Urban vs. Rural Implications: User Fee Alternatives to the Gas Tax

Justine Sydello, Transportation Policy National Practice Leader
State of Illinois approves motor fuel tax increase and other revenues to support capital infrastructure

Pritzker’s Nearly $45B Capital Plan Is Way Better for Transportation Than Expected


From road repairs to transit expansions, $33 billion in capital bill will have ‘monumental’ impact

Illinois governor signs budget, revenue and capital improvement bills
Presentation Overview

- 2019 Illinois Capital Bill Overview
- Declining Viability of the Gas Tax
- Rural vs. Urban Implications of Alternative User Fees
  - Tolling
  - Mileage-Based User Fees
Illinois Capital Bill Overview
Illinois Capital Bill Highlights

$45b total, $33b for transportation

Sources of revenue:

- Doubling the gas tax 19 cents, indexed
- Diesel differential increase from 2.5 cents to 7.5 cents per gallon (no index) → elimination of commercial distribution fee
- Sales tax on gas (6.25%) from GRF to Transportation
- Increases to motor vehicle registration
  - Passenger vehicles - $50 (now $148)
  - Commercial vehicle $100
  - Electric vehicle fees $248 total – from $35 biennially to same base registration, plus $100 for not paying MFT
- Certificate of title fees increased $55
- Allows expanded local collection of MFT
Illinois Capital Bill Highlights

**Distribution:**
- $2.5b annually for transportation
- Six years $20.5b, 54% in bonding
  - $14b roads and bridges
  - $4.5b transit
  - $1.5b passenger rail, freight rail, ports, airports
  - $50m bike-ped

**Project list:**
- $1b for I-80 expansion
- $400m for CREATE
- $500m for Amtrak expansion from Chicago to Rockford, Quad Cities
- $100m Kendall County Metra BNSF extension
- $2.5m - $6m per House/ Senate district
Initial estimates of annual increased revenue of Senate Bills 1939 and 690

<table>
<thead>
<tr>
<th></th>
<th>Capital infrastructure funds</th>
<th>General Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Senate Bill 1939 (funds transportation infrastructure)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor fuel tax</td>
<td>$1,235 million</td>
<td></td>
</tr>
<tr>
<td>Diesel differential</td>
<td>$77.5 million</td>
<td></td>
</tr>
<tr>
<td>Sales tax switch (at full implementation)</td>
<td>$600 million</td>
<td>($600 million)</td>
</tr>
<tr>
<td>Vehicle registration*</td>
<td>$475 million</td>
<td></td>
</tr>
<tr>
<td>Electric vehicle registration*</td>
<td>$4 million</td>
<td></td>
</tr>
<tr>
<td>Certificate of title</td>
<td>$146 million</td>
<td></td>
</tr>
<tr>
<td>Commercial vehicle registration*</td>
<td>$50 million</td>
<td></td>
</tr>
<tr>
<td>Commercial Distribution Fee repeal</td>
<td></td>
<td>($54 million)</td>
</tr>
<tr>
<td><strong>Senate Bill 690 (funds water buildings, transportation, broadband, and other infrastructure)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking garage tax</td>
<td>$60 million</td>
<td></td>
</tr>
<tr>
<td>Cap traded-on property exemption</td>
<td>$60 million</td>
<td></td>
</tr>
<tr>
<td>Cigarette tax increase</td>
<td>No data at time of publication</td>
<td></td>
</tr>
<tr>
<td>Gaming and gambling</td>
<td>No data at time of publication</td>
<td></td>
</tr>
</tbody>
</table>

*1 of the increase is directed to the Secretary of State

Distribution of Illinois’ 19-cent motor fuel tax increase

Note: Percentages represent the portion of $1.235 billion in anticipated new annual motor fuel tax revenue.

