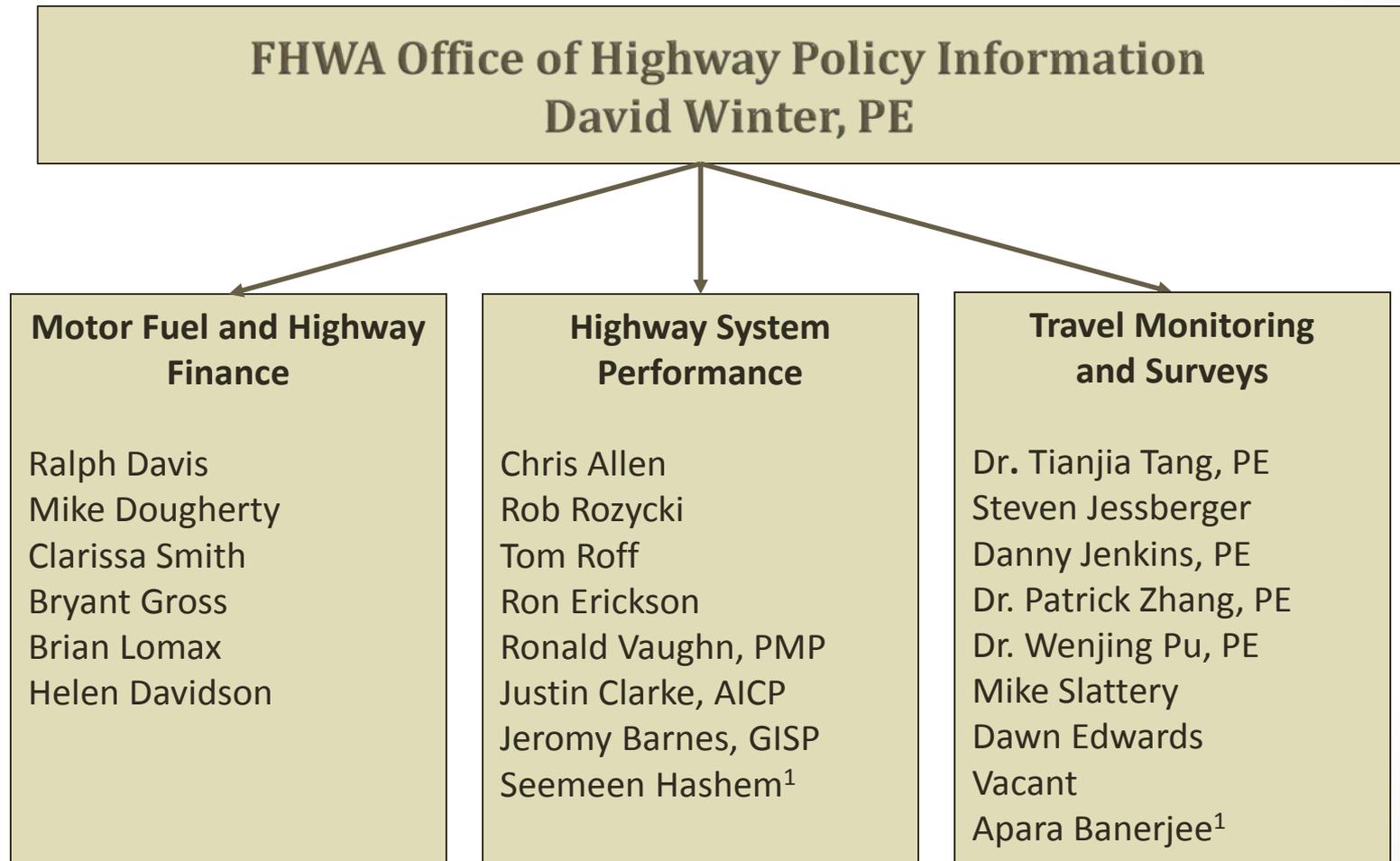


Updated Vehicle Inventory Data Focusing on Trucks

Daniel Jenkins & Wenjing Pu
Highway Information Seminar
November 15, 2017



Office Organizational Chart



1 – Indicates contractor



Project Tasks

- Develop Vehicle Inventory Pictorial Illustrations
- Develop Vehicle Axle Spacing Data and Illustrations
- Develop Vehicle Tire Arrangement Data and Illustrations
- Review FHWA 13 Vehicle Classes' Empty GVW, GVWR and Curb Weight Data

