

NEIGHBORHOOD REVITALIZATION:
MAPPING SOCIAL PERCEPTIONS AND CONDITIONS

by

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ABSTRACT

This study, an extract of a Master's Thesis from the University of Utah (2002), used GIS mapping as an intricate research tool to help find any spatial patterns of social neighborhood revitalization in an older, Salt Lake West Side Neighborhood. GIS examples included performing a qualitative-visual analysis of neighborhood color gradation maps that depict social contour effects using interpolations of sampled block data on non-sampled block regions. Insightful discoveries made include pinpointing where in the neighborhood block crime, home pride, collective efficacy, and other social conditions and perceptions shifted, increased or decreased over a seven year period (1993-2000). Overall, the combination of social survey data and GIS proved to be a powerful social science research tool.

INTRODUCTION

Neighborhood revitalization has become a growing concern for city officials and residents. Many older urban and suburban neighborhoods that were developed during or prior to the post-World War II building boom, once thriving with economic and social stability, now suffer from dilapidation, social incivilities, crime, fear, and residential and commercial instability. In order to counteract these negative conditions, federal, state, and local government agencies and private community development organizations have enacted neighborhood revitalization strategies. These strategies have included neighborhood clean-up campaigns, subsidized home improvement loans, in-fill housing, new or refurbished public properties (parks, recreation facilities, curbs, gutters, sidewalks, etc.), and even housing demolition, if necessary. Physical improvements in the neighborhood are hypothesized to make the neighborhood a more pleasant place to live, increase community confidence and residential stability, attract economic development and a higher tax base, and even decrease crime and other social problems.

Despite the billions of dollars of government and private funds that are invested in revitalization programs, few studies have evaluated whether neighborhood improvements promote positive spillover effects on the surrounding area in the form of incumbent upgrading, increased resident confidence, safety from crime, or other beneficial consequences. Program results often show some obvious physical improvements in the target areas themselves, but the impact of revitalization strategies on the residents and housing surrounding the target area have been even less well studied or understood (Kaplan, 1991).

Few studies have systematically analyzed incumbent upgrading effects of different types of revitalization mechanisms such as construction of new housing or other neighborhood improvements. Past research has also ignored the importance of psychological and social variables related to one's environment that may help initiate or impede revitalization. Finally, even fewer studies have combined the use of social survey data coupled with Geographic Information Systems (GIS) to provide a 'bird's eye view' of neighborhood change.

PREDICTORS OF NEIGHBORHOOD REVITALIZATION

The following section reviews the literature on factors that may be related to neighborhood revitalization, including the degree of home improvements, home maintenance, block crime and home pride.

Income, Home Ownership and Length of Residence

Income, homeownership and length of residency in a home are three typical indicators that affect neighborhood stability and revitalization. This literature review, however, does not address these particular topics specifically, but the review in its entirety can be referenced in the original thesis (Larsen, 2002). The fact that income is a major contributor to making home improvements and in maintaining a home better seems obvious, yet there are other dimensions to one's income, namely one's perceived social class and social identity, which may contribute to making more home improvements than usual. The next section describes this phenomenon.

Relative Income Hypothesis and Neighbors Who Have Made Improvements

The relative income hypothesis, posited by Duesenberry (1949), states that households do not assess their household spending and saving behavior solely on their absolute yearly income, nor their expected yearly income, but by the income of the class in which they most readily identify. For example, if a household's peers (e.g., those peers within the neighborhood) have experienced an increase in income and therefore have increased consumption, that household, regardless of any income change, will

attempt to increase consumption as well, going into debt if necessary. This particular phenomenon, in colloquial terms, is usually referred to as "keeping up with the Joneses." The inverse, however, may also occur. If a household has experienced an increase in income, yet its peers' consumption behavior has not changed, then that household's consumption behavior will most likely not change, either. Only if the household's income continues to increase substantially, or if its income relative to its peers' decreases substantially, over a lengthy period of time, will the household begin to identify with the next social class, either above or below, respectively (Bryant, 1990).

Economists Robert Frank (1985) and Fred Hirsch (1976) expanded Duesenberry's ideas in differentiating between consumption behavior that was observable, called positional goods, and consumption behavior that was not, called nonpositional goods. Households can easily observe a peer's new car in the driveway or a new trampoline in the backyard (positional goods), but households cannot easily observe, nor is knowledge readily given, about nonpositional goods. By definition then, believed Frank, interpersonal comparisons and hence the relative income hypothesis, relate primarily with positional goods.

How might the relative-income hypothesis relate to the physical effects of a new subdivision in an older surrounding neighborhood, or of a neighboring block resident? If a new subdivision, composed of middle-class residents, is built near other households who consider themselves to be in the middle class also then the new subdivision may act as a model that others in the surrounding, older neighborhood may attempt to follow. Likewise, neighbors down the block who have a large proportion of positional goods may entice other neighbors to purchase or do the same.

Thus, positive physical features of a new subdivision or a higher income neighbor, such as the construction quality of the homes, the degree of maintained landscaping, the litter-free properties (i.e., positional goods), may stimulate households in the surrounding area to create an environment that is similar. If the relative income hypothesis holds true, residents surrounding the high-positional-goods area may invest in home improvements, yard maintenance, and appropriate litter disposal, in order to identify with their higher-income neighbors. Taub, Taylor, and Dunham (1984) have found that, indeed, residents with neighbors who have upgraded their home tend to upgrade theirs as well, more so than residents who do not have neighbors who have had homes upgraded.

Another study supports the claim that neighborhood revitalization encourages the incumbent upgrading process. A study of community development offsite effects analyzed rehabilitation behavior across nine different United States cities found that incumbent rehabilitation effects occurred within 2 years after adjacent properties received government assistance and were limited to not more than about 1/8 to 3/16 of a mile away (Ginsberg, 1983).

More specifically, it was found that home improvements, financed in part by Community Development Block Grant (CDBG) programs, had some spillover effects in the neighborhood, but at a very immediate range: “One thousand dollars worth of assistance given as *grants* within a respondent’s grid square (i.e., within 1/16 mile) generates about \$100 in repairs or maintenance, and this is highly significant statistically” (Ginsberg, 1983, p. 6 - 18, italics added). Ginsberg (1983) notes that “...the grant effect seems to be confined to grants given to structures very close to the respondent, probably

on the same block” (p. 6 - 19). This study concluded that spillover effects were very spatially limited.¹

Thus, new or improved housing—either through in-fill housing, home improvement loans and grants, gentrification, or both—may impede the downward spiral of an aging community, and may even promote upgrading of surrounding homes. The spatial limitations of spillover effects (Ginsberg, 1983), however, suggest the need to identify more widespread, less costly, and perhaps naturally occurring catalysts for revitalization.

Crime-Related Block Problems

Little research exists on crime as a *predictor* of making home improvements, but a lack of home maintenance and signs of disorder are associated with residents’ reports of less community satisfaction, a lower sense of community (Perkins, Florin, Rich, Wandersman & Chavis, 1990), lower community confidence (Bratt, 1983), and a higher fear of crime (Perkins, Brown & Taylor, 1996; Skogan, 1990).

According to the Broken Windows hypothesis posited by Wilson and Kelling (1982), a perpetrator is more likely to offend in an area that is little surveyed, or where residents do not appear to control what happens. Signs of a lack of residential control, such as a broken window, graffiti, dilapidated state of the housing structure, and so on, are an indication that crime may be committed with few or no repercussions. The question remains, however, whether residents of higher crime areas are more likely to withdraw due to fear of crime (Perkins, Brown & Taylor, 1996) or to react by becoming more sensitive to the situation, making home improvements and becoming more territorial as a defense mechanism, or both. Territorial markers and defensible space

features (adequate lighting, low hedges, fences, etc.) have, in fact, been shown to inhibit crime as well as other community disorder problems (Brown & Altman, 1983; Perkins, Meeks & Taylor, 1992; Perkins et al., 1993).

Neighborhood Qualities

Perceptions of one's community may also determine one's home maintenance and improvement. Positive neighborhood qualities or amenities, such as police protection, nearby parks and playgrounds, housing quality, friendly neighbors, and so on, may give a resident enough pride in the community to remain. Overall, neighborhood qualities are considered important factors in determining neighborhood confidence and revitalization (Ahlbrandt & Brophy, 1975; Ahlbrandt & Cunningham, 1979; Goetze, 1976).

Perhaps the new subdivision will be perceived as having better neighborhood qualities and fewer problems and so will act as a catalyst for behavioral change by those in the surrounding neighborhood. Thus, residents in the older neighborhood may begin to emulate those residents of the newer neighborhood if they associate the new subdivision as an extension of their neighborhood as well. If the surrounding neighborhood residents have financial resources and/or the physical capability, they may desire to make more home improvements, maintain better yards, and so on, than before, because part of their new environment (where the new subdivision is located) has transformed from being dilapidated and abandoned to being new and revitalized. In theory, residents' improvements to their own homes should also occur more frequently when their block is in good physical condition regardless of whether the new subdivision is nearby.

