

AASHTO
EQUIPMENT REFERENCE
BOOK



American Association of State
Highway and Transportation Officials

Highway Subcommittee on Maintenance

Equipment Information Exchange

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I. GENERAL

Introduction

The American Association of State Highway and Transportation Officials (AASHTO) Highway Subcommittee on Maintenance promotes and encourages technology transfer by member states and related agencies. To this end the purpose for which this Equipment Reference Book is intended is to foster the development of shared information with other states in considering matters of mutual interest in serving the public need. Initially, efforts are toward mutual sharing of major equipment purchase specifications, and to promote new and innovative equipment purchasing methods, purchasing ideas, maintenance equipment practices, and the establishment of state contacts within major equipment purchasing branches.

This publication represents the eleventh edition of the Equipment Information Exchange Annual Equipment Reference Book. Positive feedback from member states indicates that the worth of this publication becomes greater with each passing day.

Each state is encouraged to provide and share information on these and other topics relative to major equipment purchase specifications. Information you wish to share for publication in future issues of the newsletter should be forwarded to:

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II. POLICIES

The Highway Subcommittee on Maintenance recognizes that purchasing policies vary between the states. While the responsibility and authority to purchase equipment, material, goods, supplies, and services are a part of our everyday life, each of the states could mutually benefit by providing and sharing information on new and improved maintenance equipment and practices. Sharing of data on new types of equipment that will further mechanize and reduce costs of maintenance operations, and identification of features that should be corrected, could benefit us all. Therefore, information you wish to share with other states should be made available for future publications.

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State Road Maintenance & Equipment Section

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35.

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Department of Transportation
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Maintenance & Engineering Services Division

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Chris Padilla, Equipment Specifications & Management	(701)328-3225 E-Mail: cpadilla@state.nd.us

State Fleet Services Division

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Paul Hanson, Fleet Truck Coordinator	(701)328-1465 E-Mail: phanson@state.nd.us
Arden Johnson, Fleet Manager	(701)328-1466 E-Mail: arjohnso@state.nd.us
Tim Paul, Fleet Manager	(701)328-3064 E-Mail: tpaul@state.nd.us

36.

**OHIO
Department of Transportation
1980 West Broad St
PO Box 899
Columbus OH 43223-1202**

Office of Highway Management

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---	--

**Office of Equipment Management
1620 West Broad St
Columbus OH 43223-1202**

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37.

OKLAHOMA
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38.

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Department of Transportation
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Salem OR 97301-5348
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39.

PENNSYLVANIA
Pennsylvania Department of Transportation
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Harrisburg PA 17120

Equipment Division
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Bureau of Maintenance & Operations
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Harrisburg PA 17105-2857
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40.

RHODE ISLAND
Department of Transportation
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Division of Highway & Bridge Maintenance

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Division of Public Works

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41.

SOUTH CAROLINA
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Huley G. Shumpert, State Maintenance Engineer

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42.

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43.

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44.

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45.

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46.

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47.

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48.

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49.

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50.

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51.

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Equipment Division

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2.

PUERTO RICO
Department of Transportation & Public Works
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San Juan Puerto Rico 00940-1269

Office of the Secretary

Dr. Fernando Fagundo, Secretary of Transportation & Public Works

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Office of the Director for Public Works

Luis Trinidad, Executive Director

(787) 723-2777

IV. EQUIPMENT SPECIFICATIONS**A. SPECIFICATIONS INVENTORY BY STATE****1. ALABAMA**

Number	Date	Title
001	98	Airplane Turbo Prop. 2 Engine
002	98	Airplane Reciprocating 2 Engine
003	03	Automobile - Gas
004	03	Automobile - Flex Fuel
005	03	Leased Automobiles
006	01	Auto Full Size
007	99	Airplane Jet Leased
008	99	Auto Propane
010	99	Post Auger Truck Diesel 2 ½ Ton
013	04	All Terrain Tool Carrier – Unimog
015	90	Auger Truck with Bucket Diesel 4-Ton Derrick
016	99	Auger Truck w/ Bucket Diesel 5-Ton Derrick
017	92	Bridge Rating Truck, Diesel 10 Ton
020	03	One (1) Ton Bucket Truck Diesel
025	03	Bucket Truck 2 - 3 Ton Diesel
026	03	Bucket Truck/Sign 2 Ton Diesel
040	99	Bus Diesel 29 - 39 Passenger
045	03	Bus Gas - 29 Passenger
050	02	Carryall Diesel
055	02	Carryall Diesel 4-Wheel Drive
057	03	Carryall Carryall 1/2 Ton Flex Fuel
060	03	Carryall Gas
065	02	Carryall Gas 4-Wheel Drive
070	98	Carryall Leased
075	00	Chassis Diesel 3/4 - 1 Ton
078	00	Chassis Diesel 1-1/2 Ton Automatic Transmission
079	98	Chassis Diesel 1-1/2 Ton Standard Transmission
080	00	Chassis Diesel 2 Ton
082	99	Chassis Diesel 3 - 4 Ton
084	99	Chassis 5-Ton Diesel
085	98	Chassis Gas 3/4-1 Ton
093	90	Knuckleboom Crane Truck 1-1/2 Ton Diesel
095	89	Crane Diesel 3 Ton
100	03	Crane Diesel Knuckleboom 2 - 3 Ton
101	98	Crane Diesel Knuckleboom 4 Ton
103	93	Crane Diesel Knuckleboom 5 Ton
105	98	Dist. Dsl. & Gas 600 -1000 Gal. Asph. Tank
110	01	Dist. Dsl. & Gas 1250 - 1500 gal. Asph. Tank
115	89	Drill Unit Diesel 3/4 - 1 Ton
120	91	Drill Unit Gas 3/4 - 1 Ton
121	99	Drill Unit 1-1/2 Ton 4x4 Diesel
125	98	Drill Unit Gas 2 Ton
126	02	Drill Unit Diesel 2 - 2-1/2 Ton 4x4
127	04	Drill Unit Diesel 2 - 2-1/2 Ton
135	98	Core Drill Truck Mounted
140	02	Dump Diesel 2 - 2-1/2 Ton Automatic Transmission
145	00	Dump Diesel 2 - 2-1/2 Ton Std. Transmission
150	03	Dump Diesel 4 Ton Automatic Transmission
155	98	Dump Diesel 4 Ton Standard Transmission
160	03	Dump Diesel 5 Ton Automatic Transmission
165	03	Dump Diesel 5 Ton Standard Transmission
167	03	Tri-Axle Dump, Diesel, Standard Transmission
190	02	Flat Diesel 1 Ton
194	02	Flat Diesel 1-1/2 Ton Automatic Transmission
195	02	Flat Diesel 2 - 2-1/2 Ton Automatic Transmission

EQUIPMENT SPECIFICATIONS

Alabama (continued)

Number	Date	Title
199	98	Flat Diesel 1-1/2 Ton Standard Transmission
200	99	Flat Diesel 2 - 2-1/2 Ton Standard Transmission
205	95	Flat Diesel 3 Ton Automatic Transmission
210	98	Flat Diesel 3 Ton Standard Transmission
215	02	Flat Gas 1 Ton
218	00	Flat Gas 1-1/2 Ton Automatic Transmission
219	98	Flat Gas 1-1/2 Ton Standard Transmission
220	98	Flat Gas 2 -2-1/2 Ton Standard Transmission
235	03	Flat Crew Cab Diesel 1 Ton
236	03	Flat Diesel 1-1/2 Ton
240	03	Flat C.C. Diesel 2 Ton Automatic Transmission
241	03	Flat C.C. Diesel. 3 Ton Automatic Transmission
245	98	Flat C.C. Diesel 2 Ton Standard Transmission
250	02	Flat C.C. Gas 1 Ton
251	03	Flat Crew Cab Gas 1-1/2 Ton
253	03	Flat C.C. Dump Diesel 1 Ton
260	03	Flat Dump Diesel 2-3 Ton Automatic Transmission
265	98	Flat Dump Diesel 2-Ton Standard Transmission
275	03	Flat Dump C.C. Diesel 2 Ton Automatic Transmission
280	98	Flat Dump C.C. Diesel 2 Ton Standard Transmission
285	03	Herbicide Diesel Automatic Transmission
287	99	Highway Motorist Assistance Vehicle
288	03	Highway Motorist Asst. Vehicle
300	98	Lift Truck Scissor Type Gas 1 Ton
303	98	Lube and Fuel Service Truck
310	01	Paint Mach. Centerline Truck Mounted Diesel & Gas
315	01	Panel Skid 1 Ton
316	03	Panel Skid 1 Ton Diesel
320	02	Pickup Diesel 3/4 Ton
322	02	Pickup Diesel 3/4 Ton Extended Cab
323	03	Pickup Diesel 1 Ton Extended Cab
324	03	Pickup Gas Mid Size Extended Cab 4x4
325	02	Pickup Gas Mid Size
326	03	Pickup Flex Fuel Mid Size Extended Cab 4x4
327	02	Pickup Gas Mid Size Extended Cab
328	02	Pickup Mid Size (Flex Fuel)
329	03	Pickup Mid Size Extended Cab (Flex Fuel)
330	03	Pickup Gas 1/2 Ton
331	03	Pickup Gas 1/2 Ton (Flex Fuel)
332	03	Pickup Gas 1/2 Ton Extended Cab
333	02	Pickup Gas 1/2 Ton 4x4
334	02	Pickup Gas 1/2 Ton Extended Cab 4x4
335	02	Pickup Gas 3/4 Ton
336	02	Pickup Gas 3/4 Ton 4x4
337	03	Pickup Gas 3/4 Ton Extended Cab
338	03	Pickup Gas 3/4 Ton Extended Cab 4x4
339	03	Pickup 1/2 Ton 4x4 Flex Fuel
340	03	Pickup Gas 1/2 Ton Tunnel
341	03	Pickup Gas 3/4-1 Ton Tunnel
342	03	Pickup 1/2 Ton Extended Cab 4x4 Flex Fuel
343	03	Pickup Crew Cab Mid Size
344	03	Pickup 1/2 Ton Extended Cab 4x4 Flex Fuel
345	03	Pickup C.C. Diesel 3/4 - 1 Ton
346	04	Pickup C. C. Diesel Mid Size 4x4
350	03	Pickup C.C. Gas 3/4 - 1 Ton
351	03	Pickup C.C. Gas 3/4 - 1 Ton 4x4
352	04	Pickup C. C. Diesel 3/4 - 1 Ton 4x4
354	99	Pickup C. C. Gas 1/2 Ton Flex Fuel
355	98	Pickup C. C. Gas 1/2 Ton 4x4 Flex Fuel

EQUIPMENT SPECIFICATIONS

Alabama (continued)

Number	Date	Title
365	92	Pothole Patcher Diesel
370	98	Post Driver
375	98	Sand Spreader Diesel All Sizes
385	98	Shoulder Maintenance Truck Diesel
387	92	Small Bridge Inspection Unit
388	03	Large Bridge Maintenance Unit
390	02	Large Bridge Inspection Unit
391	03	Truck with Service Body Gas ¾ Ton
392	03	Truck with Service Body Diesel 1 Ton w/Service Body
393	03	Truck with Service Body Diesel 1-1/2 Ton w/ Service Body
394	03	Truck with Service Body Diesel 1 Ton w/ Service Body
396	03	Truck with Service Body Crew Cab Diesel 1-1/2 Ton
397	03	Truck with Service Body Diesel ¾ Ton 4x4
398	03	Truck with Service Body Crew Cab Gas 3/4 Ton
399	03	Truck with Service Body Diesel C.C. 1-1/2 Ton 4x4
400	98	Truck Tractor Diesel 3 Ton
401	03	Truck with Service Body Diesel Extended Cab ¾ Ton
402	03	Truck with Service Body Diesel ¾ Ton 4x4
405	98	Truck Tractor Diesel 4 Ton
410	02	Truck Tractor Diesel 5 Ton Tandem Axle Standard Transmission
411	98	Truck Tractor Diesel 5 Ton Tandem Axle Standard Transmission
412	03	Utility Truck Midsize Flex Fuel
413	03	Utility Truck 4x4 Flex Fuel
415	99	Utility Truck Midsize 4x2 Leased
416	02	Utility Truck Midsize 4x2
417	02	Utility Truck Midsize 4x4
418	02	Utility Truck 4x2 Gas
419	02	Utility Truck 4x4 Gas
420	01	Van 2-5 Passenger Diesel 3/4 - 1 Ton
421	00	Utility Truck 4x4 Leased
422	03	Utility Truck 4x2 Flex Fuel
423	03	Utility Truck Midsize 4x4 Flex Fuel
424	02	Van Cargo Diesel 1-1/2 Ton
425	02	Van Cargo Diesel 2 Ton
430	03	Van Passenger Gas Midsize
431	03	Van Passenger Gas Midsize Flex Fuel
435	03	Van 2-5 Passenger ¾ Ton Gas
436	03	Van 6 - 15 Passenger 3/4 Ton Gas
437	92	Van Bridge Rating
448	98	Vertical Platform Truck 1-1/2 Ton
450	03	Station Wagon Gas Mid Size
451	03	Station Wagon Flex Fuel Midsize
455	03	Station Wagon Gas Full Size
458	02	Waste Crane Truck
460	99	Water Truck Diesel 2 – 2-1/2Ton
461	03	Water Truck Diesel 5 Ton
465	98	Water Truck Gas 2-3 Ton
470	98	Welding Truck Diesel 3/4 -1 Ton
475	98	Welding Truck Gas 3/4 -1 Ton
480	93	Winch Truck Diesel 2 Ton
481	98	Winch Truck Shopmade 3-Ton
485	98	Winch Truck Gas 2-Ton
489	03	Wrecker Diesel 1-1/2 Ton
490	98	Wrecker Diesel 2 - 3 Ton
495	89	Wrecker Diesel 4 Ton
505	98	Wrecker Gas 1 - 2 Ton
510	98	Wrecker Gas 2-1/2 - 3 Ton
700	03	Asphalt Patching Truck
720	99	Air Compressor 201 - 400 CF

EQUIPMENT SPECIFICATIONS

Alabama (continued)

Number	Date	Title
725	02	Air Compressor 401 - 600 CF
730	90	Crane Diesel 11 - 25 Ton Truck Mounted
735	90	Crane Diesel 30 - 40 Ton Truck Mounted
740	90	Crane Diesel 45 - 75 Ton Truck Mounted
750	02	Core Drill Off-Road
755	03	Core Drill Off-Road Track
760	02	Excavator Truck Mounted
765	03	Excavator Truck Mounted, Large
767	02	Excavator Trac 15-18 Ton Mounted
768	03	Excavator Trac 12-14 Ton Mounted
769	02	Excavator Trac 20-23 Ton Mounted
770	98	Heater Tank Car Asphalt Trailer Mtd.
773	92	Telescopic Materials Handler
775	99	Three Drum Hoist
780	98	Force Feed Loader
785	02	Loader Backhoe
787	03	Loader Backhoe 4 x 4 x 4
790	99	Loader Front End Crawler 1-1/8 - 2 Yd.
791	99	Loader Front End Crawler 2-3 Yd.
795	98	Loader Front End R.T. 0-1 Yd.
800	97	Front End Loader R T 1-1/8 - 2 Yd.
805	02	Front End Loader R T 2-1/8 - 3 Yd.
810	98	Asphalt Maintainer Self-Propelled
815	98	Bituminous Mixer 200 -300 Ton
824	02	Motor Patrol Small
825	03	Motor Patrol Large
830	02	Paver All Sizes
835	98	Planer 30" - 36"
840	91	Planer 60"
845	90	Planer 60" with Conveyor
847	92	Planer 75" and above w/Conveyor
849	03	Planer Trac 78" and above w/Conveyor
855	02	Roller Tandem 2 - 6 Ton
860	01	Roller Tandem 7 - 12 Ton
870	98	Roller R.T./S.P. 9-Wheel
875	01	Roller Single Drum Vibratory Medium
876	03	Roller Two Drum Vibratory
880	98	Chip Spreader
885	02	Sweeper Self Propelled
889	99	Street Sweeper 3 - 4 Yd. Mechanical
890	01	Street Sweeper 5 - 6 Yd. Vacuum
895	98	Tractor Crawler Dozer w/Backhoe
900	03	Tractor Crawler Light
905	03	Tractor Crawler Medium
907	98	Tractor Crawler Heavy
910	90	Tractor R T Heavy (State Const.)
920	03	Tractor Mower Boom/Brush
923	04	Slope Mower
925	98	Tractor Grader Mower
930	00	Tractor Mower Small
933	98	Tractor Herbicide Sprayer
935	03	Tractor 4 Cyl Operating Rotary Cutters
936	02	Tractor 6 Cyl Operating Rotary Cutters
937	97	Tractor Mower Single Wing Flail
939	03	Tractor-Mower Interstater Heavy
940	03	Tractor Mower Interstater
941	91	Tractor Mower Turf
943	98	Tractor Mower Slope Large
945	96	Trailer Low-Boy 30 - 40 Ton

EQUIPMENT SPECIFICATIONS

Alabama (continued)

Number	Date	Title
946	02	Trailer Low-Boy 41 - 50 Ton
950	91	Trailer Platform
960	01	Pickup Mid Size Leased Purchase
965	91	Road Widener Self-Propelled Medium
996		Non-Rental SG7
999		Dummy Record

EQUIPMENT SPECIFICATIONS

2. ILLINOIS

Number	Title
111	Specifications & Questionnaire for 4.0 Cubic Yard Capacity, Four-Wheel-Drive, Articulated, Wheel Type End Loaders with Hydrostatic-Powered Snow Blower
111	Specifications & Questionnaire for 1.5 Cubic Meter Capacity, Four-Wheel-Drive, Articulated, Wheel Loader
111	Specifications & Questionnaire for 1.5 Cubic Meter Capacity, Four-Wheel-Drive, Articulated, Wheel Loader
112	Specifications & Questionnaire for 80 H.P., Track-Type Loaders
113	Specifications & Questionnaire for a Self-Propelled, Hydraulically Operated, Force Feed Loader
115	Specifications & Questionnaire for a Rigid Frame, Skid-Steer Loader with Hydraulic-Powered Planer
115	Specifications & Questionnaire for Rigid Frame, Skid Steer Loader with Hydraulic-Powered 40-Inch Planer
117	Specifications & Questionnaire for a Heavy-Duty, Backhoe Mounted Asphalt/Concrete Planer Attachment
117	Specifications & Questionnaire for Heavy-Duty, Skid-Steer Loader Mounted Asphalt/Concrete Planer Attachment
118	Specifications & Questionnaire for an 80 H.P. Crawler Tractor with Angle Dozer
122	Specifications & Questionnaire for an 85 H.P., Tandem Drive, Articulated Motor Grader
123	Specifications & Questionnaire for a 125 H.P., Six-Wheel Drive, Articulated Motor Grader
131	Specifications & Questionnaire for Tractor/Loader/Backhoe
132	Specifications & Questionnaire for 80 H.P. Tractor/Loader/Backhoe
132	Specifications & Questionnaire for a 90 H.P. Tractor/Loader/Backhoe
141	Specifications & Questionnaire for a Self-Propelled Static Type, Tandem Roller
142	Specifications & Questionnaire for a Self-Propelled, Vibrating Type, Tandem Roller
142	Specifications & Questionnaire for Self-Propelled Walk Behind, Vibrating, Remote Trench Roller
143	Specifications & Questionnaire for a Portable, Self-Propelled, Vibrating Type Roller
145	Specifications & Questionnaire for a Tow Type, 9-Wheel, Pneumatic-Tired Roller
151	Specifications & Questionnaire for a 3-Wheel, Mechanical, Broom Type Street Sweeper
152	Specifications & Questionnaire for a Self-Propelled, Regenerative Air Street Sweeper
153	Specifications & Questionnaire for a Truck-Mounted, Hydraulic Powered Broom
161	Specifications & Questionnaire for a Track-Mounted, Multi-Purpose, Dragline and Lifting Crane
165	Specifications & Questionnaire for a Hydraulic, Multi-Purpose, Lifting Crane
171	Specifications & Questionnaire for a Large Truck-Mounted, Multi-Purpose, Hydraulically Powered Excavator
172	Specifications & Questionnaire for a Four-Wheel-Drive, Carrier Mounted, Multi-Purpose, Hydraulically Powered Excavator
173	Specifications & Questionnaire for a Track-Mounted, Multi-Purpose, Hydraulically Powered Excavator
181	Specifications & Questionnaire for an 18,000-Pound Forklift
181	Specifications & Questionnaire for an 8,000-Pound Pneumatic-Tired, Forklift
181	Specifications & Questionnaire for a 2,500-Pound, Rider End Control, Fork Truck
181	Specifications & Questionnaire for a Large Material Handling Forklift
181	Specifications & Questionnaire for 10,000-Pound Material Handling Forklift
201	Specifications & Questionnaire for a Small Riding Type Tractor with Various Attachments
202	Specifications & Questionnaire for a Low-Profile Riding Type Tractor with Various Attachments
203	Specifications & Questionnaire for Low Profile Tractors
203	Specifications & Questionnaire for Utility Tractor with Loader Attachments
205	Specifications & Questionnaire for 50 H.P. Agricultural Type Tractors
206	Specifications & Questionnaire for 70 H.P. Agricultural Type Tractors
206	Specifications & Questionnaire for 85 H.P. Agricultural Type Tractors
209	Specifications & Questionnaire for a Special Agricultural Tractor with Boom-Mounted Brush Cutter
211	Specifications & Questionnaire for a Single-Spindle, 72 Inch, 3-Point Hitch Mount, Rotary Mower Attachment
213	Specifications & Questionnaire for a Tow Type, 10-Foot, 2-Section, Flexible, Rotary Mower Attachment

EQUIPMENT SPECIFICATIONS

Illinois (continued)

Number	Title
214	Specifications & Questionnaire for a 3-Point, Hitch Mount, PTO Drive, Sickle Bar Mower
215	Specifications & Questionnaire for Special Boom-Mounted Brush Cutter
215	Specifications & Questionnaire for Remounting a Rotary Style Mower/Brush Cutter
216	Specifications & Questionnaire for Flail Style Hammer Knife Type Mowers
217	Specifications & Questionnaire for a Special, Hydraulic, Under-Guardrail Mower
221	Specifications & Questionnaire for a Tractor Type Front Mounted, Hydraulically Powered Broom
221	Specifications & Questionnaire for a Tractor Mounted, Hydraulically Powered Broom
221	Specifications & Questionnaire for Hydraulically Powered Broom for a Skid-Steer Loader
222	Specifications & Questionnaire for a Heavy-Duty, 8-Foot, Rear Scraper Blade
222	Specifications & Questionnaire for a Medium-Duty, 8-Foot, Rear Scraper Blade
224	Specifications & Questionnaire for a Boom Mounted Rotary-Ditching Attachment
251	Specifications & Questionnaire for a Heavy-Duty, High-Speed, One-Way Snowplow
251	Specifications & Questionnaire for Heavy-Duty, High-Speed, One-Way Snowplow for Tandem and 4 x 4 Trucks
252	Specifications & Questionnaire for a Polymer, High Moldboard Type, Reversible, Trip Blade Snowplow
253	Specifications & Questionnaire for a Heavy-Duty, V-Type Snowplows
253	Specifications & Questionnaire for Heavy-Duty, V-Type Snowplows for 125 H.P. Motor Graders
253	Specifications & Questionnaire for Heavy-Duty, V-Type Snowplows for 85 H.P. Motor Graders
254	Specifications & Questionnaire for a Heavy-Duty, Truck-Mounted Wing Plow
254	Specifications & Questionnaire for a Heavy-Duty, Mounted Wing Plow for a 125 H.P. Motor Grader
254	Specifications & Questionnaire for a Heavy-Duty, Mounted Wing Plow for an 85 H.P. Motor Grader
254	Specifications & Questionnaire for a Truck-Mounted, Double Function, Patrol Wing Plow
254	Specifications & Questionnaire for a Heavy-Duty Truck-Mounted Wing Plow
254	Specifications & Questionnaire for a Truck-Mounted Patrol Wing Plow
254	Specifications & Questionnaire for a Truck-Mounted Mid-Mounted Wing Plow
255	Specifications & Questionnaire for a Heavy-Duty Underbody Scraper
261	Specifications & Questionnaire for an Under-the Tail-Gate Type Material Spreader
261	Specifications & Questionnaire for a Zero Velocity Under-Tailgate Salt Spreader with Liquid Dispenser
261	Specifications & Questionnaire for a Pre-wetting System for Under-Tailgate Salt Spreaders
262	Specifications & Questionnaire for 16.5 Cubic Yard, Stainless Steel, Dump body Mounted, Large, Hopper Body Type Spreaders
262	Specifications & Questionnaire for Presetting System for Hooper style Salt Spreaders
262	Specifications & Questionnaire for Dump Body Mounted, 12.5 Cu. Yd., Hopper Body Type Spreaders
281	Specifications & Questionnaire for Replacement Utility Body, Recovery Boom and Wheel Lift
281	Specifications & Questionnaire for Purchase & Installation of a Large Rotating Hydraulic Recovery Wrecker and Utility Body
283	Specifications & Questionnaire for 70-Foot, Self-Propelled, Telescopic, Manlift
283	Specifications & Questionnaire for 750-Pound Capacity Scissors Style Lift
283	Specifications & Questionnaire for a 32-Foot, Self-Propelled, Lift Platform
301	Specifications & Questionnaire for a Diesel Powered Brush and Tree Chipping Machine
311	Specifications & Questionnaire for a Trailer-Mounted Stump Cutter
321	Specifications & Questionnaire for Push Style, Commercial Duty Type Power Mower
322	Specifications & Questionnaire for Self-Propelled type Commercial Duty Lawn Mower
322	Specifications & Questionnaire for a Heavy-Duty, 2-Wheel Tractor with Direct Mount Landscape Mower
331	Specifications & Questionnaire for Heavy-Duty, 18 H.P., 4-Wheel Landscape Mower
331	Specifications & Questionnaire for Heavy-Duty, 20 H.P., 4-Wheel Landscape Mower
331	Specifications & Questionnaire for a Hydraulically Driven, All-Terrain Type Carrier
332	Specifications & Questionnaire for a Diesel Powered, All-Terrain Slope Mowing Machine
341	Specifications & Questionnaire for 12-Inch, Gasoline Powered Chain Saws
342	Specifications & Questionnaire for 16-Inch, Gasoline Powered Chain Saws
343	Specifications & Questionnaire for 24-Inch, Gasoline, Powered Chain Saws

EQUIPMENT SPECIFICATIONS

Illinois (continued)

Number	Title
351	Specifications & Questionnaire for a Skid-Mounted Weed Sprayer
351	Specifications & Questionnaire for Skid-Mounted Weed Sprayer with Ground-Speed Control
352	Specifications & Questionnaire for a Portable Chemical Sprayer
352	Specifications & Questionnaire for Skid-Mounted Weed Sprayer with Ground-Speed Control
361	Specifications & Questionnaire for a Gasoline-Powered Grass Line Trimmer
362	Specifications & Questionnaire for a Gasoline-Powered Weed and Brush Trimmer
371	Specifications & Questionnaire for a Trailer-Mounted Hydroseeder
372	Specifications & Questionnaire for a Native Grass Drill
374	Specifications & Questionnaire for a Heavy-Duty, 3-Point, Hitch-Mounted Tree Planter
375	Specifications & Questionnaire for a Heavy-Duty, 3-Point, Hitch-Mounted, Tree Spade
381	Specifications & Questionnaire for a Tractor-Mounted, PTO-Powered, Center-Mount, Tiller Attachment
398	Specifications & Questionnaire for a Trailer-Mounted Mulch Spreader
402	Specifications & Questionnaire for a Trailer Mounted, 2270-Liter, Bitumen Distributor
402	Specifications & Questionnaire for a Trailer Mounted, 400-Gallon, Bitumen Distributor
403	Specifications & Questionnaire for a Trailer Mounted, Multi-Function, Asphalt Patching Machine
403	Specifications & Questionnaire for Self-Propelled, Liquid, Spray Injection, Patching Machine
423	Specifications & Questionnaire for a Trailer-Mounted, Infrared, Asphalt Reclamation Unit
431	Specifications & Questionnaire for a Trailer-Mounted, Tubular Type, Bitumen Heating Kettle, 625-Liter Capacity
432	Specifications & Questionnaire for a Trailer-Mounted, Tandem Axle, Tubular Type, Bitumen Heating Kettle, 1135-Liter Capacity
435	Specifications & Questionnaire for a Trailer-Mounted, Rubber Asphalt, Crack-Sealing Machine, 190 and 227-Liter Capacity
437	Specifications & Questionnaire for a Trailer-Mounted, Rubber Asphalt, Crack-Sealing Machine of 750-Liter Capacity
441	Specifications & Questionnaire for Rotary Air Compressor (4.2 Cubic Meter)
441	Specifications & Questionnaire for a Skid-Mounted, 100 Cubic Foot, Rotary Type Air Compressor
442	Specifications & Questionnaire for Rotary Air Compressor (7.0 Cubic Meter)
442	Specifications & Questionnaire for Stationary, Utility Style, Rotary Air Compressor (7.0 Cubic Meter)
453	Specifications & Questionnaire for a Tubular, PTO-Driven, Belt Conveyor
456	Specifications & Questionnaire for 72-Foot Portable Augers
461	Specifications & Questionnaire for an Engine Driven Steel Drum, Concrete Mixer
473	Specifications & Questionnaire for a Trailer Mounted, High Pressure, Sewer Cleaner
481	Specifications & Questionnaire for a Hydraulic Driven, Replacement End Gate Type Aggregate Spreaders
483	Specifications & Questionnaire for a Hydraulic Under-Tailgate Conveyor for Spreading Shoulder Materials
486	Specifications & Questionnaire for a Widener Attachment
492	Specifications & Questionnaire for a Self-Propelled, Pneumatic Rubber Tired, Bituminous Paver with Attachments
501	Specifications & Questionnaire for a Roof-Mounted, Directional, Arrow Indicator
501	Specifications & Questionnaire for a Directional, Split Arrow Indicator
501	Specifications & Questionnaire for a Truck-Box-Mounted, Directional, Arrow Indicator
503	Specifications & Questionnaire for Diesel-Powered, Portable, Traffic Control Arrow Panels
504	Specifications & Questionnaire for a Solar Powered, Portable, LED Traffic Control Arrow Panel
505	Specifications & Questionnaire for Truck Mounted Impact Attenuators
507	Specifications & Questionnaire for a Solar Powered, Trailer Mounted, LED Style, Changeable Message Board
507	Specifications & Questionnaire for a Truck-Mounted, Flip Disc Changeable Message Board
512	Specifications & Questionnaire for a Trailer-Mounted, Engine Driven, Hydraulic Mud-Jack
521	Specifications & Questionnaire for Portable Concrete Saw, 14 H.P.
522	Specifications & Questionnaire for Portable Concrete Saw, 18-25 H.P.
524	Specifications & Questionnaire for a 65 H.P., Self-Propelled, Concrete Cutting Machine
524	Specifications & Questionnaire for 65 H.P., Self-Propelled, Pavement Groove Cutting Machine with Vacuum

