

Yes, They Do Walk in Suburbia: Suburban Multifamily Housing and Trips to Strips

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Suburbia and the automobile are virtually inseparable in the American psyche. The automobile has literally fueled outward development beyond our central cities for the last half-century and new housing, commercial and office development, in turn, has followed auto-centric models. This pattern - an object of pride for decades - is now understood as problematic as it consumes large amounts of land, is energy intensive, ecologically destructive, and economically and environmentally unsustainable.

For those interested in urbanism, the cost of auto-dominated development and travel is not only in terms of energy and environment, but also in terms of quality of life and social contact. The automobile, a mobile private space, robs places of vitality and the potential for interaction. For the first time since the suburban boom of the last century, a tremendous shift is occurring in this country. In a recent national survey, two thirds of Americans put a high value on social interaction and accessibility, stating a preference to live in areas within easy, walking distance to shops and restaurants¹. For reasons of sustainability and reasons of lifestyle, the auto-dominated mode of travel in suburbia has come into question.

Retrofitting suburbia in order to transition from auto trips to active travel trips such as walking and biking has not been seen as a realistic, practical, or simple switch. 'Density', 'Destinations', 'Distance', and 'Design' are often referred to as the key criteria for creating pedestrian and bike accessible areas². Without a concentration of people, nearby destinations, and appropriate infrastructure to use, individuals will often opt to drive rather than walk or bike. With these criteria in mind, suburbia - with its low density,

lack of destinations, long distances, and utter dearth of design - is often considered an area where any kind of active travel is unlikely if not impossible.

However true for parts of suburbia, this characterization of suburbia is unnecessarily limited and masks an untapped potential for active travel even within existing suburban development patterns. For example, the typical commercial strip mall, often thought of as one of the icons of auto-dominant suburbia, is almost always surrounded by dense, multi-family housing. This is a widespread condition of density adjacent to destinations throughout suburbia and these areas have the potential to act as active, semi-urban centers within suburbia.

Multifamily housing has been the largest growing housing market in the United States since 1970 and currently comprises one in five units in suburbia³. This housing type is often located around commercial strip malls and for designers and planners alike, typically acts as a buffer between strip malls and proximate single-family home neighborhoods⁴. Contrary to what is typically considered the norm in suburbia, all across the country there exists these adjacencies between density and destinations. What then is the potential for walking and biking to occur in suburbia?

This paper presents research results investigating the relationship of design to active transportation. More specifically, this paper asks whether connectivity within and between suburban multifamily developments and the local strip mall affect residents' rates of walking and biking, or whether the common narrative that "nobody walks in suburbia" is

true even in the presence of design that attempts to achieve something different?

Through a series of resident surveys and site analyses we found a substantial amount of walking and biking overall and significantly more walking and biking in areas with developments that were more internally and externally connected.

WHY DO THE SUBURBAN STRIP AND SUBURBAN MULTIFAMILY HOUSING MATTER?

Suburbia is not the undifferentiated landscape of stereotypical single-family homes and nuclear families. Instead, suburbia actually contains substantial often-overlooked areas of mixed use and density. Almost hiding in plain sight, the typical commercial strip and its surrounding development hold many of the criteria necessary for supporting walking and biking. A typical commercial strip provides significant destinations as it houses a wide mix of utilitarian uses such as grocery stores, banks, dry cleaners, coffee shops, restaurants, and drug stores. These uses act as daily magnets for the substantial number of residents living nearby.

Contrary to popular perceptions about suburbia, a typical suburban strip is surrounded by approximately 1,000 housing units within ¼ mile⁵. With more than 40,000 neighborhood and community commercial centers with grocery store anchors in this country⁶, this points to a high number of individuals who live in suburbia AND within walking distance of daily destinations. A large percentage of these individuals actually do not live in single-family homes, but instead in suburban multifamily housing⁷.

