DISSERTATION

HISTORIC REGISTERS AND NEIGHBORHOOD CHANGE: DO HISTORIC REGISTERS PROMOTE GENTRIFICATION?

Submitted by

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY ROBERT SEAN ALLEY ENTITLED HISTORIC REGISTERS AND NEIGHBORHOOD CHANGE BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

HISTORIC REGISTERS AND NEIGHBORHOOD CHANGE: DO HISTORIC REGISTERS PROMOTE GENTRIFICATION?

This paper examines the link between historic designation and neighborhood change using data from Denver and Fort Collins, Colorado and a Simultaneous Equation Model (SEM) framework. Contrary to previous studies in Texas, the Colorado cities display a statistically significant link between historic registers and neighborhood demographics. Therefore, historic designations may have a role in tipping models of neighborhood transition. The importance of legal context and initial economic conditions are emphasized.

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CHAPTER 1: INTRODUCTION

This research inspects some unexamined aspects of historical designation. By designation, this paper refers to the act of having a property listed on an official national, state, or local register of culturally significant places.

The relationship between designation and neighborhood demographic change will be examined using Census data from Denver and Fort Collins, Colorado. The main areas of interest include (1) whether the size of a municipality's historic housing stock and total housing stock affect the relationship between designation and neighborhood change, (2) whether designation may be used by high income groups as a tool to prevent neighborhood change, and (3) whether local community leaders can use designation in low income areas to provoke development.[1]

Chapter 2 exhibits relevant background on these issues. Section 2.1 gives a brief account of the rising importance of historic preservation in the US. Section 2.2 summarizes the state of historic designation today. Namely, registers of historic places are kept at all levels of government. Details of each register that are relevant to the study areas (national, Colorado, Texas, local Denver, local Fort Collins, local Fort Worth) are laid out. The purpose is to reveal the incentives and disincentives for including a given

[1] The Clarion Associates (2002) investigated the link between historic designation and gentrification using case studies of a few historic districts in Denver, Fort Collins, and other Colorado cities. Their study found that, although median incomes rose after designation, lower income groups were not displaced. It is unclear whether that means that new, low income housing was built or that the low income groups are now living in more crowded conditions in the same neighborhoods. This dissertation applies a more rigorous framework to examine these relationships.

property on each register, including administrative costs of managing a property through the nomination process. Section 2.3 gives some concluding remarks about designation.

Chapter 3 reviews models of neighborhood transition. Specifically, income-related home filtering and externality-related neighborhood tipping models are examined. The implications of these models will be tested later in the paper. Chapter 4 describes the data and discusses issues with collection and taxonomy of the data. Chapter 5 compares data from Denver and Fort Worth. Chapters 6 and 7 contain empirical case studies investigating the correlation between designation and demographic shifts, such as that implied by tipping models of neighborhood change.

Chapter 6 focuses on Denver. Section 6.1 reviews the model and major results from the most recent and sophisticated investigation of designation and neighborhood change (Coulson and Leichenko, 2004). This section also applies the Coulson-Leichenko methodology to Denver data and compares the Denver results with their Fort Worth analysis. Section 6.2 develops a simultaneous equation model to test whether there is endogeneity between historic designation and change in neighborhood composition in Denver and compares these results with the Coulson-Leichenko model and with the results of Chapter 5. Section 6.3 tests whether the relationship between designation and neighborhood change in Denver is different in high income neighborhoods than in low income neighborhoods.

Chapter 7 investigates designation and neighborhood change in Fort Collins, which is a smaller metropolitan area than has previously been tested. Section 7.1 applies Fort Collins data to the simultaneous equation model developed in chapter 6 and compares the results with the Denver analysis. Section 7.2 tests whether the size of the

total housing stock and historic housing stock affect the relationship between designation and neighborhood change by comparing the statistical similarity of the two datasets.

Chapter 8 consists of summary remarks and promising avenues for further research. The empirical study in chapters 1 through 7 uncovers the following main conclusions: First, the legal and historical context of the study area is important. In Colorado, for example, there is significant variation in the implications of listing a property among local registers. All of the costs associated with owning a designated property in Colorado stem from the local register, while most of the benefits stem from the state and national registers. This is different from the arrangement in Texas, where the focus is on the state organization and localities are often subsidiaries with relatively little power over designated properties.

Second, Denver and Fort Collins data provide evidence of a link between designation and neighborhood demographics, though the relationship is different in Denver than it is in Fort Collins. This finding is significant because previous studies have found no such link.

Third, the initial economic conditions of the study area are important. Designation plays a different role in high income neighborhoods than in poorer areas. Denver exhibited the somewhat surprising finding that designation is more effective at provoking neighborhood change in high income areas than in low income areas. Also, groups of historic homes have more influence in high income areas. A single designation may affect the demographic attributes of a low income neighborhood, but a group of designations does not improve a poorer neighborhood where the mere presence of designation had no effect.

Finally, the data examined below indicate that some racial groups pay more attention to designation than others, and that city size may matter to the designation-neighborhood change dichotomy. In contrast to the hypothesis that the more inelastic supply of historic homes in Fort Collins would result in a more pronounced relationship, the relationship was stronger in Denver.

History of Historic Designation

Historic preservation in the U.S. was sparse, to put it mildly, until the mid-20th century. In the 1930's, some heritage-minded communities established the first local preservation commissions. Charleston and New Orleans were among the earliest examples. The federal government first became involved in public protection of historic resources in 1906 with the Antiquities Act, which protected historic properties that were federally owned or located on federally owned properties (http://www.cr.nps.gov/local-law/anti1906.htm). In 1935, the National Historic Sites Act made it national policy for public-use historic sites, structures and objects to be protected for the 'inspiration and benefit of the people of the United States'. The Historic Sites Act established the National Historic Landmarks Program to encourage the preservation of properties which embody national significance (http://water.usgs.gov/eap/env_guide/cultural.html).

1966 was a very important year in the history of federal efforts at heritage preservation. First, Congress passed the 1966 Department of Transportation Act, including the Section 4f review. Section 4f stipulated that the Department of Transportation could not use any site of historical significance (or of environmental importance), except under extraordinary circumstances. This represents the first time that protection of cultural resources was extended beyond publicly owned properties. That is,

section 4f restricts use of significant historic property by the Department of Transportation, even if the use affects only private property (http://www.section4f.com/res_cult.htm).

That same year, the 1966 National Historic Preservation Act (NHPA) was passed. This is the most important piece of legislation concerning this research. The NHPA funded State Historic Preservation Offices (SHPO) in all states to help identify culturally important properties, and created Local Preservation Commissions (LPC) in many urban areas to establish survey areas, fund preservation activities, and designate culturally significant places. Once designated, structures could not be altered without LPC approval. Equally important, this legislation led to growing public awareness of cultural preservation.

The Act also augmented the DOT section 4f review, with what is called a NHPA section 106 review. Section 106 reviews limit federal interference with historically important properties, but are more restrictive than section 4f reviews. First, the section 4f review is limited to DOT activity, whereas section 106 applies to all federal agencies and federally funded projects. Second, and more importantly, section 4f restricts DOT 'use' of historically significant resources, and 'use' is defined rather narrowly. Section 106, however, prohibits 'adverse effects' of federal projects on cultural resources, where 'adverse effects' refers to any diminishment of a property's integrity, 'with respect to location, design, setting, materials, workmanship, feeling, or association.' (http://www.section4f.com/res_cult.htm) Section 106 restricts government activity much more than section 4f does.

Additionally, the Act established a list of historically significant places, called the National Register of Historic Places (NRHP). The NRHP is the nation's official list of culturally significant places deemed worthy of using resources to preserve. NRHP is part of a comprehensive program to 'identify, evaluate, and protect our historic and archeological resources.' 'Properties' can mean districts, sites, structures, and other objects of American cultural or historical significance. The NRHP is administered by the National Park Service, a division of the US Department of the Interior. (http://www.cr.nps.gov/nr/about.htm) In 1968, there were 1,000 entries on the NRHP. By 2000, there were 70,000 entries and 2,000 LPC's. (Listokin and Lahr, 1997)

Finally, in the 1970's, the federal government began offering tax incentives for preservation activity. Also in the 1970's, the Secretary of the Interior established national standards for historic preservation.

CHAPTER 2: HISTORIC REGISTERS

Nowadays, historic designation occurs at the federal, state, and local levels. At the national level, the National Park Service maintains the NRHP. Every U.S. state has a historic preservation society and each one operates independently and differently. At the state level, this paper will mostly be focused on the Colorado SHPO. The Texas SHPO will be discussed briefly to gauge the comparability of rules between Colorado and Texas, where the Coulson and Leichenko study was focused. The Colorado Historical Society, a division of the Office of Archaeology and Historic Preservation, keeps track of the state plan for preserving historic resources and maintains the state historic register.

Likewise, each municipality with a LPC operates independently. The Fort Collins LPC helps local economic agents identify and protect cultural heritage via oversight of the Fort Collins Historic Preservation Program, which includes keeping a local historic register. In Denver, the LPC maintains a local historic register as part of a Landmark Preservation Ordinance. Each level of designation (federal, state, and local) has different implications for permissible property use and each level offers owners of potentially listed properties incentives to include properties on each register.

2.1 National Register of Historic Places

In 1966, Congress adopted a series of resolutions concerning the importance of historic preservation. Legislators felt that public involvement in cultural resource protection was justified because cultural resource protection serves the social interest.

The reasons Congress listed to demonstrate the importance of such preservation efforts include:

- Heritage reflects the spirit of the nation.
- Historic resources contribute to a 'sense of place' for the United States.
- Cultural resources are being lost with increasing frequency as time goes by.
- Heritage is irreplaceable and should be preserved for the benefit of future generations as well as current ones.

Eligibility

The NRHP includes listing of prehistoric and historic units of the National Park System, National Historic Landmarks, and locally/regionally significant properties. This paper is primarily concerned with the last group.

In order to be eligible for listing, a property must be nominated by a State Historic Preservation Officer, Federal Preservation Officer (if it concerns federally owned property), or Tribal Preservation Officer (if it concerns property located on a Native American reservation). The initial nomination, which can be prepared by any interested party, is submitted to a state review board where a team of historians, archaeologists, and other experts review the proposal for authenticity and merit. This board makes a recommendation to the SHPO as to whether the property is worth spending public resources to preserve. While the SHPO reviews the recommendation, the property owner is notified and public comment is solicited.

If the owner of a property objects, the property usually can not be listed on the NRHP. If multiple properties are under consideration, they will not be listed if a majority of affected property owners object. A property can only be listed without the owners

consent if the owner is a minority in a proposed district. If the owner(s) of the properties object to listing, the property may still be forwarded to National Park Service to determine *eligibility for listing* only. If the property is determined eligible for listing, but not listed, government projects affecting the property must still be approved.

If the SHPO feels that a property is historically important, they forward the nomination to National Park Service for consideration. While the National Park Service is considering the nomination, there is another solicitation of public comment on the request. The National Park Service can then approve or reject the nomination. If the nomination is approved, the property gets listed on the NRHP. If it gets rejected, it may still be listed on local or state registers. The entire process takes at least 4.5 months. (http://www.cr.nps.gov/nr/listing.htm) There are other ways for a property to be listed and circumvent this process under exceptional circumstances.

Incentives for Listing

Of primary concern to this paper is that government at all levels actively promotes listing on historic registers. The incentives for a private property owner to pursue listing on the NRHP are:

- Listing bestows honorific recognition on the property.
- Listed properties are guaranteed consideration in planning for projects with federal involvement.
    - Section 106 of National Historic Preservation Act-Advisory Council ensures consideration of historic properties in federal planning.
- Listed properties are eligible for tax credits.

- Listed property owners can get 20% investment tax credit for certified rehabilitation on listed property, if property is income-producing. Owners can also take advantage of favorable accounting rules for depreciation of the property.

- Federal tax deductions are available for charitable contributions to conservation 'purposes'.
- Special consideration is given to listed properties before coal mining permits can be issued nearby.
- Listed properties qualify for limited federal historic preservation grants.

Implications/Restrictions for Use

The incentives listed in the last section are meant to actively promote historic preservation. The results of making such incentives available should affect the decisions of marginal potential homebuyers who value these incentives or who are sensitive to the additional costs of owning a designated property. Part of the stated reason for the benefits is that compensation is required to offset any lost value on the part of the landowner from restrictions or specifications on use or demolition of designated properties, restrictions which may be capitalized into the price of the homes.

Another motivation for providing incentives may be to subsidize production of a public good, namely preservation of heritage. The preservation of heritage and culture is non-rival and potentially non-excludable. For example, the cannon in Fort Collins City Park is on the local historic register. One person's enjoyment of the history embodied in the cannon does not diminish the amount of enjoyment available to other people. Also, many historic places are located in public areas like the park or are visible from a public

street. When Fort Collins preserved the cannon and put it in the park, the city could not exclude those who want to consume the heritage embodied in it. This sort of heritage can sometimes be excludable, though. Most listed properties are private homes and the owners are under no obligation to let anyone on their property. The public good nature of heritage preservation implies that private markets will under-provide it, relative to the social optimum, as the consumers of heritage would have the opportunity to free ride. This explanation for public intervention is bolstered by the fact that many cities' preservation efforts began in earnest in the 1970's after private attempts failed to prevent the destruction of a local landmark. The Moffett Mansion in Denver is a typical example of this. (http://www.leonardleonard.com/capitolhill/index.shtml)

Listing on the NRHP implies no restrictions on use or destruction of the listed property. Under federal law, owners of listed properties are free to manage their property as they see fit, provided there is no federal involvement. If there is physical or financial involvement on the part of the federal government, any alterations must pass a section 106 review. Owners of listed properties are under no obligation to make the property available to the public, to restore, or to maintain the property. Some states and communities, however, have enacted laws or ordinances that apply to NRHP-listed properties. (www.cr.nps.gov/nr/results.htm)

2.2 Colorado State Historic Register

Historic preservation in Colorado began in earnest during the 1920's when local groups around the state began to purchase historical properties and preserve them. In 1953, the Colorado General Assembly authorized the formation of the Colorado Historical Society (CHS). One of the primary duties of the CHS was to inventory the

state's historic sites. During the 1970's, public preservation activity increased when the Colorado General Assembly passed the Antiquities Act, other restrictive land use legislation, and the State Register Act, which created the Colorado State Register of Historic Places. (http://www.coloradohistory-oahp.org/publications/pubs/1508.pdf)

The State Register is a listing of Colorado's significant cultural resources deemed worthy of preservation. It is administered by the Office of Archaeology and Historic Preservation within the Colorado Historical Society. Properties that are listed in the National Register are automatically placed in the State Register. Properties may be placed on the State Register without being placed on the National Register.

Eligibility

Properties are nominated directly to the State Register by the owner, local government, a government agency, or the CHS. Completed nominations are forwarded to the State Register Review Board, which holds public meetings tri-annually, and is comprised of experts in historical preservation. The Board makes recommendations regarding nominated properties to the CHS Board of Directors, which determines what properties ultimately will be listed on the State Register. The entire process can take as little as two months.

Incentives for Listing

The state of Colorado actively encourages listing on the National and State Registers. Listing a property on the State Register promotes the following benefits to the owners of listed properties:

- Formal recognition of property's historical importance

- Access to proprietary information on planning, tourism, and neighborhood revitalization
- A sense of contribution to local history and identity
- Eligibility for grants from the State Historical Fund, which may be used for acquisition and development projects, as well as education and planning
- Eligibility for state tax credits for preservation activity affecting listed properties

Consideration is also given in state planning processes. For example, state agencies must solicit comment from the CHS before being involved, physically or financially, in projects that affect listed properties (http://www.coloradohistory-oahp.org/publications/pubs/1322b.pdf)

Implications/Restrictions for Use

Implications for the owner of a property listed on the State Register are much like the implications for listing on the National Register. That is, there are no restrictions on property use as a result of listing on the State Register. Owners may use, ignore, or demolish the properties as they see fit. (http://www.coloradohistory-oahp.org/publications/pubs/1501.pdf)

2.3 Local Historic Registers

Local registers vary from one municipality to another. Cities offer different incentive packages for listing, and designation often implies use restrictions at the local level. This paper will focus primarily on Denver and Fort Collins, Colorado. These are two cities of very different sizes that both have long histories of heritage preservation. Appendices 1 and 2 enumerate all of the listed properties in Denver and Fort Collins (as of summer 2005), respectively.

2.3.1 Denver

In 1967, Denver established a framework for preserving culturally important buildings by creating the Denver LPC. The preservation effort grew in visibility in the early 1970's when there was a public outcry over a doomed attempt to prevent demolition of the Moffet Mansion. The LPC is responsible for oversight and enforcement of Chapter 30 of the Revised Municipal Code, which is intended to protect the city's cultural heritage. Chapter 30 is meant to foster civic pride in the past, improve historic districts, improve heritage tourism, and encourage private ownership and maintenance of historic properties.

The Denver LPC, appointed by the mayor, oversees designated structures and districts in the city. Local designation is far more restrictive than the national and state distinctions, as all proposed alterations to historic properties in the city must be approved by this commission. (http://www.denvergov.org/Historic_Preservation/420aboutus.asp)

Eligibility

Article 30 declares that protection of historic properties is a matter of public policy. As such, it specifies restrictions for altering designated properties. A designated property must be maintained in accordance with historical integrity - its reflection of its original time and place - and its significance as a contributor to Denver's distinctive character. Integrity and significance are defined broadly and include specifications regarding location, setting, design, materials, workmanship, feeling of the site, and maintenance of the association of the site with an important historic event or person.

A property is eligible for the Denver Register if it is historically important, if it represents unique period architecture, or if it is significantly situated geographically. The

designation procedure can be initiated by anyone. An application is filled out and investigated by the Denver LPC. In contrast to the state and national registers, it is possible for the Denver Register application to be approved without owner consent. The commission schedules a public hearing on the question of designation. The commission rules on the proposed designation and, if approved, sends the application to the city council. The city council approves or rejects the application, then records any approvals. The entire process takes up to three months.

Incentives for Listing

Denver is one of a few communities in the U.S. that contains historic districts which have been certified by the U.S. Secretary of the Interior as having met National Register criteria for evaluation of historic significance. These districts, the Lafayette Street Historic District and the Lower Downtown Historic District, automatically qualify for National Register designation, so all the incentives to join the National Register apply to these districts. There are no financial incentives directly associated with the Denver Register, but properties still get public recognition and status perks associated with listing.

Implications/Restrictions for Use

New construction or demolition on a historic site requires a thorough review, similar to the one required for initial listing. Zoning requests or alterations of any kind are also restricted and subject to review. Minimum maintenance of designated structures is required. Owners must preserve property 'against decay and deterioration' and keep it free of structural defects. Any owners violating the provisions of Chapter 30 are subject to legal penalties, and any property considered to contribute to a historic district is

governed by these rules. The above review process extends automatically to properties listed on the National Register (but oddly, not the State Register). This is significant because it provides an extra avenue for a property to be listed in opposition to its owner's wishes. A Denver home owner who lists her property on the National Register to take advantage of a federal tax break may find out later that this automatically places her property on the more restrictive local register.

There is a fee schedule for designation of a property or district. Generally speaking, the fees go up as the number of structures included goes up. The fees are used to cover costs associated with designation, such as signs and recording fees. Owners may appeal to have fees reduced, but fees are never waived entirely. (http://www.denvergov.org/admin/template3/forms/chapter30Mar03.doc)

2.3.2 Fort Collins

Fort Collins instituted the Fort Collins Historic Preservation Program to help identify and preserve culturally important properties. Its mission is to recognize properties that are important to the history and character of Fort Collins and protect them 'from exterior changes that might destroy or jeopardize their authenticity or distinctive features. (http://fcgov.com/historicpreservation/designations.php) The Fort Collins LPC administers and enforces Chapter 14 of the Municipal Code, Land Use Code 3.4.7, 3.5.1, the local historic preservation program plan, as well as any applicable state and local statutes regarding historic preservation. Their guiding objectives are similar in letter and spirit to those described for Denver above. Land Use Code 3.4.7 establishes rules for getting approval to develop designated sites. Land Use Code 3.5.1 ensures that designated properties are considered in the planning of any publicly funded projects that

may affect them in any way. Like Denver, this statute includes very broad definitions, such as not allowing construction that would affect the 'character' or 'historical integrity' of neighborhoods surrounding designated properties. Municipal Code Chapter 14 establishes conduct for public offices in Fort Collins regarding historic designation. Namely, public offices must seek approval of the LPC before affecting any historic property. The LPC is made up of volunteer experts in historic preservation, and has formally adopted the Secretary of the Interior's Standards for Treatment of Historic Properties, which specify design standards for exterior changes to landmarks. (http://fcgov.com/historicpreservation/policy.php)

Eligibility

The Fort Collins LPC also keeps a local historic register. The process of review for listing eligibility is much the same as with the Denver Register. The main difference is that in Fort Collins more emphasis is put on public comment during the nomination review. Fort Collins local designation is based on historical, architectural, or geographic importance.

Incentives for Listing

In addition to any applicable state or federal incentives, properties listed on the local historic register in Fort Collins are eligible for design assistance, consisting of $900 for help from architects and other design professionals. Additionally, designated property owners can obtain 0% interest loans for exterior rehabilitation, up to $5000. These loans may remain outstanding until the property is sold. A charitable contribution deduction is allowed for the donation of a preservation easement to a preservation organization. Easements may include facades, interiors, or restrictions on neighboring

lots. Deductions are also allowed if a designated property is donated (or sold at less than market value) to a charitable organization.

(http://fcgov.com/historicpreservation/financial-incentives.php)

Implications/Restrictions for Use

Municipal Code 14 includes a section called the 'demolition/alteration review process', whereby all modifications to designated properties must be reviewed by the LPC, even if they are not in historic districts. Preliminary and final hearings regarding proposed changes are held over the course of a few months. Owners are responsible for a $250 fee to cover processing of the request.

2.3.3 Registers Affecting Dallas/Fort Worth

One of the main goals of this research is to examine and extend the findings of Coulson and Leichenko's Dallas/Fort Worth study (2004). In chapter 5, designation and demographic data from Denver are compared to data from Fort Worth. Another important consideration is the legal setting with respect to designation. Residents are assumed to respond to the various benefits and costs of owning or living near a designated property, so it is critical to have an idea of what those are when making inter-city comparisons.

The primary difference in the designation framework is that in Texas most everything is controlled by the state body, rather than the LPC's. The legal regime is also more complicated, as the Texas Historical Commission (THC) offers four different types of historical designation: (http://www.thc.state.tx.us/markerdesigs/maddes.html)

1. National Register of Historic Places – THC administers the National Register program in Texas.

2. Recorded Texas Historic Landmarks (RTHL) – THC awards this status to historically significant properties which are at least fifty years old. The property must participate in the Official Texas Historical Marker process (see below) to be eligible for RTHL status. RTHL property owners must notify THC sixty days before making any exterior changes to the listed property and may lose designated status for making 'unsympathetic changes'. Owner's consent is required for RTHL designation. (http://www.thc.state.tx.us/markerdesigs/madrthl.html)
3. State Archaeological Landmarks (SAL) – some Texas properties listed in the National Register are eligible for extra legal protection if they qualify as archaeological landmarks. A SAL may not be removed, altered, or affected in any way without a THC permit. THC attempts to document any landmarks that can not be preserved. The owner's consent is required for an initial SAL designation, which then conveys with the property when it is sold. (http://www.thc.state.tx.us/merkerdesigs/madsal.html)
4. Historic Texas Cemetery – THC designates cemeteries or burial sites that are at least fifty years old and have significant historical associations. This designation does require owner's consent and it restricts the use of the designated property, but not of surrounding properties.

   (http://www.thc.state.tx.us/cemeteries/cemhtc.html)

The Texas Historical Marker Program began in the 1930's and is designed to commemorate the history and architecture of buildings, religious congregations, individuals, community organizations, business, and military sites. Age, significance, and architectural requirements are considered for marker status. The marker system is

more broadly encompassing than the other designations and can be a prerequisite for further designation.

THC lists the following incentives for seeking designation. Qualified property owners:

- May be eligible for grant funding or tax incentives.
- Have priority access to technical assistance from THC staff.
- Assist travelers to places of interest, though owners need not provide public access.
- Help identify culturally important resources.
- Have an elevated role in planning new development.

Some municipalities in Texas allow designation of local historic landmarks or districts, though this research uncovered no such registers in Dallas or Fort Worth. (http://www.thc.state.tx.us/faqs/faqmad.html#desdiff) The Dallas Landmark Commission appears to be mainly a conduit for local administration of the state program. (http://www.dallaschc.org/) Dallas does feature several private preservation groups that are extraordinarily well-organized and well-funded, which could explain why a strong, local, public entity never materialized. These groups advocate for preservation laws, assist residents in getting properties designated (they have their own library!), and even buy properties only to re-sell them encumbered with preservation easements. (http://www.preservationdallas.org/new_site/about/history.php, http://www.historicfortworth.org)

Finally, Dallas passed a sweeping new preservation ordinance in 2000. The Dallas area might be fertile empirical ground in the coming years as residents incorporate the stronger law into their decisions.

(http://www.planning.dot.gov/Documents/CaseStudy/Cities/returning _city.htm)

It is unclear whether Coulson and Leichenko used all types of designation or just RTHL's in their study. The Denver and Fort Collins examinations in chapters 6 and 7 include all designated properties in those areas. The Colorado listings are probably as inclusive as Texas' four registers, but are less inclusive than the Texas marker program. At any rate, the designation system in Colorado is similar in terms of eligibility and incentives to the system in Texas. There are, however, some important differences. In Colorado, local groups have control over designated properties, whereas the state has control in Texas. Also, the Texas system is more complicated, with tiers of designation imposing tiers of costs and benefits on historically designated property owners.

2.4 Concluding Remarks about Designation

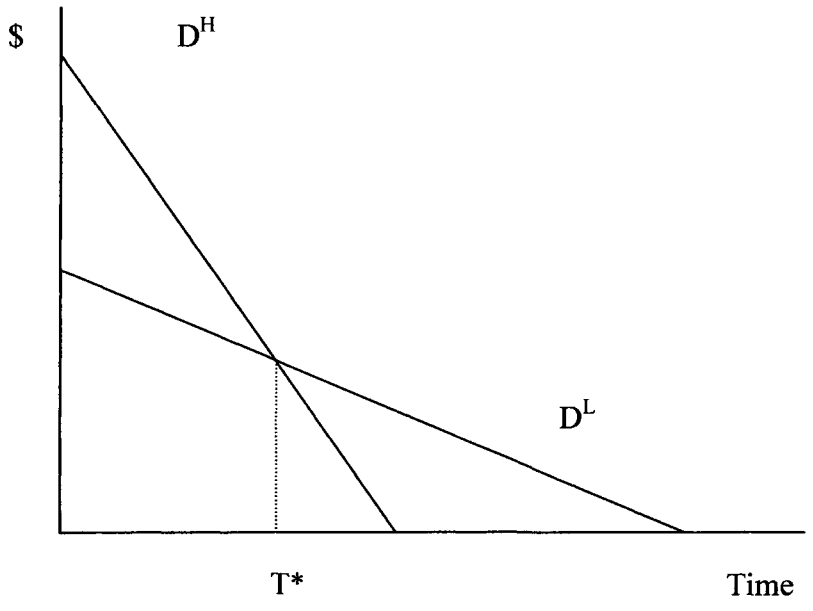
For the communities in question, most of the incentives for a private property owner to designate a property occur at the federal and state levels. Interestingly enough, neither of those levels of government requires any concessions on use of the property in return. In Colorado, any and all use restrictions on designated property come at the local level. This is particularly interesting in Denver, where there are official ties between the local register and the National Register. An unwitting property owner seeking to capitalize on the financial incentives of listing on the National Register would find her property exposed to expensive restrictions associated with the local register. Involuntary designation was recently a hot issue in Fort Collins, as well, when a couple was delayed

in selling part of their land because there were some old farm buildings on it. According to the Fort Collins LPC, the buildings were *eligible* for designation, so the couple could not move or otherwise dispose of them without an LPC review to determine their significance. (Editorial, 2004)

CHAPTER 3: MODELS OF NEIGHBORHOOD CHANGE

The theory that a house filters through income groups as it ages was first put forth by Burgess (1952), who described suburban emigration of high income residents in Chicago. If properties could no longer fetch previous market value, homes filtered down to the next lower income group. One basic assumption underlying filtering theory is that groups with higher incomes experience accelerated depreciation of housing services as their housing structures age. Consider a local economy with only two income groups, similar to Bond and Coulson (1989).

Figure 1 - Filtering



In Figure 1, let D^H be WTP for a particular house by the high income group. D^L is WTP for a particular house for a low income group. D^L is flatter, indicating that the

marginal value of the housing service declines more slowly for this group over time. This could be because they face additional liquidity constraints or because, as a social group, they attach less cachet to living in a new home. Additionally, the lower income group probably has access to fewer options as substitutes. Under ideal conditions, where each group bids its true WTP for housing services, the representative housing unit turns over at time T*. If there n income groups, the unit would turn over (n-1) times as each groups' marginal WTP declined below that of the next lower group and the unit would be abandoned when the last group's marginal WTP fell below the minimum transaction cost associated with living there. According to this theory, the median income of the occupants of a representative housing unit will naturally decline as time goes by. This follows from inhabitants making rational choices about where to live in the face of heterogeneous preferences and constraints. Under the usual (in filtering theory) restrictive assumption that all houses in a neighborhood are the same, median income in a neighborhood would also decline over time.

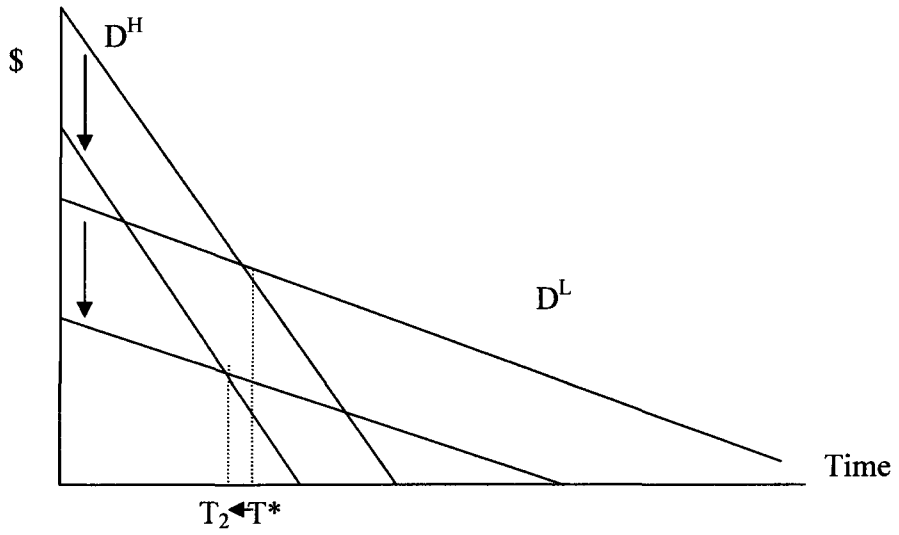
Coulson and Leichenko (2002) point out that the filtering model is limited when explaining neighborhood transition. Filtering models contemplate only individual housing units. To these models, neighborhoods are only collections individually-filtering homes. In the real world, neighborhoods are much more than this. Neighboring residents have interdependent utility functions and homes in a neighborhood share a housing market. Neighbors can easily affect each other's selling price, safety, and happiness.

Neighbors inflict externalities on one another, both positive and negative. Schelling's tipping model, first proposed in 1978, suggests that these externalities are the true impetus for neighborhood change, regardless of the age or condition of the homes.

In neighborhoods where income homogeneity is valued, a poor family moving in will lower the WTP for high income residents and reduce the age at which a housing unit might be expected to turn over (Coulson and Bond, 1990). This induces more low income families to move in, further lowering the WTP for high income residents and this cycle can cause a neighborhood to turn over rapidly.

In Figure 2, D^H represents WTP for the high income group. Externalities shift this curve to the left and shorten the time it takes for an individual house to be abandoned to a lower income group. Note: all income groups probably prefer richer neighbors. Figure 2 assumes high income groups experience more disutility from getting a new low income neighbor. As long as the high income group's WTP drops slightly more than the low income group's WTP, T^* will decline and the neighborhood will tip sooner than it originally would have.

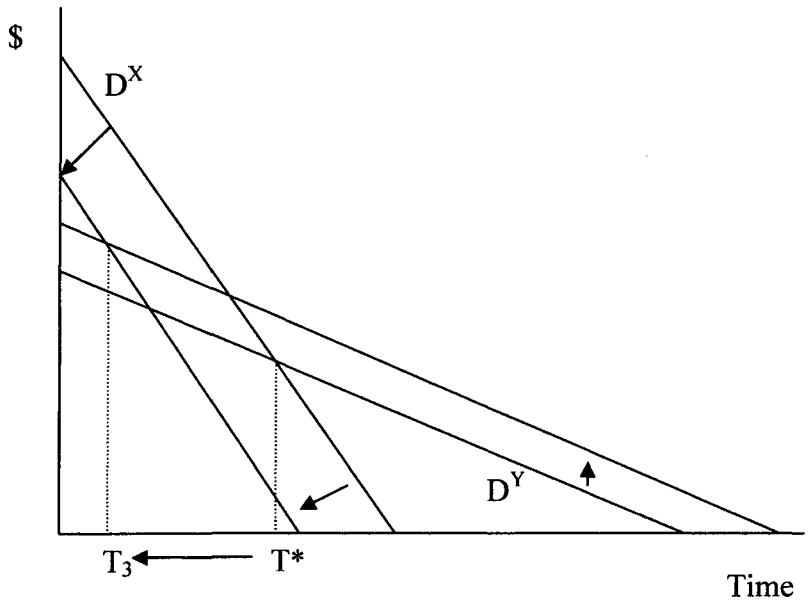
Figure 2 - Income Based Tipping



Schelling (1978) described how tipping can be race oriented, though this analysis can be generalized to any situation where there are multiple groups and each group prefers to live among their own kind. If neighborhood homogeneity is valued, a minority

moving into a majority neighborhood would raise the minority group's WTP in the neighborhood, and lower majority's WTP. The filtering process for each house quickens as externalities accumulate. Empirical studies estimate that racial transition is thought to have a tipping point at around 20-30% of the population of a neighborhood (Blair, 1995). With this kind of externality, the demographic change could be rather abrupt, as each new resident affects the WTP curves of both groups in opposite directions. In Figure 3, D^X shifts down, as the Group X's WTP is adversely affected from externalities associated with decreasing (X) homogeneity in the neighborhood. At the same time, each time a Group Y resident moves in, the neighborhood becomes more attractive to other members of Group Y and D^Y shifts up as this group experiences positive externalities. Both of these shifts provoke tipping quickly and explain some visible neighborhood transitions.

Figure 3 - Discriminatory Tipping

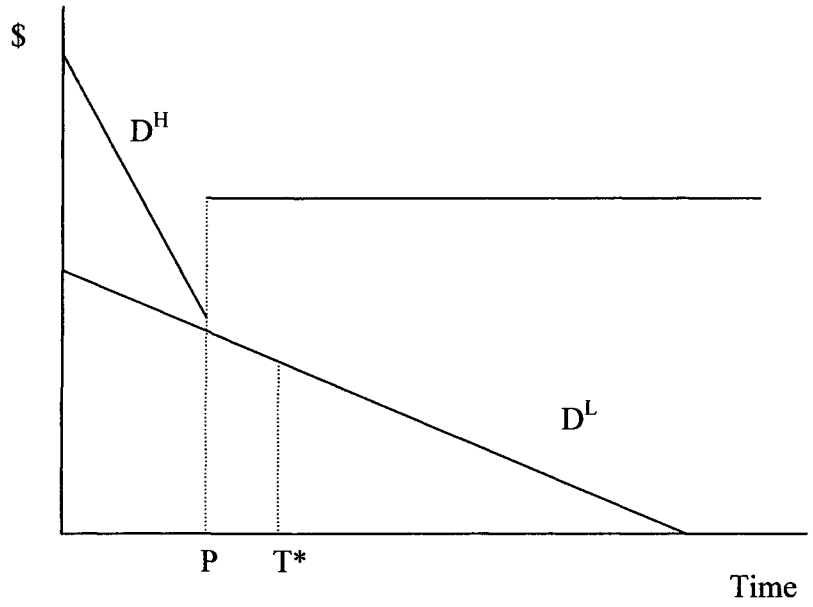


Bond and Coulson (1989) combine filtering and tipping models to explain neighborhood transition. For them, the filtering of the oldest house in the neighborhood

imposes externalities on the remaining residents and begins the tipping process. More recent literature (Frankel and Pauzner, 2000) extend the analysis to include expectations.

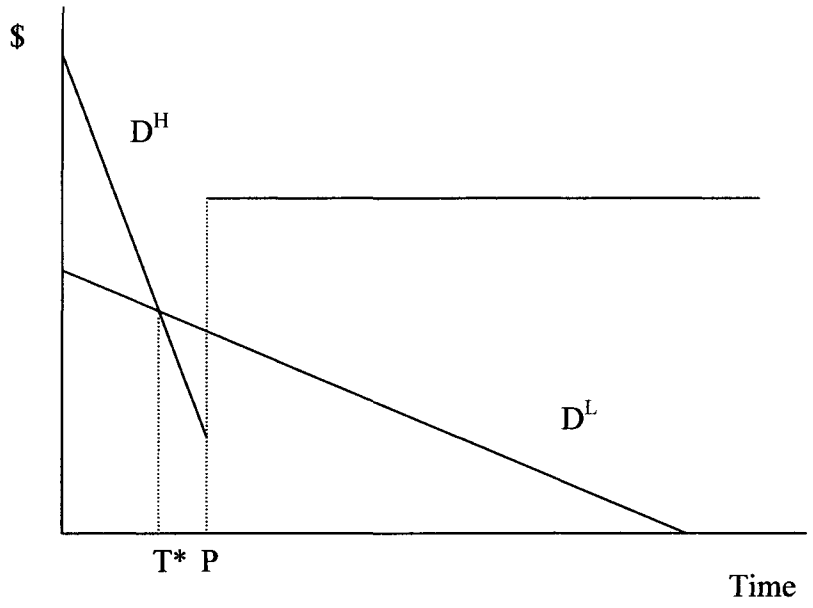
If high income groups expect filtering, each high income resident will try to escape the neighborhood before housing prices decline, and the expectations of filtering could cause a neighborhood to tip. If these residents can dampen expectations of filtering through some mechanism, say, historical designation, they may be able to delay or block the chain of filtering (and, thus, the tipping of the neighborhood) altogether. Figure 4 shows such a scenario. If high income groups attach more value to the prestige of designation, or because they can afford the additional maintenance costs of owning a designated property, then designating a neighborhood as a historic district may cause D^H to experience a discontinuous jump at the time of designation (time P in graph). This case shows what would happen if the designation were used successfully to prevent filtering. The high income group's WTP never drops below the low income group's, and the neighborhood remains full of high income residents. This graph depicts a case where the high income group's WTP for designation exactly offsets the depreciation of the home. The section of their WTP curve after time P could slope down or potentially even slope upward, although it need not.

