

# Sustainability for Suburbs

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**Abstract** The purpose of this paper is to encourage dialogue resulting in action to address unsustainable suburban sprawl. This paper focuses upon suburbs out of recognition that regional and global sustainability is not approachable until the adverse impacts of suburban sprawl and decline are resolved.

A movement inspired by smart growth principles and new urbanism has emerged, intending to improve the sustainability of existing suburban communities in decline. It advocates the transformation of declining suburbs into mixed land use, pedestrian-friendly, and village-like communities with increased density. Planners and designers associated with the movement generate designs and form-based codes to re-constitute suburbs through what is called *suburban retrofit* and *sprawl repair*.

If suburbia is to be repaired or retrofitted, substantial funding and eminent domain powers of government may not be the primary project drivers. Starting in 2005, the capabilities of government redevelopment activities have been limited by anti-condemnation legislation and scant funding allocations from state and federal legislatures.

The study reported in this paper was undertaken to find ways to financially support the transformation of suburbia into sustainable communities. The first step was to identify the financial, governmental, and institutional obstacles facing sprawl repair and community revitalization in this era of eroding local redevelopment agency funding and eminent domain power. In the second step, an assessment was made of the feasibility of applying remaining governmental capabilities together with existing funding and land assembly vehicles to catalyze redevelopment activities. Emphasis was placed on determining if funding from the private sector could replace the need for public sector funds. A finding of the study was that some new public policy applications and private investment vehicle adaptations would be necessary to accommodate private investment and mortgage funding requirements. Changes and innovations in enabling statutes and codes were also proposed as part of the path to more sustainable suburbs.

The investigation reported in this paper concluded that suburban decline and sprawl should and can be addressed to promote metropolitan sustainability. A related finding was that emerging planning and design efforts intended to transform existing suburbs into sustainable communities can be advanced if successful model projects or phases are built with public or non-profit funding and existing institutional vehicles are adapted to reduce risk and engage the private sector. Even so, leveraged government funding and public policy innovations are

identified as key factors in pushing the suburban sprawl abatement agenda forward.

## Literature Review

The negative impacts of suburban sprawl and calls for change have been identified and documented in the reference guide edited by Soule (2006), which sought to define sprawl and provide historical, legal, economic, social and political frameworks, define sprawl dynamics, highlight the problems, measure sprawl, and render policy prescriptions. Rome (2001) provided an early warning about suburban sprawl. The author explored the history of suburbs, the innovations of Levitt, the emergence of conservation-based anti-sprawl movement, and focused upon open space, wildlife, water, and soil conservation impacts. The author concluded with an argument for a land ethic. Duany, Plater-Zyberk, and Speck (2000) focused upon suburban architecture, home building and design, physical health, connectivity, and transit-oriented development. They argued for a robust proactive public sector made stronger to deal with sprawl and prescribed stronger powers for regional governments.

Lucy and Phillips (2006) argued that core cities are ascendant while older suburbs are in decline. They focused upon dispelling myths about the benefits and ills in living in cities compared to suburbs. Pastor, Dreier, Grisby, and Lopez-Garza (2000) focused upon the regional perspective in the Los Angeles metro area and argued that core cities and suburbs are becoming demographically similar and interdependent. They paid special attention to poverty issues.

Beatley (1999) suggested that planners and regulators in the United States can benefit from the traditions and modern methods applicable to suburbs in Europe. He was joined by Newton (2008) to argue that Australia has issues similar to those in the U.S. and Australians have developed approaches that could benefit American urban regions. Richardson, Chang-Hee, and Bae (2004) reported that France and the United Kingdom have developed sprawl symptoms similar to those in the U.S.

Specific design solutions for sprawl remediation that begin with redevelopment of suburban commercial land uses were suggested by smart growth advocate Sobel (2005) and Dunham-Jones and Williamson (2009), who suggested suburban retrofit and sprawl repair advocate Tachieva (2011).

Smith (2009) advanced the idea of asynchrony and recommended planned densification to retain otherwise lost value as the positive effects of development change highest and best use. He recommended planned densification as a technique to achieve this goal. Choi (2009) recommended that project design and financial planning be integrated. Lienberger (2008) argued that to redevelop suburbs there needed to be a uniform industry-wide set of design solutions for standardized suburban real estate products.

Several papers in the *Journal of Sustainable Real Estate* were found to have direct relevance to the subject matter of this article. Rauterkus and Miller (2011)

investigated residential land values and walkability. They found an enduring direct relationship. Bradshaw (2011) surveyed innovative real estate development firms and found that the conventional development process creates problems and innovative firms sought out investors more patient than is typical. They develop properties in various regions and formed durable relationships with designers of sustainable real estate products. Warren-Myers and Reed (2010) found that lack of transparency of financial drivers restricts substantial investment in sustainability because stakeholders have limited ability to measure sustainability and understand its impact upon value. Pivo (2010) argued that upgrading existing properties is more important than developing better new facilities. Examples from the U.S., Europe, and Australia were presented to illustrate that sustainable property investing will require technical skill and cooperation between owners and tenants.

Galuppo and Tu (2010) determined that real estate capital market players have concerns that project users will not recognize the value of green space and will not pay extra rent to receive the benefits. Players who were surveyed believed that lack of consumer awareness and lack of incentives is a major barrier to the growth of green development. Rauterkus, Thrall, and Hagen (2010) studied the relationship between location efficiency and mortgage default and reported that default probability decreases with higher walk scores except in low income areas. Addae-Dapaah, Hiang, and Shi (2009) reported that commercial building users in Singapore are unaware of green building financial benefits and are therefore somewhat resistant to paying higher rents to receive the benefits.

Rohde and Lutzendorf suggested that there is untapped potential for real estate consultants to propose by consulting about and developing sustainable property investment products and advocates the establishment of sustainable property funds.

Choi (2009) argued for a variety of principles and actions to promote adaption of green development practices. They included but were not limited to integration of design and financial teams, documentation of costs, benefits and market data for green developments, implementation of location-efficient mortgages, and sustainable use of redevelopment land.

### **Adding Suburban Sprawl Abatement to the Sustainable Real Estate Agenda**

Sustainable real estate literature has recently been focused upon support for individual sustainable projects. Topics such as measuring the value of green buildings and projects, examining and managing risk, sustainability education, ratings systems, operating costs, and other important work have been meaningful contributions. Projects and communities benefitting from such work are not likely to be truly sustainable environments if their host regions are not sustainable. Eighty-four percent of Americans live in metropolitan regions and 51% of the metro region residents live in suburbs. The “elephant in the room” yet to be fully addressed is the unsustainable nature of existing American suburbs and their impact that inhibits local and metropolitan sustainability.

This paper examines financial, institutional and public policy barriers to the reconfiguration of suburbs. It does not seek to evaluate design specifications for

suburban repair. The fundamental purpose is to revitalize discussion about the need to address the negative impact of suburban sprawl on regional and global sustainability. An additional intent is to discover pathways that facilitate financial, institutional and government action to resolve this serious threat to global well-being.

### The Case for Repairing Suburban Sprawl

There are numerous reasons to stimulate revitalization of some existing suburban communities with sustainable planning and practices. The negative impacts and remediation prescriptions of suburban sprawl have been identified and documented in numerous works such as a reference guide edited by Soule (2006), which sought to define sprawl and provide historical, legal, economic, social, and political frameworks, define sprawl dynamics, highlight the problems, measure sprawl, and render policy prescriptions. The Urban Institute (2002) found a relationship between sprawl, poverty, inequality, politics, and incentives to mitigate sprawl and examples drawn from Portland and Maryland. Rome (2001) provided an early warning about suburban sprawl. The author focused on negative open space, wildlife, water, and soil conservation impacts. The author concluded with an argument for a *land ethic*. A list of the unsustainable aspects of suburbia they identified includes but is not limited to transportation network inefficiency and deficient public transit, loss of farmland, inequality, water and air pollution, and high energy consumption. Households are impacted by a missing sense of community. The Urban Institute (2002) reported increased living and transportation expenses, long personal time consumed in vehicular trips, and an unjust burden on poor households. Strum and Cohen (2004) reported that, “Sprawl significantly predicts chronic medical conditions and health-related quality of life.”

