

Preparing Toll Organizations for the Future



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General Session: The Future For Tollways

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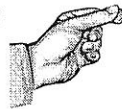
Past and Future of Toll Collection

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Legacy and Challenges of Toll Collection in the United States

- Earliest intercity canals and roads were tolled facilities – 18th and 19th centuries
- Cash-based toll collection has survived more than two centuries – despite advent of alternatives
- Cash-based toll collection remains the most expensive and user-unfriendly way to fund highway infrastructure



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Legacy and Challenges of Toll Collection in the United States - continued



- Technology offers the best way to eliminate the drawbacks of cash-based toll collection
- But technology is costly and requires change
- Machine-based toll collection augmented manual toll collection in 1960s
- Electronic toll collection augmented machine-based toll collection in 1980s
 - How long will electronic toll collection (ETC) last before it is replaced with better technologies?

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Legacy and Challenges of Toll Collection in the United States

- continued



- Open road tolling began to replace other forms of toll collection in 1990s
 - Will open road tolling accelerate or bypass ETC?
 - What form will ORT ultimately take?
- Increasing speed of obsolescence and interoperability issues challenge the economics of ETC deployment and upgrading
- What happens when toll agencies lose their primary defining characteristic – *the toll booth*?

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Evolution of Tolling Technology

Tolling Approach

Characteristics

- | | |
|---------------------------|-----------------------------|
| ■ River Chains – | Effective but not automatic |
| ■ Turn Pikes – | Easier to deploy |
| ■ Toll Gates – | Variation on a theme |
| ■ Toll Treadles – | Automation era begins |
| ■ Coin Machines – | Automatic toll collection |
| ■ Electronic Toll Booth – | Limited speed lanes |
| ■ Electronic Toll Lane – | Express lanes |
| ■ Open Road Tolling – | Barrier free lanes |

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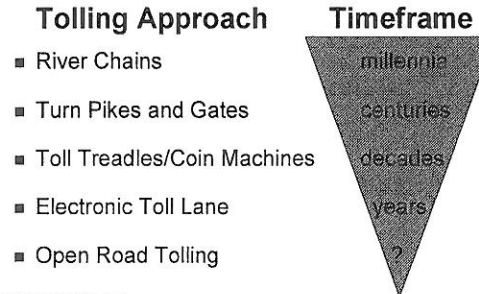
Attributes of Tolling Approaches

Turnpike	Very Slow	Very Costly	Highly Inconvenient
Turnpike Road	Slow	Costly	Inconvenient
Treadle	Slow	Costly	Inconvenient
Electronic Toll Lane	Slow	Costly	Inconvenient
Open Road Tolling	Very Slow	Very Costly	Highly Inconvenient
Turnpike	Slow	Costly	Inconvenient
Turnpike Road	Slow	Costly	Inconvenient
Treadle	Slow	Costly	Inconvenient
Electronic Toll Lane	Slow	Costly	Inconvenient
Open Road Tolling	Very Slow	Very Costly	Highly Inconvenient

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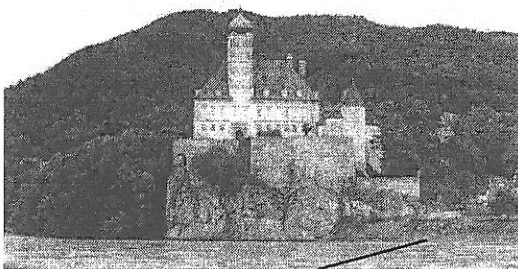
Declining Endurance of Toll Technology



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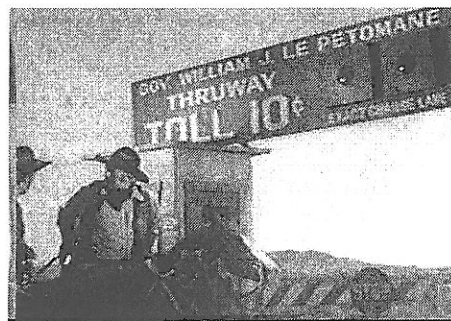
Original Toll Concept - River Chains



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The Good Ol' Days



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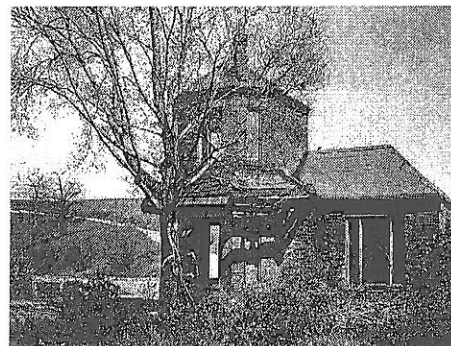
Early Toll Road in Hindley, England



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Early Toll Plaza



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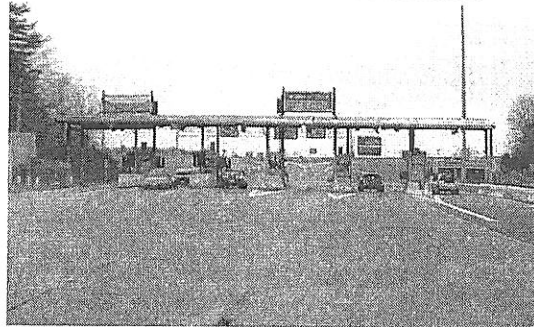
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Contemporary Toll Plaza



