

**THE FINANCIAL AND INSTITUTIONAL CHALLENGES
TO SMART GROWTH IMPLEMENTATION:**

A FOCUS ON CALIFORNIA'S CENTRAL VALLEY

AUGUST 2010

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ACKNOWLEDGEMENTS

The preparation of this report has been financed in part through grants from the United States Department of Transportation. The author is grateful to the following individuals who generously volunteered to be interviewed for this research project: Keith Bergthold, Bill Cahill, Joe Head, Patrick Kelly, Dave Randall, Gonzalo Rodriguez, Steve Salomon, John Shirey, Dave Spaur, Bill Spriggs, Rick Telegan, and Scot Townsend. The statements, conclusions, and recommendations expressed in this report are the sole responsibility of the author and do not necessarily reflect those of the USDOT or interviewees.

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EXECUTIVE SUMMARY

The suburban development that has characterized the post-World War II era has meant that Americans' quality of life has relied on an ever-expanding road infrastructure that could keep pace with rapid population and automobile growth. With growing concern over the environmental effects of greenhouse gas emissions (GHGs), policymakers have considered how to lower vehicle miles traveled as a means of reducing GHGs. According to the California Air Resources Board, the transportation sector contributes about 37 percent of all GHGs emitted within the state, with passenger vehicles comprising 73 percent of this amount. With dramatic population growth forecast over the next several decades, public policies implemented today can have important economic, social, and environmental consequences for the future.

Strategic land use planning and transportation infrastructure investments that accommodate rapid population and economic growth and that reduce individuals' vehicle miles traveled (VMT) is seen as one of the most effective means of reducing GHGs. In this regard, SB375, signed into law by Governor Schwarzenegger in September 2008, encourages local and regional communities to link their land-use planning and transportation needs so that sprawl is reduced. According to the Governor's Office, "Spending less time on the road is the single-most powerful way for California to reduce its carbon footprint . . . SB375 provides incentives for creating attractive, walkable, sustainable communities and revitalizing existing ones. It will also encourage the development of more alternative transportation options." The adoption of so-called "smart growth" principles is forecast to generate significant economic and environmental benefit in the decades to come, yet implementing them will be much more challenging. While communities might wish to institute smart growth development projects, without adequate public and private support or funding, such goals will not be achieved. The purpose of this research report, therefore, is to explore the economic, financial, and institutional barriers that might inhibit the effort to develop along smart growth parameters. The report adopts a supply and demand modeling framework that suggests that the success of smart growth development depends on the intricate market inter-relationships between homeowners and renters, developers, and the public sector.

The research suggests that the demand-side challenges to smart growth are formidable. One of the greatest challenges is simply overcoming the inertia borne by over six decades of automobile-centric living. The majority of Californians and the super-majority of Central Valley residents live in single-family detached homes. The Central Valley has clearly developed, and continues to develop, in a manner that has taken advantage of its relatively abundant and inexpensive land. The commuter culture is quite strong among Central Valley residents. A significant economic challenge for smart growth implementation in the Central Valley is that for many residents jobs are not local. More than 20 percent of workers from Madera County north, work outside their counties of residence. Given the reality of most Central Valley local economies, achieving the ideal of a walkable community whereby residents can live, work, and shop will remain elusive. Fundamental changes must occur in most Central Valley economies before a robust set of job opportunities would enable residents to abandon the traditional practice of living in one location, yet working in a relatively distant other. What is critical for the success of smart growth from a demand-side perspective is the availability of an alternative to the automobile. Suburban and exurban growth was facilitated by the efficiency of the automobile and the availability of road infrastructure; smart growth must be facilitated by the speed, comfort, and affordability of an alternative mode of transportation. In this regard smart growth and transit-oriented development should be seen as complementary objectives.

Another important element to consider in assessing the demand-side challenges associated with smart growth success is the effect of housing prices on residential demand. While it is true that one of the core principles of smart growth is to provide a range of housing options for residents of different financial means, the inherent economic tension is that smart growth will generate a set of amenities that will drive up housing prices. An important economic factor that will serve to both support and undermine smart growth's broad acceptance will be its own success. On the one hand, if supporters are accurate, smart growth will create a set of urban amenities that many homeowners and renters will find appealing. Yet one of the unintended consequences of smart growth development will be that some people will be priced out of these amenity-rich denser areas. The counterpoint to this effect will be that residents might respond by choosing to purchase smaller lots, which can further support densification.

Of course, getting residents long accustomed to suburban living to accept smart growth living is only half the challenge, the other half is overcoming supply-side hurdles. Despite SB375's goal to couple regional land-use and transportation planning, there is a significant question whether the incentive structure is now in place to elicit such cooperation. Communities may have very different ideas about their long-term development objectives, so reaching compromise may be

difficult. Where regional competition, instead of cooperation, is particularly salient is the struggle for tax dollars. Given the constraints placed on property taxes as a result of Proposition 13, cities must rely on sales taxes or user fees on new development as an important source of revenue. Yet these incentives lead to the so-called “fiscalization of land use” that encourages the support of commercial development, especially big box retail establishments that will serve as a magnet for sales tax collections. Local communities worry much about how regional transportation networks will cause negative retail sales leakage, thus harming an already fragile local fiscal situation.

To the extent that smart growth relies on the active participation of the private sector, one important question that invariably arises is: can these projects be profitable? While smart-growth and infill projects are certainly being built across California and the country, there are a number of factors that work against their anticipated profitability. First, developers have limited resources in terms of financial capital, time, personnel, and equipment, so resources are allocated to their highest valued uses. In this regard, greenfield development is the tried-and-true model. Developers understand this business model well from the consumer demand, construction, financial, and regulatory perspectives. It can be risky to deviate from a known model of profitability for both the developer and its financier.

Second, especially with redevelopment of infill areas, the fixed costs associated with establishing infrastructure can be higher than it otherwise would be in sparser greenfield development. Indeed, the daunting expense associated with redeveloping infrastructure can be prohibitive. Some of the investments needed to spark smart growth success – such as roads, sewers, utilities, schools, transit systems – will need significant public investment. How we pay for such investments will prove to be a vexing challenge.

A third obstacle to profitability from a private developer’s perspective (or even the public developer’s perspective) is the risk posed by neighbors who can align themselves against redevelopment plans. For neighbors who fear increased traffic, congestion, or overcrowding, the law affords ample opportunity to raise the financial costs of a project and to delay a project for years. Given the litigiousness of modern development efforts, the prospect of a long, drawn-out legal battle simply encourages private developers to seek projects that are likely to entail lower risk.

Fourth, denser residential construction, such as condominiums, that smart growth encourages carries its own unique legal and financial risks that encourage developers to look to alternatives

with lower risk, such as single-family detached houses. One hypothesis explaining the decline in multi-family structures in California over the past 20 years is the proliferation of construction-defect litigation to which condominiums are particularly susceptible. Further, because condominium units are structurally tied together, they all need to be brought to fruition simultaneously. The nature of this construction, therefore, raises the financial risk profile of a condominium project, causing a developer and financier to be wary of tying up significant amounts of capital. Further complicating the calculus is the fact that financiers like Fannie Mae or Freddie Mac require that up to 70 percent of units pre-sell before financing can be completed. That threshold is a tremendously burdensome hurdle, further dampening interest in pursuing such projects.

Finally, developers and policymakers cannot make land-use decisions in a vacuum, the financial sector provides the liquidity that enables plans for new development or redevelopment to be realized. The financial sector was jolted to its core as a result of the financial collapse of 2008 and the effects of the recession continue to linger. While it is impossible to forecast how long into the future these effects will persist, what is known is that the financing of development projects has changed dramatically over the past few years. Underwriting standards have stiffened, credentials of key participants in the project are scrutinized more thoroughly, more of the developer's own equity is being required, and higher levels of pre-selling of units is now expected. Evidence is presented that financing for commercial and residential development could be the next crisis that will play out in the ongoing worldwide financial sector malaise. Relying on public sector financing is fraught with its own shortcomings, however. While public funding of a project can serve as a catalyst that can push smart growth development over a tipping point, achieving such success will inevitably take many years to realize and require a high degree of tenacity and entrepreneurial acumen on the part of public officials.

THE FINANCIAL AND INSTITUTIONAL CHALLENGES TO SMART GROWTH IMPLEMENTATION: A FOCUS ON CALIFORNIA'S CENTRAL VALLEY

INTRODUCTION

How Americans have developed their communities, especially the urban communities where the density of people live, has undergone dramatic changes over the past 65 years. In the immediate post-World War II era extensive investment in suburban infrastructure lured residents to the periphery of city centers with the promise of space, affordable living and homeownership, and the option to access the economic and social amenities of the city. Yet the development that has come to pass in the last 45 years has undermined the economic and population bases of many cities, which has resulted in a diffusion of economic and cultural spheres of influence in metropolitan areas.¹ Because the automobile became the center of attention in the urban-suburban nexus, Americans' quality of life relied on an ever-expanding road infrastructure that could keep pace with rapid population and automobile growth. According to legal scholar James Kushner (2006), "Local planning accommodates, subsidizes, and encourages the production of single-family homes in the suburbs served by the personal automobile" and the resulting outcome has been "anti-family."