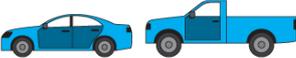
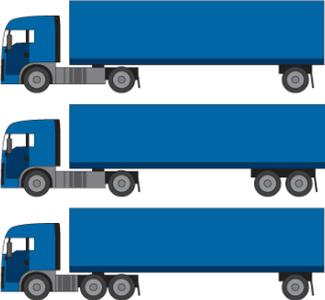
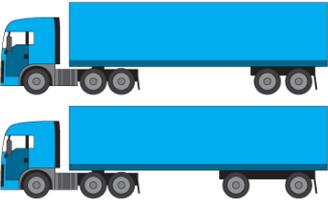


Vehicle Inventory Pictorial Data

- All 13 FHWA vehicle classes
- Minimum 20 vehicles per vehicle class (only 14 motorcycles, however)
- Minimum 650 vehicles
- Nationwide coverage



FHWA 13 vehicle classes

FHWA Vehicle Classifications				
<p>1. Motorcycles 2 axles, 2 or 3 tires</p> 	<p>2. Passenger Cars 2 axles, can have 1- or 2-axle trailers</p> 	<p>3. Pickups, Panels, Vans 2 axles, 4-tire single units Can have 1 or 2 axle trailers</p> 	<p>4. Buses 2 or 3 axles, full length</p> 	
<p>5. Single Unit 2-Axle Trucks 2 axles, 6 tires (dual rear tires), single-unit</p> 	<p>6. Single Unit 3-Axle Trucks 3 axles, single unit</p> 	<p>7. Single Unit 4 or More-Axle Trucks 4 or more axles, single unit</p> 	<p>8. Single Trailer 3- or 4-Axle Trucks 3 or 4 axles, single trailer</p> 	
<p>9. Single Trailer 5-Axle Trucks 5 axles, single trailer</p> 		<p>10. Single Trailer 6 or More-Axle Trucks 6 or more axles, single trailer</p> 		
<p>11. Multi-Trailer 5 or Less-Axle Trucks 5 or less axles, multiple trailers</p> 		<p>12. Multi-Trailer 6-Axle Trucks 6 axles, multiple trailers</p> 		
<p>13. Multi-Trailer 7 or More-Axle Trucks 7 or more axles, multiple trailers</p> 				



Final Pictorial Count

Category	Total Count	Side Picture Count	Front Picture Count	Rear Picture Count	Dimension Picture Count
Class 1	14	14	2	2	2
Class 2	20	15	0	0	6
Class 3	36	20	0	0	4
Class 4	29	14	2	2	0
Class 5	23	19	1	1	1
Class 6	39	25	3	4	3
Class 7	36	27	1	1	0
Class 8	60	1	1	0	0
Class 9	75	28	2	1	0
Class 10	138	37	2	2	1
Class 11	30	3	9	0	0
Class 12	32	0	4	2	2
Class 13	172	37	4	4	2
TOTAL	704	240	31	19	21