EQUIPMENT SPECIFICATIONS

Illinois (continued)

Number	Title
526	Specifications & Questionnaire for a Self-Propelled, Joint Routing Machine
528	Specifications & Questionnaire for a Power Brush/Blower
536	Specifications & Questionnaire for "T" Transport Trailer For Semi-portable Electronic Truck Weighing Scales
537	Specifications & Questionnaire for an Equipment Trailer with the Deck between the Wheels
539	Specifications & Questionnaire for a Single Point Suspended Platform Equipment Trailer with Air Brakes
539	Specifications & Questionnaire for a Three Axle Slipper Spring Suspended Platform Equipment Trailer with Air Brakes
541	Specifications & Questionnaire for Used, Van Style, Semi-Truck, Fifth-Wheel Trailer
542	Specifications & Questionnaire for "T" Transport Trailer for Semi-portable Electronic Truck Weighing Scales
543	Specifications & Questionnaire for a Five-Ton Capacity, Equipment Trailer with Electric Brakes
543	Specifications & Questionnaire for a Removable Gooseneck, Tandem Axle Semi-Trailer, (31,752 Kg.)
545	Specifications & Questionnaire for a Sixteen-Ton, Payload Capacity, Platform Equipment Trailer with Air Brakes
545	Specifications & Questionnaire for a Removable Gooseneck, Triple Axle Semi-Trailer (36,200 Kg.)
545	Specifications & Questionnaire for Removable Gooseneck, Tandem Axle Semi-Trailer (36,200 Kg.)
545	Specifications & Questionnaire for a Twenty-Ton, Payload Capacity, Hydraulic Tilt Deck Equipment Trailer with Air Brakes
545	Specifications & Questionnaire for an Eighteen-Ton, Payload Capacity, Platform Equipment Trailer with Air Brakes
546	Specifications & Questionnaire for a 40-Ton, Removable Gooseneck, Triple Axle Semi-Trailer
549	Specifications & Questionnaire for a Tandem Axle, Aluminum Dump Trailer
551	Specifications & Questionnaire for a Hydraulically Powered Pavement Breaker for a Skid-Steer Loader
551	Specifications & Questionnaire for a Hydraulically Powered Pavement Breaker for a Tractor/Loader/Backhoe
552	Specifications & Questionnaire for a Pneumatic Powered Pavement Breaker for Tractor/Loader/Backhoe
553	Specifications & Questionnaire for a Mobile Hydraulic Hammer
554	Specifications & Questionnaire for a Pneumatic Pavement Breaker, 30lb. - 35lb. Weight Class
554	Specifications & Questionnaire for a Pneumatic Pavement Breaker, 60lb. Weight Class
554	Specifications & Questionnaire for a Pneumatic Pavement Breaker, 80lb. - 90lb. Weight Class
556	Specifications & Questionnaire for a Pneumatic Rock Drill
563	Specifications & Questionnaire for Hydraulic Bridge Jacking and Components
563	Specifications & Questionnaire for Hydraulic Jacking Components
568	Specifications & Questionnaire for an Aluminum Flat Bottom Boat, Outboard Motor, and Trailer
571	Specifications & Questionnaire for a 5,000-Gallon, Skid-Mounted, Electric Heated, Asphalt Storage Tank
572	Specifications & Questionnaire for a Fiberglass, Calcium Chloride Storage Tank
572	Specifications & Questionnaire for a Liquid Calcium Chloride Storage Tank with Dispensing System and Installation
572	Specifications & Questionnaire for 6,500-Gallon Poly, Liquid Storage Tank
572	Specifications & Questionnaire for 6,000-Gallon Poly, Liquid Storage Tank
572	Specifications & Questionnaire for Poly, Liquid Storage Tank, 2,500-Gallon Capacity
574	Specifications & Questionnaire for a Skid-Mounted Type Storage Tank
574	Specifications & Questionnaire for a Skid-Mounted Type Water Tank
579	Specifications & Questionnaire for a Trailer-Mounted Type Tank with Sprinkling System
579	Specifications & Questionnaire for a Stainless Steel Portable Paint Tank
579	Specifications & Questionnaire for Aboveground Fuel Storage Tank
581	Specifications & Questionnaire for a 4-inch Engine-Driven Centrifugal Dewatering Pump
581	Specifications & Questionnaire for Two-Inch Centrifugal Pump
581	Specifications & Questionnaire for a 6-Inch, Diesel Powered Centrifugal Dewatering Pump
582	Specifications & Questionnaire for a Skid-Mounted, 3-Inch Trash Pump
582	Specifications & Questionnaire for Engine-Driven Concrete Pump

EQUIPMENT SPECIFICATIONS

Illinois (continued)

Number	Title
582	Specifications & Questionnaire for Engine-Driven 4-Inch Trash Pump
584	Specifications & Questionnaire for a Long Hitch Mobile Trailer Pump
591	Specifications & Questionnaire for a Gasoline-Engine Powered Tamper
601	Specifications & Questionnaire for a Skid-Mounted, Engine Driven Constant Current, AC-DC, Arc Welding Generator
602	Specifications & Questionnaire for Trailer-Mounted, Diesel Engine Driven Constant Current, DC, Arc Welding Generator Over 300 Amps
602	Specifications & Questionnaire for a Trailer-Mounted, Diesel Engine Driven Constant Current, DC, Arc Welding Generator up to 300 Amps
602	Specifications & Questionnaire for a Trailer-Mounted, Engine Driven Constant Current, AC-DC, Arc Welding Generator
606	Specifications & Questionnaire for a Portable 3KW AC Electric Generator Plant
607	Specifications & Questionnaire for a Portable 5.0KW AC Electric Generator Plant
621	Specifications & Questionnaire for 100-Pound Portable Sandblaster Package
621	Specifications & Questionnaire for a 300-Pound Portable Sandblaster Package
629	Specifications & Questionnaire for Crawler Mounted, Self-Propelled, Joint Cutter
629	Specifications & Questionnaire for Self-Propelled, Concrete Planer
629	Specifications & Questionnaire for Diesel-Powered Pile Hammer with Swing-Style Leads
629	Specifications & Questionnaire for Rubber-Tired, Self-Propelled Road Planer/Profiler
629	Specifications & Questionnaire for Mechanically Adjustable Trench Shoring
629	Specifications & Questionnaire for Trench Shoring
629	Specifications & Questionnaire for Widener Attachment
629	Specifications & Questionnaire for Grappler Attachment
629	Specifications & Questionnaire for Gravity Flow Grain Wagon
629	Specifications & Questionnaire for Shoulder Disk & Drag
629	Specifications & Questionnaire for a Set of Air-Lifting Cushions
629	Specifications & Questionnaire for Liquid Salt Applicator
629	Specifications & Questionnaire for a Heat Lance
629	Specifications & Questionnaire for a Combination Liquid Salt Applicator/Weed Sprayer
629	Specifications & Questionnaire for Replacement and Installation of a Fiberglass Utility Body
629	Specifications & Questionnaire for a Salt Brine Generator
631	Specifications & Questionnaire for a Large Garage Style Air Compressor
631	Specifications & Questionnaire for Large Vertical Garage Style Air compressor
632	Specifications & Questionnaire for a ½-Inch Capacity, Pneumatic Impact Wrench
633	Specifications & Questionnaire for a ¾-Inch Capacity, Pneumatic Impact Wrench
634	Specifications & Questionnaire for a 1-Inch Capacity, Pneumatic Impact Wrench
637	Specifications & Questionnaire for a Small, Portable, Air-Motor-Operated Lubrication Assembly
641	Specifications & Questionnaire for a Air-Over Hydraulic Floor Jack
641	Specifications & Questionnaire for a 4-Ton Capacity, Garage Type Floor Jack
641	Specifications & Questionnaire for a 10-Ton Capacity, Garage Type Floor Jack
661	Specifications & Questionnaire for a Portable, Heavy-Duty, Commercial Service Battery Charger
662	Specifications & Questionnaire for a Metal Cutting Band Saw
663	Specifications & Questionnaire for a Floor Model Drill Press
671	Specifications & Questionnaire for an AC-DC Transformer Rectifier Combination Type Electric Welder
671	Specifications & Questionnaire for a DC Type Electric Welder (3-Phase)
672	Specifications & Questionnaire for an Oxygen-Acetylene Welding & Cutting Outfit
694	Specifications & Questionnaire for Small, Hot Water, High Pressure Cleaner
694	Specifications & Questionnaire for Medium-Duty, Hot Water, High Pressure Washer, with Installation
694	Specifications & Questionnaire for Propane or Natural Gas Fired, High Pressure Washer, with Installation
694	Specifications & Questionnaire for Cold Water, High Pressure Washer
694	Specifications & Questionnaire for a Cold Water, High Pressure Sign Washer
698	Specifications & Questionnaire for a Portable Gantry Crane and Hoist
699	Specifications & Questionnaire for a Programmable, Electronic Rebar Bending Machine
699	Specifications & Questionnaire for a Dual System Generator/Starter
699	Specifications & Questionnaire for Sign Refurbishing Machine

EQUIPMENT SPECIFICATIONS

Illinois (continued)

Number	Title
699	Specifications & Questionnaire for Dust Collection Machine
699	Specifications & Questionnaire for Propane Storage Tank Dispensing Pump with Installation
699	Specifications & Questionnaire for a Hydraulic, 90-Ton Punch Press
699	Specifications & Questionnaire for a Running Gear, Trailer, and Diesel-Engine Power Source
751	Specifications & Questionnaire for an Aluminum Thermoplastic, Push Style, Hand Applicator
751	Specifications & Questionnaire for Self-Propelled Line & Curb Painting Machine
752	Specifications & Questionnaire for a Trailer Mounted, Thermoplastic Machine with Applicator
753	Specifications & Questionnaire for Heavy-Duty Surface Preparation Machine
753	Specifications & Questionnaire for Heavy-Duty, Line Remover
821	Specifications & Questionnaire for a High-Band Repeater System, High Power Tone Remote Control
822	Specifications & Questionnaire for a VHF Control Station
832	Specifications & Questionnaire for a UHF Control Station
853	Specifications & Questionnaire for a UHF 4 Channel Hand Held Radio
861	Specifications & Questionnaire for a High-Band 16 Channel Under-Dash Mobile Radio
862	Specifications & Questionnaire for a Low-Band 32 Channel Remote Mounted Mobile Radio
863	Specifications & Questionnaire for a UHF 16 Channel Under-Dash Mobile Radio
871	Specifications for a Radio Control Console
872	Specifications for a Repeater System
873	Specifications for a Repeater Station
892	Specifications & Questionnaire for a Vehicular Repeater System
897	Specifications & Questionnaire for a Seamless Fiberglass Shelter
931	Specifications & Questionnaire for District One Control Addition to Station One
931	Specifications & Questionnaire for Canister Style Load Cells
931	Specifications & Questionnaire for Portable Wheel Load Scale and Electronic Accessories
931	Specifications & Questionnaire for Type "C" Semi-portable Split Axle Load Scale & Electronic Accessories
931	Specifications & Questionnaire for Portable Wheel Load Scale and Electronic Accessories
931	Specifications & Questionnaire for a Programmable, Electronic Timer Switch
931	Specifications & Questionnaire for 40 Channel Voice Logger with Microcassette Output Option
931	Specifications & Questionnaire for 8 Channel Expandable Voice Logger
931	Specifications & Questionnaire for Radio Site Monitoring Components
931	Specifications & Questionnaire for Expandable Voice Processing System
998	Specifications & Questionnaire for Cast Iron Scale Testing Weights
T20	Specifications for a Heavy-Duty Window Van Truck (3,800 Kg. GVWR)
T22	Specifications for a Utility Body Pickup Truck (3,800 Kg. GVWR)
T32	Specifications for a Crew Cab Utility Body Pickup Truck (4,355 Kg. GVWR)
T41	Specifications for a Medium Duty Truck Mounted Wheel Lift and Body (6,800 Kg. GVWR)
T42	Specifications for a Medium Duty Utility Body Truck (4,500 Kg. GVWR)
T42	Specifications for a Medium Duty Utility Body Service Truck (6,800 Kg. GVWR)
T42	Specifications for a Medium Duty Utility Body Truck with Knuckleboom Crane (6,800 Kg. GVWR)
T43	Specifications for a Medium Duty Platform Truck (6,800 Kg. GVWR)
T43	Specifications for 10,000 lb. G.V.W.R. Platform Truck
T43	Specifications for 15,000 lb. G.V.W.R. Platform Truck
T45	Specifications for a Medium Duty Pickup Truck (4,500 Kg. GVWR)
T45	Specifications for a 10,000 LB. G.V.W.R. Cab and Chassis only
T45	Specifications for a Medium Duty Cab and Chassis (6,800 Kg. GVWR)
T47	Specifications for a Medium Duty Crew Cab Platform Truck (6,800 Kg. GVWR)
T49	Specifications for a Van with Mounted Aerial Device (4,170 Kg. GVWR)
T49	Specifications for a Medium Duty Platform Truck with Aerial Lift (6,800 Kg. GVWR)
T50	Specifications for a Single Axle Step Van Truck
T53	Specifications for a Single Axle, Heavy Duty, Utility Truck
T54	Specifications for a Single Axle, Heavy Duty, Crew Cab, Utility Truck
T55	Specifications for a Single Axle Box Van Remount Chassis
T59	Specifications for a Tandem Axle Drive Truck-Tractor (22,600 Kg. GVWR)
T64	Specifications for a Single Axle Dump Truck
T65	Specifications for a Crew Cab Single Axle Dump Truck
T66	Specifications for a Tandem Axle Dump Truck (20,800 Kg. GVWR)

EQUIPMENT SPECIFICATIONS

Illinois (continued)

Number	Title
T67	Specifications for a Tandem Axle Dump Truck and Wing Plow (20,800 Kg. GVWR)
T68	Specifications for a Large Tandem Axle Dump Truck (22,600 Kg. GVWR)
T69	Specifications for a Four-Wheel-Drive Dump Truck (19,000/28,500 Kg. GVWR)
T71	Specifications for a Single Axle Platform Truck
T71	Specifications for Single Axle, Low Profile, Platform Truck
T72	Specifications for a Crew Cab Single Axle Platform Truck
T73	Specifications for a 56,000 GVW Rated Tandem Axle Platform Truck and Related Accessories
T74	Specifications for a Single Axle Dump Truck with Hydraulic Powered Loader Attachment
T74	Specifications for Single Axle Cab and Chassis with Driving Front Axle
T79	Specifications for Truck with Combination Vacuum Type Catch Basin Cleaner and High-Capacity High-Pressure Jet Rodder (26,200 Kg. GVWR)
T80	Specifications for a Single Axle, truck with Aerial Lift
T81	Specifications for a Tandem Axle Truck with Crane (21,700 Kg. GVWR)
T83	Specifications for Under-Bridge Inspection Vehicle (28,123 Kg. GVWR)
T83	Specifications for an Under-Bridge Inspection Vehicle (21,773 Kg. GVWR)
T88	Specifications for Tandem Axle with Driving Front Axle Cab and Chassis (20,800 Kg. GVWR)
T88	Specifications for Tandem Axle Cab and Chassis (20,800 Kg GVWR)
T91	Specifications for a Single Axle Cab and Chassis
T91	Specifications for 28,500 lb. GVWR Truck and Wrecker Recovery System
T96	Specifications for a 50,000 lb. GVWR, Tandem Axle, Tilt Cab, Truck and Thermoplastic Hwy Striping Machine
T96	Specifications for a Tandem Axle, Tilt Cab, Truck Equipped With Spray Thermoplastic Long-Line Highway Striping Machine
T96	Specifications for Tandem Axle, Tilt Cab, Line Striping with Combination Center and Edge Line Capability (25,300 Kg GVWR)
T98	Specifications for a 35,000 LB. GVWR Truck Chassis for Digger Derrick Remount
T98	Specifications for a Center Mounted Digger Derrick with 4,500 Kg Capacity and 12.8 Meter Reach
T98	Specifications for Cab and Chassis, Platform Body, and Remount of Digger Derrick
T98	Specifications for a C.C. Chassis & Corner Mtd. Digger Derrick W/ 4,500 Kg. Cap. and 12.8 Meter Reach
T98	Specifications for Center Mounted Digger Derrick with 6,804 Kg. Capacity and 18.2 Meter Reach

EQUIPMENT SPECIFICATIONS

3. KANSAS

Spec. No.	Cat. Code	Date	Title
MS 75.1	AG/ERTH/HYDR	??/??/??	Earth Auger, Hydraulic Driven, 3Pt.Mnt.
MS 32.2	AG/ERTH/PTO	04/11/88	PTO Driven Augers-3 Point Hitch Mounted
MS 89.3	AG/SALT/ELEV	09/30/88	Salt Augers
MS 12.1	BD/BOND/ACTR	05/20/88	Concrete Gunning Machine
MS 34.2	BL/BOX /3PNT	02/26/87	Three-Point Box Blade
MS 170	BL/ENGN/BKPK	04/22/81	Backpack Power Blower
MS 132.2	BR/INSP/HVDY	07/24/89	Heavy Duty Bridge Inspection Unit
MS 37.2	CH/BRSH/CHIP	08/03/89	Brush Chippers
MS 168.8	CK/CRSL/PULL	06/07/89	Crack Seal Machine, Heated, Pull Type
MS 43.1	CL/STRP/REMV	05/01/86	Crack Cleaner And Stripe Remover
MS 66.1	CN/CRNE/CRMT	03/29/79	Crane, Crawler Mounted
MS 125.6	CN/CRNE/TKMT	04/11/83	Truck Mounted Crane
MS 128.19	CP/AIR /100+	08/09/89	Portable Air Compressor
MS 98.2	CP/AIR /LDPT	03/10/89	Light Duty Portable Air Compressor
MS 33.1	CR/ENGN/SMAL	07/07/89	Vibratory Plate Compactors
MS 147.10	CS/CSTR/HVDY	01/11/88	Truck Mounted Paint Striper
MS 154	CS/CSTR/MEDY	05/10/78	Center Striper, Medium Duty
MS 150.5	CT/ROCK/CUTR	08/03/89	Self-Propelled Rock Cutter
MS 49.1	CV/BELT/CNVR	??/??/??	Conveyor Belt for Salt Handling
MS 87.1	DK/ELEC/TRMT	03/24/87	Trailer Mounted Electric Derrick
MS 44.2	DM/DME /DIST	01/08/90	Distance Measuring Instrument
MS 167.1	DR/CORE/HDTK	07/14/81	Heavy Duty Mobil Drill
MS 31.1	DR/ENGN/DRBK	07/07/87	Gas Engine Drill/Breakers
MS 92.1	DR/GRAN/DRIL	??/??/??	Grass Drill Seeding Unit
MS 15.35	DT/ASPH/600G	02/12/82	600 Gal Presre Bituminous Distr & Trk
MS 171	DV/POST/DRIV	04/27/81	Post Driver
MS 29.3	DZ/CRAW/HVDY	11/15/89	Dozer, Crawler, Heavy Duty
MS 107.9	DZ/CRAW/MEDY	04/26/88	Medium Duty Crawler Tractor Dozer
MS 101.1	EP/EPOX/INJ	05/02/88	Epoxy Blend And Inject Machine
MS 35.1	FK/FORK/LTDY	02/25/88	Light Duty Hydraulic Fork Lifts
MS 143.4	FK/FORK/MEDY	12/31/86	Hydraulic Fork Lifts
MS 45.3	GN/ELEC/T15K	12/22/89	Fifteen KW Stand By Generators
MS 18.4	GN/ELEC/TO5K	03/20/89	Portable Electric Generators to 5KW
MS 19.1	HM/AIR /HNDR	07/15/87	Hammer, Air, Hand
MS 20.1	HM/AIR /PVBK	07/15/87	Hammer, Air, Pavement Breaker
MS 21.1	HM/AIR /YACHTER	07/15/87	Hammer, Air, Sinker Drill
MS 39.1	HM/AIR /CHIP	04/05/80	Hammer, Air Chipping
MS 21.1	HM/AIR /SKDR	03/12/80	Hammer, Air Sinker Drill
MS 22.1	HT/SPAC/HEAT	07/15/87	Portable, Oil-Fired Space Heaters
MS 115.1	HW/TKR /HARO	??/??/??	Spring Tooth Harrow
MS 11.4	JK/MUD /JACK	08/03/89	Concrete Lvlng & Stblzng Unit Pull Type
MS 93.1	LC/AIR /HOT	12/27/89	Hot Air Lance
MS 27.3	LR/4WDR/LTDY	12/02/83	Articulated Wheel Loader
MS 111.17	LR/4WDR/MEDY	02/28/89	Medium Duty 4-Wheel-Drive Loader
MS 118.24	LR/BKHO/LTDY	11/21/89	Industrial Loader-Backhoe
MS 86.2	LR/CRAW/HVDY	11/14/89	Heavy Duty Crawler Loader
MS 88.14	LR/CRAW/MEDY	11/14/89	Medium Duty Crawler Loader
MS 158.4	LR/LOAD/2-3Y	04/20/89	Articulated 4 W Dr Loadr w/3 Cubic Yd Bkt
MS 117.2	LR/SKID/STER	05/09/89	Skid Steer Loaders And Attachments
MS 53.6	LR/TRAC/3PNT	08/10/84	Loader, Three Point Tractor
MS 177.2	LT/AROW/SKID	02/06/89	Skid Mounted Arrow Board
MS 95.1	LT/AROW/SRTR	08/25/89	Lts, Arrow Board, Slar Powred, Tralr. Mtd.
MS 165.6	LT/ARROW/TRMT	07/22/87	Lights, Arrow Board, Trailer Mounted
MS 146.5	LT/FLSH/TRMT	11/23/87	Lights, Flashing, Trailer Mounted
MS 161.1	LT/TRAF/PORT	04/15/85	Portable Traffic Signals
MS 4.18	MG/ /LTDY	04/16/84	Light Duty Motor Grader
MS 9.27	MG/ /MDSW	08/18/88	Medium Duty Motor Grader
MS 9.27	MG/ /MEDY	08/18/88	Medium Duty Motor Grader

EQUIPMENT SPECIFICATIONS

Kansas (continued)

<u>Spec. No.</u>	<u>Cat. Code</u>	<u>Date</u>	<u>Title</u>
MS 84.1	MO/DISC/3-PT	12/20/88	Disc Mowers
MS 91.1	MO/FLAL/M100	12/27/88	Flail Mower, 60 To 100 Inch
MS 23.5	MO/LAWN/HDRG	01/18/90	Heavy Duty Riding Lawn Mowers
MS 116.2	MO/LAWN/LDPT	01/22/90	Push Type Rotary Lawn Mower
MS 124.3	MO/RIDG/FRMT	01/22/90	Front-Mount Riding Mowers
MS 159.11	MO/ROTO/HD10	10/16/89	Pull Type 10 & 15 Foot Rotary Mowers
MS 41.14	MO/ROTO/LD60	01/18/90	Whl-Type Mid Mnt Rtry Mwr 60" Min Cut
MS 41.13	MO/ROTO/LD60	05/04/89	Whl-Typ Trctr-Cntr Mt Mwer-Cut Swth>60"
MS 160.13	MO/ROTO/M100	10/13/89	Rotary Mower, 80 Inch
MS 127.1	MO/ROTO/MO90	08/15/62	Mower, Rotary, Belly Mounted 90 inch
MS 16.3	MO/SLOP/MEDY	05/04/89	Medium Duty Slope Mowers
MS 38.3	MO/TRIM/HAND	02/03/89	Trimmer/Mowers
MS 178.3	MX/BITM/PULL	08/28/89	Mixer Bituminous Material
MS 25.1	MX/CONC/1SAK	07/15/87	Portable One Sack Concrete Mixers
MS 156.4	PG/MILL/PUG	12/11/89	Cold Mix Asphalt Pugmill
MS 46.3	PH/POTH/AIR	05/04/89	Pothole Patcher, Air Compaction Type
MS 166.3	PH/POTH/HVDY	02/08/89	Pothole Patcher/Heated/Pull Typ-Hvy Dty
MS 172.6	PH/POTH/MEDY	02/07/89	Pothole Patcher/Heated/Pull Typ-Med Dty
MS 138.13	PL/REVS/11FT	08/08/88	Snow Plow, Reversible Trip Type
MS 138.13	PL/REVS/12FT	08/08/88	Snow Plow, Reversible Trip Type
MS 157.1	PL/SNOW/LRMT	04/07/87	Loader Mounted Rotary Snow Plow
MS 55.2	PL/SNOW/VTYP	08/19/88	V-Type Snow Plow (For Motor Grader)
MS 24.5	PP/WATR/5NCH	02/07/89	Water Pumps, 5 Inch or Less
MS 40.1	PR/POST/HYDR	04/06/80	Hydraulic Post Pullers
MS 133.8	PT/HMIX/PLNT	04/05/85	Portable Hot Mix Asphalt Plant
MS 155.4	PV/ASPH/TOW	05/01/89	Tow Type Asphalt Paver
MS 139.10	RL/FLAT/LDSP	05/19/89	Roller-Self Propelled-Flat Face 4-6 Ton
MS 119.16	RL/PNEU/MDSP	08/30/89	Roller, Self-Propelled, Pneumatic
MS 70.3	RL/SHFT/MEDY	04/12/88	Sheepsfoot Rollers
MS 173	RL/VIBR/LDSP	04/09/82	Roller, Self-Propelled, Vibratory
MS 162.6	SA/CHAN/SAW	02/17/88	Chain Saw, With 16 Inch Cutting Bar
MS 169.3	SA/CONC/CRAK	05/02/88	Random Crack Concrete And Asphalt Saw
MS 135.1	SA/CONC/SAW	05/02/88	Heavy Duty Concrete And Asphalt Saw
MS 137.1	SA/CONC/SAW	??/??/??	Medium Duty Concrete Saw
MS 179.1	SA/ELEC/SKIL	??/??/??	Heavy Duty Electric Circular Saw
MS 71.1	SB/SAND/BLST	04/28/89	Portable Sand Blasting Unit
MS 134.4	SB/WATR/BLST	04/03/89	Water Sand Blaster
MS 56.4	SD/CHIP/SPRD	05/24/89	Material Chip Spreader
MS 151.13	SD/HOPR/10YRD	04/20/89	Hopper Body Spreaders
MS 151.13	SD/HOPR/5YRD	04/20/89	Hopper Body Spreaders
MS 151.13	SD/HOPR/7YRD	04/20/89	Hopper Body Spreaders
MS 80.8	SD/SHLD/SPRD	05/11/89	Shoulder Material Spreader
MS 142.6	SD/TGAT/SPRD	03/12/87	Tailgate Type Material Spreaders
MS 180.1	SR/BAND/STRP	??/??/??	Strapper, Band Binder
MS 181.1	SW/FRMT/MOTR	05/04/88	Engine Driven, Front Mount Sweeper
MS 182.1	SW/MAGN/PULL	04/14/87	Towed Magnetic Road Sweeper
MS 63.1	SW/PKUP/LRMT	04/08/87	Loader Mounted Pick-Up Sweepers
MS 148.8	SW/PROP/5YRD	03/25/85	Vacuum Street Sweeper
MS 57.10	SW/PROP/N-PK	08/04/89	Sweeper, Self-Propelled Non-Pickup Type
MS 42.2	SW/PULL/MOTR	04/15/88	Engine Driven, Pull-Type Sweepers
MS 183.1	SY/WEED/4WTK	06/14/88	One Ton, 4WD, Truck-Mntd Weed Sprayer
MS 153.6	SY/WEED/HVDY	01/23/90	500 Gallon Sprayer
MS 175.1	SY/WEED/TKMT	03/12/86	Truck Mounted Weed Sprayer
MS 7.19	TC/SICL/MEDY	08/09/89	Tractor, 62 PTO HP, With Sickle
MS 6.26	TC/TRAC/HVDY	08/08/89	Wheel Tractor 72 PTO Horsepower
MS 7.19	TC/TRAC/MEDY	08/09/89	Wheel Tractor 62 PTO Horsepower
MS 58.2	TN/ASPH/PORT	10/10/62	Portable Asphalt Tank
MS 13.9	TN/ASPH/STOR	05/12/89	Road Oil Storage Tank And Supports
MS 50.6	TN/DISL/TRMT	04/23/84	Trailer Mounted Fuel Storage Tank

EQUIPMENT SPECIFICATIONS

Kansas (continued)