Collective Efficacy

“Efficacy is the power or capacity to produce a desired effect” (American Heritage College Dictionary, 1993, p. 437). In the case of neighborhoods, efficacy involves neighborhood residents acting interdependently to meet their desired objectives, such as neighborhood safety, well-being, and social and physical flourishing. Sampson, Raudenbush, and Earls (1997), have defined collective efficacy generally “...as social cohesion among neighbors combined with their willingness to intervene on behalf of the common good...” (p. 918). Examples of collective efficacy include the level of involvement a resident has in the community (calling government officials about neighborhood problems, attending council meetings), discussing neighborhood problems with other residents, knowing and visiting other neighbors, and watching a neighbor’s home while they are on vacation (Chavis & Wandersman, 1990; Perkins et al., 1996; Perkins et al., 1990; Saegert, 1989; Unger & Wandersman, 1985). These social connections and willingness to care and act in behalf of the greater community are what makes collective efficacy such a powerful force against neighborhood crime and disorder, both physically and socially (Sampson & Raudenbush, 1999).

Physical neighborhood deterioration, however, may be associated with less social interaction and support. Physical incivilities, such as litter, graffiti and abandonment, have been found to be negatively associated to informal sense of community and neighborhood participation (Perkins et al., 1990). Depending on the neighborhood residents, sometimes the increase in physical incivilities may result in more formal community participation and involvement (see Crime-Related Block Problems Section above) (Perkins et al., 1996). Organized and active residents may attempt to maintain or

improve the standard of the neighborhood physical condition (Leavitt & Saegert, 1990; Schorr, 1997; Unger & Wandersman, 1985). Research has also found that collective efficacy and hence social cohesion is associated with many other revitalization predictors such as community confidence (Varady, 1986b), home maintenance (Galster & Hesser, 1982), neighborhood improvements (DeGiovanni, 1984), and lower levels of fear on residential blocks (Taylor, Gottfredson, & Brower, 1984).

THE PRESENT STUDY

This study seeks to accomplish two main objectives: (a) to evaluate the impact of a HUD, city government, and privately sponsored new subdivision on revitalization efforts in the older surrounding community and (b) to evaluate the impact of psychological and social perceptions on revitalization efforts of neighboring residents, all from a visual map perspective. This study will address the following variables as different types of indicators of a better, revitalized community: (a) psychological proximity to the new subdivision, (b) neighborhood qualities, (c) collective efficacy, (d) self-reported home improvements, (e) block crime, and (g) home pride.

The Setting of Salt Lake City's West Side Area

There was a site within the West Salt Lake community (between 1170 and 1000 West, and between 500 to 700 South) with two abandoned properties, the old Jordan Junior High School and the Brown Floral Nursery, which provided large, tangible evidence of neighborhood decline. Former United States Utah Senator Jake Garn helped secure a \$3.9 million grant from the HUD in order to revitalize this area and to prevent further increased dilapidation (Baltezare, 1995; Evensen, 1992). The grant provided initial funding for building demolition, soil chemical contamination cleaning and flood plain mitigation along the adjacent Jordan River, and sufficient infrastructure to allow a private developer, Ivory Homes, to build 84 new single-family detached homes, for persons with moderate- and middle-incomes (Baltezare, 1995). It was hoped that this new subdivision, with the pseudonym of New West, would improve the image of West Salt Lake (Baltezare, 1995; SLCDHCD, 1993), impede physical decay, and stimulate further private investment by households in the nearby vicinity (Perkins & Brown, 1995).

METHODS

Sample

Sixty street blocks (defined as both sides of a street bounded by cross streets, or by a cross street and a dead end) were sampled from within two, adjacent and demographically similar neighborhoods, with probability proportionate to the population size (see Figure 1). Fifty-six blocks were randomly selected, and four blocks were over sampled from within two blocks of the new subdivision, New West, to ensure an adequate sample of nearby residents. (Two small-*n* blocks that were composed of the same street were, later on, combined to make one larger block, resulting in a total of 59 sampled blocks at Time One. An additional block was also added for a total of 60 sampled blocks at Time Two). Eight homes were selected on each street block using systematic sampling (selecting every third home) to ensure representation throughout each block and to minimize nonindependence effects of next-door neighbors (Perkins & Brown, 1995). At Time Two, additional addresses per block were also selected.

The total number of households interviewed at Time One was $n = 365$ and at Time Two was $n = 618$. Because names were not requested as part of the survey, assuring a true panel study was not feasible and because panel attrition was substantial, individual-level longitudinal analyses were impossible. Cross-sectional analyses representing the community as a whole at two different points in time were thus performed in lieu of a longitudinal panel design.

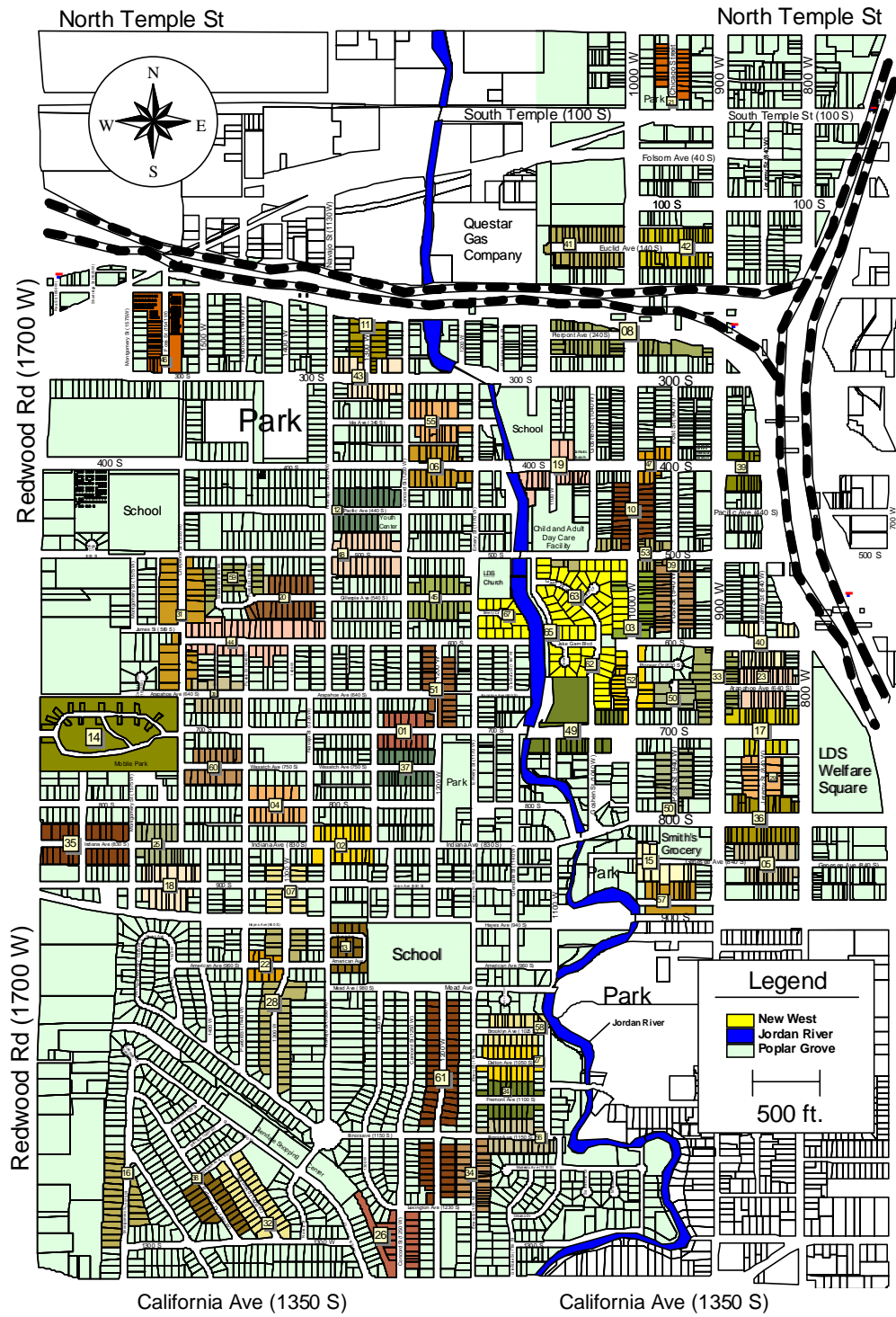


Figure 2. Poplar Grove Research Study Area

Research Design and Instrumentation

A telephone and door-to-door survey was used in assessing the degree of change in West Salt Lake City's neighborhood revitalization project (Brown & Perkins, 1998). It measures self-reported repairs and improvements, home pride, perceived block crime problems, and other variables not used for this study. The survey was taken prior to and during the construction of the subdivision in 1993-95 (Time One), and after, in 1998-99 (Time Two). See Appendix A for a list of the survey questions and their composite form.

Resident Survey

Eighty-three graduate and undergraduate university students conducted the survey at Time One. A professional research firm conducted the survey at Time Two. Residents were first contacted by phone and then in person if necessary. About half of all interviews at both Time One and at Time Two were made by phone, the other half in person. A translation of the survey in Spanish was also conducted at both times. At Time One no compensation was available, but respondents at Time Two were paid \$25 for their time. This was increased to \$50 per respondent on blocks where respondents were particularly needed. A self-administered survey was eventually used at 16 Time Two homes where interviews were not possible. At Time One, 365 (74%) of 491 sampled households completed interviews. At Time Two, (including surveys of the new subdivision which are not part of this study) 930 addresses were initially contacted for the entire sample, 13.65% refused and 16.76% were unresolved (no one responded after eight attempts, or a foreign language other than Spanish was spoken). Thus, 84.2% of those contacted who spoke English or Spanish provided interviews, and 72.7% of all addresses contacted yielded interviews.

