that of the WTW metropolitan areas, and Houston has a relatively high level of exposure to TRI sites (a function of its large oil and gas sector). MTO metropolitan areas also have higher cancer-risk scores, average shares of their tracts within 200 meters of a major highway, and average shares of their tracts developed with urban uses.

The functional environment indicators also show important differences between the MTO and WTW metropolitan areas. Two of the three subdimensions we developed for this dimension—housing market strength and housing diversity—are factor scores, each of which is the product of three variables. (Because the factor scores were developed separately for the two datasets, once for MTO and once for WTW, the scores can be usefully compared among metropolitan areas in the same dataset but not across the two datasets.) The MTO metropolitan areas generally have lower vacancy rates and homeownership rates and higher gross rents than the WTW metropolitan areas, with the exception of Baltimore. The MTO metropolitan areas also score higher on average housing diversity and density in their tracts. While New York stands out for density, it resembles Los Angeles and Boston in its level of structure-type diversity and Boston in its median housing age. The oldest average housing stock in the WTW metropolitan areas, about 47 years in Spokane, is younger than any of the MTO metropolitan areas. Finally, the FHEA transit index—which shows relative accessibility to amenities through public transit—also generally is higher in the MTO metropolitan areas than in the WTW areas. Atlanta, Augusta, and Fresno all have average scores around 1.0 because the vast majority of tracts within these sites were deemed inaccessible by HUD’s definition of the FHEA transit index. New York’s average FHEA transit index of only 32.8 is lower than we expected, and is similarly attributable to its many outlying census tracts receiving a value of one.

The metropolitan areas do not fall as cleanly into MTO versus WTW groups in their average social environments. The poverty rate, which we use as a proxy for overall neighborhood distress, is highest on average in Fresno (22.5 percent average across tracts) and Augusta (17.9 percent), but Atlanta and Spokane have poverty rates at the low end of the range (12.1 percent and 13.1 percent, respectively). Boston’s 10.0 percent average poverty rate is less than half of Fresno’s. The social status factor does not vary much across the metropolitan areas because we constructed it as two separate factor scores (one for each dataset), the exceptions being Spokane, with an average of 0.153, and Fresno, where the average was -0.11. The components of social status do vary substantially among the metropolitan areas, but again not in ways that distinguish MTO and WTW systematically. The California metropolitan areas and Houston all have average percent white non-Hispanic populations below 50 percent; Spokane’s tracts are predominantly white, with an average of almost 90 percent. Among the other metropolitan areas, only Boston is more than 70 percent white on average. The range of female headed households is more restricted, from Houston’s 27.5 percent to Baltimore’s 34.5 percent average. But the share of college graduates is more varied, with as few as 16.9 percent in Fresno on average and as many as 36.1 percent in Boston. (The MTO metropolitan areas uniformly have higher levels of college completion than the WTW metropolitan areas.)

We express the economic vitality of the tracts (i.e., what is happening inside the neighborhood rather than near it) through density of income of residents and of jobs (which can be held by people outside or inside the tract). Here again, the MTO metropolitan areas stand out because they are larger, older, and denser than the WTW metropolitans, starting with New York—the clear outlier, with an average of nearly \$630 million in household income per square mile in 1999 and over 12,400 jobs per square mile in 2000. Even excluding New York, however, the income density and job density in the MTO metropolitan areas is consistently higher than in the WTW metropolitan areas. Augusta’s average income density of only \$21 million per square mile, and its average job density of fewer than 1,000 jobs per square mile, identify it as a different place than most of the other metropolitan areas even in the WTW dataset (where Atlanta, Spokane, and Fresno have roughly comparable averages on both income and job density).

The sole access to opportunity metric we consider here is the FHEA school index. This index was computed such that it has an average score of 50. It is unclear why Fresno's average FHEA school index would be less than 40. Clarification of HUD's methods for constructing this index is pending. Other important considerations of accessibility are discussed in a subsequent chapter of this report, as are considerations of exposure to crime.

Neighborhood Typology

Our final analytic step was to develop a neighborhood typology incorporating all of the subdimensions we created except crime rates, which were available only for the central cities. For this step, we used cluster analysis to group tracts into sets based on their relative similarity to one another as measured by the indicators. We use a hierarchical cluster analysis using average linkage between groups based on squared Euclidean distances, which produces a series of potential clusters in stages, dividing previous clusters into new clusters at each stage. A measure of the average distance between cluster members serves as an indicator of the relative strength of each cluster solution. Choosing the optimal number of clusters is an experimental process in which we look for the strongest cluster solutions and examine the average values of the component indicators for each cluster both for plausibility of the solution (i.e., the analysis has produced neighborhood types with recognizable features) and for usefulness (e.g., a solution that does not lump all the tracts that are likely voucher destinations into a single cluster). Subdimensions which appear under more than one dimension enter the cluster analysis only once.

Because of the extreme range of values in two of our selected indicators, job density and aggregate income density, we performed two variable transformations. For job density, we use the natural log of the indicator, and for aggregate income density we use the natural log standardized by metropolitan area (i.e., the measure used is the z-score of the natural log). These changes caused distributions in the variables that more closely approximated a normal curve, eliminating dramatic skewing effects of extreme values on the construction of clusters.

Analysis of the MTO sites produced 4, 6, 8, 10, 12, and 15 cluster solutions. Comparing the cluster averages for our indicators and the distribution of tracts and MTO households across the clusters, we decided that the 15-member cluster solution provided the most convincing and useful grouping of neighborhood types. This solution consisted of a mix of identifiable neighborhood types, with poverty and relative affluence being important sorting factors but demonstrating variations based on our other dimensions. An initial analysis of the WTW sites revealed that over 70 percent of census tracts in Atlanta, Augusta, and Fresno had an FHEA transit index value of one, which is assigned to tracts located more than three quarters of a mile from either a bus or transit stop. We elected to omit this transit indicator from the WTW cluster analysis to avoid disproportionately weighting the tracts in these sites to group together because of their identical values. With this slightly reduced set of indicators for WTW sites, we identified solutions of 5, 6, 10 and 13 members. We concentrate our analysis on the 13-cluster solution, which performed the best in allocating tracts into recognizable groupings with members in each metropolitan area.

To simplify the interpretation of the large number of clusters produced, we divided the census tracts into groups based on the average poverty rate of the cluster to which they are assigned, creating low-, medium- and high-poverty bands. This method also addresses the problem that cluster analysis produces several clusters with very low tract counts, which can be analyzed more efficiently in combination with broadly similar clusters.

In broad terms, the clusters with the lowest average poverty levels rate favorably on other factors, while those with the highest average poverty levels have many other deficits. The poor neighborhoods are densely developed areas with little open space, weak economic activity, and occupied mainly by highly distressed households; the low-poverty neighborhoods are less dense spaces with stronger commercial

and economic growth and better-performing schools.

For the WTW sites, there are two low-poverty, four medium-poverty, and seven high-poverty clusters. Tables 3 and 4 display the clusters and average dimension values for clusters in the WTW and MTO sites. The two low-poverty clusters include a total of 893 tracts in which, compared with tracts in other clusters, less of the neighborhood's land area is urban, less is within 200 meters of a highway, schools have higher test scores, and social status is higher than in the average neighborhood. The great majority of the land area of the WTW metropolitan areas is in low-poverty tracts, but they account for about 47 percent of the tracts we classified into clusters. In all five WTW metropolitan areas, the low-poverty tracts cluster at the "macro" level (i.e., a level that is evident when viewing a map of the entire metropolitan area). In Atlanta, the large majority of tracts north of Interstate 20 are low-poverty tracts, especially those outside the I-285 beltway. Augusta's low-poverty tracts occupy a band running from northwest to southeast, with more disadvantaged tracts lying at the northeast and southwest fringes of the CBSA and on Augusta city's south side. Almost all of Fresno's low-poverty tracts occupy land northwest of SH 99, the main thoroughfare of the Central Valley. In Houston, I-45 is an important dividing line, with most low-poverty tracts sitting west of this main route between Galveston, Houston, and Dallas; this is true inside the city's two beltways as well, with a significant number of low-poverty tracts occupying a wedge on the city's west side. In Spokane, smallest of the five WTW metro areas, most of the low-poverty areas are south of I-90 or north of the city limits.

Table 3. Cluster-Factor Average Values, WTW Clusters

WTW Cluster	L1	L2	M1	M2	M3	M4	H1	H2	H3	H4	H5	H6	H7	Total
Number of tracts	443	450	183	328	228	11	71	109	40	3	15	6	4	1891
Buffer of Toxics Release Inventory facilities (%)	.18	.25	.26	.35	.47	.66	.71	.57	.64	.91	.65	.72	.71	.33
Nat log of cancer risk	3.62	3.63	3.69	3.64	3.71	3.88	3.97	3.79	4.07	4.16	4.01	3.82	4.17	3.68
Buffer of major highways (%)	.09	.12	.16	.13	.14	.16	.23	.19	.24	.16	.37	.40	.13	.13
Land area that is developed as urban uses (%)	.59	.58	.68	.65	.73	.95	.91	.84	.92	.99	.88	.81	.92	.66
Housing market strength factor	.55	.19	-.14	-.06	-.35	-.50	-.64	-.77	-1.01	-1.25	-1.12	-1.32	-1.39	.00
Housing diversity factor	-.46	-.22	.18	.06	.30	.36	.66	.69	.82	1.00	.85	1.04	1.38	.00
Poverty rate	5.47	8.50	13.40	13.46	21.46	22.27	29.75	35.68	42.47	46.04	54.29	65.05	71.20	14.58
Social status factor	.84	.42	-.45	-.12	-.53	-.43	-1.12	-1.16	-1.41	-1.78	-1.65	-1.70	-1.90	.00
FHEA school performance index	83.49	57.71	12.36	28.95	42.62	90.22	67.65	13.09	40.05	97.00	24.62	7.92	46.77	49.79
Z-score of the natural log of aggregate income density, by MSA	.11	-.10	.16	-.14	-.11	.24	.27	.09	.20	.57	.09	.00	.15	.00
Nat log of job density per sq. mi.	5.73	5.69	6.01	5.79	6.26	7.69	7.29	6.74	7.66	7.44	7.31	6.53	7.36	6.01

Source: Authors' calculations using data from sources detailed in appendix A

Note: MSA is metropolitan statistical area. FHEA is Fair Housing Equity Assessment.

Table 4. Cluster-Factor Average Values, MTO Clusters

MTO Cluster	L1	L2	M1	M2	M3	M4	M5	H1	H2	H3	H4	H5	H6	H7	H8	Total
Number of tracts	2,403	622	1,663	1,014	710	2,125	1,494	19	32	97	8	7	65	2	1	10,262
Buffer of Toxics Release Inventory facilities (%)	.28	.29	.58	.50	.46	.59	.63	.50	.51	.84	.78	.08	.73	1.00	1.00	.49
Nat log of cancer risk	3.72	3.92	4.11	4.01	4.08	3.96	4.08	4.30	4.34	4.33	4.23	4.01	4.10	4.22	4.44	3.96
Buffer of major highways (%)	.15	.17	.23	.20	.23	.21	.21	.18	.17	.25	.49	.10	.20	.25	.95	.20
Land area that is developed as urban uses (%)	.66	.90	.96	.93	.97	.86	.98	.94	.96	.98	.98	.95	.99	1.00	.98	.87
Housing market strength factor	.55	.57	-.08	-.06	-.06	-.19	-.50	-.92	-1.10	-1.16	-1.31	-.45	-1.41	-.96	-.94	.00
Housing diversity factor	-.58	-.40	.37	-.08	.36	.11	.41	.31	.37	.24	.42	-.38	.22	.18	.71	.00
FHEA transit access index	4.65	46.47	82.08	46.22	86.59	3.00	87.50	54.31	68.74	2.53	35.84	77.67	92.64	1.00	1.00	42.13
Poverty rate	5.03	5.47	12.48	14.96	15.06	16.90	24.45	41.10	42.41	44.57	52.73	61.53	62.67	93.97	100.00	14.25
Social status factor	.79	.76	-.04	-.31	.08	-.22	-.89	-.93	-1.31	-1.40	-1.44	.18	-1.43	-2.02	-1.65	.00
FHEA school performance index	75.99	79.05	45.38	28.29	77.35	31.66	17.35	79.47	45.81	78.00	20.27	96.50	11.47	29.97	69.90	48.36
Z-score of the natural log of aggregate income density, by MSA	-.65	.08	.57	-.01	.61	-.16	.40	.12	.03	.33	.01	-.36	-.43	-3.08	-5.24	.01
Nat log of job density per sq. mi.	6.37	7.30	8.39	7.50	8.45	7.54	8.03	8.78	8.28	9.17	7.73	8.99	8.27	8.98	7.59	7.55

Source: Authors' calculations using data from sources detailed in appendix A.

Note: MSA is metropolitan statistical area. FHEA is Fair Housing Equity Assessment.

The high-poverty WTW clusters differ from the low-poverty clusters in several ways. They tend to have a higher than average share of urban developed land, very weak housing markets, much lower than average expected social status, and school performance that ranges from average to very poor. In Atlanta and Houston, most high-poverty tracts are close to the center of the region; metropolitan Atlanta's high-poverty neighborhoods are concentrated inside the I-285 beltway, and Houston's lie inside Beltway 8, its second loop road. Both metropolitan areas also have smaller cities (Marietta and Galveston, respectively) with a few tracts in high-poverty clusters. Spokane's high-poverty tracts also cluster in the center of the region. In Augusta and Fresno, by contrast, tracts in high-poverty clusters take two patterns: some line up along major highways while a few others are in outlying rural areas.

The middle-poverty group of WTW clusters includes a variety of environments that sorted into four main groups. The two largest clusters are M2 (328 tracts) and M3 (228 tracts). Compared with M3, M2 has lower poverty (13 percent versus 21 percent), exposure to TRI facilities, cancer risk, income density, job density, developed land, and housing diversity, as well as having lower average FHEA school performance scores. The average poverty rate of M1, with 183 tracts, is about the same as that of M2, but its social status is lower, its housing market is weaker and more diverse, its income and job density are higher, and its school performance is much worse. Cluster M4, the average poverty rate of which is highest in the group at 22 percent, includes only 11 tracts, all of them in either Atlanta or Houston. It is the most urban of these four clusters, with the highest exposure to TRI facilities, cancer risk, percent of land developed with urban uses, housing diversity, income density, and job density, as well as the lowest average housing market strength. Its social status factor, however, is not as low as those of either cluster M1 or cluster M3.

Anomalously, the average FHEA school performance index in this cluster is higher than that of any other cluster in the low- or medium-poverty band. Visual inspection of metropolitan-level maps does not readily resolve patterns of clustering of these neighborhoods other than that they often are interspersed in patches of medium-poverty areas surrounded by low-poverty neighborhoods and surrounding high-poverty tracts.

Out of fifteen clusters of the 10,262 MTO-metropolitan census tracts we analyzed, two clusters are low-poverty, five are medium-poverty, and eight are high-poverty, though half of the high-poverty clusters contain fewer than 10 tracts. The two low-poverty clusters account for 2,822 of the tracts we analyzed, 30 percent of the total. Like those in WTW, these tracts have high social status, strong housing markets, and above average school performance. They differ in their portion of urban developed land and in income and job density, however, suggesting that cluster L1 represents suburban and exurban wealthy neighborhoods, while cluster L2 represents wealthy urban areas. Like the low-poverty tracts in the WTW metropolitan areas, these neighborhoods cluster at the macro level. In Baltimore, the main macro-level dividing line is clearly the I-695 beltway; a small number of tracts in the low-poverty clusters lie at the northern and southernmost extents of the area inside the beltway, but the vast majority is beyond the beltway (many of them immediately outside I-695). Boston's Route 128 does not form this kind of dividing line; rather, low-poverty neighborhoods line either side of the beltway with fewer low-poverty tracts occurring inside a tier of neighborhoods two to three tracts deep. The Route 128 corridor's identity as a high-tech hub likely protects nearby neighborhoods from the decline that has reached Baltimore's beltway. Chicago, too, has few low-poverty neighborhoods close to its center, with even the relatively well-off north shore neighborhoods inside the central city limits classified into the medium-poverty tracts; broad expanses of the metropolitan area's suburban and exurban hinterland are in the low-poverty band, and Chicago's close-in northern suburbs (e.g., Evanston, Winnetka, and Highland Park) are low-poverty enclaves. Los Angeles and New York present patterns of low-poverty neighborhoods too complex to discern through visual inspection.

The high-poverty clusters include a total of 231 tracts, just 2.3 percent of the total. Contrasting sharply with the low-poverty clusters, these tracts are almost exclusively composed of dense, highly developed neighborhoods with weak housing markets and low social status. Four of the five medium-poverty MTO clusters have over 1,000 tracts, and M4 has over 2,000.

The fifth cluster, M3, has 710 tracts. Differences within these clusters could undoubtedly be discerned with further rounds of analysis, but for our purposes these main groupings present interesting contrasts. Their average level of urban developed land ranges from 86 percent to 96 percent, and all of them have job density near or above the average for all tracts. All of them have about the same average exposure to highways (20 to 23 percent of the land area, on average, is within 200 meters of a highway). M1, M2, M3, and M4 have very small differences in average poverty rates, ranging from 12.5 percent to 16.9 percent; M5 has average poverty of about 24 percent. M5 shares some traits with most of the high-poverty clusters, such as very low social status, poor school performance, a high portion of urban developed land, and weak housing markets. However, the lowest average poverty rate among the high-poverty clusters is 41.1 percent, well above that of M5, whose comparatively high income density and transit access also make it different from most of the high-poverty neighborhood clusters. The average income and job density of M5 are lower than those of either M1 or M3; its relatively high FHEA transit score is, however, comparable to those of M1 and M3. Few indices distinguish M1 and M3 from one another; these relatively densely developed (urban) neighborhoods have similar levels of social status, poverty, and job density, but M1 has lower FHEA school performance scores, higher TRI exposure, and slightly higher cancer risk. M2 and M4, meanwhile, are less urban medium-poverty clusters with low school performance indices, social status, and income and job density, with M4 distinguished from M2 mainly by its very low average score (3.0) on the FHEA transit index.

These medium-poverty clusters do appear in some unsurprising geographic patterns, with New York City constituting an exception. In the other four metropolitan areas, M5 tends to dominate the central cities, while M4 is located in more peripheral locations and M1, M2, and M3 are located in neighborhoods at the edges of the central city, in inner suburbs, and in outlying small cities (e.g., Columbia, Maryland; Quincy and Brockton, MA; Aurora, Elgin, and Joliet, IL). The patterns in metropolitan New York are too complex to describe here and contain a few anomalies that may be a consequence of the use of HUD's FHEA data that may not apply as well to New York as to some of the other metropolitan areas.

Crime and Neighborhood Clusters

In an additional step, we calculated the share of MTO or WTW households in each cluster that reported high perceived safety in their neighborhoods in the interim survey. Households in lower-poverty clusters tended to report feeling safer on their streets at night, not surprisingly. Among all WTW households, just under 50 percent felt safe at night. But in the lowest-poverty cluster, 70 percent felt safe, and in the highest-poverty cluster, only 27 percent felt safe. The relationship was similar, though less consistent, among MTO clusters. In particular, high-poverty MTO clusters varied substantially in their share of households that felt safe at night. Over half felt safe in clusters H2 and H6, but in clusters H1 and H3, only 41 and 32 percent, respectively, felt safe. Furthermore, the lowest-poverty MTO cluster had only a slightly higher share of households reporting feeling safe at night than did two of the medium-poverty clusters.

Car Ownership and Residential Sorting

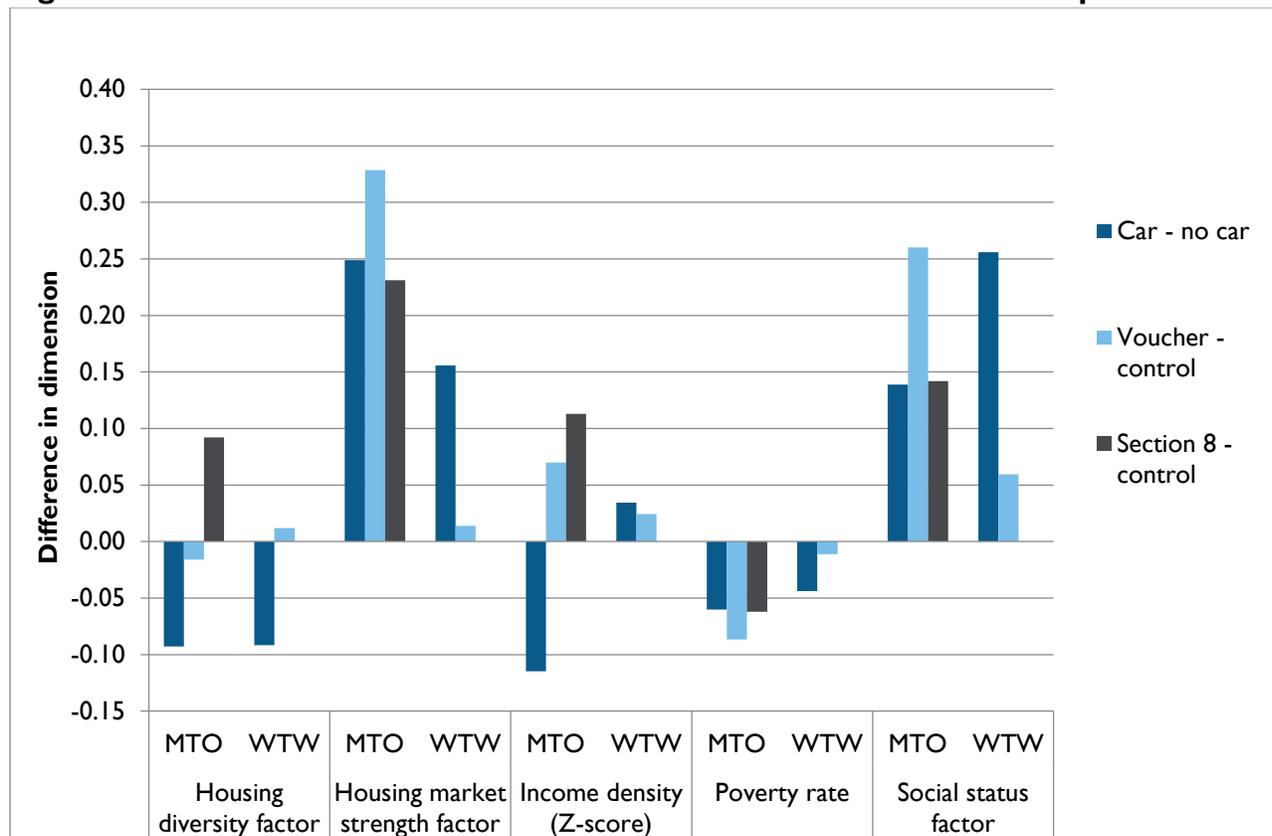
This section documents the attainment of sustainable neighborhoods by tenants who participated in the MTO and WTW programs. Its principal question is: How do households differ in their neighborhood attainment based on whether or not they own a car?

In this section, we define households in which at least one member is both a licensed driver and has access to a running car as a "driving household." The questions about car access in the MTO surveys

changed from the baseline to the interim survey to account for car ownership among household members other than the survey participant, from “Do you have a car that runs?” at baseline, to “Does anyone in your household own a car, van, or truck that runs?” in the interim survey. All WTW households were asked at baseline, “Do you have a car that runs?” Regrettably, the follow-up survey included a skip pattern in which only employed household heads were asked about cars and driver licenses. It is therefore impossible to ascertain precisely how access to cars changed between the baseline and follow-up surveys in WTW.

Figure 1 displays measures of the social environment, emphasizing comparisons between those with and without car access in addition to the experimental versus control group and Section 8 comparison versus control group. Access to a car clearly associates with access to better neighborhoods on most dimensions to which normative values can be ascribed. In both experiments, households with cars lived in neighborhoods with significantly lower poverty, higher social status, and stronger housing markets than those without cars. The relationship between driving and income density differs between MTO (in which the neighborhoods had generally higher population densities), where access to a car associated with lower income density, and WTW, where the reverse was true. These neighborhoods also had less-diverse housing stock than the neighborhoods of nondriving households. Combined with other information about neighborhood quality, this result reinforces the idea that while diverse housing stock may be favored by urban designers and planners, the neighborhoods with the most diverse housing in these 10 metropolitan areas may also have counterbalancing negative aspects that will need to be addressed before they work well for families.

Figure 1. Cars and Controls: Social Dimension Differences within the Experiments

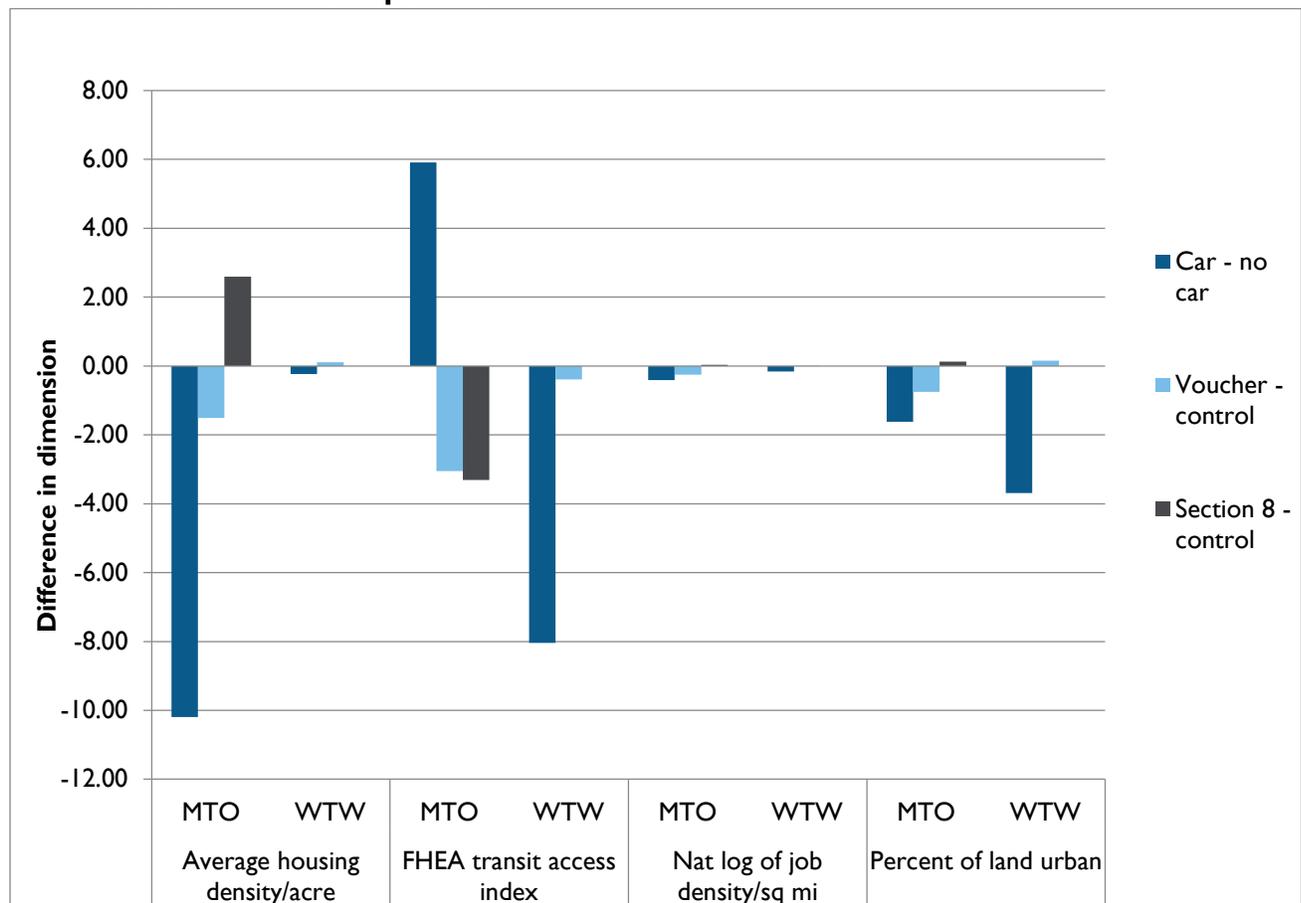


Source: Authors' data.

Figures 2 and 3 present the same comparisons for measures of the functional environment, natural

environment, and school performance. Driving households in MTO lived in neighborhoods with much lower housing density than nondriving households, whereas the difference for WTW households was smaller (but still statistically significant) (figure 2). Neighborhood job density and percent urban land were also significantly lower for driving than for nondriving households. Curiously, driving households in MTO had better access to transit than nondriving households, opposite the result of the WTW experiment. The MTO metro areas have much better transit generally than the WTW metropolitan areas; it would be intriguing to learn that MTO households with cars could find neighborhoods that were more convenient for both their transit users and their drivers. Having a car also associated fairly consistently with lower exposure to neighborhood harms and hazards (figure 3). In both experiments, the average cancer risk was lower for driving households than for nondriving households, and in WTW driving households lived in neighborhoods that had less exposure to TRI facilities and highways.

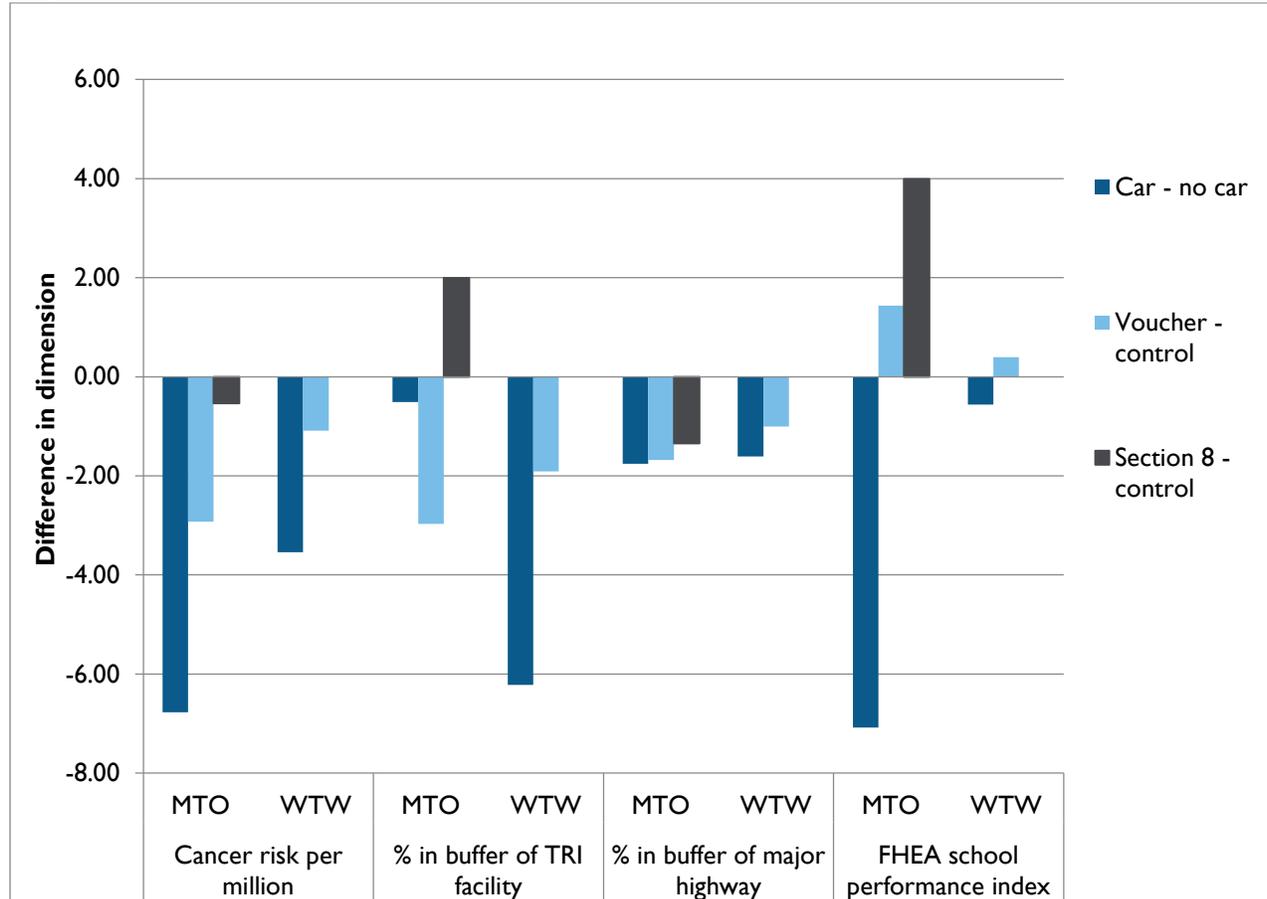
Figure 2. Cars and Controls: Built Environment and Functional Dimension Differences within the Experiments



Source: Authors' data.

Note: FHEA is Fair Housing Equity Assessment.

Figure 3. Cars and Controls: Exposure and School Access Differences within the Experiments



Source: Authors' data.

Notes: TRI is Toxics Release Inventory. FHEA is Fair Housing Equity Assessment.

The neighborhoods of nondriving households outperformed those of driving households on only one dimension: nondriving households lived in neighborhoods with significantly better school quality than driving households. This result was statistically significant and large in the MTO experiment, but not large enough to be significant at conventional levels in WTW.

Neighborhood Sorting Among Clusters: MTO

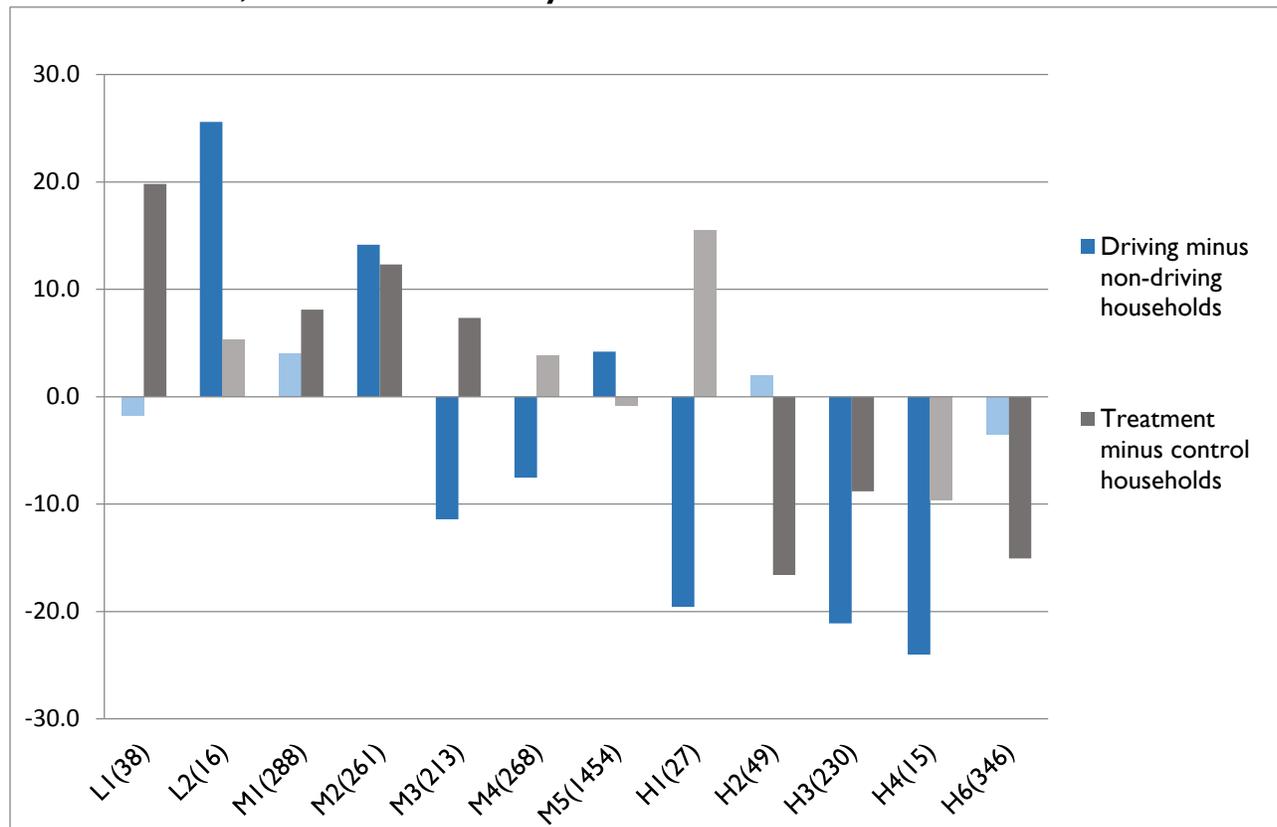
The cluster analysis procedure yielded 15 distinct clusters of neighborhoods (tracts) across MTO sites. Of those, 12 clusters contained tracts with experimental households in them. The three clusters in which there were no MTO households (from any of the three design groups) were all in the high-poverty band, and two of those clusters were the highest-poverty clusters (including a cluster with an average poverty rate of 100 percent). They also had extremely unfavorable ratings on several other factors including social status, proximity to highway and income density. Like many clusters, though, the picture was not uniformly negative; in two of those three clusters the schools had high FHEA indices, and they all had high job density.

Five of the 12 MTO-populated clusters had fewer than 50 households, but each of the remaining seven had more than 200. Of these, the majority—four clusters representing two-thirds of households—were in the medium-poverty band. Nearly 20 percent of households were also in high-poverty clusters.

Analysis of the sorting of MTO households across these clusters reinforces the conclusion that driving households and treatment households were significantly more likely to be located in low-poverty tracts (See figure 4). And, the difference between driving and nondriving households exceeded that between treatment and control households when it came to avoiding several of the highest-poverty clusters. But there were some important differences among the clusters that merit further discussion.

One medium-poverty band cluster, M5, had 1,454 MTO households, nearly half of the total. This cluster contains 1,494 tracts across the MTO sites and falls in the upper range of the medium-poverty band, with an average tract poverty rate of 24 percent. It is characterized by high-density urban tracts, with high average shares of land developed for urban uses, at 98 percent. M5 has relatively poorly performing schools and low social status factors. It has an average of 21 percent of its neighborhood area within 200 meters of a highway, near the middle of the range. M5 also has relatively high density of jobs and aggregate income, along with a mediocre housing market score. In other words, nearly half of MTO experimental households lived in dense, urban environments, with a range of socioeconomic statuses and access to opportunities. Some were likely better off than others, but on average these neighborhoods were at neither end of the spectrum with respect to sustainability and quality.

Figure 4. Percentage-Point Differences in Neighborhood Choice by Driving and Voucher Status, MTO Households by Cluster



Source: Authors' data.

Notes: Values represent the percentage-point difference from average in the household type's presence in the cluster. Dark colors represent differences that are statistically significant at the 5 percent or greater level. Light colors are not statistically significant. Horizontal axis labels are the cluster name and the number of MTO households in the cluster. For ease of representation, Treatment refers to Section 8 and Voucher households together, compared to Control households.

In general, the distribution of MTO households in this populous, medium-poverty cluster did not vary based on experimental voucher, Section 8 or control status of households. Voucher households were somewhat less likely to live in this cluster than control households, but those differences are statistically significant only at the 10 percent level. In contrast, driving households were more likely than nondriving households to live in this relatively high-quality cluster. That difference is statistically significant at the 1.0 percent level.

Nearly 600 MTO households lived in one of two high-poverty clusters, H3 and H6, with average neighborhood poverty rates of 45 and 63 percent, respectively. These clusters, containing a combined 162 tracts, comprised high-density neighborhoods with low social status factors. H6, with average poverty of 63 percent, had very poorly performing schools but high access to public transit and low proximity to highways. In contrast, H3 had comparatively good schools but poor transit access and high proximity to highways. That cluster also had the highest aggregate income density of the tracts. As with the households in M5, these 576 households lived in neighborhoods with a range of qualities, but tended to be more distressed.