The detrimental impacts of sprawl listed above are sufficient reasons to not delay in prioritizing the implementation of sprawl abatement. Recent trends add more rationale and urgency to start correcting suburban conditions. They are listed below.

1. Short, Hanlon, and Vicino (2007) reported that many first-tier suburbs<sup>1</sup> and their retail centers are 40 to 60 years old. Some are considered distressed. Without public or private renewal initiatives, they become obsolete as they fall prey to physical, economic, environmental, and visual decline. This problem might also be an opportunity. In some cases, as retail centers, residences, and neighborhoods approach the end of their economic life and decline, so do their property values. All other factors held constant, declining values may increase the economic feasibility of renewing these communities.
2. Density is considered a desirable sustainable community attribute. Lucy and Phillips (2006) found that between 1990 and 2000, 26% of U.S. suburbs studied declined in population.

3. Some suburbs are suffering from distressed retail neighborhoods and shopping centers because of a sluggish economy, unemployment, population shifts, and deterioration.
4. During the past decade, major retailing trends tilting toward e-commerce have been adverse to “brick and mortar” big box and traditional shopping center anchor tenant revenues, resulting in increasing vacancies and failing suburban retail centers. A ripple effect of these changes has begun to impact sales tax revenues for local governments.
5. Some aging shopping neighborhoods have become obsolete due to changes in retail practices and consumer trends. They are in need of redevelopment and increased backup population density to revive flagging sales.
6. Municipal property and sales tax revenues have been falling, fomenting budgetary crisis for local governments due to the conditions noted above (Lucy and Phillips, 2006).
7. Regional sustainability is negatively impacted by the existence of majority populations located in low density suburbs.
8. The global supply of carbon-based energy has diminished while its cost has skyrocketed since the time that post-WWII suburbs were designed and built. These communities typically have segregated land uses that create inefficient gaps between housing, places of employment, shopping, and recreation, necessitating numerous protracted personal household auto trips per day. If these dynamics are improved, energy conservation would result and prices might drop.
9. Low density suburbs lack viable public transit and are not pedestrian friendly. Increasing density and mixing land uses sets the stage for the development and use of improved public transportation and increased pedestrian trips. Decreased auto trips resulting from density and transportation improvements may yield cleaner air for metro regions. Money in household budgets can be released for other essential or discretionary purposes, thereby adding stimulus to the struggling American economy.
10. Sustainable nations, continents, and regions are necessary to achieve global sustainability. The impact of low density suburbs like all other urban metro problems such as crime and pollution can be shared international problems. For example, air and water pollution resulting from sprawl do not stop at the international border between San Diego and Tijuana or El Paso and Juarez.
11. Issues associated with low density American suburbs are not particular to the U.S. Other developed and developing nations also have low density suburbs, along with their negative regional and global impacts. Richardson and Bae (2004) found that despite sustainable traditions and government intervention, France and Great Britain have been experiencing suburban sprawl and its affects similar to American conditions. Pucher et al. (2005) reported that India is experiencing rampant suburban sprawl. Should sprawl repair be attempted and proven

successful in the U.S., communities in other nations might benefit from the experience of American efforts as they tackle similar issues. Remediation of international suburban sprawl impacts can assist sustainability on a global level.

12. In many regions, demand and pricing have been increasing for central city real estate. Although some first-tier suburbs are in decline, their proximity to center cities offers a marketing opportunity making redevelopment more feasible than in prior decades. If they are redeveloped, their proximity to central cities can become a competitive advantage.
13. The American economy has been struggling to overcome the employment effects of a troublesome recession that started in 2008. Previously normal levels of employment have prevented complete recovery since that time due, in part, to global outsourcing of jobs once performed in the U.S. Development and redevelopment creates local jobs in the construction and real estate related industries that cannot be outsourced. Secondary employment results in industries that supply construction and provide real estate related services and maintenance. Employment is created on a tertiary level when suburban renewal includes new industrial and commercial land uses.

### Repair and Retrofit: Designing to Reverse Sprawl and Decline

Driven by declining tax revenues, physical deterioration, and environmental impacts, suburban governments have become interested in and proactive about redevelopment, adaptive re-use, in-fill, and densification for their communities. In response, some urban planners and designers have begun to recognize and minister to the need to make suburbs more sustainable. Suburban redevelopment projects are being formulated by designers and planners to rescue older suburbs and their retail centers from decline with plans based on sustainable principles.

A suburban redevelopment movement, inspired by *new urbanism* and *smart growth* principles has become known as *sprawl repair* or *suburban retrofit*. Its planning concepts and design standards have been articulated in a published “toolkit” and a book of redevelopment-driven case studies from previous years. To date, the emerging impetus to transform suburbia has focused on vacant or marginally performing commercial retail districts and properties.

Tachieva (2010) provided design and form-based code recommendations for transforming existing suburban sprawl into mixed-use, denser pedestrian, and transit-friendly, village-like “community units.” The author advocated revamping dead and obsolete retail centers into new downtowns with increased density improved by mixed use. She recognized the need for incremental approaches toward suburban repair starting with retail centers in decline. Spatial and site analysis/design, together with infrastructure/transportation change, incentives, and code changes on the block, neighborhood, community, and regional scales were



prescribed. Toolkit components include but are not limited to increased densities and conversion from Euclidian ordinances with segregated land uses to form-based codes that permit mixed land uses and improvement types. Emphasis in sprawl repair and retrofit is on the creation of mixed land use, pedestrian-friendly dense community units.

Dunham-Jones and Williamson (2010) documented the history of and the current imperative for suburban redevelopment, adding density and changing the land use mix for first-ring or tier suburbs. Their case studies noted suburban retrofit projects with adaptive re-use and mixed land uses that typically received subsidies by redevelopment agencies, arguing that more such projects and backing are needed. Sobel (2005) also included case studies of suburban mall transformations.

Sprawl repair and suburban retrofit planners and designers have not limited their talents to incubating redevelopment plans. They have been involved in creating form-based codes for local governments and plans for new suburban communities built on greenfields as well.

There are communities that are approaching sustainability such as Portland, Oregon and Miami, Florida. They offer satisfying visions of how some components of sustainable communities look and function. Even-so, their characteristics, location, and history may not be directly applicable to many suburban sprawl remediation situations, in part because they do not suggest a viable path for the funding of suburban sprawl remediation.

Portland is considered to be an outstanding model of an American sustainable community. It was recognized as one of three international cities doing the most to achieve sustainability. Central to its progress is regional growth boundary legislation to restrain additional suburbanization of existing farmland and open space. Portland's sustainability was enhanced by installation of public transit and city-funded wetlands acquisition. The city also created public-private partnerships to restore native vegetation (Grewe, Anderson, and Butman, 2002). The model it presents is a useful one but the Portland experience does not provide instruction about how to finance the replacement of buildings and improve density in existing suburbs.

Miami is another example of progress toward sustainability. Even so, some may find it difficult to transpose the Miami experience and process to the task of rebuilding suburbs. Miami is a core city with urban infrastructure and amenities. It is centrally located inside a suburban metropolitan region. The focus of this paper is upon the type of suburbs that radiate out on three compass bearings from Miami.

There are recognized new urbanism models of sustainability that were built on greenfields. Seaside, Florida has been an inspiration for planners who would like to redevelop suburbs. Seaside is a small real estate development on the Florida Panhandle and was developed on vacant land. Kentlands, Maryland is not a municipality nor suburb but a real estate development on converted farmland inside a suburb. They were not existing suburbs that were developed. The

## Exhibit 1 | Annapolis Town Center



Source: Petrie-Ross Ventures.

financing and development issues of such enclaves are not comparable with the conditions in declining suburbs.