There are currently over 9 million units of suburban multifamily housing in the country. It is built at densities of up to 30 units per acre, is often on large lots (over four acres), includes multiple buildings, and often has its own internal circulation infrastructure. Buildings tend to be two or three stories in height with double-loaded corridors, wood frame construction, exterior vertical circulation, and balconies. Parking is often exterior to the building, taking up most of the space around buildings.

Multifamily housing is home to a wide variety of people and represents some of the most diverse areas of suburbia. Many suburban multifamily residents are drawn to the suburbs due to the amenities or

proximity to employment but desire the increased ease of changing places of residence if needed and the decreased maintenance and cost of multifamily housing compared to single-family housing. While single-family housing is made up of primarily of nuclear families, nationally, about two-thirds of households in suburban multifamily housing are what the U.S. Census defines as "non-families." This is defined as individuals living alone or with roommates, divorcees, widows, and unmarried couples. Suburban multifamily housing is also more ethnically and racially diverse than suburban single-family housing.

Critical to the issue of livability and connectivity, this typical location of this housing type around commercial strip development creates the potential for increased walking and biking in suburbia. Three of the four criteria for creating areas that promote walking and biking - density, destinations, and short distances to these destinations - are actually fairly common in these areas throughout the country. The last criterion - design - and specifically connectivity, however, is often lacking.

CONNECTIVITY AND SUBURBIA

Connectivity refers to the amount and type of routes within an area. Typically, higher connectivity correlates to less difference between the 'as the crow flies' distance and the walking distance between two points. This is especially significant in suburbia as street patterns are fragmented in many suburban neighborhoods, often causing walking distances to be significantly longer than the straight-line distance to a destination⁸.

In multifamily housing developments, routes connect residents to the buildings and amenities in their complex and to areas outside neighborhood such as commercial destinations, parks, and neighboring residential development. The number, length, accessibility, and composition of these routes affect the connectivity of an area. This connectivity, along with the aesthetics and design of the path itself, can affect the ease of walking and biking and ultimately the decision residents make to walk, bike, or drive for short trips. The connectivity of any development affects the distance people must travel to desired destinations. In well-connected areas distances are often shorter and physical barriers to using active transportation are removed.



Figure 1. A well-connected site design has extensive internal pedestrian networks, directly connects to adjacent properties in multiple locations, and is organized around legible streets.



Figure 2. A street with curbs, parking, and sidewalk acts as the primary circulation for a well-connected site design (top) while continuous parking lanes without pedestrian amenities is typical for less-connected developments (bottom).

