



Active Transportation and Land Use

The relationship between transportation infrastructure and land use determines our transportation choices, in turn influencing our ability to get exercise as part of daily life.

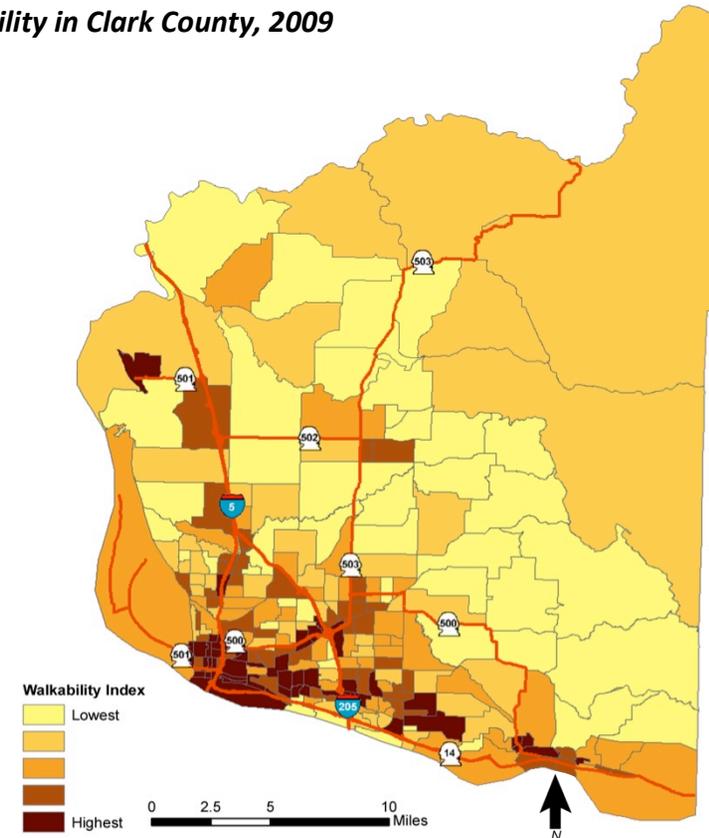
How transportation and land use impact health

The Centers for Disease Control and Prevention recommend that adults get 30 minutes of physical activity five days per week. In the past, many Americans achieved this through regular daily tasks like walking to the store or transit stop. Creating new opportunities to be active as part of daily life is a key strategy in reducing obesity, and active transportation modes such as walking and cycling offer countless opportunities to get exercise. Like all forms of transportation, people's ability to benefit from active transportation is intimately tied to the arrangement of land uses in their communities and the infrastructure available to them.

Land use

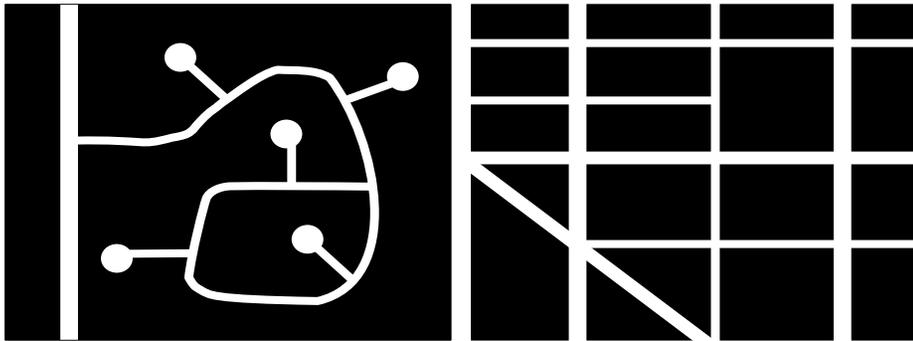
Built environments that provide opportunities for physical activity lower the risk of obesity. For example, neighborhoods with walkable destinations allow residents to get physical activity as part of their everyday routine. Physical activity achieved while traveling between destinations, such as walking from home to a café, is known as active transportation. Density and a mix of land uses promote active transportation by bringing destinations closer together. For example, a dense mix of land uses allows destinations such as restaurants and retail to be within walking distance of residences. Transportation and land use influence each other, resulting in travel choices that influence health.