Spec. No.	Cat. Code	Date	Title
MS 17.2	TN/WATR/1500	08/18/89	Tank, Water, 1500 Gallon
MS 26.6	TP/AIR /TAMP	07/15/87	Air Tampers
MS 10.1	TP/HYDR/TAMP	05/02/88	Hydraulic Tampers
MS 59.8	TR/ASPH/HVDY	07/01/87	Tandem Axl Semi-Trlr Road Oil Transport
MS 164.5	TR/SEMI/HVDY	11/07/88	Equipment Transport Semi-Trailer
MS 176.1	TR/TILT/HVDY	02/24/86	20 Ton Tandem Axle Equipment Trailer
MS 102.13	TR/TILT/TAND	03/26/84	12 Ton Tandem Axle Tilt Top Trailer
MS 113.1	TR/TOOL/TRAL	05/04/83	6 Ton Tool Trailer
MS 184.1	TR/UTIL/2WHL	04/11/85	Two Wheel Trailer - 3000 Pounds
MS 174.1	TR/UTIL/MULT	04/26/83	3 Ton Utility Trailer
MS 105.4	TR/WATR/HVDY	04/08/85	Tandem Axl Semi-Trailer Water Transport
MS 185.1	VB/CONC/VIBR	09/01/86	Concrete Vibrator
MS 30.5	WD/WELD/PORT	01/26/90	Portable Engine Driven Welders
MS 163.6	WS/HIPR/HEAT	02/10/88	Heated, High Pressure Washer
MS 8.12	XX/XXXX/XXXX	09/30/88	Snow Plow Shoes And Half Soles
MS 60.1	XX/XXXX/XXXX	12/15/88	Toolboxes for Pickups
MS 76.3	XX/XXXX/XXXX	11/21/89	Installation of UST with Piping
MS 82.5	XX/XXXX/XXXX	11/21/89	Installation Tank Monitor & Spill Prot
MS 109.1	XX/XXXX/XXXX	03/04/87	Waste Oil Heaters
CTS 11.19	AU/SEDN/COMP	08/24/77	Compact Size 4-Door Sedans
CTS 5.2	AU/SEDN/FULL	02/26/87	Full Size 4-Door Sedans
CTS 4.1	AU/SEDN/MIDS	02/04/88	Intermediate Size 4-Door Sedans
CTS 14.10	AU/STWG/MIDS	08/15/62	4-Door, 6 Passenger Station Wagon
CTS 42.9	DK/HYDR/TKMT	01/24/90	Truck Mounted Hydraulic Derrick
CTS 52	DK/LTDY/TKMT	04/12/88	Lt Dty Truck Mounted Hydraulic Derrick
CTS 41.16	DT/ASPH/1000	08/30/89	1000 Gal Press Bitum Distributor Truck
CTS 50.2	TK/CPUT/2DWR	12/09/88	Compact Utility Wagon
CTS 30.26	TK/DUMP/LTDY	04/28/89	Light Duty Truck With High-Lift Bed
CTS 21.8	TK/DUMP/MDTD	04/04/88	Medium Duty Tandem Dump Truck
CTS 23.7	TK/DUMP/MDWA	02/09/87	Medium Duty Dump Truck
CTS 29.19	TK/DUMP/MDWA	12/16/85	Ten Foot Steel Dump Bodies
CTS 29.19	TK/DUMP/MEDY	12/16/85	Ten Foot Steel Dump Bodies
CTS 48.6	TK/DUMP/TAND	04/04/88	Truck, Tandem Axle Dump
CTS 20.5	TK/DUMP/XXXX	05/21/52	Special Compartment Tool Box - Dump Trks
CTS 22.27	TK/FLAT/MEDY	02/18/88	Truck, GVW Rating 24,001 - 30,000 Lds.
CTS 24.1	TK/FLAT/MEDY	03/03/87	Truck GVW 30,000 Lbs w/Hydraulic Crane
CTS 12.47	TK/PK /1/2T	02/09/88	Pickup Truck - GVW Rating 5400 Lbs.
CTS 37.18	TK/PK /1TON	12/01/86	Truck, GVW Rating 10,000 Lbs.
CTS 38.1	TK/PK /1TUT	11/27/89	One Ton Closed Utility Body Truck
CTS 13.51	TK/PK /34MT	01/08/90	Truck - GVW Rating 7200 Lbs.
CTS 43.18	TK/PK /34UT	01/02/90	Truck - GVW Rating 7200 Lbs.
CTS 47.6	TK/PK /COMP	02/09/88	Compact Pickup
CTS 36.4	TK/PK /XXXX	08/15/62	Compartment Body For Trucks
CTS 22.27	TK/STAK/MEDY	02/18/88	Truck, GVW Rating 24,001 -30,000 Lbs.
CTS 19.1	TK/STAK/TAND	02/26/88	Truck, Stake Bed, Tandem
CTS 35.42	TK/SUBR/2WDR	12/04/89	Suburban or Travelall
CTS 46.9	TK/TILT/TAND	11/17/89	Tilt Bed Truck
CTS 31.21	TK/TRAC/MEDY	02/27/81	Truck, Single Axle Tractor
CTS 40.22	TK/TRAC/TAND	02/23/88	Truck, Tandem Axle Tractor
CTS 25.39	TK/TRUK/XXXX	05/25/71	Truck - GVW Rating 12,001 - 16,000 Lbs.
CTS 45.1	TK/VAN /LTDY	11/30/78	Step-Van Truck
CTS 51.1	VN/PASS/1TON	12/19/89	One Ton Passenger Van
CTS 39.2	VN/PASS/COMP	02/08/88	Mini-Vans
CTS 49.5	VN/VAN /1/2T	01/06/89	Van Truck
CTS 44.14	VN/VAN /1TON	12/29/89	Van Truck
CTS 53	VN/VAN /3/4T	02/01/89	3/4 Ton Passenger Van

4. KENTUCKY

If anyone has a question about Kentucky's specifications, please contact –

Rick.Durham@ky.gov or Roger.Conn@ky.gov

5. MINNESOTA

Minnesota's equipment specifications can be found on Minnesota's Web-Page –

www.dot.state.mn.us/equipment

EQUIPMENT SPECIFICATIONS

6. MISSISSIPPI

Specifications

Number	Date	Title
034-ACR-180D	06-99	Air Compressor-180 CFM - Trl Mtd
042-RTAP-10/16	11-96	Asphalt Laydown Machine
054-APRC/TR-40	06-99	Pavement Planer w/Trailer
047-AMM/P/WT-36	12-99	Asphalt Milling Machine w/Trailer (mounts in the bucket of a backhoe)
054-ASPP-TM	06-99	Aggregate Spray Pothole Patcher
059-IPH-TM	08-97	Infrared Pavement Heater
071-PSHB-14	02-97	Crawler Tractor with Hydraulic Dozer - 60 HP
072-PSLB-90HP	07-98	Crawler Tractor with Hydraulic Dozer - 90 HP
083-BC12-TMD	03-94	Brush Chipper - 12 Inch Capacity
092-GM-72TM	11-97	Grout Machine/Trailer Mounted
129-HETM-1.35CY	07-97	Hydraulic Excavator - Crawler Mtd, 1 Cu Yd.
151-PEW-225	03-94	Electric Welder - Skid Mtd - 225 Amps
157-PEW-250-60/4	03-97	Electric Welder - Skid Mtd. - 250 Amps
164-M25-PSA	06-99	Motor Grader Articulated Frame - 26,000 LB - 135 HP
164-M30-PSA	07-98	Motor Grader Articulated Frame - 30,000 LB - 140 HP
179-SBA-12MB	02-97	Scarifier Attachment - 12" Mold Board
212-FELB-10014ET-GP	07-96	Wheel Tractor w/Front End Loader and Extended Backhoe - General Purpose Bucket
212-FELB-10014ET-4N1	11-88	Wheel Tractor w/Front End Loader and Backhoe - 4 in 1 Multi Purpose Bucket
212-FELB-10014E-GP-CAC	06-99	Wheel Tractor w/Front End Loader and Extended Backhoe-General Purpose Bucket - Air Conditioned Cab
212-FELB-10014E-4N1-CAC	06-99	Wheel Tractor w/Front End Loader and Extended Backhoe - 4 in 1 Multi Purpose Bucket - Air Conditioned Cab
212-FELB/MFWD-10014E-GP-CAC	06-99	Wheel Tractor/Mechanical FWD w/Front End Loader and Extended Backhoe-General Purpose Bucket - Air conditioned Cab
217-AFEL-300GP	06-99	Industrial Articulated Front End Loader - 3 Cu. Yd. General Purpose
218-AFEL-200MP	10-97	Industrial Articulated Front End Loader - 2.0 CY 4 In 1 - Multipurpose
254-TMEM-23R5	08-96	Wheel Tractor 85 PTO HP Mid-Mount 23 Ft. Extension Mower - 5 Ft. Rotary
254-TMEM-23R5-CAC	06-99	Wheel Tractor 85 PTO HP Mid-Mount 23Ft. Extension Mower - 5 Ft. Rotary- Air Conditioned Cab
254-TMEM-28R4-CAC	06-98	Wheel Tractor 85 PTO HP Mid-Mount 28 Ft. Extension Mower - 4 Ft. Flail - Air Conditioned cab
265-RMHD-15HD	06-99	15 Ft. Rotary Mower - Mechanical - Heavy Duty
335-SWR-12TD	06-98	Steel Wheel Roller - 10-12 Ton
342-PTR-9W-15T	07-99	Self-Propelled Pneumatic Tired Roller - 9 Wheel - 15 Ton
342-PTR-11W-15T	07-98	Self-Propelled Pneumatic Tired Roller - 11 Wheel - 15 Ton
342-PTR-11W-35T	03-98	Self-Propelled Pneumatic Tired Roller - 11 Wheel - 35 Ton
344-PTPR-13T	07-97	Pull type Pneumatic Tired Roller - 13 Ton
371-RPV-1T	09-97	Portable Vibratory Roller -1 Ton
372-PSW-5TD	07-98	Portable Tandem Roller - 5 Ton
434-WFS-HD	07-98	Wildflower - Native Grass Seeder
451-SPHR-12TH	06-99	Snow Plow - 12 Ft. Reversible for Tilt Hook Truck
491--SSA-8D	06-99	Tailgate Spreader Attachment
502-TMSM-TM	12-97	Thermoplastic Striping Machine - Truck Mounted
502-TPMVT-SM	09-96	Thermoplastic Melter - Skid Mounted
506-LFMA-150	07-96	Thermoplastic Melter/Applicator - Detail Striper
507-TPAS-M/LL/DT-RO	10-99	Thermoplastic Application System - Detail Striper - Ride On
511-SSP-72D	06-99	Self-Propelled Power Boom
513-SPPS-60	07-96	Self-Propelled Lot Sweeper - Riding Type 541-HCSP-30
	03-94	Hydraulic Crane -Self Propelled - 30,000 Lb.
563-FWDD-8000	07-97	Fork Lift -Front Wheel Drive - 8,000 Lb.

EQUIPMENT SPECIFICATIONS

Mississippi (continued)

Specifications Number	Date	Title
563-PTFLG-10,000	03-94	Fork Lift - Gas - 10,000 lb.
563-PTFLG-15,000	03-94	Fork Lift - Diesel. 15,000 lb.
563-PTFLD-YD-10,000	07-98	Forklift - Diesel - Yard Truck- 10,000 lb.
607-WTD-85HR	06-99	Wheel Tractor - 85 PTO HP - 3 Point Hitch - Remote Hydraulics
607-WTD-85HR-CAC	06-99	Wheel Tractor - 85 PTO HP - 3 Point Hitch - Remote Hydraulics - Air Conditioned Cab
607-WTD/MFWD-85HR	06-99	Wheel Tractor - 85 PTO HP - 3 Point Hitch - Remote Hydraulics - Mechanical Front Wheel Drive
617-PFAB-8VD	06-99	Portable Flashing Arrow Board, Trailer Mounted - 12 Volt Diesel
633-T20P-20K	02-97	Towing Type Trailer 20,000 Lb. Capacity
633-T20P-30A	06-99	Towing Type Trailer 20,000 Lb. Capacity - Air Brakes
655-FBS/FDS-12	08-99	12' Flatbed w/Fold Down Sides
672-ATRT-85	01-00	Automatic Traffic Recorder Tester
672-STC-85	02-97	Stationary Traffic Counter
672-TCST-85	08-96	Traffic Counter
672-TCDM-85	08-96	Traffic Counter - Data Module
685-PCMS-TKM	02-97	Portable Changeable Message Sign - Pick-up Truck Mounted
685-PCMS-TRLM	08-99	Portable Changeable Message Sign -Trailer Mounted
685-PCMS-FM/LED/SP-TRLM	12-99	Portable Changeable Message Sign -Trailer Mounted
712-AEPL-TP	07-97	Automatic Level with Tripod
716-GPS-RT/STK	02-99	Geodetic Surveying system
717-EDM-TS	07-97	Electronic Distance Measure - Total Station
717-EDM-TS7	07-97	Electronic Distance Measurer - Total Station
717-GQ-TS	09-99	G
717-GQM-TS	02-00	Geodetic Quality Motorized Total Station
717-RTS-RCDC/SW-26	08-99	Robotic Total Station
717-T/3DOMS-TS	08-99	Theodolite Measuring System
719-EDC-SW	06-99	Electronic Data Collector
731-NDG-3241C	08-96	Nuclear Density Gauge
731-NDG-3430	07-97	Nuclear Density Gauge
731-DNG-3440	06-99	Nuclear Density Gauge
731-NDG-3450	07-99	Nuclear Density Gauge
731-NDG-4640B	06-99	Nuclear Density Gauge
736-ACIF-4155	02-97	Asphalt Content Furnace
736-ACIO-72	11-97	Asphalt Content Oven
737-HAO-18CF	01-98	Horizontal Airflow Oven
737-HAO-10CF-22	10-96	Horizontal Airflow Oven
737-MSS-23	11-99	Sample Splitter
737-PAS/L-23	11-99	Port-A-Screen
737-SDM-23	11-99	Soil Dispensing Mixer
737-12/SS-23	11-99	12" Sieve Shaker
739-ARBA/DP-72	09-96	Automatic Ring & Ball Apparatur w/Data Printer
739-BBR-72	09-99	Bending Beam Rheometer
737-GCO-23	11-99	Gravety Convection Oven
739-LC/G-600T	08-96	600 Ton Load Cell
739-MWB-23	11-99	Marshall Water Bath
739-MWO-72	02-97	Lab Microwave Oven
739-PVM/A-72	07-99	Portable Vibration Monitor
739-RAM-23	11-99	Roll-A-Meter w/Case
739-RMTS-72	02-98	Resilient Modulous Testing System
739-TCTM-45KN	08-96	Triaxial Compression Testing Machine
739-TSD/CC-72	09-96	Tensile Stress Ductilometer w/Coolant Circulator
739-UTS-72	08-96	Universal Testing System
741-ENC-2515	07-98	Engineering Copier
743-DNLVES-67	07-99	Digital Video Editing System
744-LCD/MM-85	01-98	LCD Multi-Media Projector

EQUIPMENT SPECIFICATIONS

Mississippi (continued)

Specifications

Number	Date	Title
748-CCS-83/20	12-97	Copy Camera System
748-EDCP-83/20	12-97	Copy Camera System
763-SML/TP-12000	08-99	Surface Mounted Lift - 12,000 lbs.
763-PJBP-2T	11-97	Pallet Jack - Battery Powered
785-TCOP-96	07-97	Two Color Offset Press
785-PIS-96	10-96	Desk-top Publishing System
785-HSCS-96	10-96	High Speed Color Scanner
801-ABTM-29DAA	07-98	Articulated Bucket - Truck Mounted -33 Ft. Working Height
801-SBBTM-29DAA	09-99	Bucket Truck - 35'
808-APTM-65 DAT	07-99	Aerial Platform - 65 Ft. w/H-Truck Mtd.
809-BIUTM-29/40	09-98	Bridge Inspection Unit - Truck Mtd.
809-BIUTKM-MD	11-99	Bridge Inspection Unit - Truck Mtd.
822-MSS-TM	06-99	Mechanical Street Sweeper
841-TMCD-4WD	06-99	Core Sample Drill - Truck Mounted
849-GRPD/P-TKMT	03-98	Hydraulic Guard Rail Post Driver/Puller - Truck Mounted
851-RDB-56CA-2CY	06-99	2 CY Dump Body
853-5CYBD-72CA	08-96	5 CY Dump Body
853-RDB-84CA-7CY	06-99	7 CY Dump Body
859-RDB-108CA-12CY	06-99	12 CY Dump Body
862-60CA-29DAA-CC	09-97	14,500 GVW Truck - 60" CA Cab and Chassis
862-60CA-14DAA-MSBW	09-97	14,500 GVW Truck - 60" CA with Maintenance Service Body and Winch
862-84CA-14DAA-CC	09-97	14,500 GVW Truck - 84" CA Cab and Chassis
862-84CA-14DAA-MSB	07-98	14,500 GVW Truck 84" CA with Maintenance Service Body
862-84CA-14DAA-MSBW	07-98	14,500 GVW Truck 84" CA with Maintenance Service Body and Winch
862-60CA-17DAA-MSB	07-99	17,000 GVW Truck - 60" CA with Maintenance Service Body
862-60CA-17DAA-MSBW	07-99	17,000 GVW Truck - 60" CA with Maintenance Service Body and Winch
862-60CA-17DAA-CC-MSB	07-99	17,000 GVW Truck - 60" CA Crew Cab with Maintenance Service Body
862-84CA-17DAA-MSB	07-99	17,000 GVW Truck 84" CA with Maintenance Service Body
862-84CA-17DAA-MSBW	07-99	17,000 GVW Truck 84" CA with Maintenance Service Body and Winch
868-DDTM-46TD76	02-97	Hydraulic Derrick - Tandem Truck Mounted - 46,000 GVW
884-84CA-24.5DAT-CCLP	11-97	24,500 GVW Low Profile Truck
887-56CA-SB	06-99	Survey Body for 14,500 Truck
888-MSBH84-DMRW-24.5/8000	07-97	Maintenance Body w/8000 lb. Hoist for 24,500 GVW Truck
888-MSBH84-DMRW-24.5/6000	10-99	Maintenance Body (Standard) w/6000 lb. Hoist for 24,500 GVW Truck
924-108CT-50DTT/WO	06-99	52,000 GVW Truck - Tractor 108" CA -w/ Options
924-WP-108	08-99	Wet Pack for 108" CA Truck
925-108CA-52DAS	06-99	52,000 GVW Truck - 108" CA for 12 CY Dump Body
931-TALB-40T		
HRA/WO	07-99	Flat Deck Low Body - 40 Ton w/Winch
934-TAD-20/22	06-99	20/22 CY Dump Trailer
938-CSUS-100GPM15	07-97	Chemical Spray unit - 1,500 Gallon Skid Mtd.
939-DNLB-50T	07-99	Drop Neck Lowboy - 50 Ton
939-FGNT-35K	01-98	Fixed Gooseneck - 35 Ton
939-FGNT-50T-PMW	10-98	Fixed Gooseneck - 50 Ton - Paver Special
945-UBAP-TRL	09-99	Bridge Inspection Unit - Aerial Platform - Trailer Mounted.
962-LMD/U/UB-12T-108CA26K	10-98	Light/Medium Duty Wrecker Body for 108CA Truck - 26,000 GVW
966-138CA-29D52-18HC	07-97	Hydraulic Crane - 18,000 Lb. Capacity - Mounted on 138" CA Truck - 30,000 GVW Diesel
966-156CA-D50-22HC	09-9	Hydraulic Crane - 44,000 Lb. Capacity - Mounted on 156" CA Truck - 50,000 GVW Diesel
968-145CA-29D33-15HAC	10-98	Articulating Hydraulic Crane - 15,000 Lb. Capacity - Mounted

EQUIPMENT SPECIFICATIONS

Mississippi (continued)

Specifications Number	Date	Title
968-156CA-29D52-18HAC	10-98	on 138" CA Truck - 33,000 GVW Articulating Hydraulic Crane - 18,000 Lb. Capacity - Mounted on 156" CA Truck - 52,000 GVW
971-BUS-17	02-98	17 Passenger Bus
971-BUS-21/22	02-98	21/22 Passenger Bus
971-BUS-24/25-MD	02-98	24/25 Medium Duty Passenger Bus
971-BUS-24/25-HD	02-98	27/29 Heavy Duty Passenger Bus
971-BUS-27/29-MD	02-98	27/29 Medium Duty Passenger Bus
971-BUS-27/29 MH	02-98	27/29 Medium Heavy Duty Passenger Bus
971-BUS-27/29 HD	02-98	27/29 Heavy Duty Passenger Bus
971-BUS-32/36-MD	02-98	32/36 Medium Duty Passenger Bus
971-BUS-32/36-HD	02-98	32/36 Heavy Duty Passenger Bus
971-Bus-40	02-98	40 Passenger Bus
971-BUS-44/46-SP	04-98	Special Transit 40 Passenger Bus

EQUIPMENT SPECIFICATIONS

7. NEW YORK

<u>Group #</u>	<u>Type Code</u>	<u>Description</u>
40400	0039	Automobiles
40500	0040	5 Passenger Minivan
	0114	Small Pickup 4X2 Ext. Cab
	0055/56	Suburban Truck
	0117	Small Pickup 4X2 Reg. Cab
	0100	Pickup Truck
	0102	Pickup 6 Person
	0106	Pickup Utility
	0113	Pickup Tow Vehicle
	0119	Pickup Dump 6 Person
40533	0121	Tower Truck Platform
	0123	Tower Truck w/artic
40500	0210	Small Dump Truck 6 Person
	0216	Small Dump Truck 6 Person w/gate
	0326	Lg. Dmp w/p 8887 40 GVW
	0327	Lg. Dmp w/p 8888 40 GVW
	0347	Lg. Dmp r/wing 1/way patrol
	0355	Trk 4x2 5th whl w/plow
	0366	Lg. Dmp trk. wing rev. patrol
	0426	Lg. Dmp w/p 8887 60 GVW
	0500-7	Small Stake Truck
	0510	Stake Truck 6-man
	0511/512	Stake Winch/Crane 6 person
	0600+	Large Stake Truck
	0721	Minivan
	0723	Minivan - Bridge Insp.
40502	0750	Power Wagon 4x4
40533	0865/67	Boom Truck
	0870	Underbridge Insp. Unit
42300	0943-44	Trailer, Lowbed
	0945	Lowboy Tri 35 Ton
	0984	Arrowboards
41400	1125/33	Port Compressor 185 CFM
41103	2100-01	Excavator long reach
	2104	Excavator single eng. 4x2
40601	2655	Tractor Ind 55 HP
	2764	Ind Tractor (ldr bhoe)
40603	3725-38	Med Loader 1 yd bkt
40604	3740	Skid Loader 1/4 yd.
37000	5516	Mower Tractor (over rail)
	5604	Mower Fail 6' (att), tow rtr 80"
	5605	Tow Rotary 15'
41306	7268-69	Patch Heater
	7278	Asphalt Storage
41300	7544	Patch Roller 5-Ton
41306	7681	Vibratory Roller 1-1/2 T w/trl
43231	7711	Concrete Saw
42900	8042-43	Wood Chipper
42901	8120-21	Stump Cutter
44000	8145	Catch Vac

8. NORTH DAKOTA

North Dakota's up-to-date specifications that are on existing contracts can be found at the following website.

www.state.nd.us/csd/spo/contracts/tcname.htm

For further information, please contact Chris Padilla at the following e-mail address:

cpadilla@state.nd.us

EQUIPMENT SPECIFICATIONS

9. OHIO

<u>Type</u>	<u>Title</u>
101	Standard Sedan
111	Standard Station Wagon
113	Station Wagon, Carry-All
121	Bus (School Type)
132	Jeep, 4 Wheel Drive
201	½ Ton Mini-Van
203	1 Ton Cargo/Van
204	12 Passenger Van
213	1 Ton Utility Truck
221	½ Ton Pickup Truck
222	¾ Ton Pickup Truck
223	1 Ton Pickup Truck
231	1 Ton Stake Truck
232	1 Ton Stake Truck with Lift Gate
233	2 Ton Stake Truck
234	2 Ton Stake Truck with Lift Gate
241	Truck Mounted Welder
242	Wrecker
254	Dump Truck Cab/Chassis - 31,000 lb. GVW
256	Tandem Axle Dump Truck Cab/Chassis
262	Truck Tractor - 50,000 lb. GVW
270	Trailer - Under 7 Tons
271	Trailer - 7 to 10 Tons
272	Trailer - Over 10 Tons
281	Low Boy Trailer
305	Tractor Mounted Cold Planer
310	Portable Changeable Message Sign
311	Tractor Loader Backhoe
314	Truck Mounted Arrow Board
316	Trailer Mounted Arrow Board
320	Towed Broom
321	Self Propelled Broom
322	Truck Mounted Attenuator
330	Truck Mounted Aerial Bucket
340	Brush Chipper
353	Rod-Type Sewer Cleaner
354	Vacuum-Type Sewer Cleaner
370	Air Compressor - Under 125 CFM
372	Air Compressor - Over 125 CFM
391	Truck Mounted Crane - ½ Yd. Size
393	Truck Mounted Crane - ¾ Yd. Size
395	Hydraulic Boom Crane
403	Bituminous/Concrete Curber
411	Sod Cutter
412	Stump Cutter
420	Truck Mounted Digger Derrick
421	Tractor Mounted Posthole Digger
430	Low Pressure Tar Distributor
431	High Pressure Tar Distributor
441	Self Propelled Ditcher/Trencher
449	Trailer Mounted Earth Drill
452	Truck Mounted Core Drill
453	Pneumatic Drill
460	Truck Mounted Post Driver
461	Truck Mounted Post Puller
470	Light Excavator
471	Heavy Excavator
480	All Size Forklifts

EQUIPMENT SPECIFICATIONS

Ohio (continued)

Type	Title
490	Small Grader
492	Large Grader
512	Pile Driver Hammer
530	Aggregate Heater
532	Portable Space Heater
540	Mud Jack
550	Tar Kettle - Under 300 Gallon
551	Tar Kettle - Over 300 Gallon
560	Truck Mounted Aerial Ladder
570	Tow Type Berm Leveler
590	4 WD Frontend Loader
598	Force Feed Loader
621	Concrete Mixer
640	15' Tow Rotary Mower
642	Extension Type Rotary Mower
644	60-66" Tow Rotary Mower
645	Flail Mower
646	5' Cutter Bar Mower
647	Under 60" Riding Mowers
651	Under 24" Push Mowers
652	18' Flail Mower
653	Weed Cutter
654	Side Mounted Rotary Mower
656	Cold/Hot Patch Box
660	Under 5 KW Light Plant
661	Over 5 KW Light Plant
686	11' Power Reversible Snow Plow
689	Truck Mounted V Plow
690	Grader Mounted V Plow
711	2" Water Pump
712	3" Water Pump
732	Road Reflector Remover
745	Asphalt Reclaimer
752	4-6 Ton Patch Roller
758	Walk Behind Roller
760	Sandblaster
770	12" Concrete Saw
771	18 & 24" Concrete Saws
773	Chain Saws
780	Crack Sealers
791	Tow Type Seeder
803	Pneumatic Spade
810	Chemical Sprayer
820	Aggregate Spreader
822	Salt/Grit Spreader
824	Hopper Spreader
840	Walk Behind Paint Striper
841	Truck Mounted Paint Striper
855	Vibratory Patch Tamper
860	Under 500 Gallon Water Tank
861	Over 500 Gallon Water Tank
870	Roto Tiller
890	Tractor, Under 140 cubic inch
891	Tractor, 140-165 cubic inch
892	Tractor, 165-190 cubic inch
893	Tractor, Over 190 cubic inch
894	Crawler Tractor
910	Concrete Vibrator
920	Sign Washer

EQUIPMENT SPECIFICATIONS

Ohio (continued)

Type	Title
930	Portable Welder
940	Wing Type Snow Plow

EQUIPMENT SPECIFICATIONS

10. PENNSYLVANIA

EQUIPMENT CLASS CODE	CLASS NAME	TYPE NAME
A 13 BP	CREW CAB	FLAT BED
A 13 BU	CREW CAB	GENERAL PURPOSE
A 13 FJ	CREW CAB	UTILITY
A 13 FR	CREW CAB	SURVEY
A 15 BU	DUMP	GENERAL PURPOSE
A 15 CM	DUMP	LEFT WING CAPABLE
A 15 DU	DUMP	RIGHT WING CAPABLE
A 15 FH	DUMP	UNDER BODY CAPABLE
A 15 IS	DUMP	CREW CAB
A 36 BP	PICK UP	FLAT BED
A 36 BU	PICK UP	GENERAL PURPOSE
A 48 AD	SPECIAL PURPOSE	AERIAL LIFT
A 48 CD	SPECIAL PURPOSE	HERBICIDE SPRAY CHASSIS
A 48 CG	SPECIAL PURPOSE	HIGHWAY WRECKER
A 48 CU	SPECIAL PURPOSE	LUBRICATOR
A 48 DI	SPECIAL PURPOSE	PAINT SUPPLY
A 48 DQ	SPECIAL PURPOSE	POST DRIVER GUARDRAIL
AA1 BU	TANDEM DUMP	GENERAL PURPOSE
AA1 CK	TANDEM DUMP	LEFT-RIGHT WING CAPABLE
AA1 CM	TANDEM DUMP	LEFT WING CAPABLE
AA1 DU	TANDEM DUMP	RIGHT WING CAPABLE
AA2 AX	BRIDGE INSPECTION	CHASSIS MOUNTED
AA3 AX	ASPHALT PREMIX	CHASSIS MOUNTED
AA4 BU	TRI AXLE DUMP	GENERAL PURPOSE
AA4 CK	TRI AXLE DUMP	LEFT-RIGHT WING CAPABLE
AA4 CM	TRI AXLE DUMP	LEFT WING CAPABLE
AA4 DU	TRI AXLE DUMP	RIGHT WING CAPABLE
AA5 AX	FUEL	CHASSIS MOUNTED
AA6 DB	DISTRIBUTOR	OIL DISTRIBUTER BITUM
AA7 AX	PONY	CHASSIS MOUNTED
AA8 AX	PAINT MACHINE	CHASSIS MOUNTED
AB7 AX	ROAD PATCHER	CHASSIS MOUNTED
AB9 BU	DUMP-UTILITY	GENERAL PURPOSE
AD1 DJ	ANTI-ICING	PARA PLASTIC
AD1 KC	ANTI-ICING	STAINLESS STEEL
B 46 CR	SNOW BLOWER	LOADER
B 46 FB	SNOW BLOWER	TRUCK INTEGRATED
B 47 CB	SNOW PLOW	HEAVY REV PLOW
B 47 CF	SNOW PLOW	HIGH SPEED PLOW
B 47 CL	SNOW PLOW	LEFT WING
B 47 CO	SNOW PLOW	LIGHT REV PLOW
B 47 DC	SNOW PLOW	ONE WAY ADJ 712 PLOW
B 47 DD	SNOW PLOW	ONE WAY ADJ 721 PLOW
B 47 DE	SNOW PLOW	ONE WAY ADJUSTABLE 721B
B 47 DF	SNOW PLOW	ONE WAY ADJ 731 PLOW
B 47 DT	SNOW PLOW	RIGHT WING
B 47 HG	SNOW PLOW	ONE WAY FIXED
B 47 IC	SNOW PLOW	RIGHT BENCHING WING
B 47 ID	SNOW PLOW	ONE WAY BUTTERFLY WING
B 47 IE	SNOW PLOW	HEAVY REV - DOUBLE TAPER
B 50 AY	SPREADER	CHEMICAL ANTI-SKID
B 50 IJ	SPREADER	AIR VELOCITY

EQUIPMENT SPECIFICATIONS

Pennsylvania (continued)

EQUIPMENT CLASS CODE	CLASS NAME	TYPE NAME
C 08 AE	COMPRESSOR	AIR
C 23 AK	HEATER	ASPHALT PREMIX
C 23 AM	HEATER	ASPHALT STORAGE TRAILER
C 25 AR	KETTLE	BITUMINOUS
C 25 DJ	KETTLE	PARA PLASTIC
C 29 BC	MILLING	COLD PLANER
C 34 AS	PAVER	BITUMINOUS FINISHER
C 34 CV	PAVER	MAINTAINER
C 34 CY	PAVER	MIXER PAVER
C 43 AI	ROLLER	ARTICULATED VIBRATORY
C 43 EB	ROLLER	RUBBER TIRE
C 43 ER	ROLLER	TANDEM STATIC
C 43 EV	ROLLER	THREE WHEEL STATIC
C 43 FM	ROLLER	VIBRATORY
C 43 JJ	ROLLER	RUBBER TIRE - STEEL WHEEL
C 63 BU	WIDENER	GENERAL PURPOSE
C 95 GO	CHIPPER	STONE
CA 9 GT	PATCHER	BITUMINOUS
CC 2 FM	PATCH ROLLER	VIBRATORY
CC 4 FJ	MIXING PLANT	UTILITY
D 54 BU	TRACTOR	GENERAL PURPOSE
D 55 BM	TRACTOR MOWER	FLAIL
D 55 DZ	TRACTOR MOWER	ROTARY
D 55 EF	TRACTOR MOWER	SICKLE
D 55 EG	TRACTOR MOWER	SICKLE-FLAIL
D 55 EH	TRACTOR MOWER	SICKLE-ROTARY
D 55 HS	TRACTOR MOWER	BOOM
D 64 EA	WOOD CHIPPER	ROTARY CUTTER
E 18 CH	EXCAVATOR	HYDRAULIC
E 18 IK	EXCAVATOR	DUAL WHEEL
E 21 AH	GRADER	ARTICULATED
E 27 AH	LOADER	ARTICULATED
E 27 DV	LOADER	RIGID
E 54 AO	TRACTOR	BACKHOE LOADER COMBINED
E B1 CR	BELT	LOADER
E B2 DV	POWER UNIT	RIGID
E C3 IP	MAINTAINER	SIDE DOZER
F 06 DL	CLEANER	PIPE FLUSHER
F 26 AG	LIGHT	ARROW DIRECTIONAL
F 26 GE	LIGHT	MESSAGE DIRECTIONAL
F 33 CQ	PAINT MACHINE	LINE SPRAYER SUPPLY
F 53 AV	SWEEPER	BROOM TRUCK
F 53 DZ	SWEEPER	ROTARY
G 45 BS	SEDAN	FOUR DOOR
G 51 BU	STATION WAGON	GENERAL PURPOSE
G 59 BU	UTILITY	GENERAL PURPOSE
G 60 BU	VAN	GENERAL PURPOSE
M 57 BP	TRAILER	FLAT BED
M 57 CT	TRAILER	LO-BOY

EQUIPMENT SPECIFICATIONS

11. TEXAS

A listing of the below, as well as other TxDOT Standard Specifications are posted on the TxDOT Internet site (www.dot.state.tx.us). They are accessible from the TxDOT home page. Click on the **ABOUT TxDOT**, then **ORGANIZATION CHART**. Click on **GENERAL SERVICES DIVISION**, then **PURCHASING**. This will take you to the **PURCHASING** page.