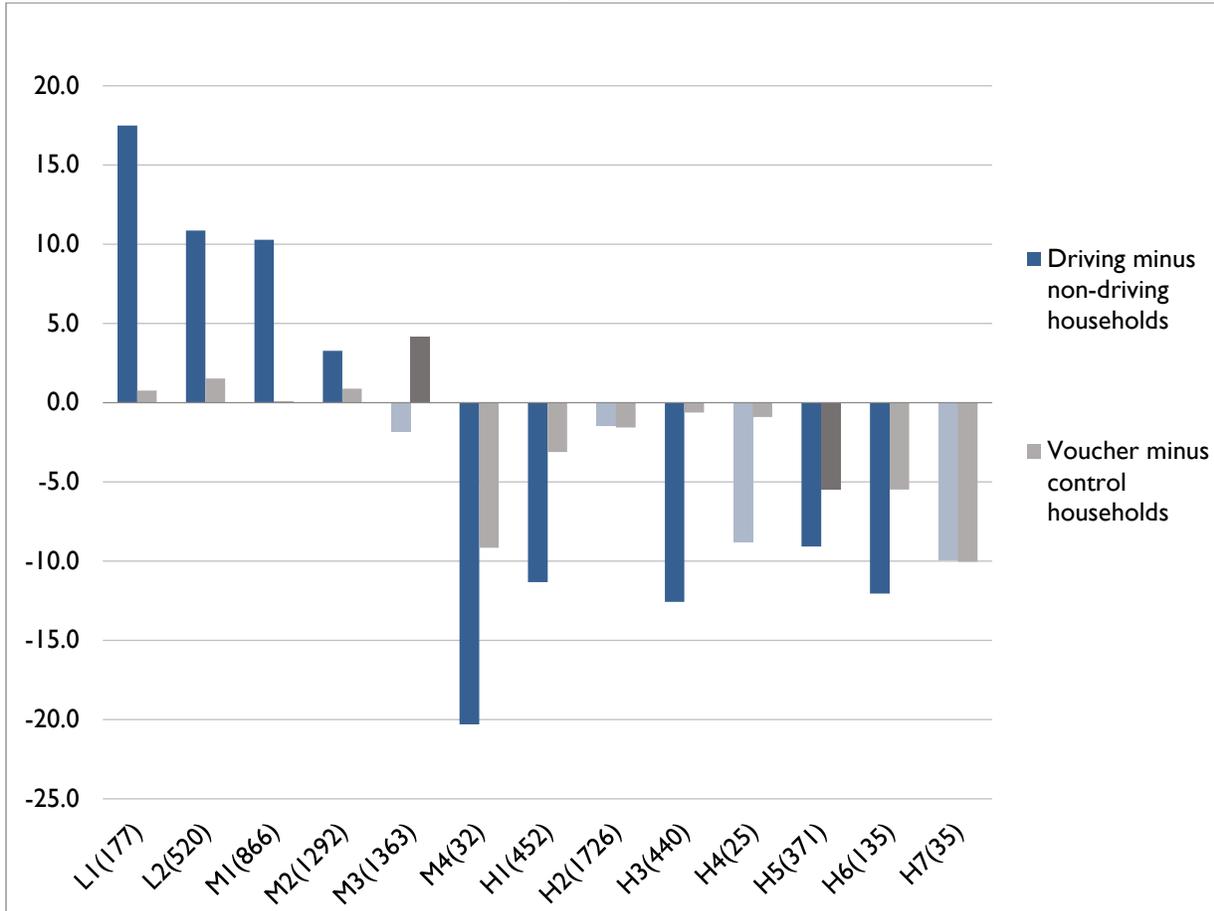
MTO experimental households with vouchers were less likely to live in these high-poverty clusters. The differences are especially pronounced in the higher-poverty cluster, with just half as many vouchers as a share of the cluster population as an even distribution would expect. Those differences are statistically significant at the 1.0 percent level. In contrast, control-group households were more likely to live in these neighborhoods, while there was not a clear pattern with Section 8 households. Similarly, driving households were much less likely than average to live in these clusters.

The remaining four clusters with more than 50 MTO households were characterized by neighborhood characteristics near the middle across the dimensions, with the exception of school quality; they tended to have poorly performing schools. The quality of schools emerged as a largely noncorrelated indicator; the highest-ranking tracts with respect to school quality were often in lower-quality neighborhoods. This is perhaps because of the temporal incongruity of that indicator, which was collected nearly a decade after randomization. There is therefore some evidence that “better-off” households—those with mobility in the form of housing choice vouchers and car access—lived in more sustainable neighborhoods, but the pattern was not universal across households or dimension of sustainability.

Neighborhood Sorting Among Clusters: WTW

The differences between driving and nondriving WTW households in attainment of low-poverty and higher-quality neighborhoods are even more consistent and pronounced than those in the MTO experiment. Whereas there are only two clusters in which voucher and control households had significant differences in sorting, there are nine in which driving and nondriving households had significant differences (figure 5). Again, important differences among the clusters merit further discussion.

Figure 5. Percentage-Point Differences in Neighborhood Choice by Driving and Voucher Status, WTW Households by Cluster



Source: Authors' data.

Notes: Values represent the percentage point difference from average in the household type's presence in the cluster. Dark colors represent differences that are statistically significant at the 5 percent or greater level. Light colors are not statistically significant. Horizontal axis labels are the cluster name and the number of WTW households in the cluster.

Compared to the MTO households, WTW households were more uniformly distributed across neighborhood types. Each neighborhood cluster had some WTW households, and only three had fewer than 50. Seven clusters had more than 400 households and three had more than 1,000. The cluster with the most WTW households contained 23 percent of the total, compared with the MTO cluster that contained nearly 50 percent of all MTO households. Further, 36 percent of WTW households—in three clusters representing nearly 1,000 tracts—were in clusters near the sustainable end of the neighborhood quality spectrum. These clusters are characterized by low to medium poverty levels—from 8 percent to 13 percent—relatively low shares of land developed for urban uses, low exposure to highways, and relatively high social status. In contrast, however, these clusters also had relatively poor schools and low density of jobs and aggregate income. In other words, neighborhoods in these clusters could be described as outside of the city center with low poverty and minor neighborhood streets.

These relatively sustainable neighborhoods were more heavily populated by WTW households that had cars at the baseline (See figure 5). In the three clusters, driving households were 3 to 10 percentage

points more likely to live in these neighborhoods six quarters after randomization than nondriving households. These differences are statistically significant at the 1.0 percent level. In contrast, voucher-holding households were not more likely than control-group households to live in these clusters. Similarly, households with children were equally likely as households with no children or households with seniors to live in these clusters. These findings suggest that access to a car is a better predictor of whether a family will live in a high-quality neighborhood than either having access to a voucher or having children at home.

Another 18 percent of WTW households live in a cluster that closely represents the middle of the sustainability spectrum. This cluster of 228 tracts, M3, has medium to high average poverty, medium-quality schools, high share of land developed for urban uses, and low average social status. In other words, the 1,400 households in this cluster tend to live in fairly dense, urban neighborhoods with high poverty, decent schools and low average social status. These are not inner-city neighborhoods, but are likely found within the urban core. As with the more sustainable clusters, baseline driving-households were more likely to live in this cluster—with statistically significant differences at the 1.0 percent level—but treatment status and presence of children did not affect the likelihood of living in these neighborhoods after randomization.

The bad news for WTW households is that nearly a quarter—over 1,700 households—lived in a cluster with high-poverty, high-density, low social status neighborhoods, H2. These 109 tracts have poor schools and low income and job density. It is these neighborhoods that most closely represent traditionally understood inner-city, unsustainable neighborhoods. Voucher households and those with access to cars were marginally less likely to live in these neighborhoods after randomization. The differences are only a percentage point away from the expected distribution however, and do not represent meaningful sorting. The 5 percent level of statistical significance is likely because of the high explanatory power of the significance test resulting from a large number of households in this cluster.

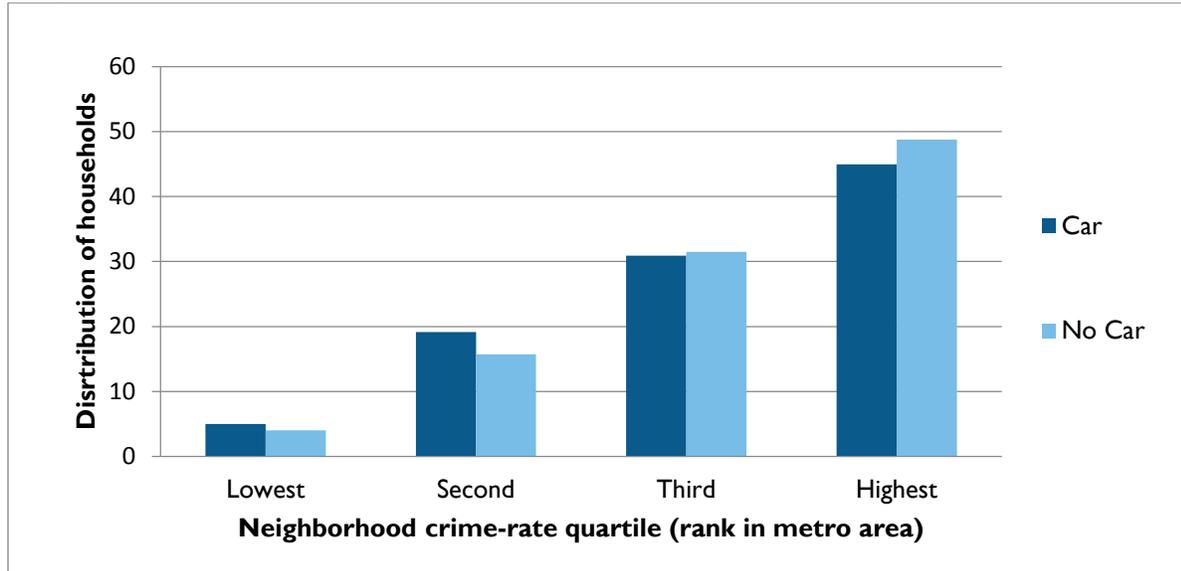
The remaining 20 percent of households—about 1,400 in total—lived in a range of clusters across the spectrum of neighborhood types. Unsurprisingly, households that had access to a car at baseline were more likely to live in the lowest-poverty cluster. In contrast, those without cars were more likely to live in the higher-poverty clusters.

Car Access, Crime, and Perceptions of Neighborhood Safety

As discussed above, we did not have complete information about crime rates for all our neighborhoods. However, we do have data on crime rates in six of the central cities of these 10 metropolitan areas and data from the MTO and WTW surveys on how participants perceived their neighborhoods' safety.

We examined the relationship between public safety and car access utilizing available crime data for six metropolitan areas in our study: Baltimore, Boston, Chicago, Los Angeles, Atlanta, and Houston. We tabulated the percent of households in each quartile (calculated individually for each site) of neighborhood violent crime rates, for those with car access and those without. The plurality of households—with or without cars—lived in the highest-crime neighborhood quartile; very few lived in the lowest-crime quartile (figure 6). Yet driving households were significantly less likely ($p < .05$) to live in the highest-crime quartile; whereas 49 percent of nondriving households lived in this quartile, 45 percent of driving households lived there. Driving households were also somewhat less likely to live in the second-highest quartile (but this was not statistically significant) and about 3 percentage points more likely than nondriving households to live in the second-lowest crime quartile.

Figure 6. Driving Households Less Likely than Nondrivers to Live in Highest-Crime Neighborhoods



Source: Authors' data.

In every site for which there was available crime data, the share of households with no car access that lived in the highest-crime quartile was higher than the share of households with car access that lived in the highest crime quartile. If we look at the top two crime quartiles together rather than only the one highest crime quartile, we see that the pattern persists. In each site, households with no car were more likely to fall in the top half of neighborhoods ranked by crime rate than households with car access. Finally, in three of the sites—Baltimore, Chicago, and Houston—there were large differences in the shares of car and noncar households in the lowest crime quartile, representing the safest neighborhoods in each site. In each of these sites, households with car access were about twice as likely to live in the lowest crime quartile compared to households without car access. In the other three sites, the shares between car and noncar households were about the same. Overall, these patterns suggest that the distribution of households with car access is shifted more towards relatively lower-crime neighborhoods compared with the distribution of households without car access.

We also examined perceptions of crime using the MTO and WTW survey responses, emphasizing the percent of heads of household who felt safe at night, out of those with car access and those without car access, by metropolitan area. We then performed chi-squared tests to determine whether, for each site, the percent of respondents who felt safe on the streets at night varied by car access status. The results of the tabulation are shown in table 5. For all sites except Los Angeles, chi-squared tests indicated a significant difference between the groups.

Table 5. Share of Households Reporting High Neighborhood Safety, by Car Access

	With Car		Without car	
	Percent	N	Percent	N
Baltimore	78	108	61	243
Boston	69	234	61	251
Chicago	77	183	66	360
LA ^a	56	140	52	136
NYC	72	73	54	374
All MTO	69	738	59	1,364
Atlanta	46	153	29	233
Augusta	66	231	52	212
Fresno	49	472	43	713
Houston	44	171	39	644
Spokane	65	330	59	380
All WTW	53	1,357	42	2,182
All sites	58	2,095	48	3,546

Source: MTO and WTW surveys.

^a Los Angeles is the only site in which a chi-squared test found no statistically significant difference between groups.

For all WTW and MTO sites, a higher percentage of households with car access reported feeling safe than did households without car access, a difference that was statistically significant in all sites except Los Angeles. MTO households were more likely to feel safe than WTW households, but the perceived safety gap of about 10 percentage points was persistent across both groups. The gap was especially large, over 15 percentage points, for households in Baltimore, New York, Atlanta, and Spokane. For Houston, Fresno, and Los Angeles, the gap was only about 5 percentage points— small, but still consistent with the broader trend.

Summary of Neighborhood Characteristics and Residential Sorting Patterns

Our analysis of neighborhood clusters and residential sorting patterns advances the measurement of neighborhood quality, especially as it relates to the residential environments of low-income residents of metropolitan America, by identifying factors that matter in different ways for household outcomes. Our analysis of neighborhood sustainability dimensions has several implications.

First, despite the attention lavished on distressed neighborhoods, only a small minority of tracts in US metropolitan areas have crushing crime rates, failing schools, high levels of environmental degradation, and deep poverty. These distressed tracts also number among the most conveniently situated places in a nation whose metropolitan areas are undergoing a “Great Inversion” (Ehrenhalt 2013). Well-off households are rediscovering central cities, crime rates are falling, tax bases are stabilizing, new investments in all kinds of urban infrastructure are underway, and school districts are showing signs of improvement. Low-income residents, meanwhile, are finding it necessary to move farther away from the central city to neighborhoods where infrastructure is more dispersed and sparse and they must rely more heavily on cars to get around.

With their low land values and disempowered populations, the neighborhoods in the “H” clusters are ripe for reinvention as places for relatively well-off singles, couples without kids, and even young married people with kids. The retention of publicly owned land, affordable housing, and services for low-income people in these distressed neighborhoods is therefore much more important than was the case in the early 1990s; many of them have the potential to become mixed-income neighborhoods if public and private investment can be coordinated to accomplish that objective. The relatively small percentage of truly distressed neighborhoods and the prospect of adding another 100 million Americans by 2060 suggest that the nation could improve many of these neighborhoods if the incentives were aligned.

Second, while most neighborhoods are not distressed, practically none with housing prices affordable to most families offers mostly positive attributes and few disadvantages. Instead, households must balance neighborhood pros and cons as they decide where to live. In particular, neighborhoods whose poverty rates range between 10 and 30 percent—which in most metropolitan areas in this study account for at least the plurality, if not the majority, of tracts—have important differences in other characteristics. It therefore appears limited to characterize neighborhoods as offering either opportunity or environmental quality but not both, as found by Been and colleagues (2010). We found little or no relationship between poverty and income density, for example, meaning that while some high-poverty neighborhoods also have little economic vitality, others have enough income circulating per square mile to justify greater investment by the public and private sectors. The correlation between poverty and measures of exposure to hazardous conditions, while troubling, generally did not exceed 0.50. And on average, high-poverty neighborhoods had higher job density and better transit service (in the MTO metropolitan areas) than lower-poverty neighborhoods. These differences are important enough to yield a mosaic of choices among medium-poverty neighborhoods, as our cluster analysis showed.

Third, our two sets of metropolitan areas offer important contrasts with one another on one important dimension. The MTO metropolitan areas—Boston, Baltimore, Chicago, New York, and Los Angeles—offer many choices with respect to transit richness. Neighborhoods ranging from highly desirable to acceptable to miserable all have decent transit. The WTW metropolitan areas—Atlanta, Houston, Augusta, Spokane, and Fresno—contrast markedly with this picture. They have (collectively) so little good transit that we were forced to drop the transit measure when we constructed the neighborhood cluster analysis. While this finding partly reflects the incompleteness of the FHEA data on transit for some neighborhoods that do have bus routes, it also reflects the underlying reality of underfunded, sparse, and inconvenient transit in many large US metropolitan areas. For transit-dependent people—kids, people with mobility limitations, and those who prefer not to drive—this lack of transit is isolating and disempowering. Even for families who usually have access to a car, access to transit can provide an important safety net when the car is unavailable.

Regarding the patterns of household sorting across different dimensions of sustainability, our research shows that families with access to cars found housing in neighborhoods where environmental and social quality consistently and significantly exceeded the neighborhoods of households without cars. In both experiments, households with cars lived in neighborhoods with significantly lower poverty, higher social status, stronger housing markets, and lower cancer risk than those without cars. WTW households with car access also lived in neighborhoods with less exposure to TRI facilities and major highways than those without cars. And unexpectedly, MTO households with cars lived in neighborhoods with better transit access than those without cars.

Low-income households did make trade-offs, however. MTO households with cars lived in neighborhoods that were more spread out—with a lower density of aggregate income and housing and less diverse housing stock—and with worse measured school performance than transit-dependent households. While this result may be unexpected, it is consistent with findings that when they receive vouchers,

families must think first about how to find an acceptable housing unit, and that they first look for safety when weighing neighborhoods against one another. Getting away from harmful relationships motivated some MTO households to move far from the housing projects where they lived, a decision made much more straightforward for families with cars (Briggs et al. 2010). But when they made these moves, they probably were finding neighborhoods with schools about which they lacked complete information. Interestingly, there was no school performance difference in the neighborhoods of WTW households according to their car access.

What Role Does Transportation Play in Voucher Users' Residential Choices?

In this section, we examine the influence of transportation access on three dimensions of location choice: (1) locational attainment, (2) neighborhood satisfaction, and (3) the dynamics of residential mobility. Each analysis, with the exception of the neighborhood satisfaction analysis, is conducted for a sample of MTO households and WTW households.

Locational Attainment

We begin with an investigation of the determinants of observed neighborhood opportunity outcomes. Specifically, we address the question, "Does vehicle access enable voucher recipients to move to neighborhoods exhibiting characteristics that are more sustainable, are more livable, and/or provide access to opportunity?" To investigate this question, we estimate several "locational attainment" models. In models of this sort, the dependent variable is a census tract characteristic associated with a household's chosen neighborhood, and independent variables include household-level determinants of location choice. A few examples of studies employing versions of this type of empirical approach include Alba and Logan (1992), Bayer et al. (2002), Dawkins (2005), Freeman (2008), and Woldoff (2008).

The dependent variables in our locational attainment models include a wide range of variables capturing the various dimensions of neighborhood opportunity outlined in the previous section, including the neighborhood functional environment, social environment, natural environment, economic vitality, and access to opportunity. Functional environment indicators, which capture the quality of available housing, transportation, and other physical neighborhood infrastructure, include median gross rent, vacancy rates, percent of housing that is owner-occupied, percent of rental housing occupied by voucher-recipients, and the FHEA transit access index. The neighborhood social environment refers to both the demographic makeup of residents and the strength and quality of the social networks present in a neighborhood. Indicators of this dimension include poverty rates, median household income, labor force participation rates, the percent of the population from a racial or ethnic minority group, the percent of households headed by females, and the percent of the adult population with a high school degree or GED.

The natural environment dimension captures the exposure to environmental hazards and presence of natural and built environment characteristics that may affect both residents' health and a neighborhood's desirability. Natural environment indicators include the percent of land that is in open space, population density, cancer risk per million persons, and the percent of a tract that is covered by 200 meter buffers surrounding major highways (a proxy for automobile emissions). A final natural environment indicator is average block length, which captures the average length of streets within a census tract. Tracts with longer average block lengths are assumed to exhibit more suburban street patterns.

The final two neighborhood dimensions examined are the neighborhood's level of economic vitality and access to opportunity. Indicators of economic vitality include job density and aggregate income

density. Access to opportunity is quantified using a measure of the number of jobs accessible within 30 minutes of the census tract centroid and the FHEA school performance index.

The independent variables in each model include several household-level factors discussed in the literature that have been shown to be associated with neighborhood choice. To capture various policy effects, we include measures of the randomly-assigned “treatment” group for each sample, interacted with whether the household was still relying on voucher assistance at the time of the final survey. For the WTW final sample, the “voucher status” variable is defined in terms of those who used the voucher to lease-up in their current location. In the MTO final sample, including voucher lease-up information substantially reduced the sample size because of the large number of missing values on that variable in the final sample. Instead, our measure of voucher status captures not whether the household has leased-up in their current location using a voucher, but whether the household is receiving voucher assistance in their current location, regardless of whether they were awarded their voucher for use in the final survey location or previously in some other location. We also include indicators of the household’s metropolitan location, with Boston omitted as the reference category for the MTO sample and Augusta omitted as the reference category in the WTW sample. Households living in Los Angeles were excluded from the WTW sample, because the program was ultimately not implemented within this metropolitan area.

Other household characteristics include income, income squared, and number of children in the household. Income is defined slightly differently for the two samples. In the MTO sample, income is defined as the total household income earned during the previous year, whereas in the WTW sample, income is defined simply using a dummy variable indicating whether the household’s income is above or below the poverty threshold. We experimented with a measure of income based on annualized earnings for the WTW sample, but because of the number of missing values for particular quarters on this variable, it proved to not be very reliable. The only other available measure with sufficient coverage for the entire WTW sample was the household’s income relative to the poverty threshold.

Characteristics of the household head include age, age squared, race and ethnicity, marital status, gender, education, and employment status. We include three measures of auto access. The first is an indicator variable equal to 1 if anyone in the household owned a car, van, or truck that runs or has access to a valid driver’s license at the time of the interim survey (for MTO households) or at the time of the baseline survey (for WTW households). For the MTO sample, we also include two indicator variables that measure whether the household gained or lost access to cars or licensing since the interim survey. Change in auto access could not be calculated for the WTW sample, due to a change in the wording of the question between the baseline and follow-up survey which limited the variable’s coverage to only those who were employed at the time of the follow-up survey. We include access to a driver’s license in our definition of auto access, because even if a household does not own a car, access to a driver’s license may enable a household member to rent a car or borrow one from a friend or family member. All of these variables, with the exception of the auto access variables, were measured contemporaneously with the date of the final survey. Additionally, in each regression model we include the lagged measure (as of the baseline surveys) of the same neighborhood characteristic used to construct the dependent variable. All models are restricted to those who moved from their baseline neighborhood to a new census tract by the final survey.

Table 6 provides a summary of the regression coefficients for automobile access across all locational attainment regressions. These tables report the sign for all coefficients significant at the .05 level. We find that auto access has significant impacts across a variety of locational outcomes, whether access is measured in terms of having a car or license at an earlier period or gaining access during the survey period. Those with access to cars or licenses gain access to neighborhoods with a more highly-valued housing stock, higher school performance, lower poverty rates and unemployment rates, and among MTO households, a more educated adult population.

Table 6. Summary of Vehicle Access Regression Coefficients from Locational Attainment Models

Variable description	MTO Sample			WTW Sample
	Car access at interim	Car access gained	Car access lost	Car access at baseline
Functional environment				
Median gross rent	+	+	-	+
Vacancy rate	-	NS	+	-
Owner occupied (%)	+	+	-	+
Vouchers (% of rental housing)	NS	NS	NS	NS
FHEA transit access index	NS	NS	+	-
Social environment				
Poverty rate	-	-	+	-
Median household income	+	+	-	+
Labor force participation rate	+	+	-	+
Unemployment rate	-	-	+	-
Minority population (%)	-	-	+	NS
Female-headed households (%)	-	-	+	-
25+ with high school diploma or GED (%)	+	+	-	NS
Natural environment				
Open space (%)	+	+	-	NS
Average block length	+	+	-	+
Population density	NS	-	+	-
Buffer of major highways (%)	NS	NS	NS	NS
Cancer risk per million	NS	NS	NS	-
Buffer of TRI facilities (%)	NS	NS	NS	NS
Economic vitality				
Job density	NS	NS	+	NS
Aggregate income density	NS	NS	NS	-
Access to opportunity				
FHEA school performance index	+	NS	NS	+
Number of jobs within 30 minutes	NS	NS	NS	NS

Source: Authors' data.

Notes: NS = not significant at .05 level; + = positive and significant at .05 level, - = negative and significant at .05 level.

We also find that when it comes to environmental conditions, economic vitality, and outcomes associated with access to opportunity, there are trade-offs associated with having access to a vehicle. While households with vehicles live in areas with more desirable environmental amenities, including more access to open space and less exposure to cancer risk (WTW households only), having a vehicle or license also encourages moves to neighborhoods that are less accessible to transit (among WTW households) and less conducive to walking. Thus, when it comes to measuring “opportunity,” one must recognize that the spatial distribution of opportunities is heterogeneous. When faced with an uneven distribution of

opportunity structures, households must often make trade-offs and choose those which are valued most highly. Although our approach does not allow us to distinguish between the effect of household preferences versus spatial supply constraints as they influence the residential outcomes observed, we find that auto access has fairly consistent effects across a range of housing market, social, economic, and environmental outcomes, and that accessing one particular dimension of neighborhood opportunity often comes at the expense of other dimensions of opportunity.

For the influence of voucher status and program treatment effects, we find that voucher status has more significant effects on locational attainment than being assigned to either the experimental or Section 8 group for MTO participants. Part of the explanation for these findings may be attributable to the length of time between the initial random assignment and the final survey, which was 10 to 15 years later in many cases. Even with this length of time, however, initial assignment to the experimental group has effects on locational attainment which persist across a variety of outcomes. This suggests that the initial exposure to low-poverty neighborhoods has impacts on long-term locational attainment, particularly when combined with voucher assistance.

Being randomly assigned to receive a voucher and using the voucher to lease up has less significant impacts on the range of locational attainment for those in the WTW program. This latter finding is consistent with Mills and colleagues (2006), who find evidence of only modest differences in the locational outcomes between the WTW voucher treatment group and the control group. Two findings are worth noting from the WTW results. First, leasing with a voucher, and in some cases being randomly assigned to the voucher treatment group, has an impact on a number of positive housing and labor market conditions. Second, random assignment to the voucher treatment group is associated with living in neighborhoods with higher levels of school performance.

A final finding worthy of note is the observation that having a voucher in the MTO program and leasing-up with a voucher in the WTW program is positively associated with moving to a neighborhood with a higher percentage of voucher holders. We interpret this as evidence of possible supply constraints limiting the locations where vouchers can be utilized. This finding is consistent with Pendall (2000), who finds that renters receiving housing assistance tend to live in distressed neighborhoods primarily due to the larger supply of rental housing in those neighborhoods.

Neighborhood Satisfaction

Access to adequate transportation is an important constraint influencing housing search and residential satisfaction, particularly among low-income households. In metropolitan areas lacking adequate public transportation service, households without access to an automobile may limit their housing search to nearby homes that are easily accessible by transit. Because public transit tends to be a slower travel mode than automobile-based travel, transit-dependent households may inspect fewer homes before making a residential location decision. Even if low-income households gain access to housing in areas with limited transit options, the neighborhoods chosen may fail to satisfy household needs if work and nonwork destinations are not easily accessible. Therefore, low-income households often must “satisfice” in their location choice decisions, selecting housing in transit-rich neighborhoods even if such neighborhoods do not necessarily provide other desirable amenities and economic opportunities.

This section examines the linkages between transportation access (defined in terms of access to a vehicle or public transportation) and neighborhood satisfaction using data from the MTO program’s final survey. Our models of neighborhood satisfaction are based on the ordered probit specification. The dependent variable is an ordinal measure of the household head’s response to the survey question, “Which of the following statements best describes how satisfied you are with your neighborhood? Would you say you are (1) very satisfied, (2) somewhat satisfied, (3) in the middle, (4) somewhat dissatisfied,

(5) very dissatisfied?” These responses were recoded so that answer five corresponds to the highest neighborhood rating and answer one corresponds to the lowest rating. Following Boehm and Ihlanfeldt (1991), we assume that this index is a proxy for the households’ unobserved level of utility attained from their neighborhood environment.

The covariates in the models include a variety of factors discussed in the literature that have been shown to be associated with neighborhood satisfaction. To capture various policy effects, we include indicator variables for each MTO treatment group, interacted with whether the household was receiving voucher assistance at the time the survey was conducted. We also include indicators of the household’s metropolitan location and whether the household lived in the suburbs at the time of the final survey. An indicator of mobility (number of moves) and its squared term is included to capture nonlinear impacts of mobility. Household characteristics include household income, household income squared, number of children in the household, and a measure of the household’s reported housing satisfaction, measured on a four-point scale. Characteristics of the household head include age, age squared, race and ethnicity, marital status, gender, education, and employment status.

We include two measures of transportation access from the MTO survey. The first is an indicator variable equal to 1 if anyone in the household owns a car, van, or truck that runs or has a valid driver’s license. We include access to a driver’s license in our definition, because even if the household does not own a car, access to a driver’s license may enable a household member to rent a car or borrow one from a friend or family member. The second measure of transportation access is an ordinal variable that measures the household’s assessment of how long it takes to reach the nearest bus or train stop. Higher values indicate that public transportation is more accessible, with the levels of access measured in 15-minute increments.

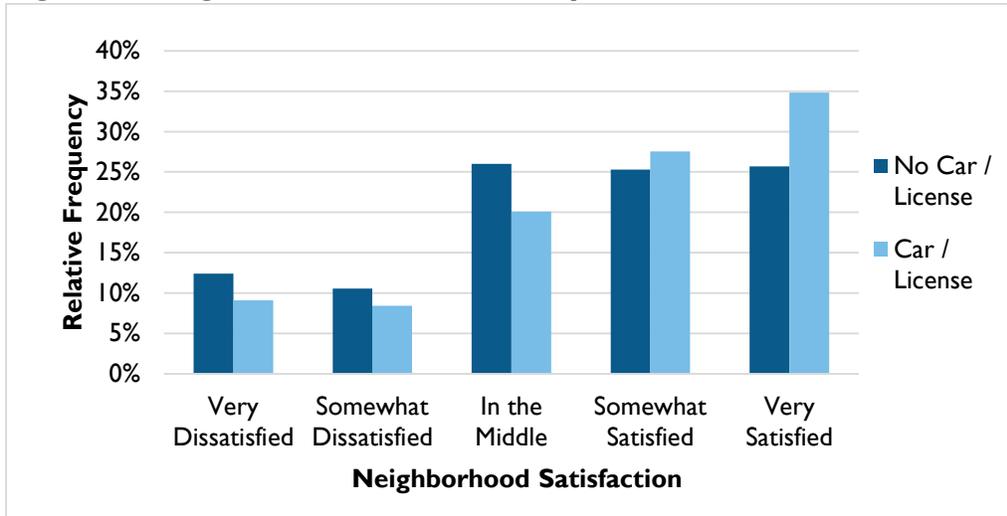
Consistent with previous studies, we include two types of neighborhood characteristics in our models: (1) the household head’s self-reported evaluation of whether particular conditions are problematic in their neighborhood, and (2) observable neighborhood characteristics measured at the census tract level. Regarding the former, we include measures of the degree to which respondents viewed the following issues as problematic in their neighborhoods: trash, graffiti, public drinking, abandoned buildings, loitering, police activity, drug use, and safety on the streets. We also include two measures of social networks with friends and neighbors in the neighborhood. Regarding the observable neighborhood characteristics, we include various measures from the 2000 census, along with a variety of derived measures to capture various neighborhood amenities and built environment characteristics, including the percent of voucher holders in rental units, housing structure diversity, housing market strength factor, the FHEA job access index, FHEA environmental hazards index, FHEA school performance index, unemployment rate, poverty rate, female-headed household percentage, and racial and ethnic composition.

Figures 7 and 8 provide a descriptive look at the connection between neighborhood satisfaction and transportation access. As shown in Figure 7, those with access to a car or a license tend to report higher levels of neighborhood satisfaction. Specifically, 35 percent of those with access to a car or license report being very satisfied with their neighborhoods, compared with 26 percent among those without access to a car or license. Similarly, 12 percent of those without access to a car or license report being very dissatisfied with their neighborhoods, compared to 9 percent among those with access to a car or license. Responses vary more by level of proximity to public transit. The largest percentage of those who are very satisfied with their neighborhoods live more than 60 minutes from the nearest transit stop. Since these households are more likely to rely on automobiles to reach destinations, this finding complements the information displayed in Figure 7.

In the ordered probit models explaining household neighborhood satisfaction scores, we find that

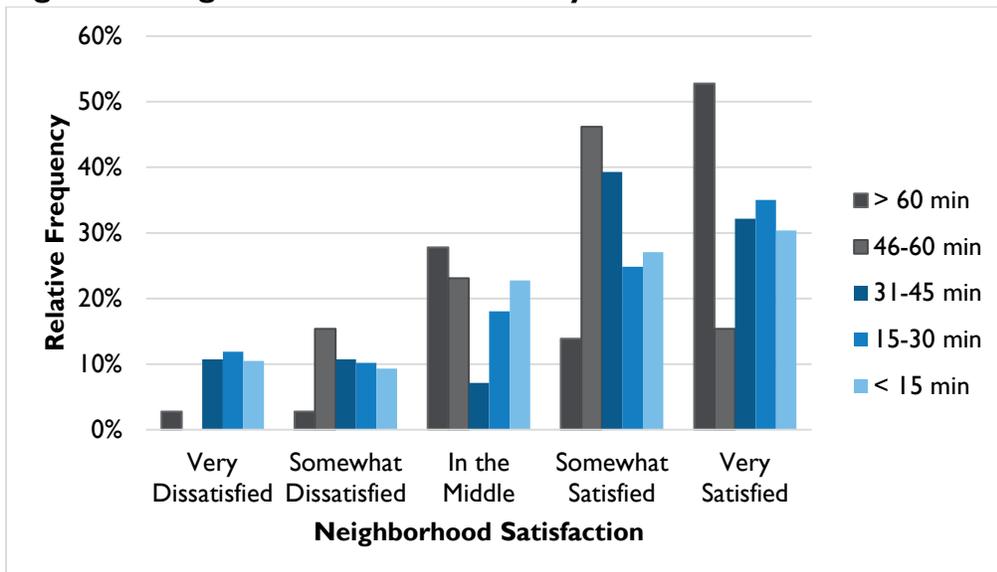
access to cars or licenses and transit each positively influence neighborhood satisfaction. The significance of the interactive effect of cars and transit suggests that the importance of automobile access varies by proximity to transit. Estimates from the full model suggest that automobile ownership matters most in neighborhoods with low transit accessibility. At relatively low levels of transit access (more than an hour to the nearest public transit stop), the marginal change in neighborhood satisfaction is much higher for car owners (1.67) than for households without a car (.20). However, in areas with high transit accessibility (less than 15 minutes to the nearest public transit stop), the marginal change in neighborhood satisfaction is slightly lower for car owners (.92) than for households without a car (1.02).

Figure 7. Neighborhood Satisfaction by Car or License Access



Source: Authors' data.

Figure 8. Neighborhood Satisfaction by Time to Nearest Transit Stop

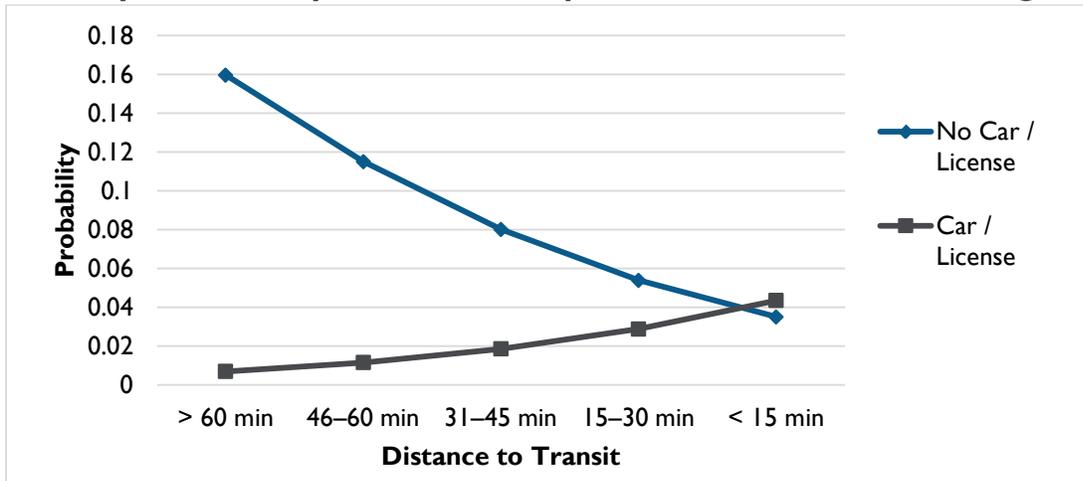


Source: Authors' data.

Figures 9 and 10 display the predicted probability that households will cite the lowest and highest neighborhood satisfaction ranking for different levels of access to transit and cars or licensing. The predicted probabilities hold values of nontransportation covariates at their respective means for the

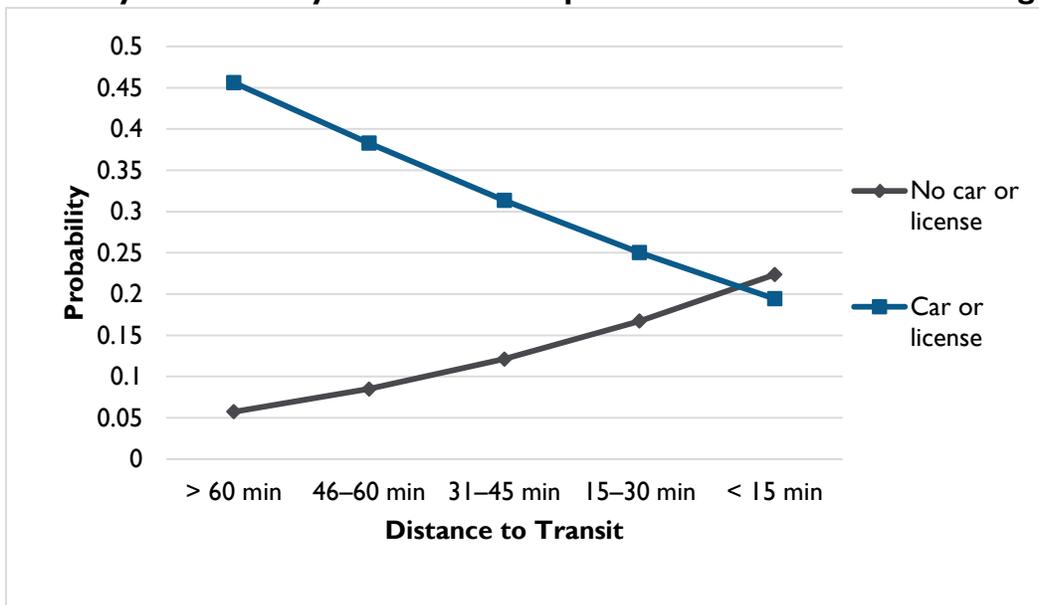
sample. Among those living within 15 minutes of a transit stop, those without access to cars or licenses report slightly higher levels of neighborhood satisfaction. Beyond this distance, the probability of being very satisfied with one’s neighborhood decreases with distance from transit for those without access to cars or licenses and increases for those with access to cars. The reverse relationship holds in models predicting the probability of a household being “very dissatisfied” with their neighborhood.

