

# Ch. 13 Urbanization



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## Central Case: Managing growth in Portland, Oregon

- Oregon residents feared sprawling development would ruin their communities
- Urban Growth Boundaries (UGBs) allow development in urban areas and protect open spaces and rural land
- Measure 37 became Measure 49 and new regulations were put into place in 2007



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## Our urbanizing world

- **Urbanization** = the movement of people from rural to urban areas
  - The greatest change of human society since its transition to a sedentary agricultural lifestyle
- Why are urban areas growing rapidly?
  - growing human population
  - Industrialization causing movement from farms to cities

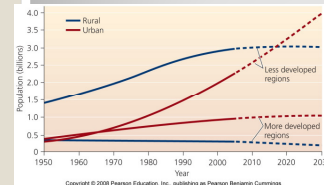


Movement  
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## Global urbanizing trends

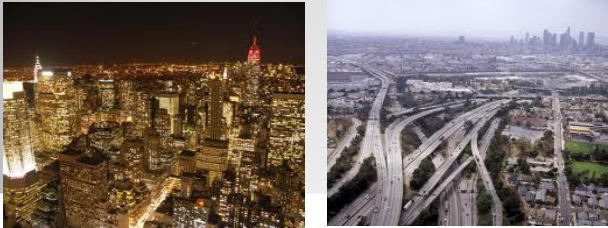
- In 1950, 30% of the population was urban, today it's 49%
- In developed nations, urbanization has slowed
  - **Suburbs** = the smaller communities that ring cities
- Developing nations are urbanizing rapidly
  - People are searching for jobs and urban lifestyles



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## Today's urban centers

- **Metropolitan area:** geographical area (or entire county) with a minimum pop. of 100,000 and at least 50,000 of pop. living in a center city
- **Megalopolis:** area of fused cities with 10 million or more people (New York, Los Angeles, Tokyo)



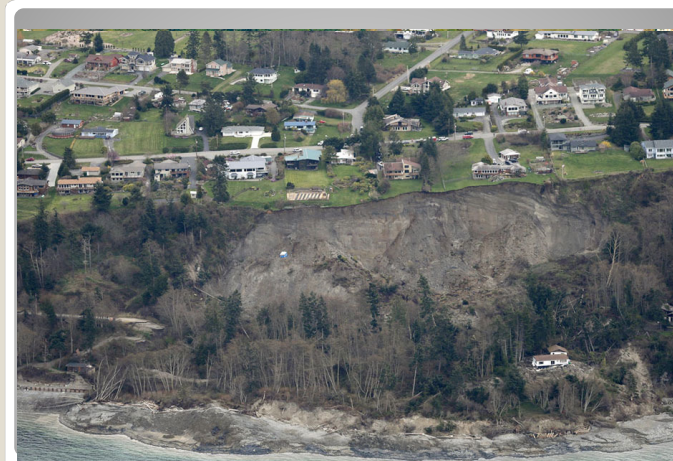
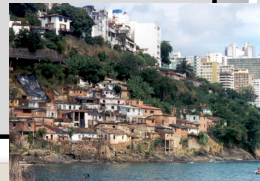
## Urban growth has often been rapid

- Growth in U.S.:
  - Due to increased trade
  - Crowding and deteriorating economic conditions occurred
  - Residents moved to the suburbs
  - Movement to southern & western states due to warmer weather or more space
- Fast-growing cities are in developing countries:
  - Less need for farm labor
  - Wars, conflict, and ecological degradation
  - Many cities now face overcrowding, pollution, and poverty



## What is *marginal land*? Land that is poorly suited for building.

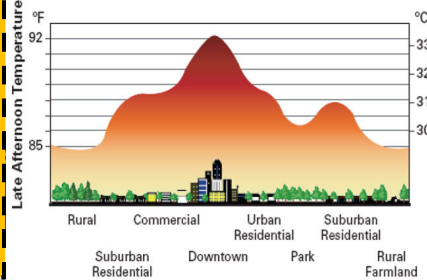
- What happens when homes are built on marginal land? Damage that impossible to repair and insurance is expensive due to risk.
- Examples: Los Angeles and Mexico City
  - little room for expansion. Expand up into the surrounding mountains on hillsides prone to landslides.



## How can urbanization impact a city?

- City generate and trap more heat. Roads and cities absorb more heat than vegetation does and retains it longer.
- It may result in a **heat island**, a city with an increased temperature. ex. Atlanta

• Heat islands affect local weather patterns. The increase in heat results in an increase in rainfall.