Walkability in Clark County, 2009



The most walkable areas in Clark County are near downtown Vancouver, with other walkable areas generally coinciding with hubs of activity such as in Hazel Dell and Orchards.

Using best practices in urban design promotes physical activity. Buildings that come right up to the sidewalk with ground-level windows and entrances encourage walking, as do attractive walking environments with amenities such as street trees, benches, and lighting. Streets are more comfortable for pedestrians when blocks, buildings, or vegetation provide a continuous sense of enclosure, whereas streets fronted by surface parking lots discourage active transportation. A well-connected street network makes bicycling and walking easier and safer, and makes transit more efficient.



Compared to cul-de-sac designs, a well-connected street grid shortens travel distances and encourages active transportation.

In Clark County

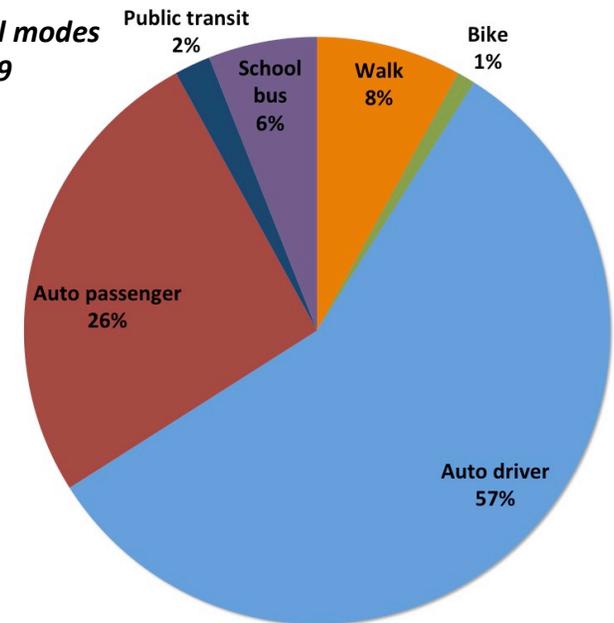
While there are good examples of walkable neighborhoods in Clark County, it is dominated by drivable suburban development. Just 4.6% of Clark County commuters use active transportation modes to get to and from work, tied for lowest of the 10 largest counties in Washington and the lowest in the Portland-Vancouver Region. In many areas of Clark County, large arterials are the only through-routes. Buildings are often low and set back from the sidewalk by large parking lots.

		County	Total of commuters	% active transport
10 most populous counties in Washington	Washington	Benton County	72,243	5.1% ($\pm 0.8\%$)
		Clark County	189,117	4.6% ($\pm 0.4\%$)
		King County	974,509	16.2% ($\pm 0.4\%$)
		Kitsap County	109,688	12.0% ($\pm 0.9\%$)
		Pierce County	361,280	7.2% ($\pm 0.6\%$)
		Snohomish County	336,556	6.6% ($\pm 0.4\%$)
		Spokane County	207,635	6.2% ($\pm 0.5\%$)
		Thurston County	114,347	5.7% ($\pm 0.7\%$)
		Whatcom County	92,113	9.8% ($\pm 1.0\%$)
		Yakima County	93,612	3.6% ($\pm 0.9\%$)
Metro	Metro	Clackamas County, OR	180,793	6.7% ($\pm 0.6\%$)
		Multnomah County, OR	353,831	19.8% ($\pm 0.6\%$)
		Washington County, OR	257,225	9.5% ($\pm 0.7\%$)

In the table above, % active transport refers to the percent of commuters who travel by biking, walking, or transit.

Non-commute travel modes in Clark County, 2009

For non-commute travel, about 83% of all trips are made by automobile in Clark County.



Auto-dependent development reinforces sedentary lifestyles, and spending time driving is associated with a higher likelihood of obesity. Research shows that each additional hour per day spent in a car increases the odds of obesity by about 6%, while each additional half mile walked decreases the odds by about the same.

