Parking 101
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Parking Policies

- Significant determinant of mode choice
- Important ingredient of economic development plans
- Contributing factor to air quality and stormwater runoff
- Key element in shaping urban form

Result:
Parking policies must compliment, rather than contradict other transportation and land use goals.
## The Two Sides of Parking

<table>
<thead>
<tr>
<th>Pro</th>
<th>Con</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking is a public sector responsibility</td>
<td>Parking should be developed by the private sector</td>
</tr>
<tr>
<td>Adequate parking provides economic benefit</td>
<td>Parking poses energy, aesthetic and environmental problems</td>
</tr>
<tr>
<td>Need to have enough downtown parking to meet demand</td>
<td>Preserve downtown land for higher uses and encourage alternative modes</td>
</tr>
<tr>
<td>Curb parking provides convenient parking and helps in “calming traffic”</td>
<td>Curb parking reduces street capacities and increases accident potential</td>
</tr>
</tbody>
</table>
Varying Parking Perspectives

**Motorist**
Park as close as possible and pay at a minimum cost

**Developer**
Adequate parking is a requirement for a marketable and successful development

**Urban Residents**
Curb parking is an implied right of residency

**Pedestrian**
Parking can be unfavorable if it blocks pathways or views

**Transit Advocate**
Plentiful parking is a disincentive for transit use
Types of Parking

Curb Parking

- Unrestricted
- Restricted

Off Street

- Lot
- Garage
  - Privately owned and operated
  - Publicly owned, privately operated
  - Publicly owned and operated
Curb Space

Competes with...

- Moving traffic
- Taxi and bus stops
- Commercial loading zones
- Short term parking
- Long term parking
Types of Curb Parking

- Unrestricted
- Time of day restrictions
- Time limit restrictions
- Special purpose zones
- Metered parking
# Effects of Parallel Parking on Capacity of Adjacent Streets

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>No Parking</th>
<th>&lt;10</th>
<th>20</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00</td>
<td>.90</td>
<td>.80</td>
<td>.70</td>
</tr>
<tr>
<td>2</td>
<td>1.00</td>
<td>.95</td>
<td>.89</td>
<td>.85</td>
</tr>
<tr>
<td>3</td>
<td>1.00</td>
<td>.97</td>
<td>.93</td>
<td>.89</td>
</tr>
</tbody>
</table>

*Source: Highway Capacity Manual*
## Safety Considerations of Parallel vs. Angle Parking

<table>
<thead>
<tr>
<th>Parking Configuration</th>
<th>Number of Sections</th>
<th>Average ADT</th>
<th>Average Accident Rate (ACC/MVM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel Both Sides</td>
<td>1472</td>
<td>7,000</td>
<td>3.8</td>
</tr>
<tr>
<td>Parallel One Side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angle One Side</td>
<td>36</td>
<td>10,300</td>
<td>15.0</td>
</tr>
<tr>
<td>Angle Both Sides</td>
<td>5</td>
<td>5100</td>
<td>31.5</td>
</tr>
</tbody>
</table>

*Source: M. Segal – “Highway Safety Research Study” Maine State Highway Commission*
Parking Meters

- Encourage parking turnover
- Generate revenue
- Effectiveness proportional to enforcement
Curb Parking

Enforcement and Adjudication

- Ticketing
- Booting
- Towing
Off Street Parking

- Characteristics
- Costs
- Funding
Midtown Atlanta Commuting Modes

Commuting by Midtown Area Residents
- Bicycle (1.8%)
- Carpool (3.7%)
- Drive alone (72.4%)
- MARTA bus (2.9%)
- MARTA train (5.5%)
- Walk (13.7%)

Source: Midtown Alliance Online Survey; November and December 2000

Commuting by Outlying Residents
- Carpool (7.3%)
- CCT (0.7%)
- Drive alone (78.4%)
- MARTA bus (0.2%)
- MARTA train (12.9%)
- Vanpool (0.5%)

Source: Midtown Alliance Online Survey; November and December 2000
Parking Requirements

Parking Requirements by Land Use Density

Number of Spaces

Total Employment

Parking Space Requirements

Parking Requirements by Land Use Density
Typical Parking Accumulation for a CBD
Typical Peak Parking Accumulation
by Trip Purpose in a CBD
Typical Walking Distance

Walking Between Parking Space and Destination (Feet)

Urbanized Area Population

Source: “Parking” weant and Levinson

Typical Walking Distance by Urbanized Area Population
Parking Requirement Relationships

Parking space requirements per specific land use per unit of development:

A - Specify maximum number of allowable spaces
B - Specify minimum and maximum number of allowable spaces
C & D - Specify minimum number of allowable spaces

Source: “Parking” Weant and Levinson

Typical Relationship Between Mode Split and Parking Requirements
Parking Pricing Strategies

- Subsidized pricing
- Fair market pricing
- Parking surcharges
- Parking “cash-out” programs
- Increase long term parking charges relative to short term charges
Facility Parking Costs

Underground Garage
(No Land Cost)

1-Level Garage
3-Level Garage
5-Level Garage
7-Level Garage

Surface Parking Lot

Surface Lot
- construction cost = $5.50/sq.ft
- efficiency = 305 sq.ft stall

One Supported Level Structure
- construction cost = $23/sq.ft
- efficiency = 315 sq.ft stall

3-7 supported Levels
- construction cost = $28/sq.ft
- efficiency = 320 sq.ft stall

Source: “Parking” Weant and Levinson

Relationship Between Surface and Structural Parking Costs
Off Street Parking

Facility Financial Analysis

1) Development plan (Space and costs)

2) Competing facilities and rates

3) Existing and future parking space supply / demands and needs

4) Proposed rates and gross receipts

5) Operational and maintenance expenses

6) Financial proforma
   
   - Income
   - O&M costs
   - Debt service coverage ratio
Typical Municipal Financing Options

- Pay as you go
- General obligation bonds
- Parking revenue bonds
- Local parking revenue bonds
- Tax increment bonds
- Lease revenue bonds
- Assessment districts
Public Parking Administration

- Assigned to existing department
- Establish separate municipal department
- Appoint parking board
- Create parking authority
Questions to Ask Yourself....

1... Do you have enough (or too much) parking?

2... Is your parking in the right location?

3... Does it compliment your city’s other transportation investments?

4... Who should provide and operate the parking?

5... If you don't have enough parking, how do you correct the problem?
Alternative Parking Strategies to Consider

- Shared parking opportunities
- Zoning for parking minimums and maximums
- Cash in lieu
- Trip reduction programs
- Peripheral parking
- Parking pricing
- Transit or alternate modes
- Parking financing
Solving the Parking Puzzle

- Parking Zoning Requirements
- Curb Parking Needs
- Parking Rates
- Parking Enforcement
- Financial Feasibility of New Parking Structure
- Parking Zones
- Requirements
- Acceptable Walking Distance
- Parking Financial Strategies
- Public vs. Private Facilities
- Parking Strategies
- Parking Meters
- Parallel vs. Perpendicular Parking
- Parking Demands
- Vanpool Parking
- Parking Demands
- Garage Design Elements
- Parking Accumulation
- Long Term vs. Short Term Parking
- Parking Turnover
- Handicapped Parking
- Parking Spaces
- Parking Strategies