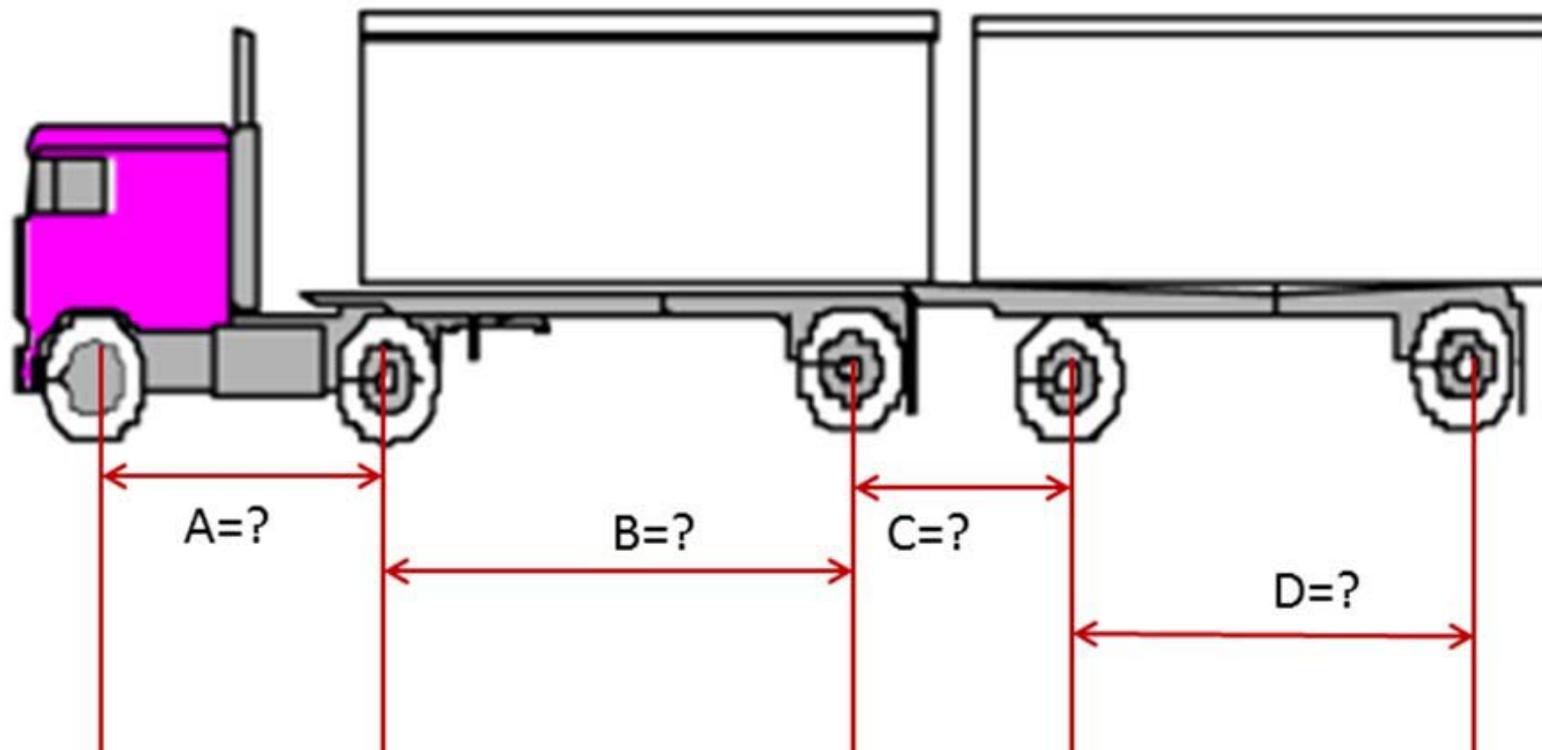
Field Trips for Photo/Illustration Data Collection



