The Limits to Growth Management: Development Regulation in Montgomery County, Maryland

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Outline

- Motivation
- Decision Frameworks
- Historical Overview
- Infrastructure Financing
- Setting Growth Limits
- Model of Transportation & Land Use
- Lessons Learned
Motivation

- Desire for Adequate Public Facilities
- Limited Public Resources
- Congestion
- Balance Jobs & Houses
- Focus Development Around Transit
- Constrain Growth in Corridor
- Later - Support Affordable Housing
The Complexity of the Problem

- Infrastructure capacity absorption depends on underlying technology and a development’s:
  - location,
  - timing,
  - density, and
  - character

- Infrastructure serves multiple uses and users
  - Multi-dimensional bundle of attributes
  - A flow not a stock
  - May have a “capacity” or a “standard”
Planning Process

- Monitoring should be linked to
  - Master plans
  - Capital Improvement Programs
  - Financing System
  - Development Regulation
Decision Frameworks

- Proactive vs. Reactive
- Categories vs. Continuum
- Single vs. Multi-Dimensional
- Incremental vs. Comprehensive
- Coordinated vs. Fragmented
Historical Overview

- 1974: APFO, Report recommending Staging Policy For Each Area
- 1970s: Series of Policy Reports
- 1980: Comprehensive Staging Plan <failed>
- 1981-6: Comprehensive Planning Policies (Planning Board)
- 1986: Interim Growth Plan
- 1987-Present: Annual Growth Policy (Planning Board & County Council)
- 1997: Alternative Review Procedures
Carrying Capacity Model

Figure 1: The Timing of Public Facilities and Private Development
An **externality** is “a commodity bundle that is supplied by an economic agent to another economic agent in the absence of any related economic transaction between the two agents.” (Spulber)

- Arise from lack of property rights.
- May be positive or negative. Positive include consumption externalities and network externalities. Negative include congestion, pollution, accidents, etc.
- Transactions costs may make internalization difficult.
## Desired Outcomes of the Transportation System (Caltrans)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Candidate Measures</th>
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<tbody>
<tr>
<td><strong>EFFECTIVENESS</strong> AND <strong>EFFICIENCY</strong></td>
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<tr>
<td>Mobility/Accessibility</td>
<td>Travel Time, Delay, Access to Desired Locations, Access to System</td>
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<tr>
<td>Reliability</td>
<td>Variability of Travel Time</td>
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<td>Cost-Effectiveness</td>
<td>Benefit/Cost Ratio, Outcome Benefit per Cost</td>
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<td><strong>RESPONSIBILITY</strong></td>
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<tr>
<td>Sustainability</td>
<td>Household Transportation Costs</td>
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<td>Environmental Quality</td>
<td>National and State Standards</td>
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<td>Safety and Security</td>
<td>Accident and Crime Rates</td>
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<td>Equity</td>
<td>Benefits per Income Group</td>
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<tr>
<td>Customer Satisfaction</td>
<td>Customer Survey</td>
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<tr>
<td>Economic Well Being</td>
<td>Final Demand, (Value of Transportation to the Economy)</td>
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Measures of Effectiveness (MOE)

- Second-Best Solution: Regulate Developer
- Infrastructure Has Multiple Attributes - A Doctor Looks at More Than Temperature, Planners Should Consider More Than Capacity
- The Right MOE’s Vary Based on Facility Being Analyzed,
- MOE’s Should Consider Not Only Current Status of System, but also Its Direction of Change.
Attributes of Good Measure of Effectiveness

- Complete
- Aggregates Well
- Aligns with User Experience
- Measurable
- Predictable
- Useful in Regulatory Context
Criteria for Selecting Measure of Effectiveness

- It aids in identifying opportunities to increase the systemwide net benefits through public investment in improvements or changes in management,
- It minimizes the cost to achieve necessary measurement accuracy, and
- It produces the right incentives.
Data Sources and Collection

- **Supply Data**
  - Measured - Engineering Cost Study
  - Predicted - Statistical Cost Study (Many Projects)

- **Demand Data**
  - Measured - Operating Agency Utilization Data
  - Predicted - Statistical Forecasts
Setting Staging Ceilings

1. Posit Area Land Use Pattern & Allocate Land Use to Zones
2. Load into Travel Demand Model & Run
3. Compute Total Transportation Level of Service for each Area
4. Compute Countywide system score

Convergence Test

Yes → Final Land Use Pattern
No
Financing Alternatives

- Developer Funded Roads
- Trip Mitigation
- Impact Fees or Taxes
- Development Districts
- Development Approval Payment
Figure 4: Transportation and the Montgomery County Growth Management System
Second Best Development
Regulation: Minimizes the Cost of:

- **Prevention**
  - (Build) The cost of infrastructure required to maintain the performance indicators (Engineering or Statistical), or
  - (Manage) The cost of demand and supply management to maintain the performance measures.

- **Damage**
  - (Accept) The cost to the community of worsening the performance indicators in the absence of the infrastructure.
Lessons Learned

- Dividing Responsibility
- Categorizing the Continuous
- Single Dimensional Standards
- Measures of Effectiveness
- “Rational” Planning
- Bringing Distant Dangers Near
Summary

- Externalities Provides Underlying Rationale for Development Regulation
- Unfortunately, “First Best” Solution (P=MC) is Not Always Feasible
- Regulating Supply is a “Second Best” Solution
- Multiple Measures of Effectiveness are Required to Understand Impact of Development on Capacity Utilization
Conclusions

- Select Measures of Effectiveness
- Collect and Forecast Data
- Establish Standards (Absolute or Relative)
- Open System to Peer Review and Public Scrutiny
- Answer Not Whether Development, But How
- Implement Monitoring System in Regulation
Measure of Effectiveness for Transportation: Consumer’s Surplus

Traffic Flow (Q)