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## SHAPING OUR GROWTH

### How Urban Growth Boundaries strengthen communities and protect greenbelts

By 2040, the Bay Area will grow from 7 million to 9.3 million people. We must decide how to best make room for everyone to live, work, and play in our cities, towns and neighborhoods.

#### ***What is a UGB?***

An urban growth boundary (UGB) is a planning tool for cities and towns that identifies the extent of where we locate our homes, schools, and businesses. A UGB separates an urban area from its surrounding greenbelt of natural and agricultural lands, and helps encourage compact, walkable development, especially near transit. UGBs are set for significant periods of time—typically 20 years or more. In the Bay Area, it's a proven tool to prevent urban sprawl.

#### ***What is sprawl?***

Sprawl is the outward expansion of low-density housing units, where residents must travel even short distances using an automobile, because of the remoteness of residential areas and inadequate availability of mass transit, walkways, or bike paths.

#### ***Sprawl is an expensive proposition***

As housing prices escalate, some are quick to blame smart growth and UGBs, and say that expanding our cities into open space and agricultural lands will solve our affordable housing crisis. The evidence doesn't support this view; rather, *multiple studies show that sprawl is far more expensive than smart growth*. A 2015 study found that sprawl costs America over \$1 trillion, and can increase per-capita land consumption by up to 80% and car use by up to 60%.<sup>i</sup>

Providing water, sewer, roads, and other services to far-flung neighborhoods is very costly for local governments. Smart growth allows more affordable housing types at increased densities, reduces land requirements per household, has lower public service costs, and reduces transportation costs. The higher housing prices that residents may pay will be offset by lower transportation costs, energy costs, and better access to jobs, services, and amenities in more centralized locations.<sup>ii</sup>

### ***Transportation costs rise as density decreases***

Suburban residents are expected to drive three times as much as urban drivers, who rely more heavily on walking, biking, and public transit.<sup>iii</sup>

A San Francisco State University study found a 10% increase in compact development and smart growth amenities resulted in a 20% decrease in vehicle miles traveled.<sup>iv</sup> It also found that building compactly was more successful in reducing vehicle miles traveled (VMT) than various taxing structures (such as a fuel charge). Furthermore, the estimated annual costs per household to provide roads in the most sprawled communities averaged \$804.74 in comparison to \$19.87 in the highest density communities.<sup>v</sup>

### ***Sprawl causes more traffic***

Building or expanding roads to serve new or existing sprawl only increases congestion through “induced demand.”<sup>vi</sup> Adding road capacity encourages people to take longer trips or more trips by car. A recent \$1 billion infrastructure investment to widen I-405 in Los Angeles resulted in commute times one minute *slower* than before the widening.<sup>vii</sup> This in turn only lengthens driver’s commutes. Drivers with a 30-minute commute will spend on average 87 hours dealing with traffic delays over the course of one year.<sup>viii</sup> That’s over 3½ days of sitting in congestion. Furthermore, the estimated annual costs per household to provide roads in the most sprawled communities averaged \$804.74 in comparison to \$19.87 in the highest density communities.<sup>ix</sup>

### ***Sprawl is harmful to our health***

Numerous studies have shown how urban sprawl negatively affects our health.<sup>x</sup> Cities built around automobile use provide fewer opportunities to exercise than walkable and bikable cities.<sup>xi</sup> Vehicles release air pollutants, including ozone, carbon, and airborne particulates, that are harmful to both wildlife and humans. Air pollution is a known cause of some respiratory problems, such as asthma and lung cancer.<sup>xii</sup>

Studies have linked increased VMT to rising obesity rates, diabetes potential, chronic illness effects, inactivity, and mental health impacts.<sup>xiii</sup> People living in less walkable communities have a 50% higher rate of diabetes as compared to the most walkable communities.<sup>xiv</sup> Thirty-five percent of people in walkable neighborhoods are overweight, compared with 60% in sprawl neighborhoods.<sup>xv</sup>

Another study found there was a positive correlation between the degree of sprawl and the amount of traffic and pedestrian fatalities in the largest 101 U.S. metropolitan areas.<sup>xvi</sup> For every 1% increase in the study’s density metric, the traffic fatality and pedestrian rates decreased by 1.49% and 1.47%, respectively.