A basic building block in the tool kit of sprawl repair and retrofit is the high density mixed use pedestrian-friendly community unit. An example has been recently developed in Parole, Maryland. The Parole Shopping Center was acquired, demolished, and replaced by a \$400,000,000 development of shopping, residential units, hotel, and offices now known as the Annapolis Town Center development in the unincorporated portion of Anne Arundel County known as Parole, Maryland. Although internal financial developer outcomes are not public, the center seems to be successful. It has no vacant retail space and many tenants are nationally-recognized companies. As prescribed by sprawl repair writings, the town center has been an incremental development. The first phase of predominantly retail space opened in 2008 and subsequent phases have added and are continuing to add additional residential condominium and rental apartment units.

The redevelopment model that the Annapolis Town Center (Exhibit 1) represents is valuable but its applicability to other suburbs in need of revitalization and sustainable development may be limited. It is located in Anne Arundel County, which is a suburban area with a profile of exceptionally high income households. The median home cost in Parole in 2009 was \$442,399. The same year, Parole had a median household income of \$81,543, with an unemployment rate of 6.4% and a 13.5% increase in population during the nine years before 2009 (City-data.com, 2012). These statistics indicate that the financial risks of investing in and building the Town Center was lower than it would be in most suburbs that are suffering from physical and economic decline, demographic changes, as well as loss of population and viable retail activity.



Most sprawl repair and retrofit planners and designers would be pleased with the design model that the Annapolis Town Center project presents. Its apparent success in obtaining funding and market acceptance is probably achievable in other upper income stable suburban communities. Private sector investment in and development of mixed land uses and densification may be a normal progression in markets without much need of stimulus or subsidy in communities with high income demographics. Suburban downtowns such as Bellevue, Washington and Coral Gables, Florida appear to have experienced private investment and redevelopment resulting in densification, mixed use, and a more pedestrian-friendly environment.

There are examples of sustainable communities in countries other than the U.S. Marique and Reiter (2011) identified Malmö, Sweden and Kronsberg, Germany among a list of sustainable neighborhood models in Europe. These examples and the others listed by the authors are new developments, sponsored with up to 95% government funding. Beatley (1999) encouraged American planners to learn much about sustainability from old and new cities in Europe, including Amsterdam. Beatley and Newman (2008) also encouraged planners to draw lessons from cities in Australia. The information the authors provide leaves a reader inspired but left with the conclusion that government intervention is the path to sustainable reform. As true as this may be, the question of how to finance suburban redevelopment in the U.S. with declining government funding and tools remains unanswered.

The intended contribution of this paper is to catalyze dialogue, research, and actions to finance and build sustainable community design and undertake suburban redevelopment without all of the governmental tools and funding that once benefitted American communities and remains a mainstay in other countries to this day.

The investigation for this paper started with the assumption that sprawl repair and retrofit and their design standards are beneficial concepts that deserve to be refined and installed. Nevertheless, it is fair to mention that generic design standards for a project or community may be difficult to apply in the field. For example, there may be agreement among sprawl repair designers and planners that increased density and mixed use to support a five minute pedestrian trip radius (the “pedestrian shed”) is a desirable sprawl repair design standard. On the other hand, after physical, social, economic, and financial feasibility is considered for a specific site, this or any design standard may require modification or revision.

Density increase in sprawl repair is a good illustration of how a generic standard might not apply to a specific site without modification. Higher density levels than presently exist in most of suburbia are considered important in establishing sustainable communities but the question is, “How dense?” Despite the useful criteria of the pedestrian shed, there may be no “one-size-fits-all” answer. Even if a universal density standard or criteria is valid and preferable, the cost of improving substandard topography, groundwater, and soil conditions on some sites would set varying limits to appropriate density.

All social benefits and costs should be considered in establishing design standards for rebuilding suburbs into sustainable communities. The indications, the task, and

the results can be complex and confusing when evaluating appropriate density and other design specifications for a sprawl repair location. For example, Harries (2006) reported that increased density levels are associated with increasing incidence of crime but mentions that this finding is subject to modification according to the socio-economic profiles of the residents. Another example is that municipal financial capacity can affect feasible project density. Ladd (1992) determined that increasing population density will only decrease local government costs when density is less than 250 persons per square mile. Increased density over that figure increases the per capita government spending.

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## **Pathways to Rebuilding Suburbia**

This section reports on the identification and assessment of barriers to the implementation of plans for sustainable suburbs. The next step was to identify and analyze the capacity of existing programs, institutions, legal, and investment vehicles to support the public and private sector funding necessary to build redevelopment projects. The last step was to devise and propose new investment vehicles if needed to supplement the execution of suburban betterment programs. Findings were evaluated to determine the likelihood of successfully launching suburban sprawl remediation projects. In the summary, a conceptual roadmap toward better suburbs was outlined. Key findings of the investigation for this paper are reported and intended to stimulate dialogue about addressing suburban impacts on sustainability with suburban retrofit and sprawl repair.

Conditions that inhibit potential public or private investment in and redevelopment of existing suburbs are identified below.

### ***Local Redevelopment Activities Have Been Drastically Curtailed***

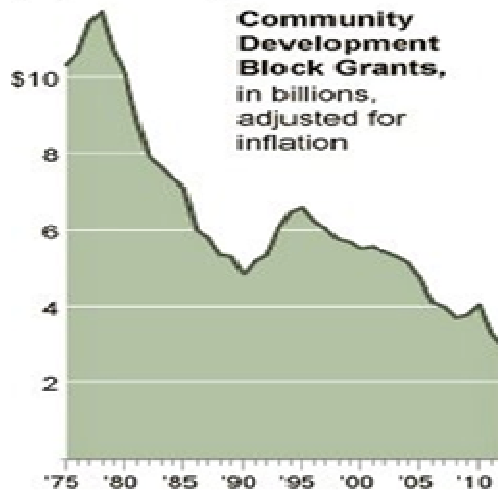
Tachieva (2011) and Dunham-Jones and Williamson (2012) prescribed the use of redevelopment funds, resources, and eminent domain powers in support of suburban redevelopment and reported on previous projects to redevelop retail centers. Prior to the current decade, most redevelopment projects were conceived of, financed, and managed by local redevelopment agencies, and funded by state and federal government funds and tax increment financing. Since then, legislative economic, governmental, legal, and public opinion factors have limited or curtailed the historical role and techniques of redevelopment. These changes have magnified the challenge of revitalizing any community including those in the suburbs.

In post WWII years, redevelopment projects were originally intended to foster full employment by targeting and revitalizing declining urban locations characterized by aged, deteriorated structures with terminal economic decline. Most central cities treated by redevelopment were originally built at higher density than found in suburbs, with grid pattern streets, abundant existing public transportation, and proximity to urban amenities. Redevelopment was managed by local governmental agencies with adequate federal and state funding for parcel acquisition, assemblage, infrastructure overhaul, parcel retention over protracted periods, and land price write-downs. These features were essentially subsidies that

## Exhibit 2 | Federal Grants

**Dwindling Funds**

Federal grants given directly to cities have dwindled since the program's inception in 1974.



Source: U.S. Department of Housing and Urban Development. The New York Times.

enabled private real estate developers to access cleared land and funds and proceed to rebuild communities. Local agencies possessed strong powers of eminent domain. Redevelopment was enabled by a favorable political climate, relatively unencumbered by NIMBYism, budgetary concerns, and political resistance.

Political reaction to real and perceived abuses of redevelopment powers arrested aspects of redevelopment. Because of resistance to adequate taxation levels, federal and local governments are presently in budgetary crisis. As Exhibit 2 demonstrates, federal community development block grant funding direct to municipalities has been drastically reduced.

Concerns about takings and environmental issues can introduce uncertainty about public support with prospects for delays and excessive developer exactions. Great Recession market dynamics and tight money have also added a layer of complication to the availability and use of eminent domain, public institutional, and private funds for any project.