Figure 4 - Designation Used to Prevent Tipping



Historic designation is also often touted as a development tool. It is asserted that designation can contribute to economic revitalization of older, typically urban, residential neighborhoods. If it is used in this manner, designation could contribute to 'upward tipping', caused by 'reverse filtering', as shown in Figure 5. Here, the WTP of the high income group jumps at the time of designation, which is long after the filtering process has begun. If this is accurate, then designation would contribute to gentrification. This is presumably a bad thing, as the normal filtering process is thought to be an important source of housing for lower income groups. (Hoover, 1975) If high income groups fail to migrate to new housing, which low income groups can not afford, then this source of affordable housing would dry up.

Figure 5 - Designation Used to Promote Reverse Tipping



Chapters 6 and 7 consist of a series of empirical examinations to determine whether there is any correlation between historic designation and demographic transition in Denver and in Fort Collins. If the models above are correct, there should be some correlation between neighborhood change and designation. Specifically, in high income neighborhoods, designation should inhibit neighborhood change, as in Figure 4. If designation indeed provokes upward tipping when used as a development tool, then increases in designation in low income neighborhoods should coincide with changing racial and/or income characteristics in those neighborhoods, as in Figure 5.

In sum, the following empirical research is designed (a) to replicate the Coulson-Leichenko model using Denver data and (b) to test the following hypotheses:

1. Historic designation encourages higher income groups to move into a neighborhood, so that rising incomes follow increased designation.

2. Higher income groups tend to pursue historic designation more than lower income groups, so that increased designation follows rising incomes.

3. Historic designation is used in high income neighborhoods to stall or prevent neighborhood tippng, so the relationship between designation and neighborhood change is muted in high income areas.

4. Historic designation is used in low income neighborhoods to provoke upward tipping, so the relationship between designation and neighborhood change is exaggerated in low income areas.

5. The relationship between designation and neighborhood change is exaggerated in smaller cities where the supply of potential historic homes is relatively low.

CHAPTER 4: DATA

This research examines Census tract data for neighborhoods in Denver and Fort Collins. (www.census.gov) Census tracts were chosen as the unit of observation for several reasons. First, Census tracts correspond roughly with popular notions of a neighborhood. Chapters 5 through 7 are concerned with testing the effect of designation on neighborhood demographics, so it is important to consider a unit that residents think of as a neighborhood. Second, chapters 5 through 7 compare Denver and Fort Collins results to earlier work by Coulson and Leichenko (2004) which analyzed Census tract data for Fort Worth. Finally, in Census data, Census tracts are the smallest unit of observation which were not fundamentally changed between 1990 and 2000. Block tracts, the next smallest unit, were completely redrawn in the interim. Census tracts were primarily redrawn only in response to large inflows or outflows of population in a tract. For this paper, tracts were split in two or merged in order to preserve 1990 boundaries.

The appendices of this paper list all the designated properties in Denver and Fort Collins as of summer 2005. I began compiling the dataset by identifying the Census tract in which each of these properties was located using the tract identifier utility on the Census Bureau website.

Table 1 contains names and descriptions of variables used in the statistical studies in chapters two and three. The last column includes notes regarding items of interest regarding how the variables were calculated or why they have been included.

Table 1 - Variable Descriptions

Variable name	Description/Identification	Notes
BEGPOP	1990 Tract Population, in Number of People	
ENDPOP	2000 Tract Population, in Number of People	
CHANGEPOP	1990-2000 Change in Population, Percent	
BEGFAM	1990 Family Households, Percent	Neighborhoods with more families may be more resistant to change. This also affects the desirability of a neighborhood for many residents.
ENDFAM	2000 Family Households, Percent	
CHANGEFAM	1990-2000 Change in Family Households, Percent	
FAMLOW	1990-2000 Change in Family Households, Lower Income Half of Tracts Only, Percent	
FAMHI	1990-2000 Change in Family Households, Higher Income Half of Tracts Only, Percent	
BEGHOUSES	1990 Number of Single Family Homes in Tract	
ENDHOUSES	2000 Number of Single Family Homes in Tract	
CHANGEHOUSES	1990-2000 Change in Number of Single Family Homes in Tract, Percent	
BEGOWNER	1990 Rate of Owner Occupancy, Percent	
ENDOWNER	2000 Rate of Owner Occupancy, Percent	
CHANGEOWNER	1990-2000 Change in Rate of Owner Occupancy, Percent	
OWNERLOW	1990-2000 Change in Rate of Owner Occupancy, Lower Income Half of Tracts Only, Percent	

Variable name	Description/Identification	Notes
OWNERHI	1990-2000 Change in Rate of Owner Occupancy, Higher Income Half of Tracts Only, Percent	
BEGVALUE	1990 Average Value of Single Family Home in Tract in 1990 Dollars	The value of the homes is as reported to the Census
BEGADJVALUE	1990 Average Value of Single Family Home in Tract in 2000 Dollars	Inflation adjustments made using BLS inflation calculator (www.bls.gov)
ENDVALUE	2000 Average Value of Single Family Home in Tract in 2000 Dollars	
CHANGEVALUE	1990-2000 Change in Average Real Value of Single Family Home in Tract in 2000 Dollars	
BEGVACANT	1990 Vacancy Rate for Single Family Homes in Tract, Percent	
ENDVACANT	2000 Vacancy Rate for Single Family Homes in Tract, Percent	
CHANGEVACANT	1990-2000 Change in Vacancy Rate for Single Family Homes in Tract, Percent	
BEGGREEN	1990 Fraction of Tract Residents Age 25-34, Percent	Younger residents may be more or less likely to engage in community activism. Activism is one explanation for why some neighborhoods pursue historic status and others do not.
ENDGREEN	2000 Fraction of Tract Residents Age 25-34, Percent	
CHANGEGREEN	1990-2000 Change in Fraction of Tract Residents Age 25-34, Percent	

Variable name	Description/Identification	Notes
GREENLOW	1990-2000 Change in Fraction of Tract Residents Age 25-34, Low Income Half of Tracts Only, Percent	
GREENHI	1990-2000 Change in Fraction of Tract Residents Age 25-34, High Income Half of Tracts Only, Percent	
BEGSILVER	1990 Fraction of Tract Residents Over Age 65, Percent	Older residents may be more or less likely to engage in community activism. Activism is one explanation for why some neighborhoods pursue historic status and others do not.
ENDSILVER	2000 Fraction of Tract Residents Over Age 65, Percent	
CHANGESILVER	1990-2000 Change in Fraction of Tract Residents Over Age 65, Percent	
SILVERLOW	1990-2000 Change in Fraction of Tract Residents Over Age 65, Low Income Half of Tracts Only, Percent	
SILVERHI	1990-2000 Change in Fraction of Tract Residents Over Age 65, High Income Half of Tracts Only, Percent	
BEGBACH	1990 Fraction of Tract Residents with Bachelors Degree or Higher, Percent	More educated residents may be more or less likely to engage in community activism. Activism is one explanation for why some neighborhoods pursue historic status and others do not.
ENDBACH	2000 Fraction of Tract Residents with Bachelors Degree or Higher, Percent	

Variable name	Description/Identification	Notes
CHANGEBACH	1990-2000 Change in Fraction of Tract Residents with Bachelors Degree or Higher, Percent	
BACHLOW	1990-2000 Change in Fraction of Tract Residents with Bachelors Degree or Higher, Low Income Half of Tracts Only, Percent	
BACHHI	1990-2000 Change in Fraction of Tract Residents with Bachelors Degree or Higher, High Income Half of Tracts Only, Percent	
BEGPROF	1990 Fraction of Tract Residents with Professional Occupation, Percent	Reported to Census as Management, Professional, or Related Occupations
ENDPROF	2000 Fraction of Tract Residents with Professional Occupation, Percent	Residents in professional occupations may be more or less likely to engage in community activism. Activism is one explanation for why some neighborhoods pursue historic status and others do not.
CHANGEPROF	1990-2000 Change in Fraction of Tract Residents with Professional Occupation, Percent	
BEGDIVERS	1990 Diversity Index[2]	0-1 Possible; Higher number means the tract is more diverse.

[2] This diversity index is used by Sandoval, et al. (2002). The index is used to give a units-free measurement of diversity and segregation in Census tracts. It is calculated as:

$$H1 = \left| \sum_{i=1}^{K} \log(P(i)) * P(i) / (\log(k)) \right| * 100, \text{ where}$$

H1=Diversity index for tract i
P(i)= Proportion of the tract population in racial/ethnic group k
K=Total number of racial/ethnic categories

Variable name	Description/Identification	Notes
ENDDIVERS	2000 Diversity Index	0-1 Possible; Higher number means the tract is more diverse.
CHANGEDIVERS	1990-2000 Change in Diversity Index, Percent	
DIVERSLOW	1990-2000 Change in Diversity Index, Low Income Half of Tracts Only, Percent	
DIVERSHI	1990-2000 Change in Diversity Index, High Income Half of Tracts Only, Percent	
BEGINCOME	1989 Median Income, in 1989 Dollars	
BEGADJINCOME	1989 Median Income, in 1999 Dollars	Inflation adjustments made using BLS inflation calculator. (www.bls.gov)
ENDINCOM	1999 Median Income, in 1999 Dollars	
CHANGEREALINCOME	1989-1999 Change in Median Real Income, in 1999 Dollars	
INCOMELOW	1989-1999 Change in Median Real Income, in 1999 Dollars, Low Income Half of Tracts Only	
INCOMEHI	1989-1999 Change in Median Real Income, in 1999 Dollars, High Income Half of Tracts Only	
HOMEAGE	Mean Age of Single Family Dwellings in Tract as of 2005	
HOMESIZE	Average Number of Rooms in Single Family Dwellings in Tract	
BEGNUMBERDES	Number of Properties Listed on a Historic Register in Tract, as of 1990	

Variable name	Description/Identification	Notes
ENDNUMBERDES	Number of Properties Listed on a Historic Register in Tract, as of 2000	
CHANGEPERCENTDES	1990-2000 Percent Change in Number of Properties Listed on a Historic Register in Tract	
BEGDESPERHOME	1990 Ratio of Designated Properties to Total Number of Homes in Tract	
ENDDESPERHOME	2000 Ratio of Designated Properties to Total Number of Homes in Tract	
CHANGEDESPERHOME	1990-2000 Change in Ratio of Designated Properties to Total Number of Homes in Tract	
BINPRESOFDES	Dummy Variable to Indicate Presence/Absence of Designated Properties in Tract as of 1990	

CHAPTER 5: COMPARING DENVER AND FORT WORTH

Coulson and Leichenko analyzed Dallas/Ft Worth data. They searched for evidence that city planners use designation as a development tool and tested for correlation between designation and neighborhood change. This chapter will reproduce their models and analysis, as nearly as possible, using Denver data to see how much continuity there is across different metropolitan areas. Also, later sections of this paper test a purportedly improved model, and I want to make sure that the tests are being run on comparable cities. The Forth Worth research consisted of two primary parts. In part one, the authors studied means and standard deviations of a limited set of Census tract variables and detailed housing data from the Tarrant County Appraisal District. In part two, they ran a series of regressions to test whether the presence of historic designation in a district could be linked to neighborhood demographic change.

Table 2 shows the means and standard deviations of the Coulson-Leichenko variables from Fort Worth compared to data from the same variables in Denver. The columns in Table 2 compare city-wide statistics to stratified statistics for tracts where historic designation is present and tracts where it is not.

Table 2 - Means (standard deviations) - Fort Worth versus Denver

Variable	All FW Tracts	FW Tracts without Designation as of 1990	FW Tracts with Designation as of 1990	All Denver Tracts	Denver Tracts no Designation as of 1990	Denver Tracts with Designation as of 1990
Vacancy Rate, 1990	0.11 (0.06)	0.11 (0.06)	0.13 (0.06)	0.11 (0.07)	0.09 (0.05)	0.13 (0.07)
Ownership Rate, 1990	0.60 (0.22)	0.61 (0.23)	0.58 (0.19)	0.49 (0.25)	0.57 (0.24)	0.42 (0.24)
Population, 1990	4312.98 (2284.30)	4313.70 (2196.14)	4310.52 (2581.97)	3488 (1327.80)	3417.81 (1337.33)	3548.53 (1325.91)
% Black	0.15 (0.25)	0.16 (0.25)	0.13 (0.22)	NA	NA	NA
% Hispanic	0.13 (0.17)	0.11 (0.13)	0.19 (0.24)	NA	NA	NA
Diversity Index, 1990	0.69 (0.17)	0.69 (0.17)	0.68 (0.17)	0.40 (.18)	0.38 (0.17)	0.41 (0.18)
Median Income, 1989	32905.48 (16281.1)	33520.79 (16424.0)	30831.69 (15761.8)	26392 (11683.5)	29448.92 (9860.1)	23723.82 (12537.7)
Average year built	1952.43 (15.98)	1954.03 (15.56)	1947.05 (16.38)	1949 (15.45)	1943 (15.45)	1953.27 (14.11)
Average living area	1505.56 (537.00)	1477.31 (537.67)	1600.76 (528.58)	5 rooms (1.32)	5.02 rooms (1.36)	4.55 rooms (1.25)
Average Number of Designated Homes	5.57 (30.43)	0.00 (0.00)	24.33 (60.33)	3.00 (11.39)	0.00 (0.00)	5.70 (15.15)
Historical Designation Dummy	0.23 (0.42)	0.00 (0.00)	1.00 (0.00)	0.53 (0.50)	0.00 (0.00)	1.00 (0.00)

Variable	All FW Tracts	FW Tracts without Designation as of 1990	FW Tracts with Designation as of 1990	All Denver Tracts	Denver Tracts no Designation as of 1990	Denver Tracts with Designation as of 1990
Δ Vacancy Rate	-0.05 (0.05)	-0.05 (0.05)	-0.04 (0.06)	-0.07 (0.06)	-0.06 (5.34)	-0.07 (6.32)
Δ Owner Rate	0.02 (0.08)	0.02 (0.08)	0.01 (0.09)	0.05 (0.12)	0.03 (0.14)	0.06 (0.09)
Δ in Diversity Index	-0.12 (0.11)	-0.13 (0.11)	-0.10 (0.12)	0.17 (0.41)	0.25 (0.50)	0.09 (29.07)
Population Growth Rate	0.33 (1.86)	0.35 (2.08)	0.26 (0.71)	0.21 (40.5)	0.27 (0.52)	0.15 (26.27)
% Δ Median Income	0.41 (0.36)	0.41 (0.29)	0.43 (0.29)	15.36 (3.67)	3.77 (-0.66)	26.49 (10.39)

As in Fort Worth, the bulk of designation in Denver occurred between 1975 and 1990. Therefore, most of the initial designation numbers reflected in the above table were fairly recent as of 1990. There are 1411 designated properties in Denver (see Appendix 1), spread throughout the metro area. The row Historical Designation Dummy takes a value of one for tracts with designated properties and zero for tracts without any designated properties. One notable difference between Denver and Fort Worth is that 53% of Denver tracts have at least one designated property compared to only 23% of Fort Worth tracts. In the preceding row, there is a large disparity between the city-wide average number of designated homes per tract in Fort Worth (5.57) and the average number of designated home per tract in tracts that have designation (24.33). This difference is much smaller in Denver, where tracts with designation having only a slightly higher average of designated homes than the city average (5.70 and 3, respectively). Coulson and Leichenko were concerned that their statistical results would

be biased by the concentration of historic homes in relatively few tracts. Historic designation in Denver is more evenly spread across tracts, so the results should be less influenced by one or two tracts with high numbers of historic homes.

In the Fort Worth study, Coulson and Leichenko observe that tracts with designation differ only slightly in their housing and demographic characteristics from tracts without designation. Denver is similar to Fort Worth, in that populations are nearly identical across columns. There are, however, some key differences in demographic makeup.

One change with this paper is that I did not collect data on individual race characteristics for Denver and Fort Collins tracts. While race is probably a factor in some home-buyers' decisions about where to live, this information is included in the calculation of the diversity index.

Recall from footnote two that the diversity index consists of collecting information on the racial makeup of a Census tract. Though the Census collects data on many races, Denver and Fort Collins tracts only contain three in statistically important amounts: white, black, and Hispanic. To calculate a diversity index, each race's share of total population in a tract are collected and combined with other races' shares according to the formula in footnote two. More evenly distributed shares produce a higher diversity index. For example, of a tract contained exactly fifty whites, fifty blacks and fifty Hispanics, the diversity index would equal one.

Since the diversity index consists primarily of the sum of each race's shares, it would be inappropriate to include both the diversity index and information on the individual shares as explanatory variables in the same regression. If both were included,

severe multicollinearity would result. For the purposes of this paper, I chose to include the diversity index initially for several reasons. First, as just mentioned, only one or the other can be used. Second, the theory of racial tipping relies on the assumption that people want to live around other people like themselves. The crucial information then, revolves more around whether an area is diverse more than which specific race inhabits a neighborhood. Third, the paucity of races represented in the data means that the diversity index should pick up something if there is racially motivated designation. If, for example, white residents used designation to discourage Hispanic or black residents from buying in their neighborhood, then the diversity index would be positively related to designation efforts. Heterogeneous neighborhoods with lower diversity indeces would be less likely to experience designation. So, even though race and diversity are not the same thing, the particular diversity index used here should pick up most race-designation correlation, especially because there are only really three races represented. If there is no strong relationship between this diversity index and designation, then there is probably no strong relationship between any particular race and designation. If there is a strong relationship between the diversity index and designation, I would interpret it as a signal that further study is needed to unpack the diversity index and see if there is a relationship between specific races and designation.

There appears to be no obvious difference in the diversity index across columns. As expected, diversity index numbers for Fort Worth tracts are much higher than for Denver, indicating more racial heterogeneity within tracts in Fort Worth. More notably, Denver tracts with designation experienced a lower increase in diversity index between 1990 and 2000 than did tracts without designation. That is, though diversity in Denver

increased over this time period, it increased less in tracts with designation than in the city as a whole, and it increased much less in tracts with designation than in tracts without. Although this phenomenon did not occur in Fort Worth, it is consistent with the theory that designation may be used by racial groups to slow or halt tipping.

As in Fort Worth, tracts with historical designation in Denver exhibit slightly depressed economic indicators compared to tracts without. Across the board, tracts with designated properties have slightly higher vacancy rates, lower ownership rates, and lower median incomes. These differences are more pronounced in Denver than in Fort Worth, perhaps because designated properties are more widely distributed in Denver. This placement of designation suggests that, in Denver, properties were designated more frequently in less affluent areas and is consistent with designation being used by planners to provoke development.

Denver tracts exhibit some curious differences from Fort Worth regarding housing quality. In Fort Worth, tracts with designation have older houses (average year built) and larger houses (average living area) than those without, which makes sense intuitively. Older, larger homes are more likely to be designated because (1) there is a minimum required age for a property to be designated, and (2) it is probably more likely that the influential residents lived in larger homes, making larger homes more likely to be historically significant on average. In Denver, however, tracts with designation have relatively newer, smaller houses. This could be simply that the Fort Worth information is from appraiser data and the Denver information is from the Census. It could also be, however, that designation is being used as a development tool more aggressively in Denver. In that case, more designation would be in lower income areas where houses are

smaller, and new construction in the tract would account for the difference in average age. This explanation also is consistent with the larger differences in economic indicators in Denver discussed above. Finally, it could be that there has been more new construction within historic areas of Denver than in Fort Worth. This would be true if Denver lost more historic properties to new construction before the local preservation movement began in earnest.

Again, the city's unique history is likely to be a factor in where designation occurs and how other residents respond to it. Denver's data anomaly (more designation where average home is newer and smaller) is also likely if historic districts in Denver are less segregated from non-historic districts. Since we know that Denver's historic properties are more widely dispersed across tracts than is true in Fort Worth, then it is more likely that Denver's historic homes stand alongside new developments and the average home age in a tract with designation will be lower than in Fort Worth. This last explanation is compelling because it comports with the casual observation that Denver focused a huge redevelopment effort (including lots of new construction) in the LoDo area, incidentally the same neighborhood where many of the historic properties are located.

There is one more item in Table 2 that warrants discussion. Coulson and Leichenko found that incomes went up only 0.41% in Fort Worth in the 1990's. I think there are two problems with this figure. First, I believe they missed on the decimal places and reported fractions rather than percentages. They also did this in the percent black and percent Hispanic rows. Surely Fort Worth is more than 0.15% black and 0.13% Hispanic, especially given the relatively high diversity index measures. However,

correcting this would make incomes rise in Fort Worth by 41% during the 1990's, which is almost certainly too high. Second, I believe they reported increases in nominal income instead of increases in real income. To test this, I checked nominal income increases for Denver and got similar numbers to what they reported for income changes. Adjusting income for inflation is crucial in this research because neighborhood transition is tied to changes in real variables. The Denver numbers in the last row of Table 2 show the percentage increase in real income. The reports show a more reasonable 15.36 percent growth in real income during the 1990's. Tracts with designation show a whopping 26.49 percent increase in real income, while tracts with no designation grew at a relatively pedestrian 3.77 percent. It is hard to imagine a difference of this magnitude could be due solely to designation, but it could be that areas with designation bore the brunt of the city's redevelopment efforts and some reverse tipping occurred, so real incomes grew much faster there than in other tracts.

Also, there is no causality implied in Table 2, so it could be that the areas with high income growth in Denver tend to draw historic designation, rather than the other way around. Finally, Fort Worth may simply be different institutionally because most of that city's historic properties are located in relatively few tracts, most of which never experienced low incomes. These neighborhoods would experience lower increases on average because incomes were really high to begin with and did not change much.

I also collected data on other neighborhood variables which may illuminate neighborhood transition in Denver. These are presented in Table 3.

Table 3 - Means (standard deviations) - Additional Denver Variables

Variable	All Denver Tracts	Denver Tracts no Designation	Denver Tracts with Designation
% Family, 1990	55.73 (19.29)	63.25 (16.31)	49.17 (19.40)
Δ % Family	12.03 (14.47)	11.47 (18.84)	12.52 (9.22)
Number of Houses, 1990	1604.29 (743.06)	1458.31 (644.95)	1731.76 (802.08)
Δ in Number of Houses	19.86 (44.86)	21.62 (55.61)	18.31 (33.09)
Home Value, 1990	81291.59 (32226.70)	78990.02 (28631.54)	83301.41 (35146.45)
%Δ in Real Home Value	47.85 (30.77)	37.79 (28.01)	56.64 (30.56)
% Age 25-34, 1990	20.74 (6.41)	20.22 (7.38)	21.20 (5.43)
%Δ Age 25-34	-0.03 (4.88)	-2.36 (5.44)	1.54 (3.47)
% Age > 65	14.15 (7.98)	12.77 (6.99)	15.36 (8.62)
%Δ Age > 65	-2.69 (5.81)	-0.65 (4.10)	-4.47 (6.48)
% with bachelor's degree, 1990	27.26 (17.98)	24.76 (17.17)	29.45 (18.51)
Δ % with bachelor's degree	7.01 (9.70)	3.94 (17.17)	9.68 (7.85)
% professional occupation	29.82 (14.51)	28.00 (13.68)	31.41 (15.12)
Δ% professional occupation	6.74 (10.14)	2.72 (9.87)	10.25 (9.07)

A "family household" is one where the householder lives together in the same household with one or more people who are related to the householder (and also non-relatives, if any). A "nonfamily household" is one where the householder lives alone or shares the home with non-relatives only. Tracts without designation in 1990 had a higher percentage of family households. This is also consistent with Denver using designation

as a development tool by designating properties in blighted urban areas where non-traditional living arrangements are more common.

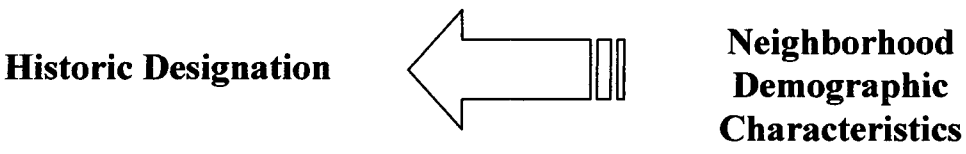
Going down the chart, none of the variables are very different across columns until Change in Real Home Value. Though all tracts saw large increases in home values, tracts with designation reported much higher gains in home value through the 1990's (56.64 percent instead of 37.79). This could also be evidence of reverse tipping in these neighborhoods, perhaps bolstered by historic designation.

The age groups of residents appear to have had little impact across the chart. There seems to be a slight effect that younger people moved into areas with designation and older people moved out. Tracts with designation had larger percentages of residents with college degrees and professional occupations. The effect over time was even stronger, with more educated, professional-types moving into areas with historic designation more than areas without designation throughout the decade of the 1990's. The majority of the data in Table 3 are compatible with planners designating properties in areas targeted for urban renewal efforts. The only row in apparent conflict is Home Value. Home values were higher in areas with designation, but that could be due to any number of things, such as location relative to work centers or savvy prospectors who had already bid up prices in anticipation of renewal. The regressions later in this chapter should help clarify these relationships.

After examining key variables, Coulson and Leichenko ran a series of regressions in two groups, Group A and Group B. Group A (see Figure 6) used an indicator of the extent of historical designation in 1990 as the dependent variable. Various 1990 neighborhood characteristics were used as exogenous variables. The results are

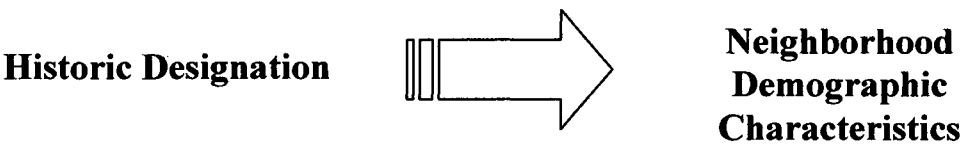
summarized in Table 4 below. Coulson and Leichenko acknowledged that the Group A regressions would uncover only correlation between designation and neighborhood characteristics and that these regressions do not imply that the characteristics caused the designation. In fact, they concluded the opposite - that they were modeling choices made by historic commissions and neighborhood activists to designate properties in a tract.[3] While Coulson and Leichenko claimed no documented policy statements to this effect and my research has uncovered none in Denver, their results and the Denver results outlined in this paper often suggest that the decisions of planners and activists are important to the understanding of where designation occurs and how the neighborhood reacts to it.

Figure 6 - Group A Model



Group B (see Figure 7) attempted to test for reverse causation by using different demographic indicators as dependent variables and designation as an explanatory variable. The Group B regressions used different variable definitions and were intended to uncover causality. This is discussed in more detail below.

Figure 7 - Group B Model



[3] An interesting avenue for further research would be to examine the source of individual designations. Regrettably, the National Park Service and the LPC in Denver do not keep summary information regarding whether most designations are instigated by homeowners, historic commissions, or someone else.

Initially, this paper examines two regressions that correspond with Coulson and Leichenko's Group A model. Later sections of this paper look at different variable choices and model forms and try to focus on the causality element of the models. At this stage, the Denver models mimic Coulson and Leichenko's work as nearly as possible to see how comparably Denver and Fort Worth data perform in nearly identical models. In the first regression, equation (1), the dependent variable is the binary indicator of the presence or absence of historic properties in a tract, as of 1990. The explanatory variables are a selection of neighborhood characteristics shown in Table 4.

(1) BINPRESOFDES = f(X)

where

BINPRESOFDES takes a value of 1 if there is at least one designated property in the tract and takes a value of 0 otherwise, and X represents a set of exogenous variables. Equation (1) is estimated using a probit model. Coulson and Leichenko's results are reported in column A of Table 4 and my Denver results are in column B.

The second regression, equation (2), uses the same explanatory variables, but uses a count variable (Poisson distribution) representing the number of designated properties in a tract as the dependent variable.

(2) BEGNUMBERDES = f(X)

where BEGNUMBERDES equals the number of designated properties in the tract, and X represents a set of exogenous variables.

This regression captures whether designation is correlated with neighborhood change. Fort Worth results are reported in column C and Denver results in column D.[4]

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[4] The Fort Worth columns show coefficients and t-statistics. The Denver columns show coefficients and z-statistics. T-statistics follow a t distribution. The rule of thumb is that the variable if

Table 4 - Group A Regressions: Determinants of the Existence and Extent of Historic Designation

	Column A: Dependent Variable = HDUM (Fort Worth probit)	**Column B: Dependent Variable = BINPRESOFDES Equation (1)**	**Column C: Dependent Variable = ND (Fort Worth Poisson)**	**Column D: Dependent Variable = BEGNUMBERDES Equation (2)**
Constant	N/A	0.90 (0.95)	N/A	5.72 (10.96)
1990 Population	5.82×10^{-4} (1.30)	2.30×10^{-4} (2.10)	2.59×10^{-4} (18.16)	4.33×10^{-4} (10.30)
1990 Ownership Rate	1.27 (1.95)	-0.04 (-3.72)	3.32 (12.88)	-0.02 (-3.49)
1990 Vacancy Rate	4.09 (1.92)	0.06 (2.38)	18.65 (26.58)	0.04 (4.31)
1990 Percentage Black	-0.554 (-1.06)	Not Used	-7.97 (-16.79)	Not Used
1990 Percentage Hispanic	1.20 (1.84)	Not Used	1.35 (10.16)	Not Used
1990 Diversity Index	Not Used	-0.02 (1.82)	Not Used	-0.06 (-13.60)
1989 Median Income	-1.13×10^{-4} (-1.14)	-9.33×10^{-6} (-0.48)	-2.26×10^{-5} (-6.27)	-1.69×10^{-4} (-12.25)
Home Age	-0.0245 (-3.18)	-0.04 (-4.38)	-0.0645 (-22.62)	5.42×10^{-4} (0.12)
Average Living Area	9.09×10^{-4} (3.91)	0.64 (2.92)	0.00211 (28.34)	0.04 (0.34)
Pseudo R^2	0.0044	0.25	0.4755	0.36

significant (at α=0.05) if the absolute value of the t-statistic is two or greater. z-statistics are distributed standard normal. Variables are significant at α=0.05 if the absolute value of the z-statistic is 1.96 or greater.

Key Results

- 1989 incomes were not significantly correlated with the presence of designation in either city
- Designation was more likely to be present in areas with depressed economic indicators
- 1989 incomes were correlated with the extent of designation in both cities
- The variables were better predictors of the extent, rather than the presence, of designation in both cities

Analysis

Using the probit model, only housing age and size were found to be significant in Fort Worth. Home age was negatively correlated and home size was positively correlated with the presence of designation.[5] As expected, tracts with designation were likely to have older, larger houses. Both were significant in Denver as well. However, the Denver Home Age represents the number of years old the house is, rather than the average year the home was built, which was the measure used in Fort Worth. That is, the probit model in Denver suggests that more designation occurs in tracts with relatively newer homes, ceteris paribus. This fits with the hypothesis that designation was used more vigorously as a development tool in Denver, relative to Fort Worth. Data from both cities suggest that designation is more likely in tracts with larger houses. This is probably because, after accounting for neighborhood differences, historically wealthier properties are more likely to be preserved. (Coulson and Leichenko, 2002) In both cities, 1989 incomes were not significantly correlated with the presence of designation.

[5] In the Fort Worth dataset, HOMEAGE was defined as the average year the home was built, so a lower number signifies older homes on average. In the Denver dataset, HOMEAGE was defined as the number of years old the average house was, so a smaller number signifies newer homes.

While the other variables were not significant at α=0.05 in Fort Worth, many of them were in Denver. In Denver, population was higher in designated tracts. Ownership rates were lower in designated tracts and vacancy rates are higher. This supports the hypothesis that more properties were being designated in economically downtrodden areas, where there were more vacant buildings and fewer owner-occupants.

The same themes are examined in a slightly different way in columns C and D. A Poisson count regression model is used, where the dependent variable is the number of designated properties in a tract. In Fort Worth, the goodness of fit measure is extremely high, over 45 percent. All the variables are significant. Coulson and Leichenko suspected their results were overly influenced by a couple of tracts where there was a lot of designation. When they ran the same regressions without those tracts, the results were more modest. The goodness of fit dropped to around 16 percent and all the t-stats were reduced in magnitude. As discussed above, Denver designation is more widely dispersed, so this problem of over-concentration is likely to be muted.

Still, the model was impressive in Denver, too. The signs of most coefficients stayed the same, but the t-stats went up compared to the probit model. Again, population was higher in designated tracts in Denver. Also, ownership rates were lower in designated tracts and vacancy rates were higher. Median incomes were very significantly and negatively related to the extent of designation in 1990. Again, this supports the idea that planners may have vigorously used designation in blighted areas to provoke development.

The diversity index was negative and significant, indicating that more designation was pursued in racially homogeneous areas. This does not fit particularly well with the

idea that planners pursued more designation in blighted areas (assuming poorer areas are likely to be more diverse). It could be, as Coulson and Bond (1990) suggested, that purely race-based tipping is weak or non-existent. Home age and size were insignificant in this regression, which is curious. Insignificant home age and size probably reflects the more even spread of historic properties across districts in Denver. This even spread also explains the lower goodness of fit and t-stats, compared to the Fort Worth regression, because the Denver tracts were more demographically heterogeneous to begin with.

Most of the variables in Table 4 do not support the possibility that wealthy citizens used designation to slow or prevent tipping in Denver or in Fort Worth. Most results suggest that designation was more likely to occur, and especially to occur in volume, in economically depressed areas.

Table 5 presents results of some other specifications of the Denver model. These were run to check the robustness of the equation (2) results by changing the timing of when the variables were measured. Table 5 presents the results of equations:

(3) ENDNUMBERDES = f(X)

where

ENDNUMBERDES = the number of designated homes in the tract in the year 2000.

(4) CHANGENUMBERDES = f(X)

where

CHANGENUMBERDES = the increase in the number of designated homes in the tract during the 1990's.

Table 5 - Alternative Specifications: Determinants of the Existence and Extent of Historic Designation in Denver

Independent Variable	Dependent Variable= ENDNUMBERDES (Poisson) Equation (3)	Dependent Variable= CHANGENUMBERDES (Poisson) Equation (4)
Constant	2.36 (11.31)	5.80 (24.64)
2000 Population	5.30×10^{-4} (23.24)	
1990-2000 Change in Population		3.13×10^{-3} (2.32)
2000 Ownership Rate	-0.03 (-11.06)	
1990-2000 Change in Ownership Rate		-0.01 (-4.47)
2000 Vacancy Rate	0.23 (32.15)	
1990-2000 Change in Vacancy Rate		0.03 (4.13)
2000 Diversity Index	4.01×10^{-3} (1.37)	
1990-2000 Change in Diversity Index		-9.42×10^{-3} (-6.48)
1999 Median Income	7.40E-05 (18.64)	
1989-1999 Change in Median Income		1.09×10^{-4} (20.42)
Home Age	-0.07 (-28.79)	-0.05 (-16.74)
Average Living Area	-0.33 (-6.19)	-0.39 (-11.05)
Pseudo R^2	0.44	0.26

Key Results

- In 2000, low economic indicators predict designation even better than they did in 1990
- During the 1990', designation increased in neighborhoods with declining neighborhood indicators regarding vacancy rates, ownership rates, and home size

- Rising incomes were a significant predictor of the extent of designation during the 1990's

Analysis

The first column is mainly for comparison purposes. It is a snapshot of the Table 4 Poisson model ten years later in 2000. The 1990 snapshot indicated that city planners were probably using designation in blighted areas to promote development. Does that trend continue? The 2000 results are even more striking than the 1990 model, as the goodness of fit jumped to 44 percent and the significance of each variable, except diversity index, increased. Ownership rate is negative and highly significant and vacancy rate is positive and highly significant. A decade later, there is even more designation in areas with these lower neighborhood economic indicators.

One interesting change is that median incomes are positively correlated with designation now, albeit in a small way. Perhaps higher income residents may be starting to move into even worse neighborhoods to take advantage of the designated status. The model also shows significant negative coefficients on home age and size. These were insignificant ten years earlier.

The tipping models imply that wealthier neighborhoods could use designation as a tool to stymie neighborhood change. If they do, tracts with good economic indicators should see more designation than poorer neighborhoods, but there may be less demographic transition in the high income neighborhoods if designation tends to entrench the current residents. The second column of Table 5 examines the 1990-2000 change in the number of designated properties in a tract as a function of neighborhood and demographic characteristics. The results do not support the theory that designation was

used to prevent the immigration of undesirable neighbors. Designation increased in tracts with decreasing ownership rates, increasing vacancy rates, and smaller houses. The number of properties designated went up more in areas with smaller, newer (on average) properties. This is all consistent with designation being used more as a development tool, rather than by incumbents keeping poorer newcomers out. Real incomes increased faster in tracts with designated properties during the 1990's, despite that the designation occurred in poorer neighborhoods.

Designation increased more during the 1990's in neighborhoods that became less diverse. This is notable because the diversity indicators were not significant for the static 1990 or 2000 regressions. This may provide some little bit of support for the racial tipping theory, as new, wealthier, homogeneous residents use designation to drive low income, diverse residents out. Further tests designed specifically to uncover this relationship would be interesting but are not explored in this research.

