Transportation

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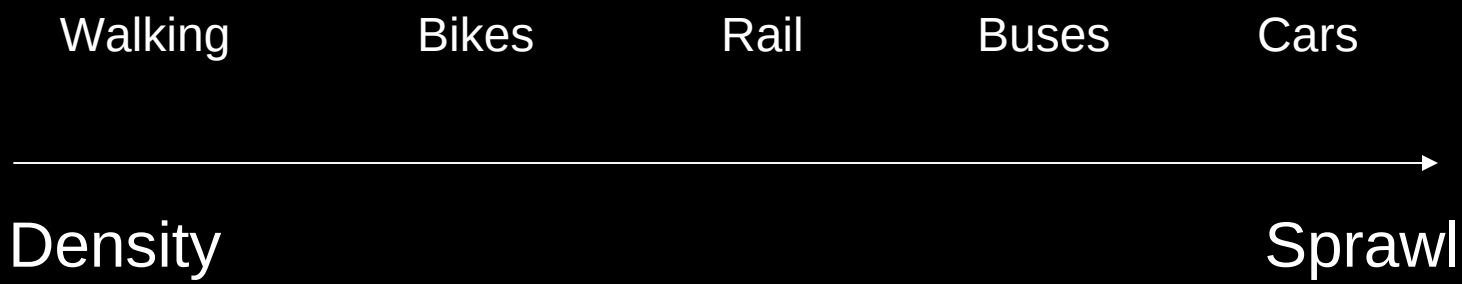
Land Use and Transportation

Intra-regional transportation systems that primarily cater to automobiles use more land than other forms of transportation.



Land Use and Transportation

Northeast Ohio can implement "Smart Growth" initiatives which will reduce the negative impacts of future retail development

- Pedestrian and bike safety and mobility
- Improving the connectivity of road networks
- Enhanced public transportation services
- Multi-modal approach to transportation

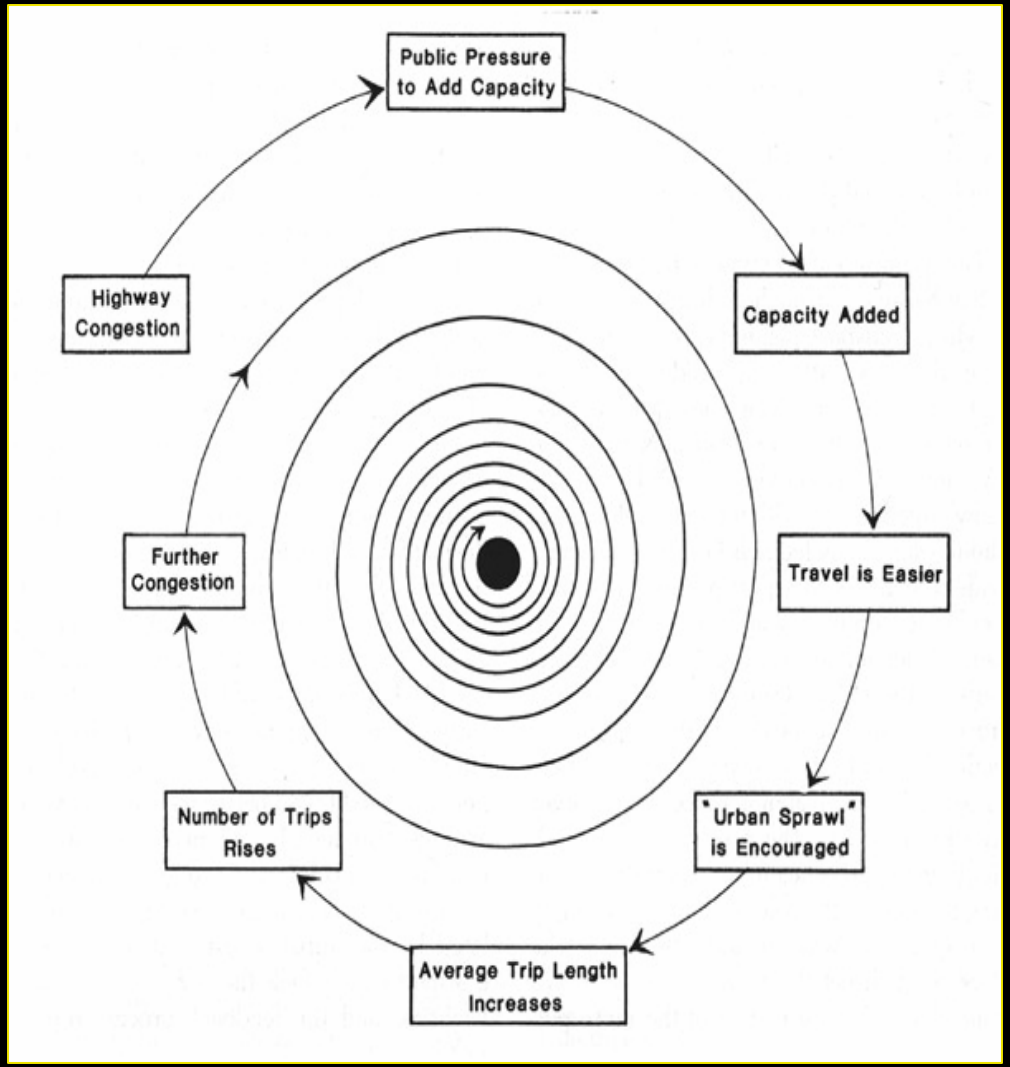
As a result, we can preserve open space, encourage the use of alternative transportation, improve public health, lessen the negative impacts on air and water quality, and make NE Ohio a more competitive region