From 2005 until the present, the use of eminent domain in redevelopment has been increasingly limited not only by economics and citizen resistance but also by legislative, administrative, and legal decision making. According to Mihaly and Smith (2011), 40 states have taken some action to limit the use of eminent domain. During his second term in office, George W. Bush limited the grounds for federal takings by Executive Order 13406 entitled “Protecting the Property Rights of the American People.” On February 28, 2012, the U.S. Congress passed H.R. 1433,

which overturns a 2005 Supreme Court decision affirming the ability of state and local government to take control of private property under the doctrine of eminent domain and hand it to another private developer. Virginia has a bill on the November 2012 ballot that narrowly defines the use of eminent domain under a proposed amendment to Virginia's Constitution. "The Virginia Eminent Domain Amendment, Question 1" is on the November 6, 2012 ballot in the State of Virginia as a legislatively-referred constitutional amendment. (Ballot-pedia.org, 2012). California exhibits the extreme of this trend. Under ABX 126, both redevelopment funding and local agencies were terminated by the state in 2012.

### **Lack of Data Inhibits Private Sector Funding of Suburban Revitalization**

During the current decade, marketplace shifts have occurred that have witnessed increased demand for the advantages of central city locations. Properties benefiting from this trend enjoy increasing financial feasibility for redevelopment with less need for massive doses of public subsidy. Because of close proximity to central cities, first-tier suburbs may have the ability to take on the marketing patina of a center city neighborhood, if their decline is arrested and reversed by revitalization. Unfortunately, robust public sector redevelopment is not readily available to such communities at this time.

Sprawl repair and suburban retrofit authors, designers, and planners leave to developers the task of acquiring funds for suburban redevelopment projects. As noted above, federal and state funding has been reduced and condemnation powers that once subsidized developers and fueled redevelopment have been weakened.

In the absence of adequate public funding and eminent domain, use of governmental "sticks and carrots" to catalyze both urban and suburban change will likely prove inadequate to launch or sustain revitalization. Private sector engagement to fill the gap left by public sector withdrawal has become critical for suburban renewal envisioned by the suburban sustainability movement. It is not helpful that in time of such need, private sector investment and mortgage lending criteria has become very conservative and risk-adverse due to the real estate market meltdown of 2008 and its continuing ramifications.

Choi (2009) identified lack of financial precedent as an institutional barrier to green building. Before engagement with innovative projects, financial players require enough market data to become comfortable with risk levels of any project. This issue is even more critical for unprecedented or innovative forms of development such as green projects in suburban redevelopment. Even in times of relaxed investment and lending criteria, adequate information about outcomes on similar previously built projects is necessary to engage private investment capital and mortgage funding. Comparable sales data are required to fuel feasibility studies and real estate appraisals, which assists investors and lenders in determining risk and reward levels (Miles, Berens, Eppli, and Weiss, 2007). Absence of adequate and reliable data of this nature for innovative projects in a market area is a barrier to innovation in real estate development.

Although Dunham-Jones and Williamson (2012) presented detailed case studies of previous retrofit and repair projects that were enabled by redevelopment agencies, financial outcomes for project developers, investors, and lenders are not available in these studies. These data are considered proprietary and difficult for any researcher to obtain. This deficit makes it very difficult to obtain investment and mortgage financing for suburban redesign projects.

In view of the diminished capacity of government redevelopment, conservative funding policies of private capital and mortgage sources and lack of information on innovative projects, it is fair to say that the issue of how to fund sprawl repair and suburban retrofit is the major obstacle for advocates.

### **Suburban Redevelopment Requires Missing Master Development Functions**

The real estate industry traditionally uses a five year investment, development, and ownership window within which to project return on and of investment funds to be received. Major redevelopment projects can take longer than five years. Protracted build and sell-out time frames increase the risk of reduced returns or loss of capital. More than moderate development risks are not usually acceptable to lenders and investors.

Investment risk is an important issue because real estate development is capital intensive and is typically financially leveraged by using institutional mortgage funding. Sources of capital for mortgage originators include bank depositors, secondary market funds, insurance policy holders, and retirement fund members. The legal fiduciary responsibility that mortgage originators have to these types of “public” funding sources obligates them to undertake stringent due diligence investigations, typically with the use of data and opinions from third-party appraisers and market feasibility consultants in the loan approval process. If adequate documentation is not available or if data and opinions indicate more than conservative project risk levels, mortgage originators will not make a loan to avoid future lawsuits of negligence from their capital sources. This is one reason that mortgage lenders and their borrower-clients are conservative about risk taking in development ventures. Another reason is that most development or construction loans are not only collateralized by real estate but also by personal or corporate guarantees. They do not accept unknown or highly speculative risks, pricing, absorption, and build-out time parameters without offsetting guarantees or subsidy.

In previous eras, the answer to issues associated with multiple years required for community was that local redevelopment agencies assumed the *master developer* role to fund high front-end costs, and absorb risk and holding costs associated with long-term investment in a project build-out. This enabled investors, the lenders and developers with shorter term time horizons to develop comparatively small phases of a large redevelopment project.

Local redevelopment agencies were able to purchase land at market prices, which were often too high to support private development, and then sell the acquired

land after writing-down the price, effectively subsidizing the project developer. Local agencies were able to perform these functions because they were recipients of receipt of federal and state grants, loans, and funding from municipal bond issues. Eminent domain provided by agencies absorbed and contained risk and expenses by assuring that all land required for a project could be acquired at market value, assembled and land-banked. Public redevelopment agencies also funded front end loaded expenses for infrastructure modifications and upgrades that could accommodate the progress of renewal for years and decades. If redevelopment is to be applied to suburbs, programs and investment vehicles must be adapted and/or invented to replace or compensate for the lost or fading master developer functions of local redevelopment agencies.

### **Value Added from Improving Suburbs Should Be Captured and Harnessed**

The first phase of a redevelopment project in a community often occurs in a low sales volume, low value local real estate market environment. In the redevelopment of declining communities, initial consumer preference, market demand, and pricing constraints may not be conducive to implementing designs and codes mandating pricing and higher densities that enable sustainable community features. In such circumstances, low-density, low value structures result, establishing a community precedent and image that is likely to remain for the duration of the economic life of the structures erected.

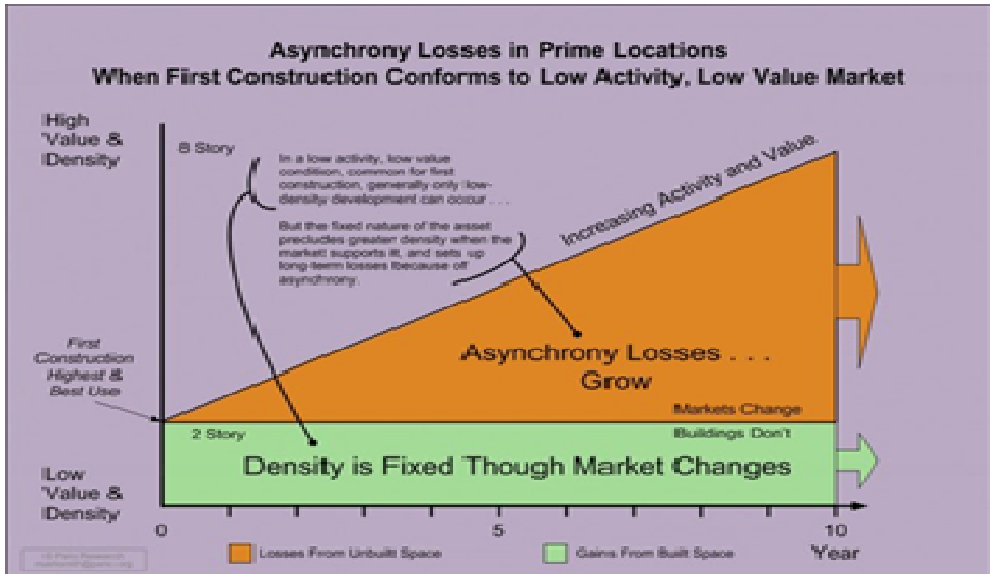
When redevelopment occurs at low density and without other sustainable features, sunk building and infrastructure costs and their remaining life spanning decades preclude subsequent redevelopment to higher sustainability and density standards. This is unfortunate because demand trends several years subsequent to redevelopment launch may improve prospects for improved price points, along with demand that promotes density and other sustainable features. Once erected, buildings remain too valuable during most of their economic life to lose to demolition.

