# Minimizing the Effects of Urban Sprawl

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Urban sprawl is the rapid expansion of low density urban development with small commercial establishments and has had several negative impacts on the environment and human quality of life in suburban communities. Smart policies and development do not have a uniform definition and can be implemented in a variety of ways. For smart growth to be effective it should create clearer guidelines for implementation. Three policy options include requiring transportation reform with street networking, enforcing urban growth boundaries, and community led smart development. Urban sprawl should be managed through Smart Growth to minimize the effects of sprawl.

## Option 1: Requiring Walkability to Daily Necessities

Transportation reform entails more than adding more bus systems or creating bike lanes. This policy recommendation would require new developing communities to design street networks prior to the application of individual transportation links (CNU, 2016). Automobiles are a significant contributor of $CO_2$ emissions, which make up the vast majority of greenhouse gases (EPA, 2019). They are directly linked to climate change and reduce overall air quality; urban sprawl has fostered an automobile reliant life style due to a lack of other convenient and active forms of transportation within communities. This insufficiency is also linked to a rise in obesity, diabetes and other health related issues (CNU, 2016). Creating policy where the skeleton of the street network is designed to promote suitable public transit along with walkable and bikeable streets can help reduce these health and environmental issues that are related to sprawl (Table 1). The nonprofit organization, Congress for the

New Urbanism, is currently working on sustainable street networking projects in order to completely reform the design and operation of regional transportation infrastructure so that it can be looked at from a network approach rather than as individual transportation components (McInelly, 2012). Other projects known as "15 minute neighborhoods" are also being researched in many communities. The city initiative Growing Up Boulder worked with local schools to research the feasibility of the 15-neighborhood concept for children in a community. It was found that play areas, equipment, and safe welcoming public spaces within a 15 minute walking distance were desired by students (Mintzer, Mendoza, Chawla & Dellepiane, 2016). Other cities adopting this practice include Detroit and Portland. Detroit is upgrading existing vacant homes and creating medium density housing to bring up housing per acre in order to support local retail that will supply daily necessities for residents in the city (Detroit Free Press, 2016). Retrofitting is one way that helps cities that are lack a framing for street networking (Detroit Free Press, 2016).

## Policy Option 2: Enforce Urban Growth Boundaries

This policy option is one that would require the establishment and enforcement of urban growth boundaries to promote efficient use of land and public facilities within a set area (Christensen, Zheng, & Rojas, 2019). Urban growth boundaries help prevent over pavement of natural environments like forests that act as carbon sinks for $CO_2$ emitted into the atmosphere, along with other natural environments. Setting these boundaries also forces communities to optimize space in an efficient and sustainable manner (Christensen, n.d). Regional governments such as Metro in Portland, Oregon, have been successful in their urban growth boundary practices but have had complaints about rising costs of housing due to boundaries (Table 1) (Christensen, n.d). The practice has become costly for the residents and are causing them to move outside of the growth boundaries of Portland which defeats the purpose of the practice. If urban growth boundaries were to be implemented on a large scale, there would need to be a way to prevent a rise in housing costs to make the communities a more equitable place to live.

## Policy Option 3: Community Led Smart Development

Community led smart development combines the perspectives of people in a community with the expertise of local or regional government entities who coordinate with state agencies to improve the overall development of the area (cite source). This option allows for the members of a community who feel most impacted by the effects of sprawl to have a voice that will be heard and taken into high priority when developing or redeveloping a city (Table 1). Government entities such as the California Strategic Growth Council have taken this initiative to communities most impacted by pollution through a project called Transformative Climate Communities (Mirzazad, n.d). This program funds community led development that will accomplish improvements in the environment, public health, and generate economic benefit in disadvantaged communities (Mirzazad, n.d). This method sets the foundation for a successful sustainable community, it not only brings in smart infrastructure but because of the strong residential involvement, people will be more environmentally conscious, want to take better care of their city and its facilities, they will develop a sense of pride for their

city, and pushing for policy will become easier with the support the community (Table 1). Some of the possible projects proposed by the Transformative Climate Communities program include affordable housing, bicycle and pedestrian facilities, health and well-being projects, and tree planting projects (Mirzazad, n.d). Currently this option is seen mostly in disadvantaged communities, but the methods can be used in all types of demographics. Government funding would need to be increased to fund many of these projects, but with strong community involvement less people may be against a possible tax increase or would even possibly participate in creating other projects for funding.

## Recommendation

My recommendation that would most efficiently combat the negative effects of urban sprawl would be to combine policy options 1 and 3. Having strong support and community involvement is a key factor to creating successful smart developments. Community led smart development fosters sustainable life styles, reduces greenhouse gases through improved infrastructure and public transit, and improves the overall health of a community. Combining policy option 1 with 3 would require transportation reform and would prevent sprawl in new developing cities and improve it in already developed ones. Methods from option 1 would create the framework for a city that is based off the street network design which allows for safe walking and biking areas, accessible public transit, and decreased the reliability of automobiles because necessities are within close distances. Combining these options is a good way to cover all types of communities to prevent and reduce sprawling effects. Although urban growth boundaries are still a viable option, they run the risk of creating diversions in social equity due to the high cost of housing they create, pushing lower demographics out of the set regions. Options 1 and 3 helps all demographics and ultimately improves environmental and community health most efficiently.

**Table 1: Evaluation of Policy Options**

| Criteria | Policy Option 1: Require transportation reform with street networking | Policy Option 2: Enforce urban growth boundaries | Policy Option 3: community led smart development |
|---|---|---|---|
| Criteria 1: Reduce GHG emissions | (+) More accessible public transit<br>(+) Increased walkability<br>(+) Less automobile dependency | (+) prevents expansion onto forest land<br>(+) efficient land use | (+) housing, jobs and key destinations within walking or biking distance<br>(+) reduction in fossil fuels for energy |
| Criteria 2: Economic Cost | (-) Costly to redesign transportation infrastructure | (-) Higher housing costs<br>(+) local gov costs decrease for public services | (+) includes the creation of affordable housing<br>(-) more gov funding |
| Criteria 3: Fosters Sustainable Practices | (+) fosters sustainable lifestyles<br>(+) Sustainable transit increase<br>(-) harder to change in already developed cities | (+) promotes preservation of open space<br>(+) increased walkability and public transit | (+) communities become environmentally conscious<br>(+) alternative energies |
| Criteria 4: Improve Community Health | (+) improvement of air quality<br>(+) reduced air pollution related health problems<br>(+) Increased physical health from walking/biking<br>(+) local environment health improvement | (+) walkability helps peoples physical health<br>(+) Develops sense of community | (+) empowers communities most effected pollution |

**Table 1:** An analysis of the positive and negative aspects of policy options 1-3 with corresponding criteria

## Literature Cited

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