GIS Procedures and Instrumentation

Geographic Information Systems (GIS) and ESRI ArcView 3.2 software were used to enhance the descriptive capabilities of the previously discussed survey data. Due to the spatial nature of placement of the new subdivision and its probable effect on the neighborhood, the use of GIS holds much potential for neighborhood revitalization research in general, and this study in particular.

GIS data were provided by the Salt Lake County Recorder's office. They included the spatial points, lines, and polygons that comprise the computerized map of the research study area and a database of all the properties that lie within, including the name of the owner, the mailing and physical address, and the parcel number. This map and data were adapted and transformed for the needs of this particular research project.

GIS was used for exploratory qualitative purposes. Neighborhood maps were produced marking each investigated variable at each of the sampled properties and at the sampled aggregate blocks, using a color gradation scale. More particularly, interpolation of block aggregates to the nonsampled regions of the study area were made using an inverse-distance weighted formula: $Z_j = \text{Sum of } W_{ij}Z_i / \text{Sum of } W_{ij}$; "where: Z_j is the estimated value at [GIS] grid location j , Z_i is the known value [sampled block aggregate mean] at control point location i , and W_{ij} is the weight that controls the effect of control points on the calculation of Z_j " (Healy, Dowers, Gittings & Mineter, 1998, p. 399). That is, each nonsampled location was given a new value based on the closest six other known values (six sampled blocks' means), with points with values farther away being given less weight by $1 / \text{distance}^2$ (see Appendix B: GIS Interpolation Example). A visual analysis was then made for locating patterns in the data.

Measures

Neighborhood Revitalization Indicators (Independent Variables)

Proximity to the new subdivision was measured psychologically. Residents were asked questions about their frequency of passing the new subdivision, whether they knew anyone in the new subdivision, and if the new subdivision was considered to be part of their neighborhood.

Perceived block crime was measured by asking residents whether several different kinds of crime incidents had occurred on the block within the last 12 months. Crime incidents varied from burglaries, to street robbery, to gang activity.

Neighborhood qualities were measured using composites of residents' reports of neighborhood conditions, such as their satisfaction with the quality and quantity of nearby parks and playgrounds, housing quality, housing affordability, police protection and neighborhood public image, to name a few.

Collective efficacy measurements were based on the view of Sampson et al. (1997) that social cohesion and social control are closely related. Social cohesion is the amount of positive social interaction a neighborhood or block has. Examples include knowing neighbors by name, informal borrowing/loaning relationships with neighbors, visiting neighbors, speaking with neighbors about a local problem, keeping watch over neighbors' homes while they are away, and feeling that one has much in common with neighbors. Social control is the amount of involvement or perceived involvement that one has in protecting the safety and well being of self and others. Examples include wanting to be involved in neighborhood improvements, willingness to join a block

association, feeling in control of the sidewalk in front of the home, belief that one's neighbors would confront problematic juveniles or talking to neighbors about neighborhood problems, and/or calling the police when problems occur.

Neighborhood Revitalization Indicators (Dependent Variables)

Self-reported home physical improvement and repairs (objective) were measured by asking residents if, in the past 12 months, they had made exterior improvements such as carpentry, gutter and roof work, painting, and so on, interior improvements such as wallpapering, electrical or plumbing work, floor work, and so on.

Home pride (subjective) was measured by asking residents to rate their pride of several personal home features, such as their house in general, their house exterior, and their front yard.

RESULTS

Strategy of Analysis

Using ArcView 3.2 GIS software, each study variable was mapped and carefully examined visually for any spatial patterns in the data. In particular, the homes within one or two blocks of the new subdivision have been examined on all GIS maps to see whether Ginsberg's (1983) 1/16th (or up to 3/16th) of a mile limit on revitalization effects has been replicated.

GIS Maps—Qualitative Analysis

Each study variable, at both Time One and Time Two, was mapped in order to assess visually any geographic patterns and/or concentrations of high or low values, respectively. Mapping variables' geographic distribution of values may help explain other factors that may not have been measured quantitatively (in prior research), but are geographically discernible, that could have discouraged revitalization near, or encouraged revitalization far from, New West.

For each given independent or dependent variable map, color gradations in approximately equal intervals were composed (areas depicted in white are outside the sampled study area). For z-scored composite variables (e.g., collective efficacy), a red to blue spectrum scale was formed—red meaning a positive value and blue meaning a negative value, for that particular variable. For raw-scored composite variables (e.g., environmental inventory), a red spectrum scale was formed—darker red meaning a higher value and lighter red meaning a lower value, for that particular variable. At times a composite map showing the change *over time* for raw-scored variables was also made—red signifying a positive change and blue signifying a negative change for that

particular variable, respectively. These color gradation maps were produced in order to highlight contrasts—the result is a social geography contour effect of mountain peaks (usually red, or dark red) and valley troughs (usually blue, or light red).

True comparison between Time One and Time Two may not be ideal because sometimes the variable's variance for each time was not identical. Comparing a change in variable's geographic distribution over time is only appropriate for those variables that are not *z*-scored. Such distributions were forced to a heuristic scale for equal visual comparison over time. Thus, polar magnitude (i.e., greater red to blue) and larger or smaller region comparisons are *general* visual approximations of differences across times. More accurate visual analysis can be performed *within* each time period map, respectively.

At Time One, New West psychological awareness appears to be higher east of the subdivision. This is strange given that those living to the west were expected to travel past the site more to get to downtown or Interstate 15. It is especially odd that the block across the street west of both the new housing and a new church was moderately low in awareness. After completion, at Time Two, awareness appears to have expanded west of the subdivision (see maps in Appendix C). This may be due to the river acting as a physical barrier to the demolition and construction process. Perhaps the presence of the new LDS Church building on the west side of the development either kept residents from realizing that most of the site would be housing, or it may have made some of the non-Mormon residents ignore the new construction until after it was completed.

The variance of perceived neighborhood qualities has diminished at Time Two compared to Time One. The same region of the neighborhood at both Time One and

Time Two appears to maintain its belief that that area has good neighborhood qualities (see maps in Appendix C).

Collective efficacy appeared to stay about the same over time, in each given region. Those residents on blocks containing both New West homes and homes in the older neighborhood showed low average block levels of collective efficacy, especially at Time Two. This may be an indication that new New West residents and the long time residents across the street are not mingling very well or else the new residents were not yet involved in the wider community (see maps in Appendix C).

In the self-reported home improvements scale, the very northeast section (300 South to North Temple) and other sporadic sections of the study area, including several blocks near New West (Blocks 10, 45, 51, 52, and 53), reported having made more home improvements over time. Other sporadic spots of the study area, reported having made fewer home improvements over time (see maps in Appendix C).

Home pride appears to have improved from Time One to Time Two—at least Time One sporadic pockets of high pride and widespread low pride have now become more pockets of low pride with high pride more widespread. A change over time composite map of home pride shows that substantial home pride increases have occurred in the midsoutheast (especially Blocks 5 and 27) and in the northwest and very northeast portions of the study area. The largest region of negative home pride over time, however, is several blocks adjacent to and east of the New West subdivision. This suggests that nearby residents may be comparing their own homes unfavorably to the new ones (see maps in Appendix C).

DISCUSSION

Limited Spillover Effects of Concentrated New Housing

It was found that the lack of clear and substantial home improvements around the new subdivision New West could be explained by surrounding residents feeling relatively deprived or envious of those living in the new subdivision to the point that they may feel it impossible to keep up with the Joneses (research not presented in its entirety; see Larsen, 2002 for a more comprehensive data analysis). This may be one rationale for why home pride of those closest to New West at Time Two decreased from Time One. Feelings of envy may also help explain why some improvements began to be better a couple of blocks away and not directly adjacent to the New West subdivision (other research not presented here; see Larsen, 2002). One study has shown that subjective well being is a function of social comparisons of income in one's community (Hagerty, 2000). Thus, persons with lower incomes who compare themselves with those living in the New West subdivision who have higher incomes may have become less satisfied with their conditions than before, perhaps resulting in a loss of hope for making home improvements substantial enough to compete with the new, larger homes and yards.

Research Limitations

It is acknowledged that there are some limitations to this study, namely external validity, history, instrumentation, sampling, and experimental mortality, which is not discussed in this paper due to excessive length. An extensive overview, however, can be referenced in the original thesis (see Larsen, 2002).

Future Research and Policy Implications

The fact that the New West subdivision was shown not to generate significant spillover revitalization effects, as was hoped by policy-makers, may encourage them to think of alternative solutions in the future. Though it is obvious that a newly constructed subdivision would bring more stability to a neighborhood than would the alternative of leaving an abandoned building site, perhaps a different neighborhood revitalization strategy would be more successful. Instead of placing a new subdivision like New West in an older neighborhood, which might increase social class differences (Brown G., 2000), perhaps a new school or a community center that *unites* a neighborhood would be more beneficial. Perhaps in the long run, New West will have more obvious influences on the wider community.

Another recommendation from this study is for governments and researchers to make better use of GIS as a tool for mapping crime and other significant neighborhood variables, like home improvements. Though the start-up costs to purchase equipment and train personnel on these instruments are quite expensive, the long run benefits are many. Crime and home improvement variables, for example, were mapped for this thesis. The GIS map provided a quick and clear means of detecting the hot spots of crime and the hot spots of home improvements. Some patterns, especially at the block level, were observable. It was found that many of the crime and other problem spots were within blocks of New West subdivision around the 900 West commercial strip. New West's effects may have been minimized by its closeness to such a nonresidential and turbulent area.

Using GIS as part of the siting of neighborhood revitalization projects would help government agencies better fit the right intervention to the exact place where it is most needed. Overall, the present combination of survey data and GIS has proved to be a powerful social research tool.