While some commentators and policy reformers see modern urban-suburban expansion as undermining community and family cohesiveness, others are equally alarmed by the environmental impact of the decades-long reliance on the automobile. U.S. public infrastructure investment in the post-World War II period has focused on facilitating automobile movement within an expanding metropolis. As scientists have discovered the deleterious link between greenhouse gas (GHG) emissions and global warming (IPCC 2007), policymakers have looked to solutions that will reduce such emissions, yet simultaneously sustain economic growth and enhance citizens' quality of life. In California, for example, the transportation sector contributes about 37 percent of all GHGs emitted within the state, with passenger vehicles comprising 73 percent of this amount.² The reality is that the state's population will grow significantly over the next four decades, with a disproportionate share of that growth occurring in the Central Valley.³ The California Department of Finance projects the state's population to increase from about 34 million today to 59.5 million by 2050, or a 152 percent increase. By contrast, the Central Valley population is expected to increase by approximately 224 percent, from 4.2 million people today to 9.5 million in 2050.⁴ How this dramatic future growth in population will be accommodated

can have important economic, social, and environmental consequences, both for individual Californians and for the state as a whole. Planning land use and transportation infrastructure that both accommodates this rapid population and economic growth and that reduces individuals' vehicle miles traveled (VMT) is, therefore, seen as one of the most effective means of reducing greenhouse gases.⁵

In September 2006 Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act (AB32), mandating that the state reduce its GHG emissions to the 1990 level by 2020. Even prior to AB32's passage, in June 2005 the governor had issued Executive Order S-3-05 calling for GHG emissions to be 80 percent below 1990 levels by 2050.⁶ Implementing the goals of AB32 by 2020 implies reducing GHG emissions about 15 percent from current levels, or 30 percent from a business-as-usual projection over the next decade. Reducing GHGs requires leadership that both the state and local government are best poised to demonstrate.⁷ After all, individual Californians have little incentive now to change their long-standing reliance on automobiles.

Given the importance of reducing transportation sector emissions in achieving AB32 objectives, local governments, acting in partnership with their regional counterparts, have been called upon to adopt "smarter" land-use planning that alters the historical way California has planned, developed, and built out its communities. In this regard, SB375, signed into law by Governor Schwarzenegger in September 2008, encourages local and regional communities to link their land-use planning and transportation needs. According to the Governor's Office, "Spending less time on the road is the single-most powerful way for California to reduce its carbon footprint . . . SB375 provides incentives for creating attractive, walkable, sustainable communities and revitalizing existing ones. It will also encourage the development of more alternative transportation options."⁸

SB375 requires the California Air Resources Board (CARB), the agency with jurisdiction over implementing AB32, to set regional GHG emissions targets for 2020 and 2050. Each of the 18 metropolitan planning organizations (MPOs) in the state is expected to meet its target by means of a "sustainable communities strategy" (SCS). MPOs already have jurisdiction over regional transportation planning matters from a federal perspective, but SB375 adds land-use planning to their portfolio of objectives. An SCS would ensure that local and regional land development would satisfy the demands of population and economic growth in the region, that a transportation network is planned that meets the population and economic needs of the region, and that achieves the GHG reduction target set by CARB. SB375 synchronizes housing planning with

transportation planning, creates transportation funding incentives to encourage local and regional cooperation, and provides environmental review benefits for projects fitting within the SCS plans.⁹ Importantly, though, land-use planning is a local affair, controlled by cities and counties, so the SCS model requires the cooperation of city, county, and regional land-use and transportation planners.

“Smart growth” is portrayed as an important mechanism in helping to reduce California’s GHGs in the decades to come. Vision California, for example, was established by the California High Speed Rail Authority and the state’s Strategic Growth Council to understand the implications of alternative land use and transportation investments.¹⁰ Vision California estimates that walkable, transit-oriented development over the next four decades will reduce VMTs by nearly 3.7 trillion miles, will save 3,700 square miles of land from being developed, will save \$194 billion in infrastructure costs because fewer roads will be needed to serve expansive development, and, in the end, will prevent 25 percent of the business-as-usual GHGs from being emitted.

While there are likely to be clear benefits from adopting smart growth principles in the decades to come, implementing them will be much more challenging. While communities might strive to implement smart growth development, without adequate public and private support or funding, such goals will not be achieved. The purpose of this research report, therefore, is to explore the economic, financial, and institutional barriers that might inhibit the effort to develop along smart growth parameters. To the extent that public policy changes can help to alleviate the hidden impediments to smart growth adoption, the report will begin to explore such recommendations.

The research in this report has relied on an extensive review of the academic and policy literatures on smart growth, an analysis of federal and state government data, private sector data, and interviews with experts involved in the development process (see the Appendix for a list of interviewees). The views of the individuals who volunteered their time to be interviewed have helped to shape the author’s understanding of smart growth, but in the hopes of eliciting frank commentary, their anonymity was promised. Therefore, the individual views of interviewees will not be attributed in the report and any interpretations of the interviewees’ comments are the sole responsibility of the author.

WHAT IS SMART GROWTH?

The term “smart growth” has been adopted by various groups, sometimes with divergent interests, which can often blur a precise definition.¹¹ Moreover, the term “smart growth” is often used interchangeably with “sustainable development” or “new urbanism,” further muddling the debate. For the purposes of this report, however, the twelve smart growth principles recently agreed upon in the San Joaquin Valley Blueprint Process provide a highly workable definition of what is typically meant by the term (see the Box below).

TWELVE SMART GROWTH PRINCIPLES OF THE SAN JOAQUIN VALLEY BLUEPRINT

1. CREATE A RANGE OF HOUSING OPPORTUNITIES AND CHOICES
2. CREATE WALKABLE NEIGHBORHOODS
3. ENCOURAGE COMMUNITY AND STAKEHOLDER COLLABORATION
4. FOSTER DISTINCTIVE, ATTRACTIVE COMMUNITIES WITH A STRONG SENSE OF PLACE
5. MAKE DEVELOPMENT DECISIONS PREDICTABLE, FAIR, AND COST-EFFECTIVE
6. MIX LAND USES
7. PRESERVE OPEN SPACE, FARMLAND, NATURAL BEAUTY, AND CRITICAL ENVIRONMENTAL AREAS
8. PROVIDE A VARIETY OF TRANSPORTATION CHOICES
9. STRENGTHEN AND DIRECT DEVELOPMENT TOWARDS EXISTING COMMUNITIES
10. TAKE ADVANTAGE OF COMPACT BUILDING DESIGN
11. ENHANCE THE ECONOMIC VITALITY OF THE REGION
12. SUPPORT ACTIONS THAT ENCOURAGE ENVIRONMENTAL RESOURCE MANAGEMENT

Source: <http://www.valleyblueprint.org>

Smart growth development implies a greater density of housing than we have become accustomed to over the past 65 years, leading to walkable communities located near jobs, schools, services, and intra- and inter-regional transportation. A smart growth community will use its land for a mix of purposes, ranging from residential to commercial, will provide a broad array of housing options for people at different economic and demographic stages of their lives, and will offer multimodal means of transportation, from walking, biking, to public transit. Smart growth communities strive to focus development on existing communities that offer distinctive features, economies, and amenities. Smart growth development places an emphasis on preserving open spaces and the natural beauty of the geographic surroundings. The overarching goal of smart growth is to develop a community that is sustainable, which means that future generations will have the opportunity to equally enjoy the benefits that the community offers.

AN ANALYTICAL FRAMEWORK FOR UNDERSTANDING THE CHALLENGES TO SMART GROWTH

Like most other goods and services, smart growth development is similar in that market forces determine the price of the housing and the quantity of such development that will be consumed and produced. Therefore, in laying out the challenges to smart growth, it is useful to adopt a market perspective, whereby sustainable development is governed by the laws of supply and demand. As such, no individual hurdle in itself is a crippling impediment to smart growth, but serves to influence the market relationship between supply and demand.

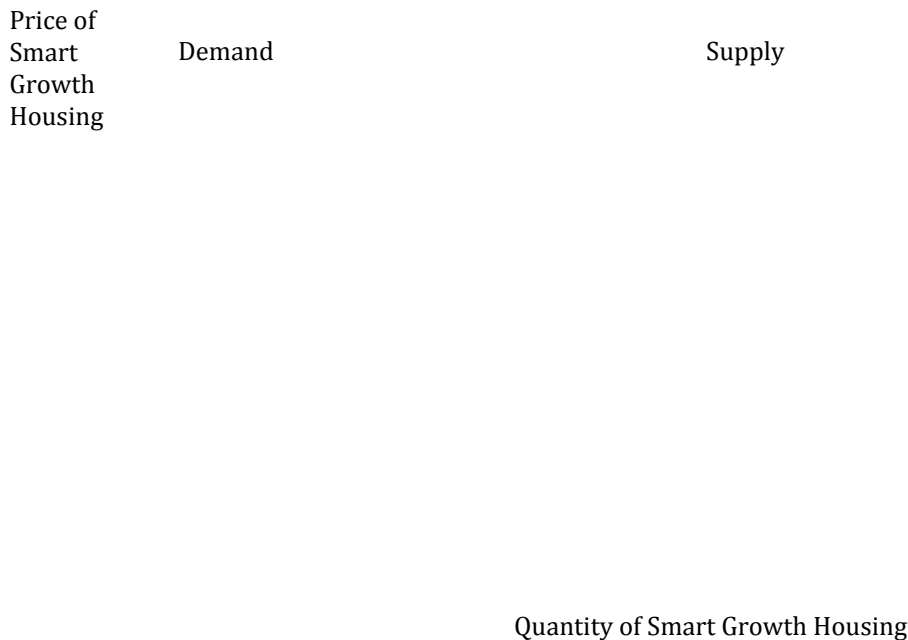
Figure 1 presents a graphical depiction of the relationship between the demand for and supply of smart growth development. As for most goods and services, the demand curve is downward sloping, indicating an inverse relationship between the price of such housing and the quantity demanded. This relationship, which is also known as the “law of demand,” suggests that residents will be sensitive to the price of their housing options. After all, residents, either owners or renters, always have the ability to seek alternative communities that match their ability and willingness to pay. Different exogenous factors can also determine the extent to which residents demand housing options that adhere to smart growth principles. For example, such factors as housing prices in neighboring communities, preferences for various housing amenities, family demographics, work location, government subsidies or assistance, or the availability and interest rates of mortgages. What becomes immediately apparent when thinking about the demand side of smart growth development is that communities are impacted by the decisions of other nearby communities. People have choices about where to reside and will be responsive to the prices and amenities that are offered in various locations.

