



**TRANSPORTATION ACCOUNTABILITY  
COMMISSION**

**OVERSIZE AND OVERWEIGHT VEHICLE  
STUDY**

**August 18, 2009**

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## **HB 1551 Mandate**

**Called for review of current fee structure for overload and overweight vehicles**

- Conducted by VDOT, in consultation with DMV and industry representatives**
- Determined what, if any, add'l fees should be associated with damage and add'l maintenance costs**

**VDOT Commissioner recommended legislation regarding the fee structure at the CTB meeting on Nov. 19, 2008**

**General Assembly did not adopt changes and issue was sent to Commission**

# Overweight Permits Issued FY08

Type	Number Issued	Permit Revenue	Avg.
Single Trip	75,500	\$1,647,000	\$22
Blanket	6,273	\$975,000	\$155
Tank Wagons*	53	\$42,400	\$800
Hydroexcavators	12	\$1,580	\$132
Exempt	10,551	0	0
Coal Haul**	750	0	0
<b>Total</b>	<b>93,139</b>	<b>\$2,665,980</b>	--

\*Current fee is \$265 for tank wagons based on previous work done by VRTC

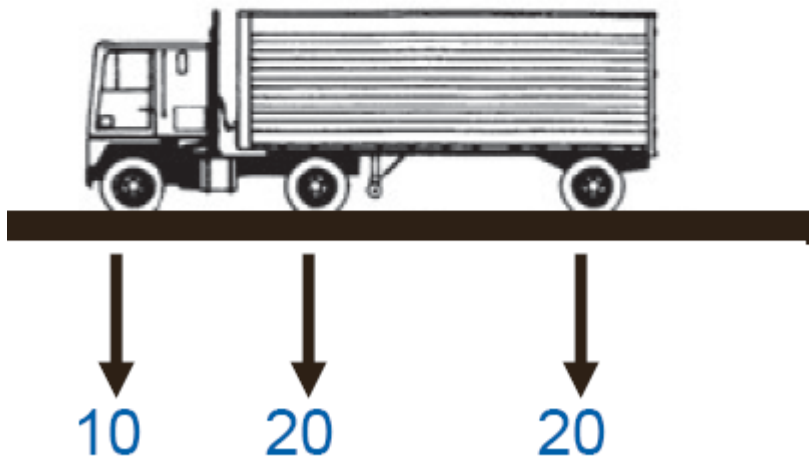
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\*\*No permit fees charged; pay coal severance tax instead

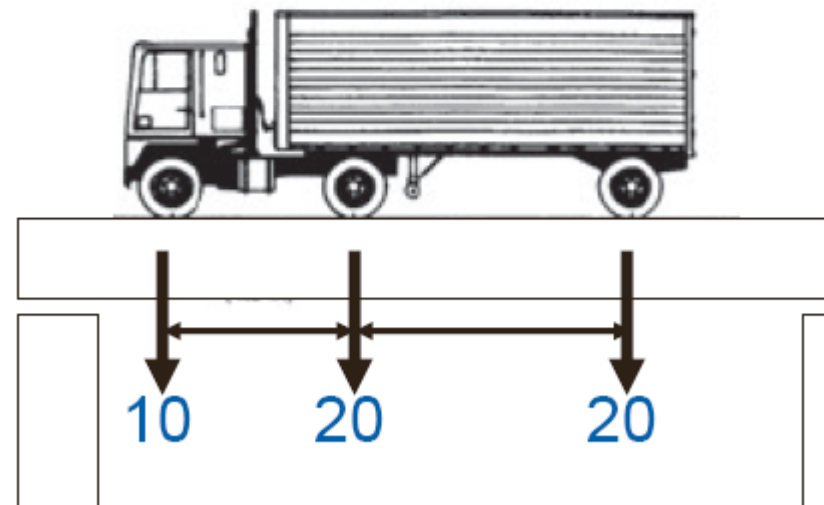
# Engineering Principles, ESALs, and Bridge Stress & Strain

## Weight Matters!

Pavements



Bridges



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# Axle Weight Related Pavement Cost Analysis