Figure 9. Predicted Probability of “Very Dissatisfied” Neighborhood Satisfaction Score by Accessibility to Public Transportation and Cars or Licensing



Source: Authors’ data.

Figure 10. Predicted Probability of “Very Satisfied” Neighborhood Satisfaction Score by Accessibility to Public Transportation and Cars or Licensing



Source: Authors’ data.

Table 7 displays the predicted neighborhood satisfaction scores for different levels of car, license, and public transit access using coefficients from the full model and the models estimated for the experimental and control groups. Values of car access and public transit access are allowed to vary, while the other variables are held at their respective means. Table 7 suggests that in areas with the highest levels of transit

access (less than 15 minutes to the nearest bus or transit stop), households without access to cars or licenses are slightly more satisfied with their neighborhoods. The disparity in neighborhood satisfaction between those with and without access to cars or licenses increases with distance from transit. In areas with the lowest levels of transit access, those with access to cars or licenses are about 1.5 times more satisfied with their neighborhoods than those without access to cars or licenses. Across all values of transportation access, car owners living in areas with the least-accessible public transit exhibit the highest levels of neighborhood satisfaction.

Table 7. Predicted Neighborhood Satisfaction by Transit and Car or License Access

Sample	Car or license access	Minutes to nearest transit stop				
		> 60	46–60	31–45	15–30	< 15
Full model	No car or license	2.83	3.05	3.26	3.47	3.67
	Car or license	4.23	4.08	3.92	3.75	3.57
Experimental group	No car or license	3.25	3.39	3.53	3.66	3.79
	Car or license	4.47	4.32	4.14	3.95	3.74
Control group	No car or license	2.39	2.67	2.96	3.24	3.51
	Car or license	4.10	3.91	3.71	3.50	3.29

Source: Authors' data.

Comparing the predicted probabilities for different treatment groups, we find similar differences between those with and without access to automobiles or licenses. The differential in neighborhood satisfaction between those with and without access to cars or licenses is largest for the control group. Among control group households with the lowest levels of transit access, those with access to cars or licenses are about 1.7 times more satisfied with their neighborhoods than those without access to cars or licenses. These group-level differences possibly reflect the differences in location choices between experimental and control group households. If those in the control group reside in locations with greater transit accessibility, we would expect to find a larger differential between the neighborhood satisfaction rankings of those with access to cars relative to those without access.

Duration of Exposure to High-Poverty Neighborhoods

While much has been written about the locational outcomes of MTO and WTW participants, we know less about the range of factors affecting low-income households' exposure to neighborhood poverty over time. Households that temporarily move into poor neighborhoods because of a temporary change in housing needs often face a different set of constraints than households that remain exposed to poverty over longer periods. Research from the MTO program suggests that while the program enabled many households to move to low-poverty neighborhoods that offered greater accessibility to different social and economic opportunities, many of those randomly-assigned to low-poverty neighborhoods subsequently moved back to high-poverty neighborhoods. Furthermore, few households that did not initially gain access to low-poverty neighborhoods subsequently moved to low-poverty neighborhoods at a later date (Turner et al. 2011). Some have pointed to these facts as possible explanations for the insignificant impacts of the MTO program on short-term employment outcomes.

This section examines the dynamics of exposure to neighborhood poverty for a sample of households from the WTW and MTO programs. We conduct descriptive analyses of the length and incidence of exposure to different neighborhood poverty conditions for the participants within each of these programs, emphasizing differences in outcomes by program treatment group and level of vehicle access, defining vehicle access as having access to either an automobile or a license. To be consistent with the MTO poverty threshold definition, we define high-poverty neighborhoods as those with poverty rates greater

than or equal to 10 percent. Unlike MTO, which defines poverty rates using 1990 census data, we rely on 2000 census data, because the majority of the residential spells for those in both the MTO and WTW programs occurred during the 2000s.

Tables 8 and 9 examine several measures of residential mobility for the entire sample in each program, and separately for each treatment group and for different levels of vehicle access. For each of these metrics, it is important to note the differences in average duration between the two samples (shown in the first row of tables 8 and 9). The length of time between the baseline and final MTO survey is on average about 13.8 years, whereas the length of time between the baseline and end-of-the-period “follow-up” WTW survey is on average about 4.5 years. The following two rows display the average length of exposure to high- and low-poverty neighborhoods over the analysis period, using the 10 percent poverty threshold defined above. The fourth and fifth rows express the duration of exposure to high- and low-poverty neighborhoods as a percentage of each household’s total duration.

Table 8. Descriptive Analysis of Neighborhood Mobility, MTO Participants

	Total households	Treatment Group			Vehicle Access	
		Exp.	Section 8	Control	Vehicle access	No vehicle access
Average total duration (days)	5,050.8	5,119.6	4,950.8	5,057.9	5,011.3	5,073.6
Average duration in high-poverty neighborhood (days)	4,566.3	4,369.6	4,587.7	4,795.3	4,371.4	4,677.5
Average duration in low-poverty neighborhood (days)	485.4	751.4	363.8	262.6	639.2	397.8
Total duration in high-poverty neighborhood (%)	90.5	85.4	92.7	94.8	87.4	92.3
Total duration in low-poverty neighborhood (%)	9.5	14.6	7.3	5.2	12.6	7.7
High-poverty neighborhood at least once (%)	100.0	99.9	100.0	100.0	100.0	99.9
High-poverty neighborhood at beginning and end of survey (%)	85.6	82.9	85.7	89.1	81.8	87.8
High-poverty neighborhood consecutively during the survey (%)	74.5	65.1	77.2	83.9	70.0	77.0
Who exit a high-poverty neighborhood (%)	23.5	33.1	20.6	14.0	28.4	20.8
Who re-enter a high-poverty neighborhood after exit (%)	12.7	20.8	9.6	5.4	13.8	12.1
Sample Size	4,594	1,812	1,348	1,434	1,679	2,904

Source: Authors’ analysis.

Rows 6 through 10 in the tables display different poverty transition measures for the households in the sample. Row six displays the percent of households, by group, who lived in a high-poverty neighborhood at least once during the analysis period. Next, we display the percent of households that began and ended their spells in a high-poverty neighborhood, ignoring whether they possibly moved to a low-poverty neighborhood at some time during the analysis period. Row eight considers the percentage of households in each group who lived in high poverty neighborhoods continuously throughout the analysis period. For all measures in rows six through eight, we include all households in each analysis, regardless of whether the household moved or not. For example, the continuous exposure to poverty for some households may have been due to never having moved from a high-poverty neighborhood, whereas for others, it may have been due to moves between two or more high-poverty neighborhoods.

Table 9. Descriptive Analysis of Neighborhood Mobility, WTW Participants

	Total households	Treatment Group		Vehicle Access	
		Voucher	control	Vehicle access	No vehicle access
Average total duration (quarters)	18.0	18.0	18.0	18.0	18.0
Average duration in high-poverty neighborhood (quarters)	16.4	16.5	16.4	16.1	17.1
Average duration in low-poverty neighborhood (quarters)	1.6	1.5	1.6	1.9	0.9
Total duration in high-poverty neighborhood (%)	91.4%	91.6%	91.1%	89.4%	95.1%
Total duration in low-poverty neighborhood (%)	8.6%	8.4%	8.9%	10.6%	4.9%
In high-poverty neighborhood at least once (%)	96.3%	96.5%	96.2%	95.4%	98.2%
In high-poverty neighborhood at beginning and end of survey (%)	86.8%	86.8%	86.7%	83.7%	92.3%
In high-poverty neighborhood consecutively during the survey (%)	85.6%	85.5%	85.7%	82.3%	91.5%
Who exit a high-poverty neighborhood (%)	8.2%	8.2%	8.1%	9.9%	5.1%
Who re-enter a high-poverty neighborhood after exit (%)	1.4%	1.6%	1.3%	1.6%	1.1%
Sample Size	8,657	4,645	4,012	5,517	2,937

Source: Authors' analysis.

The final two measures shown in tables 8 and 9 display information regarding transitions into and out of high-poverty neighborhoods. Row nine displays the percent of households that exited a high-poverty

neighborhood at least once during the analysis period, and row 10 displays the percent of households that initially lived in a high-poverty neighborhood at least once, exited to a low-poverty neighborhood at least once, and subsequently returned to a high-poverty neighborhood after an initial exposure to a low-poverty one. We now turn to a discussion of these various measures and their implications.

We find that the exposure to high-poverty neighborhoods, whether measured in terms of the total exposure or percent of total duration, is lowest for those in the MTO experimental group. This is expected, given that this group was required by the program to reside in a low-poverty neighborhood for at least one year. We find that on average, MTO households resided in low-poverty neighborhoods for slightly more than two years, compared to those in the Section 8 and control group, whose average spells in low-poverty neighborhoods were each less than one year. On average, those in the WTW program stayed in low-poverty neighborhoods for a much shorter period of time, regardless of whether they were assigned to the treatment or control group. As a percent of the total duration time, WTW participants, regardless of treatment group, spent a larger proportion of the analysis period in low-poverty neighborhoods than those in either the MTO Section 8 or control group, but the MTO experimental group spent the largest proportion of their time in low-poverty neighborhoods. These findings are expected, given the geographic focus on the MTO program. While these findings offer promise to those advocating the use of geographically targeted residential mobility programs for the purposes of reducing exposure to poverty, it is important to note that the average exposure to low-poverty neighborhoods was only slightly longer than the required minimum of one year. Furthermore, even those in the MTO treatment group spent a large proportion of their time (85.4%) in neighborhoods with poverty rates greater than 10 percent.

The effect of vehicle access on exposure to poverty is evident from the first five rows of tables 8 and 9. For both samples, those with access to vehicles spent a larger proportion of their time in low-poverty neighborhoods and a smaller proportion of their time in high-poverty neighborhoods. In the WTW program, the effects of having access to a vehicle were greater than the effects of being assigned to the voucher treatment group, with vehicle owners spending 10.6% of their spells in low-poverty neighborhoods compared with 8.4% for those in the WTW treatment group. The differences between poverty exposure for those with and without access to cars in the MTO sample are similarly large, although vehicle owners spend a slightly lower proportion of their time in low-poverty neighborhoods than do those assigned to the MTO treatment group. These findings suggest that combining auto assistance with geographically-targeted housing assistance could go a long way toward reducing the length of exposure to poverty.

We now turn to the various transition measures displayed in rows 6 through 10 of tables 8 and 9. First note the large proportion of households that lived in a high-poverty neighborhood at least once, particularly for MTO participants. This is expected given the initial locations of the subsidized units for those recruited for participation in the MTO program. A similarly large proportion of households in each program began and ended their spells in high-poverty neighborhoods or remained in high-poverty neighborhoods throughout the entire analysis period. For these two transition types, we note similarly large differences among MTO treatment groups and by vehicle access, with little difference observed between those in the WTW treatment and control group.

The last two transitions displayed in tables 8 and 9 provide a different perspective on the influence of mobility on exposure to poverty. Unlike the other dynamic patterns displayed in these tables, the last two focus exclusively on neighborhood mobility, through exits from and eventual returns to neighborhood poverty. Focusing on exits, we see similar patterns to those displayed in previous analyses, with the MTO treatment group assignment and vehicle status having a significant influence on a household's likelihood of exiting poverty. Again, we see little difference between the WTW treatment and control group in rates of exit. These findings are expected, since MTO treatment group assignment and vehicle access should

influence exposure to poverty primarily through its influence on the propensity to move.

When we examine the last column in tables 8 and 9, we find that fostering residential mobility, through geographically-targeted policies or enhanced vehicle access, also increases the likelihood of eventually returning to a high-poverty neighborhood. More than 20 percent of those in the MTO experimental group eventually returned to a high-poverty neighborhood after their initial exposure to low-poverty neighborhoods, compared with only 9.6 percent for those in the Section 8 group and 5.4 percent in the control group. Interestingly, while those with access to vehicles were more likely than those without access to return to poverty after an initial exposure to low-poverty neighborhoods, those with vehicle access were much less likely to return than those in the MTO experimental group. Taken together, these findings suggest that vehicle access has effects on exposure to poverty that are comparable to those of geographically-restricted mobility programs.

Summary of the Influence of Transportation on Residential Choices

While much has been written about the effects of neighborhoods on the social and economic outcomes of households participating in the experimental MTO and WTW programs, less is known about the types of neighborhoods chosen and the factors influencing these choices. Even less is known about the effect of car accessibility on the types of neighborhoods chosen. This section fills this gap in the literature, examining the impact of various household characteristics along with voucher assistance and auto access on the locational outcomes of low-income households.

In several locational attainment models, we find that car and license access, whether measured in terms of initially having access to a vehicle or subsequently gaining access to one, has statistically significant effects across a range of locational outcomes. This suggests that vehicles influence housing search and the types of neighborhoods considered when making a location decision. Generally speaking, having access to a vehicle has effects that are much stronger and more consistent than any other household characteristic, including income. Regarding whether the neighborhoods chosen by vehicle-owners are more desirable, it depends on how neighborhood opportunity is defined. Those with access to cars are able to locate housing in areas with lower concentrations of poverty and higher concentrations of households that are employed or participating in the workforce. These areas also tend to have higher median rents, more owner-occupied housing, lower vacancy rates, and higher-performing schools. There are trade-offs when it comes to environmental features. While vehicle owners are shown to live in areas with more access to open space and less exposure to cancer risk and toxic facilities, this comes at the expense of lower levels of transit access and urban environments that are potentially less conducive to walking. We also find that those who lose access to cars compensate by choosing neighborhoods that have higher levels of job accessibility.

We also find that access to vehicles influences neighborhood satisfaction interactively with transit access. Estimates from an ordered probit model suggest that access to automobiles or a driver's license matters most in neighborhoods with low transit accessibility. In areas with the highest levels of transit access, those with and without access to cars or licenses are each moderately satisfied with their neighborhoods, although predicted neighborhood satisfaction levels are slightly higher for those without access to cars or licenses. In areas with the lowest levels of transit access, car owners are about 1.5 times more satisfied with their neighborhoods. Considering different levels of car and transit access together, those living in areas with the least-accessible public transit and who lack access to cars or licenses exhibit the highest levels of neighborhood satisfaction.

Comparing the predicted levels of neighborhood satisfaction across MTO treatment groups, we find evidence of similar differences between those with and without access to automobiles or licenses, although the differential in neighborhood satisfaction between those with and without access to cars or

licenses is largest for the control group. Among control group households with the lowest levels of transit access, those with access to cars or licenses are about 1.7 times more satisfied with their neighborhoods than those without access to cars or licenses. These group-level differences suggest that the effect of housing mobility programs on neighborhood satisfaction is likely to be influenced by the availability of transportation options in destination neighborhoods. We also find that these effects vary by metropolitan area, likely because of differences in transportation networks across metropolitan areas.

Our descriptive analysis of the dynamics of exposure to poverty provides evidence of significant differences between those with and those without access to vehicles. The total length of exposure to low poverty was slightly lower than for those in the MTO experimental group, but vehicle-owners were also less likely than MTO experimental group members to return to high-poverty neighborhoods. Those with vehicle access exhibited high rates of exit from poverty, suggesting that mobility is the primary channel through which vehicle access influences poverty exposure. Vehicles arguably facilitate housing search and increase the accessibility of destinations following moves to low-poverty neighborhoods.

Taken together, these findings suggest that having access to vehicles facilitates mobility to low-poverty neighborhoods over time and eventual satisfaction with the neighborhood chosen. Geographically-targeted housing assistance also has measurable effects that persist over time, but the magnitude and significance of the effect varies once the geographic requirement is lifted.

How Do Transportation Access and Residential Location Choice Influence Economic Opportunity?

In this section, we examine the influence of transportation access on employment and earnings. For MTO participants, we examine the exposure of households to access opportunity neighborhoods, which we define as census tracts in the top quartile of their metropolitan area in terms of employment and public transit availability. Then we proceed to examine the influence of transportation access on employment transitions for those in the MTO and WTW program. We conclude with an analysis of the joint relationship between automobile ownership, residential location in transit-rich neighborhoods, and earnings for MTO participants.

Access Opportunity Neighborhoods: Public Transit and Employment Availability

In this section, we examine whether the MTO program provided participants with greater access to opportunities—by improving either their access to employment or their ability to use public transit to travel to opportunities. We focus on access opportunity neighborhoods, which we define as census tracts in the top quartile of their metropolitan area in terms of employment availability and public transit availability. Particularly, we examine these two areas of opportunity in the neighborhoods to which individuals moved at first lease-up, how much time they spent in high-access neighborhoods during the course of the experiment, and access at their final reported neighborhood location. The purpose of this analysis is to (1) assess whether households in the MTO experimental group have greater access to jobs and public transit than households in the Section 8 and control groups, (2) examine how these relationships are mediated by access to automobiles, and (3) determine how closely these measures of access are correlated with other dimensions of opportunity. A secondary goal of this section is to assess the reliability of different census tract-level public transit and jobs access measures, which have only recently become available with full national coverage. Because low-income individuals face complicated trade-offs among relevant dimensions of opportunity in any neighborhood, from a research perspective, there are many ways to measure neighborhood quality and accessibility (Handy and Niemeier 1997).

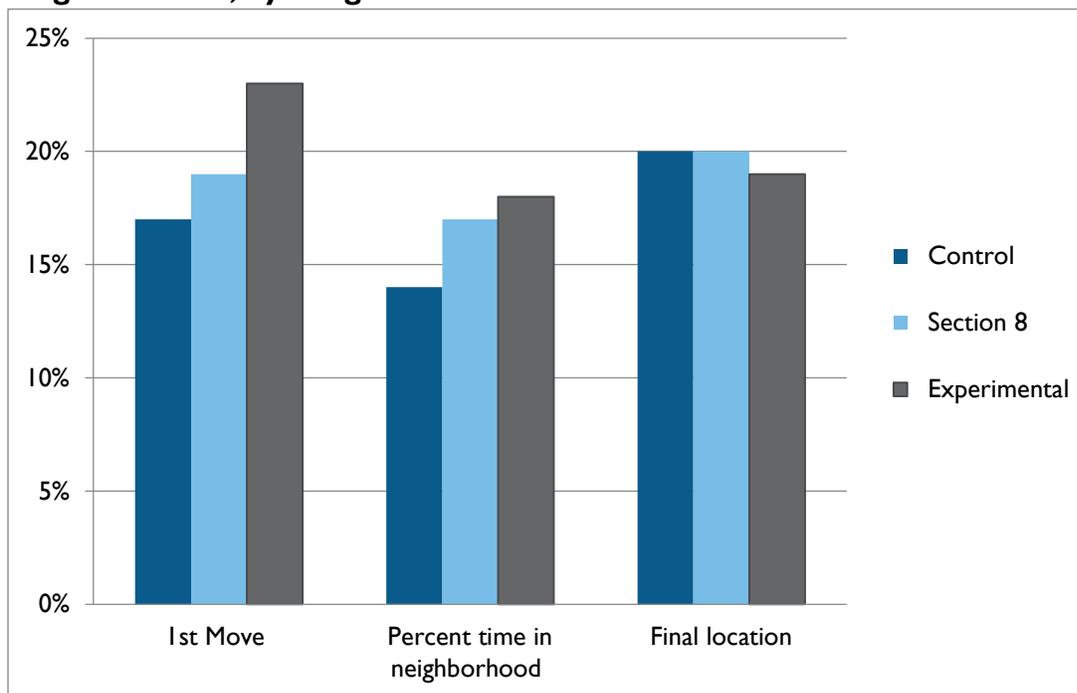
Our analysis reveals findings in a number of important areas for participants in the MTO program, which may be applicable to urban, low-income adults more broadly. Our findings can be broadly summarized in three categories: the spatial location of jobs, the residential location of program participants relative to both employment opportunities and transit, and the measures by which we calculate both of these important measures of opportunity.

Spatial Location of Program Participants Relative to Jobs

Households in the control group live in neighborhoods in closer proximity to jobs than households in either the Section 8 or the experimental (MTO) groups. Public housing tends to be located in central-city areas in close proximity to downtown (Crump 2002; Wilson 2012). Although jobs have decentralized, central-city neighborhoods typically remain the largest areas of concentrated employment within metropolitan areas (Shen 2001).

While control-group households live in close proximity to jobs, many of these positions are practically very difficult to obtain because there tends to be intense competition for job openings in dense central-city neighborhoods. Therefore, an improved measure of “job access” controls for the relative competition for jobs. Using this measure, we find that a higher percentage of households in the experimental group initially find employment in high job-access neighborhoods compared to households in the control and Section 8 groups. Further, households in the experimental and Section 8 groups spent more time in high job-access neighborhoods than households in the control group. However, as figure 11 shows, by the end of the program, the differences narrow when approximately one fifth of households in all three groups live in high job-access neighborhoods. Finally, by the end of the program, fewer households in the experimental group live in high job-rich neighborhoods compared with their neighborhoods at lease-up. This finding suggests that the effects of the MTO program on moving adults to areas of better job opportunity were short-term, at best.

Figure 11. Percent of MTO Program Participants in High Job-Access Neighborhoods, by Program Status



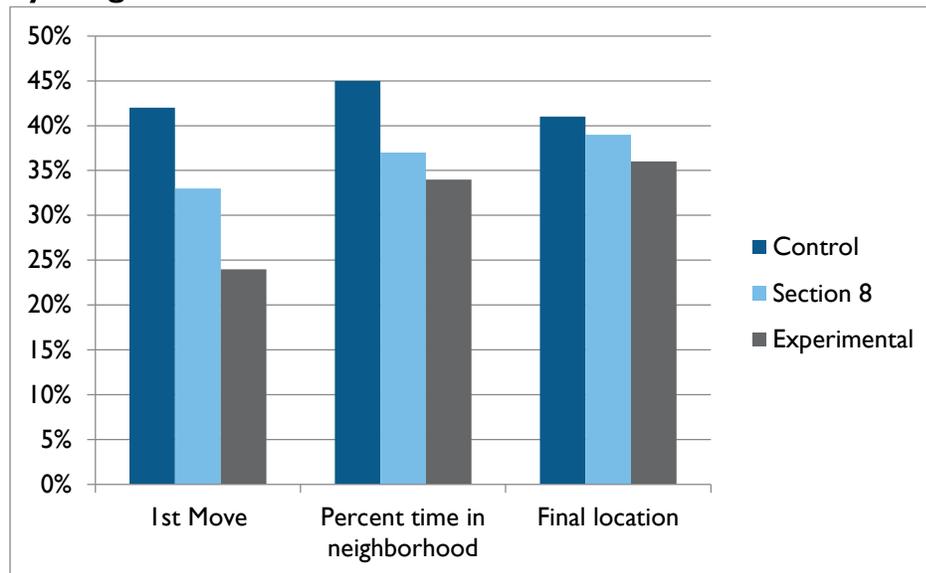
Sources: HUD and Google.

Spatial Location of Participants Relative to Public Transit

We use three measures to examine the transit characteristics of the neighborhoods in which program participants live—walk times to transit, service frequency, and jobs accessible by public transit. To summarize our findings we focus on the last measure, because—at least in theory—job access by public transit incorporates both the time it takes to walk to a transit stop or station as well as how quickly transit users can board a bus or train.

As depicted in figure 12, our analysis shows that residents in the control group are much more likely to live and remain in transit-rich neighborhoods. This finding holds true for all three measures—at lease-up, percent of time in transit-rich neighborhood, and at the close of the program. As mentioned previously, both jobs and transit networks are highly concentrated in central-city neighborhoods, where, as discussed, public housing tends to be located. Over time, households in the experimental group are more likely to live in neighborhoods that are transit rich. Since our transit data do not change over time and, therefore, do not incorporate changes in levels of transit service over time, this finding likely reflects the relocation decisions of families in the experimental group.

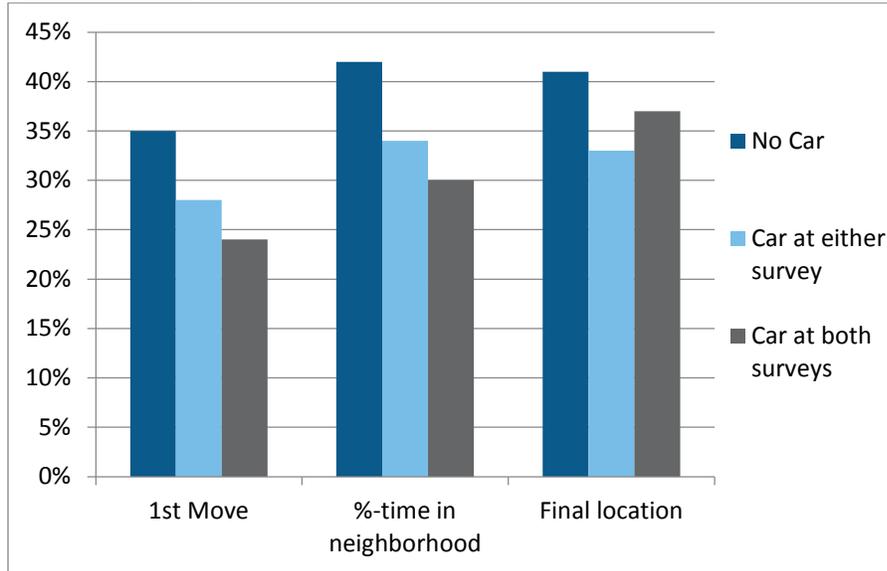
Figure 12. Percent of MTO Program Participants in Transit-Rich Neighborhoods, by Program Status



Sources: HUD and Brookings Institution.

There is a strong relationship between automobile ownership and residential location that runs in both directions (Pinjari et al. 2007; Schwanen and Mokhtarian 2005). As figure 13 shows, households without automobiles are more likely to reside and stay in transit-rich neighborhoods since they tend to be reliant on the transit network for their mobility, a finding consistent with the broader literature (Glaeser et al. 2008). However, by the end of the program, households in all three groups are more likely to live in transit-rich neighborhoods than they were at lease-up.

Figure 13. Percent of MTO Program Participants in Transit- Rich Neighborhoods, by Availability of Automobile



Sources: HUD and Brookings Institution.

Measurement Issues

There are many measurement issues that ought to be the subject of additional data collection and research. First, our findings are only as good as the data on which they are based. The evidence suggests that transportation—particularly access to automobiles—can play an important role in residential location decisions and economic outcomes. Yet the data available to analyze participants’ access to transportation (both automobiles and public transit) are quite limited. MTO participants were asked a simple yes or no question regarding their access to automobiles. At baseline they were asked whether “they had a car that runs” and in the final survey they were asked whether they “own a car or truck, or other motor vehicle that runs and can be driven on the road.” The exact question differed slightly over time. However, more importantly, automobile ownership is not a simple yes or no dynamic. A much better measure would have been the relationship between the number of working automobiles in the household and household drivers. Many low-income adults live in auto-deficit households, households in which there is less than a one-to-one ratio between vehicles and drivers. Adults in these households may not have reliable access to vehicles.

The job access and transit measures also are limited. Historical data on both jobs and transit service are scarce. Due to limitations with the census travel data, we used data from Google to calculate job richness and job access. However, these data are from 2013, and therefore do not match the years in which we have MTO survey data. Further, our calculations depend on Google drive times for the MTO areas and census data on employment; they could be enhanced by incorporating better estimates of employment competition (which would require data from areas well outside our metropolitan areas of interest) as well as travel by transit. We calculate a competition-based measure of jobs accessibility by car by employing the Google drive time data and the 2000 Census Transportation Planning Package’s estimates of job locations by census tract. We calculate the number of jobs that an individual living in a given census tract could access within 30 minutes’ drive time, but divide the number of jobs in each tract by the number of workers who could reach those same jobs in 30 minutes’ drive time. We borrow this methodology from Shen (1998) and others. While we improve on standard methods of calculating this metric by including competition from outside the metropolitan area, in some cases (particularly in the Baltimore’s metropolitan area, which overlaps considerably with Washington, DC, and Philadelphia), we

expect some error on the urban fringe.

Our analysis of transit supply rests on relatively current data from the Brookings Institution which, again, does not match the years in which we have MTO survey data. Also, while very useful, cross-sectional data do not allow us to examine changes in the transit network over time. However, many metropolitan areas expanded their transit systems over the course of the MTO program (American Public Transit Association 2013). From the beginning of the MTO program in 1994 to the end of the program (sometime between 2008 and 2010), transit agencies increased the number of vehicle miles operated by over 50 percent.

Access to public transit is an important factor in the residential location decisions of families without automobiles (Glaeser et al. 2008). However, there is relatively little research on the qualities of public transit that residents believe are important. Handy and Niemeier (1997, 1176) state that “a practical definition of accessibility must come from the residents themselves, rather than from researchers, and reflect those elements that most matter to residents.” Yet we do not know how low-income travelers evaluate the various characteristics of the transit network and how much these public transit characteristics differ even within a single neighborhood. For example, some low-income residents may live in neighborhoods close to transit stops, but where service frequencies are low or travel times to employment are lengthy.

Finally, residents’ perceptions of the transit system may also be quite different from the actual characteristics of the transit system. The MTO survey includes a question on self-reported walk time to a bus stop. This variable is only loosely correlated to the Brookings data on walk time to transit (.10). This weak relationship suggests that individuals do not necessarily experience neighborhoods in the same way that aggregate, tract-level statistics would lead us to believe in isolation. Moreover, the relationship may also be skewed by respondents who have little experience using public transit, and therefore have little basis for assessing the walk time to the stop.

Opportunity Neighborhoods

Finally, there is an important caveat to any analysis of opportunity based on our findings. Neighborhoods are complex and even seemingly clear notions of opportunity along one dimension (e.g., job opportunities) may be offset by other neighborhood characteristics that limit the opportunities available to program participants and other low-income families. Future programs need to consider a range of opportunity indicators. Moreover, additional attention should be given to facilitating households’ interest in remaining in neighborhoods with a rich variety of opportunities, the cumulative effects of which may only accrue after a lengthy duration rather than a short spell.

Transportation and Employment Outcomes

In this section, we examine the influence of transportation assets on the employment outcomes of MTO and WTW participants. We supplement the survey data with information on the characteristics of the neighborhoods in which program participants live, including their access to public transit. Combined, these data provide a rich array of individual, household, and neighborhood characteristics allowing us to control for the many factors that influence employment. Specifically, we use multinomial logistic regression models to examine the relationship between automobiles and public transit availability on employment transitions between baseline and interim surveys, controlling for other potential determinants of employment, including experimental group status.

The employment models are similar in many respects. However, there are a few differences, one of which is the way in which “automobile access” is specified. The MTO data allow us to examine transitions in automobile access between baseline and interim surveys. Therefore, our models include the following

variables: no car at both time periods, gained a car between baseline and follow-up survey, lost a car between baseline and follow up, and the presence of a car at both time periods. In contrast, as we mention previously, in the WTW follow-up survey, the automobile question was asked only of respondents who indicated that they were employed. Because we did not have follow-up automobile data for all participants, we were unable to capture transitions in automobile access. Instead, the WTW employment model includes access to an automobile at the time of the baseline survey.

MTO Results

Table 10 presents the results of a regression model predicting discrete change in employment for all adults in the sample. We report the relative risk ratios and robust standard errors. The relative risk ratio is the probability of choosing one outcome category over the probability of choosing the base category for a unit change in the predictor variable. Our model specifications explain a moderate amount of the variation in employment outcomes, in comparison to similar auto-employment models and our own analysis of the WTW voucher dataset. Low levels of prediction for individual outcomes, particularly among vulnerable population groups, are common for other similar studies reported in the literature. In our primary model specification, exactly half of the predictions are correct. We predict consistent unemployment and job gain best, and loss of a job very poorly.

Table 10. Employment Model (Base = Not Employed → Not Employed)

Independent variables	Not employed→ employed	Employed→ not employed	Not employed→ employed
Individual characteristics			
Age	+	NS	+
Age ²	-	NS	-
Male	NS	NS	NS
Black	NS	NS	+
Hispanic	-	NS	NS
Other race	NS	NS	NS
High school graduate	+	NS	+
Household characteristics			
Household size	NS	NS	NS
Aid to families with dependent children	NS	-	-
Supplemental Security Income	-	-	-
Moved between baseline and interim	NS	NS	NS
Program Status			
[excluding control group]			
Section 8	NS	NS	NS
Experimental	NS	NS	NS
Transit access			
Improved public transit between baseline and interim	NS	NS	+
Live < 15 minute walk to transit (self-	NS	NS	+

reported)

Automobile access [excluding no car]			
Gained car between baseline and interim	+	NS	+
Lost car between baseline and interim	NS	NS	+
Had car at baseline and interim	+	NS	+
Neighborhood Characteristics			
Job access (relative to metropolitan statistical area)	NS	NS	NS
Poverty rate	NS	NS	NS
Population density	NS	NS	+
Metropolitan Area [excluding Los Angeles]			
Baltimore	+	NS	+
Boston	NS	NS	NS
Chicago	+	NS	+
NYC	+	NS	NS

Source: Authors' analysis.

Notes: NS = not significant at .05 level; + = positive and significant at .05 level, - = negative and significant at .05 level. $N=3,199$. $R^2=.17$. Significance: $< .10$.

For the independent variables of interest, gaining a car between baseline and interim and maintaining access to a car at both time points are positively and strongly correlated with finding employment and being employed at baseline and interim. The effect of the presence of a car raises the probability of finding a job by a factor of two and the probability of being employed at both time points by a factor of four. While improved transit access is not a significant factor in finding employment, it appears to be the most important factor associated with being employed at both time points. Having moved to a neighborhood with better transit between baseline and interim and living within 15 minutes of a bus stop both raise the probability of having consistent employment by a factor of 14. As other studies have shown, experimental group status has no discernible effect on participants' ability to find or keep work.

Neighborhood characteristics also appear to be weakly correlated with employment outcomes, after we control for individual and household attributes. With one exception, the presence of a high number of jobs near the census tract, the poverty rate of the census tract, and the residential density of the tract are not associated with employment. Higher density is correlated with having employment at both time periods. Metropolitan-level effects are stronger than neighborhood associations, but mixed. Compared with participants in Los Angeles (the excluded group) participants in Baltimore and Chicago were more likely to both obtain a job and retain a job over the survey period, although the significance of the relationship in Chicago was weaker. The variable New York (participants living in New York) also exhibited a relationship to gaining employment (which was statistically significant at the .10 level).

We also estimated similar employment models only for those adults living in households without cars. The sample size in these models is reduced by less than one-fifth, because there were few households with cars at baseline, and as a result, the model's fit is slightly lower, correctly predicting 44 percent of the cases. Similar to the full model, transit— as measured by both self-reported bus access and households moving to neighborhoods with better service between baseline and interim— has a large positive effect on retaining employment. Both of these measures raise the likelihood of being employed at both time points

by a factor of 10. Improved public transit also has a negative but nonsignificant effect on gaining employment. Individual and household-level characteristics largely operate as in the full model, but with some demonstrating attenuated correlation to employment. Experimental group status is not correlated with work outcomes in any significant manner. At both the neighborhood and metropolitan scale, access to jobs and the surrounding poverty level have no effect on employment, while density continues to play a positive role in individuals' retention of work at both time points. Living in Baltimore continues to have a positive relationship with gaining and keeping employment, but there are no other discernible metropolitan impacts on participants' work status.

WTW Results

Table 11 presents the results of a model predicting the discrete change in employment for all adults in the WTW sample. As in table 9 above, we report the relative risk ratios and standard errors, along with a measure of model fit.

In comparison with those who are not fully employed at the baseline and follow-up surveys, access to an automobile has a significant, positive effect on the likelihood of adults going from unemployment to employment and the likelihood of adults remaining employed at the two time points. For adults employed at both time points, relative risk ratios indicate that automobile access is the most important determinant. Improved transit between baseline and follow-up surveys is not significantly related to employment outcomes. Public transit may not effectively connect low-income workers to jobs. However, it may also be true that public transit—particularly in the WTW metropolitan areas—does not provide enough service to adequately connect voucher recipients to employment opportunities. Finally, it is possible that households with characteristics that make it more difficult for them to find employment are more likely to move to and live in transit-rich neighborhoods.

In response to the levels of transit service hypothesis, we explored whether there was a relationship—or interaction—between our public transit measure and metropolitan area. In other words, might there be a positive effect of public transit on employment outcomes in metropolitan areas that provide more extensive transit service? Indeed, we find some variation by metropolitan area. Relative to program participants in Atlanta, moving to transit-richer neighborhoods has a negative effect on employment. Although tentative, this finding suggests that public transit may be more effective in connecting low-wage workers to employment opportunities in some metropolitan areas than others. These results should be interpreted with caution as the sample sizes for participants who moved to transit-richer neighborhoods in some of the metropolitan areas, particularly Spokane, are quite small. Moreover, relative to Augusta, Fresno, and Spokane, Houston also has a more developed transit network, yet the interaction term is negative.

In terms of neighborhood characteristics, job access is significantly and positively related to unemployment. Unexpected, this finding may suggest the presence of high job turnover among low-income adults, or may simply show the positive role that job access plays in an adult having had a job at any point in time, as opposed to never having had a job. Jobs access is not significantly related to employment at baseline and follow-up, whereas poverty rates are negatively related and population density is positively related to steady employment. Finally, there is significant variation in employment outcomes across metropolitan areas. In comparison with adults living in Atlanta, adults in Fresno, Houston and Spokane were less likely to find employment. Moreover, adults in Augusta, Houston and Spokane were less likely to be employed at both time points, though with varying degrees of significance.

Table 11. Model 1—Aggregate Employment Model (Base = Not Employed→ Not Employed)

Independent variables	Not employed→ employed	Employed→ not employed	Employed → employed
Individual characteristics			
Age	NS	NS	+
Age ²	NS	NS	-
Male	+	NS	+
Black	NS	NS	NS
Hispanic	NS	NS	NS
Other race	NS	NS	NS
High school graduate	+	NS	+
Household characteristics			
Household size	NS	NS	NS
Public housing	NS	NS	NS
Welfare	NS	-	-
Supplemental Security Income	-	-	-
Moved between baseline and follow-up	NS	NS	NS
Improved public transit at final	NS	NS	NS
Experimental group	NS	NS	NS
Automobile access	+	+	+
Job access relative to metropolitan statistical area	NS	+	NS
Neighborhood Characteristics (by tract)			
Poverty rate	NS	-	-
Population density	NS	NS	+
Metropolitan Areas [excluded=Atlanta]			
Augusta	NS	NS	-
Houston	-	-	-
Fresno	-	NS	NS
Spokane	NS	NS	-

Source: Authors' analysis.

Notes: NS = not significant at .05 level; + = positive and significant at .05 level, - = negative and significant at .05 level. $N=3,199$. $R^2=.17$. Significance: $< .10$.

We also estimated a separate model that replicates the aggregate model but includes only those program participants in households without access to automobiles. The independent variables operate very similar to the full specification, but in this model there is a positive relationship between being employed at both time points and jobs access. In other words, among adults without automobiles in the household, the likelihood of employment at any point in time is higher among those with access to more local jobs. Transit access, however, still does not appear to play a significant role in improving employment outcomes. Although the models control for a number of individual and household characteristics, it is likely that the transit variable reflects other characteristics of carless individuals that make it more difficult for them to find and retain employment.