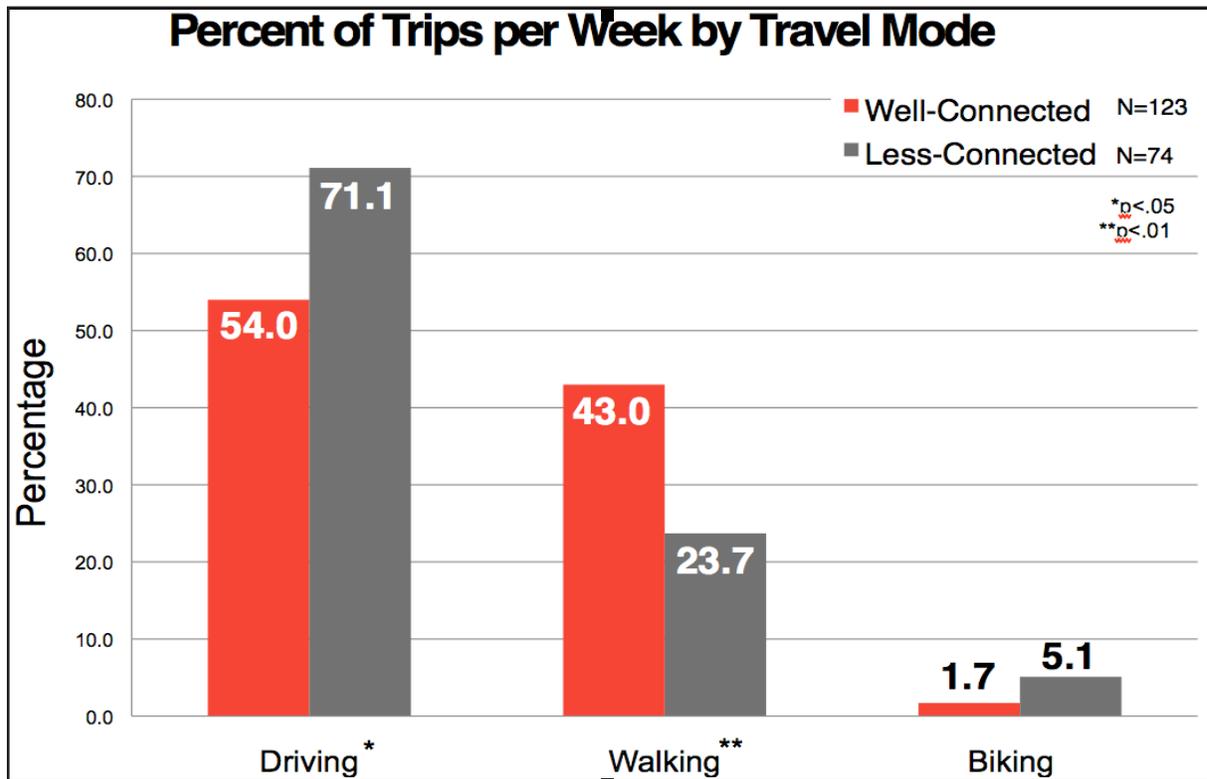
The site design of a vast majority of suburban multifamily developments continues to adopt the detached and enclaved pattern of single-family home development. This pattern typically consists of only one or two connections to local arterials and no connections to adjacent developments along the arterial. This significantly reduces connectivity in these developments, challenges the potential for increased walking and biking, and reduces the opportunity for interaction and the potential for semi-urban environments in these areas.

METHODS

Our study analyzed 14 suburban multifamily developments located near commercial strips in Eugene, Oregon. Eugene provides an ideal natural experiment as the city revised its multifamily development codes in 2001 to include specific language on street network requirements, parking design, and pedestrian infrastructure. These changes increased the connectivity of later developments as compared to those developed before the code change. In this study, we analyzed eight developments built before the code change (representing the less-connected case study sites) and six developments built after the code change (represented the well-connected sites). In selecting study sites, we attempted to hold constant the size of development, number of units, and the distance to comparable local commercial strip. While there is a necessary range of each of these criteria between the sites, both the well-connected and less-connected sites had similar ranges. Each commercial strip includes a large grocery store and at least 15 additional shops within one-quarter mile – a reasonable walking distance – of the multifamily housing development.

To evaluate the level of connectivity in the case study sites, we developed connectivity measures specific to large lot suburban multifamily housing development.

These measures took into account connectivity internal to the development, pass through connectivity between developments, and external connectivity between the housing developments and nearby commercial development. To understand the travel habits of residents in suburban multifamily developments, we developed a Multifamily Housing Travel Survey and sent it to a randomized subset of residents living in the 14 case study sites.



The survey asked questions about residents' travel habits, how they choose their modes of transportation, and barriers to walking and biking. 1,493 surveys were received by residents and a total of 229 surveys were returned, a fairly typical 15.3% response rate for this type of mail survey.

THE EFFECT OF CONNECTIVITY: WALKING IN SUBURBIA

Contrary to popular perceptions of suburbia, there is a significant amount of walking and biking occurring around commercial strips in suburbia and even more occurring in areas with high levels of connectivity. Across all sites, more than a third (38%) of all trips to the commercial strip were active transportation trips with most of those trips being walking trips. In addition, travel mode and path connectivity were significantly correlated as residents of well-connected sites were significantly more likely to walk and less likely to drive to the strip than residents of less-connected sites. Almost half (43.0%) of the trips to the strip were walking trips for residents of well-connected sites versus less than a quarter (23.7%) for residents in not well-connected sites.