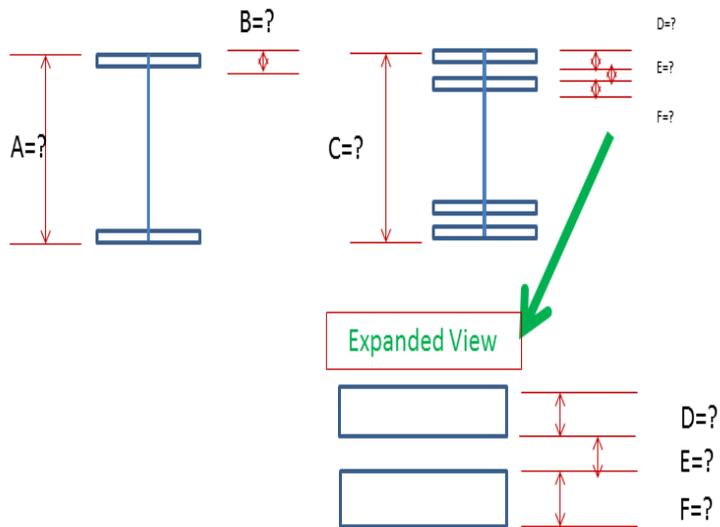
Class 1- motorcycles



Axle spacing



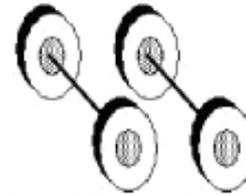
Tire arrangements



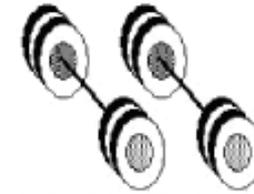
Single Axle with Single Tires



Single Axle with Dual Tires



Tandem Axles with Single Tires



Tandem Axles with Dual Tires



Class 3 Example

ID 3-2

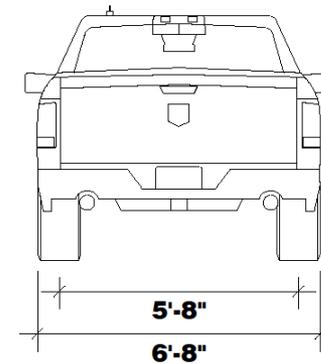
FHWA Vehicle Class : 3

Mid Size Pickup

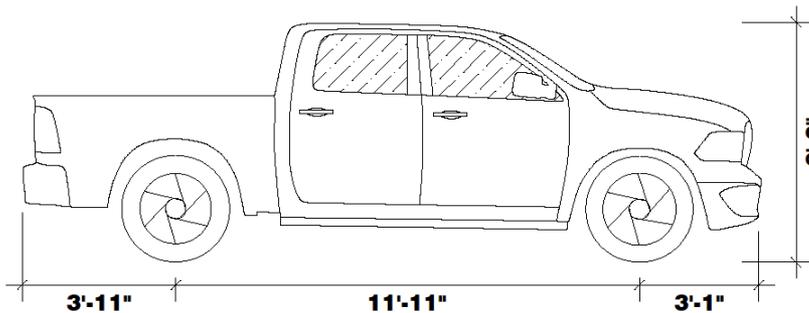
3D Model view



Back View



Side View



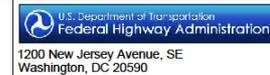
☆ Dimension Details

Vehicle Specification	Measured (Field)	Estimated (Pixel-base)	Variance (%)	Range
Front Overhang		3'-1"		
Interaxle_1		11'-11"		
Rear Overhang		3'-11"		
Overall Height	6'-8"	6'-3"	5.95%	
Overall Width	6'-7"	6'-8"	0.75%	
Rear Track	5'-8"	5'-8"	0.00%	

☆ Pixel dimension is based on rim size. Dimension in ft-in.

Location	No Data Available
Regions Operating	ALL
Main Commodity	No Data Available
Signature	

Dimension shown in figure is an example.



Class 7 Example

ID 7-36

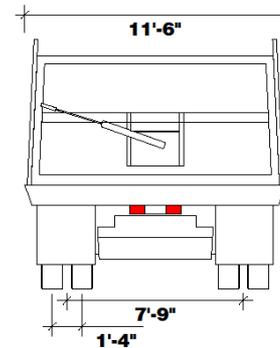
FHWA Vehicle Class : 7

Dump Truck(1-4)

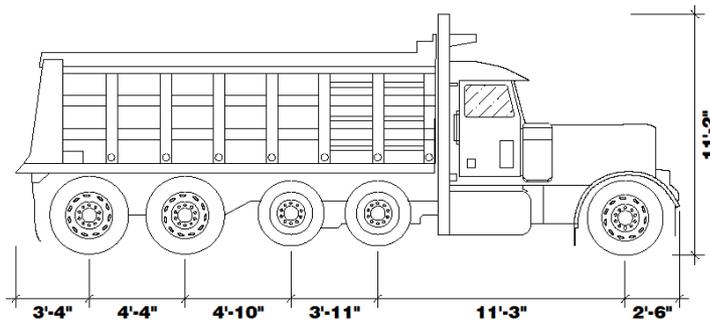
3D Model view



Back View



Side View



☆ Dimension Details

Vehicle Specification	Measured (Field)	Estimated (Pixel-base)	Variance (%)	Range
Front Overhang		2'-6"		
Interaxle_1		11'-3"		
Interaxle_2		4'-10"		
Interaxle_3		3'-11"		
Interaxle_4		4'-4"		
Rear Overhang		3'-4"		
Overall Height		11'-2"		
Overall Width		11'-6"		
Rear Track		7'-9"		
Twin Wheelbase		12'-4"		

☆ Pixel dimension is based on rim size. Dimension in ft-in.

Location	No data available
Regions Operating	ALL
Main Commodity	No data available
Signature	

Dimension shown in figure is an example.

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Washington, DC 20590



Class 12 Example

ID 12-22

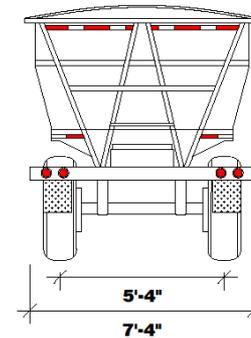
FHWA Vehicle Class : 12

2-S2-2 (Extended Hitch) Dump Truck

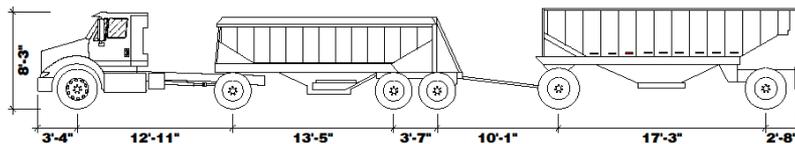
3D Model view



Back View



Side View



☆ Dimension Details

Vehicle Specification	Measured (Field)	Estimated (Pixel-base)	Variance (%)	Range
Front Overhang		3'-4"		
Interaxle_1		12'-11"		
Interaxle_2		13'-5"		
Interaxle_3		3'-7"		
Interaxle_4		10'-1"		
Interaxle_5		17'-3"		
Rear Overhang		2'-8"		
Overall Height		8'-3"		
Overall Width		7'-4"		
Rear Track		5'-4"		

☆ Pixel dimension is based on rim size. Dimension in ft-in.

