

Reducing Automobile Use in the Suburbs

People living in the United States are always on the move. Throughout the years, cities have sprouted all over the United States. These cities, such as New York and Chicago, became huge metropolises as people crowded in. As these major cities became overpopulated, people started to move out of the city. However, with a lack of transportation modes, only a few could actually live away from the city. This changed with the invention and popularity of the automobile. The automobile was a mode of transportation that gave people the freedom to move wherever they wanted to. As the automobile became more popular, the American urban landscape changed. Instead of overcrowded cities, urban areas began to sprawl outward, bringing people away from the city out to the suburbs, which stretched for tens of miles around major cities. Today, suburbs act as the living area for the majority of people around the United States, who commute daily to metropolitan areas for work and to do business. Since the suburbs are so spread out, the automobile is the primary form of transportation. As suburbs have gotten more crowded and have spread out even farther, automobile use and congestion has increased. To counteract that, city planners, local government, and advocacy groups have pushed for changes to reduce automobile use. This debate has been a major concern in the suburbs. Once thought as the home for many residents who work in the city or industrial park, and as a result, designed for commuters and cars, some suburbs are changing their general policies and planning techniques to decrease automobile use. If implemented, the policies below will work well to reduce automobile use and enhance the city life.

First, automobile dependency in a suburb can be reduced by increasing public transportation alternatives. Public transportation includes buses, trains, light-rail, shuttles, and ferries. Public transportation provides a means of mobility for people who either do not have a car, or people who cannot drive, such as children and people with disabilities (Public Transportation Overview). Public transportation carries a greater number of people in one vehicle than any private automobile could. For example, some articulated buses (a bus that sort of looks like two buses connected by what looks like an accordion) have a capacity of over 200 people (Articulated Buses). Public transportation is most developed in high-density urban areas. However, public transportation is also used to take commuters from suburbs and outlying parts of an urban area to downtowns and other places of work. In addition, public transportation is also used for trips to school, and for trips to shopping areas and hospitals. Cities with efficient modes of public transportation include New York City, London, Tokyo, and Barcelona.

An increase in the number of public transportation options in a suburban community will give residents another option to get to work, school, shopping districts, etc. without having to drive their car. This will reduce congestion on the streets and at their destination, such as the workplace, school, or shopping district (Why Ride Public Transportation?). Congestion in the streets in the suburbs causes headaches for residents

as they try to get to work or school on time. An example is in Pacifica, CA, where at 8AM and 3PM, the streets near schools come to a virtual standstill as many families drive to the schools, and many parents stop to drop off their children, thus starting a traffic jam as cars begin to queue. Public transportation provides another means to get to work and school, and therefore reduces the amount of cars both on the street and at the destination itself. Public transportation is especially attractive where as like in the above example, traveling to a destination requires queuing and having trouble entering and exiting a destination smoothly.

Next, public transportation provides mobility for people who cannot use a car. This group of people generally includes seniors, handicapped people, and minors who do not have a driver's license. In most cases, because of the great distances between the home and schools, shopping areas, etc. in existing suburbs, these people cannot walk and therefore have to find a system to get to their destination. Because driving a car is not an option, public transportation is the ideal mode for them to use. That is why in the suburban community, it is important to have a variety of public transportation options situated at schools, shopping areas, and hospitals (Public Transportation Overview). These areas are places that are frequented by minors and seniors. In addition, in the suburbs, these areas are usually situated far from the place of residence, so walking isn't an option. For seniors and handicapped people, even getting to the nearby bus stop may be difficult for them, let alone getting to their destination. To improve mobility for them, the city should provide door-to-door shuttle service. The door-to-door shuttle service would make it easier for seniors and disabled people to use public transportation, and encourage them to get out more, since catching a shuttle would be so easy (Why Ride Public Transportation?). An example of door-to-door service that serves both seniors and children is in San Carlos, where the service is very popular with those who want an alternative to driving to schools and shopping areas, which become congested at peak times.

Third, investment in efficient public transportation is cheaper than building more streets and bigger streets to accommodate traffic (Public Transportation Overview). This is especially important in cities with smaller budgets where not a lot of money can be put into more streets or street improvements (Public Transportation Overview). In addition, efficient public transportation would reduce transportation costs for resident (Why Ride Public Transportation?). With public transportation as an option, residents are less likely to buy an extra car and less likely to have to drive. The result is less money spent on gasoline and car maintenance. Public transportation, when factoring the costs of the vehicle and gasoline, would shuttle more people for less, when compared to automobiles (Why Ride Public Transportation?).