Infrastructure

Greater perceived safety and comfort is associated with higher levels of active transportation. For example, the speed of traffic or lack of separation from traffic may deter some from cycling despite statistics demonstrating relatively safe streets. Research suggests that bike lanes and sidewalks on busy roads alone are unlikely to increase active transportation; a greater degree of comfort is required. This is especially true in urban areas, where 85% of Washington bicycle and pedestrian crashes take place. For those who feel unsafe on streets, separated sidewalks and trails can offer a more comfortable experience.

In Clark County

Clark County residents average 17.5 vehicle miles per person per day, and 2.1 vehicles per household. About 2% of Clark County commuters use transit, and only 27% percent of Clark County residents live within ¼ mile of a transit stop. Safety and comfort are also important factors in transit ridership. C-Tran provides shelter at about 17% of all transit stops.

In a survey of Clark County trail users, 90% thought safety conditions on trails were good or excellent.

Obesity accounts for about 10% of annual medical spending nationwide, and Clark County spends an estimated \$111 million annually on obesity-related health care.

Transit use is associated with physical activity. A study of transit users found that about one-third met daily physical activity requirements simply by walking to access the bus stop.

Economic benefits

The benefits of active transportation go beyond increasing opportunities for physical activity. Active transportation helps to relieve congestion, reduce emissions, and decrease dependence on oil. The potential monetary benefits resulting from reduced health care costs are significant. The cost of treating obesity-related diseases is now second only to the costs of treating those related to tobacco. Because of these high costs, studies have estimated that for every dollar spent on bicycle infrastructure, as many as five dollars are saved in direct medical costs.

Walkable streets and building designs provide economic benefits as well as health benefits.



Access to health care facilities

Transit access to health care facilities offers a reasonable proxy measure for overall accessibility, as transit tends to serve the most common destinations in relatively walkable areas.

The availability of primary care has a role in preserving good health and preventing illnesses and hospitalizations from communicable diseases and conditions such as asthma and diabetes. People often consider individual level factors such as medical coverage when thinking about health care access. Regardless of a person's ability to pay, there are many community level factors that can influence access to care. Health care facility locations that allow people to use active transportation have the added health benefit of promoting physical activity.

Patient rapid transit, Duke Hospital, Texas



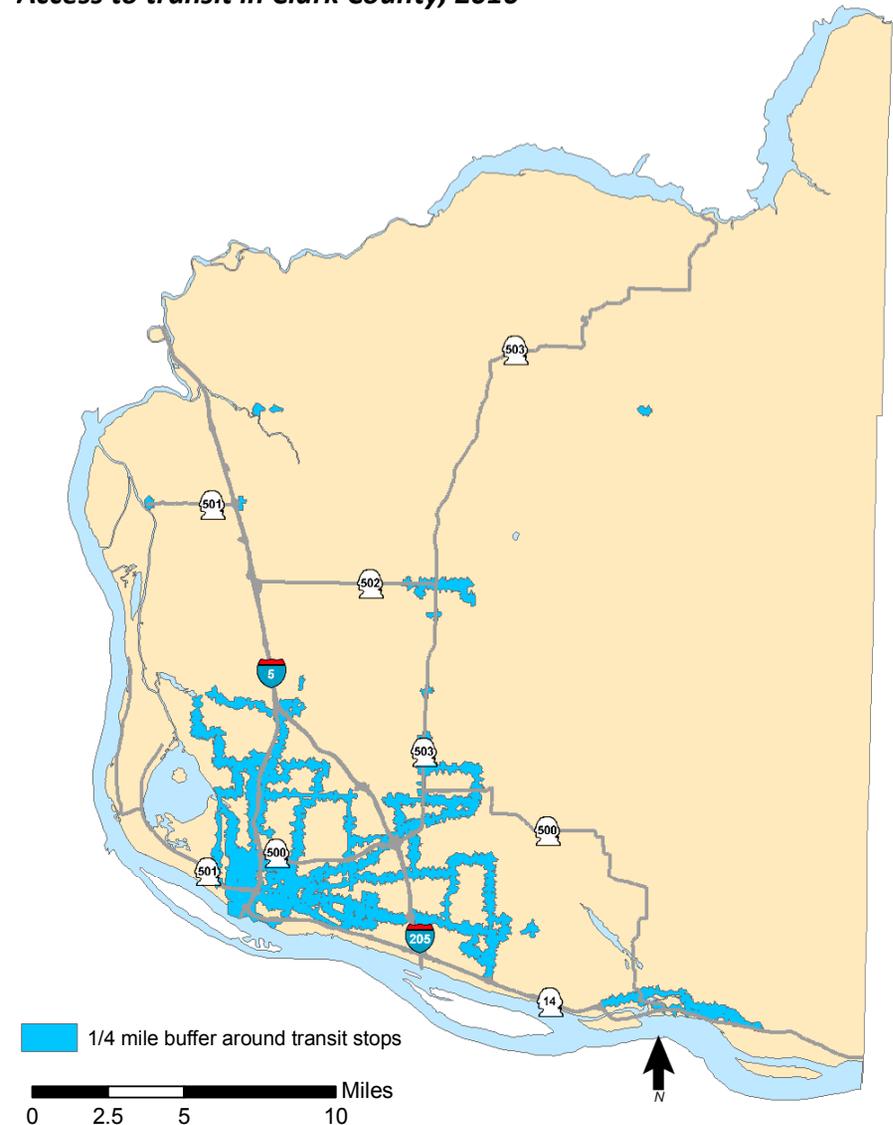
Active transportation for all ages and abilities