Finally, we considered the determinants of employment for participants in two of the metropolitan areas in our sample, Fresno and Houston, by running separate, metropolitan-level models. Descriptive evidence from the sample suggests that there are major demographic differences across these two areas. Namely, adults in Fresno are much more likely to be Hispanic, have access to automobiles, and be

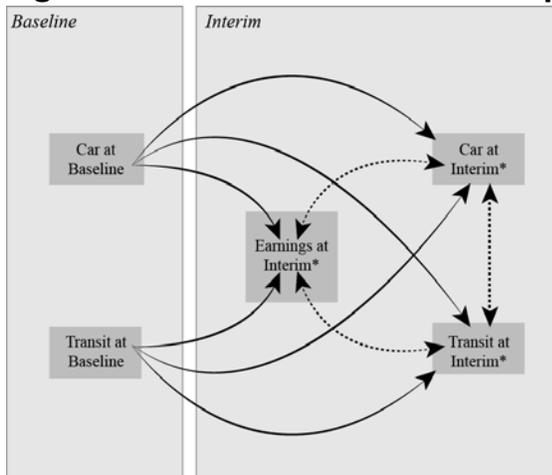
employed at baseline than adults in Houston. Among the adults living in the Fresno sample, there is a positive relationship between automobiles and both gaining employment and staying employed. In Houston, however, there is no apparent relationship between automobiles and transitions to employment. There is, however, a positive relationship between automobile access and maintaining employment at both time points. For public transit, this variable is not significant in either metropolitan area.

Automobile Ownership, Transit Accessibility, and Earnings

In this section, we take advantage of longitudinal data from the MTO program to examine the role of transportation in improving outcomes for MTO households. In particular, we examine the relationship between automobile ownership, residential location in transit-rich neighborhoods, and earnings. We are also interested in the effect of program status (being in the experimental group) itself on all three out of these outcomes. Because we expect that the relationships between these outcomes are themselves interrelated, we employ structural equation modeling, which allows the researcher to posit more complex, interrelated pathways of causation than other modeling approaches.

We depict our structural equation modeling approach in figure 14. Our conceptual model rests on the assumption that access to transportation resources—cars and high-quality public transportation—can increase an individual’s probability of employment and enhance earnings by expanding the geographic scope of the individual’s job search and improving punctuality and reliability. However, in the US context, the two transportation options we examine—cars and transit—are typically substitute goods for the journey to work. Therefore, we expect that individuals—particularly low-income individuals looking to economize—would make trade-offs in selecting between the two. We therefore expect car ownership and transit richness to both be positively associated with earnings, but negatively associated with one another. We further expect car ownership to be more strongly associated with earnings than transit access, as previous studies have found (Cervero et al. 2002; Gurley and Bruce 2005; Sandoval et al. 2011).

Figure 14. Overview of Structural Equation Modeling Approach



Source: Authors’ analysis.

Note: Dashed lines indicate modeled covariance of error term.

*Also controlled for randomization group, race/ethnicity, age, sex, and employment at baseline. The earnings submodel includes additional controls: years of education and having not moved residences by interim.

As depicted on the left side of the diagram, we use characteristics of the individual at the time of the baseline MTO interview (roughly 1994 to 1998), as well as a series of time-invariant variables such as race or ethnicity, gender, and randomization group to predict our three outcomes of interest at the time of the

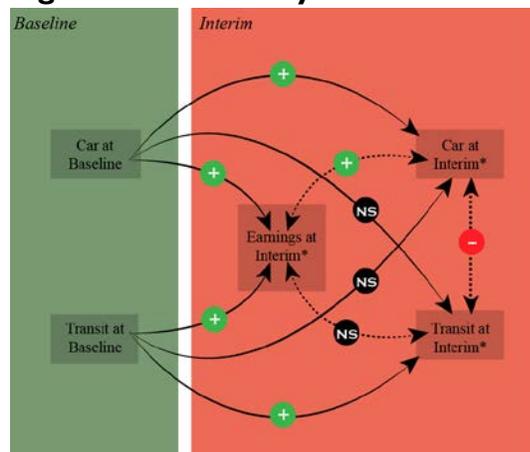
MTO interim interview. These outcomes are: automobile ownership, the transit richness of the respondent’s home census tract, and the respondent’s self-reported earnings. Most of these data are derived directly from the MTO baseline and interim surveys. For example in the baseline and interim surveys, households were asked whether they had a car that ran. We use administrative records attached to the interim dataset to determine whether the household had not moved by the interim survey.

We supplement the information on individuals and their households with data on public transit service in the neighborhoods in which program participants live. A census tract identifier allowed us to match the survey data to census tract-level data on public transit from the Brookings Institution. Between May 2009 and February 2011, researchers at the Brookings Institution collected data on the routes, schedules, and stops for 371 agencies located in the 100 largest metropolitan areas. They combined these data with employment data to develop a number of different measures of transit access including the number of jobs available in a 30-minute transit trip from a given census tract. We use these data measuring transit richness as a Z-score using the regional mean of jobs accessible by transit in thirty minutes; thus, a one-unit increase in our “transit richness” metric indicates a (region-specific) standard deviation increase in jobs accessible by transit in thirty minutes.

We also relate the three outcomes measures to one another in the overall modeling approach. We estimate a covariance parameter for the error covariance of each of the submodels. This approach assumes that the unobserved variables that help to explain car ownership, choice of residence in a transit-rich neighborhood, and earnings co-vary in meaningful ways. For instance, those who have a preference for owning a car also choose to live in a neighborhood with ample parking and lower levels of transit access.

Figure 15 summarizes the results of our model, focusing on the variables of interest. Having owned a car at the time of the baseline interview is a strong predictor of owning a car at the interim interview, perhaps reflecting both the likelihood of retaining a valuable asset such as an automobile as well as individuals’ preferences for automobile ownership. Similarly, having a job at baseline is a strong predictor of automobile ownership several years later, reflecting the need for employment to cover the financial costs of car ownership.

Figure 15. Summary of Model Results



Source: Authors’ analysis.

Note: Dashed lines indicate modeled covariance of error term.

*Also controlled for randomization group, race/ethnicity, age, sex, and employment at baseline. The earnings submodel includes additional controls: years of education and having not moved residences by interim.

Only two variables are statistically significant predictors of living in a transit-rich neighborhood. Being a member of the control group for random assignment has a strong positive association with transit richness at the time of the interim survey. The control group in the MTO experiment did not receive Section 8 vouchers, and thus most participants remained in traditional public housing, which is often located in transit-rich, inner-city areas, or left housing assistance altogether for one reason or another. The only other significant predictor of transit richness at interim is transit richness at baseline. This relationship may reflect individuals' transit preferences and the "lumpiness" of transitioning to transit's main competitor, the automobile (through vehicle purchases and licensing). It also may be because of the high financial and social costs of moving to a new neighborhood. With respect to this last point, voucher households can experience difficulty moving out of their current neighborhoods because of limited resources, landlord practices, and institutional obstacles associated with the voucher program (DeLuca et al. 2012).

Access to transportation at baseline appears to make a difference in earnings several years later. Both automobile access and transit richness in the home census tract at the time of the baseline interview are statistically significant predictors of higher earnings. However, the earnings effect for owning a car is considerably greater than the effect of transit richness. Our results suggest that one would have to live in a neighborhood nearly eight standard deviations above the mean regional transit richness to achieve the same estimated effect on earnings as owning a car. Our model further suggests that the effect of living in a transit-rich neighborhood is similar for those individuals with and without cars.

Finally, we find that the error terms of our earnings and transit richness models are both correlated with that of the car ownership submodel. This suggests that omitted variables that are associated with higher earnings but difficult to measure (such as perseverance, intelligence, a highly developed social network, or other factors) are also associated with automobile ownership. Similarly, the model results suggest that there are clear trade-offs between the choice to own a car and the choice to live in a transit-rich neighborhood. Controlling for a host of other factors, those who are more likely to choose one of these transportation options (for instance, buying a car) are considerably less likely to choose the other (for instance, living in a very transit-accessible neighborhood). This relationship likely reflects both attributes of the person (preference for one mode over the other) as well as a host of unobserved factors associated with living in a particular neighborhood. For instance, if a person lives in a transit-poor neighborhood in order to be close to friends and family, that person may be more likely to purchase a car as well.

Summary: Influence of Transportation and Location Choice on Economic Opportunity

In this section, we analyzed the relationships among various transit measures, and using robust measures of transit access and vehicle access, we examined the relationship between transportation access and transitions into and out of employment. We also considered the relationships among transportation access, residential location choice, and earnings. Here we summarize the primary findings from these analyses.

In our analysis of access opportunity neighborhoods, we find that transit and job opportunity metrics are largely incongruent, even when data for these metrics are collected contemporaneously by the same organization. Discernible trends in the data include better job richness but worse job access among the control group and those without cars, although this disparity appears to attenuate by the time of the final survey. We are surprised to find that access to public transit is not notably better among those without cars or among the control group, and in fact service frequency sometimes appears discernibly worse.

We also used several multinomial logistic regression models to investigate the relationship between

public transit and automobile access on transitions into and out of employment. In models estimated for MTO households, we find that keeping or gaining access to automobiles is positively associated with the likelihood of employment. Improved access to public transit is positively associated with maintaining employment but not with transitions to employment. Consistent with previous MTO program evaluations, we find that experimental group-status is not statistically significant.

In models examining the influence of baseline access to automobiles and public transit on follow-up employment for WTW households, we find that baseline access to automobiles has a strong positive relationship to follow-up employment, but transit access does not. While there are substantial differences in employment rates across metropolitan areas, the determinants of employment outcomes are largely consistent across the metropolitan-specific models. These findings suggest that enhancing car access will notably improve the likelihood of employment among very low income adults, but investments in transit in areas with concentrated poverty will only have, at best, marginal effects.

Finally, we examine the effect of transportation resources on earnings outcomes for MTO participants using a structural equation modeling approach to examine the interrelationships among automobile ownership, residential location in transit-rich neighborhoods, and earnings. We find evidence that both cars and transit access have a positive effect on earnings, though the effect for auto ownership is considerably greater. We also find evidence that low-income households make trade-offs between owning a car and living in a transit-rich neighborhood. We find little evidence that participation in the MTO experimental group influenced transportation decisions or earnings.

Taken together, these findings show that automobile access importantly influences employment outcomes and earnings for low-income households. The effects of public transportation are mixed, likely because of the substantial variability in transit coverage among the metropolitan areas included in the study. Moreover, we find that access to automobiles is more important than assignment to the MTO or WTW experimental group. In the next section, we discuss the implications of these findings and those discussed above for expanding low-income households' access to economic opportunities.

Conclusion and Policy Implications

In this study, we examined the interrelationships among transportation assets, residential location choice decisions, and economic outcomes for housing choice voucher recipients broadly and for those participating in the MTO and WTW experimental programs. Our analyses point to several implications for future research and data collection efforts, voucher-enhanced mobility programs, and strategies for coordinating housing and transportation policies in ways that enhance economic opportunity for low-income households.

Several findings presented above suggest that HUD would be well advised to learn more about whether all their assisted tenants have access to working cars. Collection of such information would be possible, though potentially controversial, annually as part of the income verification process. Tenants might have concerns that housing agencies would disqualify them for assistance if they revealed that they own a car. But car ownership provides both access to better neighborhoods and a way to get to work and better schools. If HUD knew which of its households had cars, it could develop new programs and partnerships to help able families become economically self-sufficient. Information about car access could also be helpful for identifying neighborhoods where assisted families with cars are living so that new economic development efforts could concentrate there, including affordable options for car maintenance, and educational opportunities for courses in auto mechanics, for example. It is clear that even in high-density, transit-rich cities, voucher users—like many other low-income people—make huge sacrifices to get and maintain car access. Housing and community development policies and programs can be shaped

so that the needs of assisted households with and without cars are accounted for individually.

Our findings also have implications for policies designed to enhance “access to opportunity” for low-income households. Our results imply that housing search services should be tailored to the transportation needs of households receiving assistance. Transporting those without access to a car to prospective residential locations along with providing information about the public transportation options available in different neighborhoods may help to improve the number and quality of units inspected prior to a housing search. This policy recommendation is echoed by Shroder (2002), who finds that car ownership and the intensity of housing counseling services both increase the likelihood of lease-up among MTO program participants. He goes on to argue that while providing long-term transportation services may be expensive, combining such assistance with other educational programs may go a long way towards increasing the rate at which mobility program participants successfully lease-up in desirable neighborhoods.

Currently, the provision of transportation-based services is an integral component of the WTW program but has been less of a focus for the MTO program. HUD provides guidance to public housing agencies participating in the WTW program regarding ways in which to tailor services to the transportation needs of households receiving assistance. The HUD website also provides information about how to coordinate housing assistance with the various local transportation programs sponsored by nonprofits, transit agencies, and the business community.¹⁷ But HUD’s role in this effort is primarily advisory, with local public housing agencies playing the lead role in designing such programs.

An implication of our findings is that combining rental vouchers with subsidies for automobile purchases may be one possible approach to expanding the location choices available to low-income households. Alternatively, short-term car rental services such as ZipCar and Car2Go have the potential to address the travel needs of some low-income adults at a lower cost. (See, for example, McCarthy [2012] and Ortega [n.d.]). These services may be particularly useful to households with at least one licensed driver but who do not have sufficient assets to own and maintain a car. Coordination of housing voucher assistance with nonprofit car donation services and rideshare services is a third possibility¹⁸. Of course, the trade-offs of such policies are that additional car-based travel will exacerbate the negative externalities associated with auto use, including congestion and air quality degradation. Furthermore, car ownership itself entails costs that accrue directly to owners, which may place undue burdens on low-income families. These trade-offs should be considered with any auto-based mobility strategy.

The importance of automobile access may also reflect the inadequacy of public transportation service in meeting the needs of many low-income households. Our research examining the link between transportation assets and employment transitions for MTO households suggests that while automobile access has the largest impact on transitions to employment, policies to enable households to move to transit-rich neighborhoods can also help participants’ retain employment.

Despite these findings, there are few federal programs aimed at helping low-income families gain access to automobiles and some programs actually act as barriers to gaining such access. Post-welfare reform, policymakers turned to transportation as a strategy for rapidly moving welfare recipients and other low-income adults into the labor market. In 1998, Congress passed the Job Access and Reverse

¹⁷ “Supportive Services Resources – Welfare to Work Vouchers,” US Department of Housing and Urban Development, accessed February 14, 2014, <http://www.hud.gov/offices/pih/programs/hcv/wtw/resources/bs10/transportation.cfm#1>.

¹⁸ See National Economic Development Law Center (2007) and “Working Cars for Working Families,” accessed February 14, 2014, <http://www.workingcarsforworkingfamilies.org/>.

Commute program, one component of the Transportation Equity Act of the 21st Century (Stommes et al. 2002). Additionally, other federal agencies—US Departments of Health and Human Services, Housing and Urban Development, and Labor—made resources available to provide transportation for welfare recipients and other low-wage workers. However, these efforts focused on public transit and, in particular, strengthening transit connections from center cities to suburbs. In the absence of building extensive transit networks which are fiscally impracticable in all but the densest US metropolitan areas, our study suggests that cars present a more viable means of connecting low-income workers to jobs. To be effective, federal strategies should be coordinated with local and state approaches. While most states have lifted or eased vehicle asset limitation rules that previously had limited welfare recipients' ability to own (reliable) automobiles, some states still maintain asset limits (Kassabian et al. 2012).

As new transportation legislation is being debated, and social equity concerns are playing a more prominent role in the design of federal transportation policy, perhaps it is time to better coordinate federal housing and transportation programs in ways that enhance the upward mobility of low-income households. The Sustainable Communities Partnership between HUD, the Department of Environmental Protection, and the Department of Transportation is one example of such coordination. Our findings lend support for additional programs such as these that consider social mobility more broadly, emphasizing the role of transportation access as it affects both residential mobility and economic mobility.

Finally, our findings call for a more nuanced reframing of the geography of opportunity debates. In our descriptive sorting analysis, locational attainment models, and descriptive characterization of access opportunity neighborhoods, we find that low income HUD-assisted households make trade-offs among different neighborhood characteristics. Areas with high-performing schools, access to open space, and a lower risk of environmental contamination may have inadequate transportation systems, have less accessibility to jobs, and have an increased risk of exposure to automobile emissions. Furthermore, households at different life-cycle stages and with different levels of access to transportation value each of these amenities differently. Given the spatial heterogeneity of preferences and opportunity structures, our findings call for an expansion of housing assistance services that are tailored to the particular needs of individual households. Thus, the goal of “moving to opportunity” may be more usefully phrased as “moving to opportunities.”

As promising as these findings about car ownership may be, more research is needed on the relationship between cars and other outcomes. A full accounting of the effects of car ownership on neighborhood choices would require a methodological approach accounting as fully for self-selection into car ownership as MTO tried to do for self-selection into low-poverty neighborhoods. Undoubtedly, families with access to cars differ in unmeasured ways from those without access to cars. Neither experiment “treated” voucher-assisted households with auto access, denying access in an experiment to a control group. Many of the factors that would lead a household to secure access to a car could also motivate moves to good neighborhoods and to get and keep jobs. For the present, therefore, our results on car access must be treated as preliminary and promising.

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Appendix A. Indicators, Labels, Descriptions, and Sources

Table A.1. Indicators, Descriptions, and Sources

Indicator	Description	Source
Natural environment		
Land within buffer of TRI site (%)	Total buffer area of TRI facilities within 1 mile in a given census tract divided by area of the census tract	EPA Toxic Release Inventory 2000
Log of cancer risk score	The sum of all carcinogens in assessment and individual pollutant contributions to total risk, multiplied by 1 million	2002 National-Scale Air Toxics Assessment
Land within 200m of major highway (%)	Total buffer area of major highways within 200 meters in a given census tract divided by area of the census tract	Authors' analysis using 2000 US census TIGER files,
Land developed as urban uses (%)	Total developed areas with low, medium, and high intensity including open space in a given census tract divided by area of the census tract	National Land Cover Database 2001
Functional environment		
Housing market strength factor	The first factor score resulting from authors' varimax rotation of vacancy rate, percent owner-occupied units, and median gross rent	2000 US census, SF3
Vacancy rate	Vacant units, except those held for seasonal or occasional use or for farmworkers, divided by total housing units in the census tract	2000 US census, SF3
Owner-occupied housing units (%)	Number of owner-occupied units divided by total number of housing units in 2000	2000 US census, SF3
Median gross rent (\$)	Median gross rent in 2000	2000 US census, SF3
Housing diversity factor	The first factor score resulting from authors' varimax rotation of diversity index of structure type, housing density, and median housing age	2000 US census, SF3
Diversity index of structure type	See table description below	2000 US census, SF3
Housing density (units/acre)	Average number of housing units per acre on blocks in a given census tract, excluding blocks with no housing units	2000 US census, SF3
Housing 50+ years old	Percent of year-2000 housing units built before 1950	2000 US census, SF3
Housing <11 years old	Percent of year-2000 housing units built in 1990 or later	2000 US census, SF3

FHEA transit access index	Score on a 1–100 index of the accessibility by bus or rail of retail, entertainment, recreation, food, and accommodations. For more information, see table description below.	HUD FHEA 2012 data
Social environment		
Poverty rate	Percent of persons in census tract with incomes below the poverty line	2000 US census, SF3
Social status factor	The first factor score resulting from authors' varimax rotation of percent non-Hispanic white, percent of households consisting of a single female with at least one child under 18, and percent of persons over 25 with at least four-year college degree in 2000	2000 US census, SF3
Non-Hispanic white (%)	Percent of population non-Hispanic white 2000	2000 US census, SF3
Female-headed households (%)	Percent of households that consist of an unmarried woman with at least one child under 18	2000 US census, SF3
Adults with college degree (%)	Percent of persons at least 25 years old with a four-year college degree or greater	2000 US census, SF3
Economic vitality		
Aggregate income per square mile	Aggregate household income (in 1999) divided by tract land area	2000 US census, SF3
Job density per square mile	Jobs as reported in the Census Transportation Planning Package part 2, divided by tract land area	2000 US Census Transportation Planning Package
Access to opportunity		
FHEA school performance index	Score on a 1–100 index of the average test scores of schools in or closest to the census tract. For more information, table description.	HUD FHEA 2012 data

Notes: TRI is Toxics Release Inventory; FHEA is Fair Housing Equity Assessment.

In table A.1, the diversity index is computed as

$$H_1 = - \sum_{i=1}^s \{(p_i) \ln(p_i) / \ln(s)\}$$

where H_1 is diversity, P_i is proportions of each of the eight housing structure types, and s is the number of structure types; in this case, $s = 8$. High values indicate high diversity of structure types.

As explained in the documentation to the August 2012 vintage Fair Housing Equity Assessment Database, which was distributed by HUD to its Sustainable Communities program grantees:

HUD has constructed a transit access index where available data exists to support local analysis. HUD uses data on over 200 transit agencies that provide data through GTFS Exchange (<http://www.gtfs-data-exchange.com/>) to assess relative accessibility within metro areas (or balance of state). The appendix

contains a list of metropolitan areas where GTFS data was available and used. The GTFS- based accessibility index is designed to model relative accessibility to amenities via bus or trains within a metro. Because standardized data on the location of amenities is not uniformly available at a granular level, HUD uses the number of jobs in retail (NAICS 44-45), arts entertainment & recreation (NAICS 71), and food & accommodations (NAICS 72) as proxies for the magnitude of amenities at the block- group level from the Local Employment Dynamics dataset published by the census bureau. (For states without Work Area Characteristics les in the LED data, population was used as a proxy.) First, HUD identified the number of jobs in these sectors within 1=2 mile of each bus stop and 3=4 mile of each rail transit stop and summed them. Then for each trip in the transit system, HUD calculated a stop-specific measure of the additional amenities accessed in each ensuing stop on that route, which it then divided (deflated) by the additional travel time to each ensuing stop. Mathematically, this can be expressed in several terms.

Let (s_{ij}) represent the accessibility of stop i on trip j , a is the amenity radius of a stop (the total jobs mentioned above), and T is the marginal travel time with each stop. Each stop of each trip takes on a value equal to the sum of the amenity radius of each ensuing stop divided by the time to that next stop for all stops on a trip.

$$s_{ij} = \sum_i^N \frac{a_{i+1}}{T_{t+1}}$$

These stop-journey specific (s_{ij}) values are then summed over all journeys j (where a journeys in opposite direction are counted as two trips) made in 24-hours to create a single aggregate accessibility value for each stop in the system (where k is the total stops in the system).

$$A_i = \sum_j^k s_{ij}$$

To translate these stop accessibility values (A_i) to block-groups, HUD then calculates the distance between each stop and the population-weighted centroid of each block-group. The three highest accessibility stops within 3/4 of a mile are summed to generate a block-group value for accessibility. Finally, these values are placed into deciles (10-percentile) buckets within-metro or balance of state, and are scaled up by a factor of 10 to align with the other indices. Block-groups that are not within 3/4 of a mile of either a bus or transit stop are normalized to a value of 1, the lowest accessibility score. For communities with fixed rail, but no available GTFS data, HUD calculates a simple access measure as the distance of the block-group centroid to the nearest fixed-rail.

As explained in the documentation to the August 2012 vintage Fair Housing Equity Assessment Database, which was distributed by HUD to its Sustainable Communities program grantees:

The neighborhood school proficiency index uses school-level data on the performance of students on state exams to describe which neighborhoods have high-performing elementary schools and which have lower performing elementary schools. The proficiency index is a function of the percent of elementary school students proficient in read (r) and math (m) on state test scores for the i th school associated with the neighborhood ($i = 1; 2; \dots n$) where N is the maximum number of schools in any block-group in the state-distribution, and school enrollment s :

$$School_i = \sum_i^N \left(\frac{s_i}{\sum_i^N s_i} \right) * \left[\frac{1}{2} * r_i + \frac{1}{2} * m_i \right]$$

Elementary schools are linked with block-groups based on a geographic mapping of attendance area zones from School Attendance Boundary Information System (SABINS), where available, or within-district proximity matches of up to the four-closest schools within a mile. In cases with multiple school matches, an enrollment-weighted score is calculated following the equation above.

Factor Analysis Results

We used factor analysis to develop three indices: housing market strength, housing diversity, and neighborhood socioeconomic status. We used common factor analysis, which creates a composite index from a selective series of measures predetermined to be related in a certain way; that is, we had already

decided what the first “factor” represents. Therefore, we know that certain variables measure the concept of housing market strength, housing diversity and neighborhood socioeconomic status, and we use this method because we want to extract an index capturing where these variables intersect. We conducted the factor analysis separately for the MTO and WTW subsets (i.e., each factor analysis used five metropolitan areas). Factor patterns for each of these variables appear in table A.2.

The housing market strength factor extracts a single index from the vacancy rate, homeownership rate, and the standardized gross rent (i.e., contract rent plus utilities converted to a z-score within each metropolitan area to account for inter-metropolitan area differences). The first factor extracted by this common factor analysis explained 51 percent of the variance across the MTO cases and 50 percent across the WTW cases. Higher scores on the housing market strength indicate lower vacancy rates, higher homeownership rates, and higher median gross rent.

The housing diversity factor is a single index created by the first factor extracted from the structure diversity index described above; the housing density in the tract net of blocks without housing units; the percent of housing over 50 years old (i.e., built before 1950); and the percent of housing less than 10 years old (i.e., built since 1990). High scores indicate more diverse, denser, and older housing stock. The MTO housing diversity factor explained 55 percent of the variance across cases, and the WTW factor explained 58 percent of the variance.

The social status factor extracts a single index from the percent of the population that is white non-Hispanic, standardized within the metropolitan area using a z-score; the percent of persons with at least a high school diploma or GED; and the percent of families and subfamilies composed of an unmarried mother with at least one child under age 18. High scores indicate high levels on all these indicators, meaning that “low” social status is indicated by high scores on this factor. The MTO social status factor accounted for 80 percent of the variation across cases, and the WTW factor accounted for 76 percent of the variation.

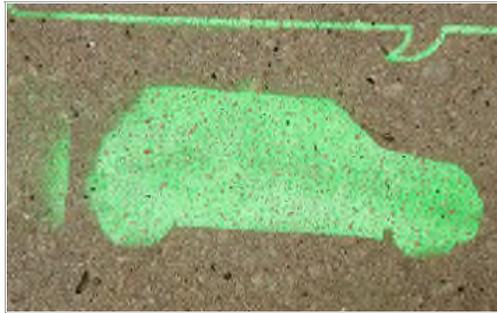
Table A.2 Factor Patterns, Housing Market Strength, Housing Diversity, and Social Status Factors

	MTO	WTW
Housing market strength		
Vacancy rate	-0.285	-0.493
Owner-occupied housing units (%)	0.608	0.543
Z-score of median gross rent, by metropolitan statistical area	0.601	0.549
Housing diversity		
Diversity index of structure type	0.406	0.601
Average number of housing units per acre on blocks	0.386	0.522
Housing 50+ years old (%)	0.652	0.406
Housing less than 10 years old (%)	-0.471	-0.524
Social status		
Z-score of percent white alone, by metropolitan statistical area	0.871	0.847
Persons age 25+ high school diploma or GED (or greater) (%)	0.744	0.636
Female-headed families	0.572	0.612

Source: Authors’ calculations using data from 2002 US census.

MOBILITY FOR THE POOR: CAR-SHARING, CAR LOANS, AND THE LIMITS OF PUBLIC TRANSIT

by [Jeff Khau](#) 08/22/2013



Public transit systems intend to enhance local economies by linking people to their occupations. This presents problems for many low-income families dependent on transit for commuting. With rising prices at the gas pump, much hope has been placed on an influx of [investment into public transit](#) to help low-income households. But does public transit really help the poor? While the effect of transit access on job attainment is murky, several

alternatives such as car loans and car-sharing programs have seen real results in closing the income gap. For Christina Hubbert, emancipation from public transit has been a change for the better. [NBC News](#) reports:

A car means Hubbert no longer spends two hours each way to and from work in suburban Atlanta. It means spending more time with her 3-year-old daughter – and no longer having to wake her up at 5 every morning so she can be in the office by 8. It also means saving hundreds of dollars each week in day care late fees she incurred when she couldn't get to the center before its 6:30 p.m. closing time.

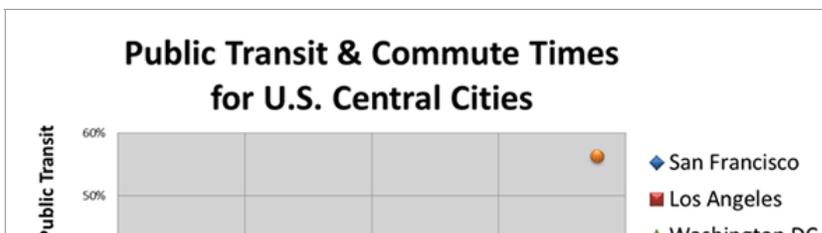
[Research](#) finds that car-ownership is positively correlated with job opportunities while no such relationship exists with access to transit stations. Furthermore, increased transit mobility has been [proven](#) to have no effect on employment outcomes for welfare recipients. The notion that newer and nearer public transit creates benefits for all is inaccurate; it only creates opportunities for those who live near the transit stations, and those opportunities are limited. A [study](#) by the Brookings Institute finds that, among the ten leading metropolitan areas in the US, less than 10% of jobs in a metropolitan area are within 45 minutes of travel by transit modes. Moreover, 36% of the entry-level jobs are *completely* inaccessible by public transit. This is not surprising given the fact [that suburbia houses two-thirds of all new jobs](#).

The mismatch between people and jobs can be reconciled in two ways: car loans and car-sharing services. Basic car-sharing involves several people using the same car or a fleet of cars, as with the [ZipCar](#). The concept has branched out to on-demand car sharing services, such as [Lyft](#), mobile apps which link riders with drivers.

Car loans on the other hand have been around for a while and offer affordable financing for a car without a required down payment. [Ways to Work](#), one of the largest loan providers in the U.S., includes courses on personal finance and credit counseling. By making vehicle travel more attractive, these two disruptive innovations threaten the expansion of public transit – and its powerful associated lobbies – in three ways:

1. It's more cost-efficient and time-efficient.

To improve the way we move people, transit developments must save both time and money. Sadly, transit lines are notorious for their extraordinary costs and long delays. Data from the 2010 Census reveals that people living in central cities with a higher proportion of transit riders experience longer commutes. And since transit riders have more cumbersome commutes, they are much more likely to be tardy or absent from work.



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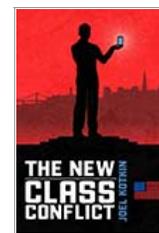
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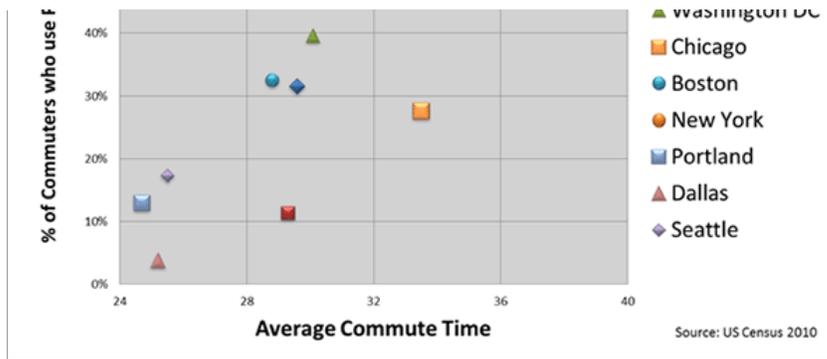
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The hefty price tag of transit projects also triggers concern. For example, the cost per new passenger of the [Washington Metro line](#) to Dulles Airport was estimated at \$15,000 annually. That's about the same as the current poverty threshold for a household of two.

Car-loan programs on the other hand are largely cost-efficient, producing real fiscal benefits to borrowers, employers, and taxpayers. A [survey](#) of 4,771 borrowers and their employers finds that borrowers have greater job security as a result of access to vehicles. With access to credit, borrowers increase their purchasing power by an average of \$2,900 each year and save about \$250 by avoiding payday loans and checks-for-cash outlets. Employers gain as well through cost savings due to increase retention and reduced absenteeism and tardiness, which amount to \$817 and \$1130 per borrower respectively. In large part, providing vehicle financing is a smart investment since it reduces the number of low-income families on social welfare – an annual cost savings of \$2,900 for each borrower coming off public assistance.

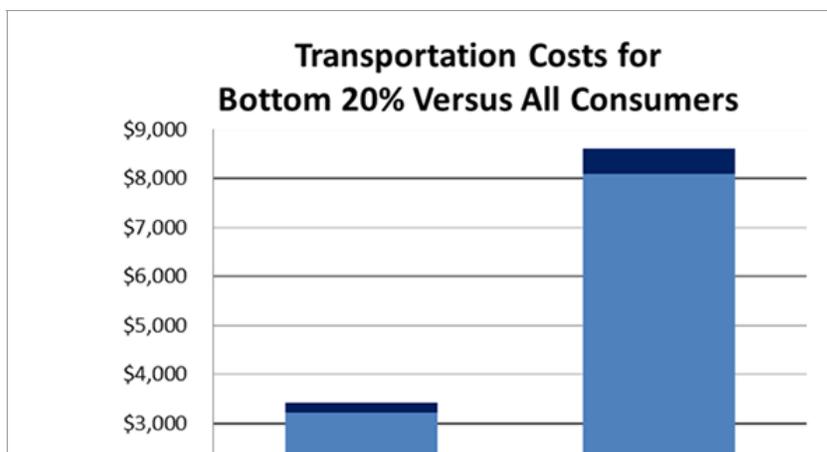
Given its clear advantages, car sharing is increasing. Recent reports find that shared-use vehicle organizations have been lucrative. Between August 2012 and July 2013, [car-sharing ridership](#) grew by 112 percent and the number of vehicles increased by 52 percent. And although car-sharing is not typically used to transport the poor, having on-demand car service makes it so that door-to-door access is more available and affordable. If car-sharing continues to grow at its current rate, it's reasonable then to assume that these pseudo-taxi services will be eventually be affordable enough so that people would choose to be chauffeured rather than drive their own vehicles.

2. Vehicle ownership provides greater access to jobs and economic opportunities.

Instead of being limited to a few areas that are transit-oriented, families with cars have access to more jobs and economic opportunities. Public transit lines are limited in their geographical coverage and take time to make often numerous stops. Transfers are inefficient and time-consuming, making much of that coverage impractical. Also regular transit riders have limited employment options since they're only able to consider jobs in the vicinity of transit stops and stations.

3. Travel by car is responsive to current travel patterns

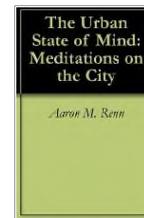
A common misperception is that low-income people do not have cars. In reality, [86% of the poor have cars](#), compared to 95% of the entire population. The high percentage of poor families with cars reveals how automobile culture has become fixed into American ideals of economic well-being and prosperity. And contrary to stereotypes, the poor and the rich similarly spend about 94% of their transportation costs on vehicle travel versus public transit, challenging the notion that low-income travel behavior is unlike that of the rest of the population. As such, providing the poor with cars dramatically levels the playing field as they are the ones who would gain the most from increased access to employment destinations and education facilities.



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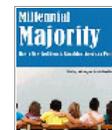
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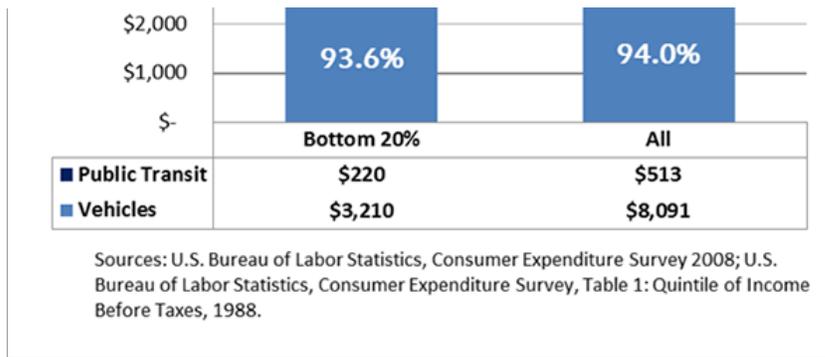
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A strong argument posited by public transit advocates is that as more cars use the road, congestion and pollution will intensify. And to be sure, public transit is more environmentally friendly than motor vehicles. The Amalgamated Transit Union (ATU), the largest union representing transit workers in North America, [reports](#) that one full bus eases the road of thirty-five cars, and that existing transit usage cuts national gasoline consumption by 1.4 billion gallons annually. Yet, on average, this result can only be achieved if buses were always full, which they are not – authorities from the [Los Angeles Metro](#) estimate that their buses run at an average of 42% capacity.

But is it equitable to ask the poor to forgo mobility and economic gain for the environment? Considering that most Americans experience some degree of social mobility via vehicle ownership, it's far more reasonable to allow low-income families greater access to opportunity. In addition, new fuel efficiency standards for cars set by the Obama administration will decrease overall GHG emissions substantially; according to [forecasts by the Department of Energy](#), carbon emissions from light-duty vehicles will drop 21% between 2010 and 2040 in spite of a 40% increase in driving. This shows that, even with more cars on the road, environmental goals can be accomplished.

Although the eligibility requirements are stricter in some areas than others, [every state](#) in the U.S. has a program for low-income residents to have access to car loans. Car-sharing is also rapidly expanding, but marketing now is geared towards millennials on a budget rather than low-income families. Both innovations, however, respond to new demands faced by future workers, who are likely to find employment in dispersed locations and may make more trips per workday since many may have multiple part-time jobs. With more efficient ways of getting people to work, it's time to challenge the assumption that the expansion of public transit is the best way to meet the needs of America's hard-pressed working class.

Jeff Khau graduated from Chapman University with a degree in business entrepreneurship. Currently, he resides in Los Angeles where he is pursuing his dual-masters in urban planning and public policy at the University of Southern California.

Photo by Romana Klee, #113 zipcar.



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Hollywood's Urban Cleansing

Patrick Range McDonald

12,878 MOSTLY LATINO RESIDENTS VANISH, PUSHED OUT BY CITY HALL, HIGH RENTS AND HIPSTERS

In the 1960s, Mercedes Cortes arrived in Hollywood after fleeing her homeland of Guatemala, which was roiled by bloody unrest. After moving around a bit, she and her husband and their three sons settled in a twobedroom apartment on Eleanor Avenue, a community of run-down apartment buildings and old Craftsmanstyle houses, which is a short walk from Paramount Pictures and Hollywood Forever Cemetery, where many stars are buried.

A decade later, Cortes' world was shattered again — when gang violence and drug dealing hit her beloved neighborhood. This time, the affable, soft-spoken housekeeper bravely stood her ground as Hollywood was engulfed in the wave of bloodletting that gripped Los Angeles from the mid-1980s to the mid-1990s. A small, unimposing woman, she became a visible member of Neighborhood Watch, walking the dark streets in candlelight vigils to confront the thugs.

And it worked. Cortes and her neighbors slowly won back Eleanor Avenue. She never dreamed that she'd be evicted — for being too poor to live in her improved, more livable community.

But in 2002 her apartment building changed hands during the real estate bubble, a particularly frenzied phenomenon in Hollywood, where the taxpayer-subsidized, nearly \$1 billion Hollywood Redevelopment Project Area helped fueled a Wild West of land speculation, building flipping, profit-seeking — and skyrocketing rents. In 2003, projects such as the stylish face-lift of the Cinerama Dome were completed. In 2004, Cortes' new landlord told her she had to go.

"I was working and doing good things for my neighborhood and they treated me like that," Cortes says. "For what? They wanted more money."