As in Fort Worth, the Denver models display little overall support for the notion that neighborhood demographics explain the presence or intensity of designation. In fact, the models suggest the opposite, that planners are using designation to influence neighborhood demographics. If the planners are right in conjecturing that designation can spur growth, then these models would be more illuminating if they considered designation as an impetus for neighborhood change, rather than as a result of it. Group B regressions were run in Fort Worth and Denver to see if this reverse causation explanation rings true.

The Group B regressions estimate what impact designation had on neighborhood characteristics between 1990 and 2000. In each specification, the dependent variable is

the change in some neighborhood characteristic during the 1990's. These regressions use historic designation that occurred prior to 1990 as the explanatory variable, so these regressions are meant to be causal. Each one follows the same form: the dependent variable is the change in some neighborhood attribute during the 1990's; the explanatory variables always include an identifier of the presence or extent of designation in a tract.

In Fort Worth, Coulson and Leichenko found no significant effects on changes in neighborhood characteristics that are the result of historic designation. That is, the presence of neighborhood designation had no effect on neighborhood changes in Fort Worth. Table 6 shows the key results from replicating these regressions using Denver data.

The top row shows the dependent variable used in each regression. The left-most column shows potential exogenous variables. The results illustrate the impact of historic designation (as of 1990) on changes in vacancy rates, diversity index, and real median income during the 1990's. The variable BINPRESOFDES is a binary indicator that equals one if a tract includes a historic property and zero if it does not. BEGNUMBERDES is a count variable showing how many historic properties a tract contains.

Following Coulson and Leichenko, I also ran these same explanatory variables against changes in population growth and changes in ownership rates. Neither the presence nor extent of designation had a significant effect on population growth or changes in ownership rates in Denver, so they were not displayed in order to make the table more readable. As Table 6 reveals, however, the similarities between Denver and Fort Worth end there. In Denver, the presence of historic designation in 1990 was a

significant explanatory variable for changes in vacancy rate, diversity index, and median real income.

Table 6 - Impact of Designation on Neighborhood Change

	1990-2000 Δ in Vacancy Rate	1990-2000 Δ in Vacancy Rate	1990-2000 Δ in Diversity Index	1990-2000 Δ in Diversity Index	1990-2000 Δ in Real Income	1990-2000 Δ in Real Income
Constant	2.28 (1.27)	3.80 (2.01)	102.71 (4.47)	90.35 (3.91)	2263.02 (0.53)	7538.89 (1.59)
BINPRESOFDES	2.75 (5.12)		-19.19 (-2.81)		7843.24 (6.18)	
BEGNUMBERDES		0.06 (2.71)		-0.26 (-0.94)		84.40 (1.51)
1990 Population	-6.19×10^{-4} (-3.33)	-5.11×10^{-4} (-2.60)	-0.004 (-1.93)	-0.005 (-2.26)	-0.05 (-0.11)	0.34 (0.68)
1990 Ownership Rate	4.98×10^{-4} (0.02)	-0.03 (-1.43)	0.14 (0.49)	0.38 (1.38)	8.38 (0.16)	-91.08 (-1.61)
1990 Vacancy Rate	-0.84 (-18.68)	-0.80 (-17.04)	1.55 (2.72)	1.28 (2.22)	27.25 (0.26)	144.19 (1.22)
1990 Diversity Index	-0.02 (-1.24)	-0.03 (-1.45)	-1.75 (-7.77)	-1.69 (-7.29)	-139.15 (-3.33)	-166.17 (-3.50)
1989 Median Income	-1.35E-05 (-0.37)	-8.57E-06 (-0.22)	-0.001 (-3.05)	-0.001 (-2.97)	-0.43 (-5.09)	-0.43 (-4.47)
Home Age	0.07 (4.19)	0.04 (2.46)	0.004 (0.02)	0.22 (1.05)	26.10 (0.65)	-62.01 (-1.47)
Home Size	-0.32 (-0.80)	0.18 (0.43)	4.58 (0.90)	1.07 (0.21)	3020.08 (3.22)	4458.47 (4.33)
R^2	0.82	0.79	0.39	0.36	0.44	0.27

Key Results

- Vacancy Rates went up more in tracts with designation than in tracts without
- Racial diversity decreased in tracts where designation was present
- The presence of designated properties is a positive and significant predictor of changes in real income

Changes in Vacancy Rate

The first two columns indicate that the presence and extent of designation are positively correlated with changes in vacancy rates throughout the 1990's. Vacancy rates went up more in tracts with designation than in tracts without.

The other variables in columns one and two display the expected signs. Population changes are negatively related to changes in vacancy rates. Also, 1990 vacancy rates are highly negatively correlated with changes in vacancy rates, indicating convergence toward a mean. Finally, tracts with older homes tend to show greater increases in vacancy rates, ceteris paribus. This supports the existence of the normal filtering process where residents prefer newer housing to old, all other things equal. The goodness of fit measures here are staggering, 82 percent and 79 percent, respectively. This is primarily due to the path dependence of vacancy rates and the control for population, probably. It is interesting to note, though, that designation appears to affect changes in vacancy rates even after controlling for initial vacancy rates, population, and home age.

Changes in Diversity Index

The presence of designation, but not the extent, was significant in explaining changes in diversity index, as well. The sign here is negative, indicating diversity decreased in tracts where designation was present. This is consistent with residents using designation to forestall or reverse neighborhood change.

The other significant variables in the diversity index specification had the expected signs, indicating that the data are generally reliable. 1990 vacancy rates were positively related to changes in diversity, so areas with high vacancy rates tended to

experience increased diversity throughout the 1990's. The diversity index specifications also exhibited convergence, as the 1990 diversity index was significant and negatively related to changes in diversity index. That is, tracts with the least diversity experienced the largest percentage changes in diversity. Finally, 1989 median real income was significant and negatively related to changes in diversity. In higher income tracts, diversity decreased, all other things equal.

Changes in Real Income

A prized goal of many urban planners is to raise the real income of urban areas. It has been suggested that historic preservation can be used to further urban revitalization. (Clarion Associates, 2002) In Denver, the most striking of the Group B regressions compared the presence and extent of designation to changes in real median income. The presence of pre-1990 designation in a neighborhood was a significant predictor of changes in real income. In fact, the t-stats were higher for these variables than for any of the designation variables used as part of a Group B regression. The presence of designation appears to be a forerunner of changing incomes in Denver, as income changes were positively correlated with the presence of designation. The extent of designation had a relatively muted effect.

The other significant variables had the expected signs, indicating that the data were generally reliable. As one would expect, higher vacancy rates were correlated with declining real incomes. Other things equal, home size was positively correlated with median real income. Regressing the presence of designation and neighborhood characteristics on real median income yielded an impressive goodness of fit measure of 44 percent.

When the Group A regressions examined the effect of neighborhood makeup on the presence and extent of designation, Denver and Fort Worth produced similar results. In both cases, designation occurred more in areas with relatively lower incomes, lower ownership rates, and higher vacancy rates. The Group B regressions examined whether designation contributes to gentrification. That is, does the presence or extent of designation lead to upward shifting in the social status of neighborhood residents? The Denver results were unprecedented this time. While no correlation was found in Fort Worth, the presence of designated properties in a Denver tract was correlated with shifting vacancy rates, neighborhood diversity, and real median incomes. Why are the results so different in Denver than Fort Worth? The remainder of this paper seeks an answer to that question.

Some differences could be explained by differences in data. There are clues that hint that the Denver data is more reliable. As mentioned above, historic properties are more evenly distributed across tracts in Denver. Also, the Fort Worth results included some suspicious results that were not commented on by the authors, such as: (1) in the Group B regressions, vacancy rates and population growth rates were positively related and had significant t-stats at $\alpha = 0.20$ where one would expect a significant negative relationship, all other things equal; (2) in Group B regressions, median incomes were significant and positively related to the diversity index where one would expect rising incomes to be associated with less diversity, assuming that all people prefer homogeneity (which was central to the racial tipping theory); and (3) in Group B regressions, average living area was insignificant and negatively related to changes in median income,

suggesting that high income residents did not tend to move into neighborhoods with larger houses in Fort Worth.

The most important improvement this paper offers is methodological. First, Coulson and Leichenko ran the different causal mechanisms separately (Table 4 and Table 6). If it is true that economic indicators use designation in blighted areas as a development tool (neighborhood demographics affect designation choices), and it is also true that designation deters some potential neighbors (designation affects neighborhood demographics), then these competing effects should be modeled simultaneously in one system of equations. This is done in chapter 6. Second, the tipping models suggest that designation is used in low income areas to spur neighborhood change and in high income areas to prevent it. Thus, there should be a fundamental difference in many of the signs of the model's coefficients in low income versus high income neighborhoods. This is also examined in chapter 6. Third, differences between the Fort Worth and Denver data could be because Fort Worth is much bigger. I examine the effect of city size and housing stock on the relationship between designation and neighborhood change in chapter 7. Finally, there could be important differences in attitudes about preservation between Texas and Colorado, in the intensity of city planners' use of designation as a development tool, or in the marginal benefits and costs of designation in Fort Worth versus Denver due to the differences in local and state preservation ordinances mentioned in chapters 1 and 2.

CHAPTER 6: THE CASE OF DENVER

6.1 Is there a Designation-Transition Feedback Loop?

Previous studies used one set of models to test whether historic designation provokes neighborhood change. Other models were used to test whether neighborhood characteristics are responsible for where designation occurs. (Coulson and Leichenko, 2002) Using data from Denver, these models were reproduced in the Group A and Group B regressions in Chapter 5. It is plausible, however, that both effects are happening simultaneously, as in Figure 8.

Figure 8 - Simultaneous Model

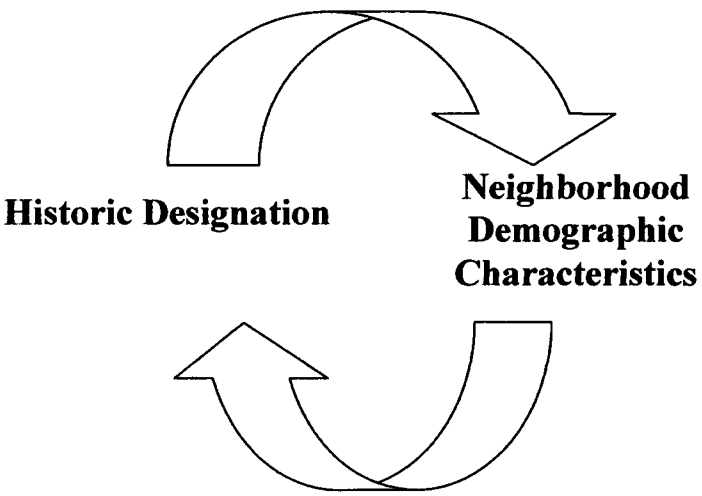

Figure 3 depicts a hypothesized feedback interaction between neighborhood demographics and historic designation. Imagine that city planners are picking out blighted neighborhoods in need of an economic spark and designating historic properties there to provoke development. According to the simultaneous model, this draws higher

income residents into a neighborhood because they value the cachet of owning a historic property. Further designation might occur 'organically'in these now older, wealthier, racially homogeneous neighborhoods where organized, politically active residents pursue designation to prevent filtering of the housing stock. So designation begets rising incomes, which lead to more designation, and so on. This feedback effect of neighborhood characteristics on designation efforts means that designation and demographic change are endogenous to one another. Previous studies have ignored this feedback loop. (See Coulson and Leichenko, 2002, and Clarion Associates, 2002) If simultaneity is present in this system, regressing single equation models will lead to inconsistent estimates and could make significant variable appear insignificant.

The model developed below is designed to test whether there is simultaneous correlation between neighborhood demographic change and the extent to which the neighborhood contains historically designated properties. The basic model consists of two simultaneous equations:

(5) $\Delta DESPERHOME=\alpha_{11}+\beta_1\Delta INCOME+\beta_2\Delta DIVERSE+B_3\Delta FAM+B_4\Delta OWNER+B_5\Delta GREEN+\beta_6\Delta SILVER+\beta_7\Delta BACH+\beta_8 BEGVALUE+\beta_9 BEGVACANT+\beta_{10} HOME AGE+\beta_{11} HOMESIZE+u_1$; and

(6) $\Delta INCOME=\alpha_{10}+\alpha_1\Delta DESPERHOME+\alpha_2\Delta BACH+\alpha_3\Delta PROF+u_2$

ΔDESPERHOME and ΔINCOME are shown as jointly determined endogenous variables. The remaining variables are assumed to be exogenously determined. u_1 and u_2 are stochastic disturbance terms.

ΔDESPERHOME is the change in the ratio of designated properties to the total number of residential homes in a census tract. Equation (5) speculates that this ratio

changes with changing demographic structure of a census tract. ΔINCOME is the change in median real income in the tract. It has been suggested that higher income groups value designation more than lower income groups, so β_1 should be greater than zero. That is, as incomes rise in a neighborhood, residents would be expected to pursue more historical designation.

The choice of these variables was informed by the results of Chapter 5. Logic, as well as Table 5, suggests that the time in which residents respond to new designation (if they do at all) is quite short. That is, the variable capturing designation should be changing more or less concurrently with the neighborhood characteristics. Also, one designated property in a small tract would have a larger percentage neighborhood effect than one in a large tract. Therefore, the change in designated properties per home was chosen as an endogenous variable. This variable captures only properties newly designated during the 1990's.

The other endogenous variable is the change in real median income. Median income is an important indicator of the economic health of a neighborhood, and arguably is the most important neighborhood characteristic in terms of its neighborhood effects. That is, residents may be more or less responsive to the race, house size, or professions of their neighbors, but it is reasonable to assume that everyone prefers neighbors with higher incomes. These residents may mentally link higher incomes with status, less crime, et cetera. Also, Tables 4 and 6 suggested that real median income is a significant factor in explaining the relationship between neighborhood change and designation, regardless of which one causes the other. Finally, both endogenous variables are distributed

continuously, rather than in a binary or count fashion, and so can be estimated using ordinary least squares.

Using ordinary least squares to estimate the change in designated properties per home presents a potential problem. The change in designated properties per home is a fraction between zero and one, so long as no tract experienced a net loss in designated homes during the 1990's. As it turns out, several of the tracts used in the study did lose some designated properties during the decade, so negative estimators are acceptable. These were probably properties on the state or national register, which impose no use restrictions on affected properties.

Still, ordinary least squares should normally be avoided when there are such limits on what the dependent variable can be since ordinary least squares provides no limits on the estimators it produces. In other words, it could produce estimates of change in designated properties per home outside the zero to one range (in absolute value terms), which is impossible because of the way the dependent variable is defined. In this case, however, the dependent variable is always a very small number. In this case, the limited dependent variable is a problem in theory only, as the estimators are all much smaller than one and there was no real chance that the regression would produce an estimator outside the range of what is possible. Appendix 3 shows examples of the ordinary least squares estimators of change in designations per home for illustration.

ΔDIVERSE is an index measure that represents racial diversity in a tract. A higher index means that the tract is more diverse. Coulson and Leichenko uncovered no evidence that the racial makeup of neighborhoods affected where designation occurred, but diversity is an important consideration in the gentrification debate. If urban renewal

advocates or neighborhood activists use designation to discriminate against diverse neighbors, then we might expect to see homogeneous neighborhoods pursuing designation relatively more. β_2, then, is expected to be negative or inconsequential.

As a side note, if one particular race group is more attracted to designation than others, it is possible for this coefficient to be corrupted. For example, if only whites value designation, then the diversity index in an increasingly homogeneous white neighborhood would be negatively correlated with designation. That is, the diversity index goes down while designation efforts increase, which has a negative effect on β_2. Meanwhile, if blacks see designation as a disamenity, the diversity index in an increasingly homogeneous black neighborhood would be positively correlated with designation. That is, the diversity index goes down while designation efforts go down, which exerts a positive effect on β_2. β_2 might appear insignificant due to these competing effects. This corruption of β_2 is unlikely, however, because: (1) there is no empirical reason to think that one race values designation more than the others do; and (2) in Colorado, there are primarily only three race groups (white, black and Hispanic) and the likelihood that one group will exactly offset another so as to make β_2 appear insignificant seems remote. That is, β_2 should pick up *something* if race is a factor in designation efforts.

The other variables are designed to illuminate the proposition that more well-organized neighborhoods should be more likely to use designation to prevent or stall filtering. ΔFAM is the change in proportion of family versus non-family households. ΔOWNER is the change in the ratio of owner- vs. renter-occupied housing. ΔGREEN is the change in the percentage of residents between the ages 25-34 and ΔSILVER is the

change in percentage of residents over 65. ΔBACH reflects changing education levels in a tract, measured as the change in per cent of residents with at least a bachelor's degree. Families, homeowners, residents in the aforementioned age groups, and the highly educated are speculated to be more organized than other population groups, so B_3, B_4, B_5, B_6, and B_7 are expected to all be positive.

The remaining variables in equation (5) are control variables that are likely to be correlated with concentrations of designated housing. Literature and common sense suggest that larger, more expensive, and older homes are more likely to be designated historic than smaller, less expensive, and newer homes. In fact, except in extraordinary circumstances, homes must be at least fifty years old in order to be considered for the National Register. It follows that tracts containing designated homes are likely to have larger and older homes, on average, than tracts containing no designated properties. Therefore, BEGVALUE (median home value), HOMEAGE (median home age), and HOMESIZE (median home size) should all affect the extent of designation in a census tract and β_8, β_{10}, and β_{11} should all be positive.

The inclusion of home value is another innovation of this model. Prior research accepted that designation had a positive effect on home values. A main goal of this paper is to illuminate whether designation is driving up home prices or following rising home prices. The timing of these variables, 1990 home values compared to changing designation during the 1990's, should shed some light on this issue. If designation provokes higher home values, 1990 home values should not be strongly correlated with designation in the following decade. If, on the other hand, 1990 home values are correlated with designation during the 1990's, then at least some designation was

occurring in neighborhoods where home values were already high. This would support the theory that resident activists and/or planners used designation to stall or prevent filtering, or it could merely indicate that more expensive homes are more likely to be historically significant.

Finally, since designation is expensive and requires upkeep, it is more likely to occur in occupied neighborhoods. Higher vacancy rates, represented by BEGVACANT should be negatively correlated with concentrations of designation, and β_9 should be negative.

Equation (6) describes the speculated feedback of designation on income in a neighborhood. Not only do higher income groups pursue more designation, but increased designation supposedly draws higher income residents. As the amount of designation increases, median income should also increase, and α_1 should be positive. Rising incomes also should be brought about by increasing levels of education (ΔBACH) and higher concentrations of residents in professional occupations (ΔPROF), so α_2 and α_3 should both be positive.

Next, redefine some variables to make the algebra more tractable:

$Y_1=\Delta$DESPERHOME

$Y_2=\Delta$INCOME

$X_2=\Delta$DIVERSE

$X_3=\Delta$FAM

$X_4=\Delta$OWNER

$X_5=\Delta$GREEN

$X_6=\Delta$SILVER

X_7=ΔBACH

X_8=BEGVALUE

X_9=BEGVACANT

X_{10}=HOMEAGE

X_{11}=HOMESIZE

X_{12}=ΔPROF

t = number of observations

β's = coefficients on endogenous variables

α's = constants and coefficients on exogenous variables

Econometric specification of model

(7) $Y_{1t}=\alpha_{11}+\beta_{12}Y_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(8) $Y_{2t}=\alpha_{10}+\beta_{21}Y_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

Identification

Identification of equations in a simultaneous equation model must be verified before the model can be estimated. Under-identified models can not be estimated at all. Exactly- or over-identified models can be estimated. The order condition states that the relationship between (K-k) and (m-1) determines a necessary condition for identification, where K, k, and m are defined as follows:

K = number of exogenous variables in the model

k = number of exogenous variables in a given equation

m = number of endogenous variables in a given equation.

There are 11 exogenous variables in the entire model. Equation (7) includes 10 exogenous variables and 1 endogenous variable. Therefore, K-k=m-1, 1=1, and the equation is exactly identified.

Equation (8) has only 2 exogenous variables and 1 endogenous variable. K-k>m-1, 9>1, and the equation is over-identified. Since one of the equations is over-identified and the other is exactly identified, the system is said to be over-identified.

Based on this, the order condition is satisfied and the necessary, but not sufficient, conditions for obtaining estimators exist. That is, the equation is not under-identified, so it can be estimated. Technically, the rank condition should also be checked because it represents a sufficient condition. In systems with more than a few variables, this can be extremely cumbersome and rarely contradicts the order condition. Following Gujarati (1995), it is omitted here.

Reduced Form Equations

The next step is to purge each equation of the effect of the right hand side endogenous variable and find reduced form versions of each equation. The reduced form equations will describe each endogenous variable as a function of exogenous variables and model parameters only.

Substitute equation (8) into equation (7) and reduce:

(9) $$Y_{1t}=\alpha_{11}+\beta_{12}(\alpha_{10}+\beta_{21}Y_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2)+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$$

(10) $$Y_{1t}=\alpha_{11}+\beta_{12}\alpha_{10}+\beta_{12}\ \beta_{21}Y_{1t}+\beta_{12}\alpha_{27}X_{7t}+\beta_{12}\alpha_{212}X_{12t}+\beta_{12}u_2+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$$

(11) $Y_{1t}- \beta_{12}\ \beta_{21}Y_{1t} =\alpha_{11}+\beta_{12}\alpha_{10}+\beta_{12}\alpha_{27}X_{7t}+\beta_{12}\alpha_{212}X_{12t}+\beta_{12}u_2+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+$

$\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(12) $Y_{1t}(1- \beta_{12}\ \beta_{21})=\alpha_{11}+\beta_{12}\alpha_{10}+\beta_{12}\alpha_{27}X_{7t}+\beta_{12}\alpha_{212}X_{12t}+\beta_{12}u_2+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+$

$\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(13) $Y_{1t}=\alpha_{11}/(1- \beta_{12}\ \beta_{21})+\beta_{12}\alpha_{10}/(1- \beta_{12}\ \beta_{21})+\beta_{12}\alpha_{27}X_{7t}/(1- \beta_{12}\ \beta_{21})+$

$\beta_{12}\alpha_{212}X_{12t}/(1- \beta_{12}\ \beta_{21})+\beta_{12}u_2/(1- \beta_{12}\ \beta_{21})+\alpha_{12}X_{2t}/(1- \beta_{12}\ \beta_{21})+\alpha_{13}X_{3t}/(1- \beta_{12}\ \beta_{21})+$

$\alpha_{14}X_{4t}/(1- \beta_{12}\ \beta_{21})+\alpha_{15}X_{5t}(1- \beta_{12}\ \beta_{21}) +\alpha_{16}X_{6t}/(1- \beta_{12}\ \beta_{21})+\alpha_{17}X_{7t}/(1- \beta_{12}\ \beta_{21})+$

$\alpha_{18}X_{8t}/(1- \beta_{12}\ \beta_{21})+\alpha_{19}X_{9t}\ /(1- \beta_{12}\ \beta_{21})+\alpha_{110}X_{10t}/(1- \beta_{12}\ \beta_{21})+\alpha_{11}X_{11t}/(1- \beta_{12}\ \beta_{21})$

$+u_1/(1- \beta_{12}\ \beta_{21})$

(14) $Y_{1t}=(\alpha_{11}+\beta_{12}\alpha_{10})/(1- \beta_{12}\ \beta_{21})+[\alpha_{12t}/(1- \beta_{12}\ \beta_{21})]\ X_{2t}+[\alpha_{13}/(1- \beta_{12}\ \beta_{21})]\ X_{3t}+$

$[\alpha_{14}/(1- \beta_{12}\ \beta_{21})]\ X_{4t}+[\alpha_{15}/(1- \beta_{12}\ \beta_{21})]\ X_{5t}+[\alpha_{16}/(1- \beta_{12}\ \beta_{21})]\ X_{6t}+$

$[(\beta_{12}\alpha_{27}+ \alpha_{17})/(1- \beta_{12}\ \beta_{21})]\ X_{7t}+[\alpha_{18}/(1- \beta_{12}\ \beta_{21})]\ X_{8t}+[\alpha_{19}\ /(1- \beta_{12}\ \beta_{21})]\ X_{9t}+$

$[\alpha_{110}/(1- \beta_{12}\ \beta_{21})]\ X_{10t}+[\alpha_{11}/(1- \beta_{12}\ \beta_{21})]\ X_{11t}+[\beta_{12}\alpha_{212}/(1- \beta_{12}\ \beta_{21})]\ X_{12t}+$

$(u_1+ \beta_{12}u_2)/(1- \beta_{12}\ \beta_{21})$

(15) $Y_{1t}= W_0+W_2X_{2t}+W_3X_{3t}+W_4X_{4t}+W_5X_{5t}+W_6X_{6t}+W_7X_{7t}+W_8X_{8t}+W_9X_{9t}+W_{10}X_{10t}+$

$W_{11}X_{11t}+W_{12}X_{12t}+w_1$

where

$W_0= (\alpha_{11}+ \beta_{12}\alpha_{10})/(1- \beta_{12}\ \beta_{21})$

$W_2= \alpha_{12t}/(1- \beta_{12}\ \beta_{21})$

$W_3= \alpha_{13}/(1- \beta_{12}\ \beta_{21})$

$W_4= \alpha_{14}/(1- \beta_{12}\ \beta_{21})$

$W_5= \alpha_{15}/(1- \beta_{12}\ \beta_{21})$

$W_6= \alpha_{16}/(1- \beta_{12}\ \beta_{21})$

$W_7 = (\beta_{12}\alpha_{27} + \alpha_{17})/(1 - \beta_{12}\beta_{21})$

$W_8 = \alpha_{18}/(1 - \beta_{12}\beta_{21})$

$W_9 = \alpha_{19}/(1 - \beta_{12}\beta_{21})$

$W_{10} = \alpha_{110}/(1 - \beta_{12}\beta_{21})$

$W_{11} = \alpha_{11}/(1 - \beta_{12}\beta_{21})$

$W_{12} = \beta_{12}\alpha_{212}/(1 - \beta_{12}\beta_{21})$

$w_t = (u_1 + \beta_{12}u_2)/(1 - \beta_{12}\beta_{21})$.

Equation (15) is a reduced form equation for Y_{1t}. It shows the change in designation per home as a function of all the exogenous variables in the system, but not as a function of changing incomes (the other endogenous variable). Unlike equation (7), equation (15) can be estimated using OLS and it will produce unbiased estimates.

Now, a reduced form version for estimating equation (8) is derived. To do this I substituted equation (7) into equation (8) and reduced as follows:

(16) $Y_{2t}=\alpha_{10}+\beta_{21}(\alpha_{11}+\beta_{12}Y_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1)+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

(17) $Y_{2t}=\alpha_{10}+\beta_{21}\alpha_{11}+\beta_{21}\beta_{12}Y_{2t}+\beta_{21}\alpha_{12}X_{2t}+\beta_{21}\alpha_{13}X_{3t}+\beta_{21}\alpha_{14}X_{4t}+\beta_{21}\alpha_{15}X_{5t}+\beta_{21}\alpha_{16}X_{6t}+\beta_{21}\alpha_{17}X_{7t}+\beta_{21}\alpha_{18}X_{8t}+\beta_{21}\alpha_{19}X_{9t}+\beta_{21}\alpha_{110}X_{10t}+\beta_{21}\alpha_{11}X_{11t}+\beta_{21}u_1+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

(18) $Y_{2t}-\beta_{21}\beta_{12}Y_{2t}=\alpha_{10}+\beta_{21}\alpha_{11}+\beta_{21}\alpha_{12}X_{2t}+\beta_{21}\alpha_{13}X_{3t}+\beta_{21}\alpha_{14}X_{4t}+\beta_{21}\alpha_{15}X_{5t}+\beta_{21}\alpha_{16}X_{6t}+\beta_{21}\alpha_{17}X_{7t}+\beta_{21}\alpha_{18}X_{8t}+\beta_{21}\alpha_{19}X_{9t}+\beta_{21}\alpha_{110}X_{10t}+\beta_{21}\alpha_{11}X_{11t}+\beta_{21}u_1+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

(19) $Y_{2t}(1-\beta_{21}\beta_{12})=\alpha_{10}+\beta_{21}\alpha_{11}+\beta_{21}\alpha_{12}X_{2t}+\beta_{21}\alpha_{13}X_{3t}+\beta_{21}\alpha_{14}X_{4t}+\beta_{21}\alpha_{15}X_{5t}+\beta_{21}\alpha_{16}X_{6t}+\beta_{21}\alpha_{17}X_{7t}+\beta_{21}\alpha_{18}X_{8t}+\beta_{21}\alpha_{19}X_{9t}+\beta_{21}\alpha_{110}X_{10t}+\beta_{21}\alpha_{11}X_{11t}+\beta_{21}u_1+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

(20) $Y_{2t}=\alpha_{10}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{11}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{12}X_{2t}/(1-\beta_{21}\beta_{12})+\beta_{21}\ \alpha_{13}X_{3t}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{14}X_{4t}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{15}X_{5t}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{16}X_{6t}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{17}X_{7t}/(1-\beta_{21}\beta_{12})+$

$\beta_{21}\alpha_{18}X_{8t}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{19}X_{9t}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{110}X_{10t}/(1-\beta_{21}\beta_{12})+\beta_{21}\alpha_{11}X_{11t}/(1-\beta_{21}\beta_{12})+$

$\beta_{21}u_1/(1-\beta_{21}\beta_{12})+\alpha_{27}X_{7t}/(1-\beta_{21}\beta_{12})+\alpha_{212}X_{12t}/(1-\beta_{21}\beta_{12})+u_2/(1-\beta_{21}\beta_{12})$

(21) $Y_{2t}=(\alpha_{10}+\ \beta_{21}\alpha_{11})/(1-\beta_{21}\beta_{12})+[\beta_{21}\alpha_{12}/(1-\beta_{21}\beta_{12})]X_{2t}+[\beta_{21}\ \alpha_{13}/(1-\beta_{21}\beta_{12})]X_{3t}+$

$[\beta_{21}\alpha_{14}/(1-\beta_{21}\beta_{12})]X_{4t}+[\beta_{21}\alpha_{15}/(1-\beta_{21}\beta_{12})]X_{5t}+[\beta_{21}\alpha_{16}/(1-\beta_{21}\beta_{12})]X_{6t}+[\beta_{21}\alpha_{17}+\alpha_{27}/(1-$

$\beta_{21}\beta_{12})]X_{7t}+[\beta_{21}\alpha_{18}/(1-\beta_{21}\beta_{12})]X_{8t}+[\beta_{21}\alpha_{19}/(1-\beta_{21}\beta_{12})]X_{9t}+[\beta_{21}\alpha_{110}/(1-\beta_{21}\beta_{12})]X_{10t}+$

$[\beta_{21}\alpha_{11}/(1-\beta_{21}\beta_{12})]X_{11t}+[\alpha_{212}/(1-\beta_{21}\beta_{12})]X_{12t}+(\beta_{21}u_1+u_2)/(1-\beta_{21}\beta_{12})$

(22) $Y_{2t}=W_{20}+W_{22}X_{2t}+W_{23}X_{3t}+W_{24}X_{4t}+W_{25}X_{5t}+W_{26}X_{6t}+W_{27}X_{7t}+W_{28}X_{8t}+W_{29}X_{9t}+$

$W_{210}X_{10t}+W_{211}X_{11t}+W_{212}X_{12t}+w_2$

where

$W_{20} = (\alpha_{10}+ \beta_{21}\alpha_{11})/(1-\beta_{21}\beta_{12})$

$W_{22} = \beta_{21}\alpha_{12}/(1-\beta_{21}\beta_{12})$

$W_{23} = \beta_{21}\ \alpha_{13}/(1-\beta_{21}\beta_{12})$

$W_{24} = \beta_{21}\alpha_{14}/(1-\beta_{21}\beta_{12})$

$W_{25} = \beta_{21}\alpha_{15}/(1-\beta_{21}\beta_{12})$

$W_{26} = \beta_{21}\alpha_{16}/(1-\beta_{21}\beta_{12})$

$W_{27} = \beta_{21}\alpha_{17}+\alpha_{27}/(1-\beta_{21}\beta_{12})$

$W_{28} = \beta_{21}\alpha_{18}/(1-\beta_{21}\beta_{12})$

$W_{29} = \beta_{21}\alpha_{19}/(1-\beta_{21}\beta_{12})$

$W_{210} = \beta_{21}\alpha_{110}/(1-\beta_{21}\beta_{12})$

$W_{211} = \beta_{21}\alpha_{11}/(1-\beta_{21}\beta_{12})$

$W_{212} = \alpha_{212}/(1-\beta_{21}\beta_{12})$

$w_2 = (\beta_{21}u_1+u_2)/(1-\beta_{21}\beta_{12})$.

Equation (22) is a reduced form equation for Y_{2t}. It shows the change in real median income as a function of all the exogenous variables in the system, but not as a function of changing designation per home (the other endogenous variable). Unlike equation (8), equation (22) can be estimated using OLS without producing biased estimators.

Hausman Test for Simultaneity

Before proceeding, the system needs to be tested for simultaneity. If the endogenous relationship between designation and income is imposed on the system and it does not really exist, the model will produce consistent but inefficient estimators. If simultaneity exists, then ignoring it and using OLS on each equation will produce biased and inconsistent estimators. Stated otherwise, it is better to use a SEM and not need it than to need one and not use it. The Hausman Specification test is a test of whether an endogenous regressor is correlated with the error term in the same equation. The test begins with the structural equations of the model and reduced forms from the last section.

Structural Equations:

(7) $Y_{1t}=\alpha_{11}+\beta_{12}Y_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(8) $Y_{2t}=\alpha_{10}+\beta_{21}Y_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

Reduced form equations:

(15) $Y_{1t}=W_0+W_2X_{2t}+W_3X_{3t}+W_4X_{4t}+W_5X_{5t}+W_6X_{6t}+W_7X_{7t}+W_8X_{8t}+W_9X_{9t}+W_{10}X_{10t}+W_{11}X_{11t}+W_{12}X_{12t}+w_1$

(22) $Y_{2t}=W_{20}+W_{22}X_{2t}+W_{23}X_{3t}+W_{24}X_{4t}+W_{25}X_{5t}+W_{26}X_{6t}+W_{27}X_{7t}+W_{28}X_{8t}+W_{29}X_{9t}+W_{210}X_{10t}+W_{211}X_{11t}+W_{212}X_{12t}+w_2$

Assume Y's are endogenous and X's are exogenous. If there is no feedback loop between Y_1 and Y_2 (that is, if the concentration of designated properties is mutually independent of median income in a tract), then Y_1 will be uncorrelated with u_2 in equation (8). This is because OLS requires the assumption that right hand side variables in any structural equation be uncorrelated with the error term. If simultaneity is present, Y_1 will be correlated with u_2 in equation (8) and OLS may not be used. The Hausman test determines whether this correlation exists.

The Hausman test begins with reduced form equations (15) and (22). First, these reduced form equations are estimated using OLS. Information on the error terms, w_1 and w_2 is then collected. Estimating equation (15) using OLS yields:

(23) $\hat{Y}_{1t}=\hat{W}_0+\hat{W}_2X_{2t}+\hat{W}_3X_{3t}+\hat{W}_4X_{4t}+\hat{W}_5X_{5t}+\hat{W}_6X_{6t}+\hat{W}_7X_{7t}+$

$\hat{W}_8X_{8t}+\hat{W}_9X_{9t}+\hat{W}_{10}X_{10t}+\hat{W}_{11}X_{11t}+\hat{W}_{12}X_{12}$

where $\hat{Y}_{1t}$ are estimated $CHANGEDESPERHOME_t$ and $\hat{W}$'s are estimated coefficients on the explanatory variables. Since the actual Y_{1t} will differ from equation (23) by the estimated residual, then

(24) $Y_{1t}=\hat{Y}_{1t}+\hat{w}_{1t}$

where $\hat{w}_{1t}$ are estimated residuals. These estimated residuals include the effect of changes in real median income on designation, as real median income was left out of the reduced form equation. Next, equation (24) is substituted back into equation (8), leaving

(25) $Y_{2t}=\alpha_{10}+\beta_{21}\hat{Y}_{1t}+\beta_{21}\hat{w}_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2.$

The null hypothesis for the Hausman test is that there is no simultaneity. If there is no feedback, there will be no correlation between $\hat{w}_{1t}$ and u_2. Otherwise stated, if

equation (25) is regressed and the coefficient on $\hat{w}_{1t}$ is not statistically different from zero, there is no simultaneity.

Equation (25) was estimated using OLS. The coefficient on $\hat{w}_{1t}$ was 33827.73 with a t-statistic of 0.888992. The feedback loop, represented by $\hat{w}_1$, is probably not significant to explaining changes in median real income based on casual observation of the low t-statistic.

If a Wald coefficient test reveals a significant, non-zero coefficient on $\hat{w}_{1t}$, then $\hat{w}_{1t}$ (and Y_{1t}) might be correlated with u_2 and it can not be concluded that there is no simultaneity problem. In this case, the Wald test generated an F-test statistic of 0.790306, with (1, 128) degrees of freedom. The critical F value for α=0.05 is 3.92. The test statistic is firmly within the 'do not reject' boundary. The null, that the coefficient for $\hat{w}_1$ is zero, is accepted. There is almost certainly no simultaneity problem between the structural equations.

This does not mean the model must be abandoned as an analytical tool. It could be that there is a specification error in one or more of the variables, or it could be that Denver is a unique case. The simultaneous equation format has been retained for the remainder of the paper to see if any of the subsequent tests offer any clues regarding the puzzling absence of the feedback loop. At any rate, using the simultaneous model in the absence of an actual feedback loop will only result in reduced efficiency for the model. The estimators will still be unbiased and consistent. Failure to used the simultaneous model when it was appropriate would be much worse, resulting in inconsistent and biased estimators.

