Table of Contents

	Summary	
In	ntroduction	ES-1
В	ackground	ES-2
St	tudy Approach	ES-2
II	lustrative Truck Size and Weight Scenarios	
	Uniformity Scenario	
	North American Trade Scenarios	
	Longer Combination Vehicles Nationwide Scenario	
	H.R. 551 Scenario	
	Triples Nationwide Scenario	ES-5
	lustrative Scenario Impacts	
C	onclusions	ES-10
-	Report	
	troduction	
В	ackground	
	1956-1975	
	1982-1991	
	1991 to Present	
St	tudy Approach	
	Review Process	
	Case Studies, Focus Groups	
	Impact Analyses	
	ehicle Characteristics	
	ighway Networks	
In	mpact Assessment	
	Infrastructure Costs	
	Pavement	
	Bridges	
	Geometrics	
	Safety Impacts	
	Crash rates	
	Public Perception	
	Vehicle Stability and Control	
	Vehicle Comparisons	
	Traffic Operations	
	Impacts on Capacity	
	Energy and Environment	
	Rail Impacts	
	Shipper Costs	
II	lustrative Truck Size and Weight Scenarios	
	Uniformity Scenario	31
	North American Trade Scenarios	32
	Longer Combination Vehicles Nationwide Scenario	
	H.R. 551 Scenario	34

Triples Nationwide Scenario	34
Illustrative Scenario Impacts	34
Diversion	34
Costs	35
Future Research	39
Conclusions	40
State Perspectives	40
Truck Size and Weight Trends	40
Cost Recovery	41
Next Steps	41
List of Tables	
Table 1. Existing Truck Fleet and Vehicle Miles of Travel, 1994 and 2000 Projections	9
Table 2. General 1994 State Weight Limits	
Table 3. 1994 Maximum Semitrailer Lengths by State	
Table 4. Longer Combination Vehicle Weight Limits by State	
Table 5. Characteristics of Typical Vehicles and How They Currently Are Used	
Table 6. Theoretical Load Equivalency Factors per 100,000 pounds of Payload Carried By Study Vehicles	
Configurations	
Table 7. Vehicle Passenger Car Equivalents Rural Highways	
Table 8. Vehicle Passenger Car Equivalents Urban Highways	
Table 9. Summary of Effects of Truck Size and Weight Characteristics	21
on Highway and Traffic Operations	28
Table 10. Noise Passenger Car Equivalents for Trucks	
Table 11. Diesel Fuel Use Rates for Illustrative Vehicle at Different Weights	2)
(miles per gallon)	29
Table 12. Estimated Diversion for Selected Vehicle Configurations	2)
for Illustrative Truck Size and Weight Scenarios	37
Table 13. Estimated Impacts of Illustrative Truck Size and Weight Scenarios	5,
(Percent Change from Base Case)	38
(refeelt change from Base case)	50
List of Figures	
Figure 1. Current Federal Truck Size and Weight Limits	3
Figure 2. National Freight Transportation Policy Statement (January 1997)	5
Figure 3. Factors Affecting Federal Truck Size and Weight Law	.6
Figure 4. Illustrative Vehicle Configurations	8
Figure 5. States Allowing Various Longer Combination Vehicles	16
Figure 6. National Network for STAA Vehicles	16
Figure 7. 1998 Comprehensive Truck Size and Weight Study Analytical Network for Longer Combina	
Double-Trailer Vehicles	
Figure 8. 1998 Comprehensive Truck Size and Weight Study	
Analytical Network for Longer Combination Triple-Trailer Vehicles	17
Figure 9. Comparison of Stability and Control Measures for Scenario	
Vehicles Relative to Five-Axle Tractor Semitrailer	24
Figure 10. Uniformity Scenario	
Figure 11. North American Trade Scenarios	

Figure 12.	Longer Combination Vehicles Nationwide Scenario	33
Figure 13.	Triples Nationwide Scenario	34
Figure 14.	H.R. 551 Scenario	34

Note

The Comprehensive Truck Size and Weight Study was begun in 1994 along with a companion study, the Federal Highway Cost Allocation Study that was submitted to Congress in August, 1997. The same basic data on truck travel were to be used for both studies so that important conclusions about cost responsibility and user fee equity developed in the cost allocation study could be used in assessing illustrative truck size and weight policy scenarios analyzed in the Comprehensive Truck Size and Weight Study. This truck size and weight study was anticipated to be completed shortly after the cost allocation study, but was delayed for several reasons including unanticipated technical difficulties with a key component of the analytical framework and the release of drafts of Volumes II and III for public comment. Drafts of reports to Congress normally are not released for comment, but because of the extraordinary interest and sensitivity of this study, the Department decided to solicit comments on drafts of the main technical sections of this report. Because of these delays, data in the report are not the most currently available. The 1994 base year data were the most current at the time the study was initiated, but later data are now available. Likewise, 2000 was chosen for the future analysis year, but the report could not be completed until 2000. Revising the report to use a different analysis year would have delayed the report still further and more importantly would have destroyed the direct link between the cost allocation study and the truck size and weight study. Furthermore, updating data used in the report would not substantially change basic findings of the scenario analyses conducted for this study. The Department concluded that it would be better to submit the report using the 1994 base year and the 2000 analysis year even though more recent data are available. Both the highway cost allocation study and the truck size and weight study can be updated before surface transportation reauthorization and many improvements in data and methods can be incorporated in those updates.