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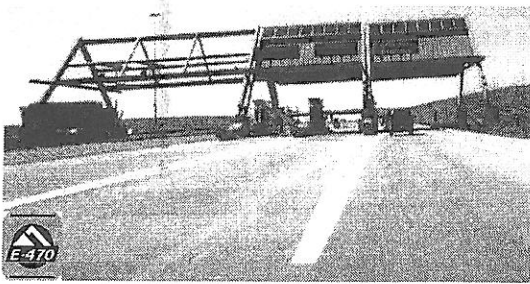
Contemporary Toll Plaza – With Electronic Toll Collection



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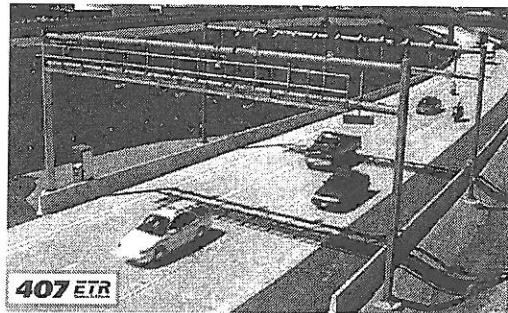
Contemporary Toll Plaza – With High Speed Electronic Toll Collection



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Open Road Tolling - Barrier-Free Overhead Gantry



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The Future of Toll Agencies

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Legacy and Challenges of US Toll Agencies



- Early toll agencies were quasi-public entities, established by governments run more like business enterprises
- In the 20th Century, state and federal governments adopted fuel taxes as an efficient means of paying for roads and bridges
- Toll agencies served narrow purposes and were largely left alone by their public counterparts
- Immediate post World War II era saw rebirth of toll roads in many states in the Northeast

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Legacy and Challenges of US Toll Agencies - continued



- Interstate system and dedicated Transportation Trust Fund propelled federal involvement in highway development across US
- In the 1980s and early 1990s, there was a strong push to:
 - Eliminate tolling from highways in the US
 - Eliminate independent toll agencies or consolidate them into state transportation agencies
- International response was opposite as privatized toll-based concession arrangements replaced public ownership/operation of highways

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Legacy and Challenges of US Toll Agencies - continued



- Shocks created by energy crises and public tax revolts undermined viability of federal Transportation Trust Fund
- National debate over ways to finance highway infrastructure resurrected toll-based financing approaches
- State transportation agencies have begun to develop their own tolling "subsidiaries"
- Debate continues – how will the toll industry respond?
- Key question – which model will emerge and which is the takeover target? (hint – follow the money)

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Contrasting State DOTs and Toll Agencies



State DOTs

- Pay-as-you-go funding through fuel excise taxes
- Short-term orientation
- Focus on local general contractors
- Project-based accountability
- Risk adverse
- Process driven
- Sunk costs
- Standardization
- Restrictive management style
- Grade/tenure-based management style
- Hierarchical staff



Toll Agencies

- Front-end financing through tax-exempt revenue bonds
- Long-term orientation
- Focus on customers and bondholders
- Service/fiscal accountability
- Managed risks
- Product/outcome driven
- Investments
- Innovation
- Permissive management style
- Performance-based management style
- Empowered staff

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Key Threats to State DOTs – or who moved my cheese?

- Unwillingness of political leadership to continue to support excise taxes for transportation capital investment
- Development of alternative fuels and more fuel-efficient vehicles
- Competition for general fund revenues and diversion/ erosion of trust fund revenues to other uses/political agendas (ethanol exemption)
- Deferred maintenance of transportation facilities – day of reckoning approaches



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Key Threats to Toll Agencies – or who wants my cheese?

- Political opposition to needed toll increases
- Efforts to eliminate tolls or sell off "mature" facilities
- Take over efforts by state DOTs
- Opposition to waiting in line to pay tolls
- Temptation for fiscal and program mismanagement by agency leaders or political boards – decays public trust
- Political diversions of toll agency funds to other purposes – cookie jar syndrome
- Lack of interoperability of toll systems
- Isolationism



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Key Opportunities Facing Highway Transportation Agencies

- Public love affair with the automobile – continues
- Public demand for system capacity – increases
- Public willingness to support local transportation programs that promote mobility, accessibility, safety, and economic development – apparent
- Development of alternative approaches to develop, finance, and preserve transportation infrastructure – continues
- Increased visibility and accountability of transportation infrastructure through public financial reporting – GASB 34



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10 Key Advantages of Toll Agencies

(- why I believe toll agencies will emerge stronger)

1. Dedicated funding sources – tolls, concessions, other
2. Focus on paying user – customer service orientation
3. Long term focus – based on duration of bonds and assets
4. Commitment to life-cycle asset management – based on priorities of bond covenants
5. Front-end revenue bond financing to build facilities faster – gain economic benefits earlier