In addition to the Specifications, you will find the below standard purchasing documents:

- TxDOT Standard Specifications Index/Numerical
- TxDOT Standard Specifications Index/Alphabetical
- Supplemental Specifications and Attachments
- TxDOT Terms and Conditions, Revised March 2004
- TxDOT HUB Subcontracting Plan
- TxDOT HUB Subcontracting Plan Letter of Instruction
- Terms and Conditions for Major Equipment Services with Operator
- Terms and Conditions for the Lease of Major Equipment without Operator
- Terms and Conditions for Original Equipment Manufacturer's Parts
- Form 20.102, Certificate of Insurance
- Form 1950, Certificate of Insurance for Services other than Highway and Building
- Technology Access Clause
- TxDOT Filter and Belt Identification Form
- Payment Bond
- Performance Bond
- Texas End User Signed Statement
- Chassis Manufacturer, Dealer, and Converter Licenses Form

TxDOT STANDARD SPECIFICATION INDEX

Specification Number	Spec Date	Title of Specification
065-05-16	02/03	Aerial Device, Articulated or Telescoping, Truck Mounted, 28, 30, 32 and 35 foot (Formerly 065-05-02)
065-05-09	12/92	Aerial Device, Articulating Boom, Truck Mounted, 42 or 50 foot
065-05-17	03/98	Aerial Device, Articulating or Telescoping Truck Mounted, 40, 45, and 50 foot (Formerly 065-05-03)
065-05-08	02/95	Aerial Device, Equipped with Hydraulic Elevator Lift, Truck Mounted, 50 foot
065-05-10	04/93	Aerial Device, Telescoping Boom, Truck Mounted, 36 and 40 foot
065-05-05	11/92	Aerial Device, Telescoping Boom, Van Mounted, 28 foot
065-05-22	03/02	Aerial Device, Telescoping with Articulating Arm, Truck Mounted, 35 foot
065-05-13	05/03	Aerial Device, Telescoping with Articulating Lower Boom, 50 and 40 foot
065-05-20	06/99	Aerial Device, Trailer Mounted, Articulated or Telescoping, 28 Foot
065-05-18	11/99	Aerial Device, Truck Mounted, 60 and 65 foot (Formerly 065-05-04 - Vol. 1 / 2)
060-03-22	12/99	Antifreeze/Coolant, Extended Life
755-06-23	06/02	Applicator, Marker Adhesive, Bitumen Type, Trailer Mounted (Formerly 755-10-06)
755-06-25	08/00	Applicator, Marker Adhesive, LPG Fired (Formerly 755-10-08)
765-61-18	06/00	Attachment, Blower, Snow, Self-Contained, for Mounting on 3 Cubic Yard Pneumatic-Tired Loader
550-42-09	11/02	Attenuator, Crash, Class II and III, Truck Mounted (Replaced Obsolete 550-42-02)
780-95-89	07/00	Bending Plate, Weigh-in-Motion, Traffic Data Collection System
765-24-01	10/93	Bits, Diamond Core, Thin Wall, Non Resettable for Concrete Pavement Drilling
120-21-35	06/99	Boat, Fiberglass, Deep V-Hull
065-65-03	06/92	Body, Oilfield, Fifth Wheel, for Truck Chassis Mounting
065-65-55	05/97	Body, Oilfield, Platform, Fifth Wheel, for Single Axle Truck Chassis (Formerly 065-65-02)
065-30-35	07/02	Body, Special Materials Handling, Hydraulically Operated, Truck Mounted, 4 or 5 cubic yard (Formerly 065-30-01)

EQUIPMENT SPECIFICATIONS

Texas (continued)

Specification Number	Spec Date	Title of Specification
065-90-01	06/96	Body, Van, Aluminum Skin, 22 foot for Mounting on a minimum 32,000 lb. GVWR Cab and Chassis
765-49-04	03/94	Breaker, Paving, Pneumatic
765-49-02	12/93	Breaker, Tool, Drill and Rock Combination
070-18-27	01/01	Carrier, Personnel/Cargo, Two or Four Wheel Drive, Off Road Type (Formerly 070-18-02)
070-18-28	12/00	Carrier, Personnel/Cargo, Two-Wheel Drive for Office Complex Use
020-04-28	03/03	Chipper, Brush, Disc or Drum Type, 18 inch branch capacity, Trailer Mounted
020-04-27	03/01	Chipper, Brush, Disc Type, 12 inch (30 cm) branch capacity, Trailer Mounted (Formerly 020-04-03)
670-61-28	06/98	Cleaner, Culvert and Drain, Jet Action
670-61-29	07/02	Cleaner, Culvert and Drain, Jet Action, Trailer Mounted
025-50-40	01/00	Compressor, Air, Diesel Powered, Trailer Mounted, 100, 125 or 185 CFM (Formerly 025-50-01)
025-50-41	06/03	Compressor, Air, Diesel-Powered, Trailer Mounted, 250-CFM or 365-CFM (Formerly 025-50-02)
765-13-26	06/95	Crane, Bridge, Mobile, Tower Type, minimum 42 foot horizontal reach
765-13-27	06/95	Crane, Bridge, Mobile, Tower Type, minimum 65 foot horizontal reach
065-94-37	09/00	Crane, Electric / Hydraulic, 3,200 pound capacity @ 3 foot radius, for Truck Mounting (Formerly 065-94-05 and 065-94-07)
065-94-01	02/94	Crane, Electric, 2,000 pound capacity, for Truck Mounting
065-94-36	10/95	Crane, Electric, minimum 4,000 pound capacity @ 4 foot radius, for Truck Mounting (Formerly 065-94-06)
765-13-88	06/98	Crane, Heavy Duty Lift Capacity, 3,500 pounds at 80 Degree Boom Angle, Truck Mounted
560-39-01	11/94	Crane, Overhead
765-13-36	01/00	Crane, Self Propelled, Deck Type Hydraulic, 8.5 ton (Formerly 765-13-09)
765-13-24	06/98	Crane, Underbridge, Articulated and Telescoping, minimum 60 foot horizontal reach (Formerly 765-13-12)
929-33-27	04/01	Cranes, Inspection and Testing (Formerly 929-16-02)
845-12-53	02/02	Data Recording System, Falling Weight Deflectometer System
220-84-25	06/99	Data Recording System, Seismic Pavement Testing System
765-13-86	06/03	Derrick, Digger, Bare Boom, Lift Capacity, 20,000 pounds, Hydraulic Rotating @ 78 degree Boom Angle with Turrent Mounted Winch (Formerly 765-13-06)
765-13-39	06/03	Derrick, Hydraulic, Rotating, Bare Boom, Lift Capacity, 24,000 pounds @ 80 degree Boom Angle with Turrent Mounted Winch
765-08-38	04/02	Drill, Core, Diesel Powered, Frame Mounted Pavement Test Core Drill
765-08-40	04/99	Drill, Core, Portable, Gasoline Powered (Formerly 765-08-02)
545-57-01	02/94	Drill, Earth, Gasoline Powered, Minimum 5 HP
545-57-36	03/99	Drill, Earth, Trailer Mounted
760-20-41	07/03	Earth Boring Machine, 20 Foot Mechanical Drive
760-20-38	06/92	Earth Boring Machine, 10 Foot, Mechanical Drive, (Formerly 760-20-07)
760-90-35	05/00	Excavating and Grading Machine, Carrier Mounted, Class II (Formerly 760-90-02)
760-90-36	03/04	Excavating and Grading Machine, Carrier Mounted, Class III (Formerly 760-90-03)
760-90-37	10/02	Excavating and Grading Machine, Carrier Mounted, Two-Wheel and All-Wheel Drive, Class I (Formerly 760-90-01 and 760-90-01SP)
760-90-38	05/98	Excavator, Hinged Boom, Crawler Mounted, 26,000 pound operating weight (Formerly 760-90-06)
760-90-41	06/99	Excavator, Telescoping Boom, Crawler Mounted, 26,000 Lb., Operating Load
450-77-73	06/97	Fabric, Tarpaulin (Formerly 265-46-01)
560-75-39	05/00	Forklift, Truck, 4,000 pound capacity (Formerly 560-75-03)
560-75-45	06/97	Forklift, Truck, Electric Powered, 3,500 and 4,000 pound capacity (Formerly 560-75-10)
560-75-46	06/00	Forklift, Truck, Electric Powered, 5,000 pound capacity
560-75-42	12/98	Forklift, Truck, Electric Powered, Reach, 4,000 pound capacity
560-75-43	11/97	Forklift, Truck, Electric Powered, Standup Rider, 3,000 pound capacity (Formerly 560-75-02)

EQUIPMENT SPECIFICATIONS

Texas (continued)

Specification Number	Spec Date	Title of Specification
560-75-48	03/97	Forklift, Truck, Piggyback Type, 5,000 pound capacity
560-75-41	07/02	Forklift, Truck, Tractor Type, Rough Terrain, 6,000 and 8,000 pound capacity (Formerly 560-75-07)
405-09-35	01/02	Fuel, Automotive (Unleaded Gasoline, Reformulated Unleaded Gasoline, and Diesel) Specifications, Terms and Conditions (Formerly 405-09-15-87)
405-09-39	03/03	Fuel, Ultra Low Sulfur, Texas Low Emission Diesel Specifications, Terms and Conditions
760-06-39	04/04	Grader Blades (Formerly 760-06-01)
760-33-36	10/99	Grader, Motor, Class I (Formerly 760-33-01)
760-33-37	09/02	Grader, Motor, Class II (Formerly 760-33-02)
760-33-38	10/02	Grader, Motor, Class III (Formerly 760-33-03)
760-33-39	10/02	Grader, Motor, Class IV (Formerly 760-33-04)
020-71-42	06/96	Gunning Machine, Seed, Wet Mix Type, Tandem Axle, Trailer Mounted (Formerly 020-71-02)
992-19-46	11/03	Inspection and Testing of Aerial Devices and Cranes with Aerial Platforms (Formerly 992-46-16)
765-41-47	06/98	Jack, Mud, Gasoline Powered, Trailer Mounted
755-20-47	11/02	Kettle, Melting, Asphalt, Diesel Fired, Class I and II, Trailer Mounted (Formerly 755-20-05 and 755-10-45)
545-33-37	12/97	Lathe, Engine, Swing Over Bed, Heavy Duty, minimum 17 inch
755-60-34	05/00	Laying Machine, Curb, Automatic Slipforming and Extruding
075-44-43	03/01	Lift, 4-Post, Truck, Electric/Hydraulic, 30,000 Pound Lift Capacity
545-39-35	04/99	Lift, Hydraulic Vertical Platform Body (Formerly 545-39-01)
065-68-47	05/98	Lift, Tailgate, Electric / Hydraulic, 1,000 pound capacity (Formerly 065-68-04)
550-96-46	11/97	Light, Warning, Bi-Directional, Battery Powered, Type "A" Flashing and Type "C" Steady Burn (Formerly 550-96-01)
055-57-83	01/98	Light, Warning, Rotating Incandescent, 360 degree, Permanent Mount
055-57-84	09/00	Light, Warning, Strobe, 360 degree, Magnetic Mount (Formerly 055-57-03)
055-57-86	09/00	Light, Warning, Strobe, 360 degree, Permanent Mount (Formerly 055-57-01)
405-03-48	06/01	Liquefied Petroleum Gas (LPG) with Lease Tank
765-85-45	07/02	Loader, Crawler, 1-1/4 and 1-1/2 cubic yard (Formerly 765-85-02)
765-85-48	02/02	Loader, Crawler, 2 cubic yard (Formerly 765-85-03)
765-85-04	05/94	Loader, Crawler, 2.6 cubic yard
760-51-31	10/99	Loader, Pneumatic Tired, 2 Cubic Yard (Formerly 760-51-02)
760-51-30	09/99	Loader, Pneumatic Tired, 2.5 Cubic Yard
760-51-32	06/00	Loader, Pneumatic Tired, 3 Cubic Yard (Formerly 760-51-03)
760-51-01	11/94	Loader, Pneumatic Tired, 5,100 pound operating load
760-51-33	09/02	Loader, Pneumatic Tired, Skid Steer Type, 1,200 and 1,700 pound operating load (Formerly 760-51-05)
760-51-34	06/02	Loader, Pneumatic Tired, Skid Steer Type, 1,874 and 2,300 pound operating load
760-51-36	09/02	Loader, Pneumatic-Tired, Skid Steer Type, 3,500 Lb. Operating Load
405-87-58	06/00	Lubricants, Engine Oil and Grease, Re-Refined (Formerly 405-39-01, Vol. I/II)
405-39-23	01/00	Lubricants, Engine Oil and Grease, Virgin (Formerly 405-39-01, Vol. I/II)
545-48-25	06/97	Machine, Milling, Turret, Vertical (Formerly 545-48-01)
755-10-50	06/01	Maintenance Unit, Asphalt, One Man Operated, Truck Mounted, 1,000 gallon or 1,750 gallon, Utility Class or Highway Class (Formerly 755-10-05 - Vol. 1 / 4)
755-10-49	03/03	Maintenance Unit, Asphalt, Trailer Mounted, 600 and 1,000 gallon (Formerly 755-10-04 - Vol. 1 / 2)
755-80-31	01/04	Mixer, Concrete, 6 and 9 cubic foot capacity, Trailer Mounted (Formerly 755-80-02, 755-80-03, and 755-8030)
755-80-30	12/02	Mixer, Concrete, Mobile, Truck Mounted, Volumetric Batch
020-66-32	06/00	Mower, Articulated, Side Boom, with Rotary Brush Cutter, for Tractor Mounting (Formerly 020-66-02)
020-15-38	06/03	Mower, Flail, Lift Type, PTO Driven, 88 inch (Formerly 020-15-01)
020-16-58	04/03	Mower, Rotary, 60 and 72 Inch, Lift Type (Formerly 020-16-01)

EQUIPMENT SPECIFICATIONS

Texas (continued)

Specification Number	Spec Date	Title of Specification
020-16-61	01/04	Mower, Rotary, Hydraulically Driven, 15 foot (Formerly 020-16-04)
020-66-68	05/00	Mower, Rotary, Telescoping Boom, Tractor Side Mounted (Formerly 020-66-01)
020-16-40	01/04	Mower, Rotary, Trail Type, PTO Driven, Heavy Duty, 84 inch Heavy-Duty (Formerly 020-16-02)
755-10-67	07/99	Patcher, Pothole, Asphalt, Truck Mounted, 4 Cubic Yard Capacity (Formerly 755-10-07)
845-12-50	05/97	Pavement Loading Device, Falling Weight Deflectometer System
755-43-55	04/00	Planer, Cold, Track-Mounted (Formerly 755-43-01)
545-39-38	06/99	Platform, Work, Aerial, Scissor Lift, Self Propelled, 32 Foot or 40 Foot (Formerly 545-39-02)
545-39-58	12/00	Platform, Work, Aerial, Scissor-Lift, Electric Powered, Self Propelled, 20 Foot Platform Height
065-05-11	05/94	Platform, Work, Aerial, Self Propelled, 40 foot
765-61-40	05/00	Plow, Snow, Power Reversible Moldboard, General Purpose, 11 foot (Formerly 765-61-01)
765-61-41	06/01	Plow, Snow, Power Reversible Moldboard, High Speed, 11 foot (Formerly 765-61-02)
720-33-01	10/93	Pump and Dispenser, Fuel, Commercial
680-77-62	03/01	Radar Instrument, Solar Assisted/Battery Powered, Trailer Mounted
680-77-61	07/00	Radar Instrument, Speed Measuring Device, Vehicle Mounted
845-49-62	04/01	Radar System, Ground Penetrating
760-26-62	03/03	Reclaimer/Stabilizer, 79 Inch Cut, Diesel Powered, Self Propelled (Formerly 760-26-02)
760-63-42	12/99	Roller, Flatwheel, Steel, Tandem, 8 - 10 and 10 - 14 ton (Formerly 760-63-05)
760-63-41	10/99	Roller, Flatwheel, Tandem, Variable Weight, 6 - 8 Ton (Formerly 760-63-04)
760-63-40	10/99	Roller, Flatwheel, Tandem, Variable Weight, with Retractable Wheels, 4 - 6 ton (Formerly 760-63-02)
760-75-63	08/02	Roller, Self Propelled, Pneumatic Tired, Minimum 27,000 Pound Ballasted Capacity (Formerly 760-75-01)
760-75-64	09/00	Roller, Self Propelled, Pneumatic Tired, Minimum 32,000 Pound Ballasted Weight (Formerly 760-75-02)
760-75-65	07/99	Roller, Tow-Type, Pneumatic Tired, 11 Wheel
760-63-43	04/96	Roller, Variable Weight, 3 Wheel, 8 - 10 ton (Formerly 760-63-03)
760-66-47	01/01	Roller, Vibratory, Flatwheel, Steel, Tandem, 12 ton
760-66-65	01/04	Roller, Vibratory, Flatwheel, Steel, Tandem, Minimum 39 Inch Rolling Width
760-66-67	10/02	Roller, Vibratory, Self Propelled, Single Drum, Pad Foot, Minimum 66 Inch (Formerly 760-66-03)
760-66-68	10/02	Roller, Vibratory, Self Propelled, Single Drum, Pad Foot, Minimum 82 Inch
755-65-74	02/00	Saw, Concrete Pavement, Walk Behind, 65 HP (Formerly 755-65-02)
755-65-73	08/01	Saw, Concrete Pavement, Walk Behind, Self-Propelled
755-30-80	07/03	Shoulder Paver, Self-Propelled
550-14-88	10/02	Sign, Arrow Board Type Traffic Alerting and Channeling Device, Vehicle Cab Mounted (Formerly 550-14-03)
550-14-77	10/02	Sign, Arrowboard, Solar / Battery Powered, Trailer Mounted (Formerly 550-14-05 – Vol. 1 / 2)
550-14-78	02/03	Sign, Programmable Message, Solar / Battery Powered, LED (Formerly 550-14-06)
550-14-79	01/00	Sign, Programmable Message, Vehicle Mounted
550-14-04	02/94	Sign, Three Line Programmable Message, Diesel Powered, Trailer Mounted
550-14-74	09/00	Sign, Trailer Mounted, Arrowboard, Diesel Powered (Formerly 550-14-01)
493-11-52	06/99	Specification for Gas Chromatograph
810-90-29	02/03	Sprayer, Hand, Compressed Air, Portable (Formerly 810-90-01)
810-93-90	07/03	Spraying Equipment, Water and Chemical, Truck Mounted
765-64-13	05/03	Spreader, Aggregate, Self Propelled (Formerly 765-64-01)
765-66-35	08/00	Spreader, Material, Dual Spinner, Under Tailgate, Hydraulic (Formerly 765-66-02)
765-66-88	08/00	Spreader, Material, V- Box Hopper Type with Conveyor, Self Contained (Formerly 765-66-06)

EQUIPMENT SPECIFICATIONS

Texas (continued)

Specification Number	Spec Date	Title of Specification
765-72-74	12/98	Striping Machine, Multiple Line, Two Color, Truck Mounted (Vol. 1 / 3) (Formerly 765-72-06)
765-72-79	05/95	Striping Machine, Thermoplastic System, Trailer Mounted
765-77-78	05/98	Sweeper, Industrial, Riding Type, Self Propelled, 44 HP (Formerly 765-77-12)
765-77-74	08/00	Sweeper, Road, Self Propelled (Formerly 765-77-02)
765-77-76	05/97	Sweeper, Road, Two Wheeled Tow Type, Engine Powered, with Remote Cab Control (Formerly 765-77-04)
765-77-80	06/03	Sweeper, Street, Four Wheel, Single or Two Engine (Formerly 765-77-07, Vol. 1 / 2)
765-77-81	06/97	Sweeper, Street, Regenerative Air, Two Engine, Cab Over, Truck Mounted, Minimum 3 Cubic Yard (Formerly 765-77-09)
765-77-77	05/03	Sweeper, Street, Regenerative Air, Two Engine, Truck Mounted (Formerly 765-77-08 - Vol. 1 / 2)
830-67-09	06/97	System, Heating, Asphalt Storage and Hot Oil, 7,000 gallon, Tandem Axle Trailer Mounted
560-09-49	01/97	System, Material Handling, 4,000 lb. Capacity
755-35-43	07/00	System, Pavement Patching, Auger Feed Type, Trailer Mounted
830-67-17	05/98	Tank, Asphalt Relay, 4,000 or 7,000 gallon, Tandem Axle, Trailer Mounted
830-64-01	07/94	Tank, Asphalt Storage, 12,000 gallon capacity
830-67-18	07/99	Tank, Asphalt, Storage, 11,000 Gallon, Trailer Mounted
830-64-15	01/02	Tank, Asphalt, Storage, Heated, 6,000 or 8,000 Gallon Capacity, Vertical and Horizontal (Formerly 830-67-15)
830-44-58	04/02	Tank, Polyethylene, Elliptical, Leg, Minimum 1235 Gallon Capacity
830-44-59	11/00	Tank, Polyethylene, Horizontal, 25 Gallon
830-44-60	03/02	Tank, Polyethylene, Horizontal, Leg, Minimum 500 Gallon Capacity
755-20-02	07/94	Tank, Storage, Asphalt, Installation of a Dual Burner System, 12,000 Gallon
755-20-01	07/94	Tank, Storage, Asphalt, Installation of Single Burner System, 12,000 Gallon
830-44-53	02/98	Tank, Thirty Gallon, Saddle
065-25-77	06/97	Tarpaulin, Spring Loaded, Self Retracting
020-77-83	06/97	Tiller, Rotary, Tractor Mounted, 48, 60, and 70 inch (Formerly 020-77-01)
765-85-91	07/00	Tractor, Crawler, Diesel Powered, with Angle / Tilt Dozer Blade, 165 HP (Formerly 765-85-07)
765-85-85	08/00	Tractor, Crawler, Diesel Powered, with Hydraulic Angle / Tilt Blade, 70 HP (Formerly 765-85-06)
765-85-88	09/00	Tractor, Crawler, Diesel Powered, with Hydraulic Angle / Tilt Dozer, 90 HP (Formerly 765-85-11)
020-89-44	02/02	Tractor, Pneumatic Tired, Diesel Powered, 65 and 85 PTO HP (Formerly 020-89-05)
765-87-85	02/02	Tractor-Loader-Backhoe Combination, 85 HP (Formerly 765-87-10 - Vol. 1 / 2)
070-78-84	07/02	Trailer, Between the Wheel Track Type, Three Axle, 21,000 pound Payload capacity @ 55 MPH (Formerly 070-78-01)
070-60-24	07/99	Trailer, Bottom Dump, Draw Bar Type, 12 Cubic Yard Capacity
070-60-25	07/99	Trailer, Bottom, Dump, 5 th Wheel Type, 20 Cubic Yard Capacity
070-59-25	06/00	Trailer, Cargo, Tag-Along, Tandem Axle, with Hide-Away Loading Ramp
070-66-32	05/00	Trailer, Equipment, Fixed Deck, Beavertail, Dual Wheel, Tandem Axle, Over-The-Wheel, With Rear Loading Ramp (Formerly 070-66-02)
070-66-33	06/00	Trailer, Equipment, Fixed Deck, Beavertail, Dual Wheel, Triple Axle, Over the Wheel, with Rear Loading Ramp
070-66-54	07/02	Trailer, Float, Flat Or Drop Deck, Tandem Axle (Formerly 070-66-01)
070-69-35	06/00	Trailer, Machinery, Drop Deck, Hydraulic, Detachable Gooseneck, Triple Axle
070-69-41	06/00	Trailer, Machinery, Drop or Level Deck, Hydraulic or Mechanical Folding Gooseneck, Triple Axle (Formerly 070-69-05)
070-61-87	06/00	Trailer, Machinery, Dump, Hydraulic, Tandem Axle with Frameless Steel Body (Formerly 070- 61-05)
070-69-46	06/00	Trailer, Machinery, Fixed Deck, Rigid Gooseneck, Sliding Tandem Axle
070-69-40	06/98	Trailer, Machinery, Folding Gooseneck, Level Deck and Drop Deck, Tandem Axle, 35 ton (Formerly 070-69-01 - Vol. 1 / 2)
070-69-45	10/02	Trailer, Machinery, Level Deck, Rigid Gooseneck, Tandem Axle with Double Folding Tail Ramp

EQUIPMENT SPECIFICATIONS

Texas (continued)

Specification Number	Spec Date	Title of Specification
070-66-51	06/00	Trailer, Machinery, Tag-Along, Tandem Axle, Between-the-Wheel, with Loading Ramps
070-66-06	06/96	Trailer, Platform, Aluminum, Tandem Axle, 45 foot
070-77-25	07/99	Trailer, Pole, 20,000 Lb. Capacity (Formerly 070-57-01)
070-69-42	12/99	Trailer, Storage, Bulk Dry, 4,100 Cubic Foot Minimum Capacity
070-81-01	06/92	Trailer, Tilt Bed, 24,000 and 32,000 pound Net carrying capacity @ 50 MPH (Vol. 1 / 2)
070-81-03	04/93	Trailer, Tilt Bed, Fixed Gooseneck, Tandem Axle, 40,000 pound Net carrying capacity @ 50 MPH
070-81-51	07/02	Trailer, Tilt Deck, 35,000 Pound Payload Capacity @ 50 MPH (Formerly 070-81-02 – Vol. 1 / 2)
070-66-40	06/00	Trailer, Utility, Between the Wheels, Tandem Axle, with Loading Ramps (Formerly 070-66-04)
070-69-44	06/00	Trailer, Utility, Fixed Deck, Gooseneck, Tandem Axle, with Beavertail
070-84-36	06/00	Trailer, Van, Curtain Side, Tandem Axle
070-84-01	12/93	Trailer, Van, Tandem Axle, 45 foot
760-15-63	11/98	Trencher, 18 HP, Self Propelled, Non Riding (Formerly 760-15-03)
760-15-64	09/94	Trencher, 30 HP (Formerly 760-15-02)
070-45-25	10/02	Truck Tractor, Single Axle, Diesel Powered, 61,000 Pound GCWR (Vol. 1 / 2) (Formerly 070-45-04)
070-45-26	10/02	Truck Tractor, Tandem Axle, Diesel Powered, 80,000 pound GCWR (Formerly 070-45-01)
070-54-07SP	06/98	Truck, Cab & Chassis, Four Axle, Diesel Powered, 64,000 pound GVWR (Attachment with 765-13-24)
070-54-87	12/98	Truck, Cab and Chassis, Diesel-Powered, Single Axle, 44,500 Lb. GVWR
070-47-25	07/99	Truck, Tandem Axle Cab and Chassis, Diesel Powered, 43,000 pound GVWR (Formerly 070-53-07)
070-51-30	10/02	Truck, Tandem Axle Cab and Chassis, Diesel Powered, 52,000 pound GVWR (Formerly 070-51-01)
060-87-89	11/00	Valve, Equalization, Pressure, Dual Tire
070-20-88	08/03	Vehicle, Utility, Electric, Four-Wheel
765-75-86	08/00	Wafers, Broom, Disposable (Formerly 765-75-01)
055-57-56	03/99	Warning Light System, Incandescent, Lightbar
780-95-91	07/00	Weigh-In-Motion System, Traffic Data Collection, Type I, Piezoelectric, Fixed and Portable

12. VIRGINIA

<u>CODE</u>	<u>DESCRIPTION</u>
018	ASPHALT HAULERS
028	BUSES
041	CHIPPERS - BRUSH
042	CAR WASHERS - AUTOMATIC
045	CLEANERS - HYDRAULIC SEWER - TRAILER-MOUNTED
048	COMPRESSORS - 150 CFM
053	COMPRESSORS - 250 CFM
058	COMPRESSORS - 365 CFM
060	COMPRESSORS - 600 CFM
076	CRACK FILLERS - JOINT SEALERS
078	CRANES - MOBILE SHOP TRANSPORT
081	CRASH CUSHIONS - NCHRP 350
152	DISTRIBUTORS - TRAILER-MOUNTED - 600 GALLON
156	DISTRIBUTORS - TRUCK-MOUNTED - 1000 GALLON
157	DITCHER UNITS - PULL TYPE (DONDI)
158	DITCHER UNITS - TRUCK-MOUNTED - 50000 GVW
173	DRILLS - ROCK CRAWLER
181	DRILLS - DIAMOND CORE WITH TRAILER
190	DRILLS - REMOTE CONTROLLED RUBBER TRACK MOUNTED GEOTECH
191	DRILLS - CRAWLER-MOUNTED GEOTECH
192	DRILLS - CARRIER/TRAILER (MUD-BUG)
193	DRILLS - TRUCK-MOUNTED (B27, B36, B38, B86)
194	DRILLS - TRUCK-MOUNTED (B52 MOBILE)
195	DRILLS - TRUCK-MOUNTED (B61 MOBILE)
197	DRILLS - CORE - TRUCK-MOUNTED
198	DRILLS - DIAMOND CORE - ASPHALT WITH TRAILER
254	FORKLIFTS
256	EXCAVATORS - TRUCK-MOUNTED
257	EXCAVATORS - CRAWLER
258	EXCAVATORS - WALKING
276	GRADERS - 65 HP - 10000 LB.
285	GRADERS - 150 HP - 30000 LB.
287	GRADERS - 6-WHEEL DRIVE
328	LOADERS - BELT TYPE (ATHEY)
330	LOADERS - SKID-STEER
331	LOADERS - REMOTE CONTROL - 30 HP
333	TRACTOR-LOADER-BACKHOES - 2-WHEEL DRIVE
334	TRACTOR-LOADER-BACKHOES - 4-WHEEL DRIVE
335	TRACTOR-LOADER-BACKHOES - 1.5 CU. YD.
338	WHEEL LOADERS - 110 HP - 2 CU. YD.