In spite of these advantages, a number of barriers exist for implementing more public transportation. One barrier is people's lack of support for public transportation. Some residents will think that transportation benefits too few people, while having high capital and operational costs. They believe that funding should be used instead on improving streets and traffic flow, since it will benefit the most people. Generally-speaking, most residents, with the exception of the previously-mentioned seniors and

minors, in the suburbs drive, so traffic improvements would help the majority of them. In addition, public transportation tends to be less effective in areas that are less dense such as the suburbs. People live too far away from transit lines, and it isn't feasible for transit to cover all areas of the suburbs, as it wouldn't be cost effective. In addition, in some suburban communities, even minors and seniors are overlooked as groups that are in need of effective transportation, especially in areas where these groups make up a low percentage of the total population (Why Ride Public Transportation?). Lastly, in suburban communities that are built out entirely, the most efficient forms of transportation, such as trains and light-rails, are hard to construct because of the lack of land. The alternatives are to build underground (tunnels) or to build bridges for the trains, but the capital costs for tunnels or bridges are very high, and as previously mentioned, opponents of public transportation think that the costs are too high for minimal benefits, and that the money could be better spent to retrofit existing streets instead.

In connection to effective public transportation is the next action which would decrease dependency on the automobile: the construction of more transit-oriented development (TODs). Transit-oriented development is a mix of compact communities located at transit hubs or train stations (Kimsey, 3). The transit hub or train station acts as the center of the neighborhood. In quick proximity to the transit hub are a mix of uses, including dense housing, commercial areas, especially ones that provide daily goods and services to residents, such as grocery stores, postal services, salons, etc., and offices. The dense housing is important because the train, bus, etc. service will provide the most effective service for the most people (Transit Oriented Development). Optimally, the transit hub and train station will be served by a variety of modes of transportation, and lines that connect the hub or station to a variety of areas. Examples of transit-oriented development in the Bay Area are Downtown Hayward, the Pleasant Hill Transit Village, and Downtown San Jose.

One benefit of transit-oriented development is the reduced dependency on automobile use for residents who live in the transit-oriented development. Since they are situated near a major public transportation mode, residents will have the option to use public transportation, and not just limited to using the automobile. A transit hub with many lines connecting to different neighborhoods will push nearby residents to use public transportation even more, since they have so many transit line options to travel to different neighborhoods, and be even less reliant on automobiles (Schwartz). An example of this is the Transit Village in Richmond, which has BART, Amtrak/Capitol Corridor, AC Transit, and Golden Gate Transit connections (Kimsey, 22). For transit-oriented development to be effective, public transportation will have to be effective. In addition, transit and trains usually connect residential areas to workplaces. Train stations typically link residential neighborhoods to downtowns and other work areas. If a person lives in a TOD, and has his office located near a train station, that person will most likely commute by using a train daily, which would mean a decrease in daily vehicular trips, five in one work week. If a high number of people lived in TODs and commuted to work using public transportation, it would greatly reduce traffic use and congestion in a suburban area. Also, stores with daily conveniences are located within TODs or nearby

and also aid in reducing automobile use. Residents or commuters, needing goods or services, only have to walk nearby their home, hub, or train station to find what they need instead of having to drive, which reduces congestion on the road.

Next, the construction of TODs will result in higher property values and better business for stores (Transit Oriented Development). Transit-oriented development, with its close proximity to transit hubs and train stations, is an attractive place to live, especially with people who are mobile or environmentally-conscious. TODs are even more attractive when the convenience of nearby stores is factored in. Because of these factors and its demand, transit-oriented development tends to be higher valued. This is good for owners of units near transit hubs and train stations as they enjoy a higher value on their home. In addition, higher values also benefit the government, who reap in higher property taxes. So high-quality TODs benefit both property owners and the government. This can be seen in transit-oriented development in Downtown San Jose (Kimsey, 27). In addition, businesses flourish with the high density of the TODs and the increased foot traffic. These businesses benefit store owners, who reap in more revenue, residents of the TOD, since they have a place nearby to shop, and the government, who receive revenue from sales tax.

