


Table 38. Vertical height detection systems.

Initiative 37: Vertical Height Detection Systems	
Description: Vertical height detection systems (VHDS) detect over-height trucks moving toward road structures, warning the truck driver to avoid collision with the structure	
Targeted mode: All traffic	Geographic scope: City, area
Type of initiative: Logistical management: intelligent transportation systems (ITS): Vertical height detection systems (VHDS)	Primary objective: Reduce damage to structures by over-height vehicles
Expected costs and level of effort to implement: VHDS are based on ITS; they require careful planning to consider the freight movement, road network, and land use in the area. The planning process should involve the engagement of stakeholders and the participation of the government (e.g., DOTs). The costs are mainly those associated with the initial capital investments and operational costs. (Some VHDS use solar energy as the power source.)	
Advantages: <ul style="list-style-type: none"> • Decrease damage to infrastructure • Reduce damage to trucks/trailers and occupant injuries • Decrease traffic backups due to a reduction of vehicle • Collisions with overhead structures • Reduce accident claims due to a reduction of truck-overhead structure accidents • Automatic notification of incident/violation 	Disadvantages: <ul style="list-style-type: none"> • Require real-life traffic information • Require very high/high capital investments • Presence of false positives (e.g., birds)
Examples: <ul style="list-style-type: none"> • Over-height vehicle detection on the Blackwall Tunnel, London, England (ITS International 2013) • Over-height vehicle detection system at the Duhail Interchange of the Doha Expressway (Qatar) (Traffic Tech Group 2013) 	
	
Sources: ITS International 2013; Traffic Tech Group 2013	
Related alternatives: 1. Vehicle Size and Weight Restrictions ; 2. Real-Time Information Systems ; 3. Dynamic Routing	
References: Mattingly 2003; BESTUFS 2007; NZ Transport Agency 2011; SUGAR 2011; ITS International 2013; International Road Dynamics Inc. 2014	