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APPENDIX A

SURVEY MEASURES

Measures – the questions and observations from the residential survey used in analysis.

Neighborhood Revitalization Predictors (Independent Variables)

1. Psychological Proximity (Awareness) to New Subdivision Indicators

- a. Is the area between 5th and 7th South, and Emery and 10th West, part of your neighborhood?
- b. Are you aware of the River Park subdivision?
- c. How often do you see these homes from driving along 5th or 7th south?
- d. Do you personally know anyone who lives in this new subdivision?

2. Perceived Block Crime Problems

In the past 12 months, has your block had any:

- a. House or place you suspect drug dealing occurs?
- b. Homes that were burglarized?
- c. Incidents of street robbery or assault?
- d. Evidence of gang activity?
- e. How many times in the past 12 months did you notice gang activity? (recoded 0-1)

3. Perceived Neighborhood Qualities

How would you rate the following qualities in your neighborhood on a 1 to 10 scale where 1 is poor and 10 is excellent?

- a. Police protection
- b. Availability of child care
- c. Nearby parks and playgrounds
- d. Housing quality

- e. Housing affordability
- f. Friendliness of neighbors
- g. Is the public image of your neighborhood excellent, good, fair or poor?
(recoded 1-10)

4. Collective Efficacy

- a. How important is it to you that you be involved in any efforts that residents might make to improve your block on a scale from 1 to 10 where 1 is not important and 10 is very important?
- b. Have you contacted the government or community council about a neighborhood problem in the past 12 months?
- c. How much control do you have over what happens on the sidewalk in front of your house on a scale from 1 to 10 where 1 is no control and 10 is total control?

If some kids were spraying graffiti on the block, which actions would your neighbors likely take?

- e. Call police?
- f. Talk to them?
- g. Talk to neighbors?

How many times in the past 12 months did you...

- a. Borrow something from or loan something to a neighbor?
- b. Visit with neighbors?
- c. Speak with a neighbor about a neighborhood problem?

- d. Keep watch on a neighbor's home while they were away?
- l. On your block, how many people do you know by sight or name?
- m. Do you know all or almost all, more than half, about half, less than half, a few or none?
- n. How much do you feel you have in common with your neighbors?

Neighborhood Revitalization Predictors (Independent Variables)

1. Self-Reported Home Physical Improvement and Repairs (objective):

During the past 12 months, have any of the following repairs or improvements been made:

Exterior:

- a. Painting on the outside of the house?
- b. Carpentry work on the outside of the house?
- c. Work on the roofing or gutters?
- d. Structural work, masonry works on bricks, stone, or concrete?
- e. Paving or work on the landscaping?
- f. Remodeling any room or making any additions to your home?

Interior:

- g. Painting or papering?
- h. Carpentry
- i. Work on the floors or floor coverings?
- j. Replacement or repair of a major appliance, such as a refrigerator, stove, washer, or air conditioner?

- k. Electrical work?
- l. Work on the plumbing fixtures?
- m. Work on the heating system, insulation, or air conditioning?
- n. Work on windows, screens, storm windows or doors?
- o. Did you do or have any other repairs or improvements done totaling \$50.00 or more inside or outside your house.

2. Home Pride (subjective)

On a 1 - 10 scale rating of pride, ...how proud are you of

- a. Your house?
- b. The way your front yard looks?
- c. The way the outside of your house looks?

Note: An index score was made for most of the above variables by calculating the mean of all of the particular construct's variable's *z*-scores, thus creating a composite variable, respectively (table of composite variables not presented; see Larsen, 2002). All scales' *z*-score means were measured using the 2/3 rule. That is, households who had not responded to at least 2/3 of the scale were discarded from the equation (lower *N*-value). Missing responses less than 1/3 per household on each scale were replaced by the mean of the *z*-score for all respondents (same *N*-value).

APPENDIX B

GIS INTERPOLATION EXAMPLE

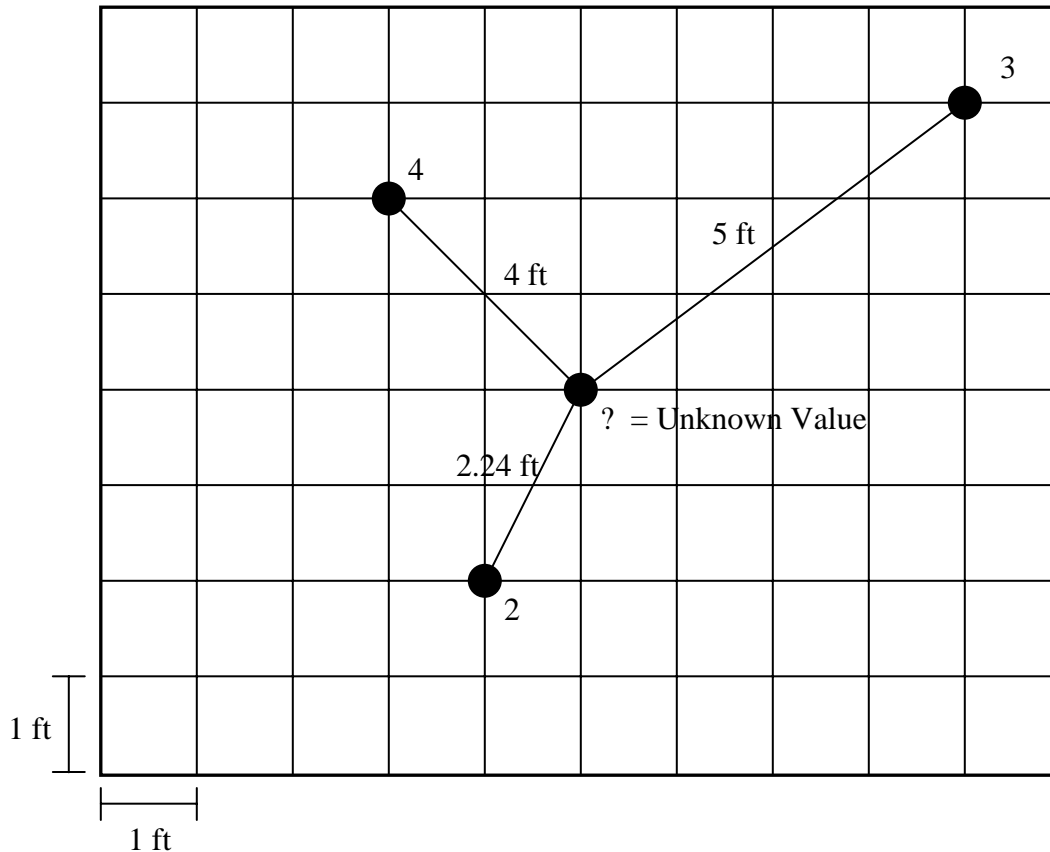


Figure 2. Sample Inverse-Distance Weighting Interpolation

Inverse-Distance Weighting Interpolation Procedure:

Step 1) Using Pythagorean theorem, distance measures from the unknown location to the known location are determined.

Step 2) Calculate the sum of $(1/\text{distance}^2) * (\text{value at location})$:

$$[(1/4^2) * (4) + (1/2.24^2) * (2) + (1/5^2) * (3)] = .7685$$

Step 3) Calculate the sum of the weight given, $(1/\text{distance})$ squared, of each known value:

$$[(1/4^2) + (1/2.24^2) + (1/5^2)] = .302$$

Step 4) Divide Step 2 by Step 3:

$$.7685 / .302 = 2.54 = \text{unknown value}$$

Step 5) Repeat steps 1 through 4 for all unknown value locations.

Step 6) Assign color value to data value (e.g. resident in survey rated neighborhood quality as good, a data value of 4, out of a 5 point scale; 5 = very dark red, 4 = dark red, 3 = red, etc.).

Step 7) Shade the sampled region with the color values that represent the new interpolated data values for previously unknown locations (see GIS maps in Appendix C).