Third, transit-oriented development helps the environment. First, the greater use of public transportation, along with stores in close proximity, both consequently lower automobile use, which also decreases pollution, especially during times of traffic congestion, which is one of the leading causes of air pollution. In addition, transit-oriented development is compact and in existing developed areas, so no natural areas have to be dug up or developed (Schwartz). These areas could remain natural, which increases the image of the city and the enjoyment of natural areas for residents.

Transit-oriented development would see barriers to implementation and construction if it were to be built in an existing suburb. First, suburbs tend to be single-family homes. Opponents of TODs would argue that higher-density housing is out of place in a suburb. In addition, critics will complain that the increased density would actually increase traffic congestion, in spite of the fact that one of the aims of TODs is to reduce automobile traffic. Some residents may not want to live so close to one another. Lastly, some residents may not want to live so close to trains and buses because of the noise and safety issue.

Not all development that reduces automobile use can be located next to a transit hub or train station, but that doesn't mean steps could not be implemented to reduce automobile use. Mixed-use developments are another form of development that can reduce automobile dependency. Mixed-use development focuses on making communities less dependent on automobiles and more walkable. Mixed-use developments, as its name suggests, has a variety of uses incorporated in the neighborhood, many times with commercial uses on the ground floor, with compact residential units situated on the above floors (Mixed-Use Development). The neighborhood itself is built for the human scale, which means shorter blocks, compact lots, and other measures done to promote the closeness of a community.

Mixed-use development reduces automobile use because its compactness makes walking a more practical mode of transportation. Mixed-use development concentrates commercial and residential units, so like TODs, when residents need to shop for goods or services, options are close by, and they don't have to drive, like most suburbs where residential and commercial uses are separated (Mixed-Use Zoning). Usually, commercial stores and residential units are built in the same building, which makes shopping for residents even more convenient. A number of mixed-use developments exist in San Francisco. Many of these developments have a grocery store and other stores for daily services on the ground floor, with a mix of residential units above. Also, in a mixed-use development, other uses such as civic buildings, schools, and parks can be located closer to residents because the compactness of mixed-use development allows these other uses to be built closer.

Finally, mixed-use development encourages compact growth, and discourages sprawl, which benefits both the city government and residents. Compact growth means less costs being spent by the government on infrastructure and more outlying roads to connect far-flung homes to the rest of the city (Mixed-Use Development). That money can be used instead on rehabilitating and improving existing neighborhoods, which would increase the value of their properties and the overall image of the city. In addition, the reduction of sprawl maintains existing open space (Mixed-Use Zoning). Open space also improves the image of the city, and gives residents a place for recreation and enjoyment of nature.

Mixed-use development is difficult to implement in suburbs that are fully developed, especially in areas consisting of single-family units. Mixed-use developments require an overall change in existing urban design, placement of buildings, street design, pedestrian areas, aesthetics, etc. to be successful, and it is difficult to succeed if many of these factors cannot be implemented. In addition, mixed-use developments require a de-emphasis in the automobile, but many existing suburbs are designed with the automobile in mind. It would be difficult to redesign existing areas to emphasize the human form. In addition, commercial areas in existing suburban areas tend to be separated from residential units, and residents would complain that intermixing commercial and residential units will lead to increased congestion near residential units and a lower quality of life (Mixed-Use Development). Next, some opponents of mixed use do not like living in compact neighborhoods. They argue that the point of moving to the suburbs is to have a big lot where neighbors are crowded so closely (Mixed-Use Development). Compact, mixed-use development would be contrary to that view. Critics say that compact uses are best left to urban cities, where land is scarce for big lots.

Next, to reduce automobile use, streetscape design should be implemented. Streetscaping is the aesthetic improvement of the street and sidewalk. This is done by improving and expanding sidewalks, adding more decorative lights, trees, and landscape, and improving the street front of buildings (Lewis). Streetscaping is done usually for the enhancement of the pedestrian realm and of the neighborhood in general. Streetscaping is especially innovative and effective today as streets in the suburbs tend to be

automobile-oriented, with the focus on moving traffic instead of beautifying the street for both pedestrians and cars. Streetscaping has recently taken place in Downtown San Leandro, which has revitalized pedestrian traffic in the area.