Looking at resident travel choices instead of total trips, we found significantly more residents choosing to walk and bike in the well-connected sites. Almost three quarters of residents (73%) in these sites use active transport to the strip at least once a week as opposed to only 58 percent of residents in less-connected sites. In other words, the well-connected sites are correlated with more individuals considering and using active transport as a viable form of transport to their local commercial area.

It is important to note that even in less connected sites, the walking rate is still unexpectedly high, demonstrating that even in extremely pedestrian hostile environments with poor connectivity and design, residents are still finding ways to walk to access nearby destinations. In addition, a significantly larger number of residents in well-connected sites (20%) ONLY walk or bike to their local commercial area as compared to residents of less-connected sites (9%).

Looking at overall weekly trips to the commercial strip, residents in well-connected sites and less-connected had similar total trips (5.6 vs. 5.2 total trips per week). What is interesting, however, is

that residents of well-connected sites averaged nearly one additional walking trip and one less driving trip per week. This suggests that in well-connected areas, residents may be substituting a driving trip for an active travel trip.

The cumulative effects of this switch can be powerful. A single, well-connected multifamily development of 200 units can generate more than 500 walking and biking trips in a single week. If these trips can replace automobile trips, the multiplying effect of this shift across all of the suburban multifamily developments within a municipality can change the transportation patterns of that city. This can potentially alleviate some congestion in key arterials and intersections, helping attain reduced vehicle miles travelled and greenhouse gas reduction targets, and increasing walking and biking throughout.

IMPLICATIONS

Residents of suburban multifamily housing do walk and bike to their local commercial area and they do so at significantly higher rates if they live in a well-connected development. Increases in active travel have been associated with improved health, reduced rates of obesity, and increases in independence. In addition, if active travel is replacing auto trips, it helps reduce greenhouse gas emissions and traffic.

Suburban multifamily housing holds a tremendous latent potential to shift the livability of suburban areas. The changes necessary to do this, both in the retrofits of existing developments and in the typical design approaches in new developments, are neither expensive nor difficult to design or implement. The key to implementation is expanding the awareness of planners, developers, and designers to site design and connectivity issues so that more-connected approaches are integral to the design, development, and regulatory process.

To create environments that foster increased active travel, designers and planners must change the culture of development around these projects and encourage developments that are well connected internally and to their surroundings. This includes changing zoning codes that discourage or prohibit connectivity. This includes codes throughout the country that mandate buffers between dissimilar uses as well as limit direct connections between

multifamily developments and adjacent commercial areas. These codes also often lack provisions for pedestrian networks as well as the need for connections to adjacent development.

The result of our current development culture is that many suburban multifamily developments are dominated by parking, have little infrastructure that supports active travel, and have little to no connections to adjacent properties. Moreover, following engrained suburban development practices, designers and developers often submit development proposals without any information about adjoining development. Project drawings often only show land use designations and not actual site designs of adjoining property, negating any evaluation of potential connections between properties. Planners then review these proposals without any notion of what surrounds the project or what connections might be possible. To capitalize on the latent potential for active travel in and around suburban multifamily developments, planners will have to re-evaluate their codes as well as their perceptions of the amount of walking and biking that can occur in suburbia. In addition, designers need to alter their perceptions of suburban sites and support pedestrian infrastructure as well as increased connectivity to all developments adjacent to their projects.

There is tremendous potential to create more active, walkable, and vibrant areas within the existing fabric of suburbia. The design of these areas – and specifically connectivity – is the key issue to unlocking this potential. If increasing walking and biking and creating areas that foster activity and vitality is a goal of urban design, then our findings have large implications for policy, design, and development. By recasting our understanding of suburbia and slightly modifying existing development, it is possible to unlock the potential of these typical suburban strips and surrounding multifamily housing to create a more walkable, vibrant, and sustainable model of suburbia.

ENDNOTES

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