6.2 Estimation of the Model

There are several methods by which to estimate systems of equations. In this model, equation (7) is exactly identified, and equation (8) is over-identified. In such cases, two stage least squares is run to produce instrumental variables. These instrumental variables are proxies for the endogenous variables, but with any feedback effects taken out. (Gujarati, 1995) Recall the structural equations:

(7) $Y_{1t}=\alpha_{11}+\beta_{12}Y_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(8) $Y_{2t}=\alpha_{10}+\beta_{21}Y_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

In order to estimate either equation, proxies are needed for Y_{2t} in equation (7) and for Y_{1t} in equation (8). OLS estimates will be inconsistent if endogeneity is not addressed. Finding proxies, or instrumental variables, for the endogenous variables will correct this inconsistency if the proxies are uncorrelated with the error terms u_1 and u_2, respectively. The fundamental idea of using 2SLS is to get a proxy for each endogenous variable that is clear of influence from the stochastic error term in the same equation. This is accomplished by using reduced form equations, regressing each endogenous variable on all the exogenous variables in the system, then using the resulting estimates of endogenous variables to estimate the 'proxied' structural equations. Details of this process are outlined below for each part of the SEM. Begin with equation (7):

Step 1: Using OLS, regress Y_{1t} on all exogenous variables in the system. That is, estimate equation (15). $\hat{w}_1$ are the OLS residuals.

(15) $Y_{1t}=W_0+W_2X_{2t}+W_3X_{3t}+W_4X_{4t}+W_5X_{5t}+W_6X_{6t}+W_7X_{7t}+W_8X_{8t}+W_9X_{9t}+W_{10}X_{10t}+W_{11}X_{11t}+W_{12}X_{12t}+\hat{w}_1$

This yields

(26) $\hat{Y}_{1t}= \hat{W}_0+ \hat{W}_2X_{2t}+\hat{W}_3X_{3t}+\hat{W}_4X_{4t} +\hat{W}_5X_{5t}+\hat{W}_6X_{6t}+\hat{W}_7X_{7t}+\hat{W}_8X_{8t}+\hat{W}_9X_{9t}+ \hat{W}_{10}X_{10t}+\hat{W}_{11}X_{11t}+\hat{W}_{12}X_{12t}.$

$\hat{Y}_{1t}$ is an estimate of the mean of Y_{1t}, given the exogenous right hand side variables. By substitution,

(27) $Y_{1t}=\hat{Y}_{1t}+\hat{w}_1.$

The stochastic random variable Y_{1t} is expressed as two separate components. The first part is made up of non-stochastic X variables, represented by $\hat{Y}_{1t}$. The second is the random variable $\hat{w}_1$. By assumption, $\hat{Y}_{1t}$ and $\hat{w}_1$ are uncorrelated. Substituting (27) back into (8) yields

(28) $Y_{2t}=\alpha_{10}+\beta_{21}\hat{Y}_{1t}+\beta_{21}\hat{w}_1+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2.$

Step 2: Estimate the related structural equation.

(29) $Y_{2t}=\alpha_{10}+\beta_{21}\hat{Y}_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2^*$

where

(30) $u_2^*=u_2+\beta_{21}\hat{w}_1.$

Equation (29) is very similar to the original structural equation (8), except that Y_{1t} has been replaced by the proxy variable $\hat{Y}_{1t}$. This new estimator has the advantage of being uncorrelated with the error term in the equation. Equation (29), then, can be estimated using OLS without producing inconsistent or biased estimators. The results of this regression are displayed in Table 7.

Table 7 - Estimation of Equation (29)
Dependent Variable = CHANGEREALINCOME

Variable	Coefficient (t-stat)
C	2576.961 (3.717298)
YONEHAT (Effect of Changes in Designation per Home)	388087.5 (3.892356)
CHANGEBACH	240.8672 (4.090234)
CHANGEPROF	87.03847 (1.450558)
Adjusted R^2	0.294705

The next step is to repeat the last process for the other structural equation, equation (8).

(8) $Y_{2t}=\alpha_{10}+\beta_{21}Y_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

Step 1: Using OLS, regress Y_{2t} on all exogenous variables in the system. That is, estimate equation (22). $\hat{w}_2$ are the OLS residuals.

(22) $Y_{2t}=W_{20}+W_{22}X_{2t}+W_{23}X_{3t}+W_{24}X_{4t}+W_{25}X_{5t}+W_{26}X_{6t}+W_{27}X_{7t}+W_{28}X_{8t}+W_{29}X_{9t}+$
$W_{210}X_{10t}+W_{211}X_{11t}+W_{212}X_{12t}+\hat{w}_2$.

Then define

(31) $\hat{Y}_{2t}=\hat{W}_{20}+\hat{W}_{22}X_{2t}+\hat{W}_{23}X_{3t}+\hat{W}_{24}X_{4t}+\hat{W}_{25}X_{5t}+\hat{W}_{26}X_{6t}+\hat{W}_{27}X_{7t}+\hat{W}_{28}X_{8t}+\hat{W}_{29}X_{9t}+$
$\hat{W}_{210}X_{10t}+\hat{W}_{211}X_{11t}+\hat{W}_{212}X_{12t}$

and

(32) $Y_{2t}=\hat{Y}_{2t}+\hat{w}_2$.

Substituting (32) into (7) yields

(33) $Y_{1t}=\alpha_{11}+\beta_{12}\hat{Y}_{2t}+\beta_{12}\hat{w}_2+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+$
$\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$.

Step 2: Estimate structural equation.

(34) $Y_{1t}=\alpha_1+\beta_{12}\hat{Y}_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1^*$

where

(35) $u_1^*=\beta_{12}\hat{w}_2+u_1$.

Equation (34) is very similar to the original structural equation (7), except that Y_{2t} has been replaced by the proxy variable $\hat{Y}_{2t}$. This new estimator has the advantage of being uncorrelated with the error term in the same equation. Equation (34) can be estimated using OLS without producing inconsistent or biased estimators. The results of this regression are presented in Table 8.

Table 8 - Estimation of Equation (34)
Dependent Variable = CHANGEDESPERHOME

Variable	**Coefficient (t-stat)**
C	0.007864 (0.773958)
YTWOHAT (Effect of Changes in Median Real Income)	6.33E-07 (1.005114)
CHANGEDIVERS	1.20E-06 (0.034425)
CHANGEFAM	-6.00E-05 (-0.445487)
CHANGEOWNER	-2.09E-05 (-0.115538)
CHANGEGREEN	8.76E-06 (0.018162)
CHANGESILVER	0.000123 (0.356352)
CHANGEBACH	-0.000146 (0.653700)
BEGVALUE	1.17E-07 (2.603584)
BEGVACANT	6.86E-05 (0.257187)

Variable	Coefficient (t-stat)
HOMEAGE	-0.000189 (-1.959024)
HOMESIZE	-0.001179 (-0.609939)
Adjusted R^2	0.065678

Key Results of SEM

- Designation leads to rising incomes in Denver neighborhoods
- Changes in demographic characteristics did not explain where designation took place
- There was no feedback loop between designation and neighborhood change

Analysis of SEM

The results of running regressions on the system of equations were largely consistent with the results of running the causal mechanisms separately in chapter 5. Given the negative result of the Hausman test for simultaneity, this is not surprising. What is a little surprising is just how well these results match up with the chapter 5 results, even though the dependent variables were altered and the timing of measurement of some of the explanatory variables were changed.

Table 7 highlights the effect that designation has on changes in median real income within a tract. These results correspond with the far right columns of Table 6 (the non-SEM specification for Group B regressions), only with a different measure of designation and different control variables. The outcome was similar. Designation clearly had an effect on the incomes of residents in a tract, and increasing designation was correlated with increasing incomes. In fact, designation affected median incomes

even after accounting for differences in residents' education and occupation. Assuming the number of houses equals 1000 in the median tract, a new designated property provoked a $388 rise in median income. These results fully support the notion that designation had a role in drawing higher income residents into Denver neighborhoods. The other variables had the expected signs, and a one percent increase in residents with bachelor's degrees led to a reasonable $241 rise in median income.

The size of the coefficient for each independent variable indicates the size of the effect that the independent variable is having on the dependent variable. That, the coefficient tells how much the dependent variable is expected to increase if the coefficient is positive (or decrease if the coefficient is negative) when that exogenous variable increases by one, holding all other exogenous variables constant. CHANGEDESPERHOME is made up of really small numbers between zero and one. For example, in Denver tract nineteen, there are a little over 1000 houses. During the 1990's, two additional properties were added to historic registers. So, CHANGEDESPERHOME is around 0.0022. This number is pretty typical. Having a small fraction leads to some odd looking regression results when this number is used as an explanatory variable. The coefficient on this number in Table 7 tells how much real incomes go up when CHANGEDESPERHOME is increased by one. Across datasets, this number is very large (nearly 400,000) in Table 7. This is due to the fractional specification of CHANGEDESPERHOME. The key thing to remember is that the coefficient represents the change in incomes when one is added to the exogenous variable, not the numerator. So, in Table 7, it is not that incomes go up by $400,000 when one more house gets designated. Rather, it says that median income went up by

that much if 1000/1000 is added to the exogenous variable. This would be impossible in real life, of course.

Tract nineteen provides a good example of how to think about the coefficient, since there are about 1000 homes there. If the coefficient on CHANGEDESPERHOME were thought about in the context of that tract, it would indicate that median incomes rise by $388 each time one more home is designated (instead of $388,000 for every 1000 homes designated). Looking at the regression in the opposite direction confirms this understanding. Table 8 shows the effect of a one dollar increase in median incomes on CHANGEDESPERHOME, which produces a small (and insignificant) coefficient. This coefficient is very small across models, which is to be expected. Applying the same scaling as above to this coefficient, it indicates that a $1000 increase in incomes produces a small, but reasonable 0.0006[6] increase in the number of designated homes. Otherwise stated, only a very large increase in median income would attract new designation assuming the coefficient was significant. It was not, of course, but I think this helps frame the difference in scale between CHANGEDESPERHOME and CHANGEREALINCOME. This example is illustrative only. The magnitude of the coefficient is less meaningful when applied to a specific tract like this, as the denominator (number of houses) is different for each tract and the coefficient is an agglomeration of all of the tracts.[7]

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[6] The number is certainly larger if only the tracts where there was a change in designated properties were counted. This 'censoring problem' is discussed elsewhere as a limitation of CHANGEDESPERHOME as an endogenous variable in an OLS model due to the large number of zeroes in it.

[7] While 1000 is close to the median, the number of houses in Denver tracts ranges from around 600 to nearly 4000.

Table 8 considers whether the changing characteristics of homes and residents affect where designation takes place, similar to the second column of Table 5 (the non-SEM specification for Group A regressions). The dependent variable is different and there are more explanatory variables in the new specification. The new specification performed poorly, relative to the earlier model. This is partly because the dependent variable is now a change in ratio of designated properties to total properties. If most of the designation happened in larger tracts, any effect on the dependent variable would be muted. In the earlier model, increasing numbers of designated properties coincided with increasing populations, so it is likely that designation did, in fact, happen more in tracts where there were more total properties.

In that case, the changing concentration of designated homes may be too subtle to use reliably as a dependent variable. That is, if new homes were being built in areas where designation was occurring at the same time, the concentration ratio designations/total homes would not reflect the increased designation effort because the numerator and denominator of the ratio were both moving.

The addition of more explanatory variables could also weaken the correspondence of changes in designation to changes in ownership rates or vacancy rates. It would not, however, account for the plummeting goodness of fit measure. In this specification, the only significant variables were home value and home age. Home values were positively correlated with changing concentrations of designated homes. This is a striking result because it conflicts with conventional wisdom that designation drives up home values.

In sum, the Denver data revealed some correlation between designation and neighborhood change. The effect of designation on residents' choices to live in a

neighborhood was consistent across specifications. The speculated feedback loop, which suggested neighborhood change provoked designation decisions, was absent from the simultaneous model. The failure of the SEM to detect a feedback loop could be due to the potential failure in the endogenous variable DESPERHOME discussed above rather than a genuine absence of feedback. It also might be the result of the different relationship designation has with neighborhood change in rich versus poor areas. This possibility is investigated next in section 6.3.

6.3 Designation in Low Income versus High Income Neighborhoods

Previous sections of this paper reveal that, in Denver, designation plays a role in the shifting make up of neighborhood residents. There were mixed results as to whether neighborhood characteristics play a role in where designation develops. Coulson and Leichenko found no significant effect in either direction in Fort Worth, although a casual inspection of neighborhood variables indicated that early designation efforts were concentrated in less cosmopolitan neighborhoods. Inspection of Denver data revealed the same (see Tables 1 and 2). Regressions on the Denver data were inconclusive in this regard. Some (Tables 4 and 5) indicated that economic indicators drive designation, while others (Table 8) show no correlation between income increases and new designation.

One theory that would account for these results is that the relationship between designation and neighborhood transition is fundamentally different in low income neighborhoods than in high income neighborhoods. As noted above, the analysis in this paper suggests that residents should respond in a different way to designation in high income neighborhoods than in low income neighborhoods. In high income

neighborhoods, designation may be viewed as a tool to support the status quo and delay or prevent 'normal' home filtering. Since a low income household in a high income neighborhood could produce externalities that affect an entire neighborhood, high income residents may try to prevent the initial filtering by means of costly historic designation. In low income areas, designation might be used by city planners to encourage neighborhood renewal and 'reverse filtering'. If these theories are true, the relationship between designation and demographic change should be exaggerated in low income areas, and muted in high income areas.

These theories assume that designation causes marginal bid rents for a property to be inflated because of restrictions on property use that raise the cost of ownership. Since willingness to pay is limited by ability to pay, high income groups may outbid low income groups for designated housing. Also, some high income residents may value the designation itself more than low income residents do because of some subjective reason, like cachet among peers.

If this assumption is true, designation should be more strongly correlated with neighborhood transition in low income areas. In high income areas, designation should stymie the normal filtering process, resulting in more limited transition. Designation should lead improving, or at least not declining, economic indicators in all areas, assuming that no groups attach negative utility to it. If planners successfully use designation to provoke development, designation should affect median incomes relatively sharply in low income areas and very slightly in high income areas. This would account for the result that designation was significant in explaining changes in median real incomes in almost every specification tested so far.

It also offers an explanation for why median incomes (and other characteristics) sometimes seemed to affect changes in designation, and sometimes did not. Suppose planners deliberately seek low income areas to designate properties. At the same time, high income residents are the only ones likely to pursue designation on their own. These two competing explanations for where designation takes place lead to ambiguous and often contradictory results from the data. Separating high and low income tracts allows the model to parcel out these effects and identify if they are present in each area. If they are, it would explain the lack of consistent results in this paper, and between this paper and the Coulson and Leichenko paper. It also will illuminate why prior research found no link between designation and gentrification, why there was no significant feedback loop (when we know planners locate designation based on neighborhood characteristics), and will help answer important gentrication-related questions like:

- Do low income tracts with designation incur more neighborhood change than low income tracts without designation, as revitalization-minded city planners hope?
- Do high income tracts with designation incur less neighborhood change than high income tracts without designation, as incumbent residents who use designation to prevent filtering hope?

The remaining parts of this chapter focus on low and high income areas separately to see if they act like two 'cities within a city', rather than parts of a whole.

Section 6.3.1: Has designation been used effectively to spur growth in low income areas? This section looks at the effect of designation on median incomes in low income areas versus high income areas. The SEM is tested here using dummy variables

to separate the effect of designation on income transition in low versus high income areas.

Specifically, if high income tracts are segmented into those that do and do not contain designation, the high income tracts with designation should exhibit less demographic change than the high income tracts without designation. Conversely, if low income tracts are segmented in the same way, low income tracts with designation should exhibit more demographic change than low income tracts without designation.

Section 6.3.2: Is the relationship between the *extent* of designation and neighborhood change different in low income areas versus high income areas? This section tests whether the entire simultaneous equation model is different in low income areas versus high income areas. The idea is that the process of transition may be very different in low income areas than high income areas. If this is correct, the low income model will be structurally different than the high income model and the interaction between designation and neighborhood change will be exaggerated in the low income data and muted in the high income data.

Section 6.3.3: Is the relationship between the *presence* of designation and neighborhood change different in low income areas versus high income areas? This section examines the effect of demographic characteristics on the presence of designation in low income areas versus high income areas. This should reveal whether, in Denver, the location of a designation property in a neighborhood where there was previously no designation has been more driven by efforts to renew blighted areas or by efforts to maintain the status quo.

6.3.1 Has designation been used effectively to spur growth in low income areas?

This section tests whether there is evidence of differing roles for designation based on where it is located. This is done by testing whether designation is correlated differently with increases in income when it is located in poorer areas. Going back to the original structural model, the effect of designation on neighborhood income change is described in equation (8). If the data for ΔDESPERHOME (Y_{1t}) is separated between hi and low income groups for the purposes of estimating equation (8), the relative coefficients should disclose whether Denver exhibits income related tipping.

First, consider the original structural equations.

(7) $Y_{1t}=\alpha_{11}+\beta_{12}Y_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(8) $Y_{2t}=\alpha_{10}+\beta_{21}Y_{1t}+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

Next, define RICH and POOR as dummy variables. RICH has a value of 1 for high income tracts and 0 for low income tracts. POOR has a value of 1 for low income tracts and 0 for high income tracts. Then, define

DESPERHOMEHI = ΔDESPERHOME*RICH; and

DESPERHOMELOW = ΔDESPERHOME*POOR.

The new model specification is:

(7) $Y_{1t}=\alpha_{11}+\beta_{12}Y_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(36) $Y_{2t}=\beta_{21HI}DESPERHOMEHI_t+\beta_{21LO}DESPERHOMELOW_t+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

Equation (36) is the unrestricted version of this equation. The restricted specification imposes the restriction that the coefficient for DESPERHOMEHAT is the

same in both low and high income groups, and is the same as equation (8). If income-based tipping occurs in Denver, the coefficient β_{21LO} should be higher and more significant than β_{21HI}. The null hypothesis is that the unrestricted model is the same as the restricted model and that the restriction does not add anything to the explanatory power of the model:

H_0: $\beta_{21HI} = \beta_{21LO}$

The alternative hypothesis is:

H_a: $\beta_{21HI} \neq \beta_{21LO}$

Estimating this model is a bit different than the original SEM because Y_{1t} here is made up of $DESPERHOMEHI_t$ and $DESPERHOMELOW_t$. The model is estimated like the original SEM initially. That is, first estimate the reduced form equation (26). This gives fitted estimates of Y_{1t} which have been purged of the influence of other endogenous variables. These values are then segmented based on income to provide estimates of $DESPERHOMEHI_t$ and $DESPERHOMELOW_t$ which are free of the influence of other endogenous variables. These estimates will be called DESPERHOMEHIHAT and DESPERHOMELOWHAT, and will be used in equation (37) below. The RSS from this equation will be collected and used for the coefficient test below.

(37) $Y_{2t}=\beta_{21HI}DESPERHOMEHIHAT_t + \beta_{21LO}DESPERHOMELOWHAT_t + \alpha_{27}X_{7t} + \alpha_{212}X_{12t} + u_2$

The results of running a regression on the unrestricted model are displayed in Table 9.

Table 9 - The Effect of Designation on Changes in Median Real Income – Low versus High Income Tracts
(Dependent Variable = CHANGEREALINCOME)

Variable	Coefficient (t-stat)
DESPERHOMEHIHAT	613837.7 (4.965506)
DESPERHOMELOWHAT	395021.5 (3.122793)
CHANGEBACH	289.8695 (5.039759)
CHANGEPROF	172.1432 (2.968146)
Adjusted R-squared	0.239469
Sum squared resid	4.72E+09

Table 9 hints at the outcome of the upcoming test. The coefficients on the designation per home variables are both positive and significant. Moreover, they are different from one another. Under the assumptions discussed in chapter 5, we can think of this as if an extra designated home added $614 to median income in high income neighborhoods, but only $395 in low income neighborhoods. This fits the explanation that designation positively affects median income in both income groups because designation should be relatively more attractive to high income residents in either setting. The higher coefficient in the high income group suggests that median incomes are more responsive to designation in high income areas. This is the opposite of what was expected. This result indicates that designation is better at provoking rising incomes in neighborhoods where incomes are already high. This makes sense if the marginal cachet of owning a designated home keeps rising as incomes go up. That is, maybe really rich people value designation more than slightly rich people do. Also, this result suggests that there is some sort of threshold effect. High income residents will pay a premium for a

designated home, but there may be a limit on how bad a neighborhood they will move to in order to get one.

Moving on to the actual test: the restricted model includes the restriction, and is written as:

(7) $Y_{1t}=\alpha_{11}+\beta_{12}Y_{2t}+\alpha_{12}X_{2t}+\alpha_{13}X_{3t}+\alpha_{14}X_{4t}+\alpha_{15}X_{5t}+\alpha_{16}X_{6t}+\alpha_{17}X_{7t}+\alpha_{18}X_{8t}+\alpha_{19}X_{9t}+$

$\alpha_{110}X_{10t}+\alpha_{11}X_{11t}+u_1$

(38) $Y_{2t}=\beta_{21}\Delta DESPERHOME+\alpha_{27}X_{7t}+\alpha_{212}X_{12t}+u_2$

This is, of course, the same as the original SEM model. The relevant results of regressing the restricted model (equation (29)) are displayed above in Table 7. The RSS of the restricted model is 5.11E+09.

If both restricted and unrestricted models are estimated and RSS collected from (37) and (38), then the test statistic

$[(RSS_{RESTRICTED} - RSS_{UNRESTRICTED})/m]/ [RSS_{UNRESTRICTED}/(T-K)]$

follows the F distribution, where m = number of restrictions and (T – K) = degrees of freedom. If the test statistic exceeds the critical F value for the chosen alpha, the null hypothesis is rejected and income-based designation responses of the kind predicted by tipping theory are possible for Denver during the 1990's.

[(5.11E+09 - 4.72E+09)/1]/ [4.72E+09/ (129)] = 10.658898

At α=0.05, the critical F value is around 3.92. The test statistic is clearly beyond this, so the null hypothesis is rejected. Regarding changes in median incomes, there is very little possibility that the designation coefficient is the same across income groups. It appears that incomes in richer neighborhoods were more sensitive to increasing concentrations of designated properties. This result runs counter to the notion that designation preserves the status quo in high income neighborhoods, but supports that

designation can affect normal income-based filtering. In fact, designation seems to encourage upward tipping, especially in high income neighborhoods!

6.3.2 Is the relationship between the *extent* of designation and neighborhood change different in low and high income neighborhoods?

The last section indicates that designation may affect median incomes differently in high versus low income areas. To test the robustness of this result, all of the Denver data are segregated on the basis of income to see: (1) if the relationship between designation and neighborhood transition is statistically different across income groups; and (2) whether the result from the last section holds up even if all the exogenous variables are segmented.

First, Denver data is divided into low and high income halves. Further segmentation, say bottom quintile versus top quintile, would be interesting, but this model requires all observations to be left in to preserve degrees of freedom. Separate models are specified for each income group.

(39) $Y_{1thi}=\alpha_{11hi}+\beta_{12}Y_{2thi}+\alpha_{12hi}X_{2thi}+\alpha_{13hi}X_{3thi}+\alpha_{14hi}X_{4thi}+\alpha_{15hi}X_{5thi}+\alpha_{16hi}X_{6thi}+\alpha_{17hi}X_{7thi}+\alpha_{18hi}X_{8thi}+\alpha_{19hi}X_{9thi}+\alpha_{110hi}X_{10thi}+\alpha_{11hi}X_{11thi}+u_{1hi}$

(40) $Y_{2thi}=\alpha_{10hi}+\beta_{21hi}Y_{1thi}+\alpha_{27hi}X_{7thi}+\alpha_{212hi}X_{12thi}+u_{2hi}$

(41) $Y_{1tlo}=\alpha_{11lo}+\beta_{12lo}Y_{2tlo}+\alpha_{12lo}X_{2tlo}+\alpha_{13lo}X_{3tlo}+\alpha_{14lo}X_{4tlo}+\alpha_{15lo}X_{5tlo}+\alpha_{16lo}X_{6tlo}+\alpha_{17lo}X_{7tlo}+\alpha_{18lo}X_{8tlo}+\alpha_{19lo}X_{9tlo}+\alpha_{110lo}X_{10tlo}+\alpha_{11lo}X_{11tlo}+u_{1lo}$

(42) $Y_{2tlo}=\alpha_{10lo}+\beta_{21lo}Y_{1tlo}+\alpha_{27lo}X_{7tlo}+\alpha_{212lo}X_{12tlo}+u_{2lo}$

Equations (39) and (40) represent high income areas only, with the 'hi' subscript denoting high income tracts. Equations (41) and (42) represent low income areas only,

with the 'lo' subscript denoting low income tracts. The null hypothesis is that the coefficients and slopes are the same in the two systems of equations.

H_0: equations (39) and (41) are the same; equations (40) and (42) are the same.

H_a: equations (39) and (41) are not the same; equations (40) and (42) are not the same.

Second, the datasets are combined, which leaves the original structural equations (7) and (8) from above.

(7) $$Y_{1td}=\alpha_{11d}+\beta_{12}Y_{2td}+\alpha_{12d}X_{2td}+\alpha_{13d}X_{3td}+\alpha_{14d}X_{4td}+\alpha_{15d}X_{5td}+\alpha_{16d}X_{6td}+\alpha_{17d}X_{7td}+\alpha_{18d}X_{8td}+\alpha_{19d}X_{9td}+\alpha_{110d}X_{10td}+\alpha_{11d}X_{11td}+u_{1d}$$

(8) $$Y_{2td}=\alpha_{10d}+\beta_{21d}Y_{1td}+\alpha_{27d}X_{7td}+\alpha_{212d}X_{12td}+u_{2d}$$

Next, assume that the errors are normal and independently distributed, so that

a. $u_{1hi} \sim N(0,\sigma^2)$

b. $u_{2hi} \sim N(0,\sigma^2)$

c. $u_{1lo} \sim N(0,\sigma^2)$

d. $u_{2lo} \sim N(0,\sigma^2)$

e. u_{1hi}, u_{2hi}, u_{1lo}, and u_{2lo} are independently distributed.

The Chow test is used to check for structural stability among data sets. This test involves a four step process. Step one is to estimate the model with all observations, equations (7) and (8). These are the same as the original estimation of the simultaneous equation model and the results are reported in Tables 7 and 8. The sum of squared residuals for equation (7) is 0.023612, and for equation (8) is 5.11E+09.

Next, define these RSS measures S_A6 and S_B6, respectively. The 'A' subscript denotes that this is the RSS from the Group A direction equation (7), where the endogenous variable reflected the extent of historic designation. The 'B' subscript

denotes that the RSS applies to the Group B direction equation (8). Degrees of freedom are $(n_1 + n_2 - k)$, where n_1 is the number of high income observations, n_2 is the number of low income observations, and k is the number of parameters estimated.

The second step of the Chow test is to estimate the low and high income models separately and collect the RSS from each of the four equations. Let S_A7 and S_B7 represent RSS for the high income model and S_A8 and S_B8 represent RSS for the low income model. Degrees of freedom are $(n_1 - k)$ for the high income equations and $(n_2 - k)$ for the low income equations.

Estimating the high income model:

Reduced forms were derived from equations (39) and (40). First, Y_{1thi} was regressed on all exogenous variables and $\hat{Y}_{1thi}$ was collected. This estimator was plugged back into equation (40), which was run using OLS. The results of this regression are displayed in the High Income Tracts column of Table 10.

Next, Y_{2thi} was regressed on all exogenous variables and $\hat{Y}_{2thi}$ was collected. This estimator was plugged back into equation (39), which was run using OLS. The results of this estimation are displayed in the High Income Tracts column of Table 11.

Estimating the low income model:

Y_{1tlo} was regressed on all exogenous variables and $\hat{Y}_{1tlo}$ was collected. This estimator was plugged into equation (42), which was then estimated using OLS. The results of this regression are displayed in the Low Income Tracts column of Table 10.

Finally, Y_{2tlo} was regressed on all exogenous variables and $\hat{Y}_{2tlo}$ was collected. This estimator was plugged back into equation (41), which was then run using OLS. The results of this estimation are displayed in the Low Income Tracts column of Table 11.

Step three of the Chow test is to combine the RSS for equations (39) and (41). First, define:

$S_A9 = S_A7 + S_A8$

$0.019576 = 0.007377 + 0.012199$

Then, combine RSS for equations (40) and (42) and define:

$S_B9 = S_B7 + S_B8$

$(4.24E+09) = (2.31E+09) + (1.93E+09)$

S_A9 and S_B9 have degrees of freedom $(n_1 + n_2 - k)$.

Next, define and compute:

$S_A10 = S_A6 - S_A9 = 0.023612 - 0.019576 = 0.004036$

and

$S_B10 = S_B6 - S_B9 = (5.11E+09) - (4.24E+09) = (8.70E+08)$

The final step of the Chow test is to generate F test statistics from the RSS collected as follows:

$F_A = (S_A10/k)/ [S_A9/ (n_1 + n_2 - 2k)] = (0.004036/16)/[(0.019576)/(132 - 32)] = 1.2886$

and

$F_B = (S_B10/k)/ [S_B9/ (n_1 + n_2 - 2k)] = ((8.70E+08)/16)/[(4.24E+09)/(132 - 32)] = 1.2824.$

n_1 and n_2 represent the number of observations in each dataset and k is the number of parameters estimated. There were 65 observations in the high income group and 67 observations in the low income group. Because of the Chow test assumptions, these F statistics follow the F distribution with degrees of freedom = $(k, n_1 + n_2 - 2k)$. If the computed F statistic exceeds the critical F statistic for a pair of equations (such as (39) and (41)) and for a chosen alpha, the null hypothesis that the equations are the same

should be rejected. If the null is rejected, the relationships between designation and demographic change are indeed different in high income areas versus low income areas of Denver.

Table 10 - Estimation of Equations (40) and (42)
(Dependent Variable = CHANGEREALINCOME)

	High Income Tracts Coefficient (t-stat)	**Low Income Tracts Coefficient (t-stat)**
C	-425.6386 (-0.370105)	2824.964 (3.309564)
YONEHAT (Effect of Changes in Designated Properties per Home)	350284.4 (3.792068)	238025.7 (1.997530)
CHANGEBACH	632.4683 (3.848206)	41.08165 (0.641249)
CHANGEPROF	31.17837 (0.184177)	356.2571 (5.629085)
Adjusted R-squared	0.480304	0.438711
RSS	2.31E+09	1.93E+09

Key Results from Tables 10 and 11

- Designation drives up median incomes in high income neighborhoods more than in low income neighborhoods
- Income changes affected the placement of designation more in high income areas than in low income areas
- College degrees drive up incomes better in high income neighborhoods than in low income neighborhoods

Table 11 - Estimation of Equations (39) and (41)
(Dependent Variable = CHANGEDESPERHOME)

	High Income Tracts Coefficient (t-stat)	**Low Income Tracts Coefficient (t-stat)**
C	-0.008658 (-0.527826)	0.037540 (1.945461)
YTWOHAT (Effect of Changes in Median Real Income)	2.58E-06 (2.217105)	9.61E-07 (0.795127)
CHANGEDIVERS	1.71E-05 (0.347333)	9.40E-06 (0.148939)
CHANGEFAM	-0.000332 (-1.582143)	3.36E-05 (0.106232)
CHANGEOWNER	-0.000646 (-1.421437)	-0.000280 (-0.791101)
CHANGEGREEN	0.000617 (1.066148)	0.000248 (0.230780)
CHANGESILVER	0.000814 (1.195699)	0.000449 (0.568036)
CHANGEBACH	-0.001335 (-2.304242)	8.40E-08 (0.263035)
BEGVALUE	1.35E-07 (1.608710)	-1.17E-08 (-0.088414)
BEGVACANT	0.000331 (0.564673)	-0.000221 (-0.616370)
HOMEAGE	0.000129 (0.675770)	-0.000316 (-1.861970)
HOMESIZE	-0.001455 (-0.612871)	-0.004219 (-1.231154)
Adjusted R-squared	0.302596	0.167084
RSS	0.007377	0.012199

Analysis

The critical F value for α=0.05 is around 1.78. For equations (39) and (41), the F statistic of 1.29 is firmly within the accept range, so the null is accepted. Across income groups, there is no statistical difference in the impact of these neighborhood variables on

changes in designation. That is, these variables affect designation in the same way in high income tracts as they do in low income tracts. Though real incomes affected designation more in high income areas, the difference was not statistically significant.

For the equations (40) and (42) represented in Table 10, the F statistic of 1.28 is firmly within the accept range, so the null is accepted. Across income groups, there is no statistical difference in the impact of designation on the evolution of a neighborhood's residents. Though Tables 10 and 11 reveal that designation was significant and positively correlated with changes in real income in high income neighborhoods only, the difference was not statistically significant.

This test supports three conclusions. First, city planners in Denver did not effectively use designation in low income areas as part of revitalization efforts. If they had, increases in designation would have been more strongly correlated with rising incomes in low income areas. Second, designation affects the evolution of neighborhood median incomes, especially in high income neighborhoods. These results clearly contrast the hypothesized role of designation in neighborhood tipping. As it turns out, designation appears more effective at drawing higher income residents to already high income neighborhoods than drawing high or middle income residents to low income areas. Third, rising incomes lead to increased designation in high income areas only. These are weak results, however, as the low and high income areas did not have statistically different datasets at α=0.05.

Figure 9 - Designation in High Income Areas

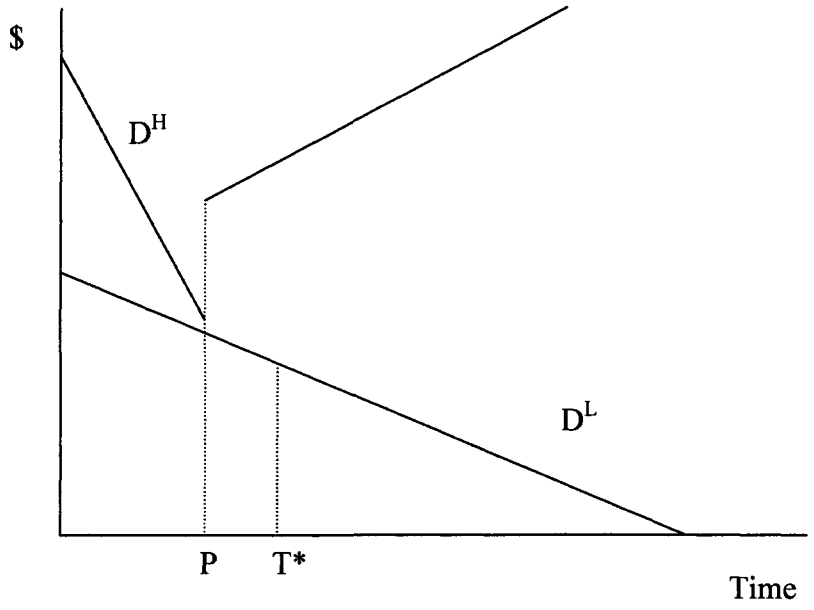

Figure 9 shows what happened in high income neighborhoods graphically. Here, designation occurs at time P before T*. Rather than filtering to a lower income group, this home is instantly more valuable to the high income set.

Figure 10 - Designation in Low Income Areas

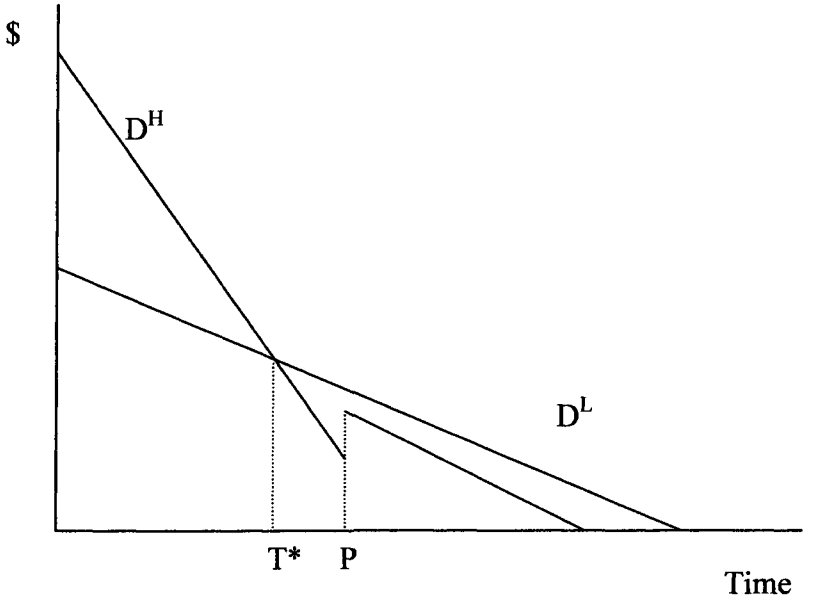

Figure 10 shows what happened in the low income neighborhoods. Here, designation occurred at time P, after the low income groups already moved in. The data indicate that, although high income residents may still attach some value to the designation, the designation did not cause the high income group's WTP to jump above that of the low income group and result in reverse tipping.

The results also suggest that perhaps the relationship between designation and median incomes is not linear. Rather, residents appear to value designation progressively more as they get richer. This may reflect a Veblen-esque tendency to emulate the next higher income group, or it may just be that, as their incomes grow, residents have progressively more disposable income to spend on status expenses like historic designation. The emulative story is bolstered by the result in Table 11 showing that rising incomes lead to increased designation in high income areas only.

6.3.3 Is the relationship between the *presence* of designation and neighborhood change different in low and high income neighborhoods?

The last section demonstrated that groups of designated properties provoke rising incomes better in high income neighborhoods, but many Census tracts only have one designated property. The question remains, will the presence of only one designated property in a tract affect incomes more in high income neighborhoods? The last section indicated that upward tipping is more likely in high income neighborhoods. So, an initial designation might be more effective at speeding transition in a low income neighborhood where economic conditions are already improving than it would be at provoking transition in a destitute area.

