The conceptual framework

- Public transportation system
  - Highway, transit, air travel, train…
- Three key questions
  - Public or private input?
  - If public, which level of government?
  - What sources of revenue?
- The general principle
  - To align benefits with costs

The practical issues

- The traditional approach
  - Fuel taxes and earmarked funds
- Challenges to the fuel taxes
  - Not enough revenue
  - Benefits and costs can be better aligned
- Alternatives
  - Congestion pricing
  - Mileage-based fees
  - Value capture

Q1: Public or private?

- Turn to your neighbors and discuss:
  - How did you get here to attend the class?
  - What public inputs? Private inputs? Why?
  - Are there alternative ways?
Q1: Public or private?

<table>
<thead>
<tr>
<th></th>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road transport</td>
<td>Automobiles, gasoline</td>
<td>Construction and maintenance of roads</td>
</tr>
<tr>
<td>Biking</td>
<td>Bicycle</td>
<td>Bicycle routes</td>
</tr>
<tr>
<td>Transit</td>
<td>Fare, permit</td>
<td>Transit systems</td>
</tr>
<tr>
<td>Air travel</td>
<td>Private airlines</td>
<td>Airport, air ways, and public air traffic control system</td>
</tr>
<tr>
<td>Water transport</td>
<td>Private boats</td>
<td>Publicly owned and maintained waterways and harbors</td>
</tr>
</tbody>
</table>

Q2: Which level of government?

- Fiscal federalism
  - Revenue authorities
  - Fiscal responsibilities
  - Intergovernmental grants
- Which level of government?
  - Interstate highways
  - State highways
  - Local roads
  - Metropolitan transit system

Considerations
- Benefit area
- Devolution
- Externalities
- Economy scale
- Coordination

Q3: What sources of revenue?

- Where from?
  - Own-source revenue (OSR)
  - Intergovernmental funds
  - (Borrowing?)
- How is it collected?
  - Taxes: property tax, sales tax, income tax…
  - Fees/charges: toll, fare, permits, congestion fees
- How is it used?
  - General revenue (general fund)
  - Special revenue (earmarked, dedicated fund)

Pair-and-share

- Q1: public or private?
- Q2: which level of government?
- Q3: what kinds of revenue to be raised?

Any “Aha!” moment to you?

What is most confusing to you?
Public transportation system

Public transportation expenditures (2001)

<table>
<thead>
<tr>
<th>Expenditure (millions)</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway $110,464</td>
<td>60.3%</td>
</tr>
<tr>
<td>Transit $33,590</td>
<td>18.3%</td>
</tr>
<tr>
<td>Air $27,404</td>
<td>15.0%</td>
</tr>
<tr>
<td>Water $10,469</td>
<td>5.7%</td>
</tr>
<tr>
<td>Rail $737</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Transportation finance in MN

Federal highway aid
- Mostly from motor fuel tax
  - 18.4 (gasoline) & 24.4 (Diesel) per gallon
- Sales tax on tires, trucks/ trailers, airline tickets, etc

Transportation finance (MN)

State revenue sources
- Motor fuel tax
  - 20 cent since 1988
- Motor vehicle registration tax (tab fee)
  - On vehicle registration
  - Amount varied by “class” ($35-$99)
- Motor vehicle sales tax (MVST)
  - 6.4% on vehicle purchase
  - Partially dedicated for transportation
  - Provide relief for tab fee and property tax
Transportation finance (MN)

- Contributions to the HUTD

![Graph showing contributions to the HUTD]

Local funding sources
- Local general fund
- Property tax and special assessment
- Local sales tax (some cities and Cook county)
- Miscellaneous income

![Diagram of local funding sources]

Funding for local roads (MN)
- Interest earnings: $52.3M
- Proceeds from sale of bonds: $168.7M
- User taxes: $120.7M
- Local General Fund: $437.6M

![Pie chart showing funding for local roads]

Highway funding (MN)
- Federal Aid
- Other Non-federal funds
- Motor Vehicle Sales Tax
- Motor Fuel Tax
- Registration Tax
- State General Revenue

![Diagram of highway funding sources]

Source: Office of the State Auditor
### Transit funding (MN)

- State MVST: 23%
- State General Fund
- Fares
- Federal Funding
- Others

### Funding for local roads (MN)

- State funding for local roads
  - Highway User Tax Distribution Fund
    - 95% Distribution Constitutional Dedication
    - 5% Distribution “Set-Aside” Constitutional Dedication
  - Trunk Highway Fund: 62% of 95%
  - County State-Aid Highway Fund: 29% of 95%
  - Municipal State-Aid Street Fund: 9% of 95%
  - Flexible Highway acct. Town Road and Town Bridge acct.

### Overview: the current approach

- Fuel-based taxes
- Dedicated funds
- Intergovernmental: devolution
- Low level of tolling
- Low level of private contribution

### Challenges to the current system

- Adequacy: stagnant revenue increase
  - Fuel tax has not been raised for a long time
  - Fuel tax cannot catch up with inflation
  - Fuel price reduces gasoline consumption
  - New technologies reduce fuel consumption
- Efficiency: benefits/costs not fully aligned
  - Fuel: a poor measure of actual usage
  - Lower marginal cost leads to excess consumption
  - Other benefits become windfalls
Alternatives

- Adequacy:
  - Fuel tax not been raised → then raise it
  - Fuel tax and inflation → indexation
  - Fuel price decrease tax amount → ad velorem tax
  - Hybrid vehicles → increased registration fee

- Efficiency:
  - Fuel not a good measure → mileage-based
  - Lower marginal cost → congestion pricing
  - Private windfalls → value capture

Highway funding (MN)

Congestion pricing

- Congestion pricing: rationale
  - Internalizing negative externalities of congestion
  - Linking benefits to costs
  - Reduced (socially) inefficient traffic

- Methods of congestion charges
  - Using tollbooths to collect: depends
  - Metered usage: much easier now
  - Travel permits during congested hours

Value capture

- Value creation of transportation
  - Direct value created
  - Enhanced value with mobility
  - Enhanced value with overall development

- Value capture: rationale
  - Matching benefits with costs
  - Improve efficiency of land use
Value capture

- Value capture: strategies
  - Tax-based approaches
    - Special assessment, TIF, split-rate property tax
  - Fee-based approaches
    - Development impact fees
    - Exaction or other in-kind contributions
  - Market-based approaches
    - Rezoning, leasing, and selling
    - Joint-development

Issues of transportation finance

- The current funding system
- Challenges
- Alternatives