Streetscaping encourages walking and the pedestrian use of streets. First, large sidewalks give more space to pedestrians and make them feel separated and safer from vehicular traffic. Decorative landscaping and lighting further make the street more inviting to pedestrians. They soften the tone of the street and break up the monotony of gray asphalt and concrete that is so prevalent on today's streets (Grotkiewicz). Trees also provide shading, which provide shading. Streetscaping on a number of streets and alleyways, when interconnected, encourage pedestrians to walk even more, instead of using cars for mobility.

Streetscaping also enhances the image of the street and neighborhood. Distinctive trees, landscape, and streetlights provide a distinct difference from the usual gray street, and increases the attractiveness for people to frequent the street (Grotkiewicz). Because of increased pedestrian traffic in the streetscaped street, businesses are also attracted to the area because of the potential increase in business (Grotkiewicz). In turn, increased businesses and the attractiveness of the streets will lead to a demand for housing close by, which will further increase the use of the street, which will make streetscaping efforts more successful (Grotkiewicz). Streetscaping causes a number of improvements to both residential and commercial areas, not to mention also the street itself and the street layout, which brings up the image of the whole neighborhood and city. The city can introduce even more streetscaping to existing non-streetscaped streets to improve even more of its neighborhoods, and introducing connecting a network of streetscaped streets.

Lastly, streetscaping provides security for pedestrians and automobiles. In addition to wide sidewalks, which provide extra space for safety, streetscaping, with the use of trees and landscape, can physically form a barrier between cars and pedestrians (Lewis). In addition, a large amount of landscaping and trees in the median and on the sidewalks can form sort of an obstacle for vehicles, causing them to slow down, which will make pedestrians feel safer when crossing the street (Lewis). In addition, streetscaping's emphasis on streetlights helps bring safety to pedestrians. They provide illumination to be more easily seen by drivers, and they discourage crime (Grotkiewicz). The fact that streetscaping attracts a high pedestrian volume and encourages social interaction also is a deterrent in crime. People are reluctant to commit crimes if people can see them.

People who oppose streetscaping contend that streetscaping will have a minimal benefit in a suburban community, where driving is still the primary mode of transportation. In addition, since commercial areas are so far from residential uses, walking is not a practical option, and streetscaping will only have a minimal impact on trips to commercial areas. Streetscaping, in an effort to increase pedestrian use and safety, usually has to change existing street design, which would anger both motorists and home and shop owners who are resistant to change, or for home owners in particular, do not want to see increased pedestrian traffic so close to their home. Critics also argue

that money spent on image-rehabbing uses is not a good way of spending money. They argue that money can be better spent on improving streets or buildings themselves. When spent on improving streets, mobility could be improved and traffic congestion could be eased. Money spent on improving residential and commercial buildings will cause property values of those buildings to rise.

Streetscaping is only one of many ways to reduce traffic speeds and automobile use. Traffic calming is another way automobile use can be discouraged and ultimately reduced. The aim of traffic calming is to slow down vehicular traffic, ultimately leading to lower use of automobile on certain streets (Fehr, et al). Examples of traffic calming measures include speed bumps, traffic circles, and chokers and bulb-outs. Speed bumps help reduce the speed of vehicles, depending on the height of the speed bump. Typically, taller speed bumps have the greatest impact on slowing down traffic (Fehr). Speed bumps can be used on any street, but is used mostly in residential streets. Another widely used traffic calming measure is a traffic circle. A traffic circle is a roundabout situated at an intersection, and forces all traffic to merge and go around a central circle before continuing on the street. Since cars need to merge into the traffic circle, they have to slow down to enter, which slows down traffic. In addition, traffic going around the circle also has to slow down to avoid collisions. Noticable uses of traffic circles are in Berkeley and on Waller Street in San Francisco. Lastly, chokers and bulb-outs are other forms of traffic-calming measures. They involve the narrowing of streets to the point where the driver needs to slow down to safely drive on the street. In addition, bulb-outs are a special kind of street-narrowing measure where the street corner is extended into the street which not only reduces vehicular speed, but also decreases the distance pedestrians have to cross the street, making them feel safer when crossing the street (Fehr).