As the impact of revitalization catalyzes better market conditions over time, improvements constructed at the start of a project may no longer reflect highest and best use in later years. A mechanism is needed to capture a portion of the evolving future value increment due to the successful of redevelopment activities at the front end of a project. Alternatively, redevelopment projects might be designed to accommodate subsequent changes in highest and best use. Failure to do one or the other is a potential lost opportunity for the environment, economic development, and municipal revenue, as well as project cost minimization and return optimization.

Viewed from the standpoint of opportunity cost, for a government or developer to not recoup some of the future value added by redevelopment is to simply leave a pile of money sitting unclaimed on the table. Smith (2009) identified this timing issue and labeled it as *asynchrony*. He formulated a wedge-shaped diagram to express its dynamics (Exhibit 3).



## Exhibit 3 | Asynchrony Dynamics



Source: Planned Densification.com and Pario.

The concept of asynchrony suggests that it is advisable to generate designs that encourage incremental projects with buildings and infrastructure that can be adapted to or accommodate increasing density and changes in highest and best use. There should also be mechanisms to capture some of the financial upside resulting from the success of the project rather than leave all of the windfall profits to property owners. To introduce and execute such a scenario would require innovations in title, legal instruments, zoning and building codes, as well as a method of monetizing future opportunity and harvesting it embedded in present value for use in funding the project at the front end.

### Barriers to Repairing Suburbs

Lack of robust redevelopment agency capacity presents numerous issues when attempting to construct projects for sustainable suburban change. A list of the issues that may exist if projects lack redevelopment support includes:

- **Title Issues:** Parcels acquired for a project may be encumbered by leaseholds, easements, purchase options, covenants, conditions, and restrictions that prevent or impede effective sprawl repair. Without eminent domain, these less than fee interests may not be removable unless beneficiaries decide to voluntarily surrender or sell their interest.
- **Taxation Disincentives:** The specter of IRS capital gains taxation on a sale or lack of a suitable tax deferred exchange property may dampen

voluntary owner interest in selling all or parts of parcels necessary for a project. Without condemnation, sellers cannot take advantage of IRS Section 1033, which offers deferral on a condemnation influenced transaction for up to two years before a replacement property is acquired.

- **Adverse Encumbrances:** Most existing improved property is owned subject to mortgage financing, which has a due on sale clause. To implement sprawl repair, replacement financing adequate to fund acquisition and construction may be difficult to achieve in the present lending climate.
- **Mortgage Financing:** Lack of mortgage financing for mixed-use projects. Many sprawl repair plans include mixed-use specifications. As a result of unfavorable lending outcomes during recent years of recession, many mortgage lenders are not favorably disposed toward lending on mixed-use projects.
- **Build-out Time Lags:** Innovative retrofit or sprawl repair designs and codes may require development windows of 7 to 20 years or longer for full development and market absorption to occur. As previously mentioned, this is a mismatch with North American investment practice, which favors financial turnover every five years.
- **Expiring Entitlements:** Considerable lag time in market response can occur when project design catalyzes product and density changes. Project build-out and sell-out may take years or decades. This circumstance requires long-term project phasing, as well as unprecedented longer-term construction and take-out loan commitments. Risk aversion can be expected in the private sector for funding long-term project build-outs. There are several reasons for this, including the possibility of changes in applicable discretionary entitlements, land use ordinances, building codes, environmental impact obstacles, and the possibility of court injunctions.
- Front-end loading of costs for acquisition, demolition, infrastructure modifications, and offsite upgrades. In former decades, redevelopment projects that required long-term phasing to reach build-out, supporting infrastructure and acquisition issues were typically resolved with the financial backing of redevelopment agencies. Where sprawl repair or retrofit plans increase density and require changes or upgrade of existing infrastructure, the resulting start-up costs must be borne by developers who operate with construction loans with terms of two to five years. The financial front end load of these costs may not be recoverable soon enough to provide a viable financial breakeven point soon enough to allow for acceptable investment rates of return for project investors and mortgage lenders.
- **Project Design Processes:** Sprawl repair planning and design professionals subscribe to the *new urbanism* movement's confidence in using the public charrette as a vehicle to incubate, refine, and validate community planning and design proposals. The public, special interest groups, and agency officials attend these meetings. Affected property owners and a representative of a developer are invited to attend. Plans

and codes resulting from charrettes may produce an excellent design product that represents the best compromise amongst stakeholders, although it is not always certain that the product is buildable. Primarily because of budgetary constraints, investors, real estate appraisers, market/feasibility analysts, and mortgage lenders are typically not brought into the process during the charrette stage. Developers and land owners attending a charrette may not have the same perspective or objectivity of these missing players. For example, if a landowner may be motivated by receiving entitlements pursuant to a charrette-driven design, he or she can sell the property at a higher price than before. Developers never know if they can acquire capitalization until they have a plan to base a proforma financial feasibility analysis on and propose to financial sources. By that time, project codes and entitlements may have been approved or disapproved.

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### **Existing and Proposed Tools May Be Capable of Supporting Sprawl Repair**

In sprawl repair and retrofit writings, arguments for a return of the sizable role of redevelopment agencies that was witnessed in previous years are prominent. Given current budgetary lockups and anti-*eminent domain* political climate this wish is likely to remain unfulfilled. Replacing government-funded redevelopment funding, land banking, management, *eminent domain*, and subsidy with private sector initiatives appears to be a daunting task but one worth the effort to generate sustainable metro regions. Creative adaptations of existing institutional practice and new innovative approaches to support and encourage non-governmental funding for sustainable suburban redevelopment projects may be necessary.

The inspiration of an excellent sustainable suburban redevelopment design is not likely to motivate all necessary players to participate in building a project. Designers and planners typically rely upon developers to build their project designs. Developers are funded by investors and lenders to fund projects. Developers do not have the tools or the magic to build innovative projects without committed investment and mortgage funding to drive development. To make funding decisions, investors and lenders rely upon due diligence based on precedents and comparables that are lacking for most large scale innovative sustainable suburban projects.

Presented below is a “toolbox” of existing vehicles capable of adaptation to mitigate some developer, lender, and investor risks or capable of facilitating some level of funding for sustainable suburban redevelopment projects. Included in the list are proposed but untried mechanisms that could also be helpful in reducing developer risk and encouraging funding sources to invest by overcoming barriers recognized in this paper. These new proposals could appeal to lenders and investors by replacing some of the eroding master developer functions of local redevelopment agencies. It is noteworthy that even with reduced direct public redevelopment support, public programs and enabling legislation retain a central role in facilitating suburban betterment.

- **Incremental Redevelopment:** Suburban repair and retrofit should be planned as incremental projects. This is because large scale projects take time to be absorbed by the market. In the absence of condemnation, project parcel acquisition is a waiting game. The principle of asynchrony predicts that market prospects can improve after initial phases of redevelopment have been built and improve the market environment. For some parcels required for a project, existing leases must expire, buildings must reach functional obsolescence, and potential user capacity and commitment to rent or purchase must evolve. Accordingly, project build-outs can take years or multiple decades. The time that it takes to launch and build-out redevelopment projects can be longer than the standard investment window of five years.
- **Extended Master Plans and Permits:** Large scale incremental redevelopment may result in protracted project phases that range for longer than expiration of land use entitlements, building permits, and in some cases the lives of community general or master plans. Incremental development and the desire to capture value by capturing asynchronous value may necessitate that applicable community master plans have a lifespan that extends beyond projected redevelopment build-out dates.
- **Long-term Density and Development Entitlements:** The point was made above that area-wide sprawl repair and retrofit will be incremental by necessity. Depending on market and project area characteristics, build-out can take several years or decades to accomplish. During this attenuated period, stakeholders will likely turnover, as will local politics and the composition and orientation of planning commissions and city councils.