Source: Chicago Metropolitan Agency for Planning analysis of Illinois Senate Bill 1939.
Declining Viability of the Gas Tax
Nationwide Gas Tax Revenue Declines

Approximate Annual Gas Tax Revenue (Billions, 2015) (Assumes Overall Average State and Federal Tax of $0.47/Gallon)

- With Current MPG
- With EIA Ref Case MPG
- With "Bloomberg" EV Adjusted MPG

- 2015: $35.6B
- 2020: $44.9B
- 2025: $50.4B
- 2030: $54.0B
- 2035: $54.0B
- 2040: $54.0B
- 2045: $54.0B
- 2050: $54.0B

$5.5B decrease from 2015 to 2020
$15.0B decrease from 2020 to 2025
$24.9B decrease from 2025 to 2030
$35.6B decrease from 2030 to 2035
$44.9B decrease from 2035 to 2040
$50.4B decrease from 2040 to 2045
$54.0B decrease from 2045 to 2050
Rural vs. Urban Implications of Alternative User Fees
Challenges

- Illinois already solved it’s revenue problem!!
  
  “We will not have to vote on this again…”
  - IL elected official following vote

- Expanded tolling or mileage based user fees are unfair to rural residents.
  
  “I can’t support any user fee that unfairly burdens my rural constituents…”
  – Countless elected officials with rural constituents
Alternative User Fees: Interstate Tolling

Interstate Tolling

Mileage-Based User Fees
Interstate Tolling Model

- Planning-level tool
- Traffic and VMT impacts
- Implementation and collection costs
- Revenue generation
- Urban vs. rural
- Travel time

<table>
<thead>
<tr>
<th>Rate per Mile</th>
<th>Avg Annual $[Billions] (2020-2040)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toll Revenue</td>
</tr>
<tr>
<td>$0.04</td>
<td>$68.40</td>
</tr>
<tr>
<td>$0.06</td>
<td>$93.80</td>
</tr>
<tr>
<td>$0.08</td>
<td>$119.50</td>
</tr>
</tbody>
</table>
Tolling Scenarios

- **UNIVERSAL TOLLING:** All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively. Same rates in urban and rural.

- **RURAL DISCOUNT:** All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively in urban areas. 25% discount in rural.

- **TRUCK ONLY, RURAL DISCOUNT:** Statewide Truck-only tolling $0.10 per mile in urban and $0.075 per mile in rural.
Driver Behavior: Changes in VMT

TOLLING SCENARIO | VMT CHANGE (MILLIONS) |
--- | --- |
INTERSTATES | CARS | TRUCKS | TOTAL |
--- | --- | --- | --- |
All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively. Same rates in urban and rural | (1,179) | (993) | (2,172) |
| 95.2% | 85.8% | 93.1% |
All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively in urban areas. 25% discount in rural | (1,086) | (834) | (1,920) |
| 95.6% | 88.1% | 93.9% |
Statewide Truck-only tolling $0.10 per mile in Urban and $0.075 per mile in rural | (213) | (912) | (1,125) |
| 99.1% | 87.0% | 96.4% |
## Revenue Generation (in millions)

<table>
<thead>
<tr>
<th>TOLLING SCENARIO</th>
<th>GROSS REVENUE CARS</th>
<th>GROSS REVENUE TRUCKS</th>
<th>TOTAL REVENUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ETC</td>
<td>NON-ETC</td>
<td>SUB-TOTAL</td>
</tr>
<tr>
<td>All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively. Same rates in urban and rural</td>
<td>$ 475.99</td>
<td>$ 250.47</td>
<td>$ 726.46</td>
</tr>
<tr>
<td>All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively in urban areas. 25% discount in rural</td>
<td>$ 435.21</td>
<td>$ 229.54</td>
<td>$ 664.75</td>
</tr>
<tr>
<td>Statewide Truck-only tolling $0.10 per mile in Urban and $0.075 per mile in rural (25% discount)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>
Revenue Generation (in millions)