### ***Sprawl makes us unhappy***

One study found that people who endure a more-than 45-minute commute are 40% more likely to divorce.<sup>xvii</sup> People who live in car-dependent sprawl neighborhoods are much less trusting of other people than people who live in walkable, mixed-use, and transit-oriented neighborhoods.

Another study found that someone with a one-hour commute has to earn 40% more money to be as satisfied with life as someone who walks to the office.<sup>xviii</sup> For a single person, exchanging a long commute for a short walk to work has the same effect on happiness as finding a new love.

### ***Sprawl residents pay more for public services***

Sprawl requires more expensive public services than smart growth. For example, a new development on the outskirts of a city requires police and fire services. Because this development is more distant, more officers may need to be working at a time to cover the additional area. The further a home is from a fire station, the higher its property insurance rates to address a low fire rating.<sup>xix</sup>

One study found that a fire station in a low-density neighborhood serves one-quarter of households at four times the cost of an otherwise identical fire station in a more compact neighborhood.<sup>xx</sup>

Similarly, the costs of municipal services also rise as sprawl increases. Denser communities pay less to provide infrastructure and services including water, roads, solid waste, libraries, parks and recreation, governance, and more.<sup>xxi</sup> A city's annual average household cost for public services is \$1,416 in high-density areas, and up to a whopping \$3,462 in sprawling areas.

### ***Sprawl uses more water***

As lot sizes increase, water consumption increases largely due to the increased irrigation needs. In San Francisco, the average resident uses just 45.7 gallons of water per day, the lowest in all of California. Smart growth development tends to have less water-consuming landscaping. A 2015 report from Energy Innovation and Calthorpe Associates found annual per-capita water use almost doubled from 25,000 gallons in “urban” development to 44,000 gallons in “standard” development.<sup>xxii</sup>

An analysis comparing current Bay Area development trends to a more smart growth scenario for future development found that the smart growth scenario would reduce water consumption by 9%.

Denser development also helps reduce water lost to leaky pipes. A 2014 report from the American Water Works Association found that California leaks about 228 billion gallons of water per year from municipal water infrastructure—the pipes that move water to where we live and work. This represents 25% of the total water in the system, which is about the annual water demand for the entire City of Los Angeles. Building within our

existing UGBs instead of expanding into open spaces or agricultural lands creates less opportunities for leaks simply because fewer miles of pipes will be necessary to serve development.

### ***UGBs promote economic prosperity***

Compact and contiguous development increases the ease of access to local businesses. Smart growth can lead to increased productivity and business activity, where people live within walking distance of more businesses, parks, and services. By reducing transportation costs, residents are more likely to purchase locally produced goods, which increases regional employment and productivity.<sup>xxiii</sup>

### ***UGBs protect our natural values***

The open space and agricultural lands next to our cities provide a vast range of ecosystem services. Water filtration, water storage and runoff, clean air, pollination, carbon capture, recreation, and natural beauty are just some of the services that our open space provides.

Without our natural and agricultural lands, we would have to cover the costs for providing these services. For example, if the City of New York did not protect its watershed and drinking water supplies, it would have to pay \$6 billion to \$10 billion in water filtration plant capital costs and more than \$300 million per year in operations.<sup>xxiv</sup> There is also great economic value of open space and parks within cities. It is estimated that the parks within San Francisco alone provide \$959 million in value (direct use, health, property values, tourism, cleaning and storing water, etc.) per year.<sup>xxv</sup>

Protecting our natural and agricultural lands from sprawl development also protects our water supply. In the Bay Area, about 30% of our water comes from local rivers, streams, and groundwater aquifers. More than a quarter of all the land in our region—1.2 million acres—serve as watersheds and groundwater infiltration zones that replenish these local water sources. Paving over critical water resource lands puts these local sources in jeopardy.