The granting of durable development rights to developers or long-term development contracts between local governments and developers could be a method that encourages investment and developer participation. This is due in part to the fact that they mitigate risk levels by resolving the mismatch between project build-out timing, changing local politics, as well as the life of community general plans, decision-making bodies, and land use and building permit entitlements.

To assist communities in attracting developer interest and private funding for sprawl repair, local and state governments should consider legislation authorizing the use of uniform, durable transferable development rights or entitlements for sustainable suburban redevelopment. Some states, including Arizona, California, Colorado, Florida, Hawaii, Maryland, Minnesota, and Nevada permit the issuance of development agreements, commonly referred to as vested rights between developers and local governments (Miles, Berens, Eppli, and Weiss, 2007). Most other states would likely require enabling legislation to allow local governments to issue vested rights. The rights issued should not expire for the projected life of an incremental suburban redevelopment project. After issuance, they would not be subject to discretionary cancellation or modifications by regulators. To assist with capitalizing redevelopment projects, vested rights should be permitted to be transferable subject to provisions to assure entitled construction is bonded for completion according to criteria in the development agreement.

The ability and willingness of local governments to confer vested development rights that are permitted to be transferable with appropriate safeguards is necessary to support the following proposals.

- **Transferable Development Rights:** Long-term redevelopment projects typically have considerable front-end costs with payback periods that are not investor or lender-friendly. To address the need to capitalize high front-end costs, innovative investment vehicles could be helpful. To assist in meeting this need, we propose transferable rights to participate in future phases of a redevelopment projects. Future development rights (FDRs) would be similar to transferable development rights (TDRs), which are an existing procedure that permits transfer of density from one parcel to another. Ownership of TDRs can be sold by the recipient to another party. FDRs would be similar to TDRs in that development density rights or any project attribute would be transferable between parties. FDRs would be unlike TDRs in that the transfer of development rights would be transferable from one party to another but the location of the entitlement would remain the same. Documentation generated to memorialize the granting of a FDR could consist of contracts, certificates, options, deeds, or shares. FDRs could be sold or granted to holders to allow a degree of participation in aspects of redevelopment phases. Those interested in holding FDRs could include investors, lenders, developers, owners, buyers, sellers, tenants, non-profit sponsors, affordable housing sponsors, local governments, material or service vendors, sub-contractors, municipal infrastructure districts, home owner associations, and third party stakeholders.

The asset base supporting FDRs could consist of ownership, partial ownership or collateralization of vested development rights. They could be created and granted by local governments that confer vested development rights. FDRs could also be generated by development entities that receive grants of rights from local government.

FDRs could encompass all of the rights pertaining to developing an entire future phase or phases. They could also be divided into partial rights pertaining to a phase, building or location within projects. Selected examples of possible partial rights are rights to develop a specific land use in a future phase, rights to receive preferred returns or profits from a future development phase, and rights or options to purchase, lease or sublease the products of a future phase on a predetermined price schedule.

FDRs could be created as certificates of assignable air rights, ground leases, un-built but recorded condominium units, sub-rights to develop, contracts, shares in a holding company or preferred rights to receive payments, or scheduled net income or profit participation from the building a of phase. FDRs shares should be transferable. They could confer active rights to physically develop in a project phase or they could be passive with limited liability, conferring the rights to the holder to receive revenue or benefits from development activities on a specific parcel or set of parcels.

Another variant of FDRs could be guaranteed by assignment or hypothecation of vested rights to develop a project. They might or might not be conveyed as recordable instruments in the chain of title on subject properties. If FDRs were to be made part of the chain of title of subject parcels, they could be conveyed by special deed and recorded as ownerships of less than fee interests.

- **Advance Sales of Future Development Rights:** To capitalize initial project phases, FDRs or any other method of conveying future development rights could be created as liquid instruments designed to be bought, sold, and encumbered by loans.
- **Monetization of Marketable Future Development Rights:** FDRs or derivatives of FDRs could be offered for sale or resale to any third party through a securities market or offering or real estate brokerage house prior or subsequent to the first phase of a project. Revenue from initial share sales might become a significant source of initial project financing. Essentially, FDR shareholders would be investing in and holding speculative rights to revenue in a futures market. Revenue granting FDRs would be different from bonds in that there is no guarantee of any amount of future income or return of investment but only the right to receive specified amounts or portions of revenue if a project or project phase is successfully completed and sold or leased. Ownership of FDRs would also be different from ownership of shares in a development company. Ownership of FDRs could be anchored as a real property right and survive the bankruptcy of a development or land owning company.

The right to harvest future profits from entitlements could be invested in, valued, traded, leveraged, and financed in a marketplace. Durability of underlying entitlements together with the transferability and liquidity of FDRs could mitigate some degree of risk for investors. Initial offerings could be priced or open to bidding. The discounted present value of harvesting possible benefits of later phase development is a speculative investment play and would yield low prices to issuers at the front end and profits to holders at the back end of a successful redevelopment project. Even so, FDR sales might contribute significant funding toward first-phase development expenses.

If FDRs prove to have a good track record and enjoy market success, they or their derivatives eventually might be bundled together and sold to REITs or stock market listed funds that trade in futures or financial paper.

FDRs for specific land uses in a revitalization zone could be offered for sale and purchased by prospective users of the type of real estate the land use represents. For example, a hotel chain or licensee might warehouse FDRs for multiple projects as long-term options to acquire and develop hotels. If a hotel company decided not to activate a FDR in its portfolio, it could be sold to a third party.

Government, title and security attorneys should participate in the development and evolution of FDRs. Title insurers should be also



involved in the development of this product. Insurance of FDRs may assist their market acceptance and open up a new line of business for the insurers.

- **Redevelopment and Density Benefits:** Distribution of redevelopment and density benefits to multiple stakeholders. Property owners and sellers, municipalities, transit, school and utility districts, property users and their associations, environmental and housing agencies are all examples of multiple stakeholders that could and perhaps should receive marketable FDRs or other types of development interests in lieu of direct funding to mitigate later phase impact issues.

Sellers of subject parcels for a redevelopment project could opt to take payment in part or in whole as FDR shares. The granting of FDR shares can act as a device to encourage stakeholder support, seller motivation, and provide for non-taxation revenue for government agencies by conferring benefits, mitigation revenue or funds to be derived from future redevelopment build-outs.

- **Integration of Project Design with Marketing and Financial Planning:** In the current public and private economic climate and without public subsidy for their projects, designers and planners are in need of implementation plans to navigate resistance from investors and lenders. Many community improvement plans are based on the ideal, leaving developers to attempt to make an ideal plan feasible.

With the exception of the early conceptual work of Smith (2009) and the contribution of Choi (2009), little attention has been given in print to the importance of making strong linkages between project design and investment at the earliest stages of incremental suburban redevelopment planning. In the absence of traditional government support for redevelopment, retrofit with sustainable elements and density in existing communities requires strategic planning and continuous feedback between the project design program and financial and marketing program planning requirements. It is better to anticipate and respond to perceived financial and marketing obstacles by optimizing integration of design with financial and marketing considerations in an effort to address them with an a priori rather than ad hoc treatment after specific designs and related codes have already been finalized by governmental fiat.