The supply curve in Figure 1 is upward sloping, suggesting that as the price of housing rises developers, both private and public, will be able and willing to produce more. This “law of supply” suggests that developers are responsive to incentives. As the likely price for which they will be able to sell or rent housing units rises, they will be more likely to invest in smart growth development. Developers have limited capital and they have multiple options for the use of their limited resources, so it is important to recognize that developers are responsive to price. Or, put another way, if developers can earn a competitive rate of return on their investment, then,

holding all else constant, they would be willing to engage in smart growth development. Different exogenous factors can also determine the extent to which both private and public developers engage in building housing units that adhere to smart growth principles. For example, such factors that influence the cost of production like regulations and zoning, the availability and affordability of financing, the cost of inputs like labor and materials, the cost or availability of developing infrastructure, or government subsidies all play a role in determining the cost of producing housing units that adhere to smart growth principles and, as a result, developers' interest in engaging in such activities.

What this simple model of smart growth development makes clear is that when considering its challenges they must be viewed within the context of a market setting. As such, individual obstacles to smart growth are not in and of themselves hard constraints, but they do affect the balance between supply and demand conditions and will influence the price of smart growth housing and, thus, the incentive to consume and produce. The supply and demand framework is also a useful tool to help formulate and categorize the various obstacles and opportunities that residents and developers might face as they consider smart growth development in their communities. It is within this framework that the remainder of the report considers the financial and institutional challenges to smart growth implementation.

FIGURE 1
SUPPLY AND DEMAND MODEL OF SMART GROWTH DEVELOPMENT



CONSIDERING THE DEMAND-SIDE OF SMART GROWTH

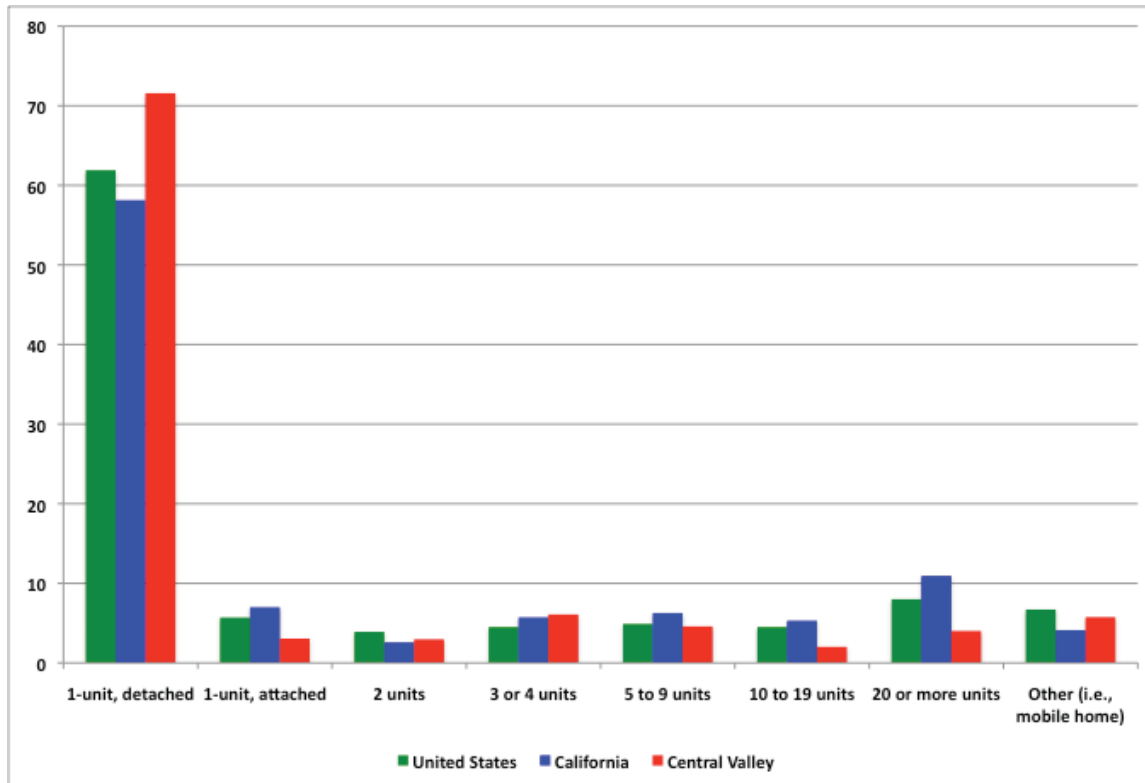
THE CHALLENGE OF INERTIA

Perhaps the greatest challenge to smart growth affecting the demand-side of the equation is simply inertia.¹² The post-World War II era in the U.S. has been one of economic prosperity, rising incomes, and the pursuit and achievement of homeownership, which has largely occurred in the suburban and exurban areas of our modern metropolitan centers. In most of these areas around the country, the automobile has become the central means by which individuals move between home, work, shopping, recreation, and other activities. While smart growth seeks to create livable environments that reduce the reliance on automobiles, overcoming over six decades of entrenched behavior is certainly a formidable challenge.

Today, like most Americans, the majority of Californians and the super-majority of Central Valley residents live in single-family detached homes. Figure 2 presents summary data on the structure of the housing stock in the U.S., California, and the Central Valley. As the figure makes clear, 72 percent of Central Valley housing units are single-family detached dwellings and only about 4 percent of housing units are situated in buildings containing 20 or more units. Thus, the region has clearly developed in a manner that has taken advantage of its relatively abundant and inexpensive land.

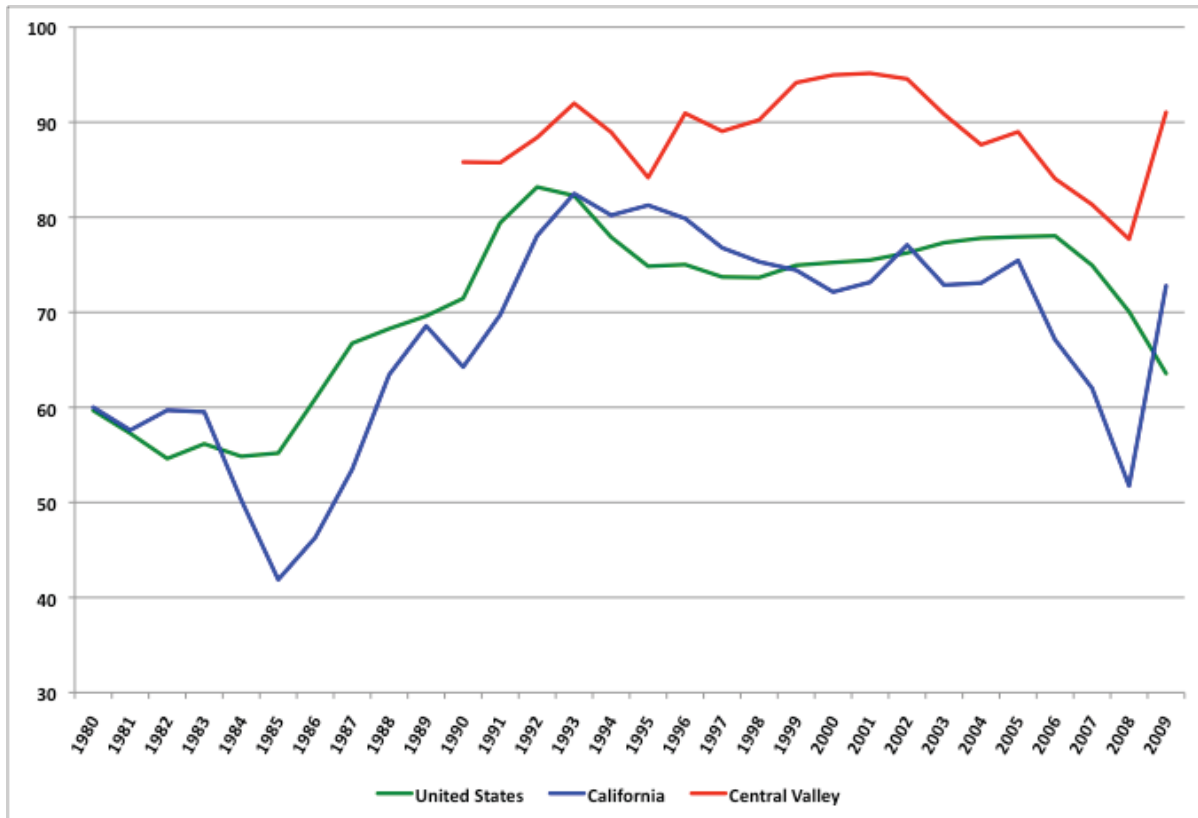
Further, as shown in Figure 3, the trend to build single-family detached homes has intensified in the Central Valley over the past 20 years. In fact, an average of 89 percent of building permits issued in the Central Valley over the past 20 years have been for single-family detached housing units. The Central Valley region stands in stark contrast to the rest of the country and state in terms of the type of housing that has been and continues to be built.