APPENDIX C

GIS Maps

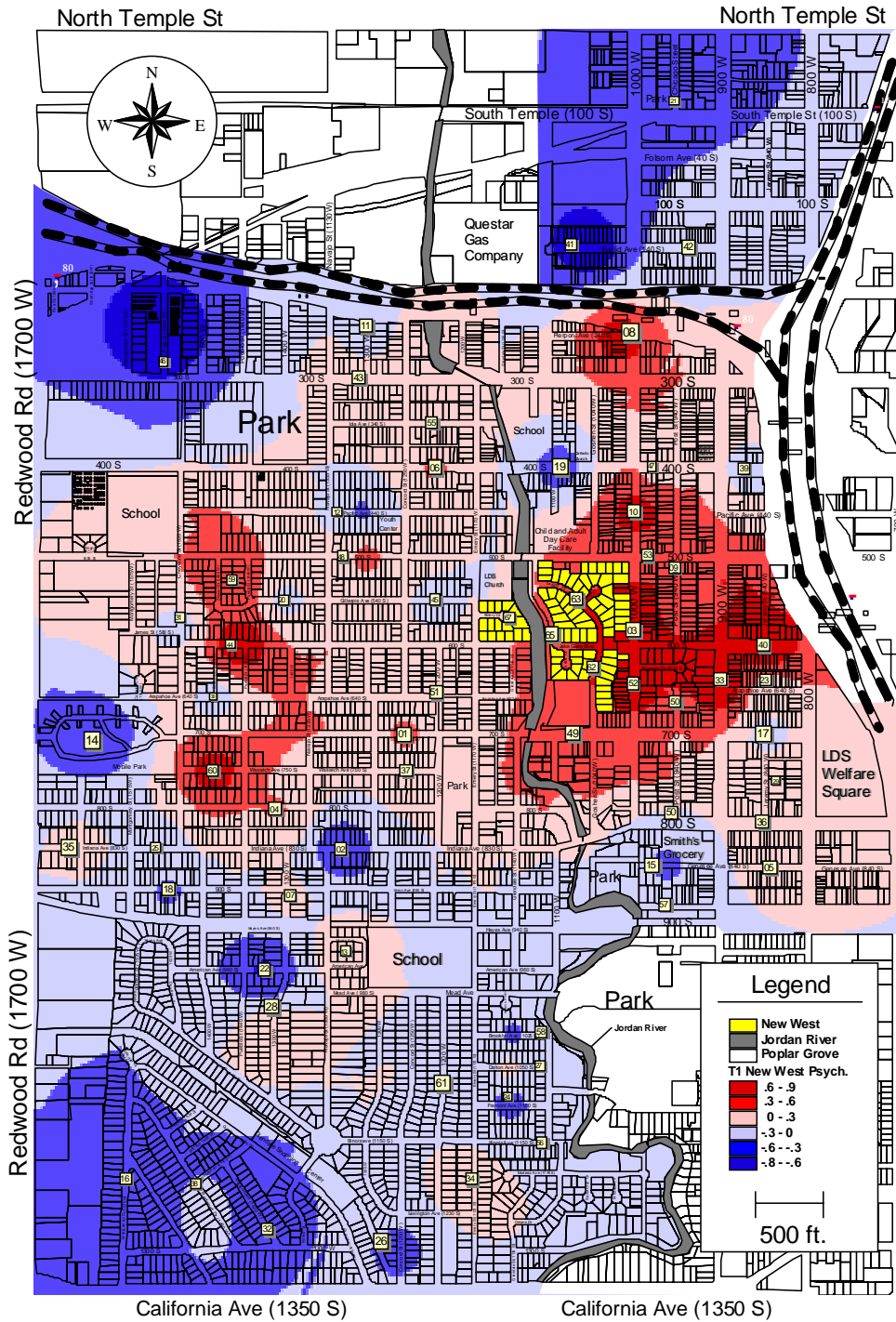


Figure 3. New West Psychological Proximity (Time One)
 Note. Based on z-scored items.

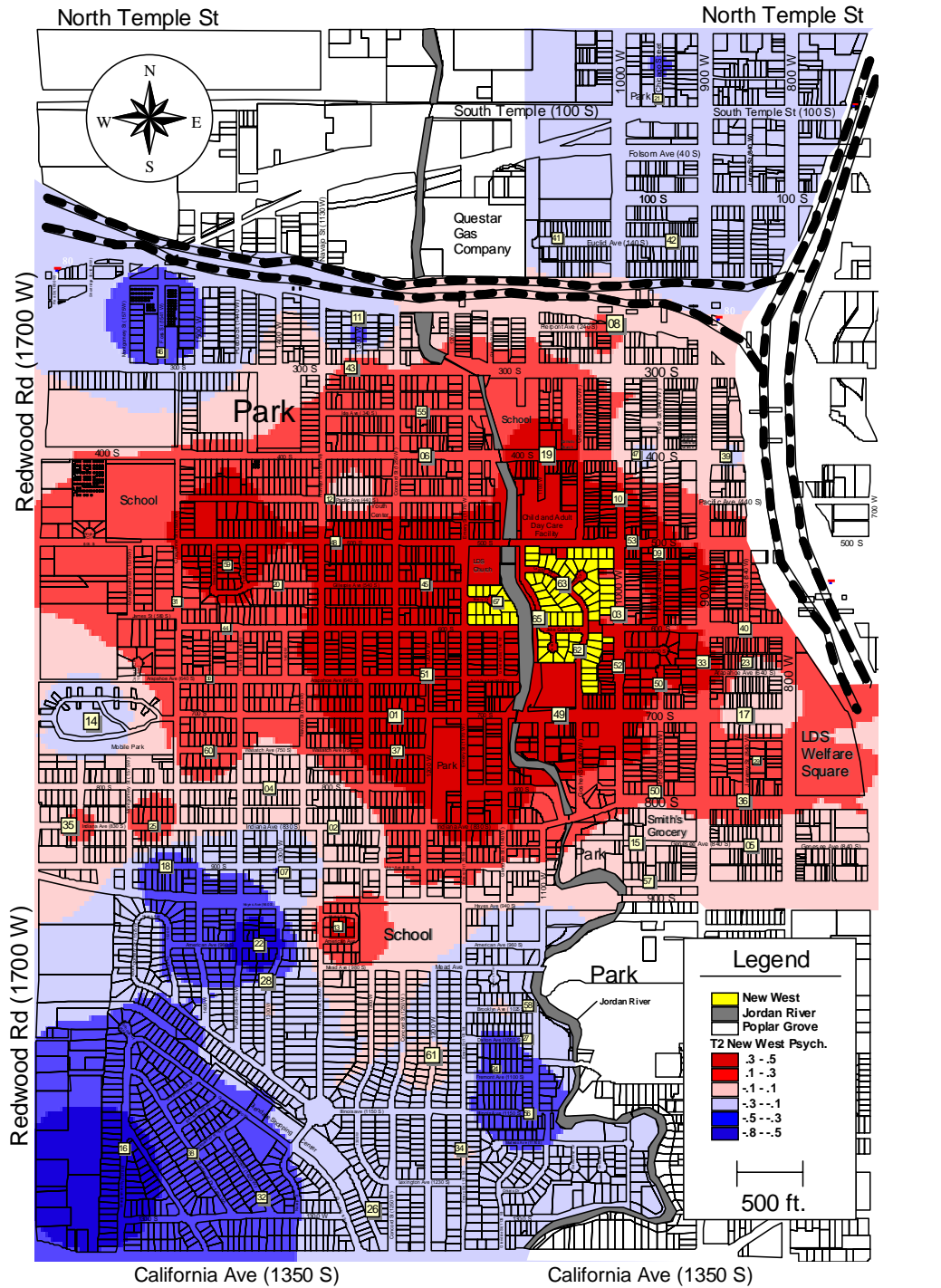


Figure 4. New West Psychological Proximity (Time Two)
 Note. Based on z-scored items.

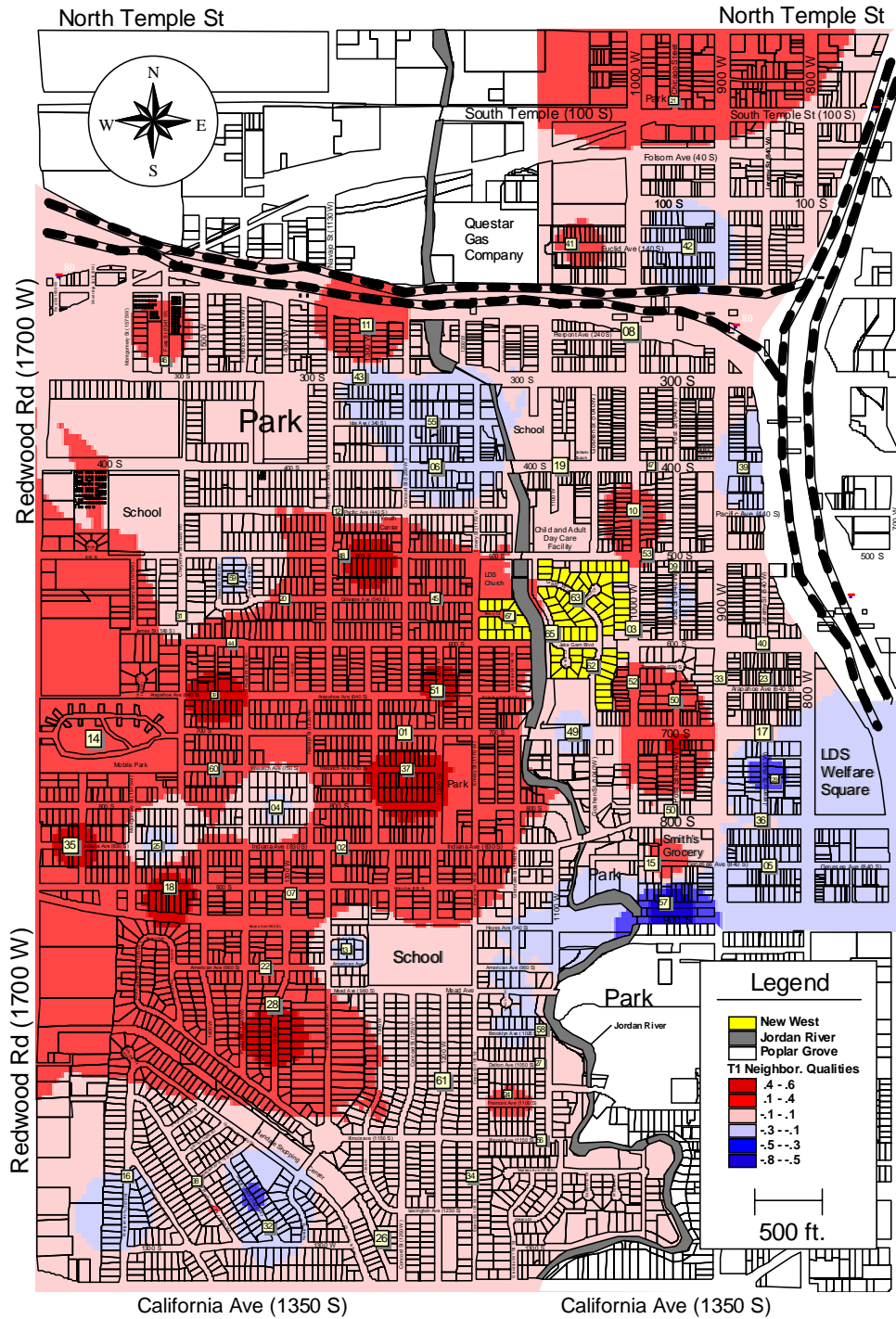


Figure 5. Neighborhood Qualities (Time One)
 Note. Based on z-scored items.