## Factors influence geography of urban areas

- Climate, topography, and waterways determine if a small settlement becomes a large city
- Successful cities often located near corridors for trade



(a) St. Louis, Missouri



(b) Fort Worth, Texas

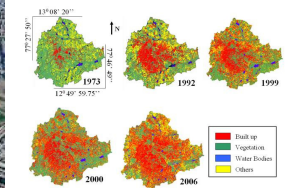
## People have moved to suburbs

- By the mid-1900s, the U.S. accumulated more people than jobs
  - Unemployment caused poverty and crime
  - Inadequate infrastructure
  - Affluent city dwellers moved to cleaner, less-crowded suburbs
- Suburbs offer
  - More space, privacy, better economic conditions, cheaper real estate, less crime, and better schools
- But natural space decreased with increasing suburbs
  - People had to drive everywhere, increasing traffic congestion



## Sprawl

- Houses and roads take over more than 1 million ha (2.5 million acres) of rural land per year
- **Sprawl** = the spread of low-density urban or suburban development outward from an urban center
  - Caused by human population growth and per capita land consumption
  - U.S. metropolitan areas grew by 80% since the 1950 but the land they covered grew by 305%





## Several types of development lead to sprawl



(a) Uncentered commercial strip development  
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(b) Low-density single-use development  
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(c) Scattered, or leapfrog, development  
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(d) Sparse street network  
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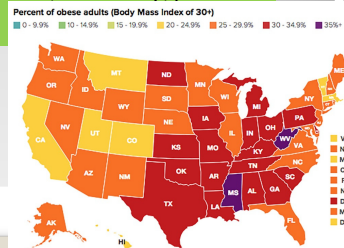
## What is wrong with sprawl?

- Transportation: people are forced to drive cars
  - Pressure to own cars and drive greater distances
  - Increases dependence on nonrenewable petroleum
  - Lack of mass transit options
  - More traffic accidents
- Pollution from sprawl's effects on transportation
  - Carbon dioxide, nitrogen- and sulfur-containing air pollutants contribute to global warming, smog, acid rain
  - Runoff from polluted water from paved areas



## What is wrong with sprawl?

- Health: impacts from pollution, promotes physical inactivity leading to increases in obesity & high blood pressure
- Land use: less land is left as forests, fields, farmland, or rangeland
  - Loss of ecosystem services, recreation, aesthetic beauty, wildlife habitat
- Economics: drains tax dollars from communities
  - For roads, water and sewer systems, electricity, police and fire services, schools, etc.



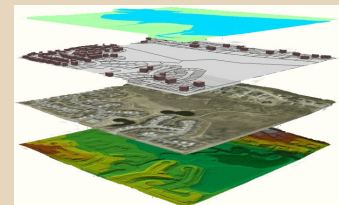
### Land-use Planning:

- Is determining in advance how land will be used:
- Ex: where houses, businesses, and factories will be built, also where land will be protected for recreation.



### Geographic information system (GIS):

- Computerized system for storing, manipulating, and viewing geographic data.
- GIS software allows a user to enter different types of data about an area.
- Such as: location of sewer, roads, and parks, and then create maps.



## GIS Views of Seattle, Washington

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## City and regional planning

- **City planning** = the professional pursuit that attempts to design cities so as to maximize their efficiency, functionality, and beauty
  - Planners advise policymakers on development options, transportation needs, public parks, etc.
- **Regional planning** = deals with same issues as city planning, but with broader geographic scales that must coordinate with multiple municipal governments

## City and regional planning

- **Zoning** = the practice of classifying areas for different types of development and land use
  - Can restrict areas to a single use or can allow a combination of residential and commercial use
- Violation of individual freedoms or for the good of the community?