FIGURE 2
DISTRIBUTION OF HOUSING STOCK, BY STRUCTURE, IN THE U.S., CALIFORNIA AND
THE CENTRAL VALLEY, 2008



Source: U.S. Bureau of the Census, American Community Survey, 2008

FIGURE 3
PERCENTAGE OF ALL BUILDING PERMITS ISSUED FOR SINGLE-FAMILY DETACHED HOUSING UNITS IN THE U.S., CALIFORNIA, AND THE CENTRAL VALLEY, 1980-2009



Source: U.S. Bureau of the Census

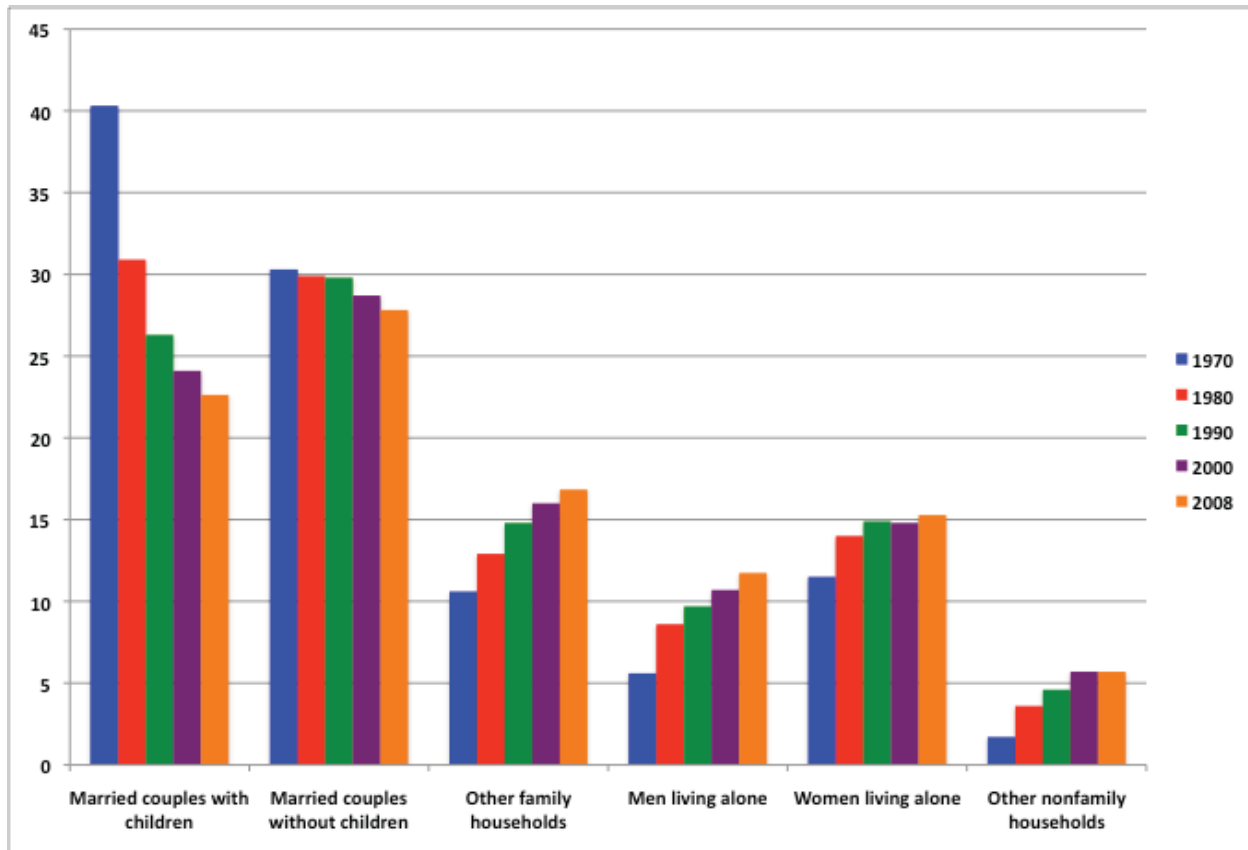
MITIGATING DEMAND-SIDE INERTIA

One of the clear advantages in terms of gaining residents' acceptance of greater housing density is the changing household demographics of the country. Household composition depends on a host of factors, including the age composition of the population, decisions about marriage, divorce, and cohabitation, social values, the economy, among many others. Fundamental changes have occurred over the past 40 years in terms of household size and composition. For example, whereas 46 percent of households in 1970 consisted of one or two people, today roughly 60 percent of households are this size.¹³ The escalation in the divorce rate, improvements in the health and longevity of the elderly, and couples delaying childbearing all have played a factor in the reduction in American household size. Figure 4 shows the distribution of household types, by decade, from 1970 to 2008. What is striking is the reduction in the proportion of households comprising married couples with children, the stereotypical consumer of a single-family detached home in the suburbs. Whereas 40 percent of households in

1970 comprised a married couple with children, today that same percentage is 22.6 percent. While the percentage of married couples without children has declined slightly, there has been an increase in other family households, likely the result of single-parent households or multiple generations living together. Another remarkable feature of the data is the rise in the share of households consisting of either a single man (5.6% in 1970 to 11.7% in 2008) or single woman (11.5% in 1970 to 15.3% in 2008). Further, the increase in “other nonfamily households” is an indication of shifting mores that have made cohabitation more common.

With the shifting nature of household composition over the past several decades and with the aging of the population, the demand-side factors should be conducive to denser living. Simply put, modern households do not need as much space as they once did because they are smaller. There is an open question as to whether today’s residential developments are being built for today’s household demographics. The statistics on household formation indicate that innovative, smart-growth designs should be able to capture the attention of one- or two-person households that do not need the abundant indoor or outdoor space of a family raising children. Households with one or two people will look for different types of amenities that smart growth can offer.

FIGURE 4
PERCENTAGES OF HOUSEHOLD TYPES, BY DECADE, 1970-2008

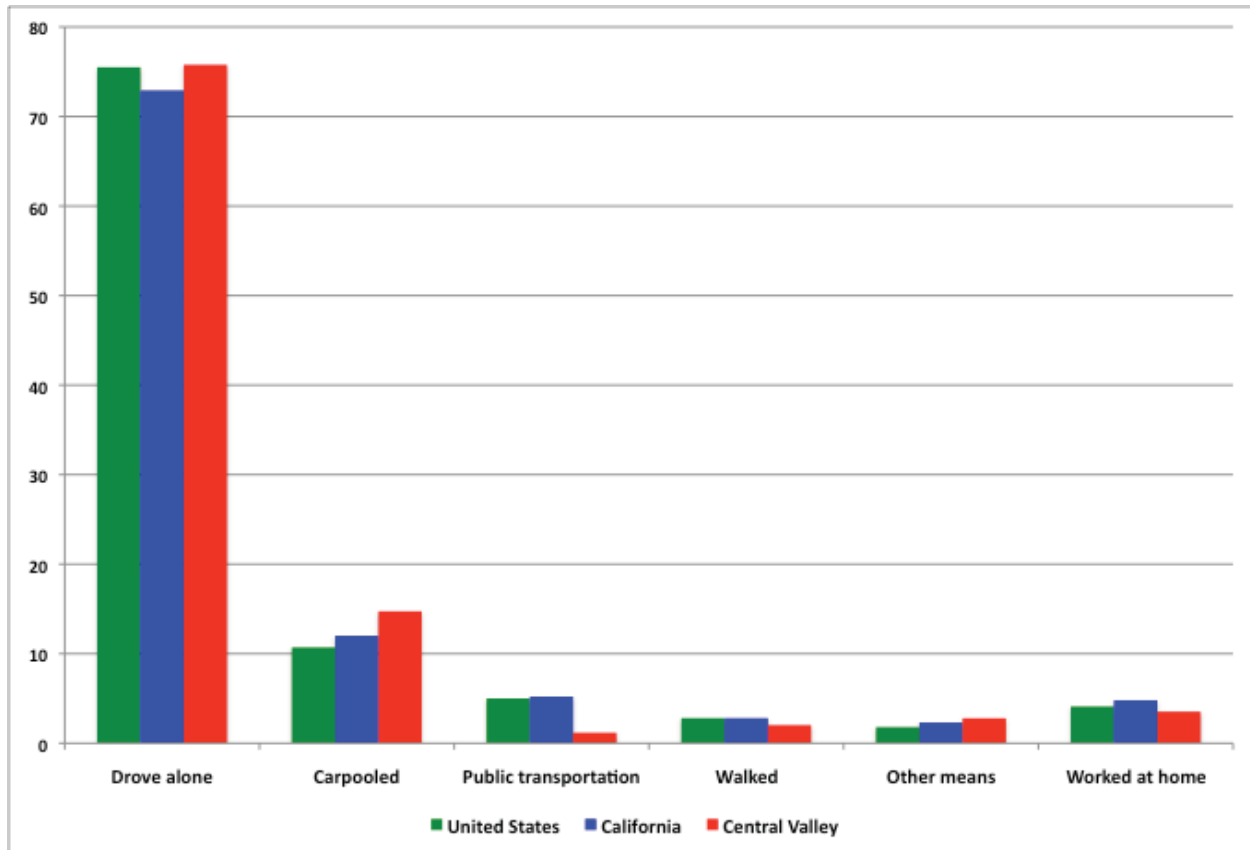


Sources: Fields (2004, p. 4) and U.S. Bureau of the Census, Current Population Survey, “Annual Social and Economic Supplement, 2008.”