In Clark County

In Clark County, approximately 85% of health care facilities are within 1/4 mile of a transit stop.

Access to transit in Clark County, 2010



About 27% of Clark County residents live within 1/4 mile, or a 5-minute walking distance, of a transit stop.

Disparities in Clark County

Socioeconomic status (SES)

Approximately 4% of Clark County households do not own a vehicle and must rely on other modes of transportation. While the low SES population is more likely to ride transit compared with high SES, overall the rate of public transit use is low. There is a moderate significant correlation between the walkability index and poverty. Low SES households are more likely to live in walkable neighborhoods compared to high SES groups. This is likely because low-income households tend to live in older housing located in older, more walkable areas of Vancouver.

Race and ethnicity

Approximately 31% of white residents live within walking distance of a transit stop compared with 38% of non-white residents. There is a weak significant correlation between the walkability index and the percent of neighborhood population that is non-white. Non-whites are more likely to live in walkable neighborhoods compared to whites.

Age

About 31% of Clark County youth and 35% of residents aged 65 years and older live within ¼ mile of a transit stop. There is a weak correlation between residents aged 65 years and older and walkability in Clark County. Older adults are slightly more likely to live in walkable neighborhoods compared with persons younger than 20.

Geography

Public transit routes, common destinations, and active transportation infrastructure are more common in urbanized areas. Urban areas therefore offer more opportunities for active transportation than rural areas.

Conditions needed to thrive

Every Clark County resident needs the choice to be able to locate in a walkable and bikeable neighborhood that reinforces daily physical activity through opportunities to build in exercise as part of daily life. Well-connected street grids, complete streets, a dense mix of land uses, access to transit, and best urban design practices lead to more people meeting physical activity recommendations more often.



Related plans, policies, and reports: Clark County Regional Trails & Bikeway Systems Plan, 2006; Clark County Bicycle and Pedestrian Master Plan, 2010; Clark County Aging Readiness Plan, 2012