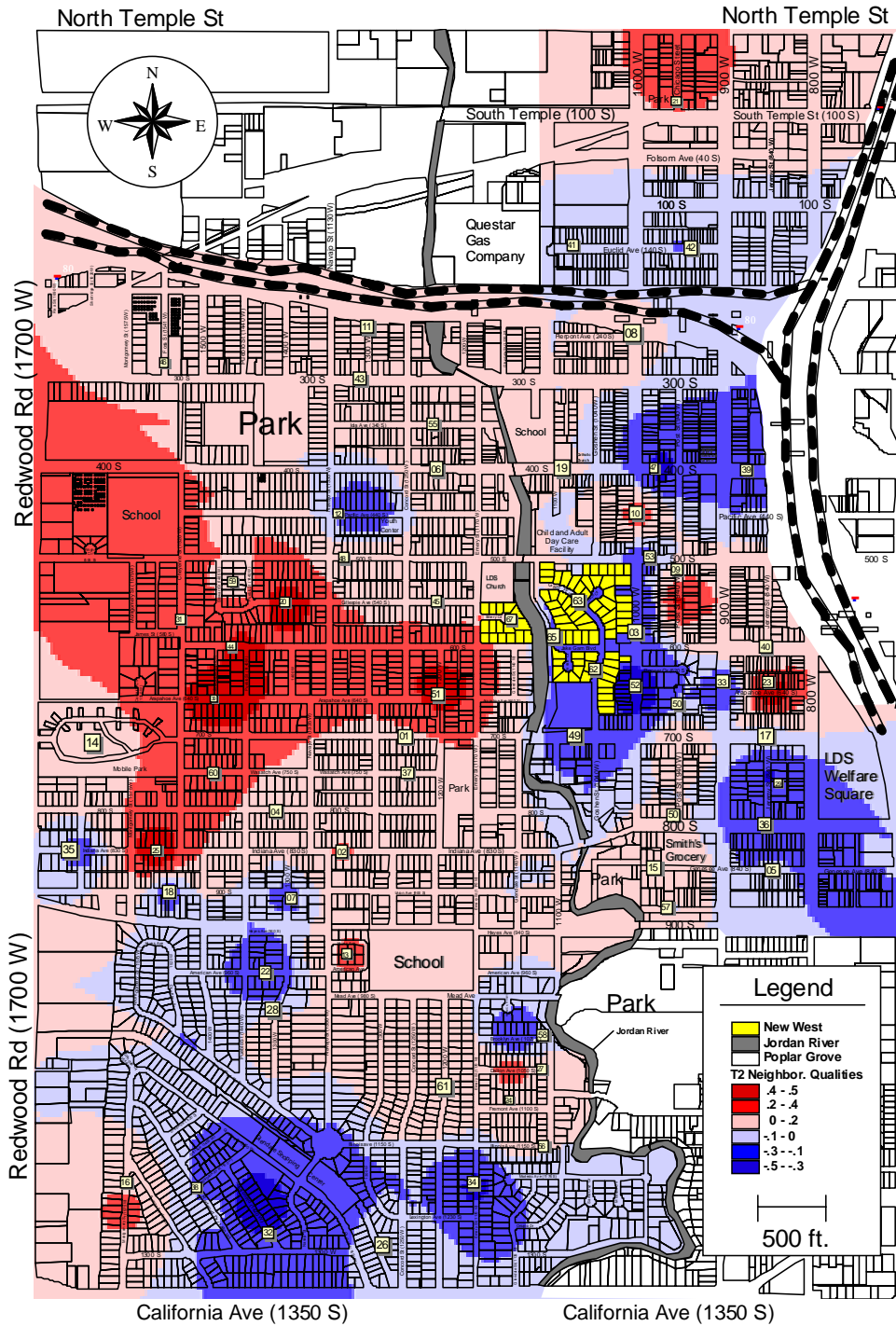


Figure 6. Neighborhood Qualities (Time Two)
 Note. Based on z-scored items.

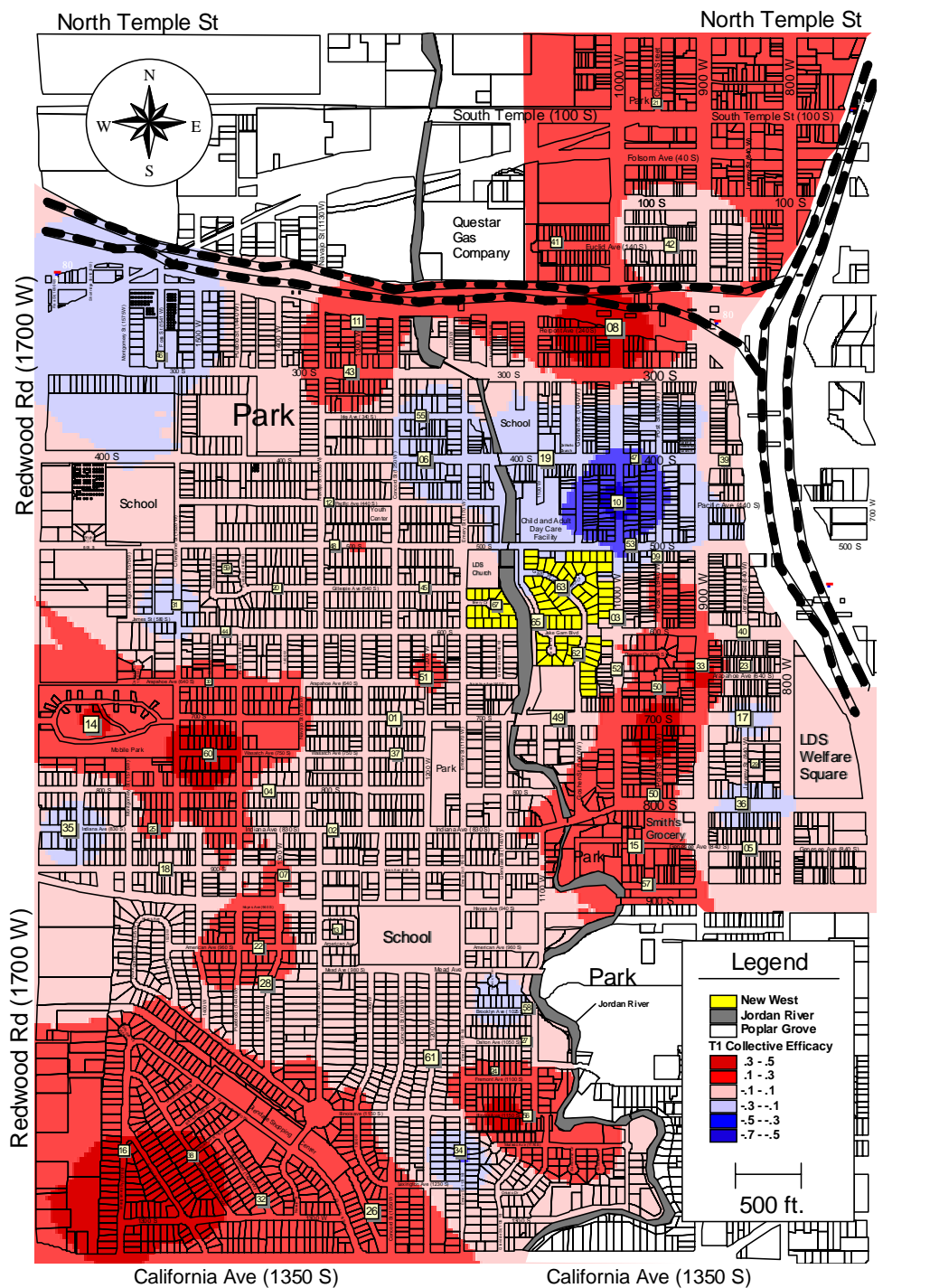


Figure 7. Collective Efficacy (Time One)
 Note. Based on z-scored items.