OVERCOMING THE PREDOMINANCE OF THE AUTOMOBILE

With the development pattern that has emerged in the postwar era, the automobile has become central to Americans’ lives. We rely on the freedom of mobility and flexibility that cars offer. As Figure 5 shows, over 70 percent of Americans, Californians, and Central Valley residents drive to work alone. Perhaps the only thing that distinguishes the Central Valley from the rest of California and the nation is that citizens in the Central Valley region tend to carpool slightly more than the norm, but use significantly less public transportation.

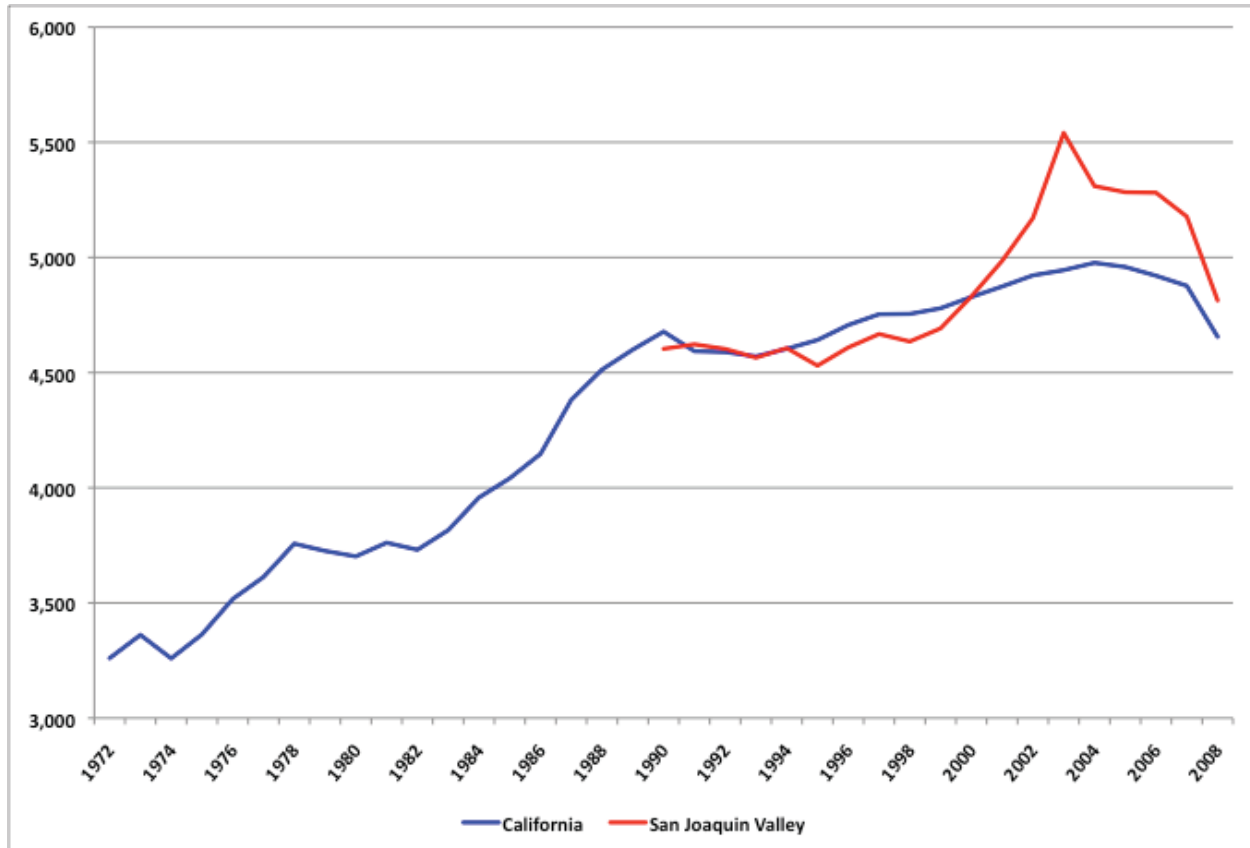
FIGURE 5
MODES OF TRANSPORTATION USED TO COMMUTE TO WORK IN THE U.S., CALIFORNIA, AND THE CENTRAL VALLEY, 2008



Source: U.S. Bureau of the Census, American Community Survey, 2008

Coupling the fact that residential development has increasingly focused on single-family detached properties and that Americans tend to drive alone, it is not at all surprising that vehicle miles traveled have increased dramatically over the past 40 years. Figure 6 shows VMTs per capita across California and within the Central Valley. While VMTs tend to be pro-cyclical and are declining now because of the recession, the figure shows the secular rise in per capita driving over the past 40 years. While VMT data for the Central Valley was only available dating back to 1990, the figure shows a clear turning point upward in 2000 as per capita VMTs in the Central Valley began to escalate, likely the result of increasing Bay Area housing prices that pushed residents to find more affordable housing.

FIGURE 6
VEHICLE MILES TRAVELED (VMT) PER CAPITA IN CALIFORNIA AND THE CENTRAL VALLEY, 1972-2009



Source: VMT data are from the California Department of Transportation and population data are from the California Department of Finance.

One final point to make with regard to the American automobile culture that poses an acute challenge for the Central Valley’s implementation of smart growth is that many residents commute fairly long distances to and from work. As housing becomes relatively expensive near one’s work location, people choose to reside farther from work. Of course, the trade-off for lower housing costs has been greater commuting costs in terms of time spent driving and transportation costs. Table 1 presents a transition matrix of the commuting patterns of Central Valley residents from their home county to their work county. The matrix offers evidence that escalating Bay Area housing has pushed residents over the Altamont Pass into northern San Joaquin Valley counties. For example, 76.5 percent of San Joaquin County workers work within the same county, while 3.1 percent travel to Stanislaus County, 9.3 percent commute to Alameda County, 2.9 percent to Sacramento County, and 3.3 to Santa Clara County. In all but Fresno, Kern, and Tulare Counties, more than 20 percent of residents commute to work in other counties.

Especially in the Central Valley counties from Merced north, more than six percent of workers commute to the Bay Area and the percentage is doubled among San Joaquin County residents. Another remarkable finding is that about 24 percent of Madera County residents work in Fresno County.

TABLE 1
TRANSITION MATRIX OF WORKERS' COUNTY OF RESIDENCE INTO COUNTY OF WORK, 2000

County of Employment	County of Residence							
	San Joaquin	Stani-slaus	Merced	Madera	Fresno	Kings	Tulare	Kern
San Joaquin	76.5	8.2	1.4	0.2	0.1	0.0	0.1	0.0
Stanislaus	3.1	79.1	12.0	0.3	0.1	0.0	0.0	0.0
Merced	0.1	2.9	75.0	2.4	0.2	0.0	0.1	0.0
Madera	0.0	0.1	1.6	68.8	2.6	0.2	0.2	0.0
Fresno	0.1	0.2	1.8	23.8	92.6	9.4	4.9	0.2
Kings	0.0	0.0	0.0	0.3	1.0	79.3	2.6	0.1
Tulare	0.0	0.0	0.1	0.2	1.8	6.5	88.2	1.0
Kern	0.1	0.0	0.0	0.1	0.1	1.7	2.8	93.6
Alameda	9.3	4.0	0.8	0.2	0.1	0.1	0.0	0.0
Los Angeles	0.1	0.1	0.0	0.2	0.1	0.2	0.2	3.1
Sacramento	2.9	0.4	0.3	0.1	0.1	0.0	0.1	0.0
Santa Clara	3.3	2.2	4.7	0.5	0.2	0.1	0.1	0.1

Source: Author's calculations from U. S. Bureau of the Census, "2000 County-to-County Worker Flow Files." The columns do not necessarily sum to 100 because some counties where residents work have been excluded from the table.

A significant economic challenge for smart growth implementation in the Central Valley is that for many residents jobs are not local. For more than 20 percent of workers from Madera County north, their commutes take them outside their counties of residence. Given the reality of most Central Valley local economies, achieving the ideal of a walkable community whereby residents can live, work, and shop will remain elusive. Denser communities in the Central Valley will not necessarily translate into a reduction in VMT. Moreover, the predominance of dual-income households means that residents would need to secure two jobs in a smart-growth location before the household could eschew the automobile.¹⁴ Fundamental changes must occur in most Central Valley economies before a robust set of job opportunities would enable residents to abandon the traditional practice of living in one location, yet working in a relatively distant other.