ODOT Spending

- Ohio Constitution requires ODOT to spend all passenger vehicle license fees and gas tax revenue exclusively on highways – construction, reconstruction, maintenance and repair
- In 2006, **$3.04 billion**, or 49 percent of the department's budget, spent directly on highways
- By comparison, **$92 million** on transit – or 1.5% of its budget
- State money spent on transit fell to $16.3 million in 2006, down from $43 million in 2001. This equals **$1.58 per capita**
- By contrast, Michigan spends $20.73 per person, while Pennsylvania spends $63.29 and Illinois spends $61.25

Impacts of Highway Favoritism

- Sprawl without growth
- Isolation of inner-city and inner-suburb residents
- Cleveland now ranks #2 in the U.S. in proportion of household income spent on transportation
  - Burdens low-income households
  - Siphons money out of local economy
- Decreasing population density makes transit infeasible



Susan Hanson-"The Geography of Urban Transportation"

Parking Issues

- Typically designed with impermeable surfaces--asphalt and concrete
- Most precipitation becomes runoff
- Storm water sewer systems are typically overwhelmed
- Excessive parking requirements for new developments (6 spaces per 1,000 sq ft)
- Detention ponds help to mitigate damage related with peak flow

Health Issues

- Increased risk of heart disease, hypertension, colon cancer, osteoporosis, arthritis, and insulin dependent diabetes
- Reduced weight control
- Reduced blood cholesterol levels
- High blood pressure
- Increased stress and tension, bone loss
- Reduced energy levels and bad quality of sleep

General Factors:

- More driving means more automobile crashes
- Sprawl spawns road rage
- Poor road designs are lethal for pedestrians and cyclists
- Most vulnerable citizens are impacted the most
- Urban sprawl keeps us in our cars