This test begins by considering all income groups in Denver. The dependent variable will be the binomial regressand, DESIGNATION. DESIGNATION is 1 if designation is present in the tract and 0 if no historic properties exist in the tract as of the year 2000. The simultaneous model featured a second equation which suggested that a larger extent of designation tends to attract higher income residents. Since the binomial model is not concerned with the extent of designation but only with the presence of designation, the feedback loop regarding median income is irrelevant. This model is designed to tease out whether rising incomes are correlated with designation more in low income tracts than in high income tracts. The basic binomial model consists of the following single equation specification:

(43) $DESIGNATION = \alpha_{11}+\beta_1\Delta INCOME+\beta_2\Delta DIVERSE+B_3\Delta FAM+B_4\Delta OWNER$
$+B_5\Delta GREEN+\beta_6\Delta SILVER+\beta_7\Delta BACH+\beta_8\Delta VALUE+\beta_9\Delta VACANT+\beta_{10}\Delta HOMEAGE$
$+\beta_{11}\Delta HOMESIZE+u_1$

Since DESIGNATION is a binary variable, its value will only equal zero or one, thus will not be normally distributed. Define P_i = the probability that designation occurs in a tract. $(1-P_i)$ is the probability that a tract has no designation. $0 \leq P_i \leq 1$. OLS should not be used to estimate equations with binary regressands because the error terms will also not be normal. When misapplied to models with binary dependent variables, OLS also introduces heteroskedasticity, predicts P_i's outside the zero to one range, and produces questionable R^2 values (R^2 applies specifically to linear models). A logit model is used here to estimate the relationship in equation (43). The logit model transforms the discrete (0,1) distribution of P_i into a continuous distribution based on the logistic function. In other words, the logit model transforms the 0 to 1 step into a likelihood that

the dependent variable will be 0 or 1, given the values of the right hand side variables for a specific observation. After transformation, the model is made linear.

(44) $\ln [Pi/ (1 - Pi)] = \alpha_{11}+\beta_1\Delta INCOME+\beta_2\Delta DIVERSE+B_3\Delta FAM+B_4\Delta OWNER +B_5\Delta GREEN+\beta_6\Delta SILVER+\beta_7\Delta BACH+\beta_8 VALUE+\beta_9 VACANT+\beta_{10} HOMEAGE +\beta_{11} HOMESIZE+u_1$

Next, variables are defined that represent the low and high income data separately. Let DVLOW indicate a dummy variable for low income groups and DVHI indicate a dummy variable for high income groups. DVLOW consists of a 1 for all tracts in the lower half of the income distribution and a 0 for all tracts in the upper half of the income distribution. DVHI consists of a 1 for all tracts in the upper half of the income distribution and a 0 for all tracts in the lower half of the income distribution. Once again, it might be instructive to compare the top income quintile to the bottom income quintile, but only the top and bottom halves were considered for this paper in order to retain all the observations and preserve degrees of freedom. Then define:

INCOMELOW = DVLOW*ΔINCOME

DIVERSELOW = DVLOW*ΔDIVERSE

FAMLOW = DVLOW*ΔFAM

OWNERLOW = DVLOW*ΔOWNER

GREENLOW = DVLOW*ΔGREEN

SILVERLOW = DVLOW*ΔSILVER

BACHLOW = DVLOW*ΔBACH

INCOMEHI = DVHI*ΔINCOME

DIVERSEHI = DVHI*ΔDIVERSE

FAMHI = DVHI*ΔFAM

OWNERHI = DVHI*ΔOWNER

GREENHI = DVHI*ΔGREEN

SILVERHI = DVHI*ΔSILVER

BACHHI = DVHI*ΔBACH

The housing control variables have not been separated among income levels; only variables reflecting differences in residents (income, race, or organization) are of particular interest between the income groups. The model in equation (45) specifies an unrestricted model of the restricted equation (44) with variables of interest segregated among income groups.

(45) $\ln [P_i/(1-P_i)] = H_1$INCOMELOW$+H_2$INCOMEHI$+H_3$DIVERSELOW$+$

H_4DIVERSEHI$+H_5$FAMLOW$+H_6$FAMHI$+H_7$OWNERLOW$+H_8$OWNERHI$+$

H_9GREENLOW$+H_{10}$GREENHI$+H_{11}$SILVERLOW$+H_{12}$SILVERHI$+$

H_{13}BACHLOW$+H_{14}$BACHHI$+H_{15}$VALUE$+H_{16}$VACANT$+H_{17}\Delta$HOMEAGE$+$

$H_{18}\Delta$HOMESIZE$+u_3$

The results of running a logit regression on equation (45) are shown in Table 12.

Table 12 - Neighborhood Characteristics and Presence of Designation
Low Income versus High Income Neighborhoods
(Dependent Variable = DESIGNATION)

Variable	**Coefficient (z-stat)**
INCOMELOW	0.000573 (2.791452)
INCOMEHI	-2.64E-05 (-0.312970)
DIVERSLOW	-0.002644 (-0.150759)
DIVERSHI	-0.028399 (-2.340598)

Variable	Coefficient (z-stat)
FAMLOW	-0.092550 (-1.606817)
FAMHI	0.004995 (0.106143)
OWNERLOW	0.095668 (1.167174)
OWNERHI	0.215186 (2.492221)
GREENLOW	0.106417 (0.772304)
GREENHI	0.058916 (0.387554)
SILVERLO	0.166487 (0.552995)
SILVERHI	-0.295842 (-1.771172)
BACHLO	-0.091970 (-1.007734)
BACHHI	0.079708 (1.019369)
ENDVALUE	2.34E-05 (2.736191)
ENDVACANT	0.574359 (2.508430)
HOMEAGE	-0.050594 (-1.948276)
HOMESIZE	-0.898044 (-2.456475)
LLR	-35.15489

Key Results

- Income changes explained the presence of designation in low income tracts only
- Decreasing racial diversity was correlated with the presence of designation, particularly in high income neighborhoods
- Ownership rates are positively related to designation, but only in high income neighborhoods

Analysis

Changes in income were not a significant factor in explaining the presence of designation in high income neighborhoods. In low income neighborhoods, income changes were significant and positive. That is, the presence of designation in low income neighborhoods is correlated with rising incomes. This model shows only correlation and indicates nothing about which variable causes movement in the other. It is noteworthy, however, that the correlation between the presence of designation and median income is stronger in low income neighborhoods. Combined with the last section, this indicates that incomes may be more responsive to the presence of designation in low income areas and are more responsive to extensive designation in high income areas. The combined effect is that if incomes are going to respond to a designated property in a low income neighborhood, they will respond to the first one or not at all.

Are the differences between incomes groups significant or are they just noise in the data? LLR statistics were collected from regressing equations (44) and (45) in order to generate a test statistic which is distributed Chi-square with seven degrees of freedom. The LLR from equation (44) is -22.31. Degrees of freedom equal seven, the number of restrictions in the restricted model. The restrictions implied in (44) are:

INCOMELOW = INCOMEHI,

DIVERSELOW = DIVERSEHI,

FAMLOW = FAMHI,

OWNERLOW = OWNERHI,

GREENLOW = GREENHI,

SILVERLOW = SILVERHI, and

BACHLOW = BACHHI.

The null hypothesis is that the restrictions are true. The LLR's are used to compute the following test statistic:

Test statistic = $-2 * (LLR_{restricted} - LLR_{unrestricted}) = -2*(-22.31 - (-35.35)) = 9.47$.

This test statistic follows a Chi-square distribution. If it exceeds the critical value for a chosen alpha, the null is rejected and the coefficients are different between income groups. The critical value for $\alpha=0.05$ (that, 95 percent of the distribution is in the accept region) is 14.07. So, the null is not rejected and it is likely that all of the coefficients are the same across income groups. However, the null hypothesis fails at $\alpha=0.25$.

It seems odd that all of the coefficients seem so different across income groups, but that they would not be statistically different. Again, the null hypothesis is that the given coefficient is the same in high income and low income neighborhoods. The results are presented in Table 13.

Table 13 - Wald Tests for Variable Equivalency across Income Groups

Restriction (Coefficients on:)	**Wald Test Chi Square Value**
C(1) = C(2) **INCOMELOW=INCOMEHI**	7.045668
C(3) = C(4) **DIVERSELOW = DIVERSEHI**	1.427527
C(5) = C(6) **FAMLOW = FAMHI**	1.980019
C(7) = C(8) **OWNERLOW = OWNERHI**	1.111936
C(9) = C(10) **GREENLOW = GREENHI**	0.051811
C(11) = C(12) **SILVERLOW = SILVERHI**	1.802760
C(13) = C(14) **BACHLOW = BACHHI**	1.842164

The critical chi-square value for the test in Table 13, for α=0.05 is 3.84. The null is accepted for each test except the first one. In other words, most neighborhood variables affect the presence of designation in Denver the same in high income tracts as in low income tracts. Change in median income was the lone exception. The coefficient on income is significantly different between the two income groups. This is important because it implies that the income based differences discussed in Table 12 may be *statistically important.*

One final point about Denver is worth noting. Coulson and Leichenko found that no neighborhood variables affect the presence of designation in Fort Worth. To find out if this is true in Denver, the restriction that all coefficients are 0 was imposed on equation (45). The hypotheses for this test are:

H_0: $H_1 = H_2 = \ldots = H_{18} = 0$

H_a: $H_1 \neq H_2 \neq \ldots \neq H_{18} \neq 0$

A Wald test using the restriction that all coefficients equal zero yielded a Chi-square statistic of 31.47 with 18 degrees of freedom. The critical Chi-square value for α=0.05 is 9.39. The null is clearly rejected and it is very unlikely that changes in neighborhood characteristics have no effect on the presence of designation. Going back to Table 12, changes in income were positively correlated with the presence of designation in low income groups only. This means that designation was more likely to occur in low income areas with rising incomes than in stagnant areas. Because the data was collected in ten year increments, it is inconclusive whether designation was placed in rising income areas or whether incomes rose in response to the designation.

CHAPTER 7: THE CASE OF FORT COLLINS

7.1 Comparing Fort Collins and Denver

One writer suggested that past studies have failed to find a correlation between designation and neighborhood change because the city under consideration was large and had a fairly elastic supply of historic housing. (Troy, 2002) The implication is that a smaller city with fewer suburbs would display a stronger relationship between designation and demographic change. If this is true, Denver is likely to show a stronger connection between designation and neighborhood change than Fort Worth. In an even smaller metropolitan area like Fort Collins, the relationship should be even more pronounced. Section 7.1 examines data from Fort Collins and compares it to Denver data. Section 7.2 tests whether coefficients on regressions run for Fort Collins data are different than those run for Denver data. This section features another Chow test for structural stability.

According to Troy (2002), the relationship between designation and neighborhood change should grow more visible as the city of interest grows smaller. The idea is that smaller cities have smaller housing stocks and smaller historic housing stocks. Small city residents who value designation, presumably higher income residents, will have to 'consume' designation where they can find it. For example, if a Los Angeles resident wants to live in a historically designated home, the sheer number of designated properties

means she can find a home in a neighborhood with lots of historic homes if she is willing to pay for it.

Also, the size of the housing stock indicates there are more eligible properties in a larger city, so the historic housing stock could grow without waiting for more houses to age. There are fewer potential historic properties in a smaller city, however. In Fort Collins, the relative dearth of historic properties (see Appendix) means there may only be a couple on the market at any given time. The Fort Collins resident would, in theory, be more willing to move into a suspect neighborhood in anticipation that the higher concentration of historic homes will lead to a quick neighborhood turnaround. In sum, the supply of homes, and historic homes, is more inelastic in a smaller metropolitan area, so would-be consumers must react more quickly and decisively in order to live in a historic area.[8]

Table 14 displays descriptive statistics of some neighborhood variables in Fort Collins. The Denver data are repeated here for comparison.[9]

Unlike Denver, 1990 vacancy rates are about the same in Fort Collins tracts with designation as in those without. Tracts with designation in 1990 do exhibit markedly lower ownership rates, lower median incomes, more racial diversity, and smaller homes. These are consistent with the notion that designation may have been targeted at areas with lower economic indicators, as with Denver and Fort Worth. 45% of Fort Collins

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[8] The total housing supply is nearly perfectly inelastic in the short run in all cities. Given the lengthy designation process, the supply of designated properties is inelastic in the short run, as well. In this discussion, the 'supply' of historic homes includes all potentially designate-able homes. So, since Denver has more large, old homes than Fort Collins, the supply of historic homes in Denver is effectively more elastic.

[9] These descriptive statistics provide no guidance on causality. That is, they are not intended to show whether designation was causing or caused by neighborhood transition. The discussion following Tables 14 and 15 speculates about causality based solely on which explanations of causality the statistics appear to coincide with. Causality is explored in the SEM later in the paper.

tracts have at least one designated property, so the designation is spread throughout the city. Tracts with designation have older homes on average, as would be expected.

Table 14 - Means (standard deviations) - Fort Collins versus Denver

Variable	All FC Tracts	FC Tracts without Designation	FC Tracts with Designation	All Denver Tracts	Denver Tracts no Designation	Denver Tracts with Designation
Vacancy Rate, 1990	0.09 (0.11)	0.08 (0.12)	0.09 (0.11)	0.11 (0.07)	0.09 (0.05)	0.13 (0.07)
Owner Rate, 1990	0.67 (0.18)	0.73 (0.12)	0.58 (0.21)	0.49 (0.25)	0.57 (0.24)	0.42 (0.24)
Pop, 1990	3307.73 (1714.09)	2999.42 (1675.05)	3690.04 (1717.81)	3488 (1327.8)	3417.81 (1337.33)	3548.53 (1325.9)
% Black	NA	NA	NA	NA	NA	NA
% Hispanic	NA	NA	NA	NA	NA	NA
Diversity Index, 1990	0.17 (0.07)	0.16 (0.08)	0.20 (0.08)	0.40 (0.18)	0.38 (0.17)	0.41 (0.18)
Median Income, 1989	31649.55 (10066.8)	35747.39 (8946.72)	26568.24 (9143.14)	26392 (11683)	29448.92 (9860.13)	23723.82 (12537.7)
Average year built	1990.10 (19.56)	1997.42 (10.70)	1977.20 (23.99)	1949 (15.45)	1943 (15.45)	1953.27 (14.11)
Average living area	5.76 rooms (1.08)	6.16 rooms (0.93)	5.5 rooms (1.06)	5 rooms (1.32)	5.02 rooms (1.36)	4.55 rooms (1.25)
Average Number of Designated Homes	1.70 (7.41)	0.00 (0.00)	3.80 (10.84)	3 .00 (11.39)	0.00 (0.00)	5.70 (15.15)
Historical Designation Dummy	0.45 (0.50)	0.00 (0.00)	1.00 (0.00)	0.53 (0.50)	0.00 (0.00)	1.00 (0.00)
Δ Vacancy Rate	-0.03 (0.07)	-0.04 (0.06)	-0.02 (0.03)	-0.07 (0.06)	-0.06 (5.34)	-0.07 (6.32)

Variable	All FC Tracts	FC Tracts without Designation	FC Tracts with Designation	All Denver Tracts	Denver Tracts no Designation	Denver Tracts with Designation
Δ in Owner Rate	0.01 (0.09)	0.04 (0.09)	0.02 (0.08)	0.05 (0.12)	0.03 (0.14)	0.06 (0.09)
Δ Diversity Index	0.23 (0.36)	0.25 (0.37)	-0.21 (0.35)	0.17 (0.41)	0.25 (0.50)	0.09 (29.07)
Pop Growth Rate	0.55 (0.80)	0.67 (0.92)	0.40 (0.62)	0.21 (40.5)	0.27 (0.52)	0.15 (26.27)
%Δ Median Income	0.16 (0.19)	0.13 (0.24)	0.19 (0.23)	0.18 (0.28)	0.04 (0.07)	0.26 (0.01)

During the 1990's, Fort Collins tracts with designation became noticeably less diverse, grew less in population, and showed much larger increases in median income than tracts where designation was not present. These are all consistent with higher income groups attaching more prestige to designation than low income groups do, and with reverse tipping associated with improving economic indicators. Overall, these statistics are comparable with Denver and Fort Worth statistics, though the effects appear more pronounced in Fort Collins where the housing stock is smaller. Table 15 presents some further descriptive statistics for Fort Collins, with Denver data included for comparison.

Like Denver, Fort Collins families preferred tracts without designation in 1990, perhaps indicating that designation efforts were targeted at depressed areas. As an aside, it is interesting to note that families left Fort Collins in all tracts, while they moved into Denver. Many more homes were built in tracts without designation, probably newer suburbs, in both cities. Curiously, Fort Collins tracts without designation tended to draw

college graduates during the 1990's, while Denver tracts with designation became more well-educated. In Fort Collins, 1990 home values were much lower for tracts with designation, which supports that designation was targeted at blighted areas.[10] In both cities, real home values rose much more sharply in tracts with designation. This could be that in-town home prices rose more sharply than suburban home prices did, or it could be that designation contributes to the home value and draws residents who are willing to spend more on homes.

Table 15 - Means (standard deviations) - Additional Variables

Variable	All FC Tracts	FC Tracts without Designation	FC Tracts with Designation	All Denver Tracts	Denver Tracts no Designation	Denver Tracts with Designation
% Family, 1990	69.36 (14.45)	74.75 (8.73)	62.68 (17.30)	55.73 (19.29)	63.25 (16.31)	49.17 (19.40)
Δ % Family	-4.37 (7.03)	-3.50 (7.21)	-5.44 (6.80)	12.03 (14.47)	11.47 (18.84)	12.52 (9.22)
Number of Houses, 1990	1378.84 (793.48)	1184.64 (637.95)	1619.64 (908.31)	1604.29 (743.06)	1458.31 (644.95)	1731.76 (802.08)
Δ in Number of Houses	55.36 (71.84)	66.94 (80.17)	41.01 (58.36)	19.86 (44.86)	21.62 (55.61)	18.31 (33.09)
Home Value, 1990	86556.43 (20001.6)	91654.84 (20297.8)	80234.40 (18072.1)	81291.59 (32226.7)	78990.02 (28631.54)	83301.41 (35146.45)
%Δ in Real Home Value	38.53 (29.51)	33.56 (36.85)	44.71 (15.08)	47.85 (30.77)	37.79 (28.01)	56.64 (30.56)
% Age 25-34, 1990	24.69 (7.64)	23.86 (7.41)	25.72 (7.96)	20.74 (6.41)	20.22 (7.38)	21.20 (5.43)
%Δ Age 25-34	-10.07 (7.17)	-10.54 (6.66)	-9.47 (7.85)	-0.03 (4.88)	-2.36 (5.44)	1.54 (3.47)

[10] This could also be due solely to the fact that the older neighborhoods (which more commonly include designated properties) in Fort Collins were made up of smaller homes than the newer neighborhoods and not due to blight.

% Age > 65	14.84 (8.31)	13.78 (8.08)	16.15 (8.57)	14.15 (7.98)	12.77 (6.99)	15.36 (8.62)
%Δ Age > 65	-5.17 (7.12)	-4.50 (6.85)	-6.01 (7.51)	-2.69 (5.81)	-0.65 (4.10)	-4.47 (6.48)
% with bachelor's degree, 1990	32.96 (13.55)	32.42 (14.71)	33.64 (12.22)	27.26 (17.98)	24.76 (17.17)	29.45 (18.51)
Δ % with bachelor's degree	5.67 (9.99)	7.37 (8.55)	3.56 (11.36)	7.01 (9.70)	3.94 (17.17)	9.68 (7.85)
% profess-ional occupation	36.53 (9.38)	37.82 (10.47)	34.93 (7.74)	29.82 (14.51)	28.00 (13.68)	31.41 (15.12)
Δ% profess-ional occupation	3.32 (8.44)	3.51 (8.24)	3.08 (8.85)	6.74 (10.14)	2.72 (9.87)	10.25 (9.07)

The most notable things about Table 15 were the differences between Fort Collins and Denver. Denver tracts with designation tended to draw young, well-educated professional types during the 1990's and repel people of retirement age. Fort Collins tracts without designation attracted well-educated families. This makes sense, because traditional families likely prefer Fort Collins suburbs while dual-income-no-kids families probably prefer downtown city life in Denver. This highlights the fact that each city has its own history and culture. There are differences in all cities based on historical evolution that probably affect the relationship between the residents and historic preservation.

Table 16 summarizes the results of regressing the reduced form equation (34) of the SEM developed in chapter 6, only this time using Fort Collins data. Denver results are repeated here for comparison purposes.

Table 16 - Estimation of Equation (34) Using Fort Collins Data (the Group A Regression)
Dependent Variable = CHANGEDESPERHOME

Variable	Fort Collins Coefficient (t-stat)	Denver Coefficient (t-stat)
C	0.005230 (1.033898)	0.007864 (0.773958)
YTWOHAT (Effect of Changes in Median Real Income)	1.04E-07 (1.714791)	6.33E-07 (1.005114)
CHANGEDIVERS	-2.26E-05 (-1.356057)	1.20E-06 (0.034425)
CHANGEFAM	0.000174 (1.559362)	-6.00E-05 (-0.445487)
CHANGEOWNER	-4.33E-05 (-0.604996)	-2.09E-05 (-0.115538)
CHANGEGREEN	9.38E-05 (1.100550)	8.76E-06 (0.018162)
CHANGESILVER	2.76E-05 (0.258173)	0.000123 (0.356352)
CHANGEBACH	2.95E-05 (0.454143)	-0.000146 (0.653700)
BEGVALUE	1.76E-08 (0.696756)	1.17E-07 (2.603584)
BEGVACANT	-2.81E-05 (-0.592977)	6.86E-05 (0.257187)
HOMEAGE	0.000150 (4.429642)	-0.000189 (-1.959024)
HOMESIZE	-0.000951 (-1.434241)	-0.001179 (-0.609939)
Adjusted R^2	0.517496	0.065678

Key Results

- Exogenous variables were much better at explaining changes in Fort Collins designation than Denver designation
- Unlike Denver, rising incomes in Fort Collins provoked increased designation in a given neighborhood

Analysis

The most surprising difference between the Fort Collins and Denver models might be the goodness of fit measure. The adjusted R^2 for the Fort Collins model is 0.52, nearly ten times better than the Denver model. Assuming that rich people do indeed value designation more than poor people, rising incomes should result in increased concentrations of designated homes in both small and large cities. In fact, however, the YTWOHAT (Effect of Changes in Median Real Income) variable was insignificant at α = 0.10 in both cities.

Table 17 summarizes the results of running the other reduced form equation from the chapter 6 SEM, equation (29), using Fort Collins data. Denver results are displayed for comparison purposes.

Table 17 - Estimation of Equation (29) Using Fort Collins Data (the Group B Regression)
Dependent Variable = CHANGEREALINCOME

Variable	Fort Collins Coefficient (t-stat)	Denver Coefficient (t-stat)
C	2895.047 (2.285719)	2576.961 (3.717298)
YONEHAT (Effect of Changes in Designation per Home)	180336.2 (0.631052)	388087.5 (3.892356)
CHANGEBACH	314.3550 (2.148190)	240.8672 (4.090234)
CHANGEPROF	681.7117 (3.946682)	87.03847 (1.450558)
Adjusted R^2	0.567732	0.294705

Key Results

- Goodness of fit measure was higher in Fort Collins for both Group A and Group B regressions

- Unlike Denver, increased designation activity in Fort Collins did not drive up incomes in a given neighborhood

Analysis

The results in Table 17 do not match the theory that housing supply affects the relationship between designation and demographic change, at least not in the expected way. According to the theory, Fort Collins has a relatively inelastic supply of designated homes. In Fort Collins, the theory predicts that rich people bid up prices in tracts with a lot of designation because there are no other old neighborhoods to move to. This should result in faster rising incomes in designated areas. Therefore, the coefficient on YONEHAT (Effect of Changes in Designation per Home) in Table 17 should be positive and relatively large and significant. Conversely, high income Denver residents have greater access to historic substitutes, which should dampen the effect of designation on incomes. Denver's coefficient on YONEHAT (Effect of Changes in Designation per Home) in Table 17 should be relatively small and insignificant. The data shows just the opposite.

While Denver displayed faster rising incomes in tracts with high concentrations of designated properties, Fort Collins did not. Designation appears to provoke rising incomes in Denver but not in Fort Collins, which is contrary to the theory that the smaller city would show an exaggerated correlation between designation and neighborhood change due to the relative dearth of available substitutes for a given designated property.

However, it is possible that this outcome is just a matter of scale: if the rich people in Denver are much richer than the rich people in Fort Collins, it would skew the results this way. Also, this could be an artifact of which properties are designated in each

city. For example, anecdotal evidence indicates that smaller homes are likely to be designated in Fort Collins because of the key roles of sugar beet factories, street cars, Quonset huts, and the timing of major population growth periods – Fort Collins boomed in the early 1910's when the upper castes' tastes were trending away from elaborate Victorian designs and toward smaller, simpler homes. (See Fort Collins History and Architecture; Thomas and Smith; Thomas) These historic accidents would mute the effect of designation on incomes in those neighborhoods. There appears to be no similar trend in Denver. In fact, casual inspection of Denver historic properties in Appendix 1 indicates that former homes of the well-to-do comprise almost the entire list of designated properties there.

Hausman Test for Simultaneity in Fort Collins

The Hausman test constructed in chapter 6 was repeated for Fort Collins data. The null hypothesis for the Hausman test is that there is no simultaneity. If there is no feedback, there will be no correlation between $\hat{w}_{1t}$ and u_2. Otherwise stated, if equation (25) is regressed and the coefficient on $\hat{w}_{1t}$ is not statistically different from zero, there is no simultaneity. If a Wald coefficient test reveals a significant, non-zero β_{21} coefficient, then $\hat{w}_{1t}$ (and Y_{1t}) might be correlated with u_2 and it can not be concluded that there is no simultaneity problem.

In this case, the Wald test for $\beta_{21} = 0$ generated an F statistic of 0.401008, with (1, 49) degrees of freedom. The test statistic is firmly within the 'do not reject' boundary. The null, that the coefficient for $\hat{w}_1$ is zero, is accepted. There is almost certainly no simultaneity problem between the structural equations in Fort Collins.

Again, this does not mean the model needs to be abandoned. It could be that there is a specification error in one or more of the variables, or it could be that Fort Collins is a unique case. At any rate, using the simultaneous model in the absence of an actual feedback loop will only result in reduced efficiency of the model. The estimators will still be unbiased and consistent. Given that Denver produced significant Group A causation and Fort Collins displayed significant Group B causation, it seems reasonable to use the SEM as a baseline model for this kind of study and accept the reduced efficiency. Failure to use the simultaneous model when it was appropriate would be much worse, resulting in inconsistent and biased estimators.

7.2 Testing the Effect of City Size

The previous section indicates that there could be some differences between the way Fort Collins and Denver demographic groups relate to historic designation. This section uses the SEM framework developed in previous chapters to examine the two data sets for statistically relevant differences.

First, specify relationships between dependent and explanatory variables in Denver (equations (46) and (47)) and in Fort Collins (equations (48) and ((49)):

(46) $Y_{1td}=\alpha_{11d}+\beta_{12d}Y_{2td}+\alpha_{12d}X_{2td}+\alpha_{13d}X_{3td}+\alpha_{14d}X_{4td}+\alpha_{15d}X_{5td}+\alpha_{16d}X_{6td}+\alpha_{17d}X_{7td}+\alpha_{18d}X_{8td}+\alpha_{19d}X_{9td}+\alpha_{110d}X_{10td}+\alpha_{11d}X_{11td}+u_{1d}$

(47) $Y_{2td}=\alpha_{10d}+\beta_{21d}Y_{1td}+\alpha_{27d}X_{7td}+\alpha_{212d}X_{12td}+u_{2d}$

and

(48) $Y_{1tf}=\alpha_{11f}+\beta_{12f}Y_{2tf}+\alpha_{12f}X_{2tf}+\alpha_{13f}X_{3tf}+\alpha_{14f}X_{4tf}+\alpha_{15f}X_{5tf}+\alpha_{16f}X_{6tf}+\alpha_{17f}X_{7tf}+\alpha_{18f}X_{8tf}+\alpha_{19f}X_{9tf}+\alpha_{110f}X_{10tf}+\alpha_{11f}X_{11tf}+u_{1f}$

(49) $Y_{2tf}=\alpha_{10f}+\beta_{21f}Y_{1tf}+\alpha_{27f}X_{7tf}+\alpha_{212f}X_{12tf}+u_{2f}$

where the 'd' subscript denotes Denver data and the 'f' subscript denotes Fort Collins data.

Next, specify a SEM using the combined data of the two cities.

(50) $Y_{1tb}=\alpha_{11b}+\beta_{12b}Y_{2tb}+\alpha_{12b}X_{2tb}+\alpha_{13b}X_{3tb}+\alpha_{14b}X_{4tb}+\alpha_{15b}X_{5tb}+\alpha_{16b}X_{6tb}+\alpha_{17b}X_{7tb}+\alpha_{18b}X_{8tb}+\alpha_{19b}X_{9tb}+\alpha_{110b}X_{10tb}+\alpha_{11b}X_{11tb}+u_{1b}$

(51) $Y_{2tb}=\alpha_{10b}+\beta_{21b}Y_{1tb}+\alpha_{27b}X_{7tb}+\alpha_{212b}X_{12tb}+u_{2b}$

where the subscript 'b' denotes both Fort Collins and Denver data combined.

If city size is relevant to the relationship between historic designation and neighborhood change, then either the corresponding slope or intercept parameters (or both) will be different in the Denver model than in the Fort Collins model. If city size is irrelevant, the observations from Denver and Fort Collins can be combined into one model containing both, such as the one specified in equations (50) and (51), and this produce results similar to either city alone. The null and alternative hypotheses for this test are:

H_0: equations (46) and (48) are the same; equations (47) and (49) are the same

H_a: equations (46) and (48) are not the same; equations (47) and (49) are not the same.

First, equations (46) and (48) are converted to reduced form equations:

(52) $Y_{1td}=\alpha_{11}+\beta_{12d}\hat{Y}_{2td}+\alpha_{12}X_{2td}+\alpha_{13d}X_{3td}+\alpha_{14d}X_{4td}+\alpha_{15d}X_{5td}+\alpha_{16d}X_{6td}+\alpha_{17d}X_{7td}+\alpha_{18d}X_{8td}+\alpha_{19d}X_{9td}+\alpha_{110d}X_{10td}+\alpha_{11}X_{11td}+u_{1d}^*$

where

(53) $u_{1d}^*=\beta_{12d}\hat{w}_{2d}+u_{1d}$

and

(54) $Y_{1tf}=\alpha_{11}+\beta_{12f}\hat{Y}_{2tf}+\alpha_{12}X_{2tf}+\alpha_{13}X_{3tf}+\alpha_{14}X_{4tf}+\alpha_{15}X_{5tf}+\alpha_{16}X_{6tf}+\alpha_{17}X_{7tf}+\alpha_{18}X_{8tf}+\alpha_{19}X_{9tf}+\alpha_{10}X_{10tf}+\alpha_{11}X_{11tf}+u_{1f}^*$

where

(55) $u_{1f}^*=\beta_{12f}\hat{w}_{2f}+u_{1f}$.

Equations (52) and (54) are very similar to the original structural equation (7), except that Y_{2t} has been replaced by the proxy variable $\hat{Y}_{2t}$, which has the advantage of being uncorrelated with the error term. These 'Group A' equations can be estimated using OLS without introducing bias or inconsistency into the results. Testing for structural differences in the data also requires running the model with all of the data, so equation (50) was also run via its reduced form. HOMEAGE was measured differently in two datasets, however, so this variable has been left out of all three datasets for present purposes. The results of these regressions are displayed in Table 18.

Table 18 - Group A Equations for Testing City Size
(Dependent Variable = CHANGEDESPERHOME)

	Fort Collins Equation (54) Coefficient (t-stat)	**Denver Equation (52) Coefficient (t-stat)**	**Combined Data Coefficient (t-stat)**
C	0.013799 (2.457043)	-0.003505 (-0.390012)	0.000639 (0.118804)
YTWOHAT (Effect of Changes in Median Real Income)	1.32E-07 (1.823255)	9.56E-07 (0.586098)	2.75E-07 (1.123574)
CHANGEDIVERS	-4.84E-05 (-2.571293)	-4.83E-07 (-0.010244)	-1.60E-05 (-0.608997)
CHANGEFAM	-1.50E-05 (-0.120826)	-9.67E-06 (-0.099901)	-7.49E-05 (-0.948844)
CHANGEOWNER	-2.05E-05 (-0.238437)	2.81E-07 (0.000932)	4.51E-05 (0.439164)
CHANGEGREEN	0.000221 (2.291373)	0.000271 (0.361490)	0.000344 (2.260652)
CHANGESILVER	-0.000132	0.000257	-9.95E-05

	Fort Collins Equation (54) Coefficient (t-stat)	Denver Equation (52) Coefficient (t-stat)	Combined Data Coefficient (t-stat)
	(-1.085173)	(0.360218)	(-0.560912)
CHANGEBACH	7.03E-05 (0.910097)	-0.000151 (-0.427915)	-6.81E-05 (-0.513926)
BEGVALUE	-1.43E-10 (-0.004768)	9.81E-08 (2.122027)	9.58E-08 (2.711247)
BEGVACANT	2.48E-05 (0.449780)	-1.63E-05 (-0.063802)	-3.33E-05 (-0.265033)
HOMESIZE	-0.001900 (-2.517096)	-0.001005 (-0.408503)	-0.001000 (-0.949833)
Adjusted R^2	0.301804	0.023375	0.036551
RSS	0.000648	0.024763	0.026241

The first two columns are mostly the same as presented in earlier sections, except that HOMEAGE was omitted here. When the data are combined, CHANGEGREEN and BEGVALUE are significant.

Next, the 'Group B' equations are treated. Equations (47) and (49) are converted to reduced form equations to take out the feedback loop:

(56) $Y_{2td}=\alpha_{10}+\beta_{21d}\hat{Y}_{1td}+\alpha_{27d}X_{7td}+\alpha_{212d}X_{12td}+u_{2d}^*$

where

(57) $u_{2d}^*=u_{2d}+\beta_{21d}\hat{w}_{1d}$

and

(58) $Y_{2tf}=\alpha_{10}+\beta_{21f}\hat{Y}_{1tf}+\alpha_{27f}X_{7tf}+\alpha_{212f}X_{12tf}+u_{2f}^*$

where

(59) $u_{2f}^*=u_{2f}+\beta_{21f}\hat{w}_{1d.}$

Equations (56) and (58) are very similar to the original structural equation (4), except that Y_{1t} has been replaced by the proxy variable $\hat{Y}_{1t}$, which has the advantage of being uncorrelated with the error term. These 'Group B' equations can be estimated

using OLS without producing inconsistent or biased estimators. Testing for structural differences in the data also requires running the model with all of the data, so equation (51) was also run via its reduced form. The results of these regressions are displayed in Table 19.

Table 19 - Group B Equations for Testing City Size (Dependent Variable = CHANGEREALINCOME)

	Fort Collins *Equation (58)* Coefficient (t-stat)	**Denver *Equation (56)* Coefficient (t-stat)**	**Combined Data Coefficient (t-stat)**
C	2725.230 (2.051147)	2728.355 (3.690612)	2545.914 (3.475673)
YONEHAT (Effect of Changes in Designation per Home)	186452.0 (0.524841)	323352.2 (2.491466)	-85235.28 (-0.561551)
CHANGEBACH	271.6054 (1.801332)	238.0967 (3.909716)	201.7049 (3.209687)
CHANGEPROF	731.6771 (4.081422)	100.7083 (1.569542)	453.3426 (6.625785)
Adjusted R^2	0.574232	0.248055	0.386257
RSS	2.81E+09	4.67E+09	9.13E+09

One noteworthy point about Table 19 is that the overall effect of designation on changes in income was insignificant in the combined dataset, just as it was in Denver. However, this is probably simply a data artifact, as there are many more tracts in Denver than in Fort Collins.

The Chow test was used to determine whether the datasets were statistically different. This test starts by assuming that:

a. $u_{1d} \sim N(0,\sigma^2)$

b. $u_{2d} \sim N(0,\sigma^2)$

c. $u_{1f} \sim N(0,\sigma^2)$

d. $u_{2f} \sim N(0,\sigma^2)$

e. u_{1d}, u_{2d}, u_{1f}, and u_{2f} are independently distributed.

In other words, the error terms in the Fort Collins and Denver models are all normally and independently distributed around a zero mean, and all have the same variance, σ^2.

The first step of the Chow test is to estimate the SEM using the combined dataset. First, reduced forms of equations (50) and (51) were estimated. Residual sum of squares (RSS) were collected from each equation and named S_A1 (= 0.026241) and S_B1 (= [9.13E+09]), respectively. The 'A' subscript denotes the Group A direction equation (50) and the 'B' subscript denotes the Group B direction, equation (51). Degrees of freedom are $(n_1 + n_2 - k) = 176$, where n_1 is the number of Denver observations, n_2 is the number of Fort Collins observations, and k is the number of parameters estimated.

The second step of the Chow test is to estimate the Denver and Fort Collins models individually and obtain RSS from each of the four regressions. S_A2 (=0.024763) and S_B2 (= [4.67E+09]) are RSS for the Denver specification. S_A3 (=0.000648) and S_B3(= [2.81E+09]) are RSS for the Fort Collins equations. Denver equations have degrees of freedom = $(n_1 - k) = 120$ and Fort Collins equations have degrees of freedom = $(n_2 - k) = 41$. Next, define:

$S_A4 = S_A3 + S_A2 = 0.025411$

and

$S_B4 = S_B3 + S_B2 = [7.48E+09]$

with degrees of freedom = $(n_1 + n_2 - 2k) = 161$.

Then, define:

$S_A5 = S_A1 - S_A4 = 0.026029 - 0.025447 = 0.00083$

and

$S_B5 = S_B1 - S_B4 = [9.15E+09] - [7.80E+09] = [1.65E+09]$.

From the assumptions of the Chow test, the test statistics

$F_A = (S_A5/k)/ [S_A4/ (n_1 + n_2 - 2k)] = 2.77311$

and

$F_B = (S_B5/k)/ [S_B4/ (n_1 + n_2 - 2k)] = 0.41062$

follow the F distribution with degrees of freedom = $(k, n_1 + n_2 - 2k)$. If the computed F value exceeds the critical value for a given equation (A or B) and for a chosen α, reject the null hypothesis that the intercepts and slope coefficients are the same for Denver as they are for Fort Collins.