What is critical for the success of smart growth from a demand-side perspective is the availability of an alternative to the automobile.¹⁵ Suburban and exurban expansion was

facilitated by the efficiency of the automobile and the availability of road infrastructure; smart growth must be facilitated by the speed, comfort, and affordability of an alternative mode of transportation. In this regard smart growth and transit-oriented development should be seen as complementary objectives.¹⁶ The success of smart growth depends on the frequency and reliability of non-automobile transportation options, such as high speed rail, light rail, or buses, but such transportation cannot succeed without the density of population to support it. In sum, smart growth planning must focus not only on a densification of housing, but also a plan for the densification of transportation.¹⁷

While the current economy of the Central Valley may not provide the robustness and diversity to sustain the ideals of smart growth, the proposed high-speed rail (HSR) offers great promise for the future. The Central Valley today is relatively inconveniently integrated into the major economic areas of the state. HSR has proven effective around the world in reducing automobile and airline traffic, while integrating wider geographic regions into a unified economic market. One of the most important anticipated benefits from HSR is the increased level of accessibility that Central Valley areas will experience. Lower transportation and transaction costs will encourage new businesses to locate in the Central Valley where favorable costs and public policies can encourage business development. Workers will be able to seamlessly commute both to, from, and within the Central Valley. Importantly, as recent research has shown, HSR will reduce the amount of traffic on freeways, thus resulting in a reduced level of airborne pollutants, not only in the Central Valley but also in the Bay Area that serves as a source of pollution for inland regions. HSR will use less open-space land than the alternative – freeway construction – and the location of HSR stations can serve as a focal point for sustainable local development. In other words, to the extent that smart growth critically depends on the availability of mass transit that encourages people to abandon their traditional driving habits, HSR offers such a focal point for smart growth success.

THE COUNTERVAILING PRICE EFFECT OF SMART GROWTH

The factors discussed above relate to the intensity of residents' demand for higher density living based on Americans' long-standing adherence to the single-family detached home and reliance on the automobile. Another important element to consider in assessing the challenges associated with smart growth success is the effect of housing prices on residential demand. While it is true that one of the core principles of smart growth is to provide a range of housing options for residents of different financial means, the inherent economic tension is that smart growth will generate a set of amenities that will drive up housing prices.¹⁸

There is voluminous evidence in real estate economics research that positive amenities, such as good schools, access to transportation links or cultural amenities, proximity to parks, or low crime lead to higher real estate values.¹⁹ Conversely, locations with negative attributes have relatively lower real estate values. The logic of this outcome is a straightforward result of the simple supply and demand framework outlined above. For positive attributes, for example, potential residents desire to live in locations that offer a high quality of life so would be willing to pay more to secure such a residence. Both real estate values and, subsequently, rents would be affected.

The reason this economic relationship is important to highlight is that there are likely to be such price effects affecting real estate markets in smart growth areas. Some argue that smart growth will succeed in locations where a catalyst serves as the focal point that creates the incentive for people to choose to live in relatively higher density housing units. Transit-oriented development is a model premised on that supposition. Once seeded, smart growth development feeds upon itself, endogenously generating positive transportation, cultural, and employment opportunities. All of these positive features of the smart growth location will serve to drive housing prices and rents upward. Yet, by the law of demand, higher prices will cause people to seek alternatives. Thus, smart growth itself, with its promise of attributes that will improve quality of life, might itself cause people to seek housing on the periphery of such growth.

An important economic factor that will serve to both undermine and support smart growth's broad acceptance will be its own success. On the one hand, smart growth amenities will have the unintended consequence of pricing some people out of denser areas.²⁰ The counterpoint to this effect will be that residents might respond by choosing to purchase smaller lots, which can further support densification.²¹

THE ROLE OF MORTGAGE FINANCE

How smart growth will impact the affordability of housing poses a challenge. If smart growth communities offer the range of amenities that are promised, then market forces will cause prices to escalate, thus limiting affordable housing choices for many people. Therefore, smart growth planning and zoning must be contemplated in tandem with plans for meeting affordable housing objectives.

One innovative solution that has attempted to mitigate the price effect of smart growth is the location-efficient mortgage (LEM) or what have become known more generally as transit

supportive home loans.²² The logic behind such loans is that because the mortgagee will be living in an area with ready access to alternative modes of transportation that would result in lower than average automobile costs, such savings would mean that the mortgagee could be approved for a higher loan payment. While research indicates that stretching traditional underwriting guidelines for such loans actually causes a greater incidence of mortgage default, from a public policy perspective the higher risk of such loans should be weighed against the potential benefits the loan program affords smart growth development.²³ In the current mortgage environment in the aftermath of the housing crisis, which was especially brutal in the Central Valley, it is highly questionable whether the major mortgage financiers – Fannie Mae and Freddie Mac – will unilaterally take on such risk.²⁴ To the extent that local communities or states see the value in smart growth, creative solutions that provide mortgage default insurance to mortgage investors could help to create a market for such location-efficient loans.

THE SUPPLY-SIDE OF SMART GROWTH DEVELOPMENT

The successful implementation of smart growth principles, of course, not only depends on citizens' acceptance, but also on the willingness and ability of the private and public sectors to produce such developments. On the supply-side of the equation, there are a myriad of challenges ranging from cost-prohibitiveness to skewed tax incentives that direct planning efforts toward commercial development. There are unique supply-side challenges to smart growth development that potentially impact both the public and private sector interests in local development.

THE OBSTACLES TO REGIONAL COOPERATION

Local government authority over land use planning is sacrosanct. While SB375's effort to link land use and transportation planning does not seek to usurp local government jurisdiction over land use planning, SB375 provides an incentive for local cooperation by exempting smart growth-type residential projects from some CEQA reviews. Yet the resistance to regional cooperation could be a formidable barrier to the successful implementation of smart growth ideals.²⁵ First, different communities have very different views on what sustainability means to their residents. Mark Lubell et. al. (2009) created an "environmental sustainability index" of Central Valley cities and found widely divergent policies across the region. The researchers found that the adoption of policies that were supportive of sustainability and smart growth tended to occur in more urban areas, or those with higher education levels, professionalism of the work force, more robust tax revenues, and less dependence on intergovernmental revenues. How the view that one policy does not fit all equally is reconciled among neighboring, and perhaps competing, communities will be a critical determinant on the success of regional planning.²⁶ While smart growth might be appropriate and accepted in one city, a neighboring community might find itself threatened by such proscriptions.

Where regional competition, instead of cooperation, is particularly salient is the struggle for tax dollars. Given the constraints placed on property taxes as a result of Proposition 13, cities must

rely on sales taxes or user fees on new development as an important source of revenue. Yet these incentives lead to the so-called “fiscalization of land use” that encourages the support of commercial development, especially big box retail establishments that will serve as a magnet for sales tax collections.²⁷ But for some cities that may not have the population base to support such retail establishment growth, the incentive to add housing and population to achieve the tipping point is salient. Indeed, it is this competition for sales tax dollars that may impede regional cooperation. From a regional perspective it might be wise to implement a public transportation system between a core economic area and an outlying area still within the larger areas sphere of economic influence. However, given the realities of local tax revenues, a smaller city would be highly reluctant to agree to a plan that may draw shoppers to another jurisdiction. The potential for retail sales leakage will be a critical hurdle to overcome if regional transportation planning is to bear fruit. To overcome this barrier regional communities might engage in a tax-sharing mechanism that reduces the incentive for each location to think parochially about its own retail sales sector. A study of the legal and economic feasibilities of such a plan would shed more light on the practicality of this solution.

WILL THE DEVELOPMENT PENCIL?

Throughout the course of the interviews that were conducted for this research, one recurring theme came up: as long as a smart growth project “penciled out,” private developers and financiers would be willing participants. Such thinking also conforms to the economist’s logic of the law of supply; that is, as the price or return on an investment grows, producers will be increasingly willing to bring more of that good or service to market. While smart-growth and infill projects are certainly being built across California and the country, there are a number of factors that work against their anticipated profitability.²⁸ First, developers have limited resources in terms of financial capital, time, personnel, and equipment, so resources are allocated to their highest valued uses. In this regard, greenfield development is the tried-and-true model.²⁹ Developers understand this business model well from the consumer demand, construction, financial, and regulatory perspectives. It can be risky to deviate from a known model of profitability for both the developer and its financier.

Second, especially with redevelopment of infill areas, the fixed costs associated with establishing infrastructure can be higher than it otherwise would be in sparser greenfield development. Indeed, the daunting expense associated with redeveloping infrastructure can be prohibitive.³⁰ This real barrier has raised the serious question as to who should bear the burden of establishing the infrastructure that is needed to serve as a catalyst for dense, smart-growth development?³¹

With some arguing that smart growth would achieve higher-level social objectives, which means that taxpayers should be willing to support such development, and others contending that the efforts should be completely private, it is clear that a major public policy question on the economic viability of smart growth lingers. Some of the investments needed to spark smart growth success – such as roads, sewers, utilities, schools, transit systems – will need significant public investment. How we pay for such investments will prove to be a vexing challenge.³²

A third obstacle to profitability from a private developer's perspective (or even the public developer's perspective) is the risk posed by neighbors who can align themselves against redevelopment plans. For neighbors who fear increased traffic, congestion, or overcrowding, the law affords ample opportunity to raise the financial costs of a project and to delay a project for years.³³ Given the litigiousness of modern development efforts, the prospect of a long, drawn-out legal battle simply encourages private developers to seek projects that are likely to entail lower risk. Risk aversion will cause developers and financiers to focus their limited resources on projects that have a higher expected profitability. The higher the expected cost to overcome legal challenges, the less likely such a project will be undertaken. Unfortunately, the potential redevelopment areas where smart growth has the greatest chance of success also happen to be the areas most at risk of neighborhood opposition.