EQUIPMENT SPECIFICATIONS

Virginia (continued)

<u>CODE</u>	<u>DESCRIPTION</u>
340	WHEEL LOADERS - 140 HP - 3 CU. YD.
341	LOADERS - CRAWLER - 110 HP
343	LOADERS - CRAWLER - 140 HP
360	MARKERS - PAINT - TRUCK-MOUNTED - 400 OR 800 GAL. CAPACITY
362	MARKERS - SPECIAL MESSAGE - STENCIL - TRUCK-MOUNTED
363	MARKERS - THERMOPLASTIC SUPPLY - TRUCK-MOUNTED
365	MARKERS - PAINT WITH TRAILER - 2 GUN
372	MIXERS - CONCRETE - 1-BAG
409	PAVERS - BITUMINOUS (LEE-BOY)
410	PATCHERS/MAINTAINERS (AMZ)
411	POTHOLE PATCHERS - TRUCK-MOUNTED SPRAY INJECTION
425	PIEZOCONE PENETROMETER - CRAWLER MOUNTED WITH TRAILER
448	PLOWS - SNOW - ROTARY - TRUCK-MOUNTED
464	PULVERIZERS - LARGE
476	PULVERIZERS - SMALL
480	PAYHAULERS
538	ROLLERS - VIBRATING/PATCHING
540	ROLLERS - 4 TO 6 TON - TANDEM
541	ROLLERS - VIBRATORY - DOUBLE DRUM DRIVE - 10000 LB
543	ROLLERS - 10 TON - VIBRATORY
545	ROLLERS - 8 TO 12 TON - TANDEM
548	ROLLERS - SINGLE DRUM VIBRATORY SELF PROPELLED
560	ROLLERS - SHEEPFOOT - SINGLE DRUM
564	ROLLERS - SHEEPFOOT - DOUBLE DRUM
573	ROLLERS - RUBBER-TIRED
613	SCRAPERS - 7 TO 10 CUBIC YARD
614	SCRAPERS - 14 TO 18 CUBIC YARD
636	CRANES - MOBILE - HYDRAULIC OR LATTICE BOOM
661	SPRAYERS - CHEMICAL - 500 GALLON - SKID MOUNTED
662	SPRAYERS - HERBICIDE - TRUCK-MOUNTED - 1000 GAL - COMP CONTRL
664	SPRAYERS - CHEMICAL - 1000 GALLON
665	SPRAYERS - SEED & FERTILIZER - 1000 GALLON
666	SPRAYERS - MULCH BLOWER
669	SPRAYERS - SEED & FERTILIZER - 1000 GALLON - TRUCK-MOUNTED
670	SPRAYERS - SEED & FERTILIZER - 2500 GALLON - TRUCK-MOUNTED
672	SPREADERS - CHIP - ROLL TYPE
673	SPREADERS - BLADE TYPE
674	SPREADERS - CHIP - SELF-PROPELLED
685	SURFACE PREPARATION SYSTEM - SELF PROPELLED
692	SWEEPERS - POWER WITH TRACTOR
693	SWEEPERS - VACUUM - 4 TO 7 CU. YD. - TRUCK-MOUNTED

EQUIPMENT SPECIFICATIONS

Virginia (continued)

<u>CODE</u>	<u>DESCRIPTION</u>
721	MOWERS - SLOPE
722	MOWERS - EXTENSION - GRADER-MOUNTED
723	MOWERS - ROPS TRACTOR - RIGHT HAND CUTTER BAR
723G	MOWERS - ROPS TRACTOR W/4 WHL DRIVE - RIGHT HAND CUTTER BAR
723K	MOWERS - CAB TRACTOR - RIGHT HAND CUTTER BAR
723L	MOWERS - CAB TRACTOR W/ 4 WHL DRIVE - RIGHT HAND CUTTER BAR
724	MOWERS - TRACTOR - PTO TYPE
726	MOWERS - NON-EXTENSION - SIDE ROTARY OR FLAIL
727	MOWERS - EXTENSION - BRUSH CUTTER - ROTARY OR FLAIL
728	MOWERS - ROPS TRACTOR - RIGHT & LEFT CUTTER BARS
728G	MOWERS - ROPS TRACTOR 4 WHL DRIVE - RIGHT & LEFT CUTTER BARS
728K	MOWERS - CAB TRACTOR - RIGHT & LEFT CUTTER BARS
728L	MOWERS - CAB TRACTOR 4 WHL DRIVE - RIGHT & LEFT CUTTER BARS
731	MOWERS - BI-DIRECTIONAL TRACTOR - 100 HP W/ATTACHMENTS
732	TRACTORS - 30 TO 50 HP - RUBBER-TIRED
732G	TRACTORS - 30 TO 50 HP - RUBBER-TIRED W/4WHEEL DRIVE
732K	TRACTORS - 30 TO 50 HP - RUBBER-TIRED W/ CAB & AC
732L	TRACTORS - 30 TO 50 HP - RUBBER-TIRED W/4WD, CAB & AC
733	TRACTORS - 51 TO 70 HP - RUBBER-TIRED
733G	TRACTORS - 51 TO 70 HP - RUBBER-TIRED W/4WHEEL DRIVE
733K	TRACTORS - 51 TO 70 HP - RUBBER-TIRED W/ CAB & AC
733L	TRACTORS - 51 TO 70 HP - RUBBER-TIRED W/4WD, CAB & AC
735	TRACTORS - 71 TO 110 HP - RUBBER-TIRED
735G	TRACTORS - 71 TO 110 HP - RUBBER-TIRED W/4WHEEL DRIVE
735K	TRACTORS - 71 TO 110 HP - RUBBER-TIRED W/ CAB & AC
735L	TRACTORS - 71 TO 110 HP - RUBBER-TIRED W/4WD, CAB & AC
737	TRACTORS WITH ROTARY DITCHER
760	TRACTORS - CRAWLER WITH DOZER - 85 HORSEPOWER
761	TRACTORS - RUBBER-TIRED WITH DOZER
764	TRACTORS - CRAWLER WITH DOZER - 120 HORSEPOWER
768	TRACTORS - CRAWLER WITH DOZER - 150 HORSEPOWER
790	TRAILERS - VARIABLE MESSAGE SIGN, SOLAR POWERED
791	TRAILERS - FUEL HANDLING - 5000 TO 7000 GALLON
792	TRAILERS - VARIABLE MESSAGE SIGN, ENGINE DRIVEN
793	TRAILERS - POLE - 2-WHEEL
796	TRAILERS - 10 TO 16 TON
800	TRAILERS - 20 TO 25 TON
804	TRAILERS - 40 TO 50 TON
812	TRUCKS - SSP INCIDENT MANAGEMENT VEHICLE 10000 GVW
814	TRENCHERS - 30 HORSEPOWER
815	TRENCHERS - 40 HORSEPOWER

EQUIPMENT SPECIFICATIONS

Virginia (continued)

<u>CODE</u>	<u>DESCRIPTION</u>
817	TRUCKS - VAN - PASSENGER 4-WHEEL DRIVE
818	TRUCKS - VAN - 15-PASSENGER - 9000 GVW
819	TRUCKS - VAN - TRAFFIC RECORDER
820	TRUCKS - SURVEY VAN
821	TRUCKS - PICKUP - SAFETY SERVICE PATROL
822	TRUCKS - UTILITY - SAFETY SERVICE PATROL - 8500 GVW
824	TRUCKS - PICKUP - CONSTRUCTION
825	TRUCKS - VAN - FULL HEIGHT - DIVING - 10000 GVW
827	TRUCKS - PICKUP - 4WD - MAINTENANCE
828	TRUCKS - PICKUP - MAINTENANCE
829	TRUCKS - VAN - CARGO
830	TRUCKS - VAN - MOBILE OFFICE
831	TRUCKS - PICKUP - CREW CAB - 8500 GVW
832	TRUCKS - UTILITY BODY - 8500 GVW
833	TRUCKS - UTILITY BODY & CRANE - 10000 GVW
834	TRUCKS - VARIOUS BODIES AVAILABLE - 10000 GVW
835	TRUCKS - PICKUP - 8500 GVW
836	TRUCKS - PICKUP - CNG
837	TRUCKS - 4WD UTILITY TYPE VEHICLE - MAINT (BLAZER,EXPLORER)
838	TRUCKS - 4WD UTILITY TYPE VEHICLE - CONST (BLAZER,EXPLORER)
839	TRUCKS - VAN - MODIFIED FOR HANDICAPPED
842	TRUCKS - DUMP - 4WD - 10000 GVW
843	TRUCKS - DUMP - 4WD - 15000 GVW
844	TRUCKS - UTILITY BODY - 15000 GVW
844I	TRUCKS - UTILITY BODY - 5000# CRANE - 15000 GVW
845	TRUCKS - UTILITY BODY W/HYD CRANE - LOW PROFILE - 21000 GVW
861	CRASH CUSHION VEHICLE WITH NCHRP-350 ATTENUATOR
864	TRUCKS - DUMP - STANDARD - 30000 GVW - MANUAL TRANS
864A	TRUCKS - DUMP - STANDARD - 30000 GVW - AUTOMATIC TRANS
864B	TRUCKS - DUMP - STANDARD - 30000 GVW - 6 SPD TRANS 1 SPD DIFF
865	TRUCKS - STAKE BODY - STANDARD 14 FT. - 28000 GVW
866	TRUCKS - DUMP - CREW CAB - 30000 GVW - MANUAL TRANS
866A	TRUCKS - DUMP - CREW CAB - 30000 GVW - AUTOMATIC TRANS
872	TRUCKS - FUEL HANDLING - 1700 GALLON TANK
873	TRUCKS - FUEL HANDLING - 3500 GALLON TANK
877	TRUCKS - VAN W/ALUMINUM BODY & LIFT GATE - 28000 GVW
885	TRUCKS - TRACTOR - SINGLE AXLE - 33000 GVW
887	TRUCKS - TRACTOR - TANDEM AXLE - 50000 GVW
890	TRUCKS - BRIDGE - CREW CAB W/LIFT - 30000 GVW - MANUAL TRANS
890A	TRUCKS - BRIDGE - CREW CAB W/LIFT - 30000 GVW - AUTOMATIC TRANS
891	TRUCKS - BRIDGE - CREW CAB - 30000 GVW - MANUAL TRANS

EQUIPMENT SPECIFICATIONS

Virginia (continued)

<u>CODE</u>	<u>DESCRIPTION</u>
891A	TRUCKS - BRIDGE - CREW CAB - 30000 GVW AUTOMATIC TRANS
892	TRUCKS - BRIDGE - UTIL BODY - CREW CAB - 30000 GVW - MANUAL TRANS
892A	TRUCKS - BRIDGE - UTIL BODY - CREW CAB - 30000 GVW - AUTO TRANS
893	TRUCKS - DUMP - 4WD - 30000 GVW - MANUAL TRANS
893A	TRUCKS - DUMP - 4WD - 30000 GVW - AUTOMATIC TRANS
894	TRUCKS - DUMP - 4WD - 37000 GVW - MANUAL TRANS
894A	TRUCKS - DUMP - 4WD - 37000 GVW - AUTOMATIC TRANS
896	TRUCKS - DUMP - TANDEM - 50000 GVW 10 SPD TRANS 1 SPD DIFF
896A	TRUCKS - DUMP - TANDEM - 50000 GVW AUTOMATIC TRANS
901	TRUCKS - SCALE TESTING UNIT - 50000 GVW
902	MOTOR HOMES - INCIDENT MANAGEMENT
936	TRUCKS - WRECKER - ROLLBACK - 15000 & 24000 GVW
937	TRUCKS - WRECKER - 24000 TO 30000 GVW
938	TRUCKS - WRECKER - 18000 GVW
939	TRUCKS - WRECKER - 44000 GVW STD OR 24000 GVW LOW PROFILE
941	TRUCKS - VACUUM CATCH BASIN CLEANER - 50000 GVW
942	TRUCKS - UNDERBRIDGE INSPECTION UNIT - GVW WILL VARY
943	UNDERBRIDGE PLATFORMS - TOW TYPE
945	TRUCKS - POLE DERRICK & AUGER - 30000 GVW
948	TRUCKS - VAN WITH TELESCOPING AERIAL BUCKET
949	TRUCKS - AERIAL BUCKET - 300 LB - 24000 GVW
950	TRUCKS - AERIAL BUCKET - 15000 GVW
951	TRUCKS - AERIAL BUCKET - 900 LB FOLDING - 30000 GVW
953	TRUCKS - AERIAL BUCKET - 65 FT & 500 LB - 50000 GVW
956	WORK PLATFORMS - HYDRAULIC
960	WELDERS - GAS DRIVEN - TRAILER-MOUNTED
961	WELDERS - GAS DRIVEN - TRUCK-MOUNTED - 10000 GVW
971	TUNNEL - FLUSH TRUCKS - 50000 GVW
972	TUNNEL - SOLUTION TRUCKS - 50000 GVW
973	TUNNEL - WRECKER TRUCKS - 40000 GVW
975	TUNNEL WASHERS - 30000 GVW
980	TOW UNITS - SKID TEST
981	TOW UNITS - DEFLECTION TEST
982	TRAILERS - SKID TEST
983	TRAILERS - DEFLECTION TEST
984	ROAD PROFILERS (SOUTH DAKOTA TYPE)
1010	AIR COMPRESSORS
1025	ARROW SIGNS - TRAILER MOUNTED
1030	ASPHALT CUTTERS
1035	ASPHALT EQUIPMENT - MISCELLANEOUS
1040	ASPHALT PLANERS & FINISHERS

EQUIPMENT SPECIFICATIONS

Virginia (continued)

<u>CODE</u>	<u>DESCRIPTION</u>
1045	ASPHALT HEATERS
1050	ASPHALT KETTLES
1060	ATTACHMENTS TO BUCKETS & BLADES
1065	ATTACHMENTS FOR BACKHOES & EXCAVATORS
1085	AUGERS - THREE-POINT HITCH & BUMPER MOUNT
1090	AUGERS - PORTABLE - ENGINE & HYDRAULIC POWERED
1105	BACKHOES - THREE-POINT HITCH
1120	BOATS
1130	BROOMS - THREE-POINT HITCH & BUMPER MOUNT
1140	BRUSH CHIPPERS - THREE-POINT HITCH
1150	BUCKETS - CONCRETE, DRAGLINE, MISCELLANEOUS
1170	COMPACTORS, SOIL - ENGINE POWERED
1175	COMPACTORS, SOIL - HYDRAULIC POWERED
1180	COMPACTORS, SOIL - PNEUMATIC POWERED
1190	CONCRETE EQUIPMENT
1195	CONCRETE MIXERS & MORTAR MIXERS
1200	CONCRETE SAWS
1205	CONCRETE VIBRATORS
1210	CONVEYORS
1220	CONVEYORS - TAILGATE - HYDRAULIC POWERED
1231	CRASH CUSHIONS - NCHRP 350
1270	ELECTRIC POWER PLANTS
1271	ELECTRIC POWER PLANTS - STATIONARY EMERGENCY UNITS
1275	ELECTRIC TOOLS - DRILLS, IMPACT WRENCHES, ETC.
1310	FORKLIFTS & ATTACHMENTS
1320	GRADER ATTACHMENTS
1330	GRADERS AND ROAD DRAGS - PULL TYPE
1350	HEATERS - PORTABLE
1370	HYDRAULIC TOOLS - DRILLS, IMPACT WRENCHES, ETC.
1420	LAWN EDGERS & WEED TRIMMERS
1430	LAWN & GARDEN - SPREADERS, SWEEPERS, MISC.
1435	LIGHTS - PORTABLE WORK
1440	MISCELLANEOUS EQUIPMENT
1450	MOWERS - 20" TO 26" WALK BEHIND
1455	MOWERS - 30" TO 48" WALK BEHIND
1460	MOWERS - 36" SICKLE WALK BEHIND
1465	MOWERS - COMMERCIAL FRONT MOUNT RIDING 42" TO 72"
1470	MOWERS - RIDING DIESEL ENGINE

EQUIPMENT SPECIFICATIONS

Virginia (continued)

<u>CODE</u>	<u>DESCRIPTION</u>
1475	MOWERS - RIDING GASOLINE ENGINE
1480	MOWERS - 3-POINT HITCH FLAIL
1485	MOWERS - 3-POINT HITCH ROTARY, 48" TO 59"
1490	MOWERS - 3-POINT HITCH ROTARY, 60" TO 71"
1495	MOWERS - 3-POINT HITCH ROTARY, 72" TO 83"
1500	MOWERS - 3-POINT HITCH & PULL ROTARY, 84" TO 95"
1505	MOWERS - PULL ROTARY, 96" TO 119"
1510	MOWERS - PULL ROTARY, OVER 120"
1525	OUTBOARD MOTORS
1540	PAVEMENT BREAKERS - HYDRAULIC & PNEUMATIC
1550	PNEUMATIC TOOLS - DRILLS, IMPACT WRENCHES, ETC.
1560	POST DRIVERS & PULLERS
1565	POWER CONVERTERS - 12 VDC TO 120 VAC
1570	PUMPS - CENTRIFUGAL
1575	PUMPS - DIAPHRAGM -ENGINE & PNEUMATIC POWERED
1580	PUMPS - JET
1590	PUMPS - SUBMERSIBLE - HYDRAULIC POWERED
1595	PUMPS - SUMP & MISCELLANEOUS
1600	RADAR SIGNS
1602	RADIOS - HIGHWAY ADVISORY - TOW TYPE
1610	ROCK DRILLS
1620	ROCK RIPPERS & SPLITTERS
1630	ROLLERS - ASPHALT
1640	ROTARY TILLERS
1750	SANDBLASTERS
1760	SAWS - CHAIN - ENGINE POWERED
1765	SAWS - HYDRAULIC POWERED
1770	SAWS - MISCELLANEOUS
1780	SCRAPER BLADES - 3-POINT HITCH
1790	SHOP TOOLS - JACKS, ETC.
1800	SIGN CLEANERS
1810	SNOW BLOWERS & THROWERS - WALK-BEHIND, MISCELLANEOUS
1811	SNOW BLOWERS - LOADER-MOUNTED
1812	SNOW BLOWERS - TRUCK-MOUNTED
1815	SNOWPLOWS - DUAL TAPER
1820	SNOWPLOWS - ONE-WAY
1825	SNOWPLOWS - TWO-WAY
1830	SNOWPLOWS - POWER REVERSING

EQUIPMENT SPECIFICATIONS

Virginia (continued)

<u>CODE</u>	<u>DESCRIPTION</u>
1835	SNOWPLOWS - V-TYPE
1837	SNOWPLOWS - MISCELLANEOUS
1840	SPRAYERS - PAINT & MATERIAL
1845	SPRAYERS - SMALL
1847	SPRAYERS - STRAW & MULCH BLOWER
1855	SPREADERS - ABRASIVE - ENGINE DRIVEN, STD. DUMP
1856	SPREADERS - ABRASIVE - ENGINE DRIVEN, TANDEM
1860	SPREADERS - ABRASIVE - HYDRAULIC DRIVEN, STD. DUMP
1861	SPREADERS - ABRASIVE - HYDRAULIC DRIVEN, TANDEM
1865	SPREADERS - MISCELLANEOUS
1870	SPREADERS - TAILGATE
1880	STEAM CLEANERS & PRESSURE WASHERS
1890	SWEEPERS - VACUUM, MECHANICAL, OR MAGNETIC
1915	TANKS - FUEL, SKID MOUNTED
1920	TANKS - WATER SPRINKLER
1940	TRACTOR ATTACHMENTS
1950	TRAFFIC LINE MARKERS
1955	TRAFFIC LINE REMOVERS
1960	TRAILERS
1970	VARIABLE MESSAGE SIGNS - TRAILER-MOUNTED
1971	VARIABLE MESSAGE SIGNS - FOR TRUCK MOUNTING
1975	WELDERS
1979	WORK PLATFORMS - SCISSORS OR BOOM LIFT - ELECTRIC OR ENGINE

EQUIPMENT SPECIFICATIONS

B. SPECIFICATIONS INVENTORY BY AFFILIATE MEMBER

1. CANADA

a) SASKATCHEWAN

Number	Date	Title
1006	05-90	2.5 Cu. Yd. (2 m3) Model, Rubber-Tired, Self-Propelled, Articulated, Tractor Shovel
1007	05-90	3 Cu. Yd. (2.2 m3) Model, Rubber-Tired, Self-Propelled, Articulated, Tractor Shovel
1017	05-90	100 H.P. Diesel Tractors
1018	06-05	100 H.P. Bi-Directional Tractors
2003	06-05	200 H.P. (Minimum) Motor Grader (Articulated Frame)
3015	05-90	Carrier for 6550 L Asphalt Distributor Operation
3037	06-05	Tandem Drive for Dump and Snow Plow Operation
3043	06-05	Tandem Drive, Cab Over for Highway Paint Stripper
11003	06-05	9 Wheeled, Self-Propelled Pneumatic Tire Roller

EQUIPMENT SPECIFICATIONS

C. SELECTED SPECIFICATION EXAMPLES

1. HEATED ASPHALT TRAILER (NJ)

We have been very pleased with the bid responses we have received to the attached specification for a "Heated Asphalt Trailer." We completed tests on various units available commercially and determined the parameters defined in the specification. Criteria included:

- 1) material was to be heated from cold to a workable temperature overnight (12 hours),
- 2) maximum allowable mix temperatures not to be exceeded to prevent material damage,
- 3) unit is to operate unattended for overnight heating and
- 4) full four (4) ton capacity to allow full drop from a batch plant.

We have received acceptable units from the Poweray Infrared Corporation and the Aeroil Products Co.

Vendor's Name: _____

STATE OF NEW JERSEY

DEPARTMENT OF THE TREASURY

DIVISION OF PURCHASE AND PROPERTY

STATE HOUSE, TRENTON, NEW JERSEY 08625

SPECIFICATION FOR

ASPHALT RECLAMATION UNIT, 4 TON (3700 KG), PROPANE HEATED, PORTABLE, TRAILER MOUNTED W/LIQUID ASPHALT STORAGE CONTAINER, POWERAY MODEL 4 TCR, AEROIL MODEL PHP-4R ASPHALT RECLAIMER AND WESTERN MODEL 4250 OR APPROVED EQUAL

Specification No.: 4938-303

Date: February 02, 1989

Request No.: 89-EQA-0093

Superseding: February 17, 1987

THIS SPECIFICATION CONSISTS OF TWO (2) DIVISIONS AS FOLLOWS:

DIVISION 1 - GENERAL PROVISIONS

DIVISION 2 - TECHNICAL PROVISIONS

- A. Asphalt Reclamation Unit, 4 Ton (3700 kg), Propane Heated, Portable, Trailer Mounted, w/Liquid Asphalt Container.

Vendor to list make and model of Asphalt Reclamation Unit he intends to supply: _____

DIVISION I - General Provisions

1. INTENT:

It is the intent of this specification to describe and govern the purchase of the following, which shall hereafter be referred to as the Unit.

Asphalt Reclamation Unit, 4 Ton (3700 kg) Propane Heated, Portable, Trailer Mounted, w/Liquid Asphalt Container, Poweray Model 4TCR Aeroil Model PHP-4R and Western Model 4250 or Approved Equal

2. GENERAL:

The Unit shall be delivered to the New Jersey State Agency as stated on Page one (1) of the bid proposal, hereafter referred to as the Agency, by the factory or their representative, hereafter referred to as the Vendor.

The Unit shall be new and of the latest design and be in current production at the time of the submission of the bid. Vendor to conform to the following conditions:

Facilities: That it has in operation, a factory adequate for the manufacture of the equipment which it proposes to furnish.

Production: That there are at least 50 similar Units of the type and model bid upon which have been in satisfactory operation for a period of two (2) years.

Parts Availability: That it has in operation, and has had for at least twelve months prior to the time of the bid opening, a

EQUIPMENT SPECIFICATIONS

Heated Asphalt Trailer (NJ) (continued)

service facility within a reasonable distance of the using Agency, equipped with spare parts, not assembled, which can be delivered within twenty-four (24) hours.

Parts Interchangeability: That all components of each Unit in this order shall be identical, i.e., alternators, filters, distributors, hydraulic pumps, hydraulic valves, etc.

Vendor Certification: In the event a bid is submitted by an Agent, a certificate executed by the manufacturer may be required stating that the bidder is an authorized Agent and that compliance will be made with all the qualifications and requirements of this specification and proposal.

Literature: That the Vendor furnish the following information with the bid: Complete detailed specifications, illustrated literature, circulars and all other necessary data on the equipment he proposes to furnish.

Specification Deviations or Substitutions: That the Vendor list and explain in detail all deviations or substitutions with his bid proposal. All deviations or substitutions to be neatly printed or typed. If no deviations or substitutions are taken the word "None" is to be neatly printed or typed in the space available. Failure to supply information and failure to complete the deviation or substitution spaces in the prescribed manner may disqualify the bid.

Unit Inspections: At the Agency's option, the Agency will inspect all Units at the Vendor's site prior to delivery and will authorize delivery if all specifications are satisfied as judged by the using Agency. Deliveries will not be accepted by the Agency without prior approval.

The Unit shall be completely assembled, serviced, and ready for use when delivered to the Agency. Any parts, controls, materials or attachments, which are standard and/or necessary to form an efficient and complete working unit; as judged by the using

Agency, shall be furnished whether specifically mentioned herein or not.

The final inspection and acceptance of the Unit shall be at the using Agency.

Manuals: The Vendor to supply one line set sheet for each Unit. A Unit shall comprise each and every assembly system and/or component. In addition to the line set sheet, the Vendor is to provide the following number of manuals for each and every assembly system and/or component that makes up the Unit:

15 - sets of parts manuals (Illustrations and Text) bound or with binders.

15 - sets of complete shop repair (factory service) manuals bound or with binders.

15 - sets plus one (1) additional set for each unit, of complete operation and routine maintenance manuals, i.e., if the contract is for five (5) units, 20 sets of these manuals are required, if the contract is for two (2) units, 17 sets of these manuals are required, etc.

Examples of, but not necessarily limited to assembly system and/or component includes:

- a) Hydraulic pump and hydraulic systems
- b) Separate engines, drives and chassis
- c) Spreader and spreader systems
- d) Vacuum pump
- e) Chain drive assembly
- f) Snowplow and truck hitch

The manuals shall be delivered directly to the Chief, Bureau of Equipment upon delivery of the first Unit. FAILURE TO SUPPLY THESE MANUALS MAY HOLD UP PROCESSING OF INVOICES FOR PAYMENT.

Training: Complete instructions on the operation and maintenance of each unit and a demonstration on the operation of the unit shall be given by the Vendor. This demonstration shall be a formal training session and shall be arranged with the Vendor, conducted within six (6) weeks of delivery of the first Unit, at the convenience of the using Agency. The training session shall be conducted at the location of delivery or at a field location, within the State of New Jersey.

Brand Names: Brand names have been eliminated from this specification wherever possible, but if a brand name is given, the term "or approved equal" is considered to follow the name. Wherever a brand name is used, it is meant to denote the minimum level of quality and performance. Any item supplied as an "equal" must be approved by the Agency.

It should be understood that specifying a brand name, components and/or equipment in this specification shall not relieve the supplier from his responsibility to produce the product in accordance with the performance warranty and contractual requirements.

3. **GUARANTEE:**

The Vendor to guarantee that the Unit and all its component parts will comply with Federal Motor Vehicle Safety Standards and New Jersey State Motor Vehicle Code Regulations, perform its functions adequately, and operate successfully without undue wear or vibration. The Vendor to agree to immediately replace and install free of charge, any part that may break or fail by reason of defective material or workmanship within a period of one (1) year from time of acceptance by the Agency.

EQUIPMENT SPECIFICATIONS

Heated Asphalt Trailer (NJ) (continued)

The Vendor is to guarantee, to maintain a supply of component parts for the expected life of the Unit.

Deviation or Substitution: _____

4. **FINISH:**

The Unit and all its components shall be cleaned and painted with one (1) coat of Dupont #1858 primer, and finished with two (2) coats of the color Dupont Centari #7744-A lime yellow. All paint shall be same shade. Manufacturer's standard primer is acceptable on truck cabs, vans and automobiles.

Deviation or Substitution: _____

5. **WEIGHT:**

Vendor shall supply dry weight or unit and components at time of delivery as follows:

Axle _____ Lbs.

Tongue _____ Lbs.

TOTAL _____ Lbs.

6. **DELIVERY HOURS:**

The Vendor shall deliver the unit(s) to the Agency between the hours of 8:00 a.m. to 3:30 p.m. on regular scheduled Agency workdays. Deliveries outside of those hours will not be accepted.