## Methodology

- Uses axle weights of all vehicles to determine cost per ESAL-mile traveled – VA weigh-in-motion data
- Accounts for miles trucks travel at less than full capacity
- Charges only for axle weights above standard legal weight limits
- Can be used to estimate the added maintenance cost from a single overweight trip or for blanket permits

# Weight-Related & Axle Configuration Bridge Damage Cost Analysis

## Methodology

- Incorporated VDOT Structure and Bridge Division permit calculation procedure for effects of truck weight and configuration on bridges
- Uses all DMV hauling permits issued for FY08 as base
- 30,000 permits issued affect bridge deterioration and maintenance costs

## Findings

- **Appropriate permit fees for overweight vehicles can be estimated that relate axle weight and configuration to pavement and bridge deterioration**
- **For pavements, the fee is estimated to be 3.56 cents per ESAL-mile traveled for weights above the legal limit**
  - **For a tractor-trailer that is 10,000 pounds overweight and eligible for a blanket permit, this equates to about 4 cents per mile**
- **For bridges, the fee can be set based on a policy decision to recover all or a portion of the damage cost per permitted trip**

# Sample Fee

Single trip

6 Axle Tractor Truck & Semi-Trailer



Traveling I-81 NB  
325 miles  
58 bridges

Pavement Fee	\$37.16
Bridge Fee	\$105.51
Total	<u>\$142.67</u> <sup>a, b</sup>

<sup>a</sup> Does not include common costs

<sup>b</sup> Fees shown apply only to axle- or gross weight in excess of legal limits

# Sample Fee

## Blanket Permit



Good for 12 months  
 Estimated miles: 50,000  
 Bridges crossed: unknown

Pavement Fee	\$2000
Bridge Fee	<u>\$403</u>
Total	\$2403 <sup>a, b</sup>

<sup>a</sup> Does not include common costs

<sup>b</sup> Fees shown apply only to axle- or gross weight in excess of legal limits



## Results of the Analysis: Example Fees

Truck	Pounds (000)		Len (Ft)	Dist (Mi)	Permit Fee	
	Permit	Legal			Current	Potential
5 Axle Tractor Truck	100	80	54	50000	\$165	\$3408
5 Axle Tractor Truck	92	80	48	50000	\$165	\$1896
3 Axle Dump Truck	60	46	22	10000	\$45	\$796
4 Axle Concrete Truck	70	58	25	10000	\$0	\$1158
7 Axle Tractor Truck	122	80	64	20	\$14	\$54
7 Axle Tractor Truck	132	80	78	335	\$46	\$150
7 Axle Tractor Truck	132	80	57	335	\$36	\$161
9 Axle Tractor Truck	168	80	92	335	\$50	\$217

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Does not include common costs and fees are only for axle- or gross-weights in excess of legal limits

# Overweight Permit Fee Administration

## For pavement damage fees:

- **Truck configuration and axle weights are reported in permit applications now**
  - ESALS can be readily calculated from this
- **Estimated mileage can be reported to DMV**

## For bridge damage fees:

- **Truck configuration and axle weights are reported in permit application now**
- **VDOT Structure and Bridge calculates damage caused relative to standard design vehicle now**

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# Policy Issues Related to Recommending An Overweight Permit Fee Structure

## Should fees be based on pavement impacts, bridge impacts or both?

- Permitted overweight load-related pavement impact is approximately \$180 million; for bridges \$24 million

## Issue of keeping fees reasonable during difficult economic times

- Very long haul permit fees could significantly increase shipping costs
- Impact on Ports

## Example exemptions presently in place

- Containerized freight—7400 permits
- 2 or 3 axle solid waste—1100 permits

## Revenue potential

- If all vehicles presently charged for permits paid fees equal to tank wagons, it would generate almost \$22 million
- If containerized cargo and solid waste paid, it would generate an additional \$2.25 million
- A bracket scale of permit fees that accounted for long-haul blanket permits presently granted at very low amounts could easily generate \$30 to \$50 million depending on the fees charged.