- **Location Efficient Mortgages:** One cause of suburban sprawl has been the ability of developers to develop greenfields on the ever expanding suburban fringe. Lower land acquisition and labor costs permit lower purchase prices for new homes than for comparable homes in more accessible and developed communities. Purchasers can more easily qualify for a loan with a home on the fringe that is priced lower. Central city and redeveloped suburban locations can be more competitive if mortgage lenders and borrower would have to consider the monthly costs of transportation in borrower qualification criteria.
- **Product Standardization:** Lienberger (2008) prescribed product standardization, mortgage industry accommodations, and non-profit entity

participation for suburban transformation. This remedy would be the result of the proven financial success of pioneering suburban retrofit projects. The building and sell-out of model projects that provide a documented history of marketing and financial outcomes is necessary for adoption of industry-wide standard products that Lienberger prescribed.

Adequate traditional governmental redevelopment funding and support appears to almost be a political impossibility to sponsor one large incremental suburban sprawl repair and retrofit project. The magnitude of aggregate need for suburban revitalization across the nation could not be satisfied even with the availability of robust state and federal funding. Some of the limited state and local funds that are available could be used at-risk, to create model redevelopment projects and financial and market performance data for use by developers and their backers in raising capital and finance for subsequent projects. It is difficult to see how model projects and templates for future developments can evolve unless initially sponsored by some sort of public subsidy or non-profit foundation.

After adaptations of the existing techniques and formulations of new ones previously identified in this paper have been refined and proven and build model developments prove successful it is likely that suburban retrofit and sprawl repair can become a mainline industry model as foreseen by Lienberger.

- **Land Leases:** In cases where parcel acquisition and assembly is required for a project but owners will not sell and eminent domain cannot be employed (because of legal constraints or lack of funding), land leasing might be a solution. Pursuant to appropriately written land leases, several leased parcels may be merged for purposes of the leasee. Improvements may be modified or demolished and rebuilt. Advantages of land leasing include that there is no necessity for sellers to procure replacement properties to defer capital gains tax and the ability to retain assets and the ability to participate in the financial upside of a development project. The advantages to developers and sponsoring agencies include the ability to leverage funds by eliminating acquisition costs and an alternative to propose to land owners who refuse to sell.
- **Options and Land Contracts:** By definition, incremental suburban sprawl repair takes considerable time. Public non-profit foundations or private funds for a project can be conserved using leverage by paying for options or phasing payments by using a contract to purchase property using pre-determined pricing formulas during project build-out. The need for costs that are associated with the front-end loading of costs advance acquisition of parcels for a project is thereby drastically reduced.
- **Limited Partnerships and Cooperative Agreements:** Should individual property owners desiring to retain ownership of property required for redevelopment, or participate in future revenues they can contribute their property for a joint venture or for a limited liability private development partnership with private developers.
- **Government Agency Revenue Insurance or Guarantees:** Private capital and mortgage sources can be encouraged to fund revitalization

projects if speculative project risk is reduced. Risk for lenders and investors can be minimized if a financially sound local, state or federal government agency insurance pool guarantees occupancy of buildings, together with the income stream from resulting rents.

The advantage to guarantee or insurance programs is that they allow government agencies to leverage scarce funds. Unlike traditional redevelopment, the guarantee scenario requires little or no upfront agency funding to catalyze development by private developers. An insurance pool fund to pay-out for vacancies and defaults can be established in agency accounts. In addition to property and sales taxes and local employment increments that would benefit local governments by the guarantees, the insuring or guaranteeing agencies could receive a fee for participation in development profits at the back-end of projects. A portion of such financial returns could help fund the ongoing agency insurance pool.

A public relations obstacle may exist for insurance and guarantee programs. FHA, Fannie Mae, and Freddie Mac loan guarantees and insurance became a costly public expense during the mortgage meltdown of 2008. On the other hand, such loan programs are presently playing a very important role. These loans are available during the current credit crunch during which private mortgage originators have been constricting credit and abandoning other types of mortgage lending. If the prospect of the potential public relations obstacle can be addressed, revenue insurance and guarantees as proposed here show promise to yield good results in stimulating construction activity and assisting with economic progress in suburban, urban, and rural communities. Guaranteed or insured rental income makes a developer's ability to secure available investment and mortgage money for the project more feasible. Lower interest and investor return rates may result because of resulting reduced risk levels.

- **Private Lease Guarantees or Insurance:** Private sector lenders or insurers can assume the same role and rewards as described above for governmental agencies. Another application is that private insurance or guarantees can underwrite or become underwritten by government agency guarantees.
- **Sandwich Leases:** In lieu of revenue insurance or guarantees, public or private funders can opt to reduce the risk associated with a project by committing to lease properties developed with the right of sublease. This vehicle has the upside of allowing the holder of the sandwich lease to be able to create a revenue margin or profit between the underlying rent to the property owner/investor if rents increase over time.
- **Special Districts:** Special improvement and taxation districts are a known vehicle that has been used for a variety of purposes, notably transportation and infrastructure improvements. Special taxation districts will likely have a broadened and significant role to play, if they are adapted to the needs of suburban revitalization.
- **Tax Increment Financing:** This source of capital for betterment projects is time tested and is a good candidate to be deployed for suburban

betterment projects. Future increments in tax revenue that accrues to a local government from a redeveloped district can be pledged to service interest and retire principle on municipal improvements bonds.

- **Public-Private Partnerships and Incentive Programs.** To lower private developer funding requirements, publicly owned land can be contributed in exchange for an interest in a development. Public land can also be leased or optioned to private developers for suburban renewal projects.

Government agencies at the local, state or federal level can help jump start a project by contracting to purchase, lease or guarantee revenue from new space. They also can stimulate developments through application of the new tools proposed in this paper including but not limited to issuing irrevocable development permits and FDRs. In return for the action of a government that lowers private development risk or increases net revenue for a private developer, it can receive a limited partnership financial interest in a development.

- **Foreign Investors:** Offshore investors are emerging as a force in American real estate markets. Motivated by well-defined property laws and the reputation of a safe investment haven, foreign nationals purchase U.S. residences and commercial properties for income. Foreign sovereign and institutional investment funds have been taking investment positions in American commercial property, real estate companies, and REITs. As Exhibit 4 shows, foreign investment has become significant in U.S. metropolitan real estate markets. Bradshaw (2011) found that sustainable developers seek more patient investors. Some offshore investors are known to have investment time horizons beyond the five-year envelope preferred by domestic investors.

While it is less difficult to market real estate in internationally known

**Exhibit 4** | Foreign Investment in Commercial Property (2012:Q2)

Rank	Market	\$Millions
1	New York	\$1,014
2	San Francisco	\$685
3	Washington, D.C.	\$643
4	Miami	\$554
5	Chicago	\$529
6	Dallas	\$514
7	Seattle	\$431
8	Minneapolis	\$384
9	Boston	\$318
10	Phoenix	\$317

Note: The sources are Jones Lang LaSalle Capital Markets Research and Minnpost.com.

cities, the new alliances between overseas investors and American real estate funds and companies may create new funding sources for suburban betterment projects and their developed real estate products.

- **The Federal Community Reinvestment Act** (12 U.S.C. 2901): This act, as amended, requires banks to reinvest a portion of their funds in the communities where branches are located. While there are many aspects as to how this requirement must be discharged, one historical use of funds was to assist distressed communities in recovery. Redevelopment that promotes mixed land uses including commercial or industrial uses, which can be characterized to provide new employment, have been and are projects that satisfy some CRA banking requirements.
- **Pre-sale and Pre-lease Commitments:** Since the mortgage meltdown of 2008, lenders have become increasingly adverse to lending for the construction or permanent financing of speculative space. In the current era, pre-construction commitments from users to buy or lease space have considerable persuasive power in the mortgage lending approval process.
- **Land Use and Density Changes:** Price feasibility points for redevelopment acquisition are not universal. As improvements reach the end of their economic life, they add no value to the underlying land. In theory, if or when the market value of the land increased by improvement demolition costs is at a level that allows a developer to build new improvements, charge his or her overhead, and make a profit appropriate to the project risk level, the land price represents a business opportunity and private redevelopment may be feasible. In many redevelopment scenarios, fully depreciated improvements may not write-down property values low enough to permit entrepreneurial development.