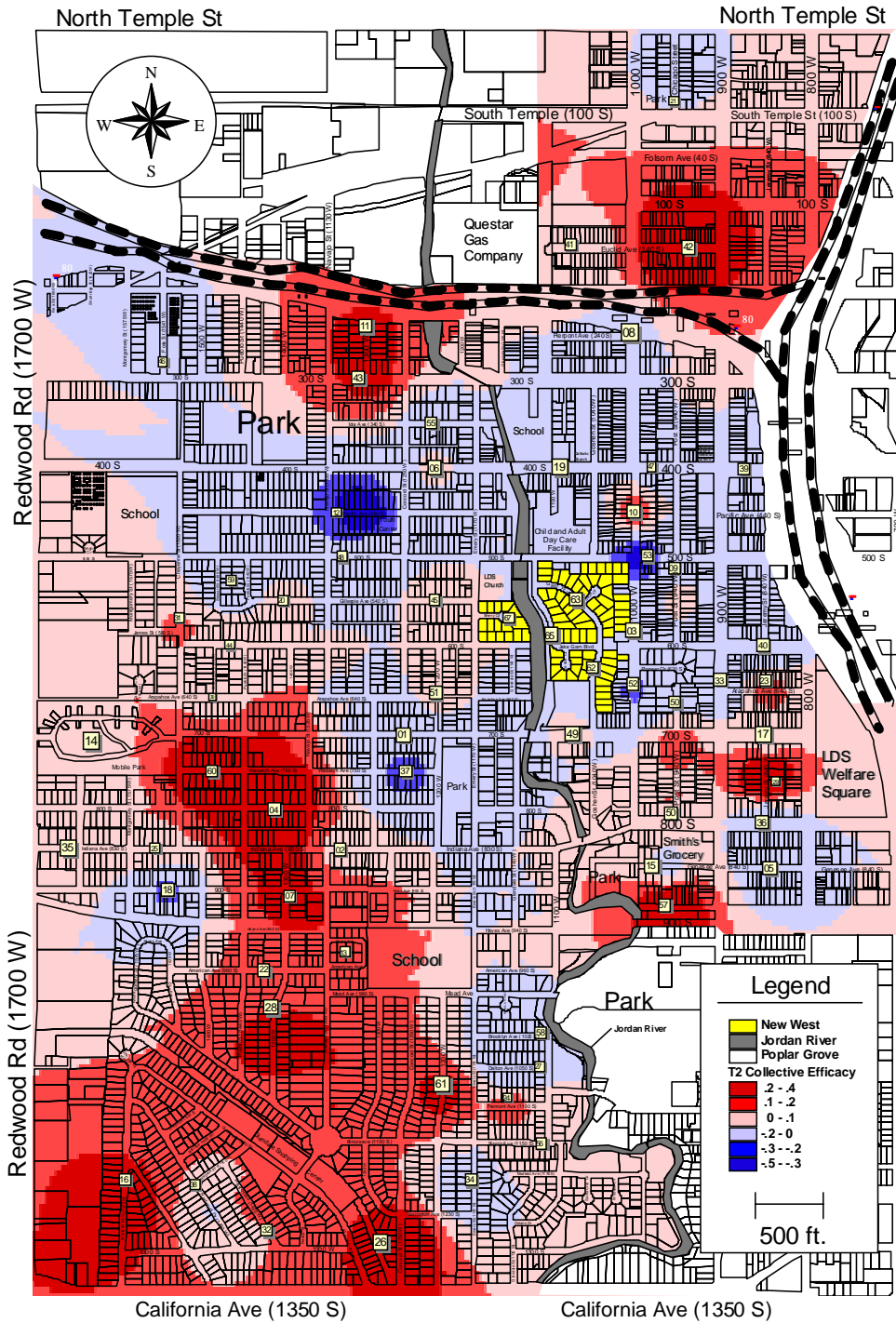


Figure 8. Collective Efficacy (Time Two)
 Note. Based on z-scored items.

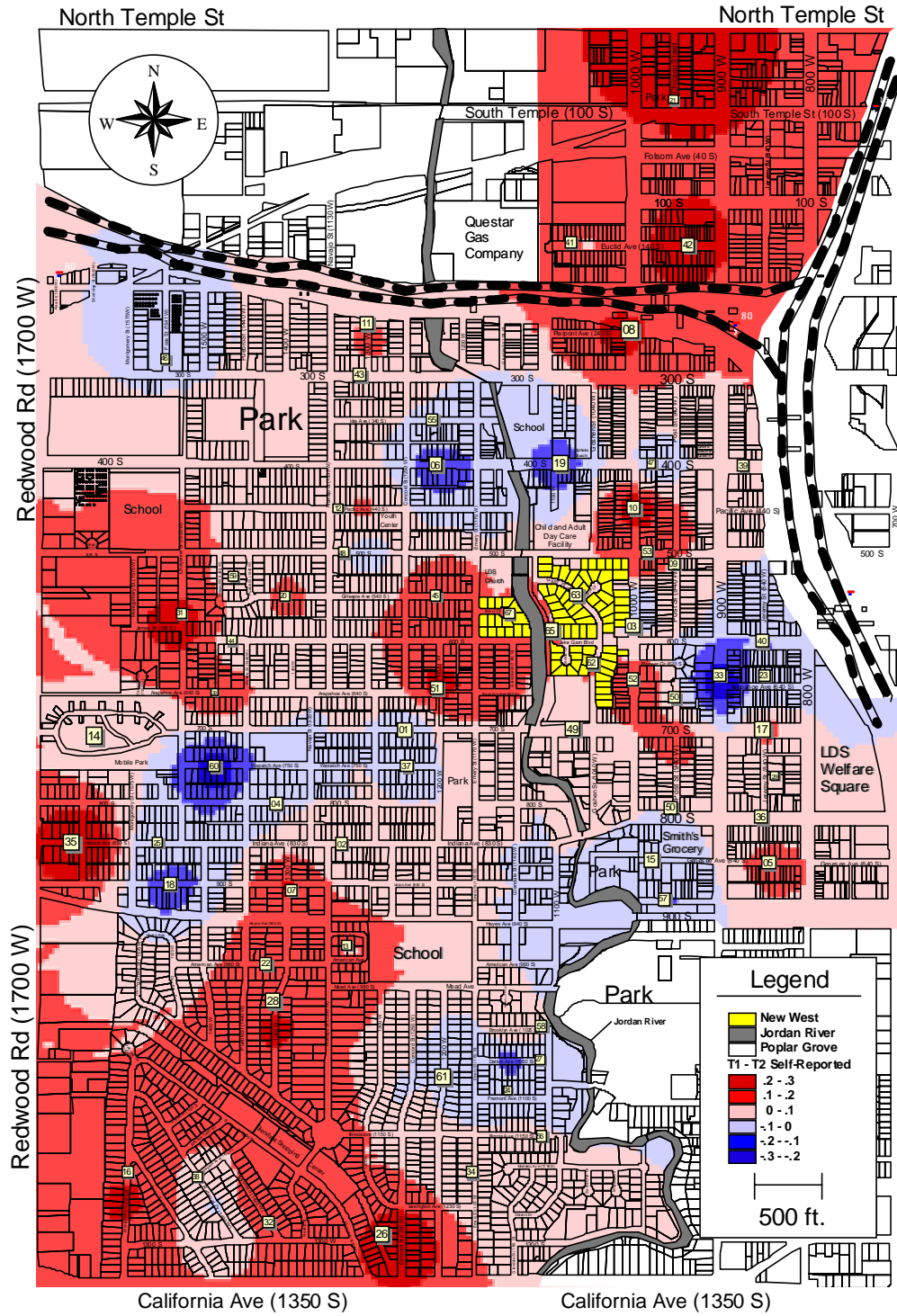


Figure 9. Self-Reported Home Improvement Change (Time One – Time Two)

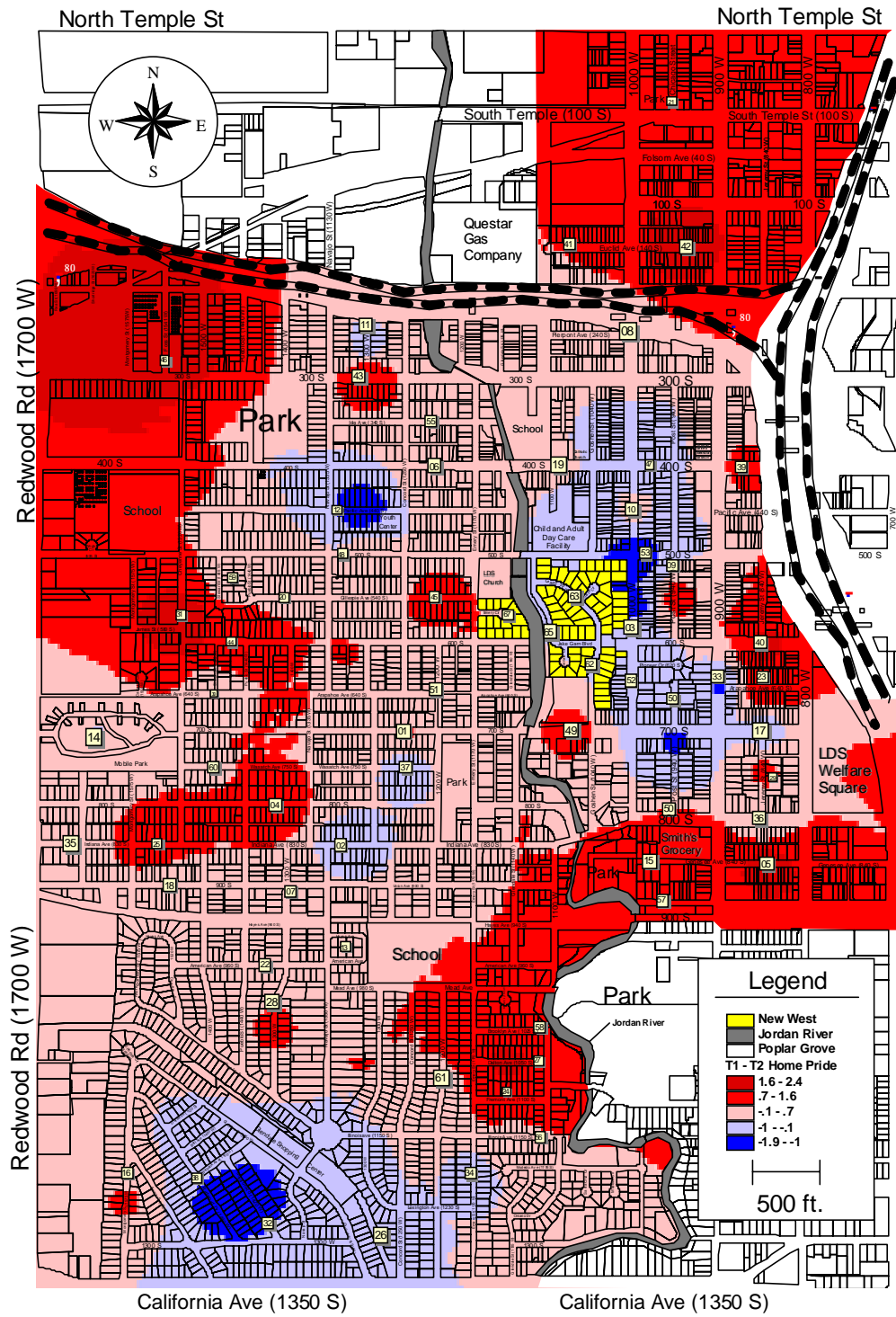


Figure 10. Home Pride Change (Time One – Time Two)