A gracious, churchgoing woman, Cortes represents a Latino diaspora of working families priced out of Hollywood and East Hollywood, a mass departure that has fueled an unexpected — and, for City Hall, increasingly embarrassing — net population plunge of 12,878 people in those two neighborhoods between 2000 and 2010.

Hollywood, defined here as the huge flatlands roughly bounded by La Brea, Melrose, Western and Franklin avenues, has lost one in every 12 of its residents. Latinos are streaming out, as a much smaller number of higher-income whites takes their place. The Latino population plummeted 17 percent, about 6,000 adults and children gone.

East Hollywood, roughly bounded by Western, Beverly, Hollywood and Hoover, has seen a net loss of more than 5,000 Latinos.

Hollywood-area City Councilman Eric Garcetti, who is running for mayor in the March 5 primary and has for 12 years avidly led the urban renewal in Hollywood, won't discuss the census data, the outflow of Latinos or the area's net population loss, none of which were foreseen by his office. But Larry Gross, executive director of the Coalition for Economic Survival, a tenants' rights advocacy group, says, "It was an economic tsunami that pushed low-income people out. There was massive displacement." Representing more than 8 percent of Hollywood and East Hollywood's population, the exodus of nearly 13,000 mostly Latinos is believed to be the largest mass departure from an L.A. neighborhood since "black flight," between 1980 and 1990. In that demographic upheaval, 50,000 residents fled the violence and shattered neighborhoods of South Central and South Los Angeles.

Garcetti and other L.A. politicians have insisted that growth is as inevitable as summer tourists, and that City Hall is merely facilitating Hollywood's unavoidable, denser future with smart planning. But census data and the stories of those who have fled suggest that city planners and political leaders are facilitating what some criticize as the urban cleansing of Hollywood.

Father Michael Mandala, who was pastor at the landmark Blessed Sacrament Catholic Church on Sunset Boulevard from 1998 to 2011, repeatedly saw landlords drive out Latino families of three or four in order to rent the same space to one or two white tenants. "I'm wondering if the policymakers are on the mark with fixing Hollywood," Mandala says, "or are they clearing out what they don't want?"

In mid-July, the Los Angeles City Council approved a new Hollywood Community Plan championed by Garcetti, which wipes out height limits in parts of Hollywood to allow skyscrapers, some of which would obscure the Hollywood Sign. At tense public hearings, hundreds of residents decried the plans for a Century City skyline in their community. Business owners, led by the Hollywood Chamber of Commerce, were among those who cheered the City Council's decision.

Three neighborhoods group have sued the city over the new skyscraper zoning. Brad Torgan, lead attorney for those groups, describes the Hollywood Community Plan as Garcetti's personal "vision for Hollywood — good and bad." But, Torgan says, "There's a perception that the plan was created for the development community at the expense of the residents."

Garcetti, the brainy, Ivy League-educated mayoral hopeful, revealed some of his thinking in a 2010 interview with Hollywood Patch: "We staged seminars in which we brought the New York banks to Hollywood and showed them the opportunities Garcetti said. "Whatever the project's size, my philosophy is to let the creative entrepreneurs in." He added that "what we did was to use the nightlife to bring back the day life" — restaurants such as Beso, 25 Degrees, Cleo and Katsuya and night spots such as the Sayers Club, Drai's, My Studio and Eden.

Garcetti's chief of staff, Yusef Robb, waves off the flight of Latino families and individuals as a sign of their own good fortune, arguing that Hollywood's Latinos did so well during the past decade that they bought homes in "the suburbs."

"We looked into the population shift in Hollywood," Robb says, "and the situation tended to be people making choices to their own advantage."

Robb could not provide L.A. Weekly any data to back up his claim. In fact, it appears that Garcetti and his sizable Staff — about 20 full-time personal aides — are unprepared to explain what is unfolding.

The hollowing out of Latinos in Hollywood is particularly dramatic in the dense, L-shaped chunk of six U.S. census tracts at the heart of Hollywood — tracts 1908.01, 1908.02, 1909.01, 1909.02, 1918.10 and 1918.20 — bordered by Western Avenue on the east, Seward Street on the west, Melrose Boulevard on the south and Sunset on the north.

Tracts 1909.01 and 1909.02 between Western, Gower, Sunset and Santa Monica Boulevard saw a net loss of 664 Latinos. Far fewer Latinos moved into than out of the neighborhood's increasingly costly apartments, condos and bungalows, resulting in a steep population decline. The same thing occurred in tracts 1908.01 and 1908.02 between Gower, Seward, Sunset and Santa Monica, where a net loss of 896 Latinos created a sharp overall population drop.

Just south of there, in tracts 1918.10 and 1918.20 bordered by Gower, Seward, Santa Monica and Melrose, a net 1,402 Latinos took off. Having lost 2,962 Latinos, the historically affordable housing in these six flatland census tracts is now a thing of the past, creating ground zero in Hollywood's working-class diaspora.

In 2000, about 80,000 people lived in Hollywood, and L.A.'s Department of Planning announced that 85,489 would live there by 2008. By 2010, only 72,000 did.

What's going on is clear enough to USC demographer Jared Sanchez. He says the data show "significant" gentrification, with wealthier households moving in — which inevitably contain fewer people than working-class households — while others get squeezed out.

Many will cheer this turn of events. Hollywood, the neighborhood, is richer, flashier and more attractive than at any time since its golden era. Hollywood Chamber of Commerce president Leron Gubler says, "We've made significant strides in cleaning up Hollywood, restoring community pride and creating a vibrant economy here in Hollywood."

Longtime Hollywood resident and Garcetti ally Ferris Wehbe says, "There has been big change in the area. Hollywood is going to soar."

The L.A. City Council in 1986 approved a 1,100-acre "redevelopment project area" with the aim of remaking Hollywood into a livable community. The nearly \$1 billion Hollywood Redevelopment Plan was one of the most heavily subsidized projects in California, with taxpayers underwriting such items as a \$32 million parking garage at the pricey Cinerama Dome and ArcLight Theaters and \$98 million for Hollywood & Highland. Los Angeles County transportation officials broke ground in 1986 on the Red Line subway with stops along Hollywood Boulevard, at that time the haunt of heroin dealers and prostitutes.

In 1992, Leron Gubler, a soft-spoken, determined power broker, became president of the Hollywood Chamber of Commerce, which supervises the Walk of Fame and is one of the most influential champions of redevelopment. Politicians rarely run afoul of the Chamber, which counts among its members top executives from Paramount Pictures, Walt Disney Studios, real estate developer Millennium Partners, The CW television network, the Renaissance Hollywood Hotel and Hollywood & Highland.

At first, Gubler says, "We had a lot of homeless. The sidewalks were dirty. Businesses were closing left and right. ... People had given up on Hollywood."

In 1993, Jackie Goldberg was elected to represent Hollywood on the City Council, and she pushed hard for redevelopment. Gubler told her that first they should focus on "nuts-andbolts" issues, which Gubler narrowed down to "crime and grime." The Chamber and Goldberg's office launched much-publicized efforts to make Hollywood's streets cleaner and safer.

But beyond the headlines, Mercedes Cortes and her neighbors were already on the job, creating a successful Neighborhood Watch that teamed up with the Los Angeles Police Department. So were many other Spanish-speaking residents, including Manny Romero, who worked as a youth organizer in unstable El Salvador, escaped that country's violent civil war, which took the lives of his family and friends in the 1980s, and moved to Los Angeles.

Romero eventually became the popular and well-respected groundskeeper at Blessed Sacrament Catholic Church, built in 1928, an important community center for Hollywood's Latino population.

In 1978, Romero moved with his wife and two children into a cheap bungalow on Las Palmas Avenue just south of Sunset. It was a few blocks west of De Longpre Park, which became a notorious cesspool of drug dealers and junkies in the late '80s and early '90s.

Romero suddenly faced a new kind of war. He went to incredible lengths to save his community, joining a neighborhood patrol group called the Hollywood Sentinels, whose members put their lives on the line by running drug dealers and gang members off of street corners.

Criminals threatened to kill Romero and his family.

"I was scared of the gang members," Romero recalls, "but it didn't stop me from doing my citizen's duties."

The Chamber's Gubler and many journalists credit the 2001 opening of the concrete elephant-bedecked Hollywood & Highland mall, where the Academy Awards are held, for initiating Hollywood's turnaround. But low-income working folks like Cortes and Romero were key figures in first steadying the community's foundation.

Romero was treated like anything but a hero. In 1996, his landlord sold the cluster of bungalows on Las Palmas Avenue, and the new owner doubled Romero’s rent from \$600 a month to \$1,200. Romero was forced to abandon his dramatic but unsung quest to create a livable community. He and his family moved to then-affordable North Hollywood.

Five years later, in 2001, Garcetti took over from Goldberg on the City Council. He was 30, fresh-faced and eager to move forward with a new kind of politics that would put residents, not big-moneyed special interests, first.

Community activist Ferris Wehbe, who spearheaded the unsuccessful Hollywood secession movement in the early 2000s, supported Garcetti then and backs him today. “Eric played a big role” in turning around Hollywood, Wehbe says. “He saw that good changes took place. You need good leaders to make decisions and not try to please everyone.”

By the mid-2000s, land speculation in Hollywood turned into a frenzy. In 2003, Ralph Horowitz and developer Larry Worchell bought historic Columbia Square on Sunset Boulevard, the West Coast home of CBS, for a reported \$15 million. Three years later, Horowitz and his partner sold the property to Las Vegas-based developer Molasky Pacific for \$66 million. That land flipping, and the breathtaking \$51 million profit for Horowitz and Worchell, were fed by the widely held belief that Garcetti, now the powerful arbiter of what could and couldn’t be built, would let developers ignore the neighborhood’s longtime height limit of a few stories to build a skyscraper.

About the same time, Mercedes Cortes’ landlord sold her building to Prime West Management chief executive officer Mercedes Anaya. In 2004, when the eviction notice arrived, Cortes was paying \$450 a month. Although she had divorced, her three adult sons still lived with her and she enjoyed a vibrant social life as an active member of Blessed Sacrament Catholic Church.

She drove each day to clean houses in West Hollywood or Beverly Hills. At 61, she fought eviction. She eventually won a settlement that paid her some “relocation” expenses, and she and two of her sons found a place far from home, in North Hollywood.

About 20 of her Latino friends and acquaintances were similarly pushed out of Hollywood, she says. A neighbor still living in the flatlands recently told Cortes that her old \$450 rental now goes for \$1,200.

In the legal battle that ensued, Anaya claimed in 2004 that Cortes’ sons were heavy-drinking gang members and nuisances. When that didn’t work, says Cortes’ lawyer Marty O’Toole, Anaya’s lawyers claimed that Cortes didn’t respond to a three-day notice that demanded she pay her rent or vacate. The landlord did not respond to emails requesting comment.

During the six-month legal battle to keep her apartment, Cortes formed a prayer group with her friends at Blessed Sacrament. “I was asking for justice,” she recalls. “Because if I lost the case, I would’ve been in the streets.”

Her prayers were partly answered. Just before the trial, Anaya’s lawyers offered Cortes five months of free rent and several thousand dollars if she moved out. Emotionally drained, she took the deal.

Not long after her battle, several blocks away, Roy Maule and his Latino neighbors faced their own war against eviction on tree-lined Camerford Avenue in a quaint bungalow complex built in 1912 for actors working at Paramount Pictures.

Many of Maule’s neighbors — mostly Latino families — had lived on the quiet block, near tony Larchmont Village, for decades. “It was great,” says Maule. “Everyone knew each other.”

They traditionally closed the street to celebrate Fourth of July, with adults lighting fireworks and kids running around. One day, a young man walked up to Maule’s mailbox and snatched a package sticking out of it. Maule’s neighbors, he recalls, “gave chase, got the package and beat up the guy. ... The poor guy didn’t know he was in a neighborhood like that.”

But the property was sold, and around 2006, the landlord made clear he wanted the families gone. Neighbors from Mexico and Central America told Maule that the landlord had threatened to make calls to federal immigration officials. Other tenants were offered money to leave.

But Maule hired a lawyer to fight his eviction and wrote to Garcetti’s office for help. He did his own homework, finding in a title search that Santa Monica-based developer Watt Genton Associates owned the property.

Maule says Garcetti “did nothing,” and at least 150 people were displaced from the bungalows and adjacent apartment units. In 2007, Maule was paid relocation money to leave, and the city put its political weight behind the developer, with the City Planning Commission and Garcetti backing his demolition of the historic bungalows and newer apartment buildings to create luxury condos for affluent professionals.

Today, the corner property stands barren, a victim of the economic disaster that struck the nation, and the historic bungalows are long destroyed. A new plan calls for a luxury apartment complex with ground-floor retail. Developer Jonathan Genton and Watt Commercial Properties executives declined to take questions from the Weekly.

“Here it is five years later,” Maule says.
“There’s nothing.”

Manny Romero says it’s a maddening scenario he has seen over and over in Hollywood: “There are many, many people like us.”

At 41, having served as Hollywood’s councilman and the area’s chief landuse visionary and community policymaker for nearly 12 years of his life, Eric Garcetti wants to become the 42nd mayor of Los Angeles. He is clearly proud of Hollywood’s turnaround and its bustling nightlife scene. In fact, Garcetti has publicly said that he wants to replicate Hollywood’s style of urban renewal across communities in Los Angeles.

Driving out thousands of Latino working and poor families in favor of affluent residents and high-end restaurants is not

part of his pitch.

"L.A. is full of bad planning," Garcetti said at a recent mayoral debate in Hollywood with rival candidates Wendy Greuel, Jan Perry and Kevin James. "You look at places where there are four jobs for every one unit of housing, and wonder why they're stuck in traffic. Hollywood has become a template for a new Los Angeles."

Except Hollywood's traffic is immeasurably worse than when Garcetti was elected to represent the area, even though one-twelfth of the population has left. For all their planning, the City Council, Los Angeles Planning Department and Garcetti have brought mass congestion to a residential community that is shrinking, not growing.

Gary Slossberg, a public-interest attorney who represents low-income clients and who ran for City Council against Garcetti in 2009, says, "A lot of his policies don't match what's best for the people in Los Angeles, but a lot of people are getting rich." Garcetti has raised nearly \$3 million for his mayoral bid by promising "bold, new ideas" and calling for the need to create more jobs for working families.

Now a well-known whistleblower who tracks the sweetheart deals often granted to developers, Kruse sees Garcetti as a cold figure who is in denial about the high-end development he embraces.

There's palpable resentment among Kruse and other activists toward Garcetti, who was raised in an upperclass household in Encino and whose life has been eased by a bequest of property that provided him thousands of dollars in annual income starting when he was a young man.

Kruse says Garcetti "has gone more times against the community than with the community," backing zoning variances and other exceptions that let developers ignore protective zoning laws, and supporting what Kruse sees as too-generous taxpayer subsidies. "The only time he goes with the community," she says, "is when it's a politically smart move."

Now, Garcetti is wooing Latinos to elect him as mayor, even controversially claiming that he is a Latino candidate.

Garcetti has no Latino ancestry. His great-grandfather was Italian; he moved the family from Europe to Mexico, where Garcetti's paternal grandparents were born and raised before the family emigrated again, to Los Angeles.

Romero, the groundskeeper at Blessed Sacrament Catholic Church, has found the councilman to be "a nice person to talk to but different when you want to solve a problem."

Such sentiments could pose a problem for Garcetti in the mayoral race. But he still has a deep well of voter support in Hollywood, having been easily re-elected more than once.

Many people welcome the changes Garcetti has pushed through.

"Development has been great for Hollywood," says Laurie Goldman, president of Friends of the Hollywood Central Park, a nonprofit that's pushing an effort to build a park over the 101 Freeway. The neighborhood has improved so much, Goldman says, that she wants to move back to where she once lived, but "it's too expensive. My rent is cheaper in Beverly Hills."

Wehbe, a longtime resident who walked the streets with the Hollywood Sentinels in the early 1990s, is more than happy with Garcetti's policies. Of Hollywood's transformation, he says, "It's day and night. It's amazing. You can walk around at any given time. Back then, you couldn't get out of your house."

Manny Romero chuckles when he hears such talk, repeating an old saying: "El saluda con sombrero ajeno." The church groundskeeper, who faced down violent gang members on Hollywood street corners before Garcetti's time, says the phrase essentially means that "someone else does the job and the person who's the opportunist takes the credit."

Hollywood historian Greg Williams also gives voice to residents who are not pleased with Garcetti's sleek vision. "It's really bad development," says Williams, who was born and raised in the community. "There's no variety. It's the same mixed-use with retail on the bottom floor and condos on top." He's come to see Garcetti as "totally in the developers' pockets. He's not for the preservation of old Hollywood."

Robb, the aide speaking on behalf of the unavailable Garcetti, strongly disputes that notion. "What developers tell us is that community activists have too much of a say" in Garcetti's decision making. Robb says his boss completely supports preserving old Hollywood, while looking to the future. "It's always been about taking what Hollywood offers," Robb says, "and enhancing it."

But when asked by the Weekly, Garcetti's staff could not provide basic figures that might shed light on what their enhancement efforts have produced. Garcetti's team does not know how many "affordable" housing units have been built in Hollywood, or the total amount of housing built or lost, since 2001. Nor could Garcetti's aides, whose salaries and overhead cost L.A. taxpayers about \$1.5 million a year, provide the Weekly even a ballpark figure for how much taxpayer money has subsidized Hollywood's makeover since 2001.

Robb says one of Garcetti's top priorities has always been affordable housing. Yet Barbara Schultz, the directing attorney of the housing unit at the Legal Aid Foundation of Los Angeles, which helps working-class and poor people in disputes involving housing rights and landlord-tenant disagreements, says Garcetti hasn't stood out. In fact, Schultz says, "There's not any top council member whose top priority is affordable housing."

Dennis Frenchman, a well-regarded professor of urban design and planning at the Massachusetts Institute of Technology, says smart policymakers always know how their planning strategies are playing out in communities. "They should have a sense of demographic changes and what's been happening," says Frenchman, one of the world's leading experts on building and maintaining a sustainable city. "They should know if people have been pushed out."

Father Mandala knows what is happening at the neighborhood level. He has seen his mostly Latino parishioners leave

Hollywood, while the Latino population grew in the rest of the city. He has seen parents take their kids out of Blessed Sacrament Elementary School. Between 2000 and 2010, student enrollment at that grade school plummeted from 250 to 100.

Contrary to Yusef Robb's claim, Mandala says these people did not want to leave. "If they could have bought a home in Hollywood," says the priest, "they would have. ... It's bad for Hollywood because if your goal is to have a mixed-income community, you're losing taxpaying citizens. These are the teachers, the contractors, the furniture makers of the community."

Wehbe argues that Garcetti is very connected to what's happening, declaring, "I bet you anything there isn't a single councilmember who walks the neighborhoods every month and knocks on doors like Eric. To me, that's saying something."

But Dowell Myers, a demographer and urban planning professor at the USC Sol Price School of Public Policy, who researched Los Angeles County's shrinking youth population, predicts that Hollywood's schools will drop in enrollment and Hollywood will become less family-oriented, with more of an emphasis on nightlife. That means fewer families will be around to keep an eye on the neighborhood. "They help to keep streets safer," Myers says.

Garcetti aide Robb said in a recent L.A. Weekly story reporting on the rise of Koreatown that Garcetti is not necessarily interested in duplicating Hollywood's urban-renewal template in Koreatown. Robb warned, "A robust nightlife is good for the economy, but too many night spots in a neighborhood can create dead spots during the day" and community "balance" is needed.

Myers says L.A. political leaders and planners have already gone too far to draw a high-end crowd to Hollywood. "We don't need more condos," he says. "We need more rentals. Rentals are where you house lower-income and poor people."

Frenchman has a similar message for Los Angeles' leaders: "Diversity is the key to long-term sustainability. ... Density without diversity makes things worse."

Mercedes Cortes sits in a back room of Blessed Sacrament Catholic Church on Sunset while trumpets in a mariachi band sound off for a mass celebrating the feast day of Our Lady of Guadalupe. Like some parishioners, Cortes still drives in from the Valley to Hollywood to worship, and the church is jammed with Latino parents and children.

But not everyone returns to Hollywood. "That's why we lost so many members of the church," Cortes says. "They moved to Palmdale, North Hollywood and Burbank" — but not because they were better off. Instead, many doubled up with relatives as the recession bore down.

Hollywood's business community often says that the catalyst that really set off development in Hollywood was Councilwoman Jackie Goldberg's pet project, the Hollywood & Highland mall, which houses the Kodak Theatre (now Dolby Theater), home to the Academy Awards show.

But Cortes says the glitzy, architecturally unloved mall has had a more complex long-term effect on the bigger neighborhood around it: "Once the Kodak Theatre was built," Cortes says, "we started seeing the rents going higher and higher."

Cortes generally likes Eric Garcetti, but she noticed a difference between him and his predecessor, Goldberg. Goldberg at least got involved in the community without prodding or protest, she recalls.

Garcetti, according to Cortes, did not seek out members of her activist group but waited for them to complain.

As if talking directly to Garcetti, the grandmother and retired house cleaner delivers up one of their complaints, still unanswered after all these years: "When they start to build something, why does the middle class have to suffer for that?"

Reach the writer at pmcDonald@laweekly.Com.

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Petitioners StopTheMillenniumHollywood.com, Communities United for Reasonable Development, Beachwood Canyon Neighborhood Association, and George Abrahams seek a writ of administrative mandamus setting aside the actions of Respondent City of Los Angeles (“City”) in approving a large, mixed-use development in Hollywood (“Project”), its supporting Environmental Impact Report (“EIR”), and its land-use entitlements.¹

The court has read and considered the moving papers, opposition, and reply, and renders the following tentative decision.

A. Statement of the Case

Petitioners StopTheMillenniumHollywood.com (“STMH”), Communities United for Reasonable Development (“CURD”), Beachwood Canyon Neighborhood Association (“BCNA”), and George Abrahams (“Abrahams”) commenced the instant proceeding on August 28, 2013 alleging claims for mandamus, declaratory relief, and injunction.

On September 5, 2014, Petitioners filed a First Amended Petition for Writ of Mandamus and Complaint for Declaratory and Injunctive Relief (“FAP”), which is the operative pleading. The FAP alleges in pertinent part as follows.

1. Petitioners and Real Party-in-Interest

Petitioner StopTheMillenniumHollywood.com (“STMH”) is an unincorporated association comprised of community organizations and individuals who participated in the administrative proceedings before the City. FAP, ¶7. Petitioner CURD is another unincorporated association of community organizations and individuals who jointly filed land use appeals during the administrative hearing process before the City Planning Commission and the City Council. *Id.*, ¶8. Petitioner BCNA is a corporation representing property owners and residents living in the areas near Beachwood Canyon in or immediately adjacent to Hollywood and the site of the Project. *Id.*, ¶9. BCNA is the parent organization of STMH and CURD. *Id.* Petitioner Abrahams is a director of BCNA. *Id.*, ¶10.

Real Party-in-Interest Millennium Hollywood, LLC (“Millennium”) is the business entity seeking to construct the Project.

2. Procedural Summary

A Draft EIR for the Project was released on October 25, 2012 and circulated for 45 days. FAP ¶25. A joint public hearing on the Project was held before a Deputy Advisory Agency and Hearing Officer (sometimes “DAA”) on February 19, 2013. *Id.*, ¶26. On February 22, 2013, the DAA approved the vesting tentative tract map (“VTTM”) for the Project. *Id.*, ¶27. The DAA also adopted a Statement of Overriding Considerations at the hearing. *Id.* On March 4, BCNA, represented by Abrahams, appealed the VTTM and Final EIR (“FEIR”) approvals as to the City

¹The court has separately ruled on the parties’ several motions to augment the Administrative Record.

Planning Commission (“Planning Commission”). *Id.*, ¶28. The hearing on BCNA’s appeal of the VTTM and FEIR, as well as consideration of the entitlements and development agreement took place on March 28, 2013. *Id.*, ¶30. On April 27, 2013, the Planning Commission issued a determination approving the entitlements and EIR, and recommending a zone change and a height district ordinance change. *Id.*, ¶35. The same day the Planning Commission issued another determination letter denying BCNA’s appeal of the DAA determinations. *Id.*, ¶36.

On May 7, 2013, CURD filed an appeal of the Planning Commission’s approval of a zone change, height district change and associated actions. *Id.*, ¶37. CURD also appealed the Planning Commission’s decision from its appeal of the VTTM approval. *Id.*, ¶38.

On May 24, 2013, the City issued a notice of land use appeal public hearing before the City Council’s Planning and Land Use Management Committee (“PLUM”). *Id.*, ¶43. The hearing was initially set for June 4, 2013. *Id.* CURD was among the organizations whose appeal was to be heard at this hearing. *Id.*, ¶44. At the scheduled PLUM hearing on June 4, it was announced that the matter was being postponed June 18, 2013 at Millennium’s request. *Id.*, ¶44. It was also announced that the matter would be heard by the full City Council on June 19, 2013. *Id.*

At the June 18, 2013 PLUM hearing, it was announced that the City Council hearing scheduled for the following day was postponed to July 24, 2013. *Id.*, ¶ 53. PLUM also voted to (1) approve the Project, subject modified conditions, (2) deny all appeals, and (3) adopt the Final EIR and “Statement of Overriding Considerations.” *Id.*, ¶56.

Prior to the July 24, 2013 City Council hearing, PLUM released a “Recommendation Report” relating the actions that it had taken on June 18, 2013. *Id.*, ¶62. Petitioners allege that this report misrepresented the June 18, 2013 actions. *Id.* Specifically, the report referred to a different ordinance than the one discussed at the hearing. *Id.* PLUM essentially set their initial proposed ordinance aside and adopted a new one instead. *Id.*, ¶64.

The City Council’s hearing was held on July 24, 2013. ¶ 71. The day before the hearing, Millennium submitted a last-minute 311-page report attacking Petitioners’ arguments. *Id.*, ¶68. Petitioners were deprived of an opportunity to rebut Millennium’s evidence. *Id.* At the conclusion of the City Council’s hearing, the councilmembers voted unanimously to approve the Project. *Id.*, ¶85.

3. The Causes of Action

The FAP’s first three causes of action are for violation of CEQA. The First Cause of Action alleges that the City violated CEQA and the CEQA Guidelines by abusing its discretion in: (1) failing to provide an accurate, stable and finite project description; (2) failing to address comments raising significant environmental issue in good faith, with reasoned responses; (3) failing to adequately disclose, analyze, mitigate or avoid the Project’s significant impacts on the environment, including emergency service response times, seismic risks and traffic impacts; (4) failing to re-circulate the Draft EIR when significant new (seismic) information was added late or was requested to be added even after FEIR certification; (5) failing to adequately disclose, analyze, mitigate or avoid the Project’s land use impacts associated with each Los Angeles Municipal Code (“LAMC”) provision overridden in favor of development regulations and/or land use equivalency programs; and (6) failing to adequately analyze the impact of the invalidation of the 2012 Hollywood Community Plan Update. *Id.*, ¶123. Petitioners further allege that the City abused its discretion by concluding that certain impacts would be less than significant without substantial evidence in support thereof. *Id.*, ¶128.

The Second Cause of Action alleges that in disregarding the concerns of Caltrans, a responsible agency under CEQA, the City violated Pub. Res. Code sections 21080.4(a) and 21092.4, and Guidelines section 15096(b)(2). *Id.*, ¶144.

The Third Cause of Action alleges that by failing to notify and consult with the California Geologic Survey (“CGS”), a responsible agency under CEQA, the City violated Pub. Res. Code section 21153 and Guidelines section 15086(a)(1). *Id.*, ¶151. Millennium and the City “colluded to suppress critical information regarding seismic hazards at the Millennium Project Site, including information indicating that traces of the active Hollywood Earthquake Fault bisect the property, and further including suppression from the EIR of the California Department of Conservation, California Geological Survey’s 2010 Fault Activity Map, which indicates the presence of the active Hollywood Earthquake Fault running directly through the Millennium Property.” *Id.*, ¶153.

The Fourth Cause of Action is for violation of due process rights and deprivation of a fair hearing under the United States Constitution, the California Constitution, and CCP section 1094.5(b). Petitioners allege that the City’s failure to attach the precise versions of the Millennium Hollywood Development Regulations and Millennium Hollywood Land Use Equivalency Program (“LUEP”) deprived them of the ability to know from the four corners of the letters of determination precisely what the Planning Commission decided. *Id.*, ¶158. When confronted with this deficiency, the City refused to cure the defect, making it impossible for Petitioners to track changes made by the City during the City Council hearing process because Petitioners could not verify what the operative versions of these zoning documents were. *Id.* The City Council’s failure to develop and publish procedural rules to assure fair and consistent hearings violates Govt. Code section 65804. *Id.*

The Fifth Cause of Action is for declaratory and injunctive relief based on deprivation of fair hearings in land use appeals. Petitioners allege that the City is presently engaged in a pattern of violating Govt. Code section 65804. *Id.*, ¶174.

The Sixth Cause of Action is for violation of City Charter (sometimes “Charter”) section 562 and LAMC section 12.27(D). Petitioners generally allege that the City has granted variances without making the legally mandated findings under the Charter and LAMC. *Id.*, ¶¶ 177-78.

The Seventh Cause of Action is for violation of Charter section 562, LAMC sections 12.04 and 12.32, as well for an unconstitutional impairment of the City’s police powers. Petitioners allege that the City is attempting to elevate development regulations into the position of a municipal ordinance, per LAMC section 12.04 and 12.32, in irreconcilable conflict with Charter section 562. *Id.*, ¶181. In doing so, the City is attempting to override stricter LAMC provisions. *Id.*, ¶182. The LUEP and development regulations are a grant of *carte blanche* authority which is *ultra vires* and *void ab initio* because they amount to the City’s unconstitutional surrender of its police power to regulate land use. *Id.*, ¶ 183.

Finally, the Eighth Cause of Action is for violation of an existing peremptory writ of mandate issued in La Mirada Avenue Neighborhood Association of Hollywood v. City of Los Angeles, et al., (“La Mirada”) BS138369 invalidating the Hollywood Community Plan Update (“HCPU”). *Id.*, ¶¶ 191-98. Per the writ, the City rescinded the HCPU and decertified its EIR. *Id.*, ¶201. Accordingly, the FEIR’s reliance on the invalidated HCPU warrants the FEIR’s invalidation. *Id.*, ¶203-04.

4. Relief Sought

On the First, Second, Third and Eighth Causes of Action, Petitioners seek: (1) a peremptory writ of mandamus directing the City and City Council to vacate and set aside the actions approving the FEIR, Project approvals, and all land use entitlements; (2) an injunction enjoining the City from granting any authority, permits, certificate of occupancy, or entitlements as part of the Project pursuant to the City's prior actions; and (3) an injunction enjoining Millennium from undertaking construction on the Project. *Id.*, p. 62.

On the Fourth Cause of Action, Petitioners seek a declaration that their due process and fair hearing rights were violated. *Id.* They request mandamus directing the City to (1) vacate and set aside its actions in approving the FEIR, Project approvals, and entitlements, and (2) provide new and fair hearings that comply in all respects with due process of law. *Id.*

On the Fifth Cause of Action, Petitioners seek a judicial declaration that the City violated Govt. Code section 65804, as well as mandamus directing the City to develop proper fair hearing policies and procedures during land use appeals. *Id.*, pp. 62-63.

Finally, on the Sixth, Seventh and Eighth Causes of Action, Petitioners seek a writ of mandamus directing the City vacate and set aside its actions approving the Project's land use entitlements. *Id.*, p. 63. They further seek to have the City enjoined from granting any authority, permits, certificate of occupancy, or entitlements pursuant to the City's prior land use entitlement approvals. *Id.* Petitioners also seek to have Millennium enjoined from undertaking construction on the Project pursuant to the approved land use entitlements. *Id.*

B. Standard of Review

A party may seek to set aside an agency decision for failure to comply with CEQA by petitioning for either a writ of administrative mandamus (CCP §1094.5) or of traditional mandamus. CCP §1085.

CEQA review of quasi-adjudicatory agency actions in which a hearing is required, evidence taken, and the agency determines factual issues are governed by administrative mandamus under CCP section 1094.5, in which the court determines whether the agency's decision is supported by substantial evidence. Pub. Res. Code §21168. Examples of such actions include issuance of use permits (Neighborhood Action Group v. County of Calaveras, (1984) 156 Cal.App.3d 1176, 1186), planned use development permits (City of Fairfield v. Superior Court, (1975) 14 Cal.3d 768, 773), and zoning variances. Topanga Assn. For a Scenic Community v. County of Los Angeles, (1974) 11 Cal.3d 506, 517.

CEQA review of quasi-legislative agency actions is governed by traditional mandamus per CCP section 1085, in which the court determines whether the agency prejudicially abused its discretion by not proceeding in a manner required by law or by making a decision not supported by substantial evidence. Pub. Res. Code §21168.5. Examples of such actions include adoption of a general plan or rezoning property. O'Loane v. O'Rourke, (1965) 231 Cal.App.2d 774, 784-85 (general plan); San Diego Building Contractors Assn. v. City Council, (1974) 13 Cal.3d 205, 212-13).

There is no practical difference between the standards of review applied under traditional or administrative mandamus in CEQA cases. Friends of the Old Trees v. Dept. Of Forestry & Fire Protection, (1997) 52 Cal.App.4th 1383, 1389. Public entities abuse their discretion if their actions or decisions do not substantially comply with the requirements of CEQA. Sierra Club v. West Side Irrigation District, (2005) 128 Cal.App.4th 690, 698. Whether an agency abused its discretion requires "scrutiny of the alleged defect" depending on whether the claim is

predominately “improper procedure or dispute over the facts.” Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, (“Vineyard”) (2007) 40 Cal.4th 412, 435. Abuse of discretion is established if the agency has not proceeded in a manner required by law or if the determination or decision is not supported by substantial evidence. Western States Petroleum Assn. v. Superior Court, (1995) 9 Cal.4th 559, 568.

Petitioners’ first, second, and third causes of action alleges violation of CEQA in failing to proceed in the manner required by law, and to some extent the first cause of action challenges the sufficiency of the FEIR. Where an EIR fails to provide certain required information and/or was misleading is failing “to proceed in a manner required by CEQA” and an issue of law. Vineyard, *supra*, 40 Cal.4th at 435. Such issues require “a critical consideration, in a factual context, of legal principles and their underlying values.” Harustak v. Wilkins, (2000) 84 Cal.App.4th 208, 212. However, the omission of information in an EIR is not presumed prejudicial, and will rise to the level of a failure to proceed in the manner required by law only if the analysis is clearly inadequate or unsupported. Citizens for a Sustainable Treasure Island v. City and County of San Francisco, (“Treasure Island”) (2014) 227 Cal.App.4th 1036, 1046-47.

Whether an agency abused its discretion in an EIR’s findings must be answered with reference to the existence of substantial evidence in the administrative record. “Substantial evidence,” is defined as “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.” Guidelines² §15384(a). The substantial evidence standard requires deference to the agency’s factual and environmental conclusions based on conflicting evidence, but not to issues of law. Laurel Heights Improvement Assn. v. Regents of University of California, (“Laurel Heights”) (1988) 47 Cal.3d 376, 393, 409. Argument, speculation, and unsubstantiated opinion or narrative will not suffice. Guidelines §15384(a), (b). Whether substantial evidence exists is a question of law. *See* California School Employees Association v. DMV, (1988) 203 Cal.App.3d 634, 644.

The challenges to violation of the LAMC and City Charter (sixth and seventh causes of action) are traditional mandamus claims. The City is entitled to great deference in interpreting its own ordinances, and the court evaluates as an issue of law whether development regulations are an unlawful delegation of police power. *See* County Mobilehome Positive Action Committee, Inc. v. County of San Diego, (1998) 62 Cal.App.4th 727, 733. Petitioners have the burden of showing that the agency decision is unreasonable or invalid as a matter of law. City of Arcadia v. State Water Resources Control Board, (2006) 135 Cal.App.4th 1392, 1409. The court must uphold the agency’s action unless it is “arbitrary and capricious, lacking in evidentiary support, or made without due regard for the petitioner’s rights.” Citizens for Improved Sorrento Access, Inc. v. City of San Diego, (2004) 118 Cal.App.4th 808, 814; Sequoia Union High School District v. Aurora Charter High School, (2003) 112 Cal.App.4th 185, 195.

²As an aid to carrying out the statute, the State Resources Agency has issued regulations called “Guidelines for the California Environmental Quality Act” (“Guidelines”), contained in Code of Regulations, Title 14, Division 6, Chapter 3, beginning at section 15000.

For the constitutional challenges based on due process and fair hearing (fourth and fifth causes of action), the court independently reviews the proceedings to decide whether a party's rights were compromised. Sinaiko v. Superior Court, (2004) 122 Cal.App.4th 1133, 1140.

Finally, the challenge for a violation of the La Mirada judgment (eighth cause of action) is a traditional mandamus claim for abuse of discretion based on a failure to proceed in the manner required by law and/or based on a lack of substantial evidence. The underlying judgment is interpreted as an issue of law. Dow v. Lassen Irrigation Co., (2013) 216 Cal.App.4th 766, 780-81.

C. Statutory Framework

1. California Environmental Quality Act (CEQA)

The purpose of CEQA, (Pub. Res. Code §21000 *et seq.*) is to maintain a quality environment for the people of California both now and in the future. Pub. Res. Code § 21000(a). “[T]he overriding purpose of CEQA is to ensure that agencies regulating activities that may affect the quality of the environment give primary consideration to preventing environmental damage.” Save Our Peninsula Committee v. Monterey County Board of Supervisors, (2001) 87 Cal.App.4th 99, 117. CEQA must be interpreted “so as to afford the fullest, broadest protection to the environment within reasonable scope of the statutory language.” Friends of Mammoth v. Board of Supervisors, (1972) 8 Cal.3d 247, 259.

The Legislature chose to accomplish its environmental goals through public environmental review processes designed to assist agencies in identifying and disclosing both environmental effects and feasible alternatives and mitigations. Pub. Res. Code §21002. Public agencies must regulate both public and private projects so that “major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian.” Pub. Res. Code §21000(g).

Under CEQA, a “project” is defined as any activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (1) undertaken directly by any public agency, (2) supported through contracts, grants, subsidies, loans or other public assistance, or (3) involving the issuance of a lease, permit, license, certificate, or other entitlement for use by a public agency. Pub. Res. Code §21065. The word “may” in this context means a reasonable possibility. Citizen Action to Serve All Students v. Thornley, (1990) 222 Cal.App.3d 748, 753. “Environment” means the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance. Guidelines §21060.5.

The “project” is the whole of the action, not simply its constituent parts, which has the potential for resulting in either direct or reasonably foreseeable indirect physical change in the environment. Guidelines §15378. An indirect physical change must be considered if that change is a reasonably foreseeable impact which may be caused by the project. On the other hand, a change that is “speculative or unlikely to occur is not reasonably foreseeable.” Guidelines §15064(d)(3). The term “project” may include several discretionary approvals by government agencies; it does not mean each separate government approval. Guidelines §15378(c).

An EIR must be prepared for a project if the agency concludes that “there is substantial evidence, in light of the whole record... that the project may have a significant effect on the environment.” Pub. Res. Code §21080(d). The EIR is the “heart” of CEQA, providing agencies with in-depth review of projects with potentially significant environmental effects. Laurel

Heights, *supra*, 6 Cal.4th at 1123. An EIR describes the project and its environmental setting, identifies the potential environmental impacts of the project, and identifies and analyzes mitigation measures and alternatives that may reduce significant environmental impacts. *Id.* Using the EIR's objective analysis, agencies "shall mitigate or avoid the significant effects on the environment... whenever it is feasible to do so. Pub. Res. Code §21002.1. The EIR serves to "demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its actions." No Oil, Inc. v. City of Los Angeles, (1974) 13 Cal.3d 68, 86. It is not required to be perfect, merely that it be a good faith effort at full disclosure. Kings County Farm Bureau v. City of Hanford, (1990) 221 Cal.App.3d 692, 711-12. A reviewing court passes only on its sufficiency as an informational document and not the correctness of its environmental conclusions. Laurel Heights, *supra*, 47 Cal.3d at 392.

