Sustainable Transportation Planning in the Portland Region

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Outline

- Elements of a sustainable transportation system
- Policy framework
- How it’s done in Portland
- Examples and results
What is a sustainable transportation system?

● Provides **choices** for people
  - Motor vehicles
  - Transit
  - Walking
  - Bicycling
Elements

- Considers **all** users
  - Personal travel
    - Ages
    - Physical abilities
    - Incomes
  - Commercial travel
    - Goods movement, freight
    - Utilities
    - Deliveries
    - General business travel
Elements

- Minimizes the impact on the environment
  - Air pollution
  - Water pollution
  - Animal habitat and migration

AIR POLLUTION SOURCES
- 33% Cars & trucks
- 23% Household & other products
- 25% Non-road engines
- 19% Industry
Elements

- Focuses on **accessibility**, not just mobility
  - We travel because we want *access* to goods or services at another location, not because we want to *move* between two places
  - In some cases, increased access can happen without increasing mobility
    - Examples:
      - Locating land uses adjacent to each other
      - Telecommunications substitutes
Elements

- **Manages** congestion, rather than eliminates it
  - Congestion is a sign of a healthy economy
  - Without pricing, it is impossible to “build” our way out of congestion

  Principal of “triple convergence” (Anthony Downs):

  New capacity on a road will be taken up by other motorists shifting their:
  1. mode of travel (e.g. transit to driving)
  2. time of travel (e.g. off-peak to peak)
  3. travel route (e.g. arterial street to freeway)
Policy Framework

- Federal
- State
- Regional
- Local
Policy Framework: Federal

- **Funding:** Federal gas tax (18.4 cents per gallon)
  - Only spent on highways and transit through a trust fund
- **Planning requirements for receiving funding**
  - Urban areas must plan transportation regionally through Metropolitan Planning Organizations (MPO)
  - Plans must be based on actual funding levels
  - Must assess environmental impacts and consider multiple modes
- **Federal role**
  - Generally does not make decisions about particular projects
  - Sets design and other standards to ensure consistency
Policy Framework: Oregon

- **Funding:** State gas tax (24 cents per gallon)
  - Can only be spent on roads, not transit

- **Planning**
  - Goal 12: Transportation
    - To provide and encourage a safe, convenient and economic transportation system
  - Transportation Planning Rule (TPR) adopted in 1991
Transportation Planning Rule

- Requires urban regions, counties and cities to adopt a Transportation System Plan (TSP)

- Objectives of TSPs include
  - Shall avoid reliance on any one mode and reduce reliance on the automobile
Local governments must adopt regulations that accomplish the following:

- Bicycle parking facilities as part of new development
- On-site facilities to accommodate safe and convenient pedestrian and bicycle access
- Bikeways along arterials and major collectors.
- Sidewalks on arterials, collectors, most local streets
TPR: Land Use Requirements

- Local governments must... (continued)
  - Street connectivity standards for new development

*Poor connectivity*  
*Good connectivity*
TPR: Land Use Requirements

- Local governments must... (continued)
  - Convenient pedestrian access to transit
  - Designation of types and densities of land uses adequate to support transit
TPR: Street standards

- Local governments must... (continued)
  - standards for local streets that minimize pavement

36 feet  28 feet
Policy Framework: State

- Oregon “Bike Bill” (1971)
  - Requires the state, cities & counties to spend reasonable amounts of highway fund on bikeways and walkways (1% minimum)
  - Requires bikeways/walkways on new and reconstructed roadways, with limited exceptions
Policy Framework: Regional (Metro)

- Metro is the region’s MPO
  - Only MPO in the U.S. to also have authority to plan land use
- 2040 Growth Concept
  - Integrates transportation and land use
Supporting Regional Plans

- Urban Growth Management Functional Plan
  - Requires *minimum* densities to support transit
  - Requires *maximum* parking limits
Supporting Regional Plans

- Regional Transportation Plan (RTP)
  - Policies for funding priorities
    - Examples:
      - Acceptable levels of congestion during peak
      - Modal targets by area (percent of trips by non single-occupant vehicles)
  - Plan for new infrastructure investment
Metro: Implementing the plans

- Programs federal and state funding for new infrastructure based on RTP

![Pie chart showing distribution of funding:]
- Freeways & Highways: 28%
- Roads & Bridges: 24%
- Transit: 41%
- Bicycles, Pedestrians & other: 7%
Metro: Implementing the plans

- Regional Travel Options: reduce demand through marketing, education and incentives
  - Employer-based programs
  - Individualized marketing
  - Vanpools
  - Carpool matching
Metro: Implementing the plans

- Operations: manage the existing infrastructure better
  - Examples:
    - Synchronized traffic signals
    - Roving trucks to help clear stalled vehicles
    - Ramp meters for highway on-ramps
    - Information to motorists on travel times
Metro: Implementing the plans

- Funding for transit-oriented development
Metro: Implementing the plans

- Street connectivity standards for the region
- Livable Streets program
Metro: Implementing the plans

- **Green streets: Reducing water pollution runoff**

![Before](image1.png) ![After](image2.png)

NE Fremont Stormwater Curb Extension

![Diagram](image3.png)

Figure 5-4
Reducing Parking Lot Imperviousness
Metro: Implementing the plans

- Modeling and data collection
  - Advanced, integrated land use and transportation models
  - Personal travel and activity survey of several thousand households
  - Transit ridership
  - Vehicle counts on freeways
Results: Overview

- Most travel is still by private, motor vehicles
  - 84% of all trips by private vehicle
  - 8% walking
  - 7% transit/school bus
  - 1% bicycle

- But, more people use transit and bicycling than other regions

- Trends are improving
Results: Overall

- Vehicle miles traveled has gone down
Results: Transit

- Investment in new transit infrastructure
  - 1970s: Fareless Square and Transit Mall
  - 1980s: Started light rail system (MAX)
  - 1990s – 2000s: expanding light rail, improving bus service, Streetcar
Transit Trips per Capita (2004)

Diagram showing the number of transit trips per capita for various cities and regions. The x-axis represents different cities and regions, and the y-axis represents the number of trips per capita. The diagram compares larger regions to smaller regions. Cities and regions are listed along the x-axis, with bars indicating the number of trips per capita.
Results: Bicycling

- Recognized as top bicycling city in U.S. and North America
- City of Portland Bicycle Master Plan adopted in 1996
- City of Portland has increased bikeway mileage from 111 miles in 1996 to 228 in 2001
- Active bicycle community and businesses
How to Use the New Bicycle Signal

1. TO GET A GREEN LIGHT
   - Place your bicycle just off the marking on the sidewalk, with your wheels directly on the line.

2. When the bicycle signal turns green:
   - Bicycles can cross the intersection as a group.

Examples:
- Oregon St
- 12th Ave
- 11th Ave
- 10th Ave
- 9th Ave
- 8th Ave

Questions and Comments:
- 206-263-1000
- PortlandBicycles@portlandoregon.gov

City of Portland
Transportation Bureau
"Ride a Bicycle Today!"
Percent of workers commuting by bicycle

- Larger regions
- Smaller regions

[Diagram showing percent of workers commuting by bicycle for different cities and regions, with bars indicating the percentage]
City of Portland: bike commuting going up

City of Portland
% of workers commuting regularly by bike

US Census
What’s the impact?

- Portlanders drive an average of four fewer miles per day
- Total savings per year:
  - $1.1 billion in direct costs (e.g. gas)
  - $1.5 billion in time savings
- Money not spent on vehicles and gasoline (which leaves the region) can be spent locally on housing, dining out, beer, coffee, etc.
Questions?