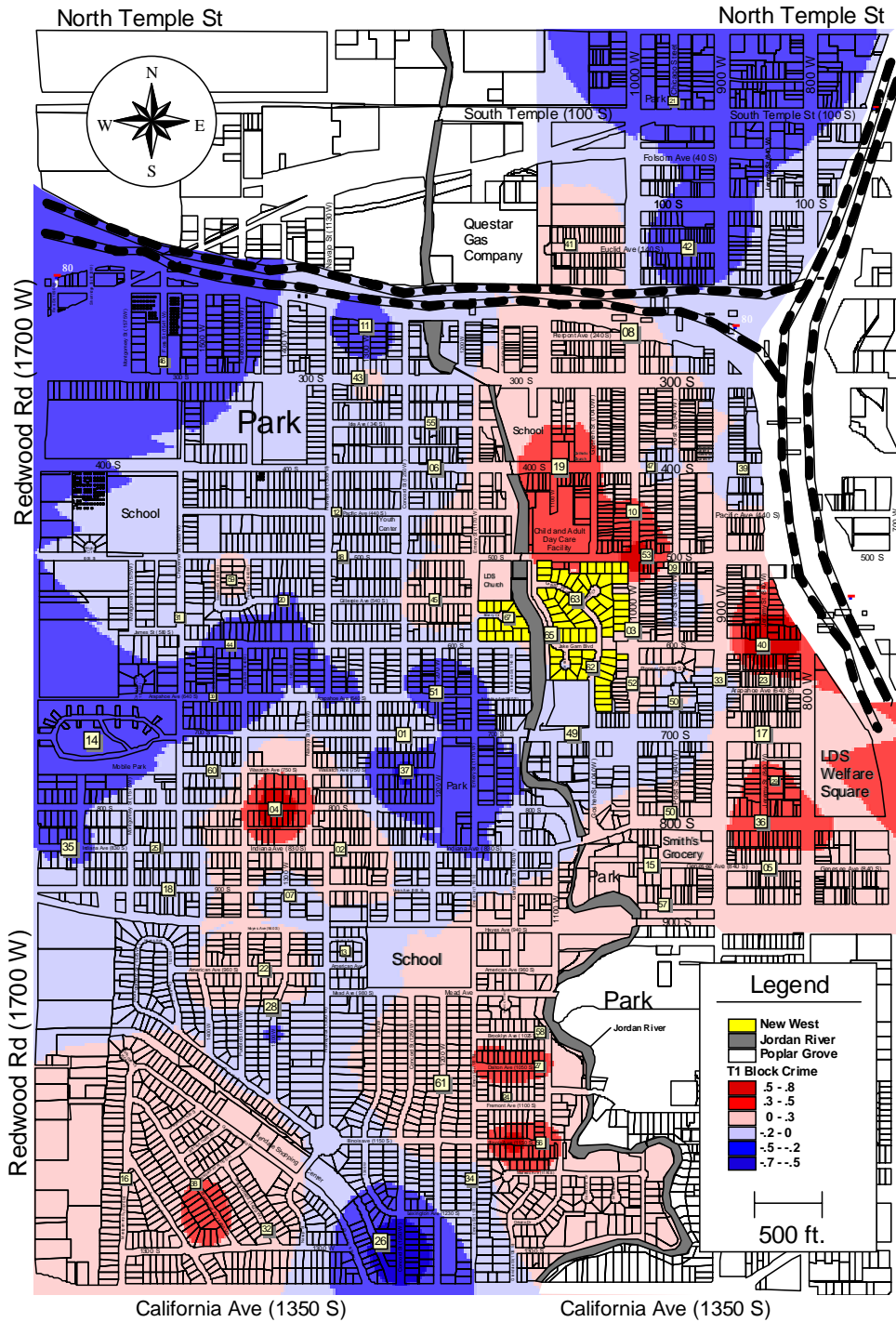


Figure 11. Block Crime (Time One)
 Note. Based on z-scored items.

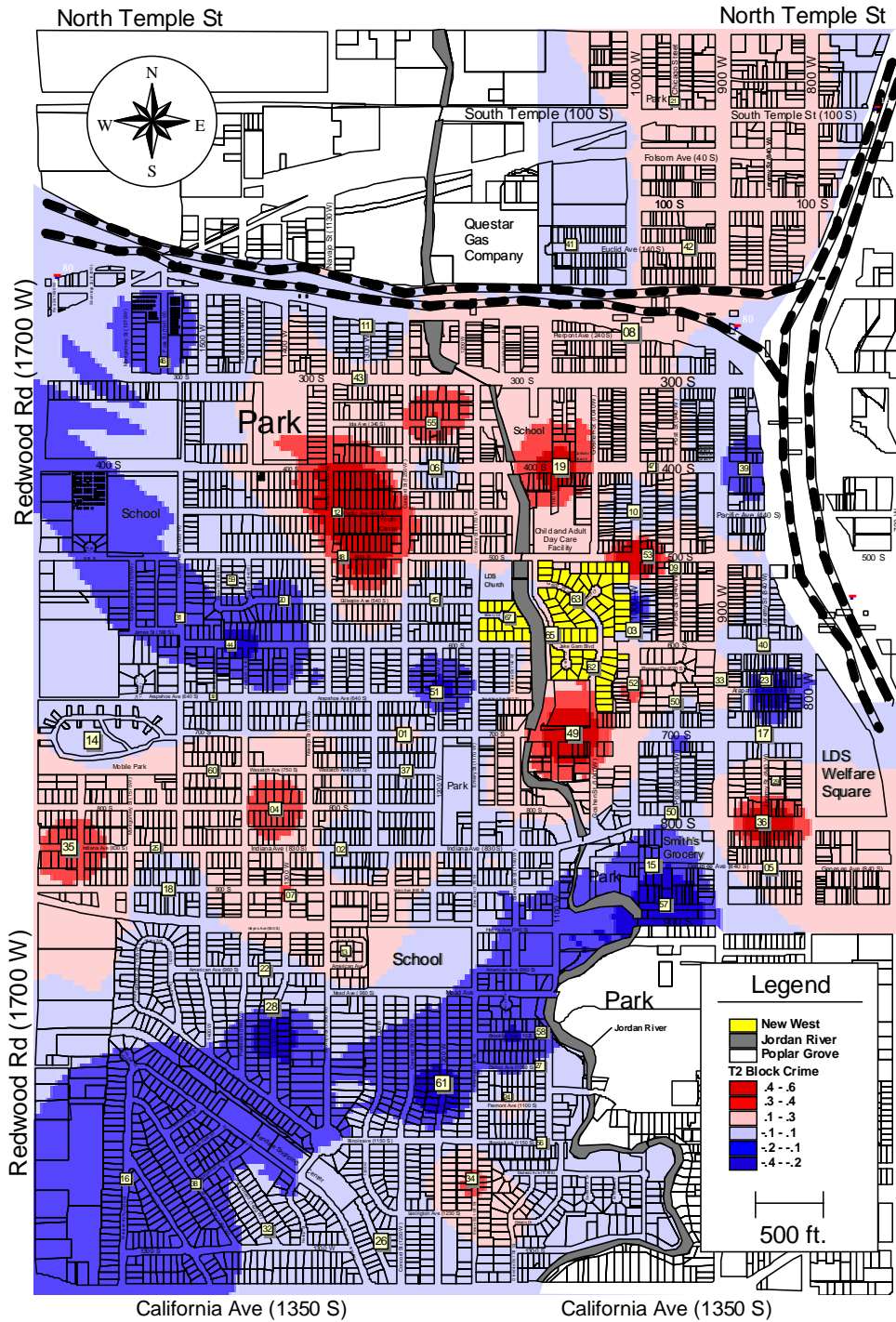


Figure 12. Block Crime (Time Two)
 Note. Based on z-scored items.

END NOTES

1. All equations were controlled for various demographic variables such as income, duration of residence, education, etc. The reader is encouraged to reference this article for further information, including various caveats that may apply but are not addressed here, such as self-selection bias, variances in cities, the ecological fallacy, lack of distinction between general maintenance and major renovations, and the notion that controlling for unassisted units that have *already* made improvements is difficult to do, and so on.

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