All EIRs must cover the same general content. Guidelines §§ 15120-32. An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. The environmental effects need not be exhaustively reviewed, but the EIR's sufficiency is viewed in the light of what is reasonably feasible. Guidelines §15151. The level of specificity of an EIR is determined by the nature of the project and the "rule of reason." Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners, (1993) 18 Cal.App.4th 729, 741-42. The degree of specificity "will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." Guidelines §15146. The ultimate decision whether to approve a project is a nullity if based upon an EIR that does not provide decision-makers, and the public, with the information about the project required by CEQA. Santiago County Water District v. County of Orange, (1981) 118 Cal.App.3d 818, 829.

2. Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act ("Alquist-Priolo"), (Pub. Res. Code §2621 *et seq.*) was enacted to prohibit the construction of buildings for human occupancy across the trace of active faults. California Oak Found. v. Regents of Univ. of California, (2010) 188 Cal.App.4th 227, 247; Better Alternatives for Neighborhoods v. Heyman, (1989) 212 Cal.App.3d 663, 670. Alquist-Priolo's purpose is in part to "provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults." Pub. Res. Code § 2621.5. It is also meant to "provide the citizens of the state with increased safety and to minimize the loss of life during and immediately following earthquakes by facilitating seismic retrofitting to strengthen buildings, including historical buildings, against ground shaking." *Id.*

Among other things, Alquist-Priolo requires the State Geologist to publish maps delineating appropriately wide earthquake fault zones, as well active and well-defined fault traces. Pub. Res. Code §2622(a). The State Geologist must "continually review new geologic and seismic data and... revise the earthquake fault zones or delineate additional earthquake fault zones when warranted by new information." *Id.*, §2622(c). Prior to publication, the State Geologist revised maps must be submitted to the State Mining and Geology Board for review and comment. *See id.*; 14 CCR §3602(a).

3. LAMC and City Charter Provisions

a. Adoption of Land Use Ordinances

Govt. Code section 65804(a) requires all city and county zoning agencies (including charter cities) to “develop and publish procedural rules for conduct of their hearings so that all interested parties shall have advance knowledge of procedures to be followed.” Zoning agencies are required to create and preserve a record of their hearings, which must be made available (at a cost). Govt. Code §65804(b).

City Charter section 558 governs the adoption, amendment, and repeal of ordinances, orders and resolutions by the City Council which concern, among other things, land-use zones or districts, zoning or land-use regulations. City Charter §558(a).

LAMC section 12.32 governs the City’s adoption of land use ordinances in accordance with Govt. Code section 65804 and City Charter section 558. The City Council, Planning Commission, or Director of Planning may initiate consideration of a proposed land use ordinance, the first two by a simple majority vote. LAMC §12.32(A). An owner of property may also apply for a land use ordinance for matters governed by subdivisions F through S. LAMC §12.32(B).

The Planning Commission is authorized to make an initial recommendation regarding the approval or disapproval of a proposed land use ordinance, which will then be considered by the City Council. LAMC §12.32(C)(1). The City is required to provide at least 24 days’ advance notice of the time, place and the public hearing on the proposed land use ordinance. LAMC §12.32(c)(4). Notice must either be in the form of publication, or in the form of mailings to owners within 500 feet of the affected property. *Id.* The applicant, if any, must also post notice in a conspicuous place at the affected property. *Id.*

Where the proposed land use ordinance concerns an amendment to zoning regulations, the Planning Commission is not required to comply with these strict notice requirements, nor must the matter be set for public hearing. *See* LAMC §12.32(E). Similarly, where the proposed land use ordinance involves a change in zone or height district, the Planning Commission may, without additional notice or hearing, recommend minor increases in affected areas or boundaries, provided that it determines that doing so is required by public necessity, convenience, general welfare or good zoning practice. LAMC §12.32(F)(1).

The Planning Commission hearing must be recorded or summarized. LAMC §12.32(C)(5)(a). If proceedings are recorded, they must be transcribed with copies made available to interested parties in exchange for a fee. *Id.* A copy of the transcript must be furnished to the Planning Commission and placed on file. *Id.* Additionally, after the hearing’s conclusion, the Planning Commission’s Director must submit a report setting forth his or her conclusions and recommendations, and the reasoning for them. LAMC §12.32(c)(5)(b).

Following the Planning Commission’s decision to recommend approval or disapproval of a proposed land use ordinance, the City Council may approve or disapprove the ordinance. LAMC §12.32(c)(7). The City Council’s decision must occur within 90 days of the recommendation. *Id.* If the proposed ordinance is approved by the City Council, it must make findings that its action is consistent with the General Plan and is in conformity with public necessity, convenience, general welfare and good zoning practice. *Id.*

The applicant may appeal the Planning Commission’s recommendation to disapprove a proposed land use ordinance by filing an appeal with the City Clerk within 20 days of the decision. LAMC § 12.32(D)(1). If no appeal is filed, the Planning Commission’s recommendation will be considered final. *Id.* At any time prior to the City Council’s decision on the appeal, the Planning Department must submit any pertinent supplemental information that the City Council or its PLUM requests. LAMC §12.32(D)(2).

b. Q Qualified Classification

LAMC section 12.32(G) provides a series of possible special zoning classifications, one of which is a “Q Qualified” classification. *See* LAMC §12.32(G)(2). Ordinarily, rezoning a property allows the occupant to maintain it for any use permitted by-right therein. *See, e.g.*, LAMC 12.14 (listing uses allowed by right in “C2” commercial zones). A Q Qualified classification allows the City Council to rezone a property to restrict its use from the full range of uses in that zone. *See* LAMC §12.32(G)(2)(a). The classification can also be used to impose certain standards (or conditions) on the intended redevelopment. *Id.* The express purpose of such classifications is to (1) protect a neighborhood’s best interests and assure compatible development therein, (2) secure appropriate development in harmony with the objectives of the applicable General Plan, or (3) prevent or mitigate the potential environmental impact of a zone change. LAMC §12.32(G)(2)(a)(1)-(3).

Q Qualified classifications may be either permanent or temporary. *See* LAMC §12.32(G)(2)(a). If made on a temporary basis, the classification lasts for up to six years. *See* LAMC §12.32(G)(2)(b)(1), (f). Once a certificate of occupancy is issued for a development, the temporary Q Qualified classification becomes permanent. LAMC §12.32(G)(2)(e). Until that point, the six-year time limit can be extended if there is “substantial physical development” of the property for the classification’s permitted uses. LAMC §12.32(G)(2)(f). Otherwise, the classification becomes null and void if the time limit expires. *Id.*

c. Variance Procedure

City Charter section 562 sets forth the minimum standards and procedures for the granting a zoning variance. All initial determinations on variances are made by the Zoning Administrator (“ZA”). Charter §562(a). ZA determinations are appealable to the appropriate Area Planning Commission, and then the City Planning Commission or City Council (as prescribed by ordinance). Charter §562(b). Even if an ordinance requires that the appeal be made to the City Planning Commission, the decision is nevertheless subject to the City Council’s discretionary review pursuant to City Charter section 245. *Id.* In any event, variances may not be granted without the following findings being made:

- (1) that the strict application of the provisions of the zoning ordinance would result in practical difficulties or unnecessary hardships inconsistent with the general purposes and intent of the zoning regulations;
- (2) that there are special circumstances applicable to the subject property such as size, shape, topography, location or surroundings that do not apply generally to other property in the same zone and vicinity;
- (3) that the variance is necessary for the preservation and enjoyment of a substantial property right or use generally possessed by other property in the same zone and vicinity but which, because of the special circumstances and practical difficulties or unnecessary hardships, is denied to the property in question;

- (4) that the granting of the variance will not be materially detrimental to the public welfare, or injurious to the property or improvements in the same zone or vicinity in which the property is located; and
- (5) that the granting of the variance will not adversely affect any element of the General Plan. Charter §562(c).

LAMC section 12.27 generally implements City Charter section 562, and governs the adoption of ordinances. Consistent with Charter section 562(c), LAMC section 12.27(D) requires that the ZA make the same five findings in writing. The ZA's decision to approve or deny a variance is appealable to the appropriate Area Planning Commission, and then in turn to the City Council directly. *See* LAMC §12.27(G)-(O).

D. The Requests for Judicial Notice

Petitioners ask the court to judicially notice 13 documents (Exs. A-M). Exhibits B-M consist of LAMC and Charter provisions (Exs. B, I, J, K), court records from La Mirada, BS 138369 and South Central Farmers v. City of Los Angeles, BS117561 (Exs. E-G, L), a City Council action (Ex. H), and a State Attorney General opinion (Ex. M). These requests are unopposed and are granted. Ev. Code §452(b), (c), (d).

Exhibit A is a City printout from the City's Ethics Commission website showing payments made by Millenium to various entities. The joint Opposition argues that Exhibit A is not part of the Administrative Record, it is immaterial that Petitioners seek to add it via judicial notice rather than a motion to augment, and it should not be judicially noticed because it is irrelevant. The Opposition explains that the payments were made by Millenium to its lawyers, engineers and consultants working on this Project; they were not made to City officials. The payments were disclosed only because the City's broadly worded lobbying ordinance requires payments for providing advice or strategy to a client be disclosed as "lobbying activities." Opp. at 6-7. Petitioners respond that the payments are not offered under CEQA, but rather to show due process violations. Reply at 1.

Exhibit A is an official act subject to judicial notice. Ev. Code §452(c). It also is relevant to Petitioners' due process claim. The request is granted.

Exhibit C is a map released by CGS on November 6, 2014 depicting the location of Alquist-Priolo Earthquake Zones and Seismic Hazard Zones within the Hollywood Quadrangle. Exhibit D is a Supplement to a Fault Investigation Report issued by CGS on November 5, 2014 to support its adoption of Exhibit C. CGS prepared Exhibits C and D to assist cities and counties in planning development. After the State adopts a map that delineates an Earthquake Fault Zone, the affected cities and counties regulated development within the Zone, including requiring the preparation of a geologic report discussing any hazard of surface fault rupture. Pub. Res. Code §2623(a).

The joint Opposition argues that the City did not have Exhibits C and D when it approved the Project, and they are irrelevant. In any event, the City treated the Project site as if it was within a Fault Zone. The mitigation conditions imposed on Millenium require it to conduct the same investigation and geologic report that would be required by placement in the Earthquake Fault Zone. Opp. at 8.

Petitioners contend that the City may have treated the Project Site as within an Earthquake Fault Zone, but that fact is insufficient for purposes of public information. The City

knew that CGS was studying the area, yet never changed the statements in the DEIR that the Project site was not in an Alquist-Priolo zone. The public should have been informed of this fact, and CGS's subsequent action reinforces that conclusion. Reply at 3.

Exhibits C and D did not exist at the time of approval, and they corroborate Petitioners' position. Nonetheless, they are inadmissible to challenge the City's approval of the FEIR and the Project entitlements. To the extent that Petitioners' CEQA challenge is quasi-legislative, extra-record evidence is completely inadmissible for the determination of whether the decision is supported by substantial evidence or the agency proceeded in the manner required by law. Western States Petroleum Assn. v. Superior Court, ((95) 9 Cal.4th 559, 573, 574-76. To the extent the challenge is quasi-adjudicative, the admission of extra-record evidence is governed by CCP section 1094.5(e). Petitioners do not discuss the requirements for the admission of extra-record evidence. The requests are denied.

In a "Second Supplemental Request for Judicial Notice" filed on April 14, 2015, Petitioners ask the court to judicially notice excerpts from an EIR dated November 2010 for the NBC/Universal Evolution Plan and the City Council's action approving and certifying the Plan (Ex. N). Petitioners argue that the excerpts are relevant to whether the Millennium FEIR adequately addressed cumulative impacts. Mot. at 2. While this may be true, Petitioners make no showing that the evidence was presented to the City before approval of the Project, or that the evidence meets the test for extra-record evidence. Petitioners also provide no reason why they waited to file the request with their reply, or give any indication that the evidence is properly responsive to a new issue raised by the Opposition. The City and Millennium have had no opportunity to object to the request, and it is denied.

The City and Real Party ask the court to judicially notice five documents (Exs A-E), including LAMC provisions (Exs. A, B, D), a Charter provision (Ex. E), and a court filing in La Mirada (Ex.C). The unopposed requests are granted. Ev. Code §452(b), (d).

E. Statement of Facts

1. The Project

The instant proceeding concerns a proposed 4.4 acre mix-use redevelopment project, spanning on two lots on the east and west sides of Vine Street south of Yucca in Hollywood ("Project"). AR 4211, 4215. The site is accessible from the Hollywood Freeway (US-101), with freeway on and off-ramps approximately one block north at Franklin and Vine, and Franklin and Argyle, respectively. AR 4217. In concept, the Project will include a mix of residential units, offices, a hotel, a health club, and retail spaces totally a developed floor area of approximately 1, 166,970 square feet, yielding a floor area ratio ("FAR") -- the total square footage of a building divided by the total square feet of the building's lot -- of 6:1. AR 4233.

2. Millennium's Initial Application

On August 18, 2008, Real Party Millennium filed a Master Land Use Permit Application with the City's Planning Department ("City Planning"). AR 21309-11. The Project was described as a mixed-use development consisting of approximately 492 residential units, a 200-unit luxury hotel, 100,000 feet of office space, an approximately 34,000 square foot sports club and spa, more than 11,000 square feet of commercial uses and approximately 34,000 square feet of food and beverage uses. AR 21321. The historic Capital Records Tower and Gogerty Building are located within the Project Site, and would be preserved as office and music recording buildings. Id. Thereafter, the City's Department of Building & Safety ("LADBS")

informed Millennium's attorney that the Project's enclosed balconies would render the building in excess of the maximum 6:1 FAR allowable under the City's General Plan, thus requiring a variance. AR 68250.

Millennium took time to review its plans and no further substantive progress occurred until 2011. *See* AR 68255-56.

3. The NOP and Caltrans' Concern

Millennium submitted another Master Land Use Permit Application with the City's Planning Department in April 2011. AR 10987-90. As part of its application, Millennium proposed (1) custom "Development Regulations" for the Project that would be incorporated in the Project approvals and contain standards for the Project's development that would prevail over zoning or land use regulations in the LAMC (AR 845-904, 853), and (2) a "Land Use Equivalency Program" ("LUEP") that would provide flexibility to Millennium to adjust the type and density of land uses for the Project, allowing Millennium to request and obtain a transfer of land uses before development of any Project phase so long as it stayed within the FAR and trip cap of 1498 new peak hour vehicle trips per day set forth in the EIR (AR 13789-90). AR 10987-90.

As the lead agency, the City issued a CEQA Notice of Preparation and Public Scoping Meeting for an EIR ("NOP") on April 28, 2011. AR 6225-31. The City's project description was for a maximum 1,166,970 square foot of floor space (6:1 FAR), preserving and maintaining the existing Capitol Records and Gogerty Building, a mix of residential, hotel, office, restaurant, health and fitness club, and retail uses, using the LUEP to provide development flexibility for future demands of the market and economy by allowing adjustment between land uses from several development scenarios, and Development Standards as embodied in a Development Agreement. AR 6226.

The Project would require entitlements of (1) a Development Agreement, (2) Vesting Tentative Tract Map ("VTTM") for the mixed use development, (3) zone change from C4 to C2, (4) height district change, (5) conditional use permit ("CUP") for alcohol and live entertainment, (6) Vesting CUP for hotel, (7) variance for sports club parking and for restaurants with outdoor eating areas above ground floor, (8) demolition and grading permits, (9) haul route approval, and (10) design review and approval to permit FAR above 4.5:1. AR 6227.

An Initial Study, also prepared on April 28, 2011, noted that the Project would develop a mix of land uses, including residential, luxury hotel, office, restaurant, health and fitness club, and retail. AR 30569. The LUEP would define a framework for permitted land uses and square footages which could be exchanged so long as the 1,166,970 square footage and 6:1 FAR were not exceeded and no additional environmental impacts occurred. *Id.* The Initial Study noted, *inter alia*, that the Project Site was not within a State-designated Alquist-Priolo Zone or other designated fault zone. However, a portion of the western portion of the Site is adjacent to the boundary of a City fault rupture study zone. The City zoning map (ZIMAS) shows the closest fault with a potential for rupture is the Santa Monica/Hollywood Fault which is 0.4 miles away. AR 30577. The Initial Study concluded that an EIR was required because the Project may have a significant environmental effect. AR 30570. The (now defunct) City of Los Angeles Community Redevelopment Agency ("CRA-LA"), South Coast Air Quality Management District ("SCAQMD") and Los Angeles Regional Water Quality Control Board ("LARWQCB") were designated as the "Responsible Agencies" under CEQA. AR 30569.

After the public scoping meeting was held, the California Department of Transportation (“Caltrans”) expressed concern in a May 18, 2011 letter over the Project’s traffic impact on the 101 Freeway. AR 31506. Caltrans had a specific concern about the possibility of vehicle queuing at the 101 Freeway on-ramps and off-ramps nearest to the Project. *Id.* Caltrans recommended that the City prepare a traffic study to determine whether the Project-related traffic, plus the cumulative traffic, would cause such issues. *Id.* Caltrans reminded the City that as a responsible agency under CEQA, it had the authority to determine the required freeway analysis for the Project and was responsible for off-setting Project vehicle trip generations that worsen the 101 Freeway. AR 31507. Caltrans noted that even the County’s Congestion Management Plan (“CMP”) standards provide that Caltrans should be consulted for the analysis of State facilities. AR 31507. Caltrans stated that trip generation, trip distribution, choice of travel mode, and assignments of trips to the 101 Freeway should be analyzed for all on/off ramps within five miles of the Project site, preferably using the Caltrans Traffic Impact Study Guide (“TISG”). AR 31506-07.

4. The DEIR

In October 2012, the City prepared a Draft Environmental Impact Report (“DEIR”). *See generally* AR 4082-5331. Per the DEIR, the Project was anticipated to encompass 492 residential units, 200 hotel units, 300 square feet of office, retail, restaurant, and fitness center/sports club space. AR 4234. The DEIR listed Caltrans as a responsible agency for its review of traffic impacts upon state highways and enforcement of any highway mitigation measures. AR 4260.

In analyzing potential traffic impacts, the DEIR applied the County’s standard CMP methodology which requires that an EIR analyze traffic conditions at all CMP monitoring arterial intersections where the project would add 50 or more trips during the weekday peak hours, and at all mainline freeway monitoring locations where the project would add 150 or more trips during weekday peak hours. AR 4955, 4975. The DEIR analyzed 37 arterial intersections, including those directly adjacent to nearby 101 freeway ramps. AR 4927. The DEIR also studied cumulative traffic impacts applying both a 1% annual ambient growth factor for the Hollywood area and a list of 58 related projects. *See* AR 4317-20, 4980. The DEIR concluded that the Project would result in a less-than-significant impact in terms of trip generation, including trips using freeway segments. AR 4975.

The DEIR addressed the Project Site’s subsurface geology, including seismic and fault rupture issues. AR 4589-602. The DEIR noted that the Project was not located within a designated Alquist-Priolo Earthquake Fault Zone. AR 4591. However, the Project’s eastern portion was adjacent to the boundary of a fault rupture study zone included as part of the Safety Element of the City’s 1996 General Plan. *Id.* The DEIR also noted that, according to CGS and ZIMAS, the closest earthquake fault with the potential for fault rupture was the Santa Monica Hollywood Fault (the “Hollywood Fault”), which was approximately 0.4 miles away. *Id.* The DEIR further included a Preliminary Geotechnical Study that analyzed subsurface borings performed on the property (*see* AR 8211-59), and seismic-geology mitigation measures, including a mitigation measure requiring substantial additional subsurface testing and monitoring prior to issuance of building or grading permits. AR 4136-37.

The DEIR addressed the Project’s impact on fire protection services. AR 4804-24. The DEIR stated that response time relates directly to distance, and the preferred response time of the Los Angeles Fire Department (“LAFD”) is to arrive at the scene of a call-out for all emergencies

within five minutes 90% of the time. AR 4800. The DEIR acknowledged that a City Controller audit of LAFD in May 2012 concluded that there has been an increase in response times for medical first responders, but not the time standard for fires and non-medical incidents. The DFEIR stated that the Controller's audit was presented for informational purposes only, and relied on LAFD-supplied response times. AR 4800.

The DEIR noted that CEQA Guidelines, Appendix G, provides that a project could have a significant environmental impact if new government facilities are necessary in order to maintain acceptable response times for fire protection and the construction of the new facilities could cause significant environmental impacts. AR 4804. The City's CEQA Thresholds Guide also provides that, if a project requires the addition of a new fire station or expanded facility to maintain service, the determination of whether the new construction could cause a significant environmental impact will be determined through a case-by-case evaluation. AR 4804-05. The DEIR noted that the Project Site is only 0.7 miles from a LAFD fire station housing a truck company and 0.8 miles from a fire station housing an engine company. AR 4807. Both the truck and engine companies are within the 1.5 mile maximum response distance required by Fire Code section 57.09.06 and applicable response times. Average response times for those two stations are less than five minutes, and the environmental impact was deemed less than significant. AR 4808.

The DEIR was circulated for 45 days, with a public hearing being held on February 19, 2013. *See* AR 21084-85.

5. Millennium's Fault Investigation Report

Pursuant to LAMC section 17.05(U), Millenium prepared and the City approved a preliminary soils report. AR 29810-11; Opp. RJN Ex.A.

Because a 2010 CGS map showed the Hollywood Fault as active, and it "appears to exist in the vicinity of the subject site," the City required a fault investigation report pursuant to Los Angeles Building Code section 1803.5.11. *See* AR 29813.

A Fault Investigation Report dated November 30, 2012 ("Fault Report") was prepared by Millenium's consultant, Langan Engineering. AR 29864-79 (without exhibits). The Fault Report stated that the Hollywood fault is active and has the potential for rupture. According to CGS and the City's ZIMAS mapping system, the Hollywood fault is located approximately 0.4 miles from the Project Site. AR 29870. The Fault Report explained that, although the Project Site is not located in a current State or City-mandated fault investigation zone, the City required a fault investigation anyway since the Project Site is within 500 feet of the Hollywood fault trace as mapped by CGS. AR 29867. The Fault Report concluded that "active faulting is not present within the limits of our investigation within the Site...." AR 29875.

6. Caltrans' DEIR Comment Letter

In a December 10, 2012 letter, Caltrans expressed a series of "major concerns" with the DEIR's traffic analysis, referencing its May 18, 2011 letter in response to the NOP. AR 31785-88. Caltrans' primary concern was that the City's June 2012 Traffic Impact Study ("Traffic Study") for the DEIR did not follow the procedures outlined in the TISG, and did not analyze impacts to the state highway system. AR 31785. Specifically, the Traffic Study only applied the CMP criteria and failed to provide adequate information for direct traffic impacts to the 101 Freeway's mainline segments and ramps. AR 31786. Additionally, the DEIR and Traffic Study omitted a cumulative traffic analysis for the 101 Freeway which would consider the impact of 58

related projects, the proposed NBC-Universal project, and anticipated growth from the Hollywood Community Plan. *Id.*

Caltrans also took issue with the DEIR's conclusion that the Project (without mitigation) would not generate significant trip generation impacts at CMP locations and on 101 Freeway segments. Caltrans asserted that this conclusion was "not based on any credible analysis that could be found anywhere in the DEIR." To the contrary, Caltrans opined that the Project would *significantly impact* the state highway system. *Id.* The Traffic Study's projected trip generation figures appeared to be "unreasonably low," and Caltrans requested that the City verify them. AR 31786-87. Particularly questionable was the Traffic Study's high number of trip-reduction credits. AR 31867.

The Traffic Study also did not include a series of nearby 101 Freeway on-ramps and off-ramps (*e.g.*, the Vine Street off-ramp), the inclusion of which was necessary to show projected queuing and upstream buildup, which is a safety issue. *Id.* In order prevent queuing and backup, City intersections adjacent to the Project needed to be able to adequately absorb increased off-ramp volumes at the same time as serving local circulation. *See id.* A Highway Capacity Manual ("HCM") weaving analysis also needed to be performed. *Id.*

In sum, Caltrans was "concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering" for the 101 Freeway, where the Level of Service (sometimes "LOS") is "F". AR 31867, 31786. If the City did not address these concerns, Caltrans refused to "recognize the [Traffic Study] and DEIR as adequately identifying and mitigating the project's impact to the State highway facilities." AR 31867.

7. The FEIR

The FEIR was published on February 8, 2013. The FEIR included over 500 pages of responses to comments. *See* AR 151-661.³

In response to Caltrans' comments, the City stated that it consulted Caltrans and considered its concerns. AR 181. The City disputed Caltrans' concern that it did not analyze the Project's impact on the state highway system. *Id.* The DEIR's Traffic Study analyzed "key freeway ramps" using the City's own "level of service" methodology, and of freeway mainline segments using the County's CMP-recommended methodology. *Id.* Caltrans' TSIG was consulted, but it did not provide thresholds of significance which CMP, a state-mandated program, did. *Id.* The City neither confirmed nor denied Caltrans' status as a CEQA responsible agency. *See id.*

As for freeway segment analyses, the City asserted that the Traffic Study concluded that Project impacts to the 101 Freeway would be less than significant so no further analysis was necessary. AR 181. Support for that conclusion was provided by the recently certified EIR for the Hollywood Community Plan Update ("HCPU"). *Id.*

The City added that it performed a supplemental traffic study using methodologies developed by the Southern California Association of Governments ("SCAG"). *Id.* The supplemental traffic analysis verified the City's initial conclusions that the Project will not result in the addition of 150 trips or more to any freeway segment, and therefore traffic impacts on the freeway system will be less than significant. *Id.*

³ The City received only a few seismic comments that generally did not address the FEIR's sufficiency or methodology. AR 23892, 23995, 24019. *But see* AR 23924.

With respect to Caltrans' criticism of the Traffic Study's failure to include a cumulative traffic analysis for the 101 Freeway -- including from the 58-related projects in the DFEIR, the NBC-Universal project, and Hollywood Community Plan growth -- the City did not directly address the proposed NBC-Universal project. *See id.* However, the City referred to its extensive transit system in the Project's vicinity, stating that the Project would provide "in-fill uses" that would reduce regional trip demand. *Id.* The City's reliance on transit solutions was also consistent with the City's traffic study guidelines and the HCPU's objectives. *Id.*

As for the on-ramp/off-ramp issues, the City responded that its own procedures were selected as the most appropriate for use in the Traffic Study, and the ramps chosen were where impacts were expected to be the most significant and substantial. AR 183. The ramps listed by Caltrans were not expected to be a capacity restraint issue. Instead, the signalized intersections and mainline 101 Freeway sections present the capacity restraints, and the queues from those constraints determine the ramp conditions. AR 184. The queuing issue will depend on under-signaling at the intersections. *Id.*

The City's trip generation estimates -- 19,486 trips per day with 1064/1888 trips during the AM/PM peak hours -- were based on well-accepted guidelines. AR 184. Additionally, it is a common practice to reduce trips for transit trips, pass-by trips, and internal trips associated with mixed-use projects. *Id.*

The City stood by its use of the critical movement analysis ("CMA") methodology for congestion modeling as per the City's Department of Transportation ("LADOT") manual instead of Caltrans' preferred HCM methodology. AR 186. The CMA is a planning methodology, whereas HCM is an operations methodology. *Id.* The HCM also assumes *constant signal timing*, which is problematic given that the City employs instantaneous, computer-controlled signaling, the timing of which varies depending on traffic. *Id.*

8. Caltrans' Supplemental Comment Letter

On February 13, 2013, Caltrans submitted a supplemental comment letter after reviewing the FEIR. AR 22840-44. Caltrans stood by its assertion that the City's use of the CMP methodology did not adequately study impacts to the freeway system. AR 22840. According to Caltrans, the City's Traffic Study analysis improperly focused on the Project's impact on the local CMP, rather than impacts to the existing state highway system, particularly for safety issues. AR 22840-41. The Traffic Study also did not provide sufficient traffic analysis for the reader to review its assumptions, analysis, and conclusions. AR 22841.

Caltrans asserted that the CMP does not capture the same data for analysis that the HCM does. AR 22841. For example, the CMP does not analyze off-ramps or freeway impacts with fewer than 150 trip assignments, even where the existing LOS is F. *Id.* It also uses a "flawed percentage ratio to determine the significance of impacts," and incorrectly analyzes cumulative traffic impacts. *Id.* Caltrans again faulted the City for failing to undertake a queuing analysis. *Id.*

After receiving no response from the City, Caltrans sent a fourth letter dated May 7, 2013 to then-Councilmember Eric Garcetti. *See* AR 11853-54. In the May 7 letter, Caltrans generally repeated its grievances about why it felt the FEIR was inadequate. *See id.*

9. The Initial Hearing on the Vesting Tentative Tract Map and FEIR

Under the Subdivision Map Act, Millenium processed a VTTM for a 41-lot subdivision of the property. On February 19, 2013, 11 days after the FEIR's release, an initial hearing was

held by the City's Deputy Advisory Agency on the proposed VTTM and the FEIR. AR 21084-85. Although the parties do not cite to the decision, the DAA apparently approved the Project's VTTM and supporting FEIR.

10. The Planning Commission Hearing

On March 28, 2013, the Planning Commission heard the appeals from the Deputy Advisory Agency's approval of the VTTM and FEIR. AR 2. At the outset of the hearing, Deputy City Attorney Adrienne Khorasanee (the "City Attorney") announced that due to a financial conflict of interest by one of its commissioners, the Planning Commission was disqualified from considering approval of the Development Agreement for the Project. AR 74812. As a result, Millenium decided to withdraw the Development Agreement, which was removed from the agenda. AR 74812. The City Attorney advised the Planning Commission that it could nevertheless consider the other items concerning the Project. *Id.*

The Project opponents were given 30 minutes to speak at the Planning Commission hearing. *See* AR 74882. Petitioners' attorney, Daniel Wright, Esq., spoke on behalf of Mr. and Mrs. Jim Geoghan, who represented the neighborhood associations appealing the initial determination. *See* AR 74883-95. Mr. Wright argued that the commissioner's conflict of interest meant that the entire Planning Commission should be disqualified from the matter and that the hearing should be terminated. AR 74885-86. Mr. Wright also made a due process objection based on his belief that the exhibits he filed were neither accepted nor considered. AR 74886. Commissioner Perlman responded that the Planning Commission had received the exhibits, which were in the record, as was Mr. Wright's last minute two-page letter. AR 74886-87.

After the appellants spoke, several prepared statements were read by City representatives. *See* AR 74918-19. Next was a 90 minute public comment period, with time split evenly between supporters and opponents. *See* AR 74927.

At the conclusion of the hearing, the commissioners voted to deny the appeals from the approval of the VTTM and FEIR. AR 21149. Thereafter, the commissioners voted to adopt the Planning Commission staff's recommended actions, including approval of various CUPs, variances, and changes to the Development Regulations. *See* AR 4-7, 21149, 75168-72. The Planning Commission also voted to recommend that the City Council (1) adopt an ordinance authorizing the execution of a Development Agreement; (2) adopt a zone change and height district change; and (3) certify the FEIR and Statement of Overriding Considerations. *Id.*

11. The PLUM Hearing

On June 18, 2013, the matter was heard before the City Council's Planning and Land Use Management Committee ("PLUM"). AR 29-33, 75300-79. Petitioners' attorney, Robert Silverstein, Esq., spoke on behalf of appellant CURD. *See* AR 75178. He requested at least ten minutes to make his objections. AR 75177-78. The Chairperson responded; "Well, why don't you start, and let's see how far you get?" AR 75178. Mr. Silverstein offered a letter with 27 exhibits for PLUM's consideration. *See* AR 75178. In addition to arguing about the dangers posed by the Hollywood Fault (AR 75178-90,) Mr. Silverstein argued that the Planning

Commissioner's disqualifying conflict of interest should have resulted in the withdrawal of all items concerning the Project. AR 75190-92.⁴

After a presentation by Millennium, the PLUM gave 20 minutes of general public comment to each side. AR 75224. Anne Geoghan, a member of CURD, was one of the speakers during this period. AR 75251-52. At the conclusion of the hearing, the PLUM voted to take all actions recommended by the staff report. *See* AR 29-33, 75295-97. The changes to the Development Regulations and Q conditions requested by Millennium and the Planning Department were adopted by reference. AR 31. Therefore, the PLUM implicitly denied the appeal. *See id.*

12. The State Geologist's Letter

On July 20, 2013, State Geologist John Parrish sent Councilmember Wesson a letter indicating that CGS was commencing a study of the Hollywood Fault, pursuant to Alquist-Priolo for possible zoning as "Active." AR 19063-64. The State Geologist mentioned the Project, which he stated may fall within an Earthquake Zone. *Id.* He advised that the study's outcome would provide the City with new information for its consideration of current and future developments along the Hollywood Fault, and indicated that the investigation and resultant maps were scheduled for completion by late 2013 or early 2014. *Id.*⁵

13. The City Council Hearing

The City Council's hearing for the Project took place on July 24, 2013. AR 105, 113-16. The day before the hearing, Millennium submitted a 311-page letter and supporting evidence responding to CURD's arguments and evidence on appeal. AR 19086-393.⁶

Mr. Silverstein again represented CURD and other Project appellants. *See* AR 75331. At the outset of the hearing, the Chairman gave ten minutes for each of the two appellants, ten minutes for the applicant, and ten minutes each for all supporters and opponents. AR 75301. Mr. Silverstein requested more time to make his case, but the Chairman refused to give him the other appellant's ten minutes. AR 75330-31.

Mr. Silverstein objected to Millennium's last-minute letter as an attempt to sneak in new studies and data, and a violation of due process. AR 75332-33. He addressed the letter written by the State Geologist on the Hollywood Fault issue, and argued that the Project Site is within an earthquake fault zone. AR 75336.

⁴ Prior to the PLUM hearing, Millennium sent a May 31, 2013 letter requesting a series of changes to the Q Conditions for approval and to the Development Regulations. *See* AR 18466-70. The City's Planning Department also made a recommended modification to Q Condition No. 2 and corrections to the Development Regulations. *See* AR 19038-42. These requested changes were not addressed by Mr. Silverstein at the PLUM hearing. *See* AR 75178-92.

⁵ Petitioners attempt to present the results of this study showing that the Project is in fact within the Hollywood fault zone (RJN Exs C, D), but the court has denied this request.

⁶ In a letter to the City Council dated the day of the hearing, LADBS noted the State Geologist's July 23, 2013 letter stating that investigation may show that the Project lies within an Earthquake Zone, and responded that LADBS already treats the Project Site as if it is located in an Earthquake Zone. It was for this reason that Millennium was required to prepare the Fault Report. AR 13791-92.

A typed amending motion was announced as circulated by the City Clerk, which was unanimously approved by the City Council. AR 75301, 75378-79. The City Council then denied all appeals and approved the Project in full. AR 125, 133-37. Thus, the City Council: (1) certified the FEIR; (2) adopted the Statement of Overriding Considerations; and (3) granted a series of land use entitlements, including a vesting CUP for a hotel within 500 feet of a residential zone, a master CUP to sell an dispense alcohol for on and off-site consumption and live entertainment, zone variances for outdoor eating above the ground floor and to permit reduced parking for a sports club facility, reduced on-site parking, and the VTTM. *See* AR 11643 (Council Amending Motion), 125-50, (City Council Action).

The Project's vested land use entitlements include Ordinance No. 182636 (the "Ordinance"), which effectuates for the Project property a zone change from a C4 zone with a 3:1 FAR and no height limitation to a C2 zone with height limitation and 6:1 FAR. AR 11644-95. The Ordinance also includes the Development Regulations, (AR 18574-635) and the LUEP (AR 13789-90), which define and restrict the Project's mix of uses, design, height, scale, and massing, and any future change in the mix of uses. AR 13789, 18586. The Ordinance further contains a Mitigation Monitoring and Reporting Plan ("MMRP"), which contains all of the mitigation measures listed in the EIR. These entitlements and conditions thereto were recorded with the County Recorder's Office. *See* AR 11656.

14. Invalidation of the Hollywood Community Plan Update

On February 11, 2014, the Honorable Ann J. Jones rendered judgment in La Mirada, LASC Case No. BS 138580. *See* Pet. Pet. RJN Ex. F. Pursuant to the court's judgment, a peremptory writ of mandate was issued invalidating and setting aside the HPCU and the EIR certified for the HCPU. *Id.*, p. 1. The La Mirada judgment also set aside and vacated the related approvals issued in furtherance of the HCPU. *Id.*, pp. 1-2. The judgment stated that its provisions were not intended to order the City to rescind "those adjudicatory approvals not challenged which the City may have made under the HCPU after its adoption by the City." *Id.*, p. 2.

The City accepted the La Mirada judgment without appeal, and it is now final. The original 1988 Hollywood Community Plan ("HCP") became operative again after the City rescinded the HCPU. *See* AR 24045.

F. Analysis

Petitioners argue that the City violated CEQA by (1) refusing Caltrans' direction as a responsible agency to study impacts to the 101 Freeway, (2) failing to notify and consult with CGS as an agency with jurisdiction, (3) failing to provide a fixed and stable Project description, (4) failing to advise the public of seismic issues, (5) failing to properly analyze traffic impacts, (6) failing to properly analyze fire/safety service impacts and (7) relying on the HCPU which was later set aside by the La Mirada judgment. In their non-CEQA claims, Petitioners argue that (1) the La Mirada judgment requires rescission of all HCPU-related approvals such as the Project, (2) the City's approval of the Development Regulations and elevation of them over all other LAMC provisions was illegal, and (3) the City Council's unfair hearings violated due process.

1. The City Was Required to Follow Caltrans' Preferred Traffic Study Methodology

Caltrans contended that the City's traffic figures for the Project of 20,000 vehicle trips and 1064/1888 peak period AM/PM vehicle trips – which Caltrans described as low and not based on credible analysis (AR 11859) -- required a Traffic Impact Study using Caltrans' TISG. Concerned about queuing and upstream freeway buildup, Caltrans wanted a study of 101 Freeway on/off ramps near the Project. Caltrans also wanted a weaving analysis pursuant to its Highway Capacity Manual ("HCM"). Caltrans further stated that the FEIR omitted a cumulative traffic analysis for the 101 Freeway which included the NBC-Universal project, which was necessary whether or not the City was correct about only 150 additional trips generated. Thus, Caltrans concluded that the FEIR did not adequately analyze the Project's impact to the state highway system. Mot. at 6-8.

In response to Caltrans, the City relied on the traffic analysis required by the CMP, which is the standard methodology for traffic studies in the County, and analyzed key freeway ramps as well as freeway mainline segments, finding a less than significant traffic impact. A supplemental traffic study using SCAG methodologies confirmed this conclusion. The City did not expect the ramps listed by Caltrans to be a capacity restraint issue. The City contended that Caltrans' allegation about its low trip estimates was unwarranted as the estimates were based on well-accepted guidelines. Finally, the City preferred its congestion modeling to Caltrans' HCM methodology which is inapplicable to planning issues.

Thus, there was a clear dispute between the City and Caltrans over the adequacy of the FEIR's Traffic Study analysis for impacts to the 101 Freeway.

The lead agency under CEQA is the agency that carries out a project or has primary authority for approving a project. Pub. Res. Code 121067; Guidelines §15051. Where the project is local, such as land use decisions, the agency that has general governmental power over a project is almost always the lead agency. See Guidelines §15051(a).