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10 Key Advantages of Toll Agencies

(- why I believe toll agencies will emerge stronger - continued)

6. Fiscal discipline of bond covenants – keep the sharks away (but beware of the internal sharks and "in-laws")
7. Ability to leverage financial resources once first generation facilities become stable – cash cows
8. Easier to apply business best practices – efficiency counts
9. Greater internal flexibility and resiliency to change
10. Political priorities balanced by fiscal/service principles

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Likely Trends and How to Capitalize on Them

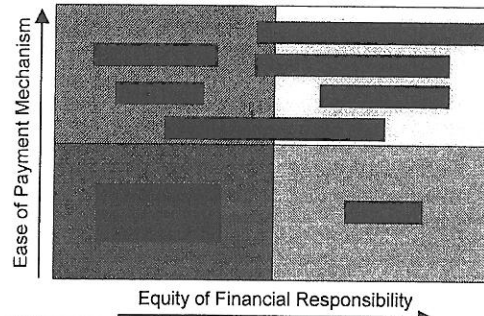


- Decaying financial viability of fuel-based excise taxes – keeps interest in the toll concept
- Greater emphasis on alternative finance methods – to replace or augment excise tax revenues
- Increased cooperation among private and public entities – through public-private and public-public agreements (innovative contracting)
- Greater flexibility for state/local governments to decide how to fund/manage highway facilities

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Cross Section of Highway Funding Mechanisms



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Likely Trends and How to Capitalize on Them - continued

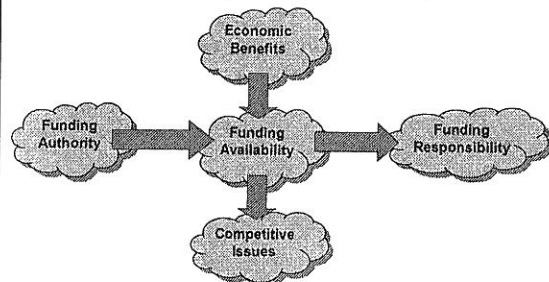


- Greater private sector interest in participating in highway infrastructure financing – particularly from non-US sources
- Evolution of open road tolling/charging for road use (ETC, photo-recognition, GPS tracking systems)
- Multimodal considerations (auto-truck-transit)
- Advent of asset stewardship linked to new financial reporting requirements of GASB 34

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Relate Economic Benefits to Funding Responsibility



Create an economic nexus between user/stakeholder benefits and cost of facility

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The Enemy Within – Complacency



- Toll agencies largely fell asleep in the 1960/70s
 - Pay off bonds, stay out of the public eye, and remain isolated
 - Facilities became deteriorated – despite bi-annual engineering inspections
 - Toll agencies increasingly became the target of public complaints, claims of political chicanery, fiscal and fiduciary abuses, and takeover threats
- Wake up call came in 1980s and 1990s when bonds were approaching retirement and efforts arose to eliminate tolls or sell off the assets

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The Wake Up Call



- Early 1990s – toll agencies faced greatest threats to their continued existence as FHWA sought to eliminate tolls by offering federal Transportation Trust Funds to rehabilitate aging toll facilities
- Toll agencies were saved by their inherent strengths:
 - Dedicated funding (golden goose)
 - Refocus on customer/service
 - Refocus on infrastructure
 - Commitment to the long-term
- Where does the toll industry go from here?

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Facing Future – Creating Future



- Toll agencies will become multimodal in nature
 - Facilities - Operations - Services
- State DOTs will begin to look more like toll agencies of today as they seek other funding sources and learn the lessons of accountability
- Strong political pressure will be exerted on toll agencies to act like state DOTs, in terms of:
 - Project selection and packaging
 - Project programming and management
 - Contract allocation among traditional industry stakeholders

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Facing Future – Creating Future



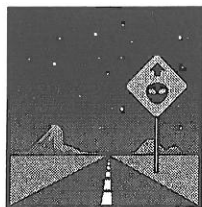
- Funding sources will become more diversified, as investors recognize the value of investments in US-based highway infrastructure
- New alignment will increasingly tap the economic benefits of adjacent property owners as part of the funding package
- Toll agencies will have many public and private partners to leverage their capabilities/resources
- Vehicle-distance, GPS-based tolling will emerge as predominant form of toll collection:
 - First overseas and then in the US
 - For all portions of National Highway System

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Key Words to Remember

- Customer service focusing
- Innovative financing
- Partnering
- Managing assets
- Managing change
- Resiliency
- Flexibility
- Forward thinking



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Presenter

Daniel Dornan, P.E., a Vice President of AECOM Consult, Inc., provides management consulting services to transportation agencies and organizations across the country. He has more than 27 years of experience in serving state and local infrastructure agencies, including state departments of transportation; toll, transit, and port authorities; and local public works departments. Mr. Dornan's expertise includes strategic planning, organizational transformation, business process improvement, transportation planning, asset management, performance auditing and measurement, and change management.

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