In former years, the solution to overpriced land for redevelopment purposes was acquisition by a local redevelopment agency using public funds, followed by demolition of the devalued improvements and subsequent resale to a developer at a subsidized price. In instances where local agency acquisition and subsidy are not available and vacant land value does not support profitable development, redevelopment is not feasible. In some such cases, the need for subsidy to write-down land costs might be offset by increases in buildable site density and/or changes in land use. Either or both methods could increase the value of the subject site. These types of density and land use changes are advocated by suburban sprawl repair designers and planners.

Increased density and mixing uses may or may not be successful in replacing redevelopment agency land price write-down subsidies. In practice, to qualify a priced site for purchase would require a discounted cash flow analysis, sometimes known as subdivision development analysis or financial feasibility study. A generic example of a subdivision development analysis to determine if a candidate parcel is priced right for development is shown below in Exhibit 5. The example assumes the development and sale of a 48-lot subdivision. In this highly simplified demonstration, the only project improvements are roads, sewers, and sidewalks with a five-year market absorption period.

Exhibit 5 | Subdivision Development Analysis

	1	2	3	4	5	Total
Beginning inventory of lots	0	48	36	24	12	
Number of developed lots	48	0	0	0	0	
Number of lots sold	0	12	12	12	12	48
Ending inventory of lots	48	36	24	12	0	0
Cumulative no. of lots sold	0	12	24	36	48	48
Average price per lot	\$40,000	\$40,000	\$42,000	\$44,000	\$46,000	
Gross lot sales income	0	\$480,000	\$504,000	\$528,000	\$552,000	\$2,064,000
On-site expenses						
Marketing costs	0	\$33,600	\$35,280	\$36,960	\$38,640	\$144,480
Legal / closing	0	9,600	10,080	10,560	11,040	41,280
Real estate taxes	1,300	8,400	6,000	3,600	1,200	20,500
Overhead / maintenance	4,800	4,200	3,000	1,800	600	14,400
Coordination / supervision	20,000	20,000	20,000	20,000	20,000	100,000
Total	\$26,100	\$75,800	\$74,360	\$72,920	\$71,480	\$320,660
Entrepreneurial profit	0	72,000	75,600	79,200	82,800	309,600
Off-site development costs	240,000	0	0	0	0	240,000
On-site development costs	384,000	95,000	0	25,000	0	504,000
Net cash flow	(\$650,100)	\$237,200	\$354,040	\$350,880	\$397,720	\$689,740
Present value	(613,302)	\$211,107	\$297,259	\$277,930	\$297,200	\$470,194
Indication of land value	\$470,194					

Source: American Institute of Real Estate Appraisers.

To determine if there is an economically feasible alternative of reusing a site at a given price by adding density, improvements, and different mixes of improvements, each reasonable redesign scenario would be analyzed by a discounted cash flow analysis. The formulation that shows the highest indication of land value is determined to be the highest and best use of the site. If the indicated value of a design specification alternative equal to or greater than the proposed purchase price, the proposed transaction is considered to be feasible. The alternative that shows the highest residual land value is determined to be the highest and best use of the site. Behind each number in the analysis is a sub-routine of supporting market data. For example, sales prices of developed lots or buildings are determined by analysis of comparable sales in the vicinity. By definition, many pioneering suburban redevelopment projects will not have close comparisons, which is one reason why investors, developer, and mortgage lenders are very cautious about funding innovative projects.

- **Pilot Communities.** Daluddrung (2011) suggested that government and non-profit funds be used to stimulate redevelopment activity in suburbs.



The benefit of this prescription is that if pilot projects prove to be successful, they provide precedents needed to provide due diligence data and case studies usable to solicit project support from developer, investors, appraisers, and mortgage lenders.

A variety of existing funding and acquisition vehicles supportive of suburban sprawl repair and retrofit, without heavy subsidy and eminent domain formerly provided by local redevelopment agencies have been identified in this paper. Some existing techniques require modification to be effective. New vehicles proposed in this paper should be refined and field tested. Techniques that might compensate for lack of eminent domain powers have been discussed as well.

As of now, there is no one proven method or set of funding and parcel acquisition techniques that will fit every suburban retrofit and sprawl repair situation. Because the replacement of functions formerly provided by a redevelopment agency is experimental, to pioneer the deployment of solutions discussed here, a team consisting of a real estate and land use attorney, a securities attorney, and a real estate feasibility consultant should perform additional research and development of the techniques discussed in this paper. On the operational level, a development feasibility specialist should be engaged to work as part of each project's design team from the very start of the design process. As a result, project designs and planning should prove to be more practical in terms of funding possibilities. The purpose of this consulting position would be to identify candidate developers, lenders, and investor requirements, and to designate, mix, layer, and coordinate acquisition and funding vehicles to be employed for a given project. Part of his or her task would be to communicate, monitor, and enforce investment and mortgage-driven design and to provide financial and marketing evaluations of design alternatives.

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## Conclusion

For true sustainability, real estate projects must be part of a sustainable region and nation. Most metropolitan regions cannot be considered to be sustainable because they include large populations living in inefficient space-consuming suburbs. Some aging suburbs have not proven to be self-renewing and their decline compounds the impact of their unsustainable suburban design.

A design and form-based code movement has emerged to address the unsustainable characteristics of existing suburbs by planning revitalized, mixed-use, pedestrian-friendly, village-like community units. Decline of local redevelopment agency capabilities make the task of redeveloping with these solutions difficult and complicated. The funding of suburban transformation projects is also hampered by the requirements of lender and investor due diligence requirements, made even more stringent by reaction to the 2008 mortgage meltdown.

The ability of local government to address suburban decline and sprawl has been diluted by program defunding and substantial legislative, judicial, and executive

restrictions on the use of eminent domain for redevelopment purposes. A formidable set of constraints to private sector investment and mortgage capital backing for suburban revitalization and sprawl repair have been identified in the paper. An inventory and analysis of existing investment vehicles and practices indicates that they can be adapted and applied to compensate for the loss of strong support by redevelopment agencies. Existing vehicles must be supplemented by additional tools such as those proposed here to replace lost master developer functions formerly provided by local redevelopment agencies. Public policy and its implementation devices will continue to play a changed but critical role in getting sustainable suburban renewal products to market.

A conceptual roadmap to sustainable suburbs might start with taxpayer and bonding derived funds and non-profit foundation funds being invested in building pilot suburban sprawl repair projects or initial project phases. If pilot projects prove to be financially successful, private sector investments and mortgage funding are likely to follow. If positive market and financial information is documented and made available from an initial pilot project phase, private investment could follow in subsequent phases. Moreover, if several pilot projects in varying locations prove to be successful and are well documented, an industry standard set of sustainable suburban real estate products could evolve for national application by developers and due diligence use by financial sources. Widespread industry adoption could then make substantial inroads to resolving suburban sprawl and its regional and global implications.

The roadmap to suburban betterment offered in this paper requires the use of a toolkit of enabling devices to be mixed and matched to address sprawl repair. The analysis, articulation, conclusions, inventions, proposals, and interpretations should be considered and if found advisable, refinement and implementation of tools in the kit remains to be accomplished. Whether the information and approaches are found to be helpful, the purpose of this paper will have been served if it catalyzes dialogue and eventual action to address one of the most unsustainable aspects of real estate development—the local, regional, and global implications of existing suburban sprawl.

## Endnote

<sup>1</sup> The terms “first tier” or “first ring” suburbs refer to their seniority as original post-WWII suburbs to be developed in proximity to their urban cores. Their spatial location, size, and geographic configuration vary according to the region within which they are located. They are generally considered to be sandwiched between urban cores and suburban development of later vintage. Urban cores have recently acquired a favorable market appeal. Because of their proximity to the urban cores and the distances now associated with later suburban developments, suburbs have taken on the complexion and appeal of an urban core neighborhood.

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