Fourth, denser residential construction, such as condominiums, that smart growth encourages carries its own unique legal risks that encourage developers to look to alternatives with lower risk, such as single-family detached houses. One hypothesis explaining the decline in multi-family structures in California over the past 20 years is the proliferation of construction-defect litigation.³⁴ Condominium structures carry a couple of important risks with regard to legal liability. They are more complicated to assemble, which makes an error harder to fix, and there is an entrenched group – the homeowners' association – well-poised to pursue legal action should something either go wrong or is perceived to go wrong. Again, for developers and financiers with limited resources and competing projects to draw their attention, anything that carries extra risk, like a multi-unit structure, will require the rate of return to be even greater to compensate for the potential risk of litigation and losses.

Fifth, another risk associated with condominiums is the bundled nature of the entire project. That is, if a developer proposes a 200-unit structure, then that developer has to be in the project completely for all 200 units. There is no option for piecemeal development that would be an option if the project were single-family detached or even attached units. In a condominium setting the units are structurally tied together so they all need to be brought to fruition

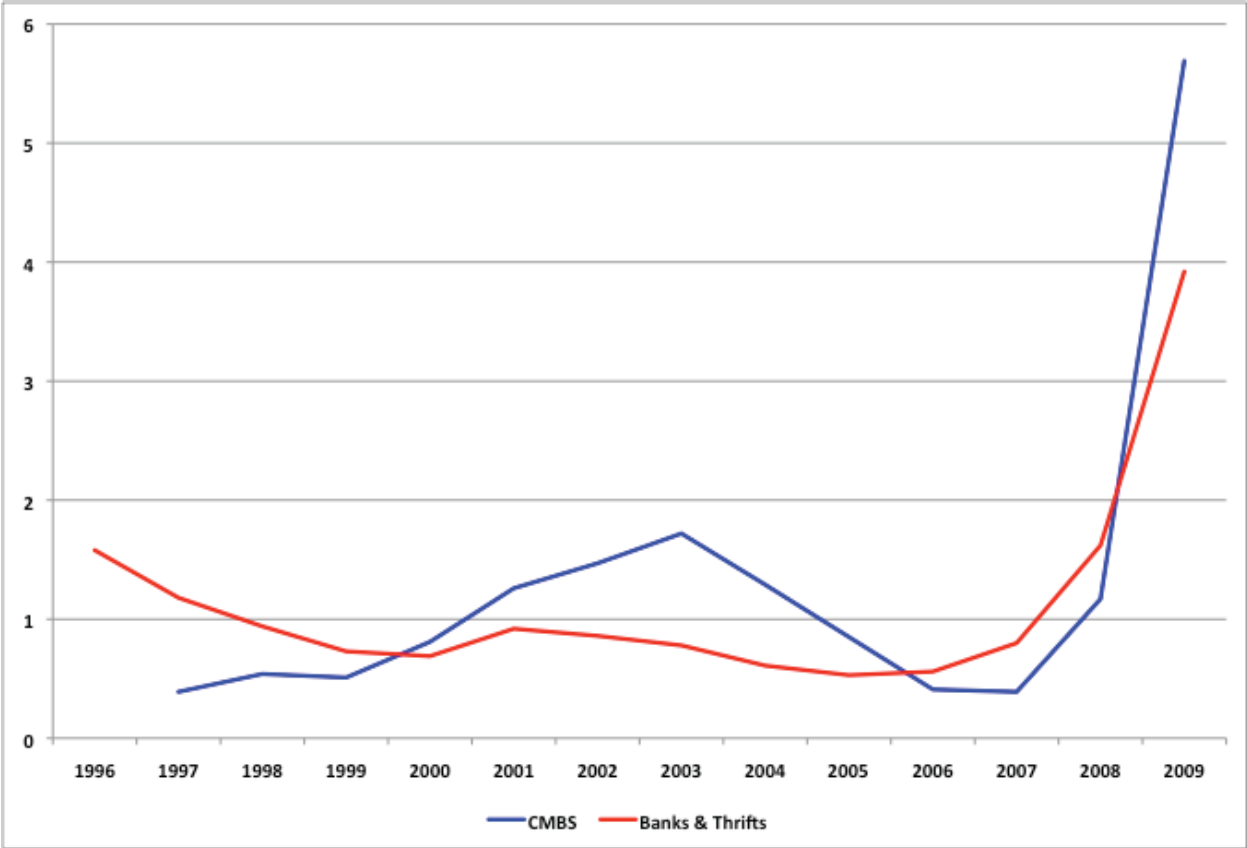
simultaneously. The nature of this construction, therefore, raises the financial risk profile of a condominium project, raising the chances that developers will choose to pursue another type of project. Or, if such a project were pursued, the greater financial risk would make lenders especially wary. Further complicating the calculus is the fact that financiers like Fannie Mae or Freddie Mac require that up to 70 percent of units pre-sell before financing can be completed. That threshold is a tremendously burdensome hurdle, further dampening interest in such projects.

FINANCING SMART GROWTH

Developers and policymakers cannot make land-use decisions in a vacuum, the financial sector provides the liquidity that enables plans for new development or redevelopment to be realized. As the National Association of Home Builders (2009) makes clear, “Banks and other financial institutions exert considerable influence over the future form of growth and housing by their lending decision.” The financial sector was jolted to its core as a result of the financial collapse of 2008 and the effects of the recession continue to linger. While it is impossible to forecast how long into the future these effects will persist, what is known is that the financing of development projects has changed dramatically over the past few years. Underwriting standards have stiffened, credentials of key participants in the project are scrutinized more thoroughly, more of the developer’s own equity is being required, and higher levels of pre-selling of units is now expected.

While the economy will recover and lending standards are likely to return to some semblance of normalcy, the prognosis for a speedy recovery is not good. One of the least discussed aspects of the current financial crisis and recession is the looming problem with commercial loans. Figure 7 shows the delinquency rates for commercial and multifamily properties (i.e., office buildings, apartment buildings, shopping centers or other income-producing properties) held in commercial mortgage backed securities (CMBS) or by banks and thrifts from 1996 to 2009. While the data do not include construction and development loans, despite their regulatory similarity to the aforementioned commercial loans, what is very clear from the figure is that the next looming financial crisis will occur in the commercial lending sector. The implication is that lending standards are likely to get much more stringent going forward. Lenders already were characterized as highly risk averse when it came to financing developments – such as mixed use developments – that might have been considered out of the mainstream. The current financial crisis is likely to impair commercial and residential development lending for years to come.

FIGURE 7
DELINQUENCY RATES OF COMMERCIAL AND MULTIFAMILY LOANS HELD IN
COMMERCIAL MORTGAGE BACKED SECURITIES (CMBS) AND BY BANKS & THRIFTS,
1996-2009



Notes & Source: The commercial mortgage backed security (CMBS) delinquency rate represents loans that are 30+ days delinquent or in REO. Banks and thrifts report their delinquency rate as 90+ days delinquent or in non-accrual. In other words, the rates are not comparable to each other, but are comparable across time within each category. Data are from Mortgage Bankers Association, “Commercial / Multifamily Mortgage Delinquency Rates for Major Investor Groups, Fourth Quarter 2009.” The delinquency rates are measured at the end of the 4th quarter of each year. If the 2010Q1 data were added, the figure would be even more dramatic. The delinquency rate for CMBS loans was 7.24% at the end of 2010Q1 and 4.24% for banks and thrifts.

Of course, an alternative to private lending is public lending or financing of projects that can catalyze a smart-growth initiative.³⁵ It is important to emphasize, however, that this alternative can be bittersweet. Public funding programs have different objectives, sometimes conflicting guidelines, and varying terms associated with their usage.³⁶ As one interviewee for this research made clear, assembling public funds for a project is akin to building a mosaic, with the various pieces rarely overlapping. While public funding of a project can serve as a catalyst that can push smart growth development over a tipping point, achieving such success will inevitably take many years to realize and require a high degree of tenacity and entrepreneurial acumen.

CONCLUDING REMARKS

Whether SB375 and the smart growth initiative is able to facilitate the successful implementation of AB32 relies on many factors that rest in the hands of millions of individual decision-makers – residents, land owners, renters, developers, financiers, local and state policymakers, and local officials called upon to enforce the various laws, regulations, and policies that govern land use. This report has adopted a supply-and-demand analytical framework that helps to delineate the various hurdles, obstacles, and chokepoints in terms of successfully achieving smart growth implementation. What the model immediately makes clear is that smart growth development depends upon the successful interaction between two sides of a market interaction. Homeowners and renters will not embrace smart growth unless it offers them something of greater value than the status quo. Smart growth developments must offer relatively alluring amenities and the price of the housing must be competitive. After all, residents have the freedom of choice and mobility, so there will always be outside options.

In turn, the price and quality-of-life attributes of smart growth development depend on public and private supply-side factors. As this research has made clear, there are numerous hurdles on the supply-side that are likely to raise the cost of engaging in smart growth planning and development. Some of these challenges, like those relating to the financial sector, depend on conditions that are beyond the control of Californians. Like residents, developers and financiers have the freedom to choose. While developing a suburban development on a greenfield site is a well known commodity, many aspects of developing along smart growth principles can be prohibitively costly and are likely to deter such projects. Passing such costs on to potential residents will not prove successful because, as noted above, they have the freedom of choice themselves and price matters very much. What this research makes clear is that incentives will play a critical role in determining the success of smart growth in California and in the United States. Creating public policies that generate the proper incentives for residents and developers will go a long way toward achieving the objectives of such laws as SB375 and AB32.