### ***There's plenty of land available inside UGBs***

Plan Bay Area, our regional blueprint for land-use and transportation planning, clearly shows we have enough space within our existing urban footprint to accommodate 100% of the region's future growth through 2040. This means **all** growth will be infill development or within established UGBs.

The methodology behind this analysis in Plan Bay Area was designed to meet the existing and projected housing needs of people at all income levels throughout the region. Our regional planning agencies, the Metropolitan Transportation Commission and the Association of Bay Area Governments, developed this methodology to achieve multiple goals, including increasing the supply, diversity, and affordability of housing; promoting infill development; promoting an improved intraregional relationship between jobs and housing; protecting environmental resources; and promoting socio-economic equity.

This analysis shows that there are many available opportunities for more housing within our existing urban footprint and inside our UGBs. We should focus efforts on building the region's next generation of new homes and new jobs within this footprint.

***People want to live in multi-unit housing close to transit***

Recent trends show people are increasingly attracted to living in dense urban areas, and urban populations are growing faster than suburban and rural areas. A recent analysis of U.S. census data shows that urban populations are growing faster than suburban or rural populations and employment centers in the country's major metropolitan areas have faster job growth.<sup>xxvi</sup>

In particular, those aged 25-34 with a bachelor's degree or higher level of education are migrating to the large metropolitan areas, stimulating economic growth. "In 2000, young adults with a four-year degree were about 77 percent more likely to live in close in urban neighborhoods than other metro residents. Now, these well-educated young adults are about 126 percent more likely to live in these close-in urban neighborhoods."<sup>xxvii</sup>

Younger adults prefer similar locations with urban amenities, and they prioritize short commutes. Currently, 34% of Millennials in the Bay Area live in apartments, compared to 21% of Gen Xers and 11% of Baby Boomers. The same number of Millennials intends to remain in apartments in the future.<sup>xxviii</sup>

The Urban Land Institute found that the construction of multi-family housing in urban locations in the Bay Area increased from 35% of total housing construction in the 1990s to nearly 50% in the 2000s; in 2010, it represented 65% of all housing construction. It projects that demand for multi-family housing will increase as seniors downsize and seek greater access to shops and services. Indeed, the current single-family housing stock provides a large supply relative to future demand, and an oversupply is projected by 2040.

Greenbelt Alliance's Grow Smart Bay Area report found that if the Bay Area redevelops opportunity sites with homes and businesses in ways that are consistent with community visions, and if city plans succeed, our cities and towns have plenty of room to accommodate all our new residents and workers.

Done right, infill development will improve the quality of life in our neighborhoods, with safer streets, more homes people can afford, and more services close by. Focusing growth within our existing cities and towns will also protect the iconic landscapes that provide us with local food, clean water, and places to enjoy the outdoors.