If the lead agency determines that an EIR is required, it must send notice to each responsible agency. Pub. Res. Code §21080.4(a). A "responsible agency" means an agency which has some discretionary responsibility for carrying out or approving a project. Pub. Res. Code §21069; Guidelines §15381. Upon receipt of the notice, each responsible agency "shall specify to the lead agency the scope and content of the environmental information that is germane to the statutory responsibilities of that responsible agency...and which, pursuant to the requirements of this division, shall be included in the environmental impact report." Pub. Res. Code §21080.4(a); Guidelines §15082(b) (responsible agency shall provide detail about the scope and content of environmental information that "must be included in the draft EIR").

The lead agency shall include the responsible agency's information in the EIR. Guidelines §15096(b)(2). The lead agency may begin work on the draft EIR without waiting for responses, but the draft "may need to be revised or expanded to conform to" the responsible agency responses. Guidelines §15082(a)(4). See Save San Francisco Bay Association v. San Francisco Bay Conservation and Development Commission, (1992) 10 Cal.App.4th 908 (city as lead agency complied with its duty to produce comprehensive document which responsible agency could rely upon in its discretionary approval).

A responsible agency complies with CEQA by reaching its own conclusions on whether and how to approve the project. Guidelines §15096(a). The responsible agency consults with the lead agency and comments on draft EIRs for projects which the responsible agency would later be asked to approve. Guidelines §15096(b), (d). If the responsible agency deems the lead agency's final EIR to be inadequate for use by the responsible agency, it must either sue, be

deemed to have waived objection, prepare a subsequent EIR if permissible, or assume the lead agency role. Guidelines §15096(e).

The City is the lead agency for the Project. If Caltrans is a responsible agency, then the City was required to include in the FEIR the information required by Caltrans. The joint Opposition argues otherwise, contending that Pub. Res. Code section 21080.4(a) and Guidelines section 15096(b)(2) provide only that the lead agency shall include “this information” in the EIR, and “this information” means the comments of responsible agencies. According to the Opposition, the City was not required to follow Caltrans’ direction as a responsible agency if it included the comments in the FEIR. Opp. at 11.

This position is incorrect. As Petitioners argue (Reply at 7), Pub. Res. Code section 21080.4(a)’s plain language requires that the responsible agency “specify” to the lead agency the “scope and content of the environmental information” within the responsible agency’s purview, and that is the information which “shall be included” in the EIR. There is no reason for the statute to use the word “specify” if a lead agency could ignore it. This conclusion is underscored by the remedies available to the responsible agency should the lead agency fails to follow the responsible agency’s direction, which include a lawsuit, preparation of a subsequent EIR if permissible, or assumption of the lead agency role. Guidelines §15096(e). There would be no need for the responsible agency to have this list of remedies – particularly the remedy of taking over as lead agency -- if it only had a right to comment on a draft EIR. Thus, a lead agency fails to follow a responsible agency’s direction at its own peril. See Remy, Thomas, Moose, & Manley, Guide to CEQA: California Environmental Quality Act, (11th ed. 2007) p. 45 (“[L]ead agencies *must* include in their EIRs information related to the environmental impacts that are anticipated by responsible agencies and trustee agencies as to matters within their expertise or jurisdiction.”).⁷

The issue becomes whether Caltrans is a responsible agency under CEQA whose direction the City was required to follow for analysis of the Project’s impact on the state freeway system. Petitioners argue that Caltrans is a responsible agency for the Project, pointing out that the City identified Caltrans as a responsible agency in the draft EIR. Mot. at 6. Specifically, the DEIR stated that Caltrans had authority to review traffic impacts on the 101 Freeway and enforce any Project mitigation measures. AR 4260.

The Opposition admits that the City treated Caltrans as a responsible agency, but contends that treatment does not make it so. The Opposition argues that the definition of a “responsible agency” requires that the agency have some discretionary responsibility for carrying out or approving a project, and Caltrans has no approval authority over the Project. See Pub. Res. Code §21069; Guidelines §15381. Even if Caltrans has a role in implementing mitigation measures for the Project, that does not make it a responsible agency. See Rominger v. County of Colusa, (2014) 229 Cal.App.4th 690, 700-01 (county’s environmental review did not bar it from contending that the project was exempt from CEQA because court decides whether agency required with procedure required by law). Opp. at 11-12.

⁷ The Opposition cites to Citizens for East Shore Parks v. State Lands Commission, (2011) 202 Cal.App. 4th 549, 567-68. Opp. at 11. That case holds only that a lead agency may rely on a responsible agency’s failure to provide comments after receiving notice to mean that the responsible agency had no comments to make. It does not hold that a lead agency may ignore a responsible agency’s direction.

Contrary to Petitioners' position (Pet. Reply for Supp. Mot. To Augment, pp. 5-7), the City is not judicially estopped from contending that Caltrans is not a responsible agency simply because it said so in the DEIR, or in a September 9, 2013 email from Deputy City Attorney Siegmund Shyu providing Petitioners with notice of the responsible agencies so that Petitioners could notify them about their lawsuit. See Pub. Res. Code §21167.6.5(b), (c). Judicial estoppel is an equitable doctrine that prevents "the use of intentional self-contradiction as a means of obtaining unfair advantage in a forum provided for suitors seeking justice." The primary purpose of the doctrine is not to protect the litigants, but to protect the integrity of the judiciary. Thomas v. Gordon, (2000) 85 Cal.App.4th 113 (citations omitted). The focus is on whether a party has taken totally inconsistent positions in judicial proceedings where the prior position was successfully asserted, and the inconsistency is not the result of ignorance, fraud or mistake. Aguilar v. Lerner, (2004) 32 Cal.4th 974, 986-97. The doctrine should apply when: (1) the same party has taken two positions; (2) the positions were taken in judicial or *quasi*-judicial administrative proceedings; (3) the party was successful in asserting the first position (i.e., the tribunal adopted the position or accepted it as true); (4) the two positions are totally inconsistent; and (5) the first position was not taken as a result of ignorance, fraud or mistake. International Engine Parts, Inc. v. Feddersen & Co. (1998) 64 Cal.App.4th 345, 350-351. The City was not "successful" in asserting that Caltrans is a responsible agency in the DFEIR or other documents, and judicial estoppel does not apply.⁸

Moreover, Caltrans does not become a responsible agency simply because it will enforce mitigation measures created by the City. See Lexington Hills Assn. v. State, (1988) 200 Cal.App.3d 415, 433 (issuance by Caltrans of "encroachment permits" was not integral to timber harvesting project, merely occurred during performance of mitigation measure, and Caltrans did not have authority or duty to approve project under CEQA). Compare Citizens Assn. for Sensible Development of Bishop Area v. County of Inyo, (1985) 172 Cal.App.3d 151, 174-75 (Caltrans was responsible agency because it must issue encroachment permit for construction of the project, and permit was discretionary because Caltrans can control the location and manner of encroachment).

However, there is more to Caltrans' involvement than mere enforcement of mitigations. Caltrans contended that it is a responsible agency for the Project, and the City agreed with that contention in the DFEIR through the outset of this lawsuit. This is not an issue of judicial estoppel or admission, but rather that the City agreed upon a legal framework which included Caltrans as a responsible agency for purposes of CEQA. The City cannot now deny Caltrans the role of responsible agency after extensive colloquy between the two agencies in which Caltrans played that very role. At some point in the CEQA process, the City becomes bound by the CEQA framework it adopts. See Genry v. City of Murrieta, (1995) 36 Cal.App.4th 1359, 1404-05 (city never considered whether to prepare supplemental EIR and consequently was bound by election to prepare only mitigated negative declaration). To conclude otherwise would impermissibly enable the City to manipulate the Project's design so as to avoid allocating discretionary decisions to Caltrans and its demands for freeway and on/off ramp traffic study.

⁸ Nor does the City Attorney's September 9 email that Caltrans is a responsible agency constitute a judicial admission. Judicial admissions apply to facts, not conclusions of law. Stroud v. Tunzi, (2008) 160 Cal.App.4th 377, 384.

Apart from the fact that the City is bound by the CEQA framework it adopted, Caltrans is a responsible agency because it does perform a discretionary function for the Project. Both the DEIR and the Project Conditions of Approval state that Caltrans and LADOT will jointly design and approve the mitigations measures for the intersection at Argyle/Franklin Avenue and the northbound onramp to the 101 Freeway. AR 4194-95, 11685; *see* AR 22879. This design feature makes Caltrans an agency with discretionary authority for approval of an integral part of the Project (design of an onramp mitigation measure), not just the implementation of mitigation measures. Caltrans is a responsible agency for the Project.^{9 10}

The Opposition contends that the City, as lead agency, was entitled to consider and reject criticism by Caltrans so long as its reasons are supported by substantial evidence. North Coast Rivers Alliance v. Marin Municipal Water District, (2013) 216 Cal.App.4th 614, 627, 642 (lead agency could reject other agency recommendations so long as lead agency decision was supported by substantial evidence). According to the Opposition, the City considered and fully responded to Caltrans' comments, including the preparation of a second traffic impact analysis using SCAG's traffic model. This second study is substantial evidence supporting the FEIR's conclusions. Unlike the City's threshold of 150 peak-hour trips in one direction, the SCAG analysis used a more conservative threshold of 150 trips during peak hours in both directions and it still found no significant impact on freeway segments. Opp. at 9-10.

The Opposition defends the City's use of CMP rather than the HCM level of service methodology preferred by Caltrans, which measures level of service based on travel speed and duration of congestion. AR 56127. The CMP chose a LOS methodology called Intersection Capacity Utilization ("ICU") due to the need for a consistent means of measuring congestion across the County. ICU has been determined to be consistent with HCM for this purpose, and CMP does not preclude the use of different methodologies for a purpose outside the CMP. AR 56127-28. The City did not use Caltrans' TISG because it does not include thresholds of significance, and the absence of significance thresholds is an appropriate basis to evaluate environmental impacts. *See Sierra Club v. City of Orange*, (2008) 163 Cal.App.4th 523, 541 (level of service standard used in EIR). Opp. at 10. The City also studied system constraints for freeway ramps by studying the immediately adjacent intersections to numerous 101 Freeway on/off ramps. The City used LADOT methodology for this purpose, and there is no evidence that this methodology was inaccurate. *Id.*

The City's choice of methodology did not comply with the substance of what Caltrans required, and the City was not free to ignore it. Even the CMP expressly states that Caltrans must be consulted to identify specific locations on the freeway system for analysis. AR 11863. The City relied on the CMP for thresholds of significance, but Caltrans told the City that the congested conditions of the 101 Freeway meant that even trips below the arbitrary CMP threshold of 150 could be significant and should be analyzed using its TISG. AR 11864. The CMP also states that at a minimum the geographic area examined in the traffic study must

⁹ Petitioners also argue that Caltrans has authority for enforcing a stormwater runoff management permit that protects water quality in Ballona Creek (AR 4284), but this enforcement authority does not make Caltrans a responsible agency for traffic impacts on the Project. *See* Reply at 2.

¹⁰ The Opposition does not argue the scope of Caltrans' authority as responsible agency, and the court need not decide whether the traffic study sought by Caltrans is outside the scope of its discretionary authority.

include mainline freeway monitoring locations where the project will add 150 or more trips, in either direction, during peak hours; it does not say that a 150 trip threshold is always sufficient. The City was not free to reject Caltrans' instruction about thresholds. See AR 56281. See Mejia v. City of Los Angeles, (2005) 130 Cal.App.4th 322, 342 ("A threshold of significance is not conclusive...and does not relieve a public agency of the duty to consider the evidence..."); Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners, ("Berkeley Keep Jets") (2001) 91 Cal.App.4th 1344, 1380-82 (agency insufficiently considered site-specific characteristics of noise from airport in favor of standard for threshold of significance). The CMP also states that it chose ICU over HCM solely out of need for a consistent means of measuring congestion across the County. AR 56127-28. This justification – the need for a consistent measure of traffic on County streets -- is irrelevant to the evaluation of freeway traffic congestion and safety. Under these circumstances, there was no reason for the City to cling to the County's CMP to conduct its traffic analysis. The City wrongly used the CMP and its 150 trip threshold in the face of Caltrans' criticism and direction to the contrary.

Caltrans also wanted the City to use its HCM methodology to address safety issues, including queuing on off-ramps between Vermont and Highland where vehicles could back up into intersections, as well as performing a weaving analysis. Caltrans further wanted a cumulative analysis of the 101 Freeway traffic impacts from the Project, the 58 related projects in the DFEIR, and the NBC-Universal project. A freeway has three types of segments: (1) a merge/diverge segment, whether a stream of traffic combines or divides, (2) a weave segment, in which traffic streams travelling in the same direction cross paths, and (3) a basic freeway segment. AR 73441. Caltrans' HCM addresses safety issues with respect to all three types of segments (AR 22841, 11290), whereas the CMP addresses only traffic congestion. AR 56114 (CMP tracks and analyzes regional transit performance), 31503 (CMP evaluates "demand-to-capacity" for freeway impacts). The CMP has only one monitoring station between downtown and Coldwater Canyon (AR 56210) which is incapable of evaluating queuing and weaving. The City did not perform the requested analyses, merely finding that the 101 Freeway was exempt because the CMP's 150 trip threshold had not been met.¹¹

The FEIR fails to analyze traffic impacts to the 101 Freeway as Caltrans directed in its role as responsible agency. As Petitioners contend (Reply at 3-4), the City's disagreement with Caltrans is a failure to proceed in the manner required by law. The City was not entitled to disagree with Caltrans, perform a study more limited than sought by Caltrans, and then rely on substantial evidence of what it did. Rather, the City was obligated to provide the information and analysis which Caltrans specified as a responsible agency should be performed. Compliance with the requirements of CEQA is "scrupulously enforced." Citizens of Goleta Valley v. Board of Supervisors, (1990) 52 Cal.3d 553, 564.

2. The FEIR's Assessment of Traffic Impacts Was Inadequate

Apart from its failure to follow Caltrans' direction for methodology and 101 Freeway impacts analysis, the City did not adequately analysis traffic impacts. As stated *ante*, the City relied on the CMP to conclude that the Project would not generate more than 150 additional trips

¹¹ Finally, the Opposition contends that Caltrans waived its objections to the FEIR when it failed to file suit under Guidelines §15096(e). Opp. at 12. True, but Petitioners did not waive their right to assert the City's failure. See Citizens for Open Government v. City of Lodik, (2006) 144 Cal.App.4th 865, 875.

per day for the 101 Freeway, and this was not a significant traffic impact. AR 182. The FEIR also concluded that the freeway ramps, including the meters and weave sections on the ramps, are not the limiting factor for the roadway in the Hollywood area. AR 184.

The FEIR's mere conclusion that the ramps -- and the weaving sections on the ramps -- are not a limiting factor in Hollywood is not substantial evidence. Caltrans pointed out that ramp queuing can lead to safety issues and "without a queuing analysis neither Caltrans nor the City can determine whether traffic from the off-ramps will back up, creating an unsafe condition. AR 22843. Similarly, without a weaving analysis for both the northbound and southbound mainline segments between the nearby on/off ramps the difficulty of drivers in maneuvering could not be assessed. AR 22844. The City's only response was that its standard CMA analysis did not require these analyses. AR 186. This response did not meet CEQA's requirement of a good faith reasoned analysis in response to comment. See Berkely Keep Jets, supra, 91 Cal.App.4th at 1367; Guidelines §15151. The omission of a freeway weaving and queuing analysis was an abuse of discretion.

When Caltrans contended that the 101 Freeway's mainline segments should be analyzed, the City responded that its CMP analysis showed a less than significant 150 Freeway trips per day, and no further analysis was necessary. AR 181-82, 31791. As discussed *ante*, the use of a threshold of 150 daily trips failed to recognize Caltrans' concern that the greater the congestion, the lower the threshold of traffic needed to create an impact. AR 22848. According to Caltrans' TISG, fewer than 50 trips may have a significant impact on a freeway which operates at LOS E or F, and a full traffic study or some lesser analysis is required in that situation. AR 55811. See AR 22848. The 101 Freeway operates at level of service F during peak hours and the City's 150 trip threshold does not take into account this congested LOS. The additional traffic volume of 150 vehicles on the freeway is particularly important in light of weaving, queuing, and diverging movements, issues which Petitioners' consultant said can be addressed by Caltrans' HCM and not CMP. AR 11290. The City did not have substantial evidence to support its mainline freeway segment analysis.

The FEIR also did not perform an analysis of the Project's cumulative traffic impact with other projects on the ramps and mainline. Caltrans noted that the 58 projects identified in the FEIR will also add peak hour trips to the 101 Freeway, and a cumulative impact analysis was required. AR 22848. The City's sole response for not doing so was that the direct impact on the Freeway of the Project's 150 trips per day was not significant. AR 181-82. But, as Petitioners point out (Mot. at 24), this response misses the point of a cumulative impacts analysis which is to evaluate the cumulative impact of projects whose incremental impact is small. Environmental damage often occurs incrementally from a variety of small sources, and the assessment of a project's cumulative impact on the environment is a critical feature of the EIR. Los Angeles Unified School District v. City of Los Angeles, (1997) 58 Cal.App.4th 1019, 1025. Understated cumulative impacts analysis impedes meaningful public discussion and skews the decision-maker's perspective. Citizens to Preserve the Ojai v. County of Ventura, (1994) 27 Cal.App.4th 713, 729-35.

The Opposition argues that the FEIR did perform a cumulative impacts analysis because the Guidelines expressly permit a cumulative impacts discussion through a list of projects producing related impacts or a summary of projections from an adopted general plan or planning document. The Opposition contends (Opp. at 12-13) that the City conservatively did both, using a 1% growth factor (AR 2732) and discussing 58 related projects within 1.5 mile radius. AR 2733-39.

There are several problems with the Opposition's argument. First, the FEIR did not conservatively wear a belt and suspenders as the Opposition implies. The Guidelines provide that as part of the cumulative impacts analysis the EIR may provide a list of "past, present, and future project producing related or cumulative impacts," or "a summary of projections contained in an adopted general plan or related planning document..." Guidelines §15130(b)(1). The FEIR listed 58 related existing projects for cumulative impacts analysis, and then used a growth factor of 1% to cover future unknown projects. AR 4980. Thus, the two did not overlap. Second, the 1% growth figure is not a projection in an adopted general plan or planning document; LADOT created it out of whole cloth. *See id.* This is not permissible under Guidelines section 15130(b)(1).¹² Third, the FEIR did not use the projections for a reasonable discussion of cumulative traffic impacts. *See* Guidelines §15130(b)(5).

The FEIR also did not include the NBC-Universal project in its list of related projects, even though Caltrans expressly noted that the NBC-Universal project itself will add traffic to the 101 Freeway. AR 22848. The City's sole response was that the CMP did not show more than 150 trips generated by the Project, which was below the threshold of significance. AR 181-82. This *non-sequitur* is woefully inadequate to constitute a good faith reasoned response to comment. *See Berkely Keep Jets, supra*, 91 Cal.App.4th at 1367.

The Opposition now argues that the FEIR was not required to include NBC-Universal as it is located 3.5 miles away from the Project, outside the 1.5 mile radius designated by the City. AR 2733. Opp. at 13.

Other projects must be included in an EIR's cumulative impacts analysis if it is "reasonable and practical" to do so. San Franciscans for Reasonable Growth v. City and County of San Francisco, (1984) 151 Cal.App.3d 61, 77. The agency may draw a geographical line for its cumulative impacts analysis if it provides a reasonable explanation for doing so. *See* Guidelines §15130(b)(3). The City provided no justification for its arbitrary 1.5 mile radius that excludes a major project from cumulative impact analysis. There appears to be no legitimate reason why the large NBC-Universal project should not have been included in a cumulative impacts analysis.¹³ Exclusion of the NBC-Universal project solely because it is 3.5 miles away is unreasonable where it apparently is quite large and lies directly downstream from the Millennium Project with few on/off ramps in between.

The FEIR did not have substantial evidence to support its cumulative impacts analysis. The FEIR's traffic impacts analysis was inadequate and an abuse of discretion.

3. The City Was Not Required to Notify and Consult with CGS Prior to Circulating the DEIR

The lead agency "shall consult with, and obtain comments from, each responsible agency, trustee agency, any public agency that has jurisdiction by law with respect to the project..." Pub. Res. Code §21153(a).

Petitioners argue that CGS is a commenting agency under CEQA. Despite knowing that there was a real prospect that the Hollywood Fault crossed Project Site, the City did not notify

¹² The DFEIR stated that the summary of projections was validated by the HCPU, but the HCPU was invalidated in La Mirada and cannot be relied upon. *See* AR 2732.

¹³ Petitioners are, of course, correct in arguing that the mitigations proposed in the FEIR to alleviate traffic congestion are no substitute for analysis of the traffic impacts from the Project. *See* AR 182. Mot. at 26.

the Department of Conservation or its CGS as either a responsible agency or an agency that has jurisdiction over the Project. The State Geologist is required to delineate active earthquake fault zones, which are identified on maps. Pub. Res. Code §§ 2621.5(b), 2622. The CGS's 2010 Fault Activity map showed the Hollywood Fault across the Project site. AR 49493. The City knew seven months before the DEIR was circulated that a Hollywood Fault trace mapped by the CGS might cross the Project Site. AR 68319. When a State Geologist found out that the City Council was considering the Project, he called to express concern and wrote to explain that CGS was mapping the Hollywood Fault and its maps and reports would be completed by year-end 2013 or early 2014. AR 68408, 11885. Yet, CGS was not named as a responsible agency. Mot. at 9.

CGS is not a responsible agency because it has no discretionary authority to approve or carry out the Project. See Guidelines §15831. Nor is it a trustee agency over natural resources held in trust for the People. See Guidelines §15386. Although Petitioners principally contend that CGS is an agency with jurisdiction by law for the Project, CGS in fact has no jurisdiction over the Project. CGS has no permitting or approval authority for the Project. Instead, CGS has jurisdiction over a fact that is relevant to the Project – the investigation and mapping of earthquake zones. But jurisdiction over a relevant fact does not make CGS an agency which must be notified under CEQA. To hold otherwise would, as the Opposition points out, give CGS jurisdiction over every project in the State. Opp. at 21.

Nor do Petitioners point to any specific prejudice from the City's failure to notify CGS. The agency's environmental decision must be set aside only if the manner in which the agency failed to follow the law is prejudicial. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236. While the failure to give notice to a responsible or trustee agency is presumed to be prejudicial, if a department appears at the hearing and voices no concerns there would be no prejudice. Fall River Wild Trout Foundation v. County of Shasta, (1999) 70 Cal.App.4th 482, 492. In this case, CGS did not appear at the City Council hearing, but its State Geologist did explain that CGS' forthcoming determination of the Hollywood Fault could bear on the Project. It is not clear what more CGS would have said.

The City was not required to give notice to CGS.

4. The Ambiguity of the FEIR's Project Description

a. Governing Law

The EIR must describe the project, including (a) a map of the project's precise location and boundaries, (b) a statement of objections sought by the proposed project (c) a general description of its technical, economic, and environmental characteristics, (d) a statement of the intended uses of the EIR. Guidelines §15124.

Only the four listed items are mandatory. California Oak Foundation v. Regents of the University of California, ("California Oak") (2010) 188 Cal.App.4th 227, 269-70. The project description should not "supply extensive detail beyond that needed for evaluation and review of the [project's] environmental impact." Guidelines 15124; California Oak, *supra*, 188 Cal.App.4th at 269-70. The critical inquiry is whether the EIR's project description "contains sufficient detail to permit reasonable and meaningful environmental review...." California Oak, *supra*, at 272. CEQA also does not require the project description to properly assess environmental impacts -- only generally to describe the project's own environmental characteristics. See Dray Creek Citizens v. County of Tulare, ("Dray Creek") (1999) 70 Cal.App. 4th 20, 28 ("general" means only the main features and not details or particulars).

An accurate, stable, and consistent project description is the *sine qua non* of an informative and legally sufficient EIR.” County of Inyo v. City of Los Angeles, (1977) 71 Cal.App.3d 185, 193. A shifting project description may confuse the public and agency decision-makers, vitiating the EIR’s usefulness as a vehicle for intelligent public participation. County of Inyo, supra, 71 Cal.App.3d at 197. The description should be sufficiently detailed to provide a foundation for a complete analysis of environmental impacts. Id. at 192-3. The description should include all project components. See Santiago County Water District v. County of Orange, (1981) 118 Cal.App.3d 818, 829-30 (EIR for mining operation should have included extension of waterlines to serve the mine). It must apprise the parties of the true scope of the project. See San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus, (1994) 27 Cal.App.4th 713, 731-32 (EIR’s project description failed to include sewer expansion which the EIR acknowledged would be required as part of the development); San Joaquin Raptor Rescue Center v. County of Merced, (2007) 149 Cal.App.4th 645, 672-83 (EIR’s project description of a mining expansion project was inadequate because it inconsistently stated that no increase in mine production was being sought, yet also stated that the real party would be permitted to increase production).

An “EIR cannot be faulted for not providing detail that, due to the nature of the project, simply does not now exist.. Nor have the courts required resolution of all hypothetical details prior to approval of an EIR.” Citizens for a Sustainable Treasure Island v. City and County of San Francisco, (“Treasure Island”) (2014) 227 Cal.App.4th 1036, 1054.

In Treasure Island, the court rejected claims that the EIR for the redevelopment of a former Naval base in the San Francisco Bay lacked sufficient detail about the project and should have been a program EIR, not a project-level EIR. 227 Cal.App.4th at 1043. The project description was for a mixed-use community with up to 8,000 residential units, 140,000 square feet of commercial and retail space, 100,000 square feet of office space, 500 hotel rooms, 300 acres of parks, playground and open space, and a school. The construction and build out would be phased over a 20-year period. Id. at 1044. The court noted that the level of detail required for an EIR is driven by the nature of the project and what is reasonably feasible; an EIR on a construction project will necessarily be more detailed in the specifics of the project than adoption of a local general plan. Id. at 1051 (citing Guidelines §15146).

The court held that the project description was accurate and stable, and not merely a “conceptual land use map” as argued by the petitioners. The EIR made an extensive effort to provide meaningful information about the project while providing flexibility to deal with changing conditions affecting final design over a 20 year period. Id. at 1053. The project provided for new zoning that identified permitted uses and development standards within each district and also a set of binding design standards that included both fixed elements, such as street layouts, and conceptual elements, such as shapes of new buildings or specific landscape designs. Id. The court noted that many project features necessarily would be subject to future revision and quite likely would be the subjects of supplemental environmental review before the final project design was implemented. Id. at 1054. The petitioners claimed that “because the EIR does not anticipate every permutation or analyze every possibility, the project description is misleading, inaccurate and vague.” Id. The court rejected this claim, finding that the basic characteristics of the project remained, accurate, stable, and finite throughout the EIR process.

Id. at 1055. As an informational document, the project description provided sufficient information for the public and reviewing agencies to evaluate the project's environmental impacts and also provided the required "main features" of the project. Id.

b. The Project Description

The City's FEIR is modeled after the EIR in Treasure Island. The Project Description states that the Project is for a mix of land uses, including "some combination" of residential units, hotel rooms, offices, restaurants, a health and fitness club, and retail. AR 4082. The DEIR describes a LUEP that would provide flexibility to Millennium to adjust the type and density of land uses for the Project, allowing Millennium to request and obtain a transfer of land uses before development of any Project phase so long as it stays within the FAR and trip cap of 1498 new peak hour vehicle trips per day stated in the EIR (AR 13789-90). AR 10987-90.

The DEIR provides for Development Regulations for the Project that are incorporated in the Project approvals with contain standards for the Project's development that would prevail over zoning or land use regulations in the LAMC. AR 845-904, 853. The Development Regulations require that final Project design meet mandatory standards for building heights (AR 859), towers (AR 879), density (FAR) (AR 858), building massing (AR 861), grade level (AR 875), storefronts (AR 877), yards (AR 873), open space (AR 884-86), street walls (871), passageways (AR 887-89), landscaping (AR 892-94), lighting (AR 895-96), parking (AR 897-98), bicycle parking (AR 899-900), and signage (AR 901). Conceptual design drawings depict maximum allowed development envelopes. AR 863-70.

The DEIR identifies three potential development scenarios: the Concept Plan, a Commercial Scenario, and a Residential Scenario. The Concept Plan represents one possible scenario in which Millennium would build approximately 492 residential units (700,000 square feet of floor area), 200 luxury hotel rooms (167,870 square feet), 215,000 square feet of office space (including the existing 114,303 square-foot Capitol Records), 34,000 square feet of food and beverage use, 35,100 square feet of fitness center/sports club, and 15,000 square feet of retail. AR 4106.

The Commercial Scenario describes the most environmental impactful development scenario possible for those resource areas where commercial uses dictate the severity of impacts: air quality, greenhouse gases, noise, water demand, wastewater flow, energy demand, police and fire services, and traffic. AR 4237. The Residential Scenario describes the most impactful development scenario possible for those resource areas where residential uses dictate the severity of impacts: population and housing, schools, parks, libraries, parking, and solid waste generation. AR 4238-39. The DEIR uses these two scenarios in determining the maximum environmental impacts in each area. The total amount of specific development -- residential, hotel, office, retail/food and beverage, and fitness center/sports club -- may increase or decrease as long as long as the maximum impacts in each issue area are not exceeded and the total 6:1 FAR is not exceeded. AR 4239-41. *See also* Opp. at 26-27.

c. Merits

Petitioners contend that the Project Description is neither stable nor finite because the actual mix of features for the Project Site is unknown, precluding an accurate identification and analysis of all environmental impacts from the Project actually built. Mot. at 10-11. Petitioners

describe the Project as an “amorphous envelope” of development parameters limited by a set of maximum environmental impacts. Nothing in CEQA permits the substitution of an impacts envelope for an actual project description, and a Project that does not provide an actual project but only “illustrative scenarios” pushes the flexibility permitted by CEQA for project descriptions beyond reasonable. Reply at 11-12.

The court agrees. An EIR should be prepared with sufficient information for the public and decision-makers to make an intelligent decision taking into account environmental consequences. The EIR’s sufficiency depends on what is reasonably feasible. Guidelines §15151. The level of specificity of an EIR is determined by the nature of the project and the “rule of reason.” Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners, (1993) 18 Cal.App.4th 729, 741-42. That degree of specificity “will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.” Guidelines §15146. The ultimate decision whether to approve a project is a nullity if based upon an EIR that does not provide decision-makers, and the public, with the information about the project required by CEQA. Santiago County Water District v. County of Orange, (“Santiago County Water”) (1981) 118 Cal.App.3d 818, 829.

The degree of specificity required in an EIR will correspond to the degree of specificity in the underlying project. Guidelines §15146. A construction project will necessarily have a more detailed EIR than that for a general plan or zoning ordinance because the effects of a construction project can be predicted with greater accuracy. Guidelines §15146(a). The use of new zoning that identifies permitted uses and also a set of binding design standards that includes both fixed elements and conceptual elements, such as shapes of new buildings or specific landscape designs, is permissible where necessary. Treasure Island. But an EIR serves both an informative and substantive purpose, and a developer must present an accurate and stable picture of the project so that the public and decision-makers can decide whether its environmental consequences are outweighed by its public benefits. City of Santee v. County of San Diego, (1989) 214 Cal.App.3d 1438, 1454.

The FEIR provides a blurred view of the Project, not the definite and stable view required under CEQA. The LUEP, Development Regulations, and Q Condition No. 1 collectively approve an envelope of potential residential, commercial, retail, and office projects which will not have more than a maximum design mass and height and that will create no more than maximum levels of air pollution and traffic impacts. CEQA requires the project description to describe the project’s characteristics so that its environmental impacts may be assessed. Dray Creek, *supra*, 70 Cal.App. 4th at 28. Analyzing a set of environmental impact limits instead of analyzing the environmental impacts for a defined project is not consistent with CEQA, which demands that “the defined project and not some different project must be the EIR’s bona fide subject.” Burbank-Glendale-Pasadena Airport Authority v. Hensler, (1991) 233 Cal.App.3d 577, 592.

There are times when a project description setting forth only a project’s physical parameters and setting out maximum permissible environmental impacts can be reasonable – most particularly where other conditions make specificity impossible. Thus, in Treasure Island, the developer had plans to build over a 20-year period a large-scale development on an island. The island was contaminated by hazardous material which required cleanup, and the developer

could not be sure when the island would be available for development. The Treasure Island court expressly cited Guidelines section 15146 for the proposition that the specificity required depends on the underlying project, and concluded that the existing conditions and long-term nature of the project prevented disclosure of detail that does not now exist. 227 Cal.App.4th at 1054. The court permitted an EIR based on new zoning that identified permitted uses and development standards that included both fixed elements, such as street layouts, and conceptual elements, such as shapes of new buildings or specific landscape designs. The court described the EIR as making an extensive effort to provide meaningful information about the project while providing flexibility. The court further noted that many of the project's features would be likely subjects of supplemental review before a final design was implemented. Id.

These circumstances have no application to Millennium's Project. There is no 20-year build out of a site containing hazardous substances or other external variables that makes the nature and timing of development unknown and unknowable. Nor is there any planned supplemental environmental review for the Project. Where a construction project is not limited by external conditions that create great uncertainty, there is no reason for a project developer not to be specific about project details. The public and decision-makers should know whether the project will contain any housing, any retail, any commercial, any restaurant, any health club, and if so, how much. They should also know whether it will have multiple tall buildings and the building footprint, all for purposes of environmental analysis. *See* Guidelines §15146(a).

The Millennium FEIR does not rely on an external condition -- such as a hazardous cleanup or a long-term development plan with many unknown variables outside Millennium's control -- to provide an ambiguous Project Description. Nor does the FEIR justify the ambiguity by anticipating further environmental review upon final Project design. Instead, the Opposition's sole excuse for not providing a clear and unambiguous Project Description are the "changing conditions and unforeseen events" that could possibly impact the Project. *Opp.* at 25. While CEQA does not require a project to be defined down to the last detail, Millennium's uncertainty about market conditions or the timing of its build-out is an insufficient ground for the ambiguous and blurred Project Description. The public and decision-makers for the Project are entitled to know what the Project will look like after Millennium makes that decision so that the Project's description can form the foundation of the environmental analysis. The EIR's project description must provide sufficient information about the project for the public and reviewing agencies to evaluate the project's environmental impacts. Treasure Island, *supra*, 227 Cal.App.4th at 1055. An EIR that does not provide decision-makers, and the public, with adequate information about the project fails as an informational document. Santiago County Water, *supra*, 118 Cal.App.3d at 829

Additionally, the Project essentially defers a portion of the environmental impacts analysis. The environmental assessment of the defined project must be performed at the earliest possible stage, and certainly in the EIR. *See Sundstrom v. County of Mendocino*, (1988) 202 Cal.App.3d 296, 306-08. As Petitioners argue, when a project faces uncertainty over several specific project alternatives, the EIR typically evaluates the environmental impacts of each specific project alternative. Deferred environmental evaluation generally is permitted only for mitigation measures, and even there only where obtaining more detailed useful information on the topic is meaningfully impossible at the time of the EIR, and the information is not of

overriding importance to determining whether to proceed with the project. Riverwatch v County of San Diego, (1999) 76 Cal.App.4th 1428, 1448 (deferral of precise detail of mitigation measure dependent on yet-to-be performed Caltrans study did not undermine EIR's conclusion that the impact could be mitigated).

Although the FEIR limits the Project to a maximum environmental impact in each issue area, it does not explain how it will be determined that the maximum impacts will not be exceeded when the Project is finally designed and built. The LUEP permits Millennium to obtain a transfer or change of uses within the Project, and the Planning Director may approve that request if the submission reasonably demonstrates that the change is consistent with the trip cap and does not exceed the maximum environmental impacts identified in the EIR. AR 13789. But how will the Planning Director make that determination for changing the Project and using what criteria?¹⁴ Since no additional CEQA review will be required to ensure that a change sought by Millennium is within maximum environmental issue limits, and no public input will be permitted, the FEIR essentially defers the environmental assessment of the Project and substantively fails to ensure that the finally designed Project will not be approved without all necessary mitigations of environmental harm.

Petitioners admit that a LUEP may be acceptable where it permits a developer to choose among specifically defined scenarios, each of which is fully analyzed in the EIR, the Millennium LUEP makes this impossible. Petitioners give an example of the FEIR's reliance on a reduction in traffic because some residents will enjoy Project facilities internally and defer making a trip outside (AR 4939-41, 3263-64), but there is no assurance that the facilities will be constructed in a manner that would result in the anticipated internal trip captures. *See* AR 31600. Petitioners provide a second example that the driveway locations are merely hypothetical since the Development Regulations permit "parking, open space, and related development" to be located anywhere within the Project Site. AR 858. As a consequence, traffic analysis of driveway locations and their impact is impossible. Mot. at 12.

The Opposition tries to rebut Petitioners' argument that the driveway locations are merely hypothetical, noting that the FEIR provides that the driveways specifically will be located along Ivar and Vine and placed pursuant to LADOT standards. AR 2724-25. The Opposition argues that the traffic study contains the specificity to assess traffic impacts of these locations. Opp. at 27. This fact does not undermine Petitioners' point that the driveway locations are subject to change.¹⁵

The CEQA process is intended to provide the fullest information reasonably available on which the decision-makers and the public can rely in determining whether to start a project.

¹⁴ Although Petitioners raised this issue (Mot. at 11, n.6), the Opposition does not address it.

¹⁵ The Opposition also contends that Petitioners are mistaken about internal trip captures. The FEIR addresses trip capture and "pass-by" trip reductions based on the most traffic-intensive development scenario, meaning that fewer trips will be permitted than otherwise. The FEIR translates use-specific trip generation into general trip generation rates based on any use. Regardless of the final design, these general rates will apply to ensure the total trips remain below the cap. Opp. at 27-28. Petitioners do not reply to this confusing point.

Natural Resources Defense Council v. City of Los Angeles, (2002) 103 Cal .App.4th 268, 271. An EIR furnishes both the road map and the environmental price tag for the project so that the decision maker and the public both know how much they and the environment will have to give up in order to take that journey. *Id.* By approving an EIR with an ambiguous Project description which defers some portion of the environmental analysis, the City failed to act in accordance with law. CEQA's informational and substantive requirements have been violated and the EIR and the entitlements it purports to support must therefore be vacated.

d. The Q Condition

Petitioners argue that the Project's Q Condition of Approval No. 1 provides Millennium even more latitude to redesign and reconfigure the development than yielded by the ambiguous Project Description.

Q Condition No. 1 provides:

“The use of the subject property shall be limited to those uses permitted in the Land Use Equivalency Program, attached as Exhibit D or as permitted in the C2 Zone as defined in Section 12.16.A of the LAMC.” AR 11651 (Emphasis added.)

Petitioners argue that, on its face, Q Condition No. 1 permits Millennium to choose from any of the long list of land uses expressly permitted in the C2 zone. None of these uses or their environmental impacts were disclosed and analyzed in the FEIR, and none had appropriate mitigation imposed. Petitioners specifically objected to this Q Condition on the grounds that Q Conditions are supposed to restrict uses on a project beyond those required by a particular zoning law and were created to address the situation where a developer obtains a zoning change and then switch plans to build a project also authorized by that zone. Yet, Q Condition No. 1 expands Millennium's right to develop for uses that have not been disclosed. AR 11168-69. Mot.at 13.

The Opposition explains that the Project's central entitlement is the Ordinance, which rezoned the property from C4 to C2 commercial – a zone change that was necessary for the health club -- and imposed the Development Regulations. The Project is governed by the Development Regulations and the LUEP, both of which are incorporated into the Ordinance. The Q Conditions, which are zoning provisions enacted through the Ordinance, were added to restrict Millennium's use of the property within the C2 zone. *See* LAMC §12.32.G(2)(a). Opp. at 29.