APPENDIX

INTERVIEWS

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Dave Randall
Planning Director
City of Madera

Gonzalo Rodriguez
Project Manager
Brookfield Land

Steve Salomon
City Manager
City of Visalia

John Shirey
Executive Director
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David Spaur
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Bill Spriggs
Mayor
City of Merced

Rick Telegan
Partner
3rd Millennium Investments

Scot Townsend
City Manager
City of Lindsay

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ENDNOTES

¹ Kushner (2008) further argues that hyper-sprawl has produced de facto segregation based on class, race, and ethnicity. On the other hand, Wassmer and Baass (2006) contend that the amenities of smart-growth communities drives up real estate values and has accelerated the movement of minorities and the poor from such areas. The price effect of smart growth is discussed more fully below.

² California Air Resources Board (CARB), “Greenhouse Gas Inventory Data - 2000 to 2008,” accessible at <http://www.arb.ca.gov/cc/inventory/data/data.htm>.

³ For the purposes of this report, the Central Valley is defined as the following eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare.

⁴ See <http://www.dof.ca.gov/research/demographic/>

⁵ One might argue that GHG emissions can be reduced by developing cleaner automobiles or by developing cleaner-burning fuel. Researchers exploring this possibility find, however, that a significant reduction in GHGs cannot be achieved without lowering VMT as well. See, for example, Lutsey and Sperling (2009).

⁶ <http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm>

⁷ See CARB, “Climate Change Scoping Plan,” December 2008, <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>

⁸ <http://gov.ca.gov/fact-sheet/10707/>

⁹ See the California State Association of Counties (www.csac.counties.org/.../SB%20375%20CSAC%20Fact%20Sheet%20-%20Oct21,08.pdf) and the League of California Cities (www.calapa.org/attachments/wysiwyg/5360/SB375TechOV.pdf) for analyses of SB 375.

¹⁰ See <http://www.visioncalifornia.org/>

¹¹ Ye, Mandpe, and Meyer (2005) analyze the guiding principles of ten different national organizations with an interest in supporting smart growth efforts. The organizations analyzed range from the U.S. Environmental Protection Agency, to the Sierra Club, to the National Association of Home Builders. Fortunately, there are many overlapping themes in these disparate views, which are discussed below. See ICMA (2010) for a portrait of what smart growth development means for rural areas, specifically. While the Central Valley has certain characteristics of a rural setting, the smart growth envisioned in the region pertains more to urban development.

¹² According to Levine and Inam (2004) and Levine (2006), there is presently ample demand for housing that conforms to smart-growth principles, yet it has been supply that has fallen short of meeting such demand. Kotkin (2010) contends that Americans are not yet ready to abandon their suburban lifestyles in favor of dense urban living. Critics of smart growth, such as Bolick (2000) and Siegan (2001), argue that the movement seeks to impose a lifestyle on people that they would otherwise not voluntarily choose. Recent studies of neighborhood satisfaction suggest that residents’ views of “smart-growth living” depend on design features of the communities. In

other words, demand for smart growth is conditional. See Yang (2008) and Rogers and Sukolratanamete (2009). Further, Howley, et. al. (2009) find that it is not the density of smart growth living per se that residents dislike, instead it is such things as noise, traffic, or lack of community. But with proper planning and design, such hurdles can be overcome.

¹³ See the sources to Figure 4.

¹⁴ Cervero and Duncan (2006).

¹⁵ For research emphasizing this argument, see Kitamura et. al. (1997), Song (2005), and Filion and McSpurren (2007). There are limits to this argument, however. Bertaud's (2003) analysis of Atlanta shows that the city's effort to reduce pollution and congestion cannot be easily achieved by extending public transportation given the city's expansive spatial structure. Handy (2005) suggests that much more research is needed before a firm conclusion can be drawn about the link between smart growth and VMT reduction.

¹⁶ Hess and Lombardi (2004) note the importance of a vital economic engine to this equation. Mokhtarian and Cao (2008) and Cao, et. al. (2009) highlight the self-selection that occurs among residents in deciding whether to live in an area with smart-growth characteristics. That is, it is not clear that installing efficient public transportation in a community will serve as a quick fix to commuting problems. People choose to live in such a community because it is conducive to their work and non-working lives. People who need to commute to a job in a distant location may see little benefit in such a smart growth community and will live somewhere where automobile transportation is better facilitated. In sum, how the population sorts itself will cause researchers to have a false sense of the true impact of smart-growth development's transportation promises.

¹⁷ The Urban Land Institute's (2010) recent analysis of SB375 highlights the need for inter-regional cooperation because, as the report recognizes, jobs and housing are not equally distributed across space. To the extent that jobs are plentiful in one area and not others, smart growth will only succeed in outlying areas if people can rely on efficient transportation to jobs. Audirac (2005) further argues that today's modern information technology capabilities might serve to undermine the smart growth effort. Whereas at one time physical proximity was important to capture so-called agglomeration spillovers, computers and the internet make communication possible for people around the world. Thus, IT may serve as a countervailing factor in encouraging people to remain on the periphery of smart-growth urban nodes.

¹⁸ Another argument is that smart growth policies, which some maintain are "growth control" policies, artificially restrict the supply of housing and, as a result, drive up prices. See, for example, Staley and Gilroy (2001).

¹⁹ For evidence that real estate values are positively correlated with the types of amenities found in smart growth areas, see Buzbee (2000), Song and Knaap (2004), Mohamed (2006), Howell-Maroney (2008), and Shaheen, et. al. (2009). Cao (2008) argue that it is the price and safety of neighborhoods that dominates homeowners' and renters' location decisions. Location is a secondary concern.

²⁰ Recent research by Aurand (2010) has found, however, that smart growth is not incompatible with affordable living. Because the sheer number of housing units constructed provides for a wide array of potential housing options for residents, the author advocates that planners and policymakers should not only specify density goals, but also goals for housing types.

²¹ See Wassmer and Baass (2006) and Wassmer and Lascher (2006).

²² Krizek (2003) provides a discussion of how transit supportive loans relate to smart growth.

²³ Blackman and Krupnick (2001) find that LEM default rates compare similarly to low-down-payment loans that traditionally carry more risk to lenders.

²⁴ One reason for pessimism is Fannie Mae's and Freddie Mac's recent refusal to buy mortgages on homes that are participating in the Property Assessed Clean Energy (PACE) program. Under the PACE program municipalities would sell bonds that would raise revenues that could be lent to homeowners to install solar panels or other energy efficient devices. Homeowners would then repay their loans through property tax assessments over an extended period of time. The property tax assessments, like all such assessments, would be secured by a lien against the property that would follow the property if it were resold. Fannie Mae and Freddie Mac made the decision not to purchase mortgages on homes that had such attached liens because they would be superior to the mortgage debt. In other words, in cases of foreclosure, the property lien would be paid off before the mortgage, leaving the mortgage investor less than whole. Despite the fact that Fannie Mae and Freddie Mac are now federal government entities that support mortgage finance liquidity and despite the potential environmental and economic benefits of retrofitting a home with energy efficient capabilities, the policy objectives of the different layers of government programs are clashing. The political debate over the PACE program is ongoing. See Tiffany Hsu, "Loan program for green home upgrades stalls," *Los Angeles Times*, August 19, 2010, <http://www.latimes.com/business/la-fi-pace-20100819,0,7260415.story>.

²⁵ Studies emphasizing the important of regional political cooperation include Song (2005), Boyle and Mohamed (2007), Edwards and Haines (2007), and Handy et. al. (2009).

²⁶ In addition to Lubell, et. al. (2009), see Portney (2002), Broussard, et. al. (2008), and O'Connell (2008 and 2009) on the disparity of views on smart growth at the local level. Saha and Paterson (2008) report on a survey of 216 cities that explores local governments' efforts to promote the "three E's" – environment, economy, and equity – of sustainable development.

²⁷ On this important topic, see Lewis (2001).

²⁸ Farris (2001), Urban Land Institute (2002) and Elkind (2009 and 2010) provide an outstanding assessment of the foregoing hurdles and offer broad solutions for overcoming them. Carter (2009), while focusing on so-called conservation subdivisions (CSDs) – residential or mixed-use areas that are designed to minimize site disturbance and to protect ecologically sensitive areas – offers a similar set of challenges.

²⁹ See Levine and Inam (2004), Bowman and Thompson (2009), and Lubell, et. al. (2009).

³⁰ See, e.g., Landis et. al (2006).

³¹ Clark, et. al. (2010) note that the question comes down to a social choice: should taxpayers bear the fixed costs associated with promoting smart growth that will lead to overarching social benefits, or should the burden be placed on private developers? Carruthers and Úlfarsson (2009) point out the importance of significant public investment in civil infrastructure before smart growth can proceed successfully.

³² The question, as noted above, also comes down to who will pay. Renne and Newman (2002) point to the promise of public-private partnerships. The Transportation Research Board of the National Academies (2004) argued that when government entities become an integral part of a project, such as in transit-oriented development, lenders become increasingly risk averse because of the political uncertainties added to the equation.

³³ For a discussion of the concerns that neighbors often have about smart-growth-like efforts, see Downs (2005) and King (2007).

³⁴ See Dunstan and Swenson (1999) and Kroll, et. al. (2002).

³⁵ NAHB (2007) provides a compendium of the multitude of public financing options available for developing the infrastructure than can initiate smart growth development.

³⁶ Pollard (2000) argues that one of the benefits of the smart growth movement is to focus attention on the conflicting and competing objectives of various public programs that ostensibly have similar fundamental objectives to revitalize communities. Reports from the field indicate that much work still is needed in this regard.