Policy recommendations

Goal	Objective	Policies & strategies
1. Maximize the use of healthy and sustainable transportation modes through transportation and land use policies	In 2035, Clark County will have the same active transportation commute mode share (walking + cycling + transit) as other counties in the Portland-Vancouver region.	<ul style="list-style-type: none"> 1.1 Adopt a healthy and sustainable transportation policy for the UGA that favors transportation modes in the following order: pedestrian, bicycle, transit, carpool & freight, single occupant vehicle <ul style="list-style-type: none"> 1.1.1 Adopt a complete streets ordinance recognizing differences between urban and rural transportation needs 1.1.2 Adopt a multi-modal level of service and require all construction in the Urban Growth Area (UGA) to meet level of service standards for bicycle and pedestrian traffic 1.1.3 Adopt an active transportation checklist for use during development review 1.2 Manage travel demand to minimize automobile travel <ul style="list-style-type: none"> 1.2.1 Adopt parking maximums and waive parking minimums for some uses 1.2.2 Manage parking demand through pricing 1.3 Fund active transportation projects <ul style="list-style-type: none"> 1.3.1 Aggressively pursue new funding sources for active transportation infrastructure 1.3.2 Reallocate existing transportation funding to emphasize active transportation
2. Build neighborhoods that support active transportation	Between 2012 and 2035, 100% of new neighborhood developments in the UGA will include land uses, infrastructure, design, and street networks that support active transportation.	<ul style="list-style-type: none"> 2.1 Ensure that land use supports active transportation <ul style="list-style-type: none"> 2.1.1 Increase residential and employment densities in the Urban Growth Area 2.1.2 Increase residential density minimums 2.1.3 Require a mix of uses 2.1.4 Incentivize transit-oriented development 2.1.5 Adopt an infill development ordinance 2.1.6 Identify opportunities to introduce neighborhood commercial uses and re-zone properties to allow them in areas dominated by residential use 2.2 Build active transportation infrastructure in the Urban Growth Area <ul style="list-style-type: none"> 2.2.1 Increase bikeway network density 2.2.2 Increase sidewalk connectivity and safe crossings by expanding the sidewalk infill program 2.2.3 Integrate walking and bicycling infrastructure with transit 2.2.4 Improve and expand transit service frequency, reliability, affordability, usability, and efficiency 2.2.5 Target transit service and infrastructure to serve health care facilities

Goal	Objective	Policies & strategies
2 (continued)		<ul style="list-style-type: none"> 2.3 Design streets and buildings to encourage active transportation <ul style="list-style-type: none"> 2.3.1 Implement design overlays that require human-scale construction, with street-level windows and entrances oriented to the sidewalk 2.3.2 Expand the use of form-based code 2.3.3 Develop street designs that allow for a variety of uses in the right-of-way, including active transportation and social uses 2.3.4 Implement innovative street designs, such as the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide 2.4 Increase street network connectivity in the UGA <ul style="list-style-type: none"> 2.4.1 Establish maximum block sizes and/or minimum connectivity standards in the UGA 2.4.2 Prohibit future construction of cul-de-sacs except where limited by sensitive areas 2.4.3 Build connections in existing disconnected street networks, such as between cul-de-sacs
3. Enhance the safety and comfort of active transportation	In 2035, there will be zero bicycle and pedestrian traffic fatalities.	<ul style="list-style-type: none"> 3.1 Set a target of zero traffic fatalities <ul style="list-style-type: none"> 3.1.1 Make safety the top priority in all roadway design 3.1.2 Develop and implement low-speed street designs such as neighborhood greenways 3.1.3 Implement traffic calming on neighborhood streets 3.2 Make cycling, walking, and transit more user-friendly <ul style="list-style-type: none"> 3.2.1 For cycling and walking, maximize separation from auto traffic when vehicle speeds are greater than 20 mph 3.2.2 Improve and expand wayfinding signage 3.2.3 Increase proportion of transit stops with rider amenities 3.2.4 Identify deficiencies in street lighting and develop an improvement plan
4. Ensure equal access to active transportation options	In 2035, high-risk populations will have equal or better opportunities to achieve physical activity through active transportation.	<ul style="list-style-type: none"> 4.1 Provide active transportation options as equitably as possible with regard to race, ethnicity, income, age, and neighborhood <ul style="list-style-type: none"> 4.1.1 Prioritize bicycling, walking, and transit facilities in neighborhoods with low SES or high minority populations 4.1.2 Implement a ciclovía or Sunday parkways program for Clark County 4.2 Improve infrastructure and encouragement programs for youth <ul style="list-style-type: none"> 4.2.1 Site new elementary and middle schools in areas within 1 mile of most student homes 4.2.2 Limit setbacks for new school construction to minimize walking distance 4.2.3 Partner with school district officials to expand and institutionalize Safe Routes to School Programs, including walking school bus programs