Location	NE
Regions Operating	ALL
Main Commodity	No data available
Signature	

Dimension shown in figure is an example.

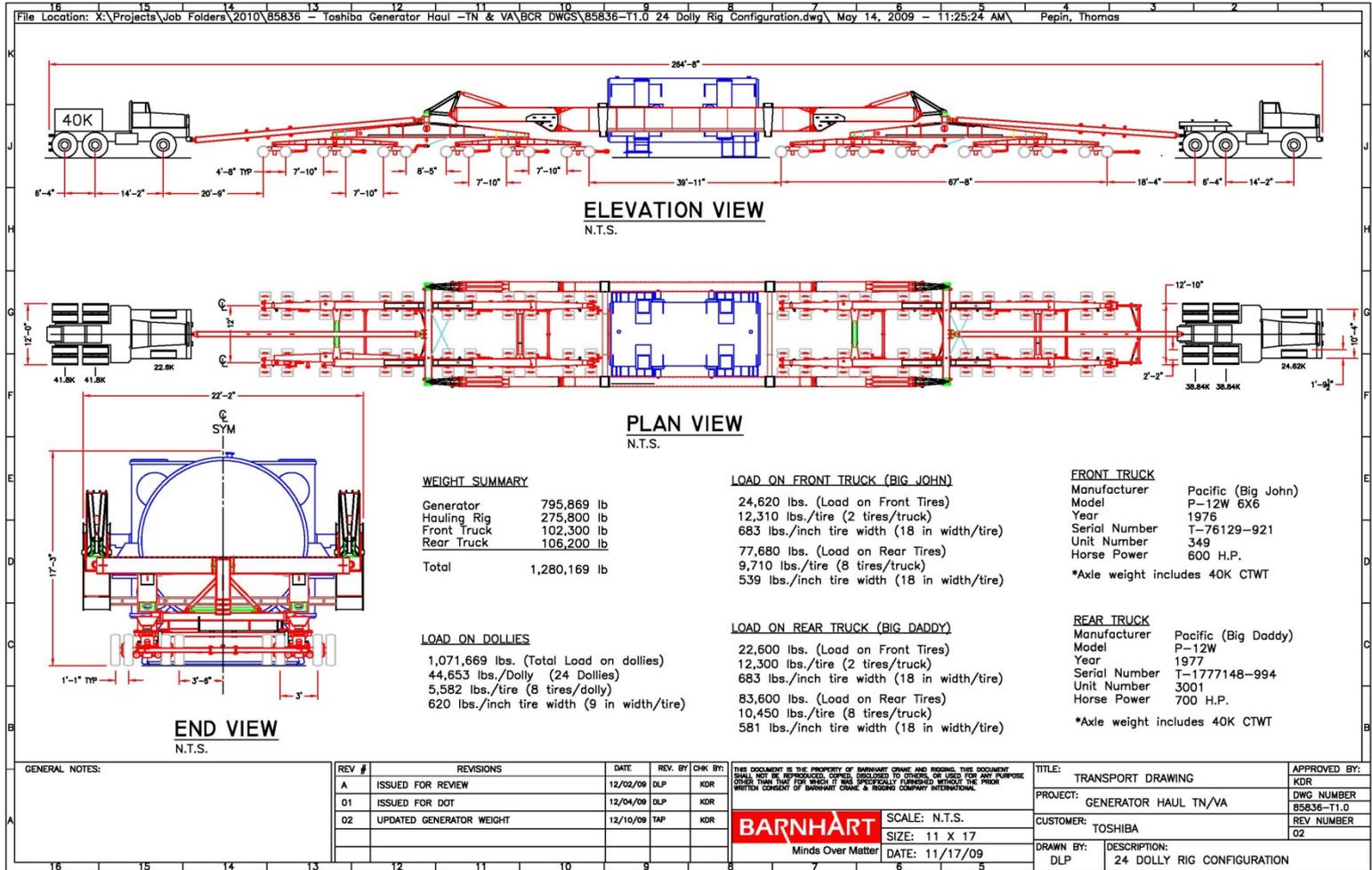
U.S. Department of Transportation
Federal Highway Administration
1200 New Jersey Avenue, SE
Washington, DC 20590



Unique sightings



Superloads



How can vehicle inventory data be used

- Freight analysis
- Pavement/bridge design
- Geometric design
- Safety analysis
- Environmental analysis (air/noise)
- Origin-Destination (when coupled with signature data)



Questions and Comments

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