For the Denver and Fort Collins Group B equations, (46) and (48), the computed F value is 0.41. At $\alpha = 0.10$, the critical F value is 1.52. At $\alpha = 0.05$, the critical value is around 1.74. The computed value is clearly lower than the critical value at either alpha, so we can not reject the null hypothesis that the Group B equations are the same. That is, designation affects incomes the same way (statistically) in both cities.

For the Group A equations, (47) and (49), the computed F value is 2.77. This is higher than the critical value at $\alpha = 0.10$ or at $\alpha = 0.05$, so we reject the null that the Group A equations are the same. The effect of median income on designation is statistically different between the two cities.

So, concentrations of designated properties affect demographics (Group B direction) in Denver and Fort Collins in the same way – not very much. However, one result from section 6.1 is robust enough to survive this test: tracts with rising incomes

tend to provoke designation in Denver more so than in Fort Collins (Group A direction), AND the difference is statistically significant. This test was repeated using the E-views Chow test utility with the same result.

CHAPTER 8: SUMMARY REMARKS AND SUGGESTED EXTENSIONS

This dissertation will significantly contribute to contemporary literature regarding historic designation. Much work has been done to relate historic designation to housing prices. Very little has been done to examine the relationship between designation and neighborhood demographic change.

When considering the relationship between designation and neighborhood change, it is important to consider the legal regime and the history of the subject area and its inhabitants. People and events may have big impacts on what is preserved and how residents perceive and relate to historic preservation. For example, the Fort Collins data indicated that tracts with designation tended to have smaller homes than tracts without. This result would be puzzling except that many of the historic properties in Fort Collins were built in the early 1900's when large, Victorian homes were out of favor. Additionally, the sugar beet industry and new public transportation of the era affected the style and size of historic homes there. Finally, the presence of what is now Colorado State University attracted many veterans in the wake of World War II. The Quonset huts that popped up around Larimer County at the time also impacted the evolution of historic preservation in Fort Collins. Many of these properties were nominated for designation as of the writing of this paper, but none appeared on the registers yet. It is unclear how this affects the empirical study above, because it is probable that residents' conceptions of

what is historic may align more with their experiences than with what is actually on the register.

So, planners using this research should temper the results with an understanding of their local history. With that in mind, here are the main conclusions:

1. A historic property is governed by layers of registers – national, state, and local. In Colorado, there is significant variation in the implications of listing a property among local registers. All of the costs associated with owning a designated property in Colorado stem from the local register, while most of the benefits stem from the state and national registers. This is different from the arrangement in Texas, where the focus is on the state organization and localities are generally subsidiaries with relatively little power over designated properties.

2. There is some correlation between designation and neighborhood change in Denver and in Fort Collins, though the relationship is different between the two cities. Both appear to have a different relationship between designation and demographics than exists in Fort Worth. In Denver, historic designation tends to provoke rising median incomes. In Fort Collins, rising incomes tend to provoke more designation. Prior research indicated no correlation between the two in Fort Worth.

3. In Denver, the relationship between historic registers and neighborhood transition may be different in low income areas than in high income areas. In low income tracts, rising incomes were slightly correlated with the presence of designation, but not the extent of it. In high income neighborhoods, concentrations of designation positively and significantly affected median incomes and rising incomes tended to lead to increased designation.

Also, increases in designation lead to rising incomes much more in areas where incomes were already relatively high. Though there is evidence that designation is being placed in poorer areas to promote economic renewal, this result suggests that designation is less effective at promoting change in poor areas. It is likely that there is a threshold of 'bad neighborhood' that high income residents simply will not go below in order to consume designation. The policy implication is that planners should use designation to promote growth in areas where incomes are not terribly low to begin with, or later in the renewal process after the neighborhood has already begun to tip upward.

The analysis above indicates that, while not a panacea for urban renewal, designating a property in an improving neighborhood may accelerate the process. Designating several properties in the same neighborhood can be an effective way to promote further economic improvement in an already nice neighborhood. Designation can also be used by high income residents to stall the normal filtering process, or even to promote upward tipping.

4. There is some evidence that different races pay attention to designation. Planners seeking to avoid accusations of gentrification should be aware of this possibility.

5. City size probably matters to the designation-neighborhood change relationship, but maybe just because it indicates how bad the bad neighborhoods are. While Denver and Fort Collins showed different relationships between designation and neighborhood change, only the Group A differences were significant (income affects designation).

Ideas for Further Research

A truly national study could be very informative. One of the most obvious results of this research is that each metropolitan area studied was different. With only three cities considered, it is still unclear whether any or all of them are outliers. A study of many cities would allow true trends to emerge and would give clearer answers on how city size and legal regime affect neighborhood makeup in historic areas.

Further research should include some primary data collection, which would allow a smaller unit of analysis (ideally block level data or individual home data). Using primary data, there could also be more explanatory variables, including many that may not be collected with Census data. These might be things like the presence of homeowners' organizations, involvement in public service, and other factors reflecting degree of organization in a neighborhood.

Also, time series data would be particularly useful in any setting. The effect of the timing of designations is difficult to pinpoint using the 1990 and 2000 data snapshots available through the Census. After all, most designations occurred before this.

Time series data would also open the possibility of using other tests. The Granger Test, for example, is like a Hausman test with a lag. Since there is probably a lag between designation and a neighborhood demographic response and between neighborhood change and further designation, the Granger test might uncover the hypothesized simultaneity that the Hausman test failed to detect. This might also reveal the presence of an emulative factor regarding who values designation – that is, do rising incomes follow new designation, especially in cities where other designated tracts are very wealthy?

Final Word

Prior research claimed that there was no correlation between historic designation and neighborhood transition. Using improved models and different test cities, this paper indicates that the case is not closed on the relationship between designation and neighborhood change. Designation appears to relate to demographics differently in different cities, but the potential for correlation in any given locale is clear. City planners, residents, and community leaders considering designation as an instrument to affect social policy should be aware that it just might work, perhaps in unintended ways. These agents should use a SEM like the one developed in this paper to reveal the relationship between designation and neighborhood change that exists in a given locality, then consider those results in light of local historical circumstances in order to predict the social effect of historic designation in a neighborhood.

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APPENDIX 1: DENVER DESIGNATED PROPERTIES

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Address	Name	Date
1201 E 1st AVE	Country Club Hist. Dist.	08/10/90
1937 E 1st AVE	Country Club Hist. Dist.	08/10/90
2001 E 1st AVE	Country Club Hist. Dist.	08/10/90
7775 E 1st AVE	Lowry Technical Training Hist. Dist.	09/08/95
46 W 1st AVE	Baker Hist. Dist.	11/17/00
50 W 1st AVE	Baker Hist. Dist.	11/17/00
58 W 1st AVE	Baker Hist. Dist.	11/17/00
100 W 1st AVE	Baker Hist. Dist.	11/17/00
200 W 1st AVE	Baker Hist. Dist.	11/17/00
300 W 1st AVE	Baker Hist. Dist.	11/17/00
400 W 1st AVE	Baker Hist. Dist.	11/17/00
500 W 1st AVE	Baker Hist. Dist.	11/17/00
600 W 1st AVE	Baker Hist. Dist.	11/17/00
608 W 1st AVE	Baker Hist. Dist.	11/17/00
614 W 1st AVE	Baker Hist. Dist.	11/17/00
616 W 1st AVE	Baker Hist. Dist.	11/17/00
617 W 1st AVE	Baker Hist. Dist.	11/17/00
University BV 1st / Speer BV AVE	Speer Boulevard Hist. Dist.	10/04/88
40 W 2nd AVE	Fire Station #11	04/10/96
40 W 2nd AVE	Baker Hist. Dist.	11/17/00
41 W 2nd AVE	Baker Hist. Dist.	11/17/00
47 W 2nd AVE	Baker Hist. Dist.	11/17/00
48 W 2nd AVE	Baker Hist. Dist.	11/17/00
50 W 2nd AVE	Baker Hist. Dist.	11/17/00
51 W 2nd AVE	Baker Hist. Dist.	11/17/00
59 W 2nd AVE	Baker Hist. Dist.	11/17/00
100 W 2nd AVE	Baker Hist. Dist.	11/17/00
200 W 2nd AVE	Baker Hist. Dist.	11/17/00

Address	Name	Date
300 W 2nd AVE	Baker Hist. Dist.	11/17/00
400 W 2nd AVE	Baker Hist. Dist.	11/17/00
500 W 2nd AVE	Baker Hist. Dist.	11/17/00
602 W 2nd AVE	Baker Hist. Dist.	11/17/00
801 E 3rd AVE	Alamo Placita Hist. Dist.	06/16/00
1111 E 3rd AVE	Alamo Placita Hist. Dist.	06/16/00
1133 E 3rd AVE	Alamo Placita Hist. Dist.	06/16/00
1200 E 3rd AVE	Country Club Hist. Dist.	08/10/90
1601 E 3rd AVE	Country Club Hist. Dist.	08/10/90
1640 E 3rd AVE	Country Club Hist. Dist.	08/10/90
1700 E 3rd AVE	Country Club Hist. Dist.	08/10/90
2011 E 3rd AVE	Country Club Hist. Dist.	08/10/90
2150 E 3rd AVE	Country Club Hist. Dist.	08/10/90
2300 E 3rd AVE	Country Club Hist. Dist.	08/10/90
2327 E 3rd AVE	Country Club Hist. Dist.	08/10/90
32 W 3rd AVE	Baker Hist. Dist.	11/17/00
36 W 3rd AVE	Baker Hist. Dist.	11/17/00
40 W 3rd AVE	Baker Hist. Dist.	11/17/00
44 W 3rd AVE	Baker Hist. Dist.	11/17/00
48 W 3rd AVE	Baker Hist. Dist.	11/17/00
52 W 3rd AVE	Baker Hist. Dist.	11/17/00
55 W 3rd AVE	Baker Hist. Dist.	11/17/00
56 W 3rd AVE	Baker Hist. Dist.	11/17/00
100 W 3rd AVE	Baker Hist. Dist.	11/17/00
200 W 3rd AVE	Baker Hist. Dist.	11/17/00
300 W 3rd AVE	Baker Hist. Dist.	11/17/00
400 W 3rd AVE	Baker Hist. Dist.	11/17/00
520 W 3rd AVE	Baker Hist. Dist.	11/17/00
523 W 3rd AVE	Baker Hist. Dist.	11/17/00
517 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
600 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
678 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
700 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
715 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
800 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
900 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
1000 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
1100 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00

Address	Name	Date
1209 E 4th AVE	Alamo Placita Hist. Dist.	06/16/00
1233 E 4th AVE	Driving Park Hist. Dist.	02/07/03
1401 E 4th AVE	Country Club Hist. Dist.	08/10/90
1428 E 4th AVE	Country Club Hist. Dist.	08/10/90
1727 E 4th AVE	Driving Park Hist. Dist.	02/07/03
1921 E 4th AVE	Country Club Hist. Dist.	08/10/90
1925 E 4th AVE	Country Club Hist. Dist.	08/10/90
1980 E 4th AVE	Country Club Hist. Dist.	08/10/90
2012 E 4th AVE	Country Club Hist. Dist.	08/10/90
2025 E 4th AVE	Country Club Hist. Dist.	08/10/90
2101 E 4th AVE	Country Club Hist. Dist.	08/10/90
2112 E 4th AVE	Country Club Hist. Dist.	08/10/90
2115 E 4th AVE	Country Club Hist. Dist.	08/10/90
2220 E 4th AVE	Country Club Hist. Dist.	08/10/90
7387 E 4th AVE	Lowry Officers' Row Hist. Dist.	09/08/95
35 W 4th AVE	Baker Hist. Dist.	11/17/00
51 W 4th AVE	Baker Hist. Dist.	11/17/00
100 W 4th AVE	Baker Hist. Dist.	11/17/00
200 W 4th AVE	Baker Hist. Dist.	11/17/00
308 W 4th AVE	Baker Hist. Dist.	11/17/00
314 W 4th AVE	Baker Hist. Dist.	11/17/00
416 W 4th AVE	Baker Hist. Dist.	11/17/00
532 W 4th AVE	Coyle/Chase House	04/24/75
455 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
456 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
500 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
600 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
700 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
800 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
900 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
1000 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
1100 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
1212 E 5th AVE	Alamo Placita Hist. Dist.	06/16/00
1221 E 5th AVE	Driving Park Hist. Dist.	02/07/03
1401 E 5th AVE	Driving Park Hist. Dist.	02/07/03
1500 E 5th AVE	Driving Park Hist. Dist.	02/07/03
1615 E 5th AVE	Driving Park Hist. Dist.	02/07/03
1700 E 5th AVE	Driving Park Hist. Dist.	02/07/03

Address	Name	Date
1920 E 5th AVE	Country Club Hist. Dist.	08/10/90
7363 E 5th AVE	Lowry Officers' Row Hist. Dist.	09/08/95
130 W 5th AVE	Baker Hist. Dist.	11/17/00
134 W 5th AVE	Baker Hist. Dist.	11/17/00
138 W 5th AVE	Baker Hist. Dist.	11/17/00
142 W 5th AVE	Baker Hist. Dist.	11/17/00
146 W 5th AVE	Baker Hist. Dist.	11/17/00
150 W 5th AVE	Baker Hist. Dist.	11/17/00
200 W 5th AVE	Baker Hist. Dist.	11/17/00
314 W 5th AVE	Baker Hist. Dist.	11/17/00
318 W 5th AVE	Baker Hist. Dist.	11/17/00
422 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
500 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
500 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
600 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
600 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
700 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
700 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
800 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
819 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
900 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
1000 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
1100 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1100 E 6th AVE	Alamo Placita Hist. Dist.	06/16/00
1220 E 6th AVE	Driving Park Hist. Dist.	02/07/03
1300 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1302 E 6th AVE	Driving Park Hist. Dist.	02/07/03
1420 E 6th AVE	Driving Park Hist. Dist.	02/07/03
1620 E 6th AVE	Driving Park Hist. Dist.	02/07/03
1625 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1700 E 6th AVE	Driving Park Hist. Dist.	02/07/03
1735 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1851 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1920 E 6th AVE	Country Club Hist. Dist.	08/10/90
1927 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
2000 E 6th AVE	Country Club Hist. Dist.	08/10/90
2101 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
2401 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93

Address	Name	Date
2735 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
2815 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
3100 E 6th AVE	East Seventh Ave. Hist. Dist.	04/30/93
4000 E 6th AVE	Denver City Beautiful Pkwys H. D.	00/00/97
4775 E 6th AVE	Dugal Farmhouse	07/23/99
7400 E 6th AVE	Lowry Officers' Row Hist. Dist.	09/08/95
400 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
500 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
600 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
700 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
722 E 7th AVE	Ferguson/Gano House	05/18/90
800 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
900 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1000 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1100 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1200 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1300 E 7th AVE	Brown/Garrey/Congdon House	06/23/92
1300 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1400 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1500 E 7th AVE	East Seventh Ave. Hist. Dist.	04/30/93
7035 E 7th AVE	Montclair Hist. Dist.	10/17/75
1600 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
1700 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
1800 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
1900 E 7th Avenue PKY	Kerr House	07/30/76
1900 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2000 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2100 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2200 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2300 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2400 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2500 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2600 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2700 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2800 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
2900 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3000 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3100 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93

Address	Name	Date
3200 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3300 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3400 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3500 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3600 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3700 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3800 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
3900 E 7th Avenue PKY	East Seventh Ave. Hist. Dist.	04/30/93
400 E 8th AVE	Governor's Mansion	01/10/68
500 E 8th AVE	Malo House	03/14/75
733 E 8th AVE	Cass House	06/02/91
800 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
900 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1000 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1100 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1200 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1300 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1414 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1500 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1600 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
1930 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
2020 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
2100 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
2109 E 8th AVE	Morgan's Subdivision Hist. Dist.	01/10/78
2205 E 8th AVE	Morgan's Subdivision Hist. Dist.	01/10/78
2430 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
2700 E 8th AVE	East Seventh Ave. Hist. Dist.	04/30/93
6835 E 8th AVE	Montclair Hist. Dist.	10/17/75
6900 E 8th AVE	Montclair Hist. Dist.	10/17/75
100 E 9th AVE	Sherman/Grant Hist. Dist.	10/14/97
200 E 9th AVE	Sherman/Grant Hist. Dist.	10/14/97
475 E 9th AVE	Clemes-Lipe House	02/26/74
700 E 9th AVE	Kistler/Rodriguez House	06/17/80
1000 9th ST	Ninth St Park Hist. Dist.	05/11/73
1146 9th ST	Golda Meir House	10/12/94
150 E 10th AVE	Sherman/Grant Hist. Dist.	10/14/97
200 E 10th AVE	Sherman/Grant Hist. Dist.	10/14/97
607 E 10th AVE	Quality Hill Hist. Dist.	10/02/92

Address	Name	Date
1201 10th ST	Emmanuel/Sherith Chapel	01/10/68
1318 10th ST	Tivoli Brewery	08/17/72
125 E 11th AVE	Sherman/Grant Hist. Dist.	10/14/97
200 E 11th AVE	Sherman/Grant Hist. Dist.	10/14/97
420 E 11th AVE	Croke/Patterson House	08/14/73
500 E 11th AVE	Pennsylvania Street Hist. Dist.	04/28/97
505 E 11th AVE	Pennsylvania Street Hist. Dist.	04/28/97
2027 E 11th AVE	Wyman Hist. Dist.	10/15/93
6969 E 11th AVE	Montclair Hist. Dist.	10/17/75
7015 E 11th AVE	Montclair Hist. Dist.	10/17/75
7025 E 11th AVE	Montclair Hist. Dist.	10/17/75
1060 11th ST	St Elizabeth's Church	04/25/69
150 E 12th AVE	Sherman/Grant Hist. Dist.	10/14/97
200 E 12th AVE	Sherman/Grant Hist. Dist.	10/14/97
1420 E 12th AVE	Humboldt St. Hist. Dist.	11/21/75
1516 E 12th AVE	Humboldt St. Hist. Dist.	11/21/75
1520 E 12th AVE	Humboldt St. Hist. Dist.	11/21/75
2015 E 12th AVE	Wyman Hist. Dist.	10/15/93
2100 E 12th AVE	Wyman Hist. Dist.	10/15/93
2120 E 12th AVE	Wyman Hist. Dist.	10/15/93
6820 E 12th AVE	Montclair Community Center	11/08/73
7020 E 12th AVE	Richtofen Castle	06/11/73
404 W 12th AVE	Ten - Winkel House	03/10/00
225 E 13th AVE	Aromor Apartment Building	06/02/00
440 E 13th AVE	Pennsylvania Street Hist. Dist.	04/28/97
500 E 13th AVE	Pennsylvania Street Hist. Dist.	04/28/97
1901 E 13th AVE	Wyman Hist. Dist.	10/15/93
2000 E 13th AVE	Wyman Hist. Dist.	10/15/93
2100 E 13th AVE	Wyman Hist. Dist.	10/15/93
2200 E 13th AVE	Wyman Hist. Dist.	10/15/93
1101 13th ST	Downtown Denver Hist. Dist.	12/20/00
2 E 14th AVE	Civic Center Hist. Dist.	04/23/76
210 E 14th AVE	Civic Center Hist. Dist.	04/23/76
429 E 14th AVE	Pennsylvania Street Hist. Dist.	04/28/97
840 E 14th AVE	Morey Middle School	05/18/94
1400 E 14th AVE	Wyman Hist. Dist.	10/15/93
1512 E 14th AVE	Wyman Hist. Dist.	10/15/93
1600 E 14th AVE	Wyman Hist. Dist.	10/15/93

Address	Name	Date
1700 E 14th AVE	Wyman Hist. Dist.	10/15/93
1800 E 14th AVE	Wyman Hist. Dist.	10/15/93
1900 E 14th AVE	Wyman Hist. Dist.	10/15/93
2000 E 14th AVE	Wyman Hist. Dist.	10/15/93
2100 E 14th AVE	Wyman Hist. Dist.	10/15/93
2200 E 14th AVE	Wyman Hist. Dist.	10/15/93
3400 E 14th AVE	Snell's Subdivision Hist. Dist.	07/28/86
100 W 14th AVE	Civic Center Hist. Dist.	04/23/76
414 14th ST	DPS Admin Bldg (CCD Annex II)	06/24/94
920 14th ST	Auditorium Theatre	11/14/91
920 14th ST	Downtown Denver Hist. Dist.	12/20/00
931 14th ST	Downtown Denver Hist. Dist.	12/20/00
1100 14th ST	Tramway Bldg	05/18/94
1100 14th ST	Downtown Denver Hist. Dist.	12/20/00
1317 14th ST	Larimer Square Hist. Dist.	01/15/74
910 15th ST	Insurance Exchange Bldg	11/17/83
910 15th ST	Downtown Denver Hist. Dist.	12/20/00
1100 15th ST	Central Bank West (demolished)	09/02/88
1318 15th ST	Lower Downtown Hist. Dist.	03/07/88
1328 15th ST	Lower Downtown Hist. Dist.	03/07/88
1331 15th ST	Lower Downtown Hist. Dist.	03/07/88
1338 15th ST	Wells Fargo Bldg	10/09/78
1400 15th ST	Lower Downtown Hist. Dist.	03/07/88
1500 15th ST	Lower Downtown Hist. Dist.	03/07/88
1600 15th ST	Lower Downtown Hist. Dist.	03/07/88
1700 15th ST	Lower Downtown Hist. Dist.	03/07/88
2101 15th ST	Moffat Station	07/17/90
2501 15th ST	Old Highland Business Hist. Dist.	12/21/79
2509 15th ST	Old Highland Business Hist. Dist.	12/21/79
2535 15th ST	Old Highland Business Hist. Dist.	12/21/79
2545 15th ST	Old Highland Business Hist. Dist.	12/21/79
2550 15th ST	Old Highland Business Hist. Dist.	12/21/79
2563 15th ST	Old Highland Business Hist. Dist.	12/21/79
1325 E 16th AVE	Humboldt Street-Park Avenue Hist. Dist.	02/03/04
625 E 16th AVE	Huddart Terrace	02/14/98
1890 E 16th AVE	Wyman Hist. Dist.	10/15/93
1900 E 16th AVE	Wyman Hist. Dist.	10/15/93
2000 E 16th AVE	Wyman Hist. Dist.	10/15/93
2100 E 16th AVE	Wyman Hist. Dist.	10/15/93

Address	Name	Date
511 16th ST	Downtown Denver Hist. Dist.	12/20/00
523 16th ST	Masonic Temple Building	04/27/82
523 16th ST	Downtown Denver Hist. Dist.	12/20/00
600 16th ST	Downtown Denver Hist. Dist.	12/20/00
622 16th ST	Downtown Denver Hist. Dist.	12/20/00
700 16th ST	Denver Dry Bldg	02/28/94
700 16th ST	Downtown Denver Hist. Dist.	12/20/00
720 16th ST	Neusteter Bldg	12/03/87
720 16th ST	Downtown Denver Hist. Dist.	12/20/00
800 16th ST	Downtown Denver Hist. Dist.	12/20/00
820 16th ST	Downtown Denver Hist. Dist.	12/20/00
900 16th ST	Downtown Denver Hist. Dist.	12/20/00
934 16th ST	Downtown Denver Hist. Dist.	12/20/00
1101 16th ST	D&F Tower	12/27/68
1101 16th ST	Downtown Denver Hist. Dist.	12/20/00
1350 16th ST	Lower Downtown Hist. Dist.	03/07/88
1400 16th ST	Lower Downtown Hist. Dist.	03/07/88
1500 16th ST	Lower Downtown Hist. Dist.	03/07/88
1600 16th ST	Lower Downtown Hist. Dist.	03/07/88
1700 16th ST	Lower Downtown Hist. Dist.	03/07/88
836 E 17th AVE	Swallow Hill Hist. Dist.	06/04/99
920 E 17th AVE	Swallow Hill Hist. Dist.	06/04/99
925 E 17th AVE	Swallow Hill Hist. Dist.	06/04/99
931 E 17th AVE	Frank E. Edbrooke House	12/21/78
940 E 17th AVE	Swallow Hill Hist. Dist.	06/04/99
941 E 17th AVE	Swallow Hill Hist. Dist.	06/04/99
1001 E 17th AVE	Aldine/Grafton	03/08/96
1002 E 17th AVE	Swallow Hill Hist. Dist.	06/04/99
1025 E 17th AVE	Swallow Hill Hist. Dist.	06/04/99
1129 E 17th AVE	Rosenzweig House	10/21/77
1332 E 17th AVE	Humboldt Street-Park Avenue Hist. Dist.	02/03/04
1900 E 17th AVE	Wyman Hist. Dist.	10/15/93
2000 E 17th AVE	Wyman Hist. Dist.	10/15/93
2100 E 17th AVE	Wyman Hist. Dist.	10/15/93
2200 E 17th AVE	Wyman Hist. Dist.	10/15/93
4000 E 17th AVE	Denver City Beautiful Pkwys H. D.	00/00/97
321 17th ST	Brown Palace Hotel	06/13/89
321 17th ST	Downtown Denver Hist. Dist.	12/20/00

Address	Name	Date
430 17th ST	Downtown Denver Hist. Dist.	12/20/00
518 17th ST	Downtown Denver Hist. Dist.	12/20/00
730 17th ST	Equitable Bldg	08/29/77
730 17th ST	Downtown Denver Hist. Dist.	12/20/00
805 17th ST	Guaranty Bank Bldg	04/27/90
817 17th ST	Downtown Denver Hist. Dist.	12/20/00
818 17th ST	American National Bank	10/12/94
818 17th ST	Downtown Denver Hist. Dist.	12/20/00
821 17th ST	Colorado Federal Bldg	10/21/77
821 17th ST	Downtown Denver Hist. Dist.	12/20/00
822 17th ST	Boston Bldg	07/17/89
822 17th ST	Downtown Denver Hist. Dist.	12/20/00
900 17th ST	Downtown Denver Hist. Dist.	12/20/00
909 17th ST	Downtown Denver Hist. Dist.	12/20/00
1322 17th ST	Columbia Hotel	05/28/74
1331 17th ST	Lower Downtown Hist. Dist.	03/07/88
1400 17th ST	Lower Downtown Hist. Dist.	03/07/88
1500 17th ST	Lower Downtown Hist. Dist.	03/07/88
1514 17th ST	Barth Hotel	10/03/85
1600 17th ST	Oxford Hotel	11/03/83
1600 17th ST	Lower Downtown Hist. Dist.	03/07/88
1635 17th ST	Sheridan Heritage Bldg	02/01/82
800 18th ST	Downtown Denver Hist. Dist.	12/20/00
1315 18th ST	Lower Downtown Hist. Dist.	03/07/88
1400 18th ST	Lower Downtown Hist. Dist.	03/07/88
1500 18th ST	Lower Downtown Hist. Dist.	03/07/88
1600 18th ST	Lower Downtown Hist. Dist.	03/07/88
5050 E 19th AVE	Park Hill Elementary School	11/02/94
1315 19th ST	Lower Downtown Hist. Dist.	03/07/88
1400 19th ST	Lower Downtown Hist. Dist.	03/07/88
1500 19th ST	Lower Downtown Hist. Dist.	03/07/88
1600 19th ST	Lower Downtown Hist. Dist.	03/07/88
1011 20th ST	20th Street Gym	04/11/92
1215 20th ST	Ballpark Neighborhood Hist. Dist.	07/22/02
1320 20th ST	Lower Downtown Hist. Dist.	03/07/88
1400 20th ST	Lower Downtown Hist. Dist.	03/07/88
1500 20th ST	Lower Downtown Hist. Dist.	03/07/88
3025 W 21st AVE	Witter Cofield Hist. Dist.	01/29/93

Address	Name	Date
3040 W 21st AVE	Witter Cofield Hist. Dist.	01/29/93
3100 W 21st AVE	Witter Cofield Hist. Dist.	01/29/93
3205 W 21st AVE	Half-Moon House	10/29/74
3205 W 21st AVE	Witter Cofield Hist. Dist.	01/29/93
401 21st ST	Clements Hist. Dist.	07/24/75
422 21st ST	Clements Hist. Dist.	07/24/75
3000 W 22nd AVE	Witter Cofield Hist. Dist.	01/29/93
3100 W 22nd AVE	Witter Cofield Hist. Dist.	01/29/93
3200 W 22nd AVE	Witter Cofield Hist. Dist.	01/29/93
416 22nd ST	Clements Hist. Dist.	07/24/75
1307 22nd ST	Burlington Hotel	09/30/93
3000 W 23rd AVE	Witter Cofield Hist. Dist.	01/29/93
3100 W 23rd AVE	Witter Cofield Hist. Dist.	01/29/93
3200 W 23rd AVE	Witter Cofield Hist. Dist.	01/29/93
933 E 24th AVE	Zion Baptist Church	04/25/69
3000 W 24th AVE	Witter Cofield Hist. Dist.	01/29/93
3100 W 24th AVE	Witter Cofield Hist. Dist.	01/29/93
3218 W 24th AVE	Witter Cofield Hist. Dist.	01/29/93
3221 W 24th AVE	Witter Cofield Hist. Dist.	01/29/93
3000 W 25th AVE	Witter Cofield Hist. Dist.	01/29/93
3025 W 25th AVE	Witter Cofield Hist. Dist.	01/29/93
3100 W 25th AVE	Witter Cofield Hist. Dist.	01/29/93
521 25th ST	Welton St. Commercial Corridor	03/14/02
623 25th ST	Curtis Park "D" Hist. Dist.	06/20/97
700 25th ST	Curtis Park "A" Hist. Dist.	03/03/95
701 E 26th AVE	Welton St. Commercial Corridor	03/14/02
605 26th ST	Welton St. Commercial Corridor	03/14/02
620 26th ST	Curtis Park "D" Hist. Dist.	06/20/97
720 26th ST	Curtis Park "D" Hist. Dist.	06/20/97
910 26th ST	Curtis Park "B" Hist. Dist.	02/03/95
915 26th ST	Curtis Park "B" Hist. Dist.	02/03/95
921 26th ST	Curtis Park "B" Hist. Dist.	02/03/95
1019 26th ST	Curtis Park "B" Hist. Dist.	02/03/95
614 27th ST	Welton St. Commercial Corridor	03/14/02
721 27th ST	Kinneavy Terrace	07/03/97
920 27th ST	Curtis Park "B" Hist. Dist.	02/03/95
921 27th ST	Curtis Park "C" Hist. Dist.	04/22/97
922 27th ST	Curtis Park "B" Hist. Dist.	02/03/95

Address	Name	Date
924 27th ST	Curtis Park "B" Hist. Dist.	02/03/95
1014 27th ST	Curtis Park "B" Hist. Dist.	02/03/95
2103 W 28th AVE	West 28th Ave. Hist. Dist.	11/04/94
2109 W 28th AVE	West 28th Ave. Hist. Dist.	11/04/94
2112 W 28th AVE	West 28th Ave. Hist. Dist.	11/04/94
2115 W 28th AVE	West 28th Ave. Hist. Dist.	11/04/94
2117 W 28th AVE	West 28th Ave. Hist. Dist.	11/04/94
1016 28th ST	Curtis Park "C" Hist. Dist.	04/22/97
1128 28th ST	Margery Reed Mayo Day Nursery	09/26/96
2114 W 29th AVE	Wheeler Block	11/20/81
2914 W 29th AVE	Queree House	11/01/73
3005 W 29th AVE	St. Dominic's Church	09/26/96
2205 W 30th AVE	Asbury Methodist Church	11/01/73
2323 W 30th AVE	Crescent Hand Laundry	01/22/96
4001 W 30th AVE	William Moses House	12/14/79
520 30th ST	Welton St. Commercial Corridor	03/14/02
1130 31st ST	Epworth Church/Community Center	06/11/99
2222 W 32nd AVE	Chapel of Our Merciful Savior	08/29/77
2400 W 32nd AVE	Potter Highlands Hist. Dist.	02/25/87
2500 W 32nd AVE	Potter Highlands Hist. Dist.	02/25/87
2533 W 32nd AVE	Henri Foster House	09/03/80
2600 W 32nd AVE	Potter Highlands Hist. Dist.	02/25/87
2653 W 32nd AVE	Henry Lee House	06/05/80
2700 W 32nd AVE	Potter Highlands Hist. Dist.	02/25/87
2825 W 32nd AVE	St Elizabeth's Chapel	09/26/74
1940 W 33rd AVE	Cole-DeRose Apartment House	11/06/95
2400 W 33rd AVE	Potter Highlands Hist. Dist.	02/25/87
2500 W 33rd AVE	Potter Highlands Hist. Dist.	02/25/87
2600 W 33rd AVE	Potter Highlands Hist. Dist.	02/25/87
2700 W 33rd AVE	Potter Highlands Hist. Dist.	02/25/87
2800 W 33rd AVE	Potter Highlands Hist. Dist.	02/25/87
2900 W 33rd AVE	Potter Highlands Hist. Dist.	02/25/87
2400 W 34th AVE	Potter Highlands Hist. Dist.	02/25/87
2500 W 34th AVE	Potter Highlands Hist. Dist.	02/25/87
2600 W 34th AVE	Potter Highlands Hist. Dist.	02/25/87
2700 W 34th AVE	Potter Highlands Hist. Dist.	02/25/87
2800 W 34th AVE	Potter Highlands Hist. Dist.	02/25/87
2900 W 34th AVE	Potter Highlands Hist. Dist.	02/25/87

Address	Name	Date
2400 W 35th AVE	Potter Highlands Hist. Dist.	02/25/87
2500 W 35th AVE	Potter Highlands Hist. Dist.	02/25/87
2600 W 35th AVE	Potter Highlands Hist. Dist.	02/25/87
2700 W 35th AVE	Potter Highlands Hist. Dist.	02/25/87
2800 W 35th AVE	Potter Highlands Hist. Dist.	02/25/87
2900 W 35th AVE	Potter Highlands Hist. Dist.	02/25/87
2400 W 36th AVE	Potter Highlands Hist. Dist.	02/25/87
2500 W 36th AVE	Potter Highlands Hist. Dist.	02/25/87
2600 W 36th AVE	Potter Highlands Hist. Dist.	02/25/87
2700 W 36th AVE	Potter Highlands Hist. Dist.	02/25/87
2800 W 36th AVE	Potter Highlands Hist. Dist.	02/25/87
2900 W 36th AVE	Potter Highlands Hist. Dist.	02/25/87
2400 W 37th AVE	Potter Highlands Hist. Dist.	02/25/87
2500 W 37th AVE	Potter Highlands Hist. Dist.	02/25/87
2600 W 37th AVE	Potter Highlands Hist. Dist.	02/25/87
2700 W 37th AVE	Potter Highlands Hist. Dist.	02/25/87
2800 W 37th AVE	Potter Highlands Hist. Dist.	02/25/87
2900 W 37th AVE	Potter Highlands Hist. Dist.	02/25/87
2400 W 38th AVE	Potter Highlands Hist. Dist.	02/25/87
2530 W 38th AVE	Potter Highlands Hist. Dist.	02/25/87
2534 W 38th AVE	Potter Highlands Hist. Dist.	02/25/87
2700 W 38th AVE	Potter Highlands Hist. Dist.	02/25/87
4620 W 38th AVE	Elitch Theater	11/06/95
3435 W 40th AVE	Skinner Middle School	11/09/93
3100 W 46th AVE	Denver City Beautiful Pkwys H. D.	00/00/97
4501 W 46th AVE	Smiley Library	10/03/89
7581 E Academy BV	Lowry Technical Training Hist. Dist.	09/08/95
7711 E Academy BV	Lowry Technical Training Hist. Dist.	09/08/95
23 Acoma ST	Baker Hist. Dist.	11/17/00
63 Acoma ST	Baker Hist. Dist.	11/17/00
121 Acoma ST	Baker Hist. Dist.	11/17/00
123 Acoma ST	Baker Hist. Dist.	11/17/00
127 Acoma ST	Baker Hist. Dist.	11/17/00
201 Acoma ST	Baker Hist. Dist.	11/17/00
217 Acoma ST	Baker Hist. Dist.	11/17/00
225 Acoma ST	Baker Hist. Dist.	11/17/00
235 Acoma ST	Baker Hist. Dist.	11/17/00
239 Acoma ST	Baker Hist. Dist.	11/17/00

Address	Name	Date
245 Acoma ST	Baker Hist. Dist.	11/17/00
249 Acoma ST	Baker Hist. Dist.	11/17/00
253 Acoma ST	Baker Hist. Dist.	11/17/00
259 Acoma ST	Baker Hist. Dist.	11/17/00
267 Acoma ST	Baker Hist. Dist.	11/17/00
317 Acoma ST	Baker Hist. Dist.	11/17/00
327 Acoma ST	Baker Hist. Dist.	11/17/00
337 Acoma ST	Baker Hist. Dist.	11/17/00
345 Acoma ST	Baker Hist. Dist.	11/17/00
349 Acoma ST	Baker Hist. Dist.	11/17/00
351 Acoma ST	Baker Hist. Dist.	11/17/00
425 Acoma ST	Baker Hist. Dist.	11/17/00
427 Acoma ST	Baker Hist. Dist.	11/17/00
428 Acoma ST	Baker Hist. Dist.	11/17/00
429 Acoma ST	Baker Hist. Dist.	11/17/00
434 Acoma ST	Baker Hist. Dist.	11/17/00
441 Acoma ST	Baker Hist. Dist.	11/17/00
451 Acoma ST	Baker Hist. Dist.	11/17/00
455 Acoma ST	Baker Hist. Dist.	11/17/00
1115 Acoma ST	Evans School	12/31/01
3200 Alcott ST	Potter Highlands Hist. Dist.	02/25/87
3300 Alcott ST	Potter Highlands Hist. Dist.	02/25/87
3359 Alcott ST	McKay House	11/08/73
3400 Alcott ST	Potter Highlands Hist. Dist.	02/25/87
3500 Alcott ST	Potter Highlands Hist. Dist.	02/25/87
3600 Alcott ST	Potter Highlands Hist. Dist.	02/25/87
3700 Alcott ST	Potter Highlands Hist. Dist.	02/25/87
1601 Arapahoe ST	D&F Tower	12/20/00
1601 Arapahoe ST	Downtown Denver Hist. Dist.	12/20/00
64 W Archer PL	Baker Hist. Dist.	11/17/00
67 W Archer PL	Baker Hist. Dist.	11/17/00
68 W Archer PL	Baker Hist. Dist.	11/17/00
71 W Archer PL	Baker Hist. Dist.	11/17/00
76 W Archer PL	Baker Hist. Dist.	11/17/00
77 W Archer PL	Baker Hist. Dist.	11/17/00
80 W Archer PL	Baker Hist. Dist.	11/17/00
91 W Archer PL	Baker Hist. Dist.	11/17/00
100 W Archer PL	Baker Hist. Dist.	11/17/00