<table>
<thead>
<tr>
<th>TOLLING SCENARIO</th>
<th>CARS</th>
<th>TRUCKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RURAL</td>
<td>URBAN</td>
</tr>
<tr>
<td>All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively. Same rates in urban and rural</td>
<td>$ 260.10</td>
<td>$ 466.36</td>
</tr>
<tr>
<td>All interstates tolled at $0.04 and $0.10 per mile for cars and trucks respectively in urban areas. 25% discount in rural</td>
<td>$ 197.16</td>
<td>$ 467.59</td>
</tr>
<tr>
<td>Statewide Truck-only tolling $0.10 per mile in Urban and $0.075 per mile in rural (25% discount)</td>
<td>$   -</td>
<td>$   -</td>
</tr>
</tbody>
</table>
Takeaways

Behavior (VMT)

- Shift in rural driver behavior is minimal between full toll and 25% discount toll (93.1% to 93.9%)
- All tolling scenarios have a bigger impact on truck driver behavior (12% to 15% change) compared to car driver behavior (<5% change)
- Trucks are slightly more likely to divert off of tolled facilities in the truck-only scenario \(\rightarrow\) roads more congested since cars are not tolled

Revenue

- Lose 11% of revenue between universal tolling and rural discount programs ($137.6m) \(\rightarrow\) depending on revenue generational goals, may be worth rural discount to make more politically palatable
- Across all scenarios \(\rightarrow\) More revenue raised by cars in urban areas; more revenue raised by trucks in rural areas
- Tolling all interstates at $0.04 and $0.10 per mile for cars and trucks, respectively, raises the equivalent of $0.19 gas tax increase
Alternative User Fees: Mileage-Based User Fees

Interstate Tolling

Mileage-Based User Fees
## Financial Impacts of Road Usage Charges (RUC) on Urban and Rural Households

<table>
<thead>
<tr>
<th>% Savings with RUC</th>
<th>Urban</th>
<th>Mixed</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>-0.7%</td>
<td>1.7%</td>
<td>6.1%</td>
</tr>
<tr>
<td>California</td>
<td>-0.3%</td>
<td>2.4%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Idaho</td>
<td>-1.0%</td>
<td>0.9%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Montana</td>
<td>-1.4%</td>
<td>-0.4%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Oregon</td>
<td>-1.0%</td>
<td>2.9%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Texas</td>
<td>-0.5%</td>
<td>1.6%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Utah</td>
<td>-0.6%</td>
<td>3.4%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Washington</td>
<td>-1.6%</td>
<td>3.6%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>
MBUF Rates to Replace the Motor Fuel Tax

**Pre-Capital Bill MBUF Rates**
- Cars: $0.01/mile
- Trucks: $0.04/mile

**Capital Bill MBUF Rates**
- Cars: $0.02/mile
- Trucks: $0.085/mile

**Illinois MBUF**
- Total: $106.8b

**Revenue from Fuel Tax**
- Total: $1.294b
  - Gas: $943m
  - Diesel: $351m
  - Cars: $98.2b
  - Trucks: $8.5b
  - Urban: $82.6b
  - Rural: $24.2b
## Revenue Generation Under Various MBUF Rates

<table>
<thead>
<tr>
<th>Car per Mile</th>
<th>Truck per Mile</th>
<th>Total Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.0100</td>
<td>$982,229</td>
<td>$341,645</td>
</tr>
<tr>
<td>$0.0125</td>
<td>$1,227,786</td>
<td>$427,056</td>
</tr>
<tr>
<td>$0.0150</td>
<td>$1,473,343</td>
<td>$512,467</td>
</tr>
<tr>
<td>$0.0175</td>
<td>$1,718,900</td>
<td>$597,878</td>
</tr>
<tr>
<td>$0.0200</td>
<td>$1,964,458</td>
<td>$683,290</td>
</tr>
</tbody>
</table>
Policy Levers for MBUF (GPS-based)

- Rural vs. Urban
- Car vs. Truck
- Time of day → Congestion
- Location → $ for Transit
- Equity Considerations
- In-State vs. Out-of-State
Now what?

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