Another way automobile use can be reduced is to reduce the number of parking spaces. This will result in a greater difficulty in finding a parking space, and would discourage people from driving, since it would be so difficult to find a parking space. Reducing parking spaces works most effectively when combined with the other measures previously mentioned that would reduce automobile use. In addition, monetizing parking spaces would also limit parking. This usually works best in downtowns and other centers of attraction. Usually, parking spaces are free, especially in the suburbs, which encourage people to drive. With metered parking spaces and pay parking garages, people will be reluctant to drive, or would limit their time driving and parking in a downtown area (Parking Management). Lastly, minimum parking requirements in residential units and offices can be reduced or eliminated entirely, requiring tenants or owners to own less cars or make greater use alternative forms of transportation, such as public transportation (Parking Management). An advantage is that less land will have to be used for the car, such as the garage, or parking lot, or driveway. Homes and offices can be built more closely together, which would promote pedestrian interaction. In addition, with less or no minimum parking requirement, homes would be more affordable and in reach of lower-income households.

Traffic calming, monetizing parking spaces, and reducing parking spaces altogether has been met with plenty of criticism. First, traffic calming, if not carefully

placed, may cause too much traffic congestion as cars slow down, which would cause negative effects of lack of safety for pedestrians since too many cars will be in one location, worse air pollution from idling cars, and hinder a quick response from emergency vehicles. Paying for parking space use also has its drawbacks. First, people believe that parking is a free commodity, and forcing them to pay will discourage them from parking in the area, which would make it detrimental to stores and businesses if the area is a commercial or industrial zone. Second, parking meters will encourage people to find un-metered parking spaces, usually in residential neighborhoods, which will reduce the supply available to residents themselves, and may cause a shortage of parking. Lastly, the government would have to cover the costs of installing parking meters, collecting the money from meters, and enforcing the parking rules. Reducing parking spaces altogether will add to congestion as more cars will be circling around, looking for a parking space. In addition, according to some, businesses will be negatively affected as drivers will be discouraged to drive to their business because of the lack of parking spaces. Some businesses that sell bigger items or more goods contend that people need to drive to their store because they buy too many goods to either walk home or carry onto buses or trains.

Implementation of these policies requires time and coordination and effort among local government, residents, and advocacy groups. First, a progressive local government, in a conscious effort to enhance the image of the suburban city as more than just a bedroom community, must announce its intent to reduce automobile use by implementing policies discussed above. To appease both residents and advocacy groups, local governments should get them involved in the planning process. Specifically, that means listening to their issues and needs, and getting their input on what should be done, and involving them in the actual policy decision-making. In addition, the local government should update both the city's general plan and zoning code to make reducing automobile use a greater priority and easier to implement planning practices to achieve this. Just like the actual policies, residents and advocacy groups should be part of the process of modifying both the general plan and zoning code. Local government should also know and assure residents and advocacy groups that the reduction of automobile use will be a gradual process, with policies, laws, and regulations coming gradually in a step-by-step process. Changes done too quickly anger some residents, who may be reluctant to change. Gradual change allows for constant updating. The local government, when implementing the actual policies, should be upfront with the details of the policy, and let residents know of any changes, and be aware of any sudden concerns brought up by residents or advocacy groups. As it is well-known, planning and policy-implementation involves a lot of variables and continuous modification, so the local government should be prepared for this. After implementing the policies, laws, etc., the local government, with the help of residents and advocacy groups, should monitor the effects of the policies, etc. after specific time intervals to gauge their effect on the community. In addition, regularly-scheduled analysis of the changes will allow for modifications and the gauging of the success rate. After fully implemented the policies, local governments should continue to look for other policies to reduce automobile use, and in addition, continually modify existing policies to make them more effective.

Policies must be implemented to reduce automobile use and enhance a city's image. With the encouragement of TODs and public transportation, reliance on automobiles in the suburbs will decrease. This will change the suburb to a more beautiful and livable community, with improvements in social interaction and urban design, and increased business at shops. To accomplish this, different groups, ranging from local government to different advocacy groups, must work together to make these policies work effectively. These policies are progressive and even sometimes controversial, and as in all policy implementation cases, opposition exists. Working together to address all concerns helps implementing the best policy which everyone supports. If done correctly, these policies can change a suburban city for the better. If multiple cities implement these policies, years of sprawl, typical planning practices, and mundane urban design can be erased to form better cities for everyone.

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