Address	Name	Date
1320 E Asbury AVE	Asbury Elementary School	02/03/95
425 Ash ST	Steck Elementary School	05/28/99
100 Bannock ST	Baker Hist. Dist.	11/17/00
200 Bannock ST	Baker Hist. Dist.	11/17/00
300 Bannock ST	Baker Hist. Dist.	11/17/00
400 Bannock ST	Baker Hist. Dist.	11/17/00
1310 Bannock ST	Byers/Evans House	04/23/76
1437 Bannock ST	Civic Center Hist. Dist.	04/23/76
1 Bannock ST	Baker Hist. Dist.	11/17/00
100 S Bannock ST	Baker Hist. Dist.	11/17/00
201 S Bannock ST	Baker Hist. Dist.	11/17/00
207 S Bannock ST	Baker Hist. Dist.	11/17/00
213 S Bannock ST	Baker Hist. Dist.	11/17/00
219 S Bannock ST	Baker Hist. Dist.	11/17/00
1 S Bannock ST	Baker Hist. Dist.	11/17/00
30 W Bayaud AVE	Baker Hist. Dist.	11/17/00
44 W Bayaud AVE	Baker Hist. Dist.	11/17/00
48 W Bayaud AVE	Baker Hist. Dist.	11/17/00
52 W Bayaud AVE	Baker Hist. Dist.	11/17/00
63 W Bayaud AVE	Baker Hist. Dist.	11/17/00
64 W Bayaud AVE	Baker Hist. Dist.	11/17/00
67 W Bayaud AVE	Baker Hist. Dist.	11/17/00
68 W Bayaud AVE	Baker Hist. Dist.	11/17/00
69 W Bayaud AVE	Baker Hist. Dist.	11/17/00
74 W Bayaud AVE	Baker Hist. Dist.	11/17/00
76 W Bayaud AVE	Baker Hist. Dist.	11/17/00
110 W Bayaud AVE	Baker Hist. Dist.	11/17/00
113 W Bayaud AVE	Baker Hist. Dist.	11/17/00
119 W Bayaud AVE	Baker Hist. Dist.	11/17/00
123 W Bayaud AVE	Baker Hist. Dist.	11/17/00
126 W Bayaud AVE	Baker Hist. Dist.	11/17/00
127 W Bayaud AVE	Baker Hist. Dist.	11/17/00
130 W Bayaud AVE	Baker Hist. Dist.	11/17/00
132 W Bayaud AVE	Baker Hist. Dist.	11/17/00
135 W Bayaud AVE	Baker Hist. Dist.	11/17/00
139 W Bayaud AVE	Baker Hist. Dist.	11/17/00
141 W Bayaud AVE	Baker Hist. Dist.	11/17/00
144 W Bayaud AVE	Baker Hist. Dist.	11/17/00

Address	Name	Date
147 W Bayaud AVE	Baker Hist. Dist.	11/17/00
150 W Bayaud AVE	Baker Hist. Dist.	11/17/00
152 W Bayaud AVE	Baker Hist. Dist.	11/17/00
154 W Bayaud AVE	Baker Hist. Dist.	11/17/00
157 W Bayaud AVE	Baker Hist. Dist.	11/17/00
160 W Bayaud AVE	Baker Hist. Dist.	11/17/00
163 W Bayaud AVE	Baker Hist. Dist.	11/17/00
166 W Bayaud AVE	Baker Hist. Dist.	11/17/00
168 W Bayaud AVE	Baker Hist. Dist.	11/17/00
170 W Bayaud AVE	Baker Hist. Dist.	11/17/00
173 W Bayaud AVE	Baker Hist. Dist.	11/17/00
175 W Bayaud AVE	Baker Hist. Dist.	11/17/00
176 W Bayaud AVE	Baker Hist. Dist.	11/17/00
182 W Bayaud AVE	Baker Hist. Dist.	11/17/00
3300 Belcaro DR	Phipps Tennis House	05/05/77
1360 Birch ST	Milo Smith House	02/14/97
1400 Blake ST	Lower Downtown Hist. Dist.	03/07/88
1500 Blake ST	Lower Downtown Hist. Dist.	03/07/88
1501 Blake ST	Constitution Hall (site)	01/10/68
1514 Blake ST	Barney Ford House	12/08/82
1600 Blake ST	Lower Downtown Hist. Dist.	03/07/88
1700 Blake ST	Lower Downtown Hist. Dist.	03/07/88
1732 Blake ST	Windsor Stables Bldg	10/25/85
1800 Blake ST	Lower Downtown Hist. Dist.	03/07/88
1900 Blake ST	Lower Downtown Hist. Dist.	03/07/88
2100 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2200 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2223 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2245 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2249 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2261 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2300 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2550 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2601 Blake ST	Ballpark Neighborhood Hist. Dist.	07/22/02
1501 Boulder ST	Old Highland Business Hist. Dist.	12/21/79
101 Broadway ST	1st & Broadway Bldg	05/21/86
110 Broadway ST	Mayan Theatre	03/07/84
550 Broadway ST	Leeman Auto Co. Building	09/07/99

Address	Name	Date
1300 Broadway ST	Civic Center Hist. Dist.	04/23/76
1357 Broadway ST	Civic Center Hist. Dist.	04/23/76
1820 Broadway ST	Trinity Methodist Church	05/01/68
1820 Broadway ST	Downtown Denver Hist. Dist.	12/20/00
2425 Broadway ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2441 Broadway ST	Ballpark Neighborhood Hist. Dist.	07/22/02
3200 Bryant ST	Potter Highlands Hist. Dist.	02/25/87
3300 Bryant ST	Potter Highlands Hist. Dist.	02/25/87
3400 Bryant ST	Potter Highlands Hist. Dist.	02/25/87
3500 Bryant ST	Potter Highlands Hist. Dist.	02/25/87
3600 Bryant ST	Potter Highlands Hist. Dist.	02/25/87
3700 Bryant ST	Potter Highlands Hist. Dist.	02/25/87
101 W Byers PL	Baker Hist. Dist.	11/16/00
108 W Byers PL	Baker Hist. Dist.	11/17/00
174 W Byers PL	Baker Hist. Dist.	11/17/00
178 W Byers PL	Baker Hist. Dist.	11/17/00
184 W Byers PL	Baker Hist. Dist.	11/17/00
188 W Byers PL	Baker Hist. Dist.	11/17/00
192 W Byers PL	Baker Hist. Dist.	11/17/00
1 W Byers PL	Baker Hist. Dist.	11/17/00
1554 California ST	Downtown Denver Hist. Dist.	12/20/00
1555 California ST	Downtown Denver Hist. Dist.	12/20/00
1609 California ST	Downtown Denver Hist. Dist.	12/20/00
1617 California ST	Feldhauser/Baldwin Building	02/07/95
1617 California ST	Downtown Denver Hist. Dist.	12/20/00
2400 California ST	Curtis Park "A" Hist. Dist.	03/03/95
2500 California ST	Curtis Park "D" Hist. Dist.	06/20/97
2605 California ST	Curtis Park "D" Hist. Dist.	06/20/97
100 W Cedar AVE	Baker Hist. Dist.	11/17/00
215 W Cedar AVE	Baker Hist. Dist.	11/17/00
1 W Cedar AVE	Baker Hist. Dist.	11/17/00
1323 Champa ST	Downtown Denver Hist. Dist.	12/20/00
1525 Champa ST	Downtown Denver Hist. Dist.	12/20/00
1529 Champa ST	Downtown Denver Hist. Dist.	12/20/00
1543 Champa ST	Odd Fellows Hall	01/22/73
1543 Champa ST	Downtown Denver Hist. Dist.	12/20/00
1636 Champa ST	Downtown Denver Hist. Dist.	12/20/00
1717 Champa ST	Downtown Denver Hist. Dist.	12/20/00

Address	Name	Date
1720 Champa ST	Downtown Denver Hist. Dist.	12/20/00
1732 Champa ST	Downtown Denver Hist. Dist.	12/20/00
1742 Champa ST	Downtown Denver Hist. Dist.	12/20/00
2500 Champa ST	Curtis Park "B" Hist. Dist.	02/03/95
2600 Champa ST	Curtis Park "B" Hist. Dist.	02/03/95
2900 Champa ST	Anfenger House	11/29/84
20 S Cherokee ST	Baker Hist. Dist.	11/17/00
70 S Cherokee ST	Baker Hist. Dist.	11/17/00
100 S Cherokee ST	Baker Hist. Dist.	11/17/00
104 S Cherokee ST	Baker Hist. Dist.	11/17/00
108 S Cherokee ST	Baker Hist. Dist.	11/17/00
114 S Cherokee ST	Baker Hist. Dist.	11/17/00
116 S Cherokee ST	Baker Hist. Dist.	11/17/00
120 S Cherokee ST	Baker Hist. Dist.	11/17/00
133 S Cherokee ST	Baker Hist. Dist.	11/17/00
137 S Cherokee ST	Baker Hist. Dist.	11/17/00
141 S Cherokee ST	Baker Hist. Dist.	11/17/00
145 S Cherokee ST	Baker Hist. Dist.	11/17/00
149 S Cherokee ST	Baker Hist. Dist.	11/17/00
152 S Cherokee ST	Baker Hist. Dist.	11/17/00
153 S Cherokee ST	Baker Hist. Dist.	11/17/00
154 S Cherokee ST	Baker Hist. Dist.	11/17/00
156 S Cherokee ST	Baker Hist. Dist.	11/17/00
158 S Cherokee ST	Baker Hist. Dist.	11/17/00
159 S Cherokee ST	Baker Hist. Dist.	11/17/00
160 S Cherokee ST	Baker Hist. Dist.	11/17/00
162 S Cherokee ST	Baker Hist. Dist.	11/17/00
164 S Cherokee ST	Baker Hist. Dist.	11/17/00
165 S Cherokee ST	Baker Hist. Dist.	11/17/00
166 S Cherokee ST	Baker Hist. Dist.	11/17/00
167 S Cherokee ST	Baker Hist. Dist.	11/17/00
172 S Cherokee ST	Baker Hist. Dist.	11/17/00
218 S Cherokee ST	Baker Hist. Dist.	11/17/00
55 Cherokee ST	Baker Hist. Dist.	11/17/00
66 Cherokee ST	Baker Hist. Dist.	11/17/00
100 Cherokee ST	Baker Hist. Dist.	11/17/00
200 Cherokee ST	Baker Hist. Dist.	11/17/00
300 Cherokee ST	Baker Hist. Dist.	11/17/00

Address	Name	Date
419 Cherokee ST	Baker Hist. Dist.	11/17/00
424 Cherokee ST	Baker Hist. Dist.	11/17/00
428 Cherokee ST	Baker Hist. Dist.	11/17/00
430 Cherokee ST	Baker Hist. Dist.	11/17/00
435 Cherokee ST	Baker Hist. Dist.	11/17/00
436 Cherokee ST	Baker Hist. Dist.	11/17/00
439 Cherokee ST	Baker Hist. Dist.	11/17/00
440 Cherokee ST	Baker Hist. Dist.	11/17/00
443 Cherokee ST	Baker Hist. Dist.	11/17/00
447 Cherokee ST	Baker Hist. Dist.	11/17/00
452 Cherokee ST	Baker Hist. Dist.	11/17/00
500 Cherokee ST	Baker Hist. Dist.	11/17/00
200 Cherry ST	Cranmer House	03/08/96
1963 Chestnut PL	Hose Company #1	03/03/86
400 Circle DR	Country Club Hist. Dist.	08/10/90
500 Circle DR	Country Club Hist. Dist.	08/10/90
City Park	City Park Pavilion Hist. Dist.	02/05/90
1500 City Park Esplanade	Denver City Beautiful Pkwys H. D.	00/00/97
304 Clarkson ST	Alamo Placita Hist. Dist.	06/16/00
400 Clarkson ST	Alamo Placita Hist. Dist.	06/16/00
500 Clarkson ST	Alamo Placita Hist. Dist.	06/16/00
600 Clarkson ST	East Seventh Ave. Hist. Dist.	04/30/93
670 Clarkson ST	John Mitchell House	03/30/79
700 Clarkson ST	East Seventh Ave. Hist. Dist.	04/30/93
709 Clarkson ST	Adoph Zang House	05/23/77
709 Clarkson ST	East Seventh Ave. Hist. Dist.	04/30/93
1313 Clarkson ST	St John's Episcopal Church	05/01/68
1570 Clarkson ST	German House/Denver Turnverein	09/13/95
3200 Clay ST	Potter Highlands Hist. Dist.	02/25/87
3300 Clay ST	Potter Highlands Hist. Dist.	02/25/87
3400 Clay ST	Potter Highlands Hist. Dist.	02/25/87
3500 Clay ST	Potter Highlands Hist. Dist.	02/25/87
3600 Clay ST	Amos B. Hughes House	09/07/99
3600 Clay ST	Potter Highlands Hist. Dist.	02/25/87
3700 Clay ST	Potter Highlands Hist. Dist.	02/25/87
600 Clayton ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Clayton ST	East Seventh Ave. Hist. Dist.	04/30/93
1080 Clayton ST	Fire House #5	12/31/85

Address	Name	Date
300 Clermont ST	Denver City Beautiful Pkwys H. D.	00/00/97
200 E Colfax AVE	Civic Center Hist. Dist.	04/23/76
201 E Colfax AVE	Civic Center Hist. Dist.	04/23/76
401 E Colfax AVE	Immaculate Conception	05/01/68
935 E Colfax AVE	Ogden Theater	11/02/94
1210 E Colfax AVE	The Colonnade	05/26/00
1600 E Colfax AVE	Wyman Hist. Dist.	10/15/93
1610 E Colfax AVE	Wyman Hist. Dist.	10/15/93
1800 E Colfax AVE	Wyman Hist. Dist.	10/15/93
1900 E Colfax AVE	Wyman Hist. Dist.	10/15/93
2021 E Colfax AVE	Wyman Hist. Dist.	10/15/93
2100 E Colfax AVE	Wyman Hist. Dist.	10/15/93
2239 E Colfax AVE	Wyman Hist. Dist.	10/15/93
2301 E Colfax AVE	Wyman Hist. Dist.	10/15/93
2400 E Colfax AVE	Austin Building	02/07/95
3315 E Colfax AVE	Bluebird Theatre	05/18/04
144 W Colfax AVE	Civic Center Hist. Dist.	04/23/76
320 W Colfax AVE	US Mint	08/17/72
924 W Colfax AVE	Westside Courthouse	07/17/98
3400 E Colfax A PL	Snell's Subdivision Hist. Dist.	07/28/86
3400 E Colfax B PL	Snell's Subdivision Hist. Dist.	07/28/86
600 Colorado BV	East Seventh Ave. Hist. Dist.	04/30/93
2205 Colorado BV	Fire Station #18	04/10/96
600 Columbine ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Columbine ST	East Seventh Ave. Hist. Dist.	04/30/93
1140 Columbine ST	Stevens School	11/14/91
1477 Columbine ST	Fifth Church of Christ Scientist	11/14/97
1400 Cook ST	Snell's Subdivision Hist. Dist.	07/28/86
169 Corona ST	Alamo Placita Hist. Dist.	06/16/00
300 Corona ST	Alamo Placita Hist. Dist.	06/16/00
400 Corona ST	Alamo Placita Hist. Dist.	06/16/00
500 Corona ST	Alamo Placita Hist. Dist.	06/16/00
600 Corona ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Corona ST	East Seventh Ave. Hist. Dist.	04/30/93
846 Corona ST	Dora Moore School	03/14/75
1439 Court PL	Curry/Chucovich House	12/08/82
906 Curtis ST	Ninth St Park Hist. Dist.	05/11/73
1512 Curtis ST	Downtown Denver Hist. Dist.	12/20/00

Address	Name	Date
2600 Curtis ST	Curtis Park "B" Hist. Dist.	02/03/95
2700 Curtis ST	Curtis Park "C" Hist. Dist.	04/22/97
220 S Dahlia ST	Joshel House	11/10/94
Daniels Park	Florence Martin Ranch	11/18/94
3300 Decatur ST	Potter Highlands Hist. Dist.	02/25/87
3400 Decatur ST	Potter Highlands Hist. Dist.	02/25/87
3500 Decatur ST	Potter Highlands Hist. Dist.	02/25/87
3600 Decatur ST	Potter Highlands Hist. Dist.	02/25/87
3700 Decatur ST	Potter Highlands Hist. Dist.	02/25/87
3701 Decatur ST	Potter Highlands Hist. Dist.	02/25/87
100 Delaware ST	Baker Hist. Dist.	11/17/00
200 Delaware ST	Baker Hist. Dist.	11/17/00
300 Delaware ST	Baker Hist. Dist.	11/17/00
421 Delaware ST	Baker Hist. Dist.	11/17/00
431 Delaware ST	Baker Hist. Dist.	11/17/00
435 Delaware ST	Baker Hist. Dist.	11/17/00
436 Delaware ST	Baker Hist. Dist.	11/17/00
437 Delaware ST	Baker Hist. Dist.	11/17/00
440 Delaware ST	Baker Hist. Dist.	11/17/00
442 Delaware ST	Baker Hist. Dist.	11/17/00
443 Delaware ST	Baker Hist. Dist.	11/17/00
446 Delaware ST	Baker Hist. Dist.	11/17/00
450 Delaware ST	Baker Hist. Dist.	11/17/00
453 Delaware ST	Baker Hist. Dist.	11/17/00
457 Delaware ST	Baker Hist. Dist.	11/17/00
460 Delaware ST	Baker Hist. Dist.	11/17/00
461 Delaware ST	Baker Hist. Dist.	11/17/00
465 Delaware ST	Baker Hist. Dist.	11/17/00
467 Delaware ST	Baker Hist. Dist.	11/17/00
469 Delaware ST	Baker Hist. Dist.	11/17/00
473 Delaware ST	Baker Hist. Dist.	11/17/00
1173 Delaware ST	Ten - Winkel House	03/10/00
Denver Univ	Evans Chapel	04/25/69
600 Detroit ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Detroit ST	East Seventh Ave. Hist. Dist.	04/30/93
1545 Detroit ST	East High School	02/04/91
2000 Dexter ST	Park Hill Library	09/20/89
2201 Dexter ST	St Thomas Church	04/01/77

Address	Name	Date
1 S Downing ST	Country Club Gardens	10/18/01
99 S Downing ST	Norman Apartment Building	07/16/02
100 Downing ST	Country Club Hist. Dist.	08/10/90
131 Downing ST	Alamo Placita Hist. Dist.	06/16/00
300 Downing ST	Country Club Hist. Dist.	08/10/90
317 Downing ST	Alamo Placita Hist. Dist.	06/16/00
400 Downing ST	Alamo Placita Hist. Dist.	06/16/00
500 Downing ST	Alamo Placita Hist. Dist.	06/16/00
600 Downing ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Downing ST	East Seventh Ave. Hist. Dist.	04/30/93
1601 Downing ST	Swallow Hill Hist. Dist	06/04/99
2123 Downing ST	Thomas Hornsby Ferrill House	08/31/73
2225 Downing ST	McBird House	06/21/93
2229 Downing ST	Gebhard/Smith House	12/21/79
2330 Downing ST	CF Holmes, Jr. House	12/05/94
1 Downing ST	Denver City Beautiful Pkwys H. D.	00/00/97
1 S Downing ST	Denver City Beautiful Pkwys H. D.	00/00/97
7 Elati ST	Baker Hist. Dist.	11/17/00
13 Elati ST	Baker Hist. Dist.	11/17/00
19 Elati ST	Baker Hist. Dist.	11/17/00
25 Elati ST	Baker Hist. Dist.	11/17/00
29 Elati ST	Baker Hist. Dist.	11/17/00
41 Elati ST	Baker Hist. Dist.	11/17/00
43 Elati ST	Baker Hist. Dist.	11/17/00
55 Elati ST	Baker Hist. Dist.	11/17/00
61 Elati ST	Baker Hist. Dist.	11/17/00
66 Elati ST	Baker Hist. Dist.	11/17/00
69 Elati ST	Baker Hist. Dist.	11/17/00
77 Elati ST	Baker Hist. Dist.	11/17/00
83 Elati ST	Baker Hist. Dist.	11/17/00
85 Elati ST	Baker Hist. Dist.	11/17/00
91 Elati ST	Baker Hist. Dist.	11/17/00
92 Elati ST	Baker Hist. Dist.	11/17/00
94 Elati ST	Baker Hist. Dist.	11/17/00
100 Elati ST	Baker Hist. Dist.	11/17/00
300 Elati ST	Baker Hist. Dist.	11/17/00
301 Elati ST	Baker Hist. Dist.	11/17/00
305 Elati ST	Baker Hist. Dist.	11/17/00

Address	Name	Date
951 Elati ST	West High School	10/22/92
3200 Eliot ST	Potter Highlands Hist. Dist.	02/25/87
3300 Eliot ST	Potter Highlands Hist. Dist.	02/25/87
3400 Eliot ST	Potter Highlands Hist. Dist.	02/25/87
3500 Eliot ST	Potter Highlands Hist. Dist.	02/25/87
3600 Eliot ST	Potter Highlands Hist. Dist.	02/25/87
3700 Eliot ST	Potter Highlands Hist. Dist.	02/25/87
600 Elizabeth ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Elizabeth ST	East Seventh Ave. Hist. Dist.	04/30/93
1301 Elizabeth ST	Lorenzo Benson House	11/17/95
24 E Ellsworth AVE	Arthur E. Pierce House	03/02/98
1010 E Ellsworth AVE	Country Club Gardens	10/18/01
32 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
36 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
48 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
50 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
58 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
62 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
66 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
68 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
100 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
200 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
204 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
218 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
222 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
225 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
230 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
231 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
235 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
239 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
245 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
290 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
500 W Ellsworth AVE	Baker Hist. Dist.	11/17/00
305 Emerson ST	Alamo Placita Hist. Dist.	06/16/00
400 Emerson ST	Alamo Placita Hist. Dist.	06/16/00
500 Emerson ST	Alamo Placita Hist. Dist.	06/16/00
600 Emerson ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Emerson ST	East Seventh Ave. Hist. Dist.	04/30/93

Address	Name	Date
1532 Emerson ST	Lang/Zang House	06/25/79
1566 Emerson ST	Swallow Hill Hist. Dist.	06/04/99
1600 Emerson ST	Swallow Hill Hist. Dist.	06/04/99
1610 Emerson ST	Flower/Vaile House	10/20/81
Evergreen Lake	Warming House	11/22/94
3209 W Fairview PL	Bosler House	02/14/84
2100 Federal BV	Witter Cofield Hist. Dist.	01/29/93
2200 Federal BV	Witter Cofield Hist. Dist.	01/29/93
2300 Federal BV	Witter Cofield Hist. Dist.	01/29/93
2400 Federal BV	Witter Cofield Hist. Dist.	01/29/93
2905 Federal BV	St. Dominic's Church	09/26/96
3300 Federal BV	Potter Highlands Hist. Dist.	02/25/87
3400 Federal BV	Potter Highlands Hist. Dist.	02/25/87
3500 Federal BV	Potter Highlands Hist. Dist.	02/25/87
3600 Federal BV	Potter Highlands Hist. Dist.	02/25/87
3625 Federal BV	Woodbury Library	10/03/89
600 Fillmore ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Fillmore ST	East Seventh Ave. Hist. Dist.	04/30/93
1700 Forest PKY	Denver City Beautiful Pkwys H. D.	00/00/97
715 S Forest ST	Four Mile House	12/27/68
100 Fox ST	Baker Hist. Dist.	11/17/00
1 Fox ST	Baker Hist. Dist.	11/17/00
100 S Franklin ST	Grant House	07/17/98
701 S Franklin ST	Eugene Field House	11/01/73
100 Franklin ST	Country Club Hist. Dist.	08/10/90
300 Franklin ST	Country Club Hist. Dist.	08/10/90
401 Franklin ST	Driving Park Hist. Dist.	02/07/03
500 Franklin ST	Driving Park Hist. Dist.	02/07/03
600 Franklin ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Franklin ST	East Seventh Ave. Hist. Dist.	04/30/93
737 Franklin ST	Jane Silverstien Ries House	06/25/92
1300 Franklin ST	Wyman Hist. Dist.	10/15/93
1400 Franklin ST	Wyman Hist. Dist.	10/15/93
1401 Franklin ST	Wyman Hist. Dist.	10/15/93
3620 Franklin ST	Wyatt School	02/18/88
100 Gaylord ST	Country Club Hist. Dist.	08/10/90
240 Gaylord ST	Country Club Hist. Dist.	08/10/90
300 Gaylord ST	Country Club Hist. Dist.	08/10/90

Address	Name	Date
600 Gaylord ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Gaylord ST	East Seventh Ave. Hist. Dist.	04/30/93
800 Gaylord ST	Morgan's Subdivision Hist. Dist.	01/10/78
900 Gaylord ST	Morgan's Subdivision Hist. Dist.	01/10/78
1100 Gaylord ST	Wyman Hist. Dist.	10/15/93
1200 Gaylord ST	Wyman Hist. Dist.	10/15/93
1300 Gaylord ST	Wyman Hist. Dist.	10/15/93
1401 Gaylord ST	Wyman Hist. Dist.	10/15/93
1406 Gaylord ST	Wyman Hist. Dist.	10/15/93
1530 Gaylord ST	Wyman Hist. Dist.	10/15/93
1547 Gaylord ST	Wyman Hist. Dist.	10/15/93
1600 Gaylord ST	Wyman Hist. Dist.	10/15/93
1718 Gaylord ST	Baerresen/Freeman House	03/30/81
1880 Gaylord ST	Pearce/McCallister House	08/17/72
100 Gilpin ST	Country Club Hist. Dist.	08/10/90
300 Gilpin ST	Country Club Hist. Dist.	08/10/90
401 Gilpin ST	Driving Park Hist. Dist.	02/07/03
500 Gilpin ST	Driving Park Hist. Dist.	02/07/03
600 Gilpin ST	The Church of the Ascension	04/19/04
601 Gilpin ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Gilpin ST	East Seventh Ave. Hist. Dist.	04/30/93
1300 Gilpin ST	Wyman Hist. Dist.	10/15/93
1400 Gilpin ST	Wyman Hist. Dist.	10/15/93
1401 Gilpin ST	Wyman Hist. Dist.	10/15/93
1750 Gilpin ST	1750 Gilpin Building	10/06/00
2259 Gilpin ST	Walter/Brierly House	04/04/78
1325 Glenarm PL	Denver Athletic Club	11/01/82
1330 Glenarm PL	Denver Press Club	10/09/86
1611 Glenarm PL	Downtown Denver Hist. Dist.	12/20/00
1621 Glenarm PL	Paramount Theatre	10/12/88
1621 Glenarm PL	Downtown Denver Hist. Dist.	12/20/00
2015 Glenarm PL	St Andrew's Memorial Chapel	09/26/74
2050 Glenarm PL	Clements Hist. Dist.	07/24/75
2061 Glenarm PL	Clements Hist. Dist.	07/24/75
2062 Glenarm PL	Clements Hist. Dist.	07/24/75
2071 Glenarm PL	Clements Hist. Dist.	07/24/75
2100 Glenarm PL	Clements Hist. Dist.	07/24/75
2105 Glenarm PL	Clements Hist. Dist.	07/24/75

Address	Name	Date
2201 Glenarm PL	Clements Hist. Dist.	07/24/75
200 Grant ST	Sherman School	09/26/95
900 Grant ST	Sherman/Grant Hist. Dist.	10/14/97
975 Grant ST	Porter House	07/06/90
1000 Grant ST	Sherman/Grant Hist. Dist.	10/14/97
1100 Grant ST	Sherman/Grant Hist. Dist.	10/14/97
1115 Grant ST	Dennis Sheedy House	01/23/74
1128 Grant ST	Whitehead/Peabody House	07/19/93
1244 Grant ST	Creswell House	09/10/75
1345 Grant ST	First Baptist Church	10/01/68
1370 Grant ST	Scottish Rite Masonic Temple	03/29/89
2000 Grove ST	Witter Cofield Hist. Dist.	01/29/93
2020 Grove ST	Witter Cofield Hist. Dist.	01/29/93
2100 Grove ST	Witter Cofield Hist. Dist.	01/29/93
2143 Grove ST	Frederic Neef House	09/10/75
2200 Grove ST	Witter Cofield Hist. Dist.	01/29/93
2300 Grove ST	Witter Cofield Hist. Dist.	01/29/93
2400 Grove ST	Witter Cofield Hist. Dist.	01/29/93
600 Harrison ST	East Seventh Ave. Hist. Dist.	04/30/93
Harvard Gulch Park	Nursery Building	09/16/94
2101 E Hawthorne PL	Country Club Hist. Dist.	08/10/90
3240 W Hayward PL	House w/ Round Window	05/18/94
100 High ST	Country Club Hist. Dist.	08/10/90
200 High ST	Country Club Hist. Dist.	08/10/90
300 High ST	Country Club Hist. Dist.	08/10/90
400 High ST	Driving Park Hist. Dist.	02/07/03
500 High ST	Driving Park Hist. Dist.	02/07/03
600 High ST	East Seventh Ave. Hist. Dist.	04/30/93
700 High ST	East Seventh Ave. Hist. Dist.	04/30/93
1000 High ST	Cheesman Park Memorial	11/01/73
1300 High ST	Wyman Hist. Dist.	10/15/93
1400 High ST	Wyman Hist. Dist.	10/15/93
1410 High ST	Stokes/Nicholson Bldg	06/29/76
1437 High ST	Watson House	06/29/76
1471 High ST	Peter McCourt House	04/16/82
1515 High ST	Wyman Hist. Dist.	10/15/93
1530 High ST	Wyman Hist. Dist.	10/15/93
1600 High ST	Wyman Hist. Dist.	10/15/93

Address	Name	Date
2501 High ST	Miller House	11/01/73
4725 High ST	Elyria School	01/22/96
2080 Hooker ST	Witter Cofield Hist. Dist.	01/29/93
2100 Hooker ST	Witter Cofield Hist. Dist.	01/29/93
2200 Hooker ST	Witter Cofield Hist. Dist.	01/29/93
2300 Hooker ST	Witter Cofield Hist. Dist.	01/29/93
2400 Hooker ST	Witter Cofield Hist. Dist.	01/29/93
100 Humboldt ST	Country Club Hist. Dist.	08/10/90
300 Humboldt ST	Country Club Hist. Dist.	08/10/90
401 Humboldt ST	Driving Park Hist. Dist.	02/07/03
501 Humboldt ST	Driving Park Hist. Dist.	02/07/03
600 Humboldt ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Humboldt ST	East Seventh Ave. Hist. Dist.	04/30/93
1000 Humboldt ST	Humboldt St. Hist. Dist.	11/21/75
1075 Humboldt ST	Sweet-Miller House	11/21/75
1100 Humboldt ST	Humboldt St. Hist. Dist.	11/21/75
1300 Humboldt ST	Wyman Hist. Dist.	10/15/93
1475 Humboldt ST	Hamilton Apartment Building	07/25/02
1617 Humboldt ST	Humboldt Street-Park Avenue Hist. Dist.	02/03/04
3601 Humboldt ST	Annunciation Church	06/24/90
888 E Iliff AVE	Nursery Building	09/16/94
4400 E Iliff AVE	Bethesda Gateway and Chapel	04/07/00
2200 Irving ST	Witter Cofield Hist. Dist.	01/29/93
35 W Irvington PL	Baker Hist. Dist.	11/17/00
39 W Irvington PL	Baker Hist. Dist.	11/17/00
43 W Irvington PL	Baker Hist. Dist.	11/17/00
51 W Irvington PL	Baker Hist. Dist.	11/17/00
59 W Irvington PL	Baker Hist. Dist.	11/17/00
100 W Irvington PL	Baker Hist. Dist.	11/17/00
200 W Irvington PL	Baker Hist. Dist.	11/17/00
300 W Irvington PL	Baker Hist. Dist.	11/17/00
600 Josephine ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Josephine ST	East Seventh Ave. Hist. Dist.	04/30/93
1365 Josephine ST	Gates House	09/16/77
1400 Josephine ST	Bosworth House	01/02/75
3559 Kalamath ST	Guadalupe Church	08/14/95
678 King ST	7th Avenue Congregational Church	11/20/98
100 Lafayette ST	Country Club Hist. Dist.	08/10/90

Address	Name	Date
300 Lafayette ST	Country Club Hist. Dist.	08/10/90
401 Lafayette ST	Driving Park Hist. Dist.	02/07/03
501 Lafayette ST	Driving Park Hist. Dist.	02/07/03
600 Lafayette ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Lafayette ST	East Seventh Ave. Hist. Dist.	04/30/93
2100 Lafayette ST	Lafayette St. Hist. Dist.	09/09/87
2932 Lafayette ST	Cody House	06/21/93
1400 Larimer ST	Hotel Hope Bldg	01/15/74
1400 Larimer ST	Larimer Square Hist. Dist.	01/15/74
1401 Larimer ST	Miller Bldg	01/15/74
1411 Larimer ST	McKibben Bldg	01/15/74
1412 Larimer ST	Barnum Bldg	01/15/74
1415 Larimer ST	Lincoln Hall Bldg	01/15/74
1421 Larimer ST	Congdon Bldg	01/15/74
1422 Larimer ST	Kettle Bldg	01/15/74
1430 Larimer ST	Sussex Bldg	01/15/74
1437 Larimer ST	Crawford Bldg	01/15/74
1445 Larimer ST	Gallup/Stanbury Bldg	01/15/74
1460 Larimer ST	Granite Bldg	01/15/74
2000 Larimer ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2100 Larimer ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2200 Larimer ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2201 Larimer ST	Burlington Hotel	09/30/93
2401 Larimer ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2639 Larimer ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2669 Larimer ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2701 Larimer ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2760 Larimer ST	Sacred Heart Church	08/31/73
900 Lawrence ST	St Cajetan's Church	04/08/70
1348 Lawrence ST	Hover/Bromley Bldg	04/10/96
1384 Lawrence ST	Downtown Denver Hist. Dist.	12/20/00
1801 Lawrence ST	Tramway Cable Bldg	01/22/72
2162 Lawrence ST	Savage Candy Co. Building	12/05/94
23 Lincoln ST	S. Broadway Christian Church	04/25/69
900 Lincoln ST	Sherman/Grant Hist. Dist.	10/14/97
1160 Lincoln ST	St Mark's Church	02/18/70
1300 Lincoln ST	Civic Center Hist. Dist.	04/23/76
1400 Lincoln ST	Civic Center Hist. Dist.	04/23/76

Address	Name	Date
1500 Lincoln ST	Civic Center Hist. Dist.	04/23/76
5100 Lincoln ST	Globeville School	03/31/04
1501 S Logan ST	James Fleming House	11/08/73
600 Logan ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Logan ST	East Seventh Ave. Hist. Dist.	04/30/93
801 Logan ST	Sayre's Alhambra	11/29/95
900 Logan ST	Hallet House	02/26/74
900 Logan ST	Quality Hill Hist. Dist.	10/02/92
930 Logan ST	McNeil House	12/19/75
940 Logan ST	Campbell House	02/26/74
948 Logan ST	Mckinley Mansion	02/26/74
1000 Logan ST	Brind Mansion	05/19/86
1030 Logan ST	Stearns House	07/28/78
1034 Logan ST	Daly House	09/10/75
1208 Logan ST	Baker-Plested House	03/31/76
1325 Logan ST	Denver Women's Press Club	12/27/68
1350 Logan ST	Cuthbert-Dines House	06/06/97
1401 Logan ST	1st Church-Christ Scientist	10/01/68
1904 Logan ST	Arcanum-Beldame Apartments	10/08/99
1912 Logan ST	Ross-Lewin Double	06/19/98
1501 S Logan ST	Decker Library	10/04/84
1700 E Louisiana AVE	South High School	11/14/91
1820 Lowell BV	Lake Middle School	06/21/96
3417 Lowell BV	Cox House	11/01/73
3425 Lowell BV	Cox Gargoyle House	11/01/73
5025 Lowell BV	Berkeley School	07/05/96
1401 Madison ST	Snell's Subdivision Hist. Dist.	07/28/86
27 W Maple AVE	Baker Hist. Dist.	11/17/00
28 W Maple AVE	Baker Hist. Dist.	11/17/00
100 W Maple AVE	Baker Hist. Dist.	11/17/00
320 S Marion ST	Steele Elementary School	03/23/94
100 Marion ST	Country Club Hist. Dist.	08/10/90
300 Marion ST	Country Club Hist. Dist.	08/10/90
410 Marion ST	Benjamin Brown House	04/22/97
410 Marion ST	Driving Park Hist. Dist.	02/07/03
501 Marion ST	Driving Park Hist. Dist.	02/07/03
600 Marion ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Marion ST	East Seventh Ave. Hist. Dist.	04/30/93