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## Urban growth boundaries (UGBs)

- Limits sprawl: keeps growth in existing urbanized areas
  - Revitalize downtowns
  - Protect farms, forests, and their industries
  - Ensure urban dwellers some access to open space
- May reduce infrastructure costs
- Disadvantages:
  - Increases housing prices within their boundaries
  - Restricts development outside UGB
  - Increases the density of new housing inside the UGB
  - Increasing pressure to expand boundaries

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## Smart growth

- **Smart growth** = urban growth boundaries and other land use policies to control growth
- Proponents promote:
  - Healthy neighborhoods and communities
  - Jobs and economic development
  - Transportation options
  - Environmental quality
- Building "up, not out"
  - Focusing development in existing areas
  - Favoring multistory shop-houses and high-rises



## Principles of smart growth

- Mixed land uses
- Compact building design
- Range of housing opportunities and choices
- Walkable neighborhoods
- Distinctive, attractive neighborhoods
- Preserve open space
- Develop existing communities
- A variety of transportation choices
- Predictable development decisions
- Community collaboration in development decisions

## New urbanism

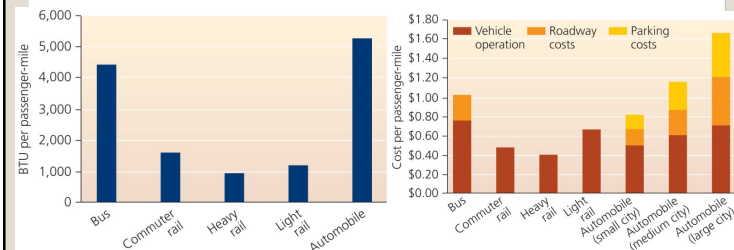
- **New urbanism** = neighborhoods designed on walkable scale so homes, businesses, and schools are close together & needs can be met without using a car
- **Transit-oriented development** = communities arrayed around stops on a major rail transit line



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## Mass transportation

- Public buses, trains & subways, rail transit
- Cheaper, more energy efficient, and cleaner
- Traffic congestion is eased
- Expensive to replace existing roads, may involve raising fuel taxes, taxing other modes of transportation, rewarding carpoolers



(a) Energy consumption for different modes of transit

(b) Operating costs for different modes of transit

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## Parks & open spaces

- Offers an escape from noise, commotion, and stress of urban life
- provide greenery, scenic beauty, and recreation
- Protecting natural lands becomes more important as urban dwellers become more isolated and disconnected with nature



## Greenways

- **Greenways (or green spaces)** = strips of land that connect parks or neighborhoods
  - Protect water quality
  - Boost property values
  - Corridors for wildlife movement
- Ecological restoration in cities
  - Enhances "naturalness" of cities



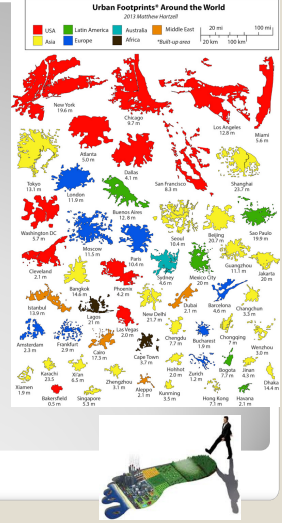
## Urbanization impacts the environment

- **Resource sinks** = cities must import resources from long distances
  - rely on land elsewhere for water, timber, minerals, etc.
  - Material wealth grows as cities grow causing a bigger need for resources




## Consumption in urban areas

- Cities have ecological footprints far beyond their actual sizes
  - Cities take up only 2% of the land surface, but consume more than 75% of the world's resources
  - Urban dwellers have far larger ecological footprints than rural dwellers
  - But, urban residents tend to be wealthier, and wealth correlates with consumption



## Efficiency in urban areas

- Dense cities minimize per capita consumption b/c resources w/in city are easier to deliver and obtain
  - density facilitates social services that improve the quality of life such as medical services, education, water and sewer systems, waste disposal, transportation



## Cities preserve land but export pollution

- Because people are packed densely in cities, more land outside cities is left undeveloped
  - If cities did not exist, we would have much less room for agriculture, wilderness, biodiversity, or privacy
- Cities export wastes and transfer the costs of activities to other regions
  - Citizens are exposed to pollution such as heavy metals and chemicals
  - The poor bear the brunt of pollution because they are too poor to move



## Cities have noise and light pollution

- **Noise pollution** = undesired ambient sound
  - Degrades aesthetic surroundings
  - Can induce stress and harm hearing
- **Light pollution** = lights obscure the night sky, impairing the visibility of stars; no health effects



## Urban sustainability: cities should...

- Use resources efficiently
- Recycle
- Develop environmentally friendly technologies
- Account fully for external costs
- Offer tax incentives for sustainable practices
- Use locally produced resources
- Use organic waste and wastewater to restore soil fertility
- Encourage urban agriculture