- <sup>i</sup> Victoria Transport Policy Institute and LSE Cities. *Analysis of Public Policies That Unintentionally Encourage and Subsidize Urban Sprawl*. March 2015.
- <sup>ii</sup> The Brookings Institute. *The Link Between Growth Management and Housing Affordability: The Academic Evidence*. 2012.
- <sup>iii</sup> Sustainable Prosperity. *The Cost of Sprawl*. 2014
- <sup>iv</sup> Dr. Sudip Chattopadhyay. *Do Smart Growth Strategies Have a Role in Curbing Vehicle Miles Traveled in California? A Further Assessment Using Household Level Survey Data*. The B.E. Journal of Economic Analysis & Policy, 2012.
- <sup>v</sup> David Thompson. *Suburban Sprawl: Exposing Hidden Costs, Identifying Innovations*. University of Ottawa, 2013.
- <sup>vi</sup> Gilles Duranton and Matthew A. Turner. *The Fundamental Law of Road Congestion: Evidence from US Cities*. 2011.
- <sup>vii</sup> Data analysis conducted by INRIX, a traffic data analysis corporation.
- <sup>viii</sup> TomTom. *TomTom Traffic Index: Measuring Congestion Worldwide*.
- <sup>ix</sup> David Thompson. *Suburban Sprawl: Exposing Hidden Costs, Identifying Innovations*. University of Ottawa, 2013.
- <sup>x</sup> David B. Resnik. *Urban Sprawl, Smart Growth, and Deliberative Democracy*. American Journal of Public Health, Oct 2010.
- <sup>xi</sup> Howard Frumkin, Lawrence Frank, and Richard Jackson. *Urban Sprawl and Public Health*. 2004.
- <sup>xii</sup> David B. Resnik. *Urban Sprawl, Smart Growth, and Deliberative Democracy*. American Journal of Public Health, Oct 2010.
- <sup>xiii</sup> Sustainable Prosperity. *The Cost of Sprawl*. 2014.
- <sup>xiv</sup> A. Motluk. *Neighbourhood Health*. University of Toronto Magazine, Winter 2013. See also, for example, V. Russell-Evans. *Expanding cities and expanding waistlines: Urban sprawl and its impact on obesity, how the adoption of smart growth statutes can build healthier and more active communities*. 2009.
- <sup>xv</sup> Howard Frumkin, Lawrence Frank, and Richard Jackson. *Urban Sprawl and Public Health: Designing, Planning, and Building for Healthy Communities*. 2005.
- <sup>xvi</sup> R. Ewing, R. Schieber, and C. Zegeer. *Urban Sprawl as a Risk Factor in Motor Vehicle Occupant and Pedestrian Fatalities*. American Journal of Public Health, Sept 2003
- <sup>xvii</sup> Erica Sandow, Umea University. *On the road: Social aspects of commuting long distances to work*. 2011.
- <sup>xviii</sup> Alois Stutzer and Bruno Frey. *Stress that doesn't pay: the Commuting Paradox*. 2004.
- <sup>xix</sup> Steve Mouzon. *Costs of Sprawl- Part 1*. Original Green, Mar. 2011.
- <sup>xx</sup> Todd Litman. *Understanding Smart Growth Savings: Evaluating Economic Savings and Benefits of Compact Development, and How They Are Misrepresented By Critics*. Victoria Transport Policy Institute, 2015.
- <sup>xxi</sup> Sustainable Prosperity. *The Cost of Sprawl*. 2014.
- <sup>xxii</sup> Energy Innovation and Calthorpe Associates. *Moving California Forward – How Smart Growth can Help California Reach its 2030 Climate Target While Creating Economic and Environmental Co-Benefits*. 2015. “Urban” development is defined as moderate to high density urban centers, consisting largely of multifamily and attached single-family homes, with some smaller lot single-family homes. “Standard” development is defined in part as largely consisting of separate-use, auto-oriented development.
- <sup>xxiii</sup> Todd Litman. *Understanding Smart Growth Savings: Evaluating Economic Savings and Benefits of Compact Development, and How They Are Misrepresented By Critics*. Victoria Transport Policy Institute, 2015.
- <sup>xxiv</sup> See New York State Department of Environmental Conservation’s New York City Watershed Program
- <sup>xxv</sup> The Trust for Public Land. *The Economic Benefits of San Francisco’s Park and Recreation System*. 2014.
- <sup>xxvi</sup> Joe Cortright. *City Report: Surging City Center Job Growth*. 2015.
- <sup>xxvii</sup> Joe Cortright. *City Report: The Young and the Restless and the Nation’s Cities*. 2014.
- <sup>xxviii</sup> Urban Land Institute. *Bay Area in 2015*. 2015.