Address	Name	Date
1410 Marion ST	Wolcott School	02/01/82
1 S Marion ST	Denver City Beautiful Pkwys H. D.	00/00/97
1400 Market ST	Lower Downtown Hist. Dist.	03/07/88
1500 Market ST	Lower Downtown Hist. Dist.	03/07/88
1600 Market ST	Lower Downtown Hist. Dist.	03/07/88
1620 Market ST	Hitchings House	05/28/74
1624 Market ST	Lieberhart/Lendner Bldg	05/28/74
1634 Market ST	McCary Bldg	05/28/74
1642 Market ST	Commercial bldg	05/28/74
1644 Market ST	Commercial bldg	05/28/74
1700 Market ST	Lower Downtown Hist. Dist.	03/07/88
1800 Market ST	Lower Downtown Hist. Dist.	03/07/88
1900 Market ST	Lower Downtown Hist. Dist.	03/07/88
2009 Market ST	Mattie Silks House	01/20/81
2100 Market ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2200 Market ST	Ballpark Neighborhood Hist. Dist.	07/22/02
3601 E Martin Luther King BV	George W. Clayton College	03/15/99
600 Milwaukee ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Milwaukee ST	East Seventh Ave. Hist. Dist.	04/30/93
100 Monaco PKY	Denver City Beautiful Pkwys H. D.	00/00/97
1551 S Monroe ST	Merrill Middle School	11/22/94
7000 E Montclair PL	Montclair Hist. Dist.	10/17/75
4000 E Montview BV	Denver City Beautiful Pkwys H. D.	00/00/97
4705 E Montview BV	Park Hill Library	09/20/89
Red Rocks Park Morrison RD	Red Rocks Amphitheatre	11/01/73
Morrison RD	Pueblo Trading Post	11/22/94
3500 Navajo ST	Hannigan/Canino Terrace	06/04/87
3549 Navajo ST	Mt Carmel Church	08/29/77
4130 Navajo ST	Horace Mann Middle School	09/11/95
3520 Newton ST	John Brisbane Walker House	11/08/73
2 S Ogden ST	Country Club Gardens	10/18/01
250 Ogden ST	Alamo Placita Hist. Dist.	06/16/00
300 Ogden ST	Alamo Placita Hist. Dist.	06/16/00
355 Ogden ST	Alamo Placita Hist. Dist.	06/16/00
400 Ogden ST	Alamo Placita Hist. Dist.	06/16/00
500 Ogden ST	Alamo Placita Hist. Dist.	06/16/00

Address	Name	Date
600 Ogden ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Ogden ST	East Seventh Ave. Hist. Dist.	04/30/93
1317 Ogden ST	The Cornwall	04/29/76
1420 Ogden ST	Emerson School	10/04/84
1545 Ogden ST	Swallow Hill Hist. Dist.	06/04/99
1600 Ogden ST	Swallow Hill Hist. Dist.	06/04/99
2036 Ogden ST	Wolf House	05/03/04
2201 Ogden ST	Scott Methodist Church	02/18/70
700 Olive ST	Montclair Hist. Dist.	10/17/75
700 Olive ST	Montclair Hist. Dist.	10/17/75
754 Olive ST	Montclair Hist. Dist.	10/17/75
762 Olive ST	Montclair Hist. Dist.	10/17/75
770 Olive ST	Montclair Hist. Dist.	10/17/75
800 Olive ST	Montclair Hist. Dist.	10/17/75
900 Olive ST	Montclair Hist. Dist.	10/17/75
1000 Olive ST	Montclair Hist. Dist.	10/17/75
1100 Olive ST	Montclair Hist. Dist.	10/17/75
700 Oneida ST	Montclair Hist. Dist.	10/17/75
800 Oneida ST	Montclair Hist. Dist.	10/17/75
900 Oneida ST	Montclair Hist. Dist.	10/17/75
1000 Oneida ST	Montclair Hist. Dist.	10/17/75
1100 Oneida ST	Montclair Hist. Dist.	10/17/75
1130 Oneida PL	Montclair Hist. Dist.	10/17/75
1426 Oneida ST	Fire Station #14	04/10/96
1000 Osage ST	Buckhorn Exchange	08/17/72
3611 Osage ST	Frank Damascio House	12/08/77
3617 Osage ST	Cerrone's Grocery	12/24/81
3016 Osceola ST	Herman Heiser House	11/01/73
3131 Osceola ST	Highlands United Methodist Church	08/14/98
2000 E Park PL	East Park Place Hist. Dist.	12/30/93
119 Park Avenue West	Shorter AME Church	04/22/97
410 Park Avenue West	Ebert Elementary School	01/25/93
1415 Park Avenue West	Ballpark Neighborhood Hist. Dist.	07/22/02
1500 Park Avenue West	Park Avenue Hist. Dist.	07/22/02
340 Pearl ST	Alamo Placita Hist. Dist.	06/16/00
400 Pearl ST	Alamo Placita Hist. Dist.	06/16/00
500 Pearl ST	Alamo Placita Hist. Dist.	06/16/00
600 Pearl ST	East Seventh Ave. Hist. Dist.	04/30/93

Address	Name	Date
700 Pearl ST	East Seventh Ave. Hist. Dist.	04/30/93
720 Pearl ST	East Seventh Ave. Hist. Dist.	04/30/93
736 Pearl ST	Forster/McCauley/Symes/French Cons	08/14/73
777 Pearl ST	John Porter House	03/14/75
900 Pearl ST	Quality Hill Hist. Dist.	10/02/92
1022 Pearl ST	Quality Hill Hist. Dist.	10/02/92
1062 Pearl ST	Helene Apartments	06/06/97
1595 Pearl ST	Temple Emmanuel/Temple Center	04/02/87
1726 Pearl ST	Haynes Townhouses	11/05/98
150 S Pearl ST	Byers Junior High School	11/14/96
1600 S Pearl ST	Cameron Methodist Church	09/29/03
3301 Pecos ST	St Patrick's Church	08/29/77
400 Pennsylvania ST	Alamo Placita Hist. Dist.	06/16/00
500 Pennsylvania ST	Alamo Placita Hist. Dist.	06/16/00
600 Pennsylvania ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Pennsylvania ST	East Seventh Ave. Hist. Dist.	04/30/93
770 Pennsylvania ST	Grant/Humphrey Mansion	10/07/76
900 Pennsylvania ST	Quality Hill Hist. Dist.	10/02/92
901 Pennsylvania ST	Clemes-Lipe House	02/26/74
945 Pennsylvania ST	Taylor House	02/26/74
1040 Pennsylvania ST	Pennsylvania Street Hist. Dist.	04/28/97
1065 Pennsylvania ST	Pennsylvania Street Hist. Dist.	04/28/97
1102 Pennsylvania ST	Pennsylvania Street Hist. Dist.	04/28/97
1107 Pennsylvania ST	Pennsylvania Street Hist. Dist.	04/28/97
1129 Pennsylvania ST	Butters House	07/28/81
1133 Pennsylvania ST	Fleming-Hanington House	07/28/81
1200 Pennsylvania ST	Dunning-Benedict House	06/16/75
1200 Pennsylvania ST	Pennsylvania Street Hist. Dist.	04/28/97
1207 Pennsylvania ST	Keating House	06/16/75
1225 Pennsylvania ST	Robinson House	09/18/91
1300 Pennsylvania ST	Pennsylvania Street Hist. Dist.	04/28/97
1340 Pennsylvania ST	Molly Brown House	03/30/71
1355 Pennsylvania ST	Milheim House (moved)	09/09/88
1400 Pennsylvania ST	Pennsylvania Street Hist. Dist.	04/28/97
1650 Pennsylvania ST	Guerrieri/Decunto House	08/.20/79
710 S Pennsylvania ST	Lincoln Elementary	06/19/98
2841 Perry ST	Woodbury House	12/22/78
2851 Perry ST	Lobach House	12/22/78

Address	Name	Date
1416 Platte ST	Forney Museum	05/25/72
711 Pontiac ST	Montclair Hist. Dist.	10/17/75
1800 Pontiac ST	Treat Hall	08/15/75
1256 Poplar ST	St Luke's Church	09/10/75
3742 W Princeton CIR	Field Officers' Quarters	11/19/90
400 S Quebec ST	Gate Lodge-Fairmount Cemetery	11/04/76
400 S Quebec ST	Ivy Chapel-Fairmount Cemetery	11/04/76
510 Quebec ST	Lowry Officers' Row Hist. Dist.	09/08/95
600 Quebec ST	Eisenhower Chapel-Lowry AFB	02/01/82
3350 Quitman ST	Edison Elementary School	12/05/96
3225 Quivas ST	Edward L. Fox House	11/06/95
3635 Quivas ST	Bryant-Webster School	07/05/96
1017 S Race ST	Neahr House	02/13/04
100 Race ST	Country Club Hist. Dist.	08/10/90
300 Race ST	Country Club Hist. Dist.	08/10/90
400 Race ST	Country Club Hist. Dist.	08/10/90
500 Race ST	Country Club Hist. Dist.	08/10/90
600 Race ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Race ST	East Seventh Ave. Hist. Dist.	04/30/93
800 Race ST	Morgan's Subdivision Hist. Dist.	01/10/78
900 Race ST	Morgan's Subdivision Hist. Dist.	01/10/78
1200 Race ST	Wyman Hist. Dist.	10/15/93
1300 Race ST	Wyman Hist. Dist.	10/15/93
1320 Race ST	Pope/Thompson/Wasson House	05/24/72
1359 Race ST	Adams/Fitzell House	03/14/75
1400 Race ST	Wyman Hist. Dist.	10/15/93
1402 Race ST	Wyman Hist. Dist.	10/15/93
1515 Race ST	Wyman Hist. Dist.	10/15/93
1540 Race ST	Wyman Hist. Dist.	10/15/93
1555 Race ST	Chappell House	03/22/82
1572 Race ST	Raymond House - Castle Marne	11/22/74
1600 Race ST	Wyman Hist. Dist.	10/15/93
2118 Race ST	East Park Place Hist. Dist.	12/30/93
125 Rampart WAY	Lowry Technical Training Hist. Dist.	09/08/95
130 Rampart WAY	Lowry Technical Training Hist. Dist.	09/08/95
200 Rampart WAY	Lowry Technical Training Hist. Dist.	09/08/95
415 Rampart WAY	Lowry Officers' Row Hist. Dist.	09/08/95
505 Rampart WAY	Lowry Officers' Row Hist. Dist.	09/08/95

Address	Name	Date
6500 E Richthofen PKY	Denver City Beautiful Pkwys H. D.	00/00/97
6800 E Richthofen PKY	Montclair Hist. Dist.	10/17/75
6840 E Richthofen PL	Montclair Hist. Dist.	10/17/75
6920 E Richthofen PL	Montclair Hist. Dist.	10/17/75
6930 E Richthofen PL	Montclair Hist. Dist.	10/17/75
6935 E Richthofen PL	Montclair Hist. Dist.	10/17/75
6940 E Richthofen PL	Montclair Hist. Dist.	10/17/75
7001 E Richthofen PL	Montclair Hist. Dist.	10/17/75
7010 E Richthofen PL	Montclair Hist. Dist.	10/17/75
7041 E Richthofen PL	Montclair Hist. Dist.	10/17/75
7055 E Richthofen PL	Montclair Hist. Dist.	10/17/75
400 Saint Paul ST	Greenleaf Masonic Temple	01/31/89
600 Saint Paul ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Saint Paul ST	East Seventh Ave. Hist. Dist.	04/30/93
675 Santa Fe DR	Byers Library	09/20/89
6930 E Severn PL	Montclair Hist. Dist.	10/17/75
900 Sherman ST	Sherman/Grant Hist. Dist.	10/14/97
969 Sherman ST	Crawford Hill Mansion	11/21/89
1000 Sherman ST	Sherman/Grant Hist. Dist.	10/14/97
1100 Sherman ST	Sherman/Grant Hist. Dist.	10/14/97
1300 Sherman ST	Civic Center Hist. Dist.	04/23/76
1500 Sherman ST	Civic Center Hist. Dist.	04/23/76
1530 Sherman ST	Civic Center Hist. Dist.	04/23/76
1540 Sherman ST	Civic Center Hist. Dist.	04/23/76
1770 Sherman ST	El Jebel Temple	03/13/95
4250 Shoshone ST	Smedley Elementary School	06/23/92
505 E Speer BV	Alamo Placita Hist. Dist.	06/16/00
609 E Speer BV	Alamo Placita Hist. Dist.	06/16/00
693 E Speer BV	Alamo Placita Hist. Dist.	06/16/00
701 E Speer BV	Alamo Placita Hist. Dist.	06/16/00
777 E Speer BV	Alamo Placita Hist. Dist.	06/16/00
825 E Speer BV	Alamo Placita Hist. Dist.	06/16/00
2960 Speer BV	North High School	09/10/96
University BV Speer BV / 1st AVE	Speer Boulevard Hist. Dist.	10/04/88
1550 S Steele ST	Cory Elementary School	11/22/94
600 Steele ST	East Seventh Ave. Hist. Dist.	04/30/93
682 Steele ST	East Seventh Ave. Hist. Dist.	04/30/93

Address	Name	Date
700 Steele ST	East Seventh Ave. Hist. Dist.	04/30/93
1531 Stout ST	Downtown Denver Hist. Dist.	12/20/00
1543 Stout ST	Downtown Denver Hist. Dist.	12/20/00
1616 Stout ST	Downtown Denver Hist. Dist.	12/20/00
1823 Stout ST	US Post Office	09/11/74
2335 Stout ST	Nagel House	08/01/97
2343 Stout ST	Kaub House	03/02/98
2400 Stout ST	Curtis Park "A" Hist. Dist.	03/03/95
2418 Stout ST	Huddart/Lydon House	01/25/93
2500 Stout ST	Curtis Park "D" Hist. Dist.	06/20/97
2600 Stout ST	Curtis Park "D" Hist. Dist.	06/20/97
2700 Stout ST	Kinneavy Terrace	03/02/98
1389 Stuart ST	Bliss House	10/02/75
1390 Stuart ST	Kenehan House	12/21/78
1435 Stuart ST	Smith House	11/22/74
1444 Stuart ST	Stuart Street House "A"	02/25/76
1471 Stuart ST	Voorhees House	11/22/74
1914 Syracuse ST	Ashley Elementary School	12/11/92
3600 Tejon ST	Fire House #7	08/14/95
1326 Tremont PL	Fire House #1	02/11/74
1715 Tremont PL	Downtown Denver Hist. Dist.	12/20/00
1725 Tremont PL	Navarre Bldg	12/09/71
1725 Tremont PL	Downtown Denver Hist. Dist.	12/20/00
2100 Tremont PL	Clements Hist. Dist.	07/24/75
1740 Ulster ST	Greeters of America	07/17/90
2745 Umatilla ST	West 28th Ave. Hist. District	11/04/94
2753 Umatilla ST	West 28th Ave. Hist. District	11/04/94
2947 Umatilla ST	Fager Residence	07/20/95
3147 Umatilla ST	Alexander Cowie House	11/06/95
1 S University BV	Denver City Beautiful Pkwys H. D.	00/00/97
325 University BV	Country Club Hist. Dist.	08/10/90
1 University BV	Denver City Beautiful Pkwys H. D.	00/00/97
100 Vine ST	Country Club Hist. Dist.	08/10/90
200 Vine ST	Country Club Hist. Dist.	08/10/90
300 Vine ST	Country Club Hist. Dist.	08/10/90
600 Vine ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Vine ST	East Seventh Ave. Hist. Dist.	04/30/93
800 Vine ST	Morgan's Subdivision Hist. Dist.	01/10/78

Address	Name	Date
900 Vine ST	Morgan's Subdivision Hist. Dist.	01/10/78
1100 Vine ST	Wyman Hist. Dist.	10/15/93
1200 Vine ST	Wyman Hist. Dist.	10/15/93
1300 Vine ST	Wyman Hist. Dist.	10/15/93
1400 Vine ST	Wyman Hist. Dist.	10/15/93
1500 Vine ST	Wyman Hist. Dist.	10/15/93
1516 Vine ST	Wyman Hist. Dist.	10/15/93
1600 Vine ST	Wyman Hist. Dist.	10/15/93
2141 Vine ST	East Park Place Hist. Dist.	12/30/93
2300 Walnut ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2400 Walnut ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2500 Walnut ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2600 Walnut ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2700 Walnut ST	Ballpark Neighborhood Hist. Dist.	07/22/02
2930 E Warren AVE	Chamberlain Observatory	09/01/94
1751 S Washington ST	Grant Middle School	11/09/93
2305 S Washington ST	Thomas Field House	02/27/79
300 Washington ST	Alamo Placita Hist. Dist.	06/16/00
400 Washington ST	Alamo Placita Hist. Dist.	06/16/00
500 Washington ST	Alamo Placita Hist. Dist.	06/16/00
600 Washington ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Washington ST	East Seventh Ave. Hist. Dist.	04/30/93
707 Washington ST	Wood/Morris/Bonfils House	04/30/93
740 Washington ST	East Seventh Ave. Hist. Dist.	04/30/93
750 Washington ST	East Seventh Ave. Hist. Dist.	04/30/93
841 Washington ST	Enos House	06/21/96
900 Washington ST	Quality Hill Hist. Dist.	10/02/92
1005 Washington ST	Quality Hill Hist. Dist.	10/02/92
1010 Washington ST	Quality Hill Hist. Dist.	10/02/92
2500 Washington ST	Fire House #3	12/05/94
Washington Park	Bath House	09/16/94
Washington Park	Boat House Pavilion	11/22/94
Washington Park	Smith's Ditch Historic District	03/22/77
1301 Wazee ST	Lower Downtown Hist. Dist.	03/07/88
1333 Wazee ST	Lower Downtown Hist. Dist.	03/07/88
1400 Wazee ST	Lower Downtown Hist. Dist.	03/07/88
1500 Wazee ST	Lower Downtown Hist. Dist.	03/07/88
1600 Wazee ST	Lower Downtown Hist. Dist.	03/07/88

Address	Name	Date
1700 Wazee ST	Lower Downtown Hist. Dist.	03/07/88
1701 Wazee ST	Oxford Hotel	11/03/83
1800 Wazee ST	Lower Downtown Hist. Dist.	03/07/88
1900 Wazee ST	Lower Downtown Hist. Dist.	03/07/88
1555 Welton ST	Downtown Denver Hist. Dist.	12/20/00
1614 Welton ST	Masonic Bldg	04/27/82
1614 Welton ST	Downtown Denver Hist. Dist.	12/20/00
2400 Welton ST	Welton St. Commercial Corridor	03/14/02
2500 Welton ST	Welton St. Commercial Corridor	03/14/02
2600 Welton ST	Welton St. Commercial Corridor	03/14/02
2700 Welton ST	Welton St. Commercial Corridor	03/14/02
2745 Welton ST	Douglass Undertaking Bldg.	04/22/93
2800 Welton ST	Welton St. Commercial Corridor	03/14/02
2900 Welton ST	Welton St. Commercial Corridor	03/14/02
400 Westwood DR	Country Club Hist. Dist.	08/10/90
400 Williams ST	Denver City Beautiful Pkwys H. D.	00/00/97
400 Williams ST	Driving Park Hist. Dist.	02/07/03
500 Williams ST	Driving Park Hist. Dist.	02/07/03
600 Williams ST	East Seventh Ave. Hist. Dist.	04/30/93
700 Williams ST	East Seventh Ave. Hist. Dist.	04/30/93
1290 Williams ST	Tears/McFarlane House	02/06/73
1300 Williams ST	Wyman Hist. Dist.	10/15/93
1400 Williams ST	Wyman Hist. Dist.	10/15/93
1433 Williams ST	Wyman Hist. Dist.	10/15/93
1526 Williams ST	Wyman Hist. Dist.	10/15/93
2839 Wyandot ST	Conine-Horan House	11/06/95
2925 Wyandot ST	Talmadge & Boyer Store & Terrace	07/20/95
1400 Wynkoop ST	Lower Downtown Hist. Dist.	03/07/88
1500 Wynkoop ST	Lower Downtown Hist. Dist.	03/07/88
1600 Wynkoop ST	Lower Downtown Hist. Dist.	03/07/88
1700 Wynkoop ST	Lower Downtown Hist. Dist.	03/07/88
1701 Wynkoop ST	Denver Union Terminal	N/A
1738 Wynkoop ST	Wynkoop Bldg	07/27/83
1800 Wynkoop ST	Lower Downtown Hist. Dist.	03/07/88
1801 Wynkoop ST	Ice House	12/18/96
600 York ST	East Seventh Ave. Hist. Dist.	04/30/93
700 York ST	East Seventh Ave. Hist. Dist.	04/30/93
800 York ST	Morgan's Subdivision Hist. Dist.	01/10/78

Address	Name	Date
909 York ST	Botanic Gardens House	11/08/73
918 York ST	Morgan's Subdivision Hist. Dist.	01/10/78
1005 York ST	Boettcher Memorial Conservatory	11/08/73
1100 York ST	Wyman Hist. Dist.	10/15/93
1200 York ST	Wyman Hist. Dist.	10/15/93
1300 York ST	Wyman Hist. Dist.	10/15/93
1400 York ST	Wyman Hist. Dist.	10/15/93
1500 York ST	Wyman Hist. Dist.	10/15/93
1600 York ST	Wyman Hist. Dist.	10/15/93
1801 York ST	Smith House	12/09/71
2080 York ST	Graham/Bible House-City Park	09/16/94
2944 Zuni ST	Romeo Block	11/09/93
3200 Zuni ST	Potter Highlands Hist. Dist.	02/25/87
3300 Zuni ST	Potter Highlands Hist. Dist.	02/25/87
3400 Zuni ST	Potter Highlands Hist. Dist.	02/25/87
3500 Zuni ST	Potter Highlands Hist. Dist.	02/25/87
3600 Zuni ST	Potter Highlands Hist. Dist.	02/25/87
3700 Zuni ST	Potter Highlands Hist. Dist.	02/25/87

APPENDIX 2: FORT COLLINS DESIGNATED PROPERTIES

(http://fcgov.com/historicpreservation/fort-collins-landmarks.php, 2005)

Address	**Name**	**Date**
610 Cherry St	Rev. Joseph P. Trudel House	NA
107 N College Av	Woolworth Building-Welch Block	06/20/93
111 N College Av	Windsor Hotel	11/15/94
114 N College Av	Avery Block	01/01/79
132-140 N College Av	Trimble Block	01/01/79
144 N College Av	Barkley Building	01/01/79
146 N College Av	Commercial Bank & Trust Building	01/01/79
150 N College Av	n/a	01/01/79
154-156 N College Av	Chinese Laundry	01/01/79
160 N College Av	Reed & Beals Block	01/01/79
164 N College Av	Star Grocery	01/01/79
172 N College Av	Northern Hotel	01/01/79
401 N College Av	Power Plant & Art Deco Fountain	09/01/87
430 - 500 N College Av	Power Plant's Rock Garden, Waterway, Pool, & Grotto	11/02/99
112 S College Av	Brinker Grocery	09/15/92
201 S College Av	Old Post Office	10/25/85
249 - 261 S College Av	Armstrong Hotel	12/16/97
612 S College Av	Darrah House	04/01/03
613 S College Av	Frank Corbin House	08/01/95
900 S College Av	Scott Apartments & Associated Garage	03/01/02
1304 S College Av	William Welscher Residence	06/04/96
7225 & 7309 S College Av	Deines Barn & Twin Silos	01/16/01
300 E Elizabeth St	McGannon-Middleswart House & Garage	06/04/96
415 E Elizabeth St	Kimple House	12/16/03
425 E Elizabeth St	Spencer House	08/01/95
514 E Elizabeth St	Anna B. Miller House	06/18/96
321 Garfield St	Emerson H. Kirkpatrick House	02/18/97
2112 E Harmony Rd	Harmony School	04/01/97
1745 Hoffman Mill Rd	Nix Farm	06/05/01

Address	Name	Date
127 N Howes St	St. Joseph Catholic School	06/04/96
330 N Howes St	Street Railway Car Barn	09/15/92
223 S Howes St	Dealy-Goode House	10/01/96
231 S Howes St	Humphrey-Davis House	11/03/98
510 S Howes St	Hiram Pierce House	06/04/96
520 S Howes St	Joseph Baines House	08/21/01
122 Jackson Av	Hill-Hunter House	02/17/98
211 Jefferson St	Jefferson Block	01/01/79
229 Jefferson St	Vandewark Block	01/01/79
241 Jefferson St	Ralph Building	01/01/79
243 Jefferson St	The Courier	01/01/79
136 Laporte Av	C&S Depot & Dock	08/01/95
1006 Laporte Av	Marsh-Geist House & Garage	08/25/00
1500 Laporte Av	Beach Residence	07/17/01
220 E Laurel St	Long Apartments	02/18/97
321 - 323 E Laurel St	EP Montgomery Duplex House, Garage & Shed	02/15/00
330 E Laurel St	Laurel Street School	05/15/84
425 E Laurel St	JM Glick House	09/15/98
131 E Lincoln Av	Harmony Mill	11/15/94
201 Linden St	Linden Hotel	01/01/74
210 Linden St	Mercer Building	01/01/79
213 Linden St	Loomis Block	01/01/79
214 Linden St	Bernheim Block	01/01/79
216 Linden St	Seckner Bros.	01/01/79
218 Linden St	Philippi Harness Shop	01/01/79
220 Linden St	Antlers Hotel	01/01/79
223 Linden St	Reed-Dauth Block	01/01/79
234 Linden St	Bernard Block	01/01/79
235 Linden St	Poudre Valley Bank Building	01/01/79
240 Linden St	Tomlin Building	01/01/79
247 Linden St	Robertson-Haynes Block	01/01/79
261 Linden St	Stover Building	01/01/79
131 N Loomis Av	Howard Carriage House	11/07/00
145 N Loomis Av	Howard House	10/17/95
301 S Loomis Av	D. Watrous House & Garage	02/18/97
226 W Magnolia St	Montezuma Fuller House	01/01/77
924 W Magnolia St	Elizabeth Collins House & Associated Structures	03/04/97

Address	Name	Date
200 Mathews St	Fort Collins Museum	08/30/85
623 Mathews St	SA Johnson House	09/15/00
725 Mathews St	Littler-Baker House	08/01/95
1611 Mathews St	AW Scott House	03/04/97
140 N McKinley Av	Robert & Orpha Buxton House & Attached Garage	12/15/98
515 S Meldrum St	Arthur and Lillian Andrew House, Barn & Garage	11/16/99
516 S Meldrum St	Garnick House	02/03/04
626 S Meldrum St	Price Paired Home, South Unit	11/16/99
200-220 E Mountain Av	HC Howard Block & JL Hohnstein Block	01/01/79
249-250 E Mountain Av	Forrester-Seckner Block	01/01/79
314 E Mountain Av	Fort Collins National Guard Armory	04/18/00
328 W Mountain Av	Avery House & Avery House Historic District	08/15/74
408 W Mountain Av	Morgan-Kirkland House	11/21/95
430 W Mountain Av	Kickland House & Garage	07/21/98
609 W Mountain Av	George W. Coffin House	04/02/96
628 W Mountain Av	Sadler House	08/01/95
629 W Mountain Av	Shenk House	11/19/91
704 W Mountain Av	Giddings House	08/19/03
808 W Mountain Av	Clippinger House	02/18/97
810 W Mountain Av	John & Edna Squires House	05/20/03
816 W Mountain Av	Isaac W. Bennett House	12/07/93
930 W Mountain Av	Sarchet House	06/17/80
1007 W Mountain Av	JW Spencer House & Garage	02/18/03
1009 W Mountain Av	Wiggins House & Garage	02/18/03
1501 W Mountain Av	Ernest Waycott House	06/04/96
314 E Mulberry St	Repogle-Bennet House	02/01/94
321 E Mulberry St	Calvert House	12/17/02
616 W Mulberry St	Sheldon House	04/20/04
1024 W Mulberry St	Honstein House	04/20/04
2306 W Mulberry St	Empire Grange Hall	09/26/03
2340 W Mulberry St	RG Maxwell House	12/01/82
304 E Myrtle St	JF Farrar House & Garage	04/02/96
308 E Myrtle St	HF Elliot-Carl Anderson House & Barn	04/02/96
324 E Oak St	Mosman House	07/06/76
426 E Oak St	Hottel-Hoffman House & Ash Pit (2001)	01/02/01
716 W Oak St	William & Clair Blair House & Garage	02/18/03

Address	Name	Date
832 W Oak St	WE Mahood House	03/04/97
1109 W Oak St	Vandewark House & Garage	09/15/98
1316 W Oak St	Jasper Loomis House	07/05/94
1320 W Oak St	Marion Alice Parker-Frank P. Stover House	06/04/96
1400 W Oak St	George J Wolfer House & Garages	09/15/98
11 Old Town Sq	Miller Block	01/01/79
15-21 Old Town Sq	Whitton Block & McPhearson Block	01/01/79
23-25 Old Town Sq	HA Craft Block	01/01/79
508 W Olive St	Rosenoff-Smith House	06/04/96
717 W Olive St	William & Eva Stroud House & Garage	01/08/03
730 W Olive St	Winslow-Guard Home	01/04/00
2005 N Overland Tr	Old (Fort Collins) Waterworks	01/01/71
120 Pearl St	Edwin & Ella Wolf House & Garage	11/07/00
218 Peterson St	BH McCarty House	04/04/97
518 Peterson St	BF Ayers House	08/01/95
630 Peterson St	Addie R. Debolt House	11/17/98
632 Peterson St	GR McDaniel House	10/21/97
811 Peterson St	Dura & Neil Graham House	06/18/96
817 Peterson St	Temple House	02/18/03
214 Pine St	Nicol Building	01/01/79
216 - 222 Pine St	n/a	01/01/79
226 Pine St	Asmus Signs	01/01/79
232 Pine St	La Court Hotel	01/01/79
240 Pine St	Blaine Hotel	01/01/79
401 Pine St	Giddings Machine Shop	01/21/03
200 E Plum St	Phi Delta Theta Fraternity House	07/16/96
319 E Plum St	Schalk-Stallings House	12/19/95
719 E Prospect Rd	Rush & Jean C. Locke House	11/03/98
2513 W Prospect Rd	Brown Farmhouse	05/18/93
2513 W Prospect Rd	Cunningham Corner Barn	12/07/93
148 Remington St	Poudre Garage	02/18/97
202 Remington St	McHugh-Andrews House	08/16/83
328 Remington St	First Baptist Church	07/07/02
503 Remington St	William C. Stover House	06/04/96
509 Remington St	Willard & Gladys Eddy House & Shared Barn	10/21/97
515 Remington St	Fred W. Stover House	10/21/97
622 Remington St	CM Smith House	02/01/82

Address	Name	Date
641 Remington St	Ralph House	11/03/98
700 Remington St	MG Nelson House & Carriage House	04/02/96
729 Remington St	Clammer-Juel House, Garage, Iron Fence & Stone Walk	11/02/99
824 Remington St	William E. Greffenius House & Garage	04/02/96
1315 Remington St	Hunter House	02/01/94
1400 Remington St	Fort Collins High School	09/06/94
2902 Rigden Pkwy	Henry Jessup-Cal Johnson Farm Bldgs	11/07/00
1600 Sheely Dr	Ben Olds House	02/15/00
1601 Sheely Dr	Mittry-Young House	07/21/98
1604 Sheely Dr	Sherwood House	02/15/00
1605 Sheely Dr	Moyer House	02/15/00
1608 Sheely Dr	Arthur Sheely House	02/15/00
1609 Sheely Dr	Wells House	02/15/00
1612 Sheely Dr	Dwight Ghent House	02/15/00
1613 Sheely Dr	Galyardt-Puleston House	02/15/00
1617 Sheely Dr	McCluskey House	02/15/00
1645 Sheely Dr	Shawver House	02/15/00
1700 Sheely Dr	Lincoln Mueller House	02/15/00
103 N Sherwood St	Baker-Harris House	05/04/93
128 N Sherwood St	Burnett-Killgore House & Outhouse	11/02/99
505 Smith St	Montgomery House & Garage	02/18/03
525 Smith St	George W. Coffin House	04/02/96
530 Smith St	John M. Riddle House	06/04/96
903 Stover St	Charles A. Lory House & Outbuildings	04/02/96
1035 E Swallow Rd	Nelson Milkhouse	01/01/73
425 Tenth St	John & Inez Romero House	08/21/01
5529 Timberline Rd	Gill-Nelson Farm	10/03/00
200 Walnut St	CC Forrester Building	01/01/79
210 Walnut St	Silver Grill Café	01/01/79
222 Walnut St	P. Anderson Mercantile Co.	01/01/79
232 Walnut St	Old Firehouse	01/01/79
237 West St	Sondburg House, Garage, & Chicken Coop	03/21/00
311 Whedbee St	JC Beers Barn	10/21/97
400 Whedbee St	Seventh Day Adventist Church	12/16/03
423 Whedbee St	Losey-Walker House	06/18/96
638 Whedbee St	EM Dodd-Frank Ghent House	04/02/96
120 N Whitcomb St	Ruth A. Jones House	02/18/03

Address	Name	Date
546 Willow St	Lindell Mill	11/15/94
227 Wood St	Harden House	09/07/99
407 Wood St	Gamble House	04/01/03
4605 S Zeigler Rd	Preston Farm	11/03/98
City Park Cannon	City Park	06/17/97
Annie's Grave	136 Laporte Av	11/07/95
Birney Streetcar #21	1801 W Mountain Av	08/30/85
Frank Miller Stagecoach	Fort Collins Museum - 200 Mathews St	03/15/94
Diamond T Fire Truck	Fort Collins Museum - 200 Mathews St	09/17/96
Janis Cabin	Fort Collins Museum - 200 Mathews St	08/30/85
Auntie Stone Cabin	Fort Collins Museum - 200 Mathews St	08/30/85
Franz-Smith Cabin	Fort Collins Museum - 200 Mathews St	08/25/00

APPENDIX 3: FITTED ESTIMATES OF CHANGEDESPERHOME FROM SELECTED REGRESSIONS[11]

Combined Data	Denver Data	Fort Collins Data
0	0	0.023288638
0	0	0.013500603
0.002191936	0	0
0.015264957	0	0.004617514
0.001884062	0	0
0.013473552	0	0.000311139
0.000490196	0	0.008161804
-0.015530165	0	0.021442517
0.004697565	0	0.003103863
0	0	0.000847099
0	0	0
0.013157559	0	-7.10121e-07
0	0	0
0.000395856	0	0
0.000635728	0	0
0.00630705	0	0
0.00203666	0	0
0	0	0.000825083
0.0032858	0	0
0	0	0
0.001285809	0	0
0.00034786	0	0
0	0	0.013414634
0.021065005	0	0
0.001102536	0	0
0	0	0
0	0	0
0	0	0.000487805
0.042286542	0	0
0	0	0

[11] While the limit turned out to not be a problem, Appendix 3 brought to light another problem with CHANGEDESPERHOME as a dependent variable for OLS. It is clear that there is a censoring problem (lots of zeroes) in the dependent variable. One way to approach this would be to estimate this equation with a reduced form tobit model (OLS is still okay for the CHANGEREALINCOME equation) and compare the result to the reduced for OLS result to see if the zeroes matter.

Combined Data	Denver Data	Fort Collins Data
0.002889933	0	0.003605769
0	0	0.001336898
0.000904568	0	0.000940734
0.003509007	0	0.000607903
0.105048286	0	0.000992063
0.001017142	0	0.000457247
0.000856789	0	0
0.006736677	0	0
-0.000323495	0	0
-0.001564356	0	0
0.00104712	0	0.000672584
0.000646621	0	0
0.001020408	0	0
0.013094628	0	0
0	0	0
0	0	0
0	0	0
0	0	0.001745501
0	0	0
0	0	0
0.004633895	0	0.001111396
-0.030382931	0	0.000406426
0	0	0.000492368
0.008992248	0	0
0.000819001	0	
0	0	
0	0	
0.010623534	0	
0	0	
0	0	
0	0	
0.003896877	0	
0.004007398	0.002191936	
0	0.015264957	
0.000297655	0.001884062	
0.000728863	0.013473552	
0	0.000490196	
-0.000524659	-0.015530165	
0.041502534	0.004697565	
0.000622774	0.013157559	
0	0.000395856	
0	0.000635728	
0	0.00630705	
0.00085034	0.00203666	

Combined Data	Denver Data	Fort Collins Data
0	0.0032858	
0.00308642	0.001285809	
0	0.00034786	
0.000405022	0.021065005	
0	0.001102536	
0	0.042286542	
0	0.002889933	
0	0.000904568	
0	0.003509007	
0	0.105048286	
0	0.001017142	
0.000589795	0.000856789	
0	0.006736677	
0	-0.000323495	
-0.000345146	-0.001564356	
0.000746826	0.00104712	
0.000431406	0.000646621	
0	0.001020408	
0.001096491	0.013094628	
0.000798085	0.004633895	
0.000621504	-0.030382931	
0	0.008992248	
0	0.000819001	
0	0.010623534	
0.000481464	0.003896877	
0	0.004007398	
0.00053053	0.000297655	
0.000296234	0.000728863	
0	-0.000524659	
0.008930419	0.041502534	
0	0.000622774	
0	0.00085034	
0	0.00308642	
0.000384911	0.000405022	
0	0.000589795	
0.001623377	-0.000345146	
0	0.000746826	
-0.000210499	0.000431406	
0	0.001096491	
0	0.000798085	
-5.87956e-05	0.000621504	
0	0.000481464	
0.000453926	0.00053053	
0	0.000296234	

Combined Data	Denver Data	Fort Collins Data
0.002312139	0.008930419	
0.000536769	0.000384911	
0	0.001623377	
0	-0.000210499	
0	-5.87956e-05	
0	0.000453926	
0	0.002312139	
0.001931158	0.000536769	
0	0.001931158	
0.030022808	0.030022808	
0.001895441	0.001895441	
0.001134655	0.001134655	
0.000432139	0.000432139	
0.103331823	0.103331823	
0.003676471	0.003676471	
0.023288638		
0.013500603		
0		
0.004617514		
0		
0.000311139		
0.008161804		
0.021442517		
0.003103863		
0.000847099		
0		
-7.10121e-07		
0		
0		
0		
0		
0		
0.000825083		
0		
0		
0		
0		
0.013414634		
0		
0		
0		
0		
0.000487805		
0		

Combined Data	Denver Data	Fort Collins Data
0		
0.003605769		
0.001336898		
0.000940734		
0.000607903		
0.000992063		
0.000457247		
0		
0		
0		
0		
0.000672584		
0		
0		
0		
0		
0		
0		
0.001745501		
0		
0		
0.001111396		
0.000406426		
0.000492368		
0		