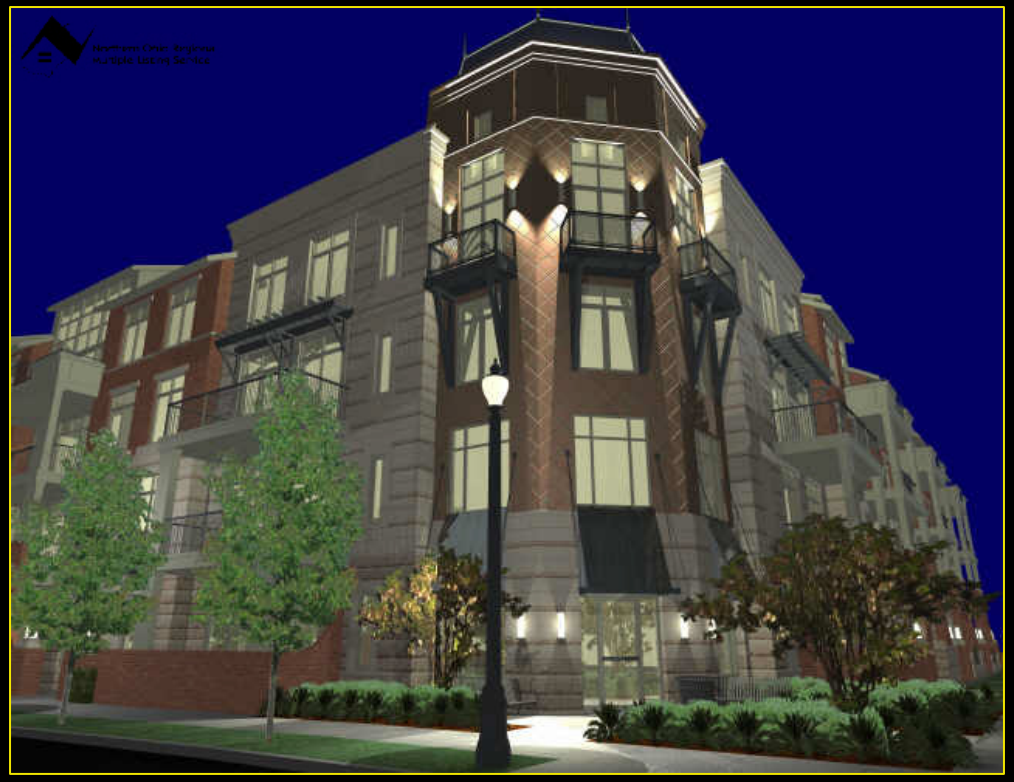
Air Pollution from Passenger Cars

Type of Shopping Center	Cumulative Annual Vehicle Miles Generated	Annual VOC Emissions (lbs)	Annual CO Emissions (lbs)	Annual NO_x Emissions (lbs)	Annual CO_2 Emissions (lbs)
Large Super Regional Center	70,638,750	435,657.49	3,251,871.97	216,272.82	64,705,095.00
Small Super Regional Center	51,358,499	316,748.45	2,364,300.95	157,242.98	47,044,385.08
Regional Center	22,042,231	135,943.27	1,014,719.44	67,486.13	20,190,683.60
Community Center	8,404,578	51,834.40	386,906.78	25,732.08	7,698,593.45
Neighborhood Center	1,426,511	8,797.87	65,669.78	4,367.51	1,306,684.08
Convenience Center	472,410	2,913.54	21,747.51	1,446.37	432,727.56
Power Center	28,846,272	177,906.52	1,327,945.12	88,317.88	26,423,185.15
Big Box Retailer	10,024,065	61,822.43	461,460.26	30,690.42	9,182,043.54
Large Drug Store	115,525	712.49	5,318.22	353.70	105,820.90

Sources: Urban Land Institute, *Dollars and Cents of Shopping Centers,* 1998; Institute of Traffic Engineers, *Trip Generation*, 6th Ed. 1997; U.S. Environmental Protection Agency National Vehicle and Fuel Emission Laboratory, 2000.

Transit Oriented Development

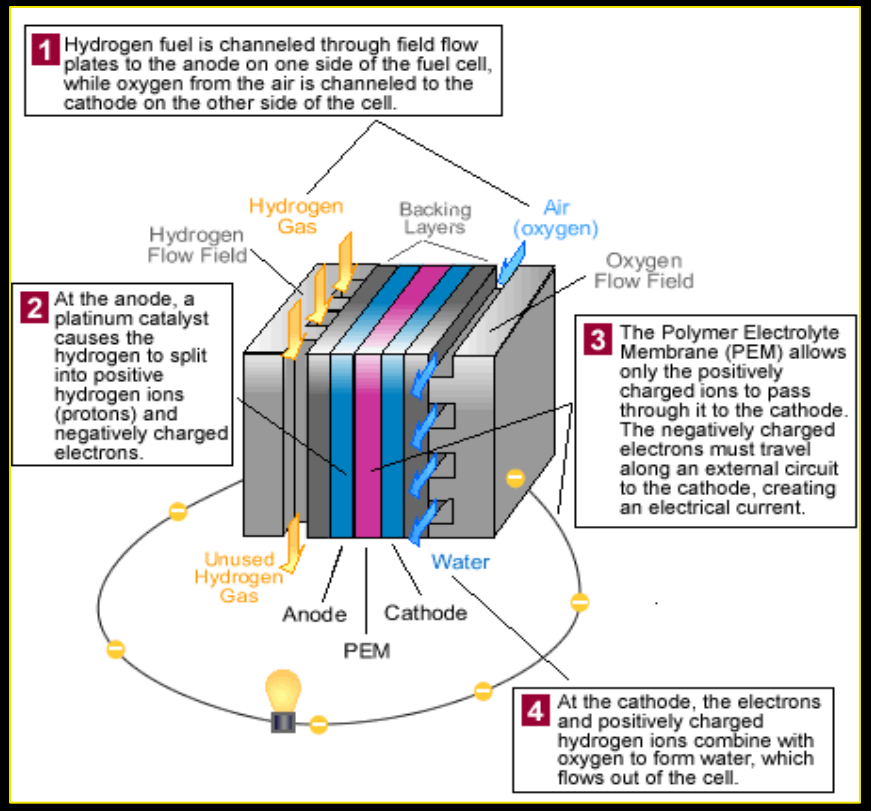
- TOD are developments that are mixed use in nature, diverse, walkable, dense and close to transit stops
- Gresham Civic Neighborhood Plan
- Montgomery County, MD Transit Station Zone



Avalon Station, Shaker Heights

Fuel Cells as an Alternative Fuel

- **Cleveland's role in alternative fuel**
- **Types of alternative fuel**
  - Diesel, Ethanol, Electric, Biogas, Fuel Cell
- **Challenges of fuel cell production**
  - Reducing costs
    - *$1,000 per kilowatt of electric power*
  - Increasing durability
  - Start-up reliability of vehicles in freezing temperatures
    - *Intolerance of carbon monoxide (CO)*
      - 2000: 1.93 million tons emitted
      - 2009: Federal Tier 2 emission standards will still emit 500,000 tons
- **Cleveland+**
- **Encourage companies to Cleveland to:**
  - Research fuel cells
  - Develop fuel cells
  - Distribute fuel cells



Strategies

- **Land Use**
  - Increase density and encourage infill
- **Encourage transit oriented development**
  - Moratorium on new road construction
  - Form-based zoning
  - Commuter and high speed rail service
- **Impact fees on developers with proceeds going into clean air or public transportation fund**

Strategies

- **Change ODOT policies**
  - Revise ODOT “TRAC” system to favor reinvestment over sprawl, using NOACA’s 9 scoring criteria as a model
  - Boost state transit funding
- **Parking: Increase bio detention basins, reduce City parking requirements, develop “shared parking” policies**
- **Fund alternative fuel development in the region and encourage alternative fuel use**