The Opposition acknowledges the plain language of Q Condition No. 1, but argues that the City's intent in imposing Q Condition No. 1 was not to permit any use listed in the C2 zone. Instead, the LUEP defines the uses which Millennium is permitted to develop, if otherwise permitted on the C2 zone. Those uses must stay within the identified environmental maximum impacts and the Development Standards and Millennium's compliance will be verified and enforced by City Planning. Q Condition No. 1 must be read as a whole with the LUEP use restrictions and environmental impact caps (the LUEP is incorporated into Condition No. 1), and the requirements of the Development Regulations. Opp. at 29-31. Under familiar principles of statutory construction, Q Condition No. 1 must be interpreted with the LUEP and the

Development Regulations to “impose use and development limitations on the Project.” Opp. at 32.

The construction of ordinances is subject to the same standards applied to the judicial review of statutory enactments. Department of Health Services of County of Los Angeles v. Civil Service Commission, (1993) 17 Cal.App.4th 487, 494. In construing a legislative enactment, a court must ascertain the intent of the legislative body which enacted it so as to effectuate the purpose of the law. Brown v. Kelly Broadcasting Co., (1989) 48 Cal.3d 711, 724; Orange County Employees Assn. v. County of Orange, (“Orange County”) (1991) 234 Cal.App.3d 833, 841. The court first looks to the language of the statute, attempting to give effect to the usual, ordinary import of the language. Brown v. Kelly Broadcasting Co., (1989) 48 Cal.3d 711, 724. Significance, if possible, is attributed to every word, phrase, sentence and part of an act in pursuance of the legislative purpose. Orange County, *supra*, 234 Cal.App.3d at 841. The various parts of a statute must be harmonized by considering each particular clause or section in the context of the statutory framework as a whole. Lungren v. Deukmejian, (1988) 45 Cal.3d 727, 735. If a statute is ambiguous, the construction given it by the agency charged with its enforcement is entitled to consideration if such construction has a reasonable basis. Ontario Community Foundations, Inc. v. State Bd. of Equalization, (1984) 35 Cal.3d 811, 816.

In effect, the Opposition contends that the language of Q Condition No. 1 should be interpreted to limit the uses of the property to those uses permitted by the LUEP **and** by C2 zone. If a use is not permitted by both, Millennium may not put the property to that use. The problem with the Opposition’s interpretation is that it runs contrary to the plain meaning of the word “or” in Q Condition No. 1, which in context means “either A or B”. There is no ambiguity on which the court can rely to justify the City’s interpretation.

Even if *arguendo* Condition No. 1, the LUEP, and the Development Standards collectively constitute a statutory scheme which should be collectively harmonized, that harmonization is easily done. Q Condition No. 1 addresses property use. The Development Standards concern building design, and do not address the use to which the property is placed. The LUEP contains use limitations, but Condition No. 1 places those use limitations in the alternative with uses in the C2 zone. Thus, the three elements are easily harmonized.

Petitioners objected to the language of Q Condition No. 1, and the City ignored their objection. The court cannot rewrite the Q Condition No. 1 now. It means what it says, and it provides Millennium greater latitude to redesign and reconfigure the Project in areas that have not been subjected to environmental analysis. This is a failure to act in accordance with the requirements of law.

5. Seismic Review

a. Petitioners’ Argument

Petitioners acknowledge that the FEIR adequately analyzed seismic issues, and argue that the City failed to disclose pertinent environmental information, failing to meet CEQA’s mandate that the public be equally informed as the agency. See Laurel Heights, *supra*, 47 Cal.3d at 404. Mot. at 14; Reply at 18.

Petitioners point out that the Hollywood Fault is considered active, and therefore a potential hazard for catastrophic rupture. Petitioners’ consulting geologists identified, and the 2010 CGS Map showed, the Hollywood Fault crossing through both sides of the Project Site.

AR 11542-43; RL 33497-98. Although the City's ZIMAS mapping did not show the Hollywood Fault as crossing the Project Site, LADBS staff noted that a City geologist met with Millennium and discussed the fact that the Fault potentially crossed the property. AR 68257. In recommending a Fault Report, the City geologist stated that the Hollywood Fault "appears to exist in the vicinity of the subject site." AR 65566-68.

The City's Initial Study noted the potential of a significant impact from rupture of a known earthquake fault, and stated that the EIR will provide additional analysis. AR 680-81. A November 2011 report was prepared as a technical appendix to the EIR (AR 29824), but was never included in the FEIR. The report claimed that the Project Site is not located in a Fault Rupture Study Area ("FRSA"), and site-specific fault studies were not performed or required. AR 29829. But Petitioners contend that Exhibit 4 to the November 2011 report shows the Project's eastern portion crossing through the red footprint of the FRSA. Wright Decl., Ex.1.

Petitioners note that in March 2012 LADBS acknowledged the need for a limited fault investigation based on a CGS Hollywood Fault trace map. AR 29988. LADBS and Millennium representatives agreed that this limited investigation would include only the Project's western portion, not the eastern portion identified in Exhibit 4, and would be deferred until the buildings were designed. RL 6677-78.

The Planning Department reviewed a proposed DEIR which did not have the November 2011 report, and instead included a May 2012 report prepared by Millennium's expert. The May 2012 report was identical to the November 2011 report except that Figure 4 now showed the entire Project Site outside the FRSA boundary and a bolded sentence was deleted. AR 1385. Petitioners conclude that the May 2012 report was deliberately rigged to avoid disclosure of the Project Site within the FRSA. Mot. at 18.

The May 2012 report was attached as a technical appendix to the DFEIR which was released by City Planning staff on October 25, 2012 without waiting for, or without knowing about, the limited Fault Report that Millennium's expert was preparing. As a result, the DFEIR stated that the Hollywood Fault was 0.4 miles away from the Project Site and included little seismic analysis.

Not until the November 2012 Fault Report did Millennium or the City change its position. The Fault Report repeated the statement that the Hollywood Fault was 0.4 miles away, but acknowledged that the City had required a limited investigation because the 2010 CGS map showed the Hollywood Fault to be within 500 feet of the Project Site. The Fault Report was never included in the FEIR and never released to the public. Although the City's information potentially showed that the Project Site crosses the Hollywood Fault, the FEIR does not disclose or discuss the 2010 CGS Map. Mot. at 15. The City should have recirculated the DEIR with the Fault Report because it constituted significant new information. Pub. Res. Code §21005(a); Guidelines §§ 15088.5, 15144.

Petitioners conclude that the failure to ensure that the public knew about the seismic issue was an abuse of discretion and the DFEIR's reliance on Figure 4 to show the Project as outside the FRSA was clearly erroneous. Mot. at 19-20.

b. Merits

The Opposition seeks to debunk Petitioners' conspiracy theory that the City and Millennium worked to suppress the fact that the Project is located in a state-designated fault zone and in a City-designated FRSA. Opp. at 18-20.

Even if the Opposition does not successfully do so, the court agrees that no further disclosure about the location of the Project Site's proximity to the Hollywood Fault was required. Petitioner's theory of non-disclosure is based upon (1) the FEIR's failure to include the Fault Report, which stated that the Hollywood Fault was 0.4 miles away from the Project Site, but acknowledged that the 2010 CGS map showed the Hollywood Fault to be within 500 feet, and (2) the fact that the May 2012 report, which was included in the DEIR, attached a Figure 4 which showed the entire Project Site outside the FRSA boundary and deleted a bolded sentence.

Figure 4, the 2010 CGS map on which Petitioners rely to show the Hollywood Fault traversing the Project Site, is not a reliable document. *Compare* Wright Decl., Ex.1 and AR 1385. First, it is not an official CGS fault map. The 2010 map is a "Fault Activity Map" prepared for CGS's 150th anniversary and expressly states that it is "not intended to replace or supersede the Official Maps of Earthquake Fault Zones -- the location of fault traces shown should not be substituted for site-specific fault rupture investigations[.]" AR 49493. Second, a cursory review of the 2010 CGS map reveals that it is a low-resolution, non-scalable, map of the entire state of California. *Id.* It is not something anyone can rely upon to show fault boundaries.¹⁶

As for the contention that the May 2012 report was deliberately rigged to avoid disclosure that the Project Site was within the FRSA, the Opposition contends that the exhibit in the May 2012 report differs from that in the November 2011 report only because of a cut and paste from a graphic in the City's 1996 Safety Element. AR 47303. Opp. at 20. Whether or not the accusation of a doctored exhibit is true, it is irrelevant. The Initial Study clearly states that the Project Site is adjacent to, but not within, a City-designated FRSA. The DEIR said that the Hollywood Fault is 0.4 miles away. AR 4591, 4595. A not-to-scale exhibit showing differently is immaterial. AR 680.

Petitioners nonetheless contend that the May 2012 report attached to the DEIR is misleading because at all times the public was told that the Hollywood Fault trace was 0.4 miles away when LADBS actually regarded it as within 500 feet. If LADBS required a fault investigation because of the 2010 CGS map, the public was entitled to know about this same information. The Fault Report continued the City's position that the Hollywood Fault was 0.4 miles away from the Project Site, but at least acknowledged that the 2010 CGS map showed the Hollywood Fault to be within 500 feet. This should have been disclosed. Mot. at 19.

The Opposition argues that the Fault Report was prepared by Millennium's consultant for purposes of the VTTM under LAMC section 17.05U. LADBS acted with care by requiring a limited fault investigation despite the fact that the Project Site was not in a fault zone or FRSA, and did so because the Hollywood fault trace was less than 500 feet away. AR 29876. The Fault Report concluded that "active faulting is not present within the limits of our investigation within the Site...." AR 29875. The Fault Report was approved by LADBS for purposes of the VTTM. AR 29810-11. Opp. at 15-16.

As Petitioners reply, the VTTM process cannot be separated from the CEQA process, and the City's approval of the VTTM by itself required CEQA compliance. Pub. Res. Code

¹⁶ Although the court has declined to judicially notice Petitioners' Exhibits C and D, which purport to show the Project Site within the Hollywood Fault, the Opposition correctly argues that if CGS released for the first time in November 2014 a map showing the Project Site in the Hollywood Fault Zone, how is it possible that CGS's 2010 map already placed the Project in a fault zone? Opp. at 19.

§21080(a); Govt. Code §66474.01. CEQA is essentially an environmental full disclosure statute and the City cannot silo information about seismic issues from the EIR. See Rural Landowners Assn. v. City Council, (1983) 143 Cal.App.3d 1013, 1020. Reply at 15-16.

Nonetheless, the FEIR adequately addressed seismic issues. The Opposition shows, and Petitioners do not dispute, that the City treated the Project as if it were in an earthquake zone. The DEIR included an adequate discussion of potential impacts from fault rupture (AR 4589-4602) and a 48-page Preliminary Geotechnical Engineering study which showed no evidence of faulting. AR 8212-59. Despite the fact that the Hollywood Fault was only proximate, the City adopted mitigation measures to ensure seismic safety, including construction of the Project in accordance with seismic standards and a requirement for final geotechnical engineering report prior to issuance of building or grading permits. See Oakland Heritage Alliance v. City of Oakland, (2011) 195 Cal.App.4th 884, 904 (upholding similar mitigation measures); California Oak, *supra*, 188 Cal.App.4th at 264 (upholding EIR for project in earthquake zone that required further testing before development of site).

Nothing in the Fault Report supports Petitioners' argument that it should have been included in the FEIR. As the Opposition argues, the DEIR already contained a May 2012 preliminary geotechnical study prepared by Millennium's expert claiming that the Project Site is not located in a FRSA, and that site-specific fault studies were not required. AR 29829. The Fault Report concluded that active faulting is not present at the Project Site, and this conclusion is consistent with the May 2012 report. The City treated the Site as if it was in a FRSA, and the FEIR contained a discussion of seismic issues, a preliminary geotechnical report, and mitigation measures. It did not have to include the Fault Report prepared for LADBS and the VTTM showing no active faulting. See California Oak, *supra*, 188 Cal.App.4th at 265 (seismic study prepared for compliance with Alquist-Priolo was not required to be included in EIR).

Petitioners argue that case law supports the exclusion of a particular document from the record where the discussion of an environmental impact is present in the EIR, but not where a crucial area of environmental impact has been omitted. Reply at 18.

Perhaps so, but the FEIR did not omit a crucial area of environmental impact. The City performed the proper environmental analysis, consistently stating that the Hollywood Fault was 0.4 miles away. The mere fact that the Fault Report acknowledged that the City required a limited investigation because the 2010 CGS map showed the Hollywood Fault to be within 500 feet of the Project Site, not 0.4 miles (2112 feet), does not mean the FEIR fails as an informational document. As the Opposition contends, the 2010 CGS map is unreliable and unofficial. The City required the Fault Report in order to be cautious and treat the Project Site as if it were in a FRSA, and the Fault Report confirmed a lack of active faulting. The mere fact that the FEIR did not disclose the reason why the City required a Fault Report is insufficient to cause the FEIR to fail as an informational document.

Because the Fault Report did not contain significant new information showing new or substantially more severe impacts, recirculation was not required. See Guidelines §15088.5(a).¹⁷ Recirculation is not required where the new information merely clarifies or amplifies information

¹⁷ Petitioners argue that the Opposition does not cite to any finding or evidence that recirculation is not required, but they bear the burden of showing that it was. See Mot. at 19.

in the EIR. Guidelines §15088.5(b). See Treasure Island, *supra*, 227 Cal.App.4th at 1063-64 (court must defer to decision not to circulate where it is supported by substantial evidence).¹⁸

6. Fire and Protective Services

Petitioners contend that the FEIR relied on inaccurate data concerning the Project's impacts on fire safety and services. The FEIR acknowledged that under CEQA Guidelines Appendix G a significant environmental impact occurs where a project causes substantial adverse physical impacts associated with new or improved government facilities in order to maintain acceptable service rations, response times, or other performance objectives for fire protection. AR 4804. The Millennium Project's impacts would be significant "if the project requires the addition of a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain service." AR 4805. The FEIR concluded that the Project would not require the addition or expansion of a fire station to maintain service, and therefore no significant impacts on this issue area. AR 4806.

LAFD's preferred response time threshold for emergencies is five minutes or better 90% of the time. AR 4800. The FEIR noted that Fire Station 27, which houses a truck company, is 0.7 miles from the Project Site and Fire Station 82, which houses an engine company, is 0.8 miles from the Project Site. AR 4807. Consistent with Fire Code section 57.09.06, this proximity was sufficient to meet the response time requirement. Additionally, the average response times for Fire Stations 27 and 82 are less than five minutes based on data supplied by LAFD for July 5, 2011-December 14, 2011. AR 4807-08.

Petitioners criticize this conclusion as repudiated by another City official. The City Controller's May 2012 audit revealed that over 1/3 of the 1.9 million reported emergency incidents either coded unclearly as either emergency or non-emergency at the discretion of dispatchers. Therefore, the audit was unable to verify that LAFD had met its 90% goal for emergency response times. Pet. Mot. to Augment, Ex. 2. The DEIR acknowledged the Controller's audit, mentioning it "for information purposes only." AR 4800. LAFD subsequently stated that its prior reporting data should not be relied upon until properly recalculated and verified. AR 11187. Consequently, Petitioners argue that the City wrongly relied on the inaccurate data. Reply at 20.

Petitioners ignore the proximity of Fire Stations 27 and 82 to the Project Site. Fire Code section 57.09.07 requires response distances in compliance with Table 9-C, which in turn permits a maximum response distance of 1 ½ miles for engine and truck companies in high density resident and commercial neighborhoods. Fire Stations 27 and 82 are within those distances. The FEIR also noted five other stations nearby, the Project would generate revenue that could be applied to new fire facilities, emergency access would be adequate, and LAFD has experience navigating these streets. AR 313, 4808. Under these circumstances, the Controller's audit discrediting LAFD community-wide response time data does not undermine the FEIR's

¹⁸ The City Council clearly understood that LADBS treated the Project as if it was in an earthquake zone, and the City Council approved an amending motion which imposed a condition of a comprehensive geotechnical report prior to issuance of any grading or building permit. AR 13791-92, 11643.

conclusion that response times to the Project area will meet the standard of five minutes or less 90% of the time.¹⁹

It is also true, as the Opposition argues and Petitioners admit, that Appendix G only requires analysis of whether new or modified facilities will be required, not response times.²⁰ The City concluded that no new facility will be required. AR 4806. Its decision that there is no significant impact from this environmental issue is supported by substantial evidence.

7. The Invalidated Hollywood Community Plan Update

a. The FEIR's Reliance on the HCPU

The HCPU governed the Project Site at the time of the City Council's approval. Like the City's other community plans, the HCPU was an integral part of the General Plan, and formed the General Plan's state law-mandated land use element for the Project area. Govt. Code §§ 65300, 65302(a). The City thus had to make, and did make, findings in the DEIR that the Project was consistent with the HCPU. AR 4689-4700. The FEIR's mitigations also relied on the HCPU.

Following the City Council's approval of the Project, the superior court in La Mirada invalidated the entire HCPU. Pet. RJN, Ex. G. The City elected not to appeal the decision, and rescinded its adoption of the HCPU. Pet. RJN, Ex. H. Since consistency with a general plan or one of its elements is required for any portion of local government land use, the absence of a valid general plan or its valid relevant elements precludes enactment of actions, including approval of entitlements. Neighborhood Action Group v. County of Calaveras, (1984) 156 Cal.App.3d 1176, 1184.

Petitioners argue that the City's land use consistency findings for the Project collapsed when the HCPU was invalidated and rescinded. Mot. at 29-30. The HCPU promoted high-intensity, mixed use development near transit stops, and had goals and policies custom-tailored for the Project. Because the Project approvals cannot be consistent with an invalid HCPU, the Project approvals are null and void. Mot. at 31.

This argument may be dealt with summarily. The FEIR acknowledged that the HCPU was subject to legal challenge, and therefore it analyzed the Project's consistency with both the HCPU and the original 1988 Hollywood Community Plan ("1988 HCP"), which became operative after the City rescinded the HCPU. See AR 24045, 24069-70. The Land Use Planning Section of the DEIR clearly states that the Project does not depend on the HCPU. AR 28213-78. This section provides the separate, parallel consistency analysis for both the 1988 HCP and the HCPU. Table 1V.G-3, analyzes the Project's consistency with the 1988 HCP. AR 28248. Table 1V.G-4 then analyzes the Project's consistency with the HCPU. AR 28249-60. The DEIR concludes that the Project is "consistent with the goal and policies of the 1988 Community Plan and the Community Plan Update and thus would not result in conflicts with local plans and policies." AR 28260. Because the Project is consistent with both plans, the FEIR finds land use consistency impacts to be less-than-significant under either plan. AR 28273.

¹⁹ Petitioners also argue that the FEIR's response time analysis does not include the additional 19,000 daily trips generated by the Project. Mot. at 28. Not so. This issue was addressed in the FEIR's discussion of cumulative impacts of increased residents, households, and employees on fire protection services in the Project area. AR 4813.

²⁰ Petitioners state that the issue of whether emergency response times are themselves an impact which must be assessed is currently before the California Supreme Court. Reply at 19.

A city council's determination that the project is consistent with its general plan carries a strong presumption of regularity. Sequoyah Hills Homeowners Assn. v. City of Oakland, (1993) 23 Cal. App. 4th 704, 717. The foregoing evidence satisfies CEQA's land use consistency requirement and state law.

Moreover, the court agrees with the Opposition (Opp. at 36) that Petitioners waived their land use consistency argument by failing to discuss the FEIR's reliance on the 1988 HCP. When a petitioner challenges an administrative decision as unsupported by substantial evidence, it is the petitioner's burden to demonstrate that the record does not contain sufficient evidence to support the agency's decision. State Water Resources Control Board Cases, (2006) 136 Cal.App.4th 674, 749. A recitation of only the part of the evidence that supports the petitioner's position is not the "demonstration" contemplated by this rule. If a petitioner contends that some issue of fact is not sustained, the failure to set forth in his brief all the material evidence on the point and note merely his own evidence constitutes a waiver. Id. (quoting Foreman & Clark Corp. v. Fallon, (1971) 3 Cal.3d 875, 881.

Petitioners have not met their heavy burden of proving that the City's land use consistency findings for HCP were arbitrary and capricious.

b. Compliance with the La Mirada Judgment

Petitioners further argue that the La Mirada judgment required the City to rescind not only all actions approving the HCPU, but also "all related approvals issued in furtherance of the HCPU", with the exception of "adjudicatory approvals not challenged which the City may have made under the HCPU after its adoption by the City." Pet. RJN, Ex. G. Petitioners contend that this final judgment and supporting writ created a mandatory duty to rescind all approvals for development projects in the Hollywood planning area that were made while the HCPU was in effect, except where no lawsuit was filed against the project. According to Petitioners, the Millennium Project is within the scope of the La Mirada judgment and writ and the City has a mandatory duty to rescind its approvals. Mot. at 31-32.

This argument requires interpretation of the La Mirada judgment. The rules for interpreting a court order or judgment are the same as in ascertaining the meaning of any other writing. Dow v. Lassen Irrigation Co., (2013) 216 Cal.App.4th 766, 780; Los Angeles Local Board of Culinary Workers, etc. v. Stan's Drive-Ins, Inc., (1955) 136 Cal.App.2d 89, 94. Individual clauses or provisions are not considered separately but rather the entire document must be considered on its four corners and construed as a whole to effectuate its intentions. Id.

The Opposition is most certainly correct that the Project approvals are not "related approvals" under the La Mirada judgment. That judgment expressly states that related approvals "refers only to those quasi-legislative actions necessary to carry out the HCPU...." Pet. RJN, Ex. G (Emphasis added.) The Project approvals are independent of, and not necessary to carry out, the HCPU. The La Mirada judgment gives examples of what related approvals are, including the HCPU text and maps, the Resolution amending the 1988 HCP, the actions necessary to effect the HCPU, amendments to the General Plan made to reflect changes in the HCPU, and CEQA findings for the PCPU. The Project is not a related approval, and Petitioners are simply wrong arguing that any project that relied upon the HCPU is a related approval. Reply at 20-21.

Petitioners have not met their burden to show that the City is obligated to rescind the land use consistency findings as related approvals under La Mirada.

8. Violation of the City Charter

Petitioners argue that the Development Regulations and Q Conditions are an unlawful blanket variance and/or an improper delegation of the City's police power. The Sixth Cause of Action alleges that the City granted variances for the Project without making the legally mandated findings under Charter section 562 and LAMC section 12.27(D), and the Seventh Cause of Action contends that the City has unconstitutionally impaired its police powers. Petitioners allege that the City is attempting to elevate the Development Regulations into the position of a municipal ordinance, per LAMC section 12.04 and 12.32, in irreconcilable conflict with Charter section 562. *Id.*, ¶181. In doing so, the City is attempting to override other LAMC provisions. *Id.*, ¶182. The LUEP and development regulations are a grant of *carte blanche* authority which is *ultra vires* and *void ab initio* because they amount to the City unconstitutionally surrendering its police power to regulate land use. *Id.*, ¶183.

Petitioners present a history in which the City created the Development Regulations and LUEP to be adopted in conjunction with the Development Agreement. AR 4105-06. The Development Regulations would prevail over zoning or land use regulations in the LAMC. AR 4105, 18581. At the Planning Commission hearing, Millennium withdrew the Development Agreement when it was determined that the Commission would be disqualified from hearing it. AR 74811-12.²¹ Instead of using the Development Agreement, the City claimed it had the authority to impose the Development Regulations and LUEP as Q Conditions of Approval. AR 74826. *See* LAMC §12.32(G).

Petitioner CURD then submitted evidence to the PLUM on appeal that Q Conditions authorized under LAMC section 12.32(G) must restrict a project, not increase a developer's rights to use property. AR 11169-1172. Implicitly accepting this argument, the City substituted the draft Ordinance for the original ordinance adopted by the Planning Commission. AR 11949-952. The draft Ordinance purported to enact the Development Regulations as Exhibit C. *See* AR 11644-95.

According to Petitioners, the substitution of the Ordinance for the original ordinance was accomplished through the creation of a false PLUM recommendation report that claimed PLUM had voted to recommend substituting the Ordinance for the original ordinance. This report recommended that the City Council "7. PRESENT and ADOPT the accompanying NEW ORDINANCE.... 8. NOT PRESENT and ORDER FILED the Ordinance approved by the [Planning Commission] on March 28, 2013." AR 11950. No such event ever happened, as reflected by the transcript of the PLUM hearing and the two documents approved by the PLUM. *See* AR 75174-299, 18466-470, 19738-42. The PLUM, or the City Clerk, created a false public record in violation of Charter section 281(c). CURD objected to this false record prior to the City Council hearing. AR 11731. Mot. at 35.

Petitioners argue that the Charter is the City's constitution and Charter section 562 protects the rights of residents by mandating that any variance from strict application of the zoning code proceed through a zoning administrator, who must make five affirmative findings. The City's attempt to enshrine the Development Regulations -- whether as the withdrawn Development Agreement, an *ultra vires* Q Condition, or a frantic enactment of City ordinance through a false public record -- cannot override Charter section 562 and is a void effort to grant

²¹ The parties dispute whether the conflict was due to a conflict of interest by Planning Commission President William Roschen as a paid consultant to Millennium and that a City ethics investigation led to his rapid resignation. *Compare* Mot. at 34 *with* Opp. at 34, n.16.

undisclosed variances. See Trancas Property Owners Assn. v. City of Malibu, (2006) 138 Cal.App.4th 172, 181-82 (contract exempting development from zoning law is unenforceable as violation of public policy). Mot. at 35-36. The City cannot adopt a Q Condition that is more permissive than that permitted in the City's zoning code. LAMC section 12.32(G) authorizes the City to approve projects and restrict the land uses to those specified in the Q Condition, not expand a developer's right to override the zoning code. Mot. at 36.²² Additionally, the combined effect of the Ordinance and the agreement signed by Millennium to make the Q Conditions enforceable against it (AR 11656) constitute an unconstitutional contracting away of the City's police power. Mot. at 36-37.

The creation of the Ordinance demonstrates unpalatable eagerness by the City. The Opposition defends the PLUM recommendation report claiming the PLUM had voted to recommend substituting the Ordinance for the original ordinance. AR 11950. The Opposition argues that the report is not false, as the PLUM did modify the original ordinance by adopting a City Planning memo of technical corrections and a letter from Millennium's counsel concerning the Conditions of Approval. AR 75294-95. Opp. at 34. However, the technical changes and changes to the Conditions of Approval submitted by Millennium's counsel and City Planning, they were not the new Ordinance described in the PLUM recommendation report. The PLUM report is false.

Although the brief history of the Ordinance is troublesome, the Opposition correctly argues that the Q Conditions are not a blanket variance. Opp. at 33. A "variance" is a "permit to build a structure or engage in an activity that would not otherwise be allowed under the zoning code." Neighbors in Support of Appropriate Land Use v. City of Tuolumne, (2007) 157 Cal.App.4th 997, 1007. The City did not grant Millennium a variance to deviate from zoning requirements, although it tried to do so in the Development Agreement. Rather, the City made a legislative policy choice in the Ordinance to favorably zone the Project Site, and this zoning rests on equal footing with the other zoning in the City.²³ Charter section 562 does not prevent the adoption of the Ordinance and the Q Conditions in it.

The false trail concerning adoption of the Ordinance does not necessarily invalidate it, and Petitioners do not argue that it does. Instead, they contend that the Ordinance adopts the Development Regulations (Exhibit C), which expressly provide that they shall prevail over any more restrictive zoning provision in the LAMC. AR 18581. According to Petitioners, this prevents the City from enacting in the future any zoning provision inconsistent with the Development Regulations and, as such, is an unconstitutional delegation of police power. Since Millennium has potentially 12 years to begin the Project (AR 75052), this is no small consideration. Reply at 22. On this point, Petitioners rely on Cotta v. City and County of San

²² The court agrees with this argument, which however is mooted by enactment of the Ordinance.

²³ This appears to be the converse of "spot zoning", which is a legislative zoning of a specific property in a discriminatory fashion such that it has lesser rights than surrounding properties. See Consaul v. City of San Diego, (1992) 6 Cal.App.4th 1781, 1801. Illegal spot zoning involving the unreasonable and arbitrary regulation of uses of property is an unconstitutional violation of due process. Echevarrieta v. City of Rancho Palos Verdes, (2001) 86 Cal.App.4th 472, 483. The City provided Millennium with favorable zoning, not more restrictive zoning.

Francisco, ("Cotta") 157 Cal.App.4th 1550, 1557-59 and 108 Holdings, Ltd. v. City of Robert Park, ("108 Holdings") (2006) 136 Cal.App.4th 186, 194. Reply at 22.

A municipality may not contract away its legislative and governmental functions. 108 Holdings, 136 Cal.App.4th at 194. Such power may not be surrendered or impaired either by contract or ordinance. Id. The controlling consideration is whether the local entity has bargained away its police power or municipal function. Id. at 195.

In 108 Holdings, the city entered into a stipulated judgment that bound it to interpret and apply its general plan in the manner set forth. Id. at 191. The petitioner claimed that this was an unlawful surrender of police power, and the court disagreed. Nowhere in the stipulated judgment did the city agree to refrain from legislating in the future on matters that were subject to the stipulated judgment; the city could amend its general plan as it saw fit and future circumstances dictated. Id. at 195. The court distinguished County Mobilehome Positive Action Com., Inc. v. County of San Diego, (1998) 62 Cal.App.4th 727, in which a county had imposed a 15-year moratorium on the enactment of rent control legislation for mobilehome park owners who entered into an agreement with the county. The agreement specified that its provisions would prevail over any county action, and the county agreed not to adopt any ordinance that would regulate mobilehome rent the owner could charge. This action prevented the county from exercising its police power out of fear that a subsequent enactment would expose the county to a breach of contract action. Id. at 195-96. In contrast, the 108 Holdings stipulated judgment did not limit the city's ability to amend its general plan in the future. Reservation of police power is implicit in all government contracts and private parties take their rights subject to that reservation. Id. at 196.

In Cotta, the court addressed an exercise of police power after an airport commission entered into a contract granting certain benefits to taxi drivers of clean air taxis providing service at San Francisco Airport. The plaintiffs purchased compressed natural gas taxis and operated them. Then the commission adopted a new resolution that conferred fewer benefits. 157 Cal.App.4th at 1553. The court held that the commission's earlier resolution did not create a contract and was in fact a regulatory framework which involved no vested right. If construed as a contract, it would be unenforceable as an unlawful delegation of police power. Id. at 1563-64.

Petitioners point to nothing in the Ordinance and the Development Regulations which prevents the City from adopting a future ordinance changing the Project's zoning. To the contrary, Millennium had to sign an agreement that it is bound by the Conditions of Approval, which restrict its use of the property. AR 11656. The Development Regulations, which are part of the Ordinance, do state that they trump inconsistent zoning provisions. AR 18581. But this is merely one ordinance controlling the application of another existing ordinance of equal dignity. Petitioners point to no provision of the Ordinance or Development Regulations which prevents the City from changing the zoning at the Project Site, either before Millennium begins development or afterwards (when vested rights may occur).

It is worth noting that the now withdrawn Development Agreement expressly stated that the City accepted the Development Agreement's restrictions on its police powers only to the extent required to achieve the parties' mutual objectives and to obtain public benefits which go beyond those obtained by traditional city controls on projects. AR 23437. Otherwise, the City reserved all remaining police powers to itself. AR 23436. Presumably, the Ordinance, which was created to substitute for the Development Agreement, was intended to effectuate the same result.

The Ordinance is not an unconstitutional delegation of police power.

9. Violation of Due Process and Recirculation

Petitioners argue that the PLUM and City Council hearings violated due process and their right to a fair hearing.

Specifically, at the PLUM hearing Millennium's attorney was permitted to make new substantive claims that CURD was not permitted to rebut (AR 11735-39), and major changes were made to the Development Regulations as set forth in a May 31, 2013 letter from Millennium's counsel and in a June 18, 2013 Planning staff memo without providing a copy to the public (AR 18466079), 19038-42).

At the City Council hearing, (1) Millennium's attorney submitted a 311-page letter and supporting evidence, including a 120-page geological report, less than 18 hours before the hearing and the City Council provided no opportunity to refute these arguments, (2) the City Council required CURD and the public to testify before calling City staff to give new presentations and evidence, and (3) the City Clerk announced at the hearing that an amending motion had been circulated when in fact it had not.

Finally, persons who attended the PLUM and City Council hearings either had no opportunity to speak or were given an impossible one minute to present evidence. Petitioners argue that each of the 131 persons who asked and were denied the opportunity to be heard at the public hearing should have been heard. See Manufactured Home Communities, Inc. v. County of San Luis Obispo, (2008) 167 Cal.App.4th 705 (mobilehome park owner denied fair hearing where rent control board exercised judicial-like powers in deciding the parties' rights in their leases and relied on uncross-examined testimony of tenants). Mot. at 39-40. Petitioners contend that they were deprived of an opportunity to refute and explain as a result. Mot. At 38-39.

Due process is flexible and does not require any particular procedure, so long as there is notice and a reasonable opportunity to be heard. Horn v. County of Ventura, (1979) 24 Cal.3d 605, 612. Rather, these requirements vary according to the competing interests of the government and the citizen. Skelly v. State Personnel Board, (1975) 15 Cal.3d 194, 208. At a minimum, due process requires notice and an opportunity for a hearing. Id. When an agency conducts adjudicatory proceedings, the hearing must comply with principles of due process. Morongo Band of Mission Indians v. State Water Resources Control Board, (2009) 45 Cal.4th 731, 737. The tribunal must be free of bias, and an adjudicator is presumed impartial unless he or she has a financial interest in the outcome. Id. Where city council has authority to make final adjudications of fact, it may not rely on information of which the parties were not apprised and of which they had no opportunity to controvert. Clark v. City of Hermosa Beach, (1996) 48 Cal.App.4th 1152, 1171 (property owner was denied fair hearing on application to construct two-unit condominium).

Petitioners have not shown they have a due process right. Some of the City's actions (*e.g.*, the Ordinance) were legislative in nature. No person has a due process right for a body's legislative approvals; only governmental decisions which are adjudicative in nature are subject to procedural due process principles. Horn, supra, 24 Cal.3d at 612. For that portion of the City's approvals that were quasi-adjudicative, Petitioners must show that they a property right supporting a due process violation. Horn, supra, 24 Cal.3d at 615. This requires a protected property interest, which must be more than an abstract need or desire for an outcome. Smith v. Board of Quality Medical Assurance, (1988) 202 Cal.App.3d 316, 326. While Petitioners have shown they are property owners or community members, they have not shown that their property

rights are protected because they are adversely affected by the Project. See Abrahams Decl., ¶'s 3-4, 8; Dodge Decl., ¶3-4; Schwartz Decl., ¶3-4.

Aware of this fact, Petitioners rely on a dignitary interest – which is an interest in being informed of government action and in being able to present his or her side. Reply at 24. But this is putting the cart before the horse. A dignitary interest in due process only applies once it is determined that the plaintiff has a constitutionally protected property interest; Petitioners cannot use a dignity interest to create a property interest. See Mohilef v. Janovici, (“Mohilef”) (1996) 51 Cal.App.4th 285-87 (deciding existence of protected property interest before using dignitary interest to decide what process was due).²⁴

Assuming that Petitioners have a due process interest, the hearings provided the notice and opportunity to be heard that are the basics of due process. It is undisputed that the City provided notice. The City also provided an opportunity to be heard, fairly dividing the presentation time. At the PLUM hearing, Petitioners were given ten minutes to present its case. Members of the public opposing and supporting the Project were given 20 minutes, respectively. At the City Council hearing, Petitioners’ side (including another appellant) was given 20 minutes, twice as much time as Millennium. Members of the public were given ten minutes each. Petitioners individually and through their counsel also submitted many letters, reports, opinions, and emails to the City. Consequently, Petitioners certainly had an opportunity to be heard. As for the public at large, Petitioners cite no case holding that every person who attends a public hearing must be given a chance to speak; local government could never perform the people’s business if that were true. The City Council was entitled to limit the number and time of speakers to avoid cumulative information.

There were aspects of the hearing process which appear unfair, including the PLUM’s acceptance of changes to Q Conditions and the Development Regulations through a May 31, 2013 letter from Millennium’s counsel and through a Planning staff memo without providing either to the public, the submission by Millennium’s attorney of a 311-page letter rebutting Petitioners’ arguments less than 18 hours before the City Council hearing, requiring CURD and the public testify before City staff gave its presentation, and the City Clerk’s announcement at the City Council hearing that an amending motion had been circulated when one had not been circulated.

The court need not decide whether these errors individually or cumulatively denied a fair hearing because Petitioners have not discussed prejudice: why the City’s procedural due process errors require a new hearing. Prejudice is required for public agency decisions on land use matters. Govt. Code §65010; Rialto Citizens for Responsible Growth v. City of Rialto, (2012)

²⁴ Petitioners’ reliance on American Tower Corp. v. City of San Diego, (9th Cir. 2014) 763 F.3d 1035, 1050-51 is not to the contrary. In that case, the Ninth Circuit interpreted Horn as relying on the broader due process principles of the California Constitution in holding that reasonable notice and an opportunity to be heard is required before an agency makes a land use decision that is a substantial deprivation of landowner property rights. Id. at 1051. Thus, American Tower concluded that adjacent and nearby property owners could make a due process objection to a city decision to permit dozens of antennas perched on hundred foot towers alongside sizable equipment shelters. Id. Whatever the correctness of American Tower’s interpretation of Horn, Petitioners have made no such showing of significant impact from the Project. See Mohilef, *supra*, 51 Cal.4th at 285, n.16 (equating scope of federal and state due process for purposes of nuisance abatement case).

208 Cal.App.4th 899, 920-22. Petitioners argue that they are relying on constitutional, not statutory principles (Reply at 25), but due process does not mandate that all governmental decision-making comply with standards that assure perfect, error-free determinations. Machado v. State Water Resources Control Board, (2001) 90 Cal.App.4th 720, 725-26.²⁵

The due process and fair hearing claims are denied.

G. Conclusion

The Petition is granted in part. The First and Second causes of action under CEQA are granted. The Third Cause of Action under CEQA is denied. The Sixth, Seventh, and Eighth causes of action (violation of City Charter, delegation of police power, and violation of La Mirada are denied, as are the Fourth and Fifth causes of action (due process and fair hearing). A writ of mandamus shall issue directing the City and City Council to vacate and set aside the actions approving the FEIR, Project approvals, and all land use entitlements. An injunction shall issue enjoining the City from granting any authority, permits, certificate of occupancy, or entitlements for the Project pursuant to the City's prior actions, and enjoining Millennium from undertaking construction on the Project pursuant to the set aside approvals.

Petitioners' counsel is ordered to prepare a proposed judgment and writ of mandate, serve them on counsel for the opposing parties for approval as to form, wait 10 days after service for any objections, meet and confer if there are objections, and then submit the proposed judgment and writ along with a declaration stating the existence/non-existence of any unresolved objections. An OSC re: judgment is set for June 11, 2015 at 9:30 a.m.

²⁵ Petitioners also argue that recirculation of the DEIR was required under Guidelines section 15088.5, which provides for recirculation is required where significant new information is added after public notice is given for review of the DEIR. New information is not significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment. Id. Petitioners point to nearly 400 pages of new or revised tables and analysis, much of it related to traffic and noise analysis (AR 5824-6222) and to Millennium's 120-page geology report and other materials submitted 18 hours prior to the City Council hearing. Petitioners argue that disclosure of this information and analysis was mandatory in the DEIR, not later when the public could no longer officially comment on it. Mot. at 33. The Opposition does not respond to this issue which is mooted by the fact that a new EIR is required.