DIVISION 2 - Technical Provisions

A. ASPHALT RECLAMATION UNIT, 4 TON (3700 KG) PROPANE HEATED PORTABLE, TRAILER MOUNTED, WITH LIQUID ASPHALT CONTAINER, POWERAY MODEL AEROIL MODEL PHP-4R ASPHALT RECLAIMER AND WESTERN MODEL 4250 4TCR OR APPROVED EQUAL

1. **INTENT:**

It is the intent of this specification to describe and govern the purchase of a 4 Ton (3700 kg) Trailer Mounted Asphalt Reclamation Unit with Liquid Asphalt Storage Unit. Manufacturer's models are to be modified where necessary in order to meet or exceed specifications.

2. **STORAGE BOX:**

(a) **Capacity:** Storage box to be capable of holding 4 tons of asphalt.

Deviation or Substitution: _____

(b) **Construction:** Constructed of sheet steel, double and triple walled with insulation to prevent heat loss. Third wall around entire unit to be insulated. The storage bin shall be properly insulated such that the heat loss is reduced to a minimum.

Deviation or Substitution: _____

(c) **Loading Doors:** Two (2) doors to be located on topside of unit, manually operated. Opened doors to form an effective chute for transfer of material. Bar type handles for opening the top to be easily accessible. Grab handles and steps are to be provided to enable personnel to reach door opening handles. Doors to be of sufficient strength and bracing to facilitate ease of operation and long life. They are to be insulated. The loading doors are to open to a width of 96 inches to allow loading with a 96 inch width loader bucket. The loading doors are to be designed so that no asphalt will enter the hinge area to cause binding or prevent closing of the doors.

Deviation or Substitution: _____

(d) **Shovelling Doors.** They are to be located in rear of unit, on each side. To have double action linkage for positive cutoff. They are to be manually operable.

Deviation or Substitution: _____

(e) **Shovelling Deck:** The deck to run the full width of the shovelling doors. It is to be of sturdy construction with the

EQUIPMENT SPECIFICATIONS

Heated Asphalt Trailer (NJ) (continued)

necessary bracing for rigidity. The rear edge of the shovelling deck is to be constructed and insulated to prevent accidental burning of the operator.

Deviation or Substitution: _____

3. HEATING SYSTEM:

Storage box to be heated by means of two (2) 50,000 BTU burners or convertors. The burners or convertors are to be controlled by the thermostat(s).

The temperature settings are to be 180°F for cold patch or 310°F during reclaiming and while holding the material. The temperature of the material three (3) inches from the bottom of the storage box is to be within +/-20°F of the thermostat setting after 16 hours with ambient temperatures 20°F and above. An easy switch over provision for temperature control for cold patch and hot mix to be incorporated into the controls. Battery operated thermostats to be provided with battery and charger.

At no time shall the material temperature exceed 330°F while reclaiming. The thermostat setting is to be restricted so that a temperature setting above 310°F cannot be obtained.

The heating system to operate on propane gas (vapor cylinders). Each unit to come with two (2) 100 lb cylinders mounted. In the event that one fuel cylinder is empty, the system to be automatically switched over to operate off of the second cylinder. A dial to be provided to indicate when the second cylinder is in use. Unit to have extra heavy hinged brackets to hold cylinders in place. Cylinders are to be mounted within the "A" frame of the drawbar. An additional empty 100 lb. propane cylinder is to be provided with each unit. (Each unit will have a total of 3 cylinders, two mounted and one loose.)

The heating system to incorporate 100% shut off valves with flame sensing thermocouples, high pressure hose with reusable fittings and necessary tank regulators.

NOTE: Cold material placed in unit for reclaiming in the afternoon shall be brought to approximately 310°F by the next morning. The temperature of the material in the top of the storage box to be at least 225°F.

Unit to be capable of reclaiming milled material, chunks of old wear course or cooled plant mix with no burning, stripping, or segregation.

NOTE: Vendor to provide literature and printed instructions for reclaiming of asphalt with the bid.

Deviation or Substitution: _____

4. BITUMINOUS MATERIAL STORAGE TANK:

The tank to be of the same construction as the storage box. It is to be insulated all around, and be equipped with draw off cock and come with a two gallon (7.57 liter) crack and joint filler pouring pot (Aeroil No. 46B or approved equal).

The capacity of the Bituminous Material Storage Tank to be 20 gallons (94.625 liter).

The tank is to be separately heated from the storage box and be controlled by means of a thermostat. The thermostat to be housed in the same control panel as the storage box thermostat. A temperature setting of 130°F is to be provided and stenciled on the side of the tank. The thermostat setting is to be restricted so that a temperature setting above 130°F cannot be obtained.

Tank to be securely mounted on Unit on curb side or front.

Deviation or Substitution: _____

5. MOUNTING:

The Unit to be mounted on a welded steel frame trailer, with leaf springs mounted on tandem axles. Disc wheels equipped with four (4) pneumatic tires to be provided. Springs, axles and tires are to be rated such that the GAWR is not exceeded with a fully loaded trailer. Unit to be equipped with spare tire and wheel mounted on drawbar or side of trailer and locked to mounting. Lock to come with two (2) keys. Spare tire to be mounted to wheel. Tire pressure to be stenciled in black paint over each tire on fender or body, lettering to be 1".

A swing away hand screw jack complete w/caster wheel and all necessary mounting hardware shall be securely mounted to the drawbar. Capacity of screw jack to be sufficient to withstand fully equipped and loaded trailer when mounted at any position on drawbar. Screw jack not to interfere with towing truck.

SAFETY CHAINS -- Two 7' (2.133 m), 3/8" (9.525 mm) steel safety chains with the end link welded to the main frame of the unit

EQUIPMENT SPECIFICATIONS

Heated Asphalt Trailer (NJ) (continued)

are to be supplied. The safety chains are to terminate with 7/16" (9.5 mm) standard shape connecting links and 1/2" screw pin anchor shackles which will be connected to the towing vehicle.

DRAWBAR ----- Unit shall be equipped with a heavy duty drawbar with lunette ring (6-1/4" (15.9 cm) O.D. - 3" (7.6 cm) I.D. of 1-5/8" (4.1 cm) round stock) for attaching to a Holland T-60-AOL-8 pintle hook. be of sufficient length to provide unobstructed clearance of 60" (152.4 cm) between lunette and the unit (first obstacle) so towing truck can negotiate turns without damage to unit when tailgate spreader is on truck. The drawbar height from lunette to ground shall be 20" (50.8 cm) when trailer is level.

BRAKES ----- The braking system is to consist of hydraulic surge brakes. Free backing trailer brakes are to be provided or the brakes are to be equipped with a Mico trailer backing, brake lockout system. The lockout is to be wired to the blue wire (center pin of the male connector) of the 7-wire trailer cable.

PINTLE HOOK----- Each unit to come with a pintle hook (Holland T-60-AOL-8 or approved equal) to be mounted on the towing vehicle by Agency. Pintle hook to have a vertical load capacity of 6,000 lbs. and a horizontal load capacity of 30,000 lbs. The lunette to be fully attachable to this pintle hook. Vendor is to supply four (4) bolts 1/2" - 20 UNF - 2" Long, Grade 8.

Deviation or Substitution: _____

6. **HOUSING AND EQUIPMENT:**

(a) **LIGHTS** - Combination dual stop and taillights, with directional signals, reflectors, clearance lights, and license plate bracket with lights (according to the latest Federal Safety Standards and New Jersey State Motor Vehicle Code) shall be provided. Slow moving vehicle triangle to be mounted on the rear.

A 7 inch double face warning lamp with an amber lens on each face, Signal-Stat Model 394AA or approved equal, is to be mounted high on each side of the unit at the rear. These lights to operate with emergency flasher and turn signal.

Deviation or Substitution: _____

(b) **SPILL PROOF CONTAINER** - Unit to be equipped with spill proof container for cleaning of rakes, shovels, etc. This container is to be of sturdy construction and secured to trailer.

Deviation or Substitution: _____

(c) **CABLE AND CONNECTOR** - ATA approved, 7-wire quick detachable trailer connectors (Midland Model #23752 Female, 23753 Male or approved equal) with 7-wire trailer cable made to SAE and ATA specifications to be provided. The cable shall be cut to extend three (3) feet beyond the lunette with the connector installed. Wiring to conform to the ATA color code.

Deviation or Substitution: _____

(d) **VANDALISM PROTECTION** - Unit thermostat to be completely enclosed to prevent tampering.

LOCKS - Lock w/two sets of keys be provided where ever needed. All locks on unit to be keyed alike. Each unit to be keyed differently.

Deviation or Substitution: _____

(e) **FENDERS** - Unit to come equipped with full length fenders each side (diamond plate, to withstand the weight of the operator). They are to be securely braced. There is to be sufficient space between tires and fenders. There shall be no contact between tires and fenders under any condition.

Deviation or Substitution: _____

(f) **FIRE EXTINGUISHER** - 10BC rating with mounting bracket is to be shipped loose with the unit.

Deviation or Substitution: _____

EQUIPMENT SPECIFICATIONS

Heated Asphalt Trailer (NJ) (continued)

For more information contact:

Stephen A. Toth (609-530-2200)

Submitted by: Stephen A. Toth, Chief
Bureau of Equipment
New Jersey Department of Transportation
Trenton, New Jersey 08625

2. WATER TANK, 1500 GALLON (NJ)

After dealing with unsightly rusted exteriors and interior tank coatings which flaked and otherwise deteriorated on water tank trucks, the attached specification for an aluminum water tank was developed.

We have a number of these units in the field and with almost two (2) years of service they still look new.

We intend for this to be our new standard.

B. WATER TANK, 1,500 GALLON

1. INTENT:

It is the intent of this section of the specification to describe and govern the purchase of a 1,500 gallon capacity water tank equipped with self-contained pump.

2. TANK: (Aluminum)

1,500 gallon capacity, tank and baffles constructed of hi-strength aluminum alloy and manufacturer's standard thickness. All visible exterior welds to be heliarc'd for smooth finish. Shell to have a dulled finish.

J-Beam mounting on oak cushion sills, with sills firmly secured to chassis frame. Flashing top side length of tank with rear drain. An 8" sump blank on bottom of water tank to be provided for cleanout. 20" round manhole with vent to be mounted on top of tank.

Full length tank (no shelter); tank mounted over pump with valving and controls located in a cabinet curb side adjacent to the pump. Cabinet to be made of aluminum with two lockable doors hinged vertically fore and aft. Locks to be integral with door handles. Two keys per lock.

Catwalk on each side of tank, running full length of tank. The grating of the catwalks shall be below the center of the tank. Catwalk width to extend to outer edge of rear tires and have a height of 6". Skirting will extend about 3" below catwalks. Catwalks also to be used for suction hose storage. Two clamps per catwalk.

Grating to be non-skid open face material (Bustin Firm-Grip or approved equal).

Deviation or Substitution: _____

3. PUMP:

Tank to be equipped with Marlow centrifugal pump or approved equal. Pump to be piped with 3" (7.6 cm) suction and 2" (5.08 cm) discharge pipe.

Capacity-----160 GPM (10.1 L/Sec.) against a 25' head (7.6 M)

To have electric priming unit operating from truck battery, and also equipped with reserve tank and necessary valves.

Priming unit to be designated to operate against 12' suction lift (rubber impeller type suggested). Priming unit operated by engine vacuum is not acceptable. Electric switch box priming unit to be located near to valving.

Pump to be mounted behind truck cab frame and be P.T.O. driven from truck transmission. Universal joints to be needle bearing, heavy duty. Shafts to be heavy duty, spline drive.

A safety switch, connected between the engine and the water pump, is to be set at 125 PSI (8.5 bar). Scully Signal Co. Model P-157 or approved equal. The purpose of this switch is to turn off the engine whenever the pump pressure reaches 125 PSI (.0086 n/m2).

Pump to be directly driven by PTO shaft through gearbox without chains, belts or pulleys.

Deviation or Substitution: _____

4. PIPING:

Pump suction and discharge lines to permit drawing water from outside sources and discharging directly into tank. Suction line to be equipped with strainer.

Suction line from tank through pump and discharging through 1-1/2" (3.81 cm) pipe below tank and extended to rear of tank. A pressure relief valve and return line to tank to be connected near end of discharge line. Purpose of valve and return line is to relieve pressure on system when low volume (5 GPM) usage is needed.

3" (7.62 cm), 90° swivel joint attached to a fill pipe to be provided at top of tank to permit filling from hydrant. Perforated pipe to run through tank and equipped with clean-out plug. A 2-1/2" - 20' (6 cm - 6 m) cotton braided hydrant hose to be clamped at fill elbow end and a 2-1/2" (6 cm) NST hydrant fitting at other end.

EQUIPMENT SPECIFICATIONS

Water Tank, 1500 Gallon (NJ) (continued)

. 2" (5.08 cm) tank outlet with 2" (5.08 cm) pipe to rear of tank with valve for gravity drain. Valves to be installed where necessary (pump, piping, and tank) to completely drain system and all components of water for winter storage.

. A tank overflow is to be provided and piped below tank level to ground.

Butterfly valves to be installed to permit the above pumping operations. Successful bidder to supply a valve position chart for each pumping operation with each tank truck delivered.

The valve position chart is to be permanently affixed near valves showing all operations.

. See SPECIAL NOTE on Page 6.

Deviation or Substitution: _____

5. **LIGHTS AND WIRING:**

All to conform to New Jersey State Inspection Requirements.

Deviation or Substitution: _____

6. **HOSE:**

25' (6.7 m) length of 2" (5 cm) suction hose with Ever-Tite 2" quick coupler at one end and a foot valve and strainer at the other end. The coupler end attaches to an Ever-Tite 2" - 3" Part A reducer, mounted on the suction end of a pump.

Deviation or Substitution: _____

7. **MISCELLANEOUS:**

Ladder with grab handles and 14" (35 cm) wide steps w/non skid treads. Ladder to be welded and/or bolted to top of water tank and to the truck's main frame. Ladder to be located curb side of unit and not to interfere with opening doors of cabinet. First step to be 23" from ground, properly braced.

Mud flaps attached to rear wheel fenders.

Deviation or Substitution: _____

For more information contact: Stephen A. Toth (609) 530-2200

Submitted by: Stephen A. Toth, Chief
Bureau of Equipment
New Jersey Department of Transportation
Trenton, New Jersey 08625

V. NEW OR INNOVATIVE EQUIPMENT PURCHASING METHODS

A. METHODS

1. BID EVALUATION SYSTEMS

a) BEST VALUE PURCHASING (TX)

BEST VALUE PURCHASING

The Texas Government Code, Title 10, Subtitle D, Section 2155.074, allows state agencies to develop and apply award evaluation criteria to a procurement in order to obtain goods and services that provide the *best value* for the state. In determining best value, other relevant factors may be considered in addition to purchase price and whether the product meets specifications. Those factors are: installation costs; life cycle costs; the quality and reliability of goods and services; the delivery terms; indicators of probable vendor performance; cost of employee training associated with a purchase; the effect of a purchase on agency productivity; and other factors relevant to determining best value for the state in the context of a particular purchase. Under these guidelines, a vendor is not automatically awarded a purchase order simply because they submit the lowest bid response.

All products offered under this advertisement will be evaluated against best value purchasing criteria in order to determine the award. TxDOT will evaluate this advertisement using historical data to project anticipated costs, repairs and operating expenses for the life of the unit(s) using the following criteria:

- Historical Lifetime Fuels Costs
- Historical Lifetime Downtime Costs
- Historical Lifetime Repair Costs
- Estimated Residual Value

TxDOT captures extensive information on all aspects of equipment operation through an in-house Equipment Operating System (EOS). All repair and operational cost-data information on the various classes and makes of equipment utilized by TxDOT is captured in this mainframe-based system. This historical cost-data information will be used to evaluate the make of equipment offered by the bidder. Only the cost-data information found in EOS will be used in the bid evaluation process. Repair and operational cost-data from other sources outside TxDOT will not be considered under any circumstances. In those instances where TxDOT does not have any historical repair or operational cost-data information on the equipment being offered, TxDOT will assign a mean (average) value, based on the historical repair and operational cost-data averages of all equipment-makes in the class of equipment being advertised, in order to evaluate the bid.

NEW OR INNOVATIVE PURCHASING METHODS

Best Value Purchasing (TX) (continued)

DATED: AUGUST 2000

BEST VALUE PURCHASING – continued

<u>DEFINITIONS:</u>		
1) Annual Usage (Hours)	(AUH)	EOS Average Annual Usage (in hours) for All Equipment of Same Make
2) Annual Fuel Cost	(AFC)	EOS Average Annual Fuel Cost for all Equipment of Same Make
3) Annual Fuel Cost-per-Hour Operation	(AFCH)	EOS Average Annual Fuel Cost (per-Unit-Hour of Operation) for All Equipment of Same Make
4) Annual Repair Cost	(ARC)	EOS Average Annual Repair Cost for All Equipment of Same Make
5) Annual Repair Cost-per-Hour Operation	(ARCH)	EOS Average Annual Repair Cost (per-Unit-Hour of Operation) for All Equipment of Same Make
6) Annual Downtime (Hours)	(ADH)	EOS Average Annual Downtime Hours for All Equipment of Same Make
7) Downtime Cost-Per-Hour	DCH	Cost-per-Hour Due to being Out of Service, for All Equipment of Same Make
7.1)		<u>\$25.00 – Cost-Per-Hour</u>
8) Annual Downtime Cost	(ADC)	[ADH x DCH]
9) TxDOT Equipment Replacement Model	(TERM)	Estimated Lifetime Use (Years) for All Equipment of Same Make
9.1)		<u>12 years</u>
10) Estimated Lifetime Cost of Fuel	(ELCF)	Cost of Lifetime Fuel for One Piece of Equipment of Same Make
11) Estimated Lifetime Cost of Repair	(ELCR)	Cost of Lifetime Repairs for one Piece of Equipment of Same Make
12) Estimated Lifetime Cost of Downtime	(ELCD)	Cost of Lifetime Downtime for one Piece of Equipment of Same Make
13) Bid Price	(BP)	Vendor Bid Price
14) Residual Value	(RV)	20% of Bid Price
15) Equalized Bid	(EB)	ELFC + ELRC + ELCD + BP – RV

Bid Evaluation:

An EOS ad-hoc report is run on the class-code of equipment [as per the department's Tables and Characteristics System (TACS) Table: TEOS001] being purchased. Historical repair operational cost data is obtained from the report on each make of equipment being offered and the information is used in the following steps to arrive at the total evaluated bid price:

1. Obtain AUH for each make of equipment offered and insert the amount in the AUH block.
2. Obtain AFC for each make of equipment offered and insert the amount in the AFC block.
3. Obtain ARC for each make of equipment offered and insert the amount in the ARC block.
4. Obtain ADH for each make of equipment offered and insert the amount in the ADH block.
5. Multiply DCH by ADH and insert amount in ADC block.
6. Multiply AFCH by average annual usage for all makes. Next, multiply the product of AFCH/average annual usage by TERM lifetime (Yrs.) and insert amount in ELFC block.
7. Multiply ARCH by average annual usage for all makes. Next, multiply the product of ARCH/average annual usage by TERM lifetime (Yrs.) and insert amount in ELRC block.
8. Multiply ADC by TERM lifetime (Yrs.) and insert amount in ELDC block.
9. Insert vendor's unit bid price in Bid Data block.
10. Compute RV and insert amount in TxDOT Data block.
11. Calculate and rank equalized bid price = ELFC + ELRC + ELDC + BP – RV

NEW OR INNOVATIVE PURCHASING METHODS

Best Value Purchasing (TX) (continued)

DATED: August 2000

BEST VALUE PURCHASING – continued

EXAMPLE: (NOTE: The table was split into four sections due to its length (read left to right, skip down to the next table).

EOS DATA					
	Annual Usage	Annual Fuel	Annual Fuel	Annual Repair	Annual Repair
Make	Hours (per Unit)	Cost (per Unit)	Cost (per Unit per Hour)	Cost (per Unit)	Cost (per Unit per Hour)
A	\$804	430	\$1.87	\$3,732	\$8.68
B	\$731	502	\$1.46	\$3,466	\$6.90
C	\$757	470	\$1.61	\$3,565	\$7.59
D	\$775	497	\$1.56	\$3,630	\$7.30

EOS DATA				
	Annual Downtime	\$25.00 Downtime	Annual Downtime	12 TERM
Make	Hours (per Unit)	Cost (per Hour)	Cost (per Unit)	Lifetime (Yrs.)
A	154	\$25	\$3,850	12
B	111	\$25	\$2,775	12
C	135	\$25	\$3,375	12
D	128	\$25	\$3,200	12

EOS DATA			
	Est. Lifetime Fuel	Est. Lifetime Repair	Est. Lifetime Downtime
Make	Cost (per Unit)	Cost (per Unit)	Cost (per Unit)
A	\$10,547	\$48,955	\$46,200
B	\$8,795	\$38,916	\$33,300
C	\$9,080	\$42,808	\$42,780
D	\$8,798	\$41,172	\$38,400

	BID DATA	TxDOT DATA	CALCULATED DATA		
	Minimum Bid Price: \$82,776	Residual	Minimum Eq. Bid: \$164,535	"Bid"	"Eq-Bid"
Make	Bid Price	Value (20%)	Equalized Bid	Rank	Rank
A	\$92,637	\$18,527	\$179,812	1	3
B	\$114,290	\$22,858	\$172,443	3	1
C	\$121,018	\$24,204	\$191,482	4	4
D	\$105,950	\$21,190	\$173,130	2	2

NOTE: In this example, the vendor offering Make B is the lowest bidder offering the best value to the state; Vendor C bids a make that is not in the fleet - mean average is used.

Best Value Purchasing (TX) (continued)

An Excel Spreadsheet is available upon request.

For more information contact: Glenn R. Hagler, CPPO, CTPM, Director of Purchasing (512) 374-5402
E-Mail – ghagler@dot.state.tx.us

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Submitted by: Scott D. Buford, Director
General Services Division
Texas Department of Transportation

b) LIFE-CYCLE COST PURCHASING OF EQUIPMENT (CA)

LIFE-CYCLE COST PURCHASING OF EQUIPMENT

Traditionally, purchasing of fleet equipment by governmental agencies has been through the awarding of contracts to the lowest bidder complying with specifications. Escalating costs of parts and labor, coupled with fluctuations in depreciation and resale value of equipment, have resulted in a renewed interest in alternative purchasing and financing methods.

The real cost of a piece of equipment to the user is not merely the original purchase price, but rather what the equipment costs to purchase, operate, and then resell at the end of its useful life.

Life-cycle costing is an acquisition or procurement technique which considers operating, maintenance, and other costs of ownership as well as acquisition price in the award of contracts. A true life-cycle cost bid includes complete provisions for the following items:

1. Base bid price
2. Terms of warranty coverage
3. Guaranteed maintenance and repair costs for stipulated periods during the life of the equipment
4. Downtime provisions
5. Options for bidder's guaranteed repurchase price at stipulated time intervals

This type of bid is often called "total cost bidding". Many agencies make use of a partial life-cycle cost bid, in which a base bid price is called for, along with selected items of total life-cycle equipment costs. For example, the California Department of General Service's Office of Procurement currently issues bid proposals for equipment ranging from California Highway Patrol motorcycles to automobiles, in which the lowest compliant bid price is evaluated along with fuel consumption ratings, buy-back, or other selected parameters, on a weighted basis, to determine lowest total costs of ownership to the State.

Life-cycle cost bidding offers the following advantages:

1. With proper specifications, competition will increase because bidding is open to a wider range of equipment quality.
2. A maximum total fixed unit cost will be established for each piece of equipment.
3. Because equipment costs are established in advance, budgeting is easier.
4. Downtime and availability of parts are better controlled.
5. Options for guaranteed buy-back at specific time intervals can be established.
6. Advanced equipment with latest technology can be considered if lowest initial price limitations are removed.
7. Agencies with limited repair capabilities and parts purchasing can be assured of reasonable dealer costs for repairs and parts.
8. Life-cycle cost bidding permits the user to purchase high quality equipment - often cheaper in the long run -rather than low priced equipment which may prove expensive to maintain and keep.

On the other hand, disadvantages of life-cycle cost bidding are as follows:

1. Increased initial cost outlay may prohibit life-cycle cost bidding. Cost of money which could have been available for other purposes if it had not been used for an increased initial bid price must be considered.
2. Administration of purchasing contracts may be difficult. The use of performance bonds and arbitration clauses are necessary for buyer protection.

LIFE-CYCLE COST PURCHASING OF EQUIPMENT (CA) (continued)

3. In time of uncertainty, future projections for parts and maintenance costs and buy-back can be costly, because the bidder must include a cushion for variability. Most vendors will limit life-cycle cost bidding to a maximum term of five years.
4. Life-cycle cost bidding works best for high usage, high dollar equipment. Units with low usage and long replacement intervals are not good candidates for this type of purchasing.
5. More time and care must be allotted for life-cycle specifications. Considerations must be made for qualification of bidders and equipment.

The California Department of Transportation, hereafter referred to as Caltrans, operates an active fleet of about 12,150 light, medium, and heavy-duty vehicles. This equipment ranges in nature from mowers to rotary snowplows. The first venture for Caltrans into life-cycle cost purchasing occurred in 1969, when three motor graders, three track-laying tractors with dozers and rippers, three pneumatic-tired front end loaders with 4-1/2 cubic yard buckets, three 10 cubic yard dump body trucks, and six truck tractors with semi-trailers were purchased for use in Siskiyou and Humboldt counties. High-quality equipment was urgently needed on a quick procurement basis, resulting in this method of acquisition. In retrospect, usage was not as high as expected on this equipment and the buy-back option was not exercised, so the result was premium equipment (Caterpillar and Kenworth units) at premium prices.

The next life-cycle cost purchase of equipment by Caltrans occurred in 1986, when bids were issued for two articulated 2-1/2 cubic yard wheel loaders and two tandem axle motor graders. The two graders were Caterpillar Model 120G units: purchase price was \$71,162 each, with 5-year or 3,500 hour warranty meeting Caltrans life-cycle specifications, and a buy-back unit price option of \$53,700 at the end of the five year period. The two loaders purchased were Caterpillar Model 936G units; purchase price was \$74,700 each, with 5-year or 3,500 hour warranty and a buy-back unit price option of \$54,300 at the end of five years. Control units for comparison purposes were five Champion Model 710A motor graders, and nine John Deere Model 644D loaders purchased during the approximate time period. A premium price of about \$23,000 each for the motor graders and \$22,000 each for the loaders was paid to obtain life-cycle warranty, guaranteed maintenance, and stipulated buy-back prices. While the final evaluation showed a reduction in downtime and repair cost, total lifetime cost was higher for two reasons. The buy-back option specified (and paid for) was not utilized, due to the significantly higher purchase price for new replacement units, and the low usage and excellent condition of the life-cycle units. In addition, lower-than-expected annual usage (typical of municipal fleets), combined with warranty terms better suited to the higher annual usage typical of private contractors, meant that the extended warranty benefits paid for upfront were not fully utilized. Higher-usage vehicle assignments or a lower usage rate warranty term (and attendant lower upfront cost) would have provided a more favorable cost-benefit ratio.

Caltrans initiated its third life-cycle cost purchase program with the acquisition of thirty-one diesel-powered 3 cubic yard sweepers. Successful bidder on this \$4 million contract was FMC Corporation of Pomona, California, with its Vanguard Model 4000 SP sweeper. These sweepers were purchased with a 5-year or 5,000 hour warranty, 4-day parts availability requirement, and a 75% uptime guarantee. No buy-back options were specified.

Caltrans Maintenance Division operates a fleet of 125 sweepers throughout the state. This fleet is expensive to operate: a total of over \$1.6 million was spent during calendar year 1989 for parts and repairs to keep them sweeping roads and highways. Litter pickup is a major operation of the Maintenance Division, one which has high public visibility and concern. Caltrans hopes that life-cycle costing and a reduction in replacement criteria time from nine years to five years retention for its sweepers will result in reduced repair expenditures and less equipment downtime. Based mostly in metropolitan areas, the thirty-one sweepers commenced operation during May of 1990. Only dedicated operators qualified through the Caltrans Motorized Equipment Training Academy operate these life-cycle units, and both the vendor and Caltrans are conducting special training of operators and mechanics to assure proper care and operation. One unconventional option specified on these sweepers is an automatic lubrication system that provides continuous lubrication to 47 grease points.

An additional 14 street sweepers were purchased in 1992 on the life-cycle cost purchasing basis. These sweepers are FMC (now Johnston Sweeper Co.) Vanguard 4000 SP models, and are a supplement to the 31 Vanguard 4000 SP models purchased under life-cycle cost purchasing in 1990. The life-cycle parameters (5-year or 5,000 hour warranty, 4-day parts availability, 75% uptime guarantee) are the same for

LIFE-CYCLE COST PURCHASING OF EQUIPMENT (CA) (continued)

all 45 units. The automatic lubrication systems and the dedicated operator concept are proving to be effective, and the program is experiencing great success and acceptance. Control units are also being monitored, and a final report on the first two groups of life-cycle sweepers is now being written.

A total of 27 street sweepers have recently been purchased on the life-cycle cost purchasing basis. The successful bidder on this purchase is furnishing the Elgin Eagle Series E street sweeper, and the units were placed in service in the San Francisco and Los Angeles area during the summer of 1994. Extended warranty, parts availability, and uptime requirements are the same as for the previous 45 life-cycle cost sweepers. 1996 (19 units) and 1997 (28 units) purchases provided the fourth and fifth groups of life-cycle cost sweepers in the fleet. Both purchases were of the Johnston V4000 sweeper. Other than a change in warranty coverage time (a 4,000-hour term in some areas instead of the typical 5,000-hour coverage, to match the historical usage patterns), the warranty remains essentially the same as when the program was started in 1990.

An invitation to bid has been issued for 22 portable changeable message signs. These signs, like street sweepers, show good potential for life-cycle cost purchase benefits because of their low uptime and extremely high repair costs experienced in the fleet. Vendors have indicated that they feel they can furnish a higher quality unit and assure timely delivery of parts and repairs if they are not bound to low cost bidding. Due to a lack of support, this invitation to bid was not completed and the signs were not purchased with a life-cycle warranty. No further attempts at life-cycle purchasing of this item have been pursued.

Other types of equipment are being monitored for suitability of future life-cycle cost purchasing to meet the demands of tight budgets, higher initial equipment costs, and increasing dependability requirements.

In today's world of demanding duty factors, increasing dependability requirements, and tight budgets, low bid equipment may not prove to be the least expensive choice over the long run. Caltrans is exploring alternate purchasing methods to assure optimum results.

For more information contact: Lisa Kunzman (916) 227-9600
Director, Equipment Service Center

Submitted by: John LaCamera, Chief, Office of Fleet and Business Management
Division of Equipment
California Department of Transportation
Sacramento, California

c) COST EFFECTIVE ANALYSIS OF VEHICLE REPAIRS (TX)

**COST EFFECTIVE ANALYSIS
Vehicle Maintenance and Repairs**

In September 1991, the Texas Department of Transportation (TxDOT) implemented steps to maximize the use of the private sector in an effort to provide the best service for the least cost in maintenance and repairs to the statewide fleet. A program was adopted to systematically approach each repair opportunity using cost effective analysis to determine if the private sector could provide the needed service at a 10% cost savings, and at sufficient quantity and quality, to the department. Equipment managers are encouraged to use cost analysis in the decision making process to determine if the repair should be accomplished in-house by state forces, or contracted out to a commercial facility. The benefit of the cost analysis approach produces increased accountability, productivity and improves the overall efficiency of the shop operation.

An hourly shop rate is computed and published monthly for each of the (26) district/division shops (includes all direct and indirect costs) to be used in comparing in-house repair costs to commercial entity costs for each repair. In this respect, cost effective analysis uses cost accounting data to provide information needed to help equipment managers document, and make sound, fair, and consistent decisions regarding vehicle repairs.

The results of this increased effort to utilize the private sector are shown in the following statewide averages for shop rates and percentage contracted:

Time Frame	Shop Rate	Percent Contracted
End of Year FY 1991	\$39.56	8.7%
End of Year FY 1992	34.57	18.1%
End of Year FY 1993	33.47	23.5%
End of Year FY 1994	34.55	29.5%
End of Year FY 1995	33.86	33.3%
End of Year FY 1996	33.29	35.8%
End of Year FY 1997	32.43	33.8%
End of Year FY 1998	33.89	35.7%
End of Year FY 1999	32.89	37.4%
End of Year FY 2000	33.79	36.5%
End of Year FY 2001	34.84	36.2%
End of Year FY 2002	37.28	37.8%
End of Year FY 2003	39.18	37.8%

Monthly reports are generated for each district/division shop operations displaying dollars expended by state forces and to private entities, as well as percent contracted.

For more information contact:

Karen Dennis
Equipment Systems Group
(512) 374-5447
E-Mail - kdennis@dot.state.tx.us

Submitted by: Scott M. Buford, Director
General Services Division
Texas Department of Transportation

2. EQUIPMENT PURCHASING
a) EQUIPMENT PURCHASING (PA)

Equipment Purchasing

The Pennsylvania Department of Transportation currently utilizes contracts to procure approximately 90% of all equipment. The following contracts and specifications may be viewed on the Department of General Services internet site at <http://dgsapp.state.pa.us/comod/contract.asp>. Enter the contract number or contract description to access stored information.

Contract Description	Contract Number
Dump Trucks	1302-02
Passenger/Light Duty Trucks	2310-02
Crew Cabs	2310-05
Power Equipment	2420-01
Snow Plows & Attachments	2540-02
Construction Equipment	2540-04
Stainless Steel Spreaders	3830-09
Forklifts	3930-01
Arrow Panels	9905-10
Traffic Control Device (Work Zone)	9905-11
Compaction Equipment	2540-06
Kettles, Patchers	5680-05

For more information contact: Larry Allen, HEM II
 Specification Unit, Section Manager
 Telephone: 717-787-2123
 E-mail address: lawallen@state.pa.us

Submitted by: Raymond Rugh, Chief
 Equipment Division
 Commonwealth of Pennsylvania
 Department of Transportation
 17th St & Arsenal Blvd, Harrisburg PA 17120
 Telephone: 717-787-4299
 E-mail address: rrugh@state.pa.us

b) 10 CU. YD. DUMP TRUCKS (OR)

NEW TEN-YARD TRUCKS ON ORDER

A new, innovative purchasing process was used for the purchase of the ten-yard trucks currently on order. The bidders were asked to submit a bid on complete truck packages. The package was to include trucks, dump beds, sanders and push and wing plows to be delivered ready to use. This varies from the past practice of purchasing sanders and plows separately and installing them on trucks after delivery. Advantages of this new purchasing process include:

- . trucks are delivered ready to use
- . getting the truck to the user quickly
- . reducing handling and storage
- . improving bed sander interface
- . allowing mechanics to do more in-house repair on existing fleet
- . cost is less than purchasing separately and assembling in-house

Truck delivery will start in September 1992.

The new 1993 ten-yard trucks will be Navistar with Columbia dump beds, Fontaine sanders, and Henke snowplows. They will come with electronic engines, allowing us to select optimal drive train gearing and cruise control in an effort to maximize fuel efficiency.

Some trucks will come with the new load-sensing hydraulics that you may have heard about. We will be researching truck performance and monitoring for potential fuel and component maintenance savings. Electronic engines, along with load-sensing hydraulics, have the potential of reducing fuel costs up to 25%.

Thanks to user input and new innovative technology, we are confident this truck will be the best yet.

For more information contact: Thomas Luther (503) 378-2602
Equipment & Services Unit

Submitted by: Thomas Luther
Manager, Equipment & Services Unit
Oregon Department of Transportation

VI. NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

A. IDEAS

1. ASPHALT MAINTENANCE UNITS

a) UNIFORMITY OF APPLICATION SPRAY BAR TEST (TX)

Uniformity Of Application Spray Bar Test

The following is an accounting of the activities related to our computer program which determines the uniformity of application rates for spray bars utilized on our asphalt maintenance units and pressure distributors.

The program was originally on our mainframe computer as a Maxicalc spreadsheet. Subsequently, we created a Lotus 1-2-3 spreadsheet version for use on personal computers. Its purpose is to simplify the process used in determining spray bar specification compliance.

The program analyzes the relative performance of each individual nozzle along the length of the spray bar by:

- . computing the total spray bar output
- . determining the number of nozzles with actual output
- . computing the individual nozzle outputs
- . comparing the individual nozzle outputs to the average nozzle output
- . computing the variance between individual nozzle outputs and the average nozzle output
- . comparing the nozzle variance to our specification limits of plus or minus 7.5%
- . determining PASS or FAIL conditions
- . displaying all data and results, both numerically and graphically

A copy of each type spreadsheet is attached to depict the actual presentation of the data and results. Also attached is a brief documentation for the Lotus version and a detailed printout of the Maxicalc version. This information should assist in your understanding of the program, formula, and logic. Additionally, examples are included of our spray bar specification and spray bar test procedures.

For more information contact: Glenn R. Hagler, CPPO, CTPM (512) 374-5402
E-Mail - ghagler@dot.state.tx.us

Submitted by: Scott D. Buford, Director
General Services Division
Texas Department of Transportation

UNIFORMITY OF APPLICATION SPRAY BAR TEST (TX) (continued)

**Controlled Weight
Bucket Test**

STATEMENT OF INTENT: A test will be made to check the quantity of material delivered by each nozzle along the spray bar by the following method. It is the intent of this test that all nozzles of the thirteen (13) foot spray bar shall be working and dispensing material. Test calculations shall be based on all of these nozzles working and dispensing material.

The material in the dispenser will be heated and circulated. The spray bar will then be "blown" or sprayed for a short period of time. Buckets will then be placed under each nozzle. The buckets will be placed in a manner to catch all material which is emitted in the test. The material will be applied through the spray bar nozzles into the buckets. The buckets will then be weighed to determine the quantity of material emitted by each nozzle. An average nozzle application quantity will be calculated. The average application quantity will be determined by calculating the total cumulative weight of the buckets and material quantity emitted, less the tare weight of the buckets, divided by the total number of nozzles on the thirteen (13) foot spray bar (see below). Uniformity of application for a thirteen (13) foot spray bar shall not vary from the average application by more than plus or minus seven and one-half percent ($\pm 7.5\%$), for each nozzle over the entire thirteen (13) foot length of the spray bar.

BUCKET TEST

SPRAY BAR SPREADSHEET: The spreadsheet is fairly self-explanatory. It was developed on Lotus 1-2-3, release 2. It should work acceptably under release 1A. It provides certain information about spray bar performance based on the weight of samples collected. The user enters the weight of a full bucket in the first column and the weight of an empty bucket in the third column. The spreadsheet calculates material weight, calculates an average and computes the variance from the average. If it is less than 7.5%, the COMMENT column will indicate "PASSED." If it is over 7.5%, COMMENT will show "FAILED." The last column will graph the variance with pluses indicating a positive variance (++++++) and minuses indicating a negative variance (-----).

Material Applied via the Average Weight Test Method

BT-TO-WT	BKT-NO.	BT-TR-WT	MAT-WP	OFF	AT-MT-WT	%VAR-AVG	COMMENT	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	
3,140	1	1,286	1,854	1	1,763	5.1742%	PASS	+	+	+	+	+											
3,043	2	1,230	1,813	1	1,763	2.8484%	PASS	+	+	+													
3,074	3	1,269	1,805	1	1,763	2.3945%	PASS	+	+														
3,035	4	1,261	1,774	1	1,763	0.6360%	PASS	+															
3,078	5	1,276	1,802	1	1,763	2.2243%	PASS	+	+														
3,119	6	1,351	1,768	1	1,763	0.2956%	PASS																
2,960	7	1,283	1,677	1	1,763	-4.8667%	PASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,955	8	1,228	1,727	1	1,763	-2.0303%	PASS	-	-														
2,986	9	1,285	1,701	1	1,763	-3.5052%	PASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,029	10	1,302	1,727	1	1,763	-2.0303%	PASS	-	-														
2,948	11	1,212	1,736	1	1,763	-1.5197%	PASS	-	-														
3,017	12	1,267	1,750	1	1,763	-0.7255%	PASS	-															
2,925	13	1,218	1,707	1	1,763	-3.1648%	PASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,129	14	1,422	1,707	1	1,763	-3.1648%	PASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,999	15	1,260	1,739	1	1,763	-1.3495%	PASS	-															
3,132	16	1,423	1,709	1	1,763	-3.0514%	PASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,975	17	1,232	1,743	1	1,763	-1.1226%	PASS	-															
3,175	18	1,461	1,714	1	1,763	-2.7677%	PASS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,040	19	1,000	2,040	1	1,763	15.7257%	FAILED	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
0	20	0	0	0	1,763		FAILED																
0	21	0	0	0	1,763		FAILED																
0	22	0	0	0	1,763		FAILED																
0	23	0	0	0	1,763		FAILED																
0	24	0	0	0	1,763		FAILED																
0	25	0	0	0	1,763		FAILED																
0	26	0	0	0	1,763		FAILED																
0	27	0	0	0	1,763		FAILED																
0	28	0	0	0	1,763		FAILED																
0	29	0	0	0	1,763		FAILED																
0	30	0	0	0	1,763		FAILED																
0	31	0	0	0	1,763		FAILED																
0	32	0	0	0	1,763		FAILED																

2. HAZARDOUS MATERIALS
a) ENVIRONMENTAL/FINANCIAL (NJ)

Environmental/Financial Management

From both the environmental and financial aspects, we have been very much aware of the need to eliminate hazardous waste in our shop.

We have taken the following direction:

- 1) Waste drain oil - removed by a contractor for recycling.
- 2) Parts Cleaning Solvent - all recirculating and immersion parts cleaners are obtained by contract which includes solvent replacement.
- 3) We are evaluating Freon recovery systems and will include as standard shop equipment at all facilities in the near future.
- 4) We are evaluating antifreeze recycling equipment and expect to implement antifreeze recycling statewide in the next twelve (12) months.

For more information contact: Stephen A. Toth (609) 530-2200
Chief, Bureau of Equipment

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Submitted by: Stephen A. Toth, Chief
Bureau of Equipment
New Jersey Department of Transportation

3. EMERGENCY EQUIPMENT
a) NATURAL DISASTERS (TX)

Natural Disasters

Ad Hoc program(s) have been developed using information in the Department's Equipment Operations System (EOS) to identify major equipment traditionally used in the event of a natural disaster. The program is shared (accessible to other users) and is available for immediate use. The report provides a class description, equipment number, and location by District, Section, and County.

Each unit of equipment in the statewide fleet has been identified as falling into one of three functional categories: Emergency, Standby or Operational. These categories are used to identify types of equipment for budget and reporting purposes. By use of a code, equipment within each of the categories is identified as being equipped or not equipped with a 2-Way radio. Demand reports have been made available that will provide an immediate listing by category.

For more information contact: Karen Dennis (512) 374-5447
Equipment Systems Group
E-Mail - kdennis@dot.state.tx.us

Submitted by: Scott D. Buford
General Services Division
Texas Department of Transportation

4. FLEET SIZE
a) REPLACEMENT ANALYSIS (TX)

**TxDOT Equipment Replacement Model
TERM**

The Texas Department of Transportation utilizes a uniform process in its approach to determine equipment replacement criteria. To provide some background, the Department owns and maintains an active fleet inventory of over 17,000 units, with an estimated replacement value in excess of \$613 million, to service more than 79,000 centerline miles on the state highway system. We purchase and dispose of approximately 10% of the fleet annually.

The fleet ranges from compact sedans to motorized ferries, to meet the diverse geographical conditions and program needs in the State of Texas. The Department consists of 25 Districts and 27 support Divisions/Offices. Each District receives an annual allocation for equipment purchases to use in determining needs. District management is responsible for specific needs, and most utilize equipment committees to identify equipment as candidate for replacement.

We are continually evaluating the suitability of units in our fleet based on age, hours or miles of operation, and downtime, as well as operating and maintenance costs. Most of the evaluation is done subjectively through input from equipment, maintenance, and field personnel. During 1988-9, after conducting an extensive search of printed material, we contacted the various state highway departments to determine if an automated method to identify equipment as candidate for replacement was in use. While various methods were being used, most employed schedules for classes of equipment based on the criteria of age and usage, and considered life repair costs, as well as the condition of the equipment.

After an extensive review of replacement methodologies; and to satisfy an internal audit recommendation to include inflation as a factor in the Department's replacement process; and recognizing that all District equipment operations are not the same, and that there are numerous factors that must be considered when planning for equipment replacement, we chose to develop an in-house approach. The result is the TxDOT Equipment Replacement Model (TERM), which identifies items of equipment that are candidates for replacement.

The Equipment Operations System (EOS), a subsystem of our overall Management Information System (MIS), operational since September 1984, captures extensive information on all aspects of equipment operations. This system is used to provide historical data in our computerized approach. Due to the complexity of the equipment replacement decisions, we chose to keep the philosophy simple: The computer processes raw EOS historical data against three preset standards for each identified equipment class. The criteria used in our approach are: (1) equipment age; (2) life usage expressed in hours or miles; and (3) life repair costs (adjusted for inflation) relative to original purchase cost (including net adjustments to capital value).

REPLACEMENT ANALYSIS (TX) (continued)

Term Methodology and Logic

Methodology - After a complete review of available software and methods used by other states for equipment replacement, the Equipment Operations System (EOS) developed an in-house approach to identify items of major equipment that may be candidates for replacement. The approach considers equipment age, elapsed usage, and life repair costs, as these are generally accepted criteria in literature and/or other states' methods.

Actual Method - An ad hoc program written in SAS language was developed that identified classes of equipment having 82% of the value and 73% of the quantity of the statewide equipment fleet. The remaining equipment, being unique or having low population, is not considered in this approach.

The logic used in this approach is that each item of equipment reaches a point in its useful life when significant increases are experienced in repair costs. Replacement should occur just prior to that point. Ad hoc reports were developed, and monitored annually, that display historical information on usage and repairs to identify, in years, when that time occurs.

From this historical information, standards for each criteria were established for each class of equipment. For sedans, pickups, and dump trucks, the manufacturer's warranty period was incorporated into the standards used in our replacement model. For aerial devices, the standard was determined as that point just prior to the required major inspection.

Report Explanation - This approach identifies equipment meeting specified criteria one year in advance of the actual time that replacement is required. In the report, standards are established and displayed for each class of equipment. Standards for usage are displayed in miles/hours ("Criteria For Usage" column); age is expressed by model year ("Criteria For Model Yr" column); and life repairs are expressed in dollars ("Criteria For Repair Exp" column). The criterion for repair expenses for a particular piece of equipment is the original purchase cost plus adjustments to capital value for that piece of equipment. Life repair expenses have been adjusted to include inflation.

Each item of active equipment in the District fleet is compared to the established standards. When an item of equipment meets one or more of the standards, it will be displayed on the report. The equipment's historical information is then displayed in relation to the established standards. Equipment that meets three standards is displayed on the reports with three asterisks, two standards with two asterisks, and one standard with one asterisk.

Replacement cost and funding activity have also been included in the reports. The "Replacement Cost" column displays the average replacement cost for that class of equipment based on the previous year's purchases. The "STRNUM" column shows the funding activity the item is currently classified in. At the bottom of each report, the "Equipment Count Meeting Criteria" and "Total Estimated Replacement Cost" are listed.

The resulting reports provide information to better manage equipment replacement and to plan for future needs. This approach can identify equipment meeting specified criteria one year in advance of the actual time that a replacement may be required. This allows sufficient time for the procurement and delivery of a new unit.

In this approach, historical information and other data have been used to develop statewide standard replacement guidelines for each identified equipment class. The resulting reports display replacement candidates by funding activity. A District's report contains three listings: Equipment that has met all three criteria; two criteria; and one criterion. Equipment meeting three criteria is assumed to be the highest priority candidate for replacement (e.g., a light duty pickup truck in class 430010, which is eight (8) years old, has accumulated 100,000 miles of usage, and whose life repair costs have exceeded 50% of the original purchase cost including net adjustments to capital value meets all three criteria). The criteria are not weighted or ranked as to importance.

TERM is only one tool in the overall decision-making process, and does not replace the knowledge of the equipment manager, but only serves to supplement it. Consequently, as equipment budget constraints are realized, this requires each District to prioritize equipment replacement relative to their needs and approved budget funding. Accordingly, each District considers this information, as well as downtime, condition of equipment, new equipment needs, identified projects, and other factors when planning equipment replacement.

The coded computer program, a mainframe application, is written in SAS language, and will be made available to you if you feel it would be helpful.

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (TX) (continued)

CLASS CODE	CLASS CODE DESCRIPTION	STANDARD FOR USAGE	STANDARD FOR AGE	STANDARD FOR REPAIR
001010	Aerial Personnel Device, Trk Mtd, To 30', inc Trk	7,000 Hrs	7 Yrs	.75
001020	Aerial Personnel Device, Trk Mtd, 31 to 40', Inc Trk	7,000 Hrs	7 Yrs	.75
001030	Aerial Personnel Device, Trk Mtd, 41 to 59', Inc Trk	7,000 Hrs	7 Yrs	.75
001040	Aerial Personnel Device, Trk Mtd, 60' + Inc Trk	9,000 Hrs	10 Yrs	.50
001050	Aerial Personnel Device, Truck Mounted, Mileage	11,000 Mi	7 Yrs	1.00
011010	Asphalt Distributor, Truck Mtd. (Includes Truck)	5,000 Hrs	12 Yrs	.75
012010	Asphalt Maintenance Unit 600 Gal, Trailer Mtd.	3,500 Hrs	10 Yrs	1.00
012020	Asphalt Maintenance Unit, 1000 Gal. Trailer Mtd	3,500 Hrs	12 Yrs	.75
012030	Asphalt Maintenance Unit, Truck Mounted	5,000 Hrs	12 Yrs	.75
012040	Asphalt Maintenance Unit. Dumpbody Contained	4,500 Hrs	13 Yrs	.75
014000	Asphalt Melting Kettle (HTR) Trailer Mtd.	1,800 Hrs	10 Yrs	.75
019000	Asphalt Inplace Reclaimer, S P Hydrostatic, Diesel W/LIQ	3,000 Hrs	10 Yrs	.50
020020	Automobiles, Sedan, 100 Thru 112.9 Inch Wheelbase	90,000 Mi	8 Yrs	.50
020030	Automobiles, Sedan, 113 in wheelbase and greater	90,000 Mi	8 Yrs	.50
025010	Automobiles, Station Wagons Up to 112.9 wheelbase	90,000 Mi	8Yrs	.50
044000	Earth Boring Machine, Trk Mtd (Includes Truck)	5,000 Hrs	14 Yrs	.75
052010	Crane, Carrier Mounted, Cable Control	6,000 Hrs	16 Yrs	.75
052020	Crane, Crawler Type, Cable Control	10,000 Hrs	14 Yrs	.50
054000	Crane, Telescoping Boom, Trk, Mtd. (Inc. Trk)	7,000 Hrs	12 Yrs	.50
056000	Crane, Yard/Industrial, Self-Propelled	5,000 Hrs	12 Yrs	.50
064000	Dynamic Deflection System, Trailer Mounted	90,000 Mi	10 Yrs	1.00
070010	Excavator, Hinged Boom, Crawler Type	7,000 Hrs	10 Yrs	.50
070020	Excavator, Hinged Boom, Pneumatic Tired Carrier	7,000 Hrs	10 Yrs	.50
075010	Excavator, Tlscp Bm, Car Mt, Cls I, Sgle Axle 4x2	7,000 Hrs	9 Yrs	.75
075020	Excavator, Tlscp Bm, Car Mt, Cls II, Sgle Axle 4x4	7,000 Hrs	9 Yrs	.75
075030	Excavator, Tlscp Bm, Car Mt, Clss III, Tndm Axle 6x4	8,400 Hrs	12 Yrs	.75
080000	Forklift, Electric	5,000 Hrs	12 Yrs	.50
085010	Forklift, Engine Driven, up to 3,999 Capacity	9,000 Hrs	12 Yrs	1.00
085020	Forklift, Engine Driven, 4,000 LB and over	9,000 Hrs	12 Yrs	.75
090010	Grader, Motor, Class I, Up To 109HP	5,000 Hrs	12 Yrs	.50
090020	Grader, Motor, Class II, 110 to 134 HP	6,000 Hrs	13 Yrs	.75
090030	Grader, Motor, Class III, 135 to 149 HP	6,000 Hrs	13 Yrs	.75
090040	Grader, Motor, Class IV, 150 HP and Greater	6,000 Hrs	12 Yrs	1.00
110010	Loader, Crawler, up to 1.9 Cu Yd Capacity	4,000 Hrs	13 Yrs	.75
110020	Loader, Crawler, 2 Cu Yd Capacity and Greater	4,000 Hrs	13 Yrs	.75
115000	Loader, Pnmtc Trd, to 3000 Lb Op. Cap. (Under 1 Cu Yd)	3,000 Hrs	10 Yrs	1.00
115010	Loader, Pnmtc Trd, Inte-gral, Max 5199 Lb Op Cap	5,000 Hrs	13 Yrs	.75
115020	Loader, Pnmtc Trd, Inte-gral 5200 to 6699 Lb Op Cap	5,200 Hrs	13 Yrs	1.00
115030	Loader, Pnmtc Trd, Inte-gral, 6700 to 8000 Lb Op Cap	5,500 Hrs	13 Yrs	.75
115040	Loader, Pnmtc Trd, Inte-gral, 8001 lb. Op and Greater	6,500 Hrs	13 Yrs	1.00

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (TX) (continued)

CLASS CODE	CLASS CODE DESCRIPTION	STANDARD FOR USAGE	STANDARD FOR AGE	STANDARD FOR REPAIR
122010	Mixer, Concrete, Portable, up to 6 Cu. Ft. Capacity	8,000 Hrs.	20 Yrs	1.00
122020	Mixer, Concrete, Portable, 9 Cu. Ft. and Greater	1,000 Hrs	20 Yrs	1.00
130010	Mower, Lift or Trail, Flail 5-7 Ft.	2,000 Hrs	14 Yrs	1.50
130020	Mower, Lift or Trail, Flail 7-9 Ft.	1,500 Hrs	14 Yrs	1.50
132010	Mower, Lift or Trail, Rotary 5-7 Ft.	1,500 Hrs	14 Yrs	1.50
132020	Mower, Lift or Trail, Rotary 7-9 Ft.	1,500 Hrs	14 Yrs	1.50
132030	Mower, Lift or Trail, Rotary Swing Arm	1,000 Hrs	17 Yrs	1.50
132040	Mower, Trail Type, Rotary, 9 Ft and Greater	3,000 Hrs	8 Yrs	1.00
135010	Mower, SF Prop., Riding, Fwd Mt., Rotary, to 60"	1,000 Hrs	11 Yrs	1.00
135020	Mower, SF Prop., Riding, Fwd Mt., Rotary, 60' +	1,000 Hrs	8 Yrs	.50
135040	Mower, Tractor Type, Riding, Rotary, up to 30 HP	1,000 Hrs	10 Yrs	1.00
136010	Mower, Slope, Side Boom, Tractor Mtd., Inc. Tractor	2,000 Hrs	13 Yrs	1.00
140040	Paint Stripe Machine, 2 Color, Multi-Line, Trk Mt	10,000 Hrs	10 Yrs	1.00
154000	Pavement Profiling Machine, Self Propelled	7,000 Hrs	10 Yrs	.50
156010	Paver, Bituminous, Self Propelled	5,000 Hrs	11 Yrs	.50
162020	Pulverizer-Mixer, Earth, Self Propelled	3,000 Hrs	9 Yrs	.50
170010	Roller, Flatwheel, Self Prop 4-6 Ton With Pnmtc Trs	3,000 Hrs	16 Yrs	.75
170020	Roller, Flatwheel, Self Prop 5-8 Ton	4,500 Hrs	16 Yrs	.75
170030	Roller, Flatwheel, Self Prop 8-14 Ton	4,500 Hrs	16 Yrs	.75
174010	Roller, Pneumatic Tired, Self Prop	4,000 Hrs	14 Yrs	1.00
176010	Roller, Tamping, Self Propelled	3,000 Hrs	15 Yrs	.50
178010	Roller, Vibrating, Self Propelled	2,000 Hrs	15 Yrs	.50
178020	Roller, Vibrating, Self Prop with Pneumatic Tires	2,500 Hrs	12 Yrs	.50
186000	Sign, Electronic Changeable Trailer Mtd.	6,000 Hrs	12 Yrs	1.00
186010	Sign, Electronic Changeable,	6,000 Hrs	12 Yrs	1.00
192010	Sprayer, Herbicide/Insecticide Trk Mt (In Truck)	6,300 Hrs	9 Yrs	1.00
194010	Spreader, Aggregate, Self Prop	5,000 Hrs	15 Yrs	1.00
202010	Sweeper, Road, Self Propelled	3,000 Hrs	10 Yrs	1.00
204020	Sweeper, Street, Truck Mounted	5,000 Hrs	8 Yrs	.75
204030	Sweeper, Street, Truck Mounted Regenerative Air, up to 6 CY	5,000 Hrs	8 Yrs	.50
204040	Sweeper, Street, Truck Mounted Regenerative Air, 6 CY & Up	5,000 Hrs	8 Yrs	.75
214000	Tank, Water, Truck Mtd., Inc. Truck	140,000 M	12 Yrs	1.00
214010	Tank, Water, Truck Mtd., Inc. Truck	4,000 Hrs.	12 Yrs	1.00
220010	Tractor, Crawler Type (W/ or W/O Dozer) to 100 HP	6,000 Hrs	12 Yrs	.75
220020	Tractor, Crawler Type (W/ or W/O Dozer) to 100 - 129 HP	6,000 Hrs.	12 Yrs	.75
220030	Tractor, Crawler Type (W/ or W/O Dozer) to 130 - 179 HP	6,000 Hrs.	12 Yrs	1.00
230010	Tractor, Pneumatic Tired, to 49 HP (Tractor Only)	3,000 Hrs	14 Yrs	1.00
230020	Tractor, Pneumatic Tired, 50 to 64 HP (Tractor Only)	3,000 Hrs	14 Yrs	1.00
230030	Tractor, Pneumatic Tired, 65 HP and + (Tractor Only)	3,000 Hrs	14 Yrs	1.00
240020	Tractor, Pneumatic Tired, With Loader and Backhoe, to 60 HP	3,500 Hrs	14 Yrs	.75
240030	Tractor, Pnmtc Trd, W/Ldr and Backhoe, 60 HP and up	6,000 Hrs	10 Yrs	.50
260010	Trailer, Eqpt, Tilt Bed/Utility, to 24,000 Capacity	3,000 Hrs	15 Yrs	1.00
260020	Trailer, Eqpt, Tilt Bed/Utility, 24,000 # Cap & Gtr	4,000 Hrs	15 Yrs	1.50
260030	Trailer, Equipment, Gooseneck	0,000 Hrs	15 Yrs	1.50
280010	Trailer, Transport, Platform	,000 Hrs	12 Yrs	1.00
280020	Trailer, Transport, Sign	4,000 Hrs	14 Yrs	1.00
400010	Truck, 4-WD Utility/Carryall	100,000 Mi	7 Yrs	.50
400020	Truck, 4-WD Pickup, all styles	100,000 Mi	7 Yrs	.50
400030	Truck, 2-WD Utility Vehicle,	10,000 Mi	7 Yrs	.50

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (TX) (continued)

CLASS CODE	CLASS CODE DESCRIPTION	STANDARD FOR USAGE	STANDARD FOR AGE	STANDARD FOR REPAIR
	3961 to 4850 GVWR, Series 66			
410010	Truck, Carryall, up to 6950 LB	100,000 Mi	7 Yrs	.50
410020	Truck, Carryall, 7,000 LB and Grter	100,000 Mi	7 Yrs	.50
420010	Truck, Cargo or Window Van up to 6,200 LB	100,000 Mi	8 Yrs	.50
420020	Truck, Cargo or Window Van, 6,200 LB and Greater	100,000 Mi	8 Yrs	.50
430010	Truck, Light Duty, Pickup, up to 4600 Lb GVWR	100,000 Mi	8 Yrs	.50
430020	Truck, Light Duty, Pickup, 4600 to 6199 LB GVWR	100,000 Mi	7 Yrs	.50
430030	Truck, Light Duty, PU, Other Bdy Styles, 4600-6199 GVWR	100,000 Mi	7 Yrs	.50
430040	Truck, Hvy Duty Compact, 4320-5600 GVWR, Series 852-3	100,000 Mi	7 Yrs	.50
430050	Truck, Extended Cab Compact 4245-5034 GVWR, Ser 854	100,000 Mi	7 Yrs	.50
430070	Truck, Ext. Cab ½ Ton, 6000-5250 GVWR, Ser 863	100,000 Mi	7 Yrs	.50
440010	Truck, Light Duty, Pickup, 6200 to 7999 Lb GVWR	100,000 Mi	7 Yrs	1.00
440020	Truck, Light Duty, PU, 6200-7999 GVWR, Other Body	100,000 Mi	7 Yrs	.50
440030	Truck, Ext. Cab, 3/4 Ton, 72-8800 GVWR, Series 868	100,000 Mi	7 Yrs	.50
450010	Truck, Light Duty, 8000-8900 GVWR Pickup Body	100,000 Mi	7 Yrs	.50
450020	Truck, Light Duty 8000-8900 GVWR, Other Body	100,000 Mi	7 Yrs	.50
460010	Truck, Lt Dty, 9,000 GVWR & Gtr Pickup Body	100,000 Mi	7 Yrs	.50
460020	Truck, Lt Dty, 9000 GVWR & Gtr. Other Body Styles	100,000 Mi	7 Yrs	.50
470020	Truck, Lt Dty, Cr Cab, 7901-8999 GVWR, All Body Styles	100,000 Mi	7 Yrs	.50
470030	Truck, Lt Dty, Cr Cab, 9000 14900 GVWR, All Body Styles	100,000 Mi	7 Yrs	.50
480010	Truck, Pltfm, Pltfm Dump, Stake, 9000-14900 GVWR	100,000 Mi	7 Yrs	.50
490010	Truck, Light/Med, 14,500 to 17,340 GVWR, Series 940	100,000 Mi	7 Yrs	.50
500010	Truck, All Body Styles 15,000 to 18,900 GVWR	115,000 Mi	8 Yrs	.50
510010	Truck, All Body Styles 19,000 to 20,900 GVWR	115,000 Mi	8 Yrs	.50
520010	Truck, All Body Styles Exc Conv Dump 21000-25400 GVWR	115,000 Mi	8 Yrs	.50
520020	Truck, Conventional Dump, 21000 to 25400 GVWR	100,000 Mi	8 Yrs	.50
520030	Truck, Ejection Type Mat Body, 21000-25400 GVWR	100,000 Hrs	8 Yrs	.50
530010	Truck, All Body Style, Exc. Conv. Dump/Wrecker 25,500 - 28,900 GVWR	125,000 Mi	10 Yrs	.75
530020	Truck, Conventional Dump, 25500 to 28900 GVWR	125,000 Mi	10 Yrs	.75
530030	Truck, Ejection Type Material Body, 25500 - 38900	120,000 Mi	10 Yrs	.75
540010	Truck, Dump, Single Rear Axle, 29000-42900 GVWR	140,000 Mi	14 Yrs	1.00
540020	Truck, Dump, Tndm Rear Axle, 43000 GVWR & Gtr	150,000 Mi	12 Yrs	1.00
550010	Truck, All Style Exc Dump, Single Rear Axle 29-38,900 GVWR	120,000 Mi	11 Yrs	.75
550020	Truck, All Style Exc Dump, Tandem Axle Dump 39,000 GVWR Plus	120,000 Mi	11 Yrs	.75
600010	Truck Tractor, Single Rear Axle up to 60,000 GVWR	125,000 Mi	13 Yrs	.75
600020	Truck Tractor, Single Rear Axle, 60000 GCWR & Gtr	125,000 Mi	13 Yrs	1.00
600030	Truck Tractor, Tandem Rear Axle, All GCWR	200,000 Mi	10 Yrs	1.00

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (TX) (continued)

Originally TERM Looked At:

70 Class Codes of the 310 in EOS	22.58%
12,584 Units of Equipment of 17,357 active status	72.51%
\$251,709,530.54 of the Original Purchase Cost	82.28%

Currently TERM Looks At:

125 Class Codes of the 320 in EOS	39.06%
15,552 Units of Equipment of 17,481	88.97%
\$483,160,138.54 of the Original Purchase Cost	88.39%

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Submitted by: Scott D. Burford, Director
General Services Division
Texas Department of Transportation

b) REPLACEMENT ANALYSIS (CA)

Replacement Analysis

The California Department of Transportation, Equipment Service Center establishes and maintains equipment age and usage standards for its entire 14,015 fleet unit inventory.

The fleet is grouped into item categories (sedan, ½ ton pickup, 4 yard dump truck, etc.) and identified by a specific Maint. Class (item number 00101 = sedan, compact). There are over 650 different item classifications in the California DOT Inventory.

AGE AND USAGE STANDARD LISTING

The attached Age and Usage Standard Listing provides the various equipment in the fleet inventory identified by relative maint. class. The listing provides:

1. Maint. Class
2. Equipment Description
3. Age Projected Replacement Standard
4. Usage Projected Replacement Standard
5. Usage Standard Criteria - Miles or Hours

The information provides general guidelines to assist in the equipment replacement evaluation process. In addition, other considerations in the replacement process include (in no particular order) equipment repair costs, equipment utilization, obsolescence, and program changes.

AGE/USAGE STANDARD METHODOLOGY

Age and usage standards are reviewed by the Fleet Management Branch annually and adjustments made if necessary.

For an incoming brand new item number without an existing age and usage standard, Fleet Management:

1. Determines projected equipment usage by evaluating the program application and discussions with equipment managers.
2. Reviews equipment specifications and discusses equipment life expectancy with the equipment engineers/vendors.
3. Locates comparable units if available and checks for uniformity.
4. Considers programs or packages which may impact equipment life and performance (life-cycle costing, extended warranty, PM).
5. Checks the age and usage "base" against program application. Investigates equipment upgrades or technological improvements which may extend equipment life. Ensures any revisions to standards will not impact the program user, provide a better product and reduce resource obligations, while remaining cost effective.

All listed data was provided from the Equipment Service Center's Office Equipment Management System (EMS), a system which records all fleet equipment usage, repair, and fuel information. The reports are available upon demand and are updated daily and monthly.

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
00101	Sedan, Compact	084	100000	M
00103	Sedan (Intermediate)	084	100000	M
00104	Sedan, Intermdte, w/Tracking Device	084	100000	M
00107	Sedan, Sub Compact, Electric	060	060000	M
00108	Sedan, Variable Fuel, Gas/M85	084	100000	M
00144	Van, Mini, 7 Passenger, Computer	096	100000	M
00150	Van, Mini, Pass, Non-Pool	096	100000	M
00184	Van, 12 Passenger, Commuter, CNG	096	100000	M
00194	Van, 12 - 15 Passenger, Commuter	108	120000	M
00195	Van, Commuter, Lift Equipped	096	200000	M
00200	Van, Delivery, ½ Ton	096	100000	M
00210	Van, 12-15 Pass, Non-Com, Gas/CNG	108	120000	M
00250	Van, 12 - 15 Passenger, Non-Commute	108	130000	M
00261	Van With Profiler	084	200000	M
00301	Station Wagon, Compact	084	100000	M
00302	Station Wagon	108	130000	M
00400	Pickup, Mini	096	120000	M
00407	Pickup, Mini, Electric	096	100000	M
00410	Pickup, Mini, Gas/CNG	096	120000	M
00470	Van, Mini	096	100000	M
00521	Bus, 21 - 36 Passenger	108	130000	M
00607	Pickup with A/C, ½ Ton	108	130000	M
00610	Pickup, ½ Ton, Gas/CNG	108	130000	M
00688	Blazer Body Type	108	130000	M
00690	Sport Utility, Mid-Size 2x2	108	130000	M
00707	Pickup ½ Ton A/C Diesel	120	150000	M
00801	Pickup with Plow	096	150000	M
00804	Pickup Crew Cab	120	150000	M
00807	Pickup with A/C, 3/4 Ton	120	150000	M
00810	Pickup, 3/4 Ton, Gas/CNG	120	150000	M
00830	Utility Body	108	150000	M
00831	Utility Body with Plow	096	150000	M
00833	Utility Body, 3/4 Ton, Gas/CNG	108	150000	M
00840	Van, Survey	120	175000	M
00841	Van, Survey, Vanguard	120	175000	M
00844	Utility Body, Crew Cab	120	150000	M
00860	Van With Deflectometer	120	012000	H
00870	Van, Delivery	120	150000	M
00877	Van, Mechanics	120	150000	M
00901	Pickup with Plow, Diesel	120	175000	M
00904	Pickup, Crew Cab, Diesel	120	175000	M
00907	Pickup, with A/C, Diesel	120	175000	M
00930	Utility Body, Diesel	120	175000	M
00931	Utility Body, with Plow, Dsl.	120	175000	M
00944	Utility Body, Crew Cab, Dsl.	120	175000	M
00970	Van, Delivery, Diesel	120	175000	M
01000	Pickup, 1 Ton	120	150000	M
01001	Pickup with Plow	108	150000	M
01009	Pickup Crew Cab w/Tr Mtd Skidtes	096	150000	M
01028	Van, Mobile Telecommunications	144	150000	M
01030	Utility Body	096	150000	M
01031	Service Body with Plow	096	150000	M
01033	Utility Body W/Flow, Gas/CNG	096	150000	M
01034	Utility Body, Crew Cab	096	150000	M
01036	Mechanic Body	144	150000	M
01037	Cone Body	132	150000	M
01039	Survey Body	144	150000	M
01040	Van, Survey	120	100000	M
01041	Plumbing Truck	108	150000	M
01049	Cargo Body 9 Ft w/o Hoist	144	150000	M
01050	Cargo Body 9 Ft with Hoist	144	150000	M
01051	Cargo Body w/o Hoist, w/Plow	108	150000	M
01052	Cargo Body w/o Hoist, w/Plow	108	150000	M
01054	Cargo Body w/o Hoist, Utility	144	150000	M
01055	Cargo Body w/o Hst, Util, w/Plow	108	150000	M

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
01056	Cargo Body, w/Hoist, Util, W/O Plow	108	150000	M
01057	Cargo Body, w/Hoist, Litter	108	150000	M
01059	Cargo Body 9 Ft. w/o Hoist, Gas/CNG	144	150000	M
01060	Cargo Body 9 Ft. w/Hoist, Gas/CNG	144	150000	M
01063	Cargo Body, Crew Cab, w/o Hoist	144	150000	M
01064	Cargo Body, Crew Cab	144	150000	M
01065	Cargo Body, Crew Cab w/Plow	144	130000	M
01070	Van, Delivery	108	150000	M
01071	Van, Delivery, High-Cube Body	144	150000	M
01080	Personnel Hoist, 28' Elec Body	108	150000	M
01082	Drill, Core Testing	144	010000	B
01100	Pickup, Diesel	120	175000	M
01101	Pickup with Plow, Diesel	108	175000	M
01104	Pickup, Crew Cab, Diesel	120	175000	M
01130	Utility Body, Diesel	120	175000	M
01131	Utility Body, with Plow, Diesel	120	175000	M
01134	Utility Body, Crew Cab, Diesel	120	175000	M
01136	Mechanic Body, Diesel	120	175000	M
01137	Cone Body, Diesel	120	175000	M
01139	Survey Body, Diesel	120	175000	M
01147	Utility-Cone Setter, One-Ton Dsl.	108	150000	M
01149	Cargo Body without Hoist, Dsl	120	175000	M
01150	Cargo Body with Hoist, Diesel	120	175000	M
01151	Cargo Body w/o Hoist, w/Plow Dsl	108	175000	M
01152	Cargo Body w/Hoist, w/Plow Dsl	108	175000	M
01154	Cargo Body w/o Hoist, Util Dsl	108	175000	M
01155	Cargo Body w/o Hoist, Util w/Plow Dsl	108	175000	M
01157	Cargo Body Litter Pickup W/O HST	108	150000	M
01163	Cargo Body, Crew Cab, w/o Hst, Dsl	120	175000	M
01164	Cargo Body with Crew Cab, Dsl	120	175000	H
01170	Van, Cargo, Diesel	120	175000	M
01180	Personnel Hoist 28', UB, Elec., Dsl.	108	175000	M
01230	Utility Body, 1-Ton, Gas	108	150000	M
01236	Mechanic Body	108	150000	M
01237	Cone Body	108	150000	M
01238	Sign Body, Gas	120	100000	M
01257	Cargo Body w/ Hst, Litter Pick-up	108	150000	M
01280	Personnel Hoist, 28' UB, Elec.	108	150000	M
01282	Personnel Hst 34 Ft. Art Telescopic	108	150000	M
01330	Utility Body, Super 1 Ton, Diesel	120	175000	M
01336	Mechanic Body	108	175000	M
01337	Cone Body	108	175000	M
01338	Sign Body	108	175000	M
01339	Survey Body, 1-Ton Diesel	120	175000	M
01341	Plumbing Truck	108	175000	M
01347	Utility, Cone-Setter, 1-Ton DSL	108	175000	M
01357	Cargo Body, W/Hoist, Litter	108	175000	M
01360	Truck, Mounte FWD	144	175000	M
01380	Personnel Hoist, 28',UB, Elec, Dsl	108	175000	M
01382	Personnel Hst. 34 Ft. Art Telescopic	108	175000	M
01428	Van, Mobile Telecommunications	144	150000	M
01436	Mechanic Body, Step	144	150000	M
01437	Cone Body	132	150000	M
01441	Plumbing Truck	144	150000	M
01470	Step Van, Personnel	144	150000	M
01477	Step Van, Mechanics	144	150000	M
01478	Step Van, Mobile Laboratory	144	150000	M
01479	Step Van, Signal Loop Repair	144	150000	M
01497	Wrecker	072	150000	M
01498	Wrecker, CNG	072	150000	M
01500	Pickup Body w/Fifth Wheel	120	175000	M
01530	Utility Body	120	175000	M
01536	Mechanic Body, Diesel	120	175000	M
01537	Cone Body, Diesel	132	175000	M
01538	Sign Body	120	175000	M

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
01541	Plumbing Truck, Diesel	120	175000	M
01549	Cargo Body, 9 Ft. w/o Hoist	120	175000	M
01550	Cargo Body 9 Ft. w/Hoist	144	150000	M
01570	Step Van, Diesel	132	175000	M
01577	Step Van, Mechanics, Diesel	144	175000	M
01578	Step Van, Mobile Lab, Diesel	144	175000	M
01583	Stencil, w/Paint Unit, Diesel	168	175000	M
01597	Wrecker, Diesel	072	175000	M
01802	Barrier Vehicle	144	150000	M
01837	Cone Picker	096	150000	M
01838	Sign Body	144	150000	M
01849	Cargo Body without Hoist	144	150000	M
01850	Cargo Body with Hoist	144	150000	M
01883	Stencil with Paint Unit	144	150000	M
01886	Thermoplastic Trfc Strp Tilt Cab	156	150000	M
01887	Thermoplastic Stencil w/Marker	144	150000	M
01898	Drill, Truck, 2 Axle	144	150000	M
01930	Utility, Body, Super 1-Ton DSL	120	175000	M
01936	Mechanic Truck, 2-Ton Diesel	120	175000	M
01937	Cone, Body (Bay Bridge Special)	144	175000	M
01938	Sign Body	168	175000	M
01949	Cargo Body, w/o Hoist, Diesel	120	175000	M
01983	Stencil with Paint Unit, Diesel	168	175000	H
01996	Wrecker, Car Carrier, Diesel	072	175000	M
01997	Wrecker, 8-Ton, Diesel	072	230000	M
01998	Drill Rig, Truck Mounted, Diesel	168	175000	M
02220	Dump Body	144	150000	M
02221	Dump Body with Plow	120	150000	M
02222	Dump Body with Spreader	144	150000	M
02223	Dump Body with Plow & Spreader	120	150000	M
02236	Mechanic Body	144	150000	M
02249	Cargo Body without Hoist	144	150000	M
02250	Cargo Body with Hoist	144	150000	M
02255	Cargo Body Pavement Marker-Dot	144	150000	M
02258	Tree Trimmer	144	150000	M
02260	Cargo Body, Tilt Cab	144	150000	M
02280	Personnel Hoist	144	150000	M
02288	Lube Truck	144	150000	M
02293	Landscape Spray, Tilt Cab 1000 G	144	150000	M
02294	Landscape Spray, Tilt Cab, 500 G	144	150000	M
02320	Dump Body	168	175000	M
02321	Dump Body with Plow	120	175000	M
02322	Dump Body with Spreader	168	175000	M
02323	Dump Body with Plow & Spreader	120	175000	M
02330	Utility Body	168	175000	M
02338	Sign Installation, Diesel	168	175000	M
02349	Cargo Body w/o Hoist 12' Dsl	168	175000	M
02350	Cargo Body with Hoist 12' Dsl	168	175000	M
02355	Cargo Body, Marker-Dot, Dsl	168	175000	M
02358	Cargo Body, Tree Trim, Dsl.	168	175000	M
02363	Cargo Body, Crew, w/o Hoist, Dsl.	168	175000	M
02364	Cargo Body, Crew, w/Hoist, Dsl.	168	175000	M
02382	Personnel Hoist, W/Util Bdy 35"	168	175000	M
02383	Landscape Spray, 400 Gallons	168	175000	B
02387	Thermoplastic Stencil w/Marker Dsl	168	175000	M
02393	Landscape Spray, Tilt Cab, 1000 G	168	175000	M
02402	Barrier Vehicle	144	150000	M
02439	Mechanic Body	144	180000	M
02449	Cargo Body without Hoist	144	130000	M
02450	Cargo Body with Hoist	144	150000	M
02452	Cargo Body 12 Ft. Scissor Hoist	144	180000	M
02454	Cargo Body w/Compressor, Air Drill	144	150000	B
02455	Tree Trimmer with Hoist	144	130000	M
02456	Tender, Thermoplst, w/2 Preheater	168	180000	M
02457	Cargo Body w/Compressor & Sandblst	144	150000	M

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
02466	Compressor Unit 125-200 CFM	144	150000	B
02478	Van Body, Mobile Laboratory	144	104000	M
02482	Personnel Hoist	144	150000	M
02490	Digger Derrick w/Utility Body	144	150000	M
02497	Landscape Spray	144	150000	M
02549	Cargo Body, 15 Ft w/o Hoist	168	180000	M
02550	Cargo Body, 15 Ft with Hoist	168	180000	M
02551	Cargo Body, 15', w/Hoist, w/Plow	168	180000	M
02552	Cargo Truck, 15 Ft, w/Scissor Lft	168	180000	M
02553	Cargo Body, Scissor Lift w/Plow	144	150000	M
02554	Cargo Body w/Compressor, Air Drill	168	180000	M
02555	Cargo Body, Pavement Marker Do	168	175000	M
02556	Tender, Thermoplastic, w/2 Prehtrs	168	180000	M
02558	Cargo Body, Tree Trimmer	168	180000	M
02580	Personnel Hoist 50' w/Tree Trim	168	180000	M
02582	Personnel Hoist 45' w/Util Bdy	168	180000	M
02587	Thermopl Stencil W/Pre Heat CA	168	175000	M
02590	Digger Derrick, w/Util Body	168	180000	M
02591	Wrecker	072	230000	M
02592	Landscape Spray, 500-1000 Gals	168	180000	B
02593	Landscape Spray, Tilt Cab, 1000 GL	168	180000	M
02594	Digger Derrick, with Sign Body	168	180000	M
02920	Dump Body	168	200000	M
02922	Dump Body with Spreader	168	200000	M
02987	Personnel Hoist, 45' Tele, Util Bdy	168	250000	M
03017	Dump Body with Loader, Tilt Cab	144	150000	M
03020	Dump Body	144	150000	M
03052	Cargo Body with Scissors Lift	144	150000	M
03059	Crane	144	130000	M
03080	Tank, Spray Rig	144	150000	M
03098	Fence Repair	144	150000	M
03099	Fence Repair, Tilt Cab	144	150000	M
03300	Tractor, Truck	168	250000	M
03302	Barrier Vehicle	168	250000	M
03304	Barrier Vehicle, CNG	168	250000	M
03317	Dump Body with Loader, Tilt Cab	168	250000	M
03320	Dump Body	168	250000	M
03321	Dump Body with Plow	120	175000	M
03322	Dump Body with Spreader	168	200000	M
03323	Dump Body with Plow & Spdr	120	175000	M
03324	Dump Body with 2 Plows	120	175000	M
03325	Dump Body with 2 Plows & Spdr	120	175000	M
03349	Cargo Body, 15' w/o Hoist	144	250000	M
03351	Cargo Body with Plow	168	250000	M
03352	Cargo Body, w/Scissor Lift	144	250000	M
03356	Tender, Thermoplastic, w/2 Prehtrs	144	250000	M
03358	Striper Tender	168	250000	M
03359	Cargo Body with Crane	168	250000	M
03368	Truck, 4 Cy., Hook-Lift	120	175000	M
03375	Emulsion Distributer, 800 Gal.	144	150000	M
03378	Personnel Hoist, Art Bridge Insp.	168	180000	M
03379	Personnel Hoist Art 45 Ft UB Elec	168	180000	M
03380	Personnel Hoist 65' Tree Trimmer	168	250000	M
03381	Tank Sp Rig Contourmatic Boom	168	250000	M
03382	Personnel Hst, Art w/Util Bdy Elec, 65'	168	250000	M
03383	Personnel Hoist w/Work Platform	168	200000	M
03384	Trash Compactor, 16 CY Rear Load	168	250000	M
03385	Trash Compactor, 20 CY Side Load	168	250000	M
03386	Trash Compactor, Rear Load, w/Plow	168	250000	M
03387	Personnel Hoist Art 50 Ft T/Trm	168	180000	M
03389	Mobile Fuel Supply	168	250000	M
03390	Digger Derrick with Utility Body	168	250000	M
03391	Wrecker	072	230000	M
03393	Landscape Spray, Tilt Cab, 1000 G	168	250000	M
03394	Digger Derrick, Tilt Cb Sign Body	168	250000	M

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
03398	Fence Repair	168	250000	M
03720	Dump Body	168	200000	M
03722	Dump Body with Spreader	168	200000	M
03784	Litter Bag Machine	168	250000	M
03794	Digger Derrick	168	250000	M
04300	Tractor, Truck	168	300000	M
04320	Dump Body	168	300000	M
04350	Cargo Body with Hoist	168	300000	M
04355	Cargo Body w/Comprsr & Sandst	168	300000	M
04375	Emulsion Distributor	168	300000	M
04382	Penetrometer	180	016000	M
04384	Striper Low Entry Thermoplastic	168	300000	M
04700	Truck Tractor	168	300000	M
04720	Dump Body	168	230000	M
04721	Dump Body with Plow	120	200000	M
04722	Dump Body with Spreader	168	230000	M
04749	Cargo Body 15' w/o Hoist	168	300000	M
04753	Mud-Jack Tender w/Tank & Cargo Bdy	168	300000	M
04759	Drill Tender	168	300000	M
04790	Digger Derrick	168	300000	M
04891	Drill	144	150000	M
04920	Dump Body	168	230000	M
05280	Tank Spray Rig	144	150000	M
05300	Truck Tractor	168	500000	M
05301	Truck Tractor with Plow	168	500000	M
05310	Truck, Driving Simulator	168	200000	M
05320	Dump Body	168	230000	M
05321	Dump Body with Plow	120	200000	M
05322	Dump Body with Spreader	168	230000	M
05323	Dump Body with Plow & Spreader	120	200000	M
05324	Dump Body with 2 Plows	120	200000	M
05325	Dump Body w/2 Plows & Spreader	120	200000	M
05349	Cargo Body w/o Hoist	168	300000	M
05351	Cargo Body with Plow	168	300000	M
05356	Tender, Thermoplastic, w/4 Prehtrs	168	300000	M
05358	Striper Tender, Paint	168	300000	M
05359	Drill Tender, w/Integ Water Tank	156	300000	M
05360	Striper, Low Entry Cab Hot Paint	168	300000	M
05370	Catch Basin & Sewer Line Cleaner	168	250000	M
05380	Tank, Spray Rig, 3,000 Gal	192	200000	M
05381	Tank, Spray Rig w/Contour, Boom	192	200000	M
05382	Personnel Hoist, Bridge Insp	168	250000	M
05383	Catch Basin & Sewer Line Cleaner	168	250000	M
05384	Truck, Litter Pickup	168	250000	M
05385	Personnel Hoist w/Work Platform	168	200000	M
05390	Bridge Repair	168	250000	M
05392	Drill, Trk Mtd.	168	016000	M
05395	Crane, Shop Use	168	250000	M
05396	Crane, Mobil Structural Handling	168	250000	M
10101	Sedan, Compact, 4 WD	084	100000	M
10150	Van, Mini, Pass., Non-Pool, 4 WD	096	100000	M
10400	Pickup, Compact, 4 WD	096	120000	M
10607	Pickup with A/C, ½ Ton 4 WD	120	130000	M
10680	Jeep	120	130000	M
10688	Blazer Body Type	108	130000	M
10690	Station Wagon	108	130000	M
10691	Utility, 4-Door 4WD W/Nav. System	108	130000	M
10801	Pickup with Plow	096	140000	M
10804	Pickup Crew Cab	108	140000	M
10807	Pickup with A/C, ¾ Ton 4 WD	108	140000	M
10830	Utility Body	108	140000	M
10831	Utility Body with Plow	096	140000	M
10844	Utility Body, Crew Cab	108	140000	M
10880	Carryall Suburban, 4 WD	120	140000	M
10901	Pickup, with Plow, Diesel	120	175000	M

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
10904	Pickup, Crew Cab, Diesel	120	175000	M
10907	Pickup, w/Air Cond, Dsl	120	175000	M
10930	Utility Body, Diesel	120	175000	M
10931	Utility Body, with Plow, Dsl	120	175000	M
10944	Utility Body, 4 WD, w/Crew Cb Dsl	120	175000	M
10980	Carryall, Suburban, Diesel	120	175000	M
11001	Pickup w/ Plow, 4 WD	096	150000	M
11005	Pickup, Crew Cab, w/Plow	108	120000	M
11030	Utility Body	120	140000	M
11031	Utility Body with Plow	108	140000	M
11034	Utility Body, Crew Cab	144	150000	M
11036	Mechanic Body	144	150000	M
11037	Drill, Auger	120	140000	M
11039	Survey Body	120	140000	M
11051	Cargo Body w/hst, w/plow, 4x4	144	150000	M
11052	Cargo Body, W/Hoist & Plow, 4 WD	144	150000	M
11100	Pickup, 1-Ton Diesel 4 WD	144	150000	M
11101	Pickup w/Plow, 4 WD, Diesel	144	150000	M
11130	Utility Body	144	140000	M
11131	Utility Body with Plow, Dsl	144	150000	M
11134	Utility Body, Crew Cab, 4 WD, Dsl	144	150000	M
11136	Mechanic Body, Diesel	144	150000	M
11149	Cargo Body w/o Hoist, Utility	120	175000	M
11151	Cargo Body, w/o Hoist, w/Plow Dsl	144	150000	M
11154	Cargo Body, w/o Hoist, Utility	120	175000	M
11163	Cargo Body, Crew Cab w/o Hoist D	144	175000	M
11339	Survey Body, Super 1-Ton, 4WD Dsl	144	150000	M
11382	Drill, Core Testing, 4x4	144	010000	H
11589	Tunnel Washer, Unimog	144	010000	H
13321	Dump Body with Plow	120	175000	M
13323	Dump Body with Plow Spreader	120	175000	M
13330	Drill Tender with Service Body	168	200000	M
13357	Drill Tender w/Integ Water Tank	168	200000	H
13390	Drill Rig	156	016000	M
13391	Wrecker	072	200000	M
13721	Dump Body with Plow	120	175000	M
13723	Dump Body w/Plow & Spreader	120	175000	M
13724	Dump Body with 2 Plows	120	175000	M
13725	Dump Body w/ 2 Plow and Spreader	120	175000	M
14290	Drill	168	016000	H
15321	Dump Body, Tag Axle, w/Plow	120	200000	M
15324	Dump Body 4 WD Tag Axle w/2 Plows	120	200000	M
15490	Drill	168	016000	H
15721	Dump Body with Plow, 6 WD	120	200000	M
15724	Dump Body, with 2 Plows, 6 WD	120	200000	M
17002	Rotary Snowplow, Fwd, Conventional	228	015000	H
17003	Rotary Snowplow, Ldr Mtd, 1200 T/Hr	228	015000	H
17004	Rotary Snowplow, Conventional	228	015000	H
17005	Rotary Snowplow, Ldr Mtd, 1400 T/Hr	228	007000	H
17006	Rotary Snowplow, Ldr Mtd, Art	228	015000	H
17007	Rotary Snowplow, Snowblast	228	007000	H
17010	Rotary Snowplow, Norland	228	007000	H
17011	Rotary Snowplow, Robla 5000 T/Hr	228	007000	H
17101	Rotary Snowplow, Trk MT, 2,200 T/H	228	008000	H
17102	Rotary Snowplow, Trk MT, 2,600 T/H	228	008000	H
17103	Rotary Snowplow, Trk MT, 3,500 T/H	228	008000	H
17104	Rotary Snowplow, Chas MT, 5,000 TPH	240	007000	H
17105	Rotary Snowplow, Cab Ovr, 2,600 T/H	228	008000	H
17106	Rotary Snowplow, Cab Ovr, 3,500 T/H	228	008000	H
22000	Boat, Ferry	240	010000	H
22022	Boat, Trailerable	240	010000	H
22024	Boat, Non-Trailerable	240	010000	H
24402	Weedburner, Trl Mtd.	168	011000	H
25202	Chipper, Brush	156	010000	H
25204	Chipper, Brush, Disc, Art	144	008000	H

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
25205	Chipper, Brush, Diesel	156	010000	H
26103	Cleaner Culvert 50 Gal Trl Mtd.	144	006000	H
26302	Cleaner, Sign, to 124 Gallons	144	004000	H
26402	Cleaner, Sign, 350 Gal Trl Mtd.	144	004000	H
26604	Cleaner, Steam 151-300 Gal/Hr	144	001000	H
26606	Cleaner, Steam 301+ Gal/Hr	144	007000	H
27000	Combination Power Supply System	180	003000	H
27106	Compressor, Air 125 CFM, Trlr Mtd.	192	006000	H
27108	Compressor, Air 185 CFM, Trl Mtd.	192	008000	H
27110	Compressor, Air 200 CFM, Trl Mtd	192	010000	H
27111	Compressor, Air, 250-300 CFM, Skid	192	010000	H
27112	Compressor, Air, 300 CFM, Trl Mtd.	192	010000	H
27114	Compressor, Air 600 CFM, Trl Mtd	168	010000	H
27120	Compressor, Air 1200 CFM, Trl Mtd	192	010000	H
27402	Conveyor Belt, Trailer Mounted	276	002000	H
27412	Conveyor Belt with Gravel Screen	180	006000	H
27621	Crane, Diesel Self Propelled 10 Ton	180	012000	H
27631	Crane, Gas Self Propelled 12 Ton	180	010000	H
27651	Barrier Transfer Unit, Diesel	240	008000	H
27682	Pers Hoist, Bridge Insp, Slf Prop	180	004000	H
28508	Cutter, Stump	192	004000	H
28510	Cutter, Pavement, Ride-On	120	005000	H
31702	Drill Rig Horiz Crawler Trk Mtd	204	087000	H
31704	Drill Rig Concrete Trailer Mounted	204	006700	H
31705	Drill Rig Concrete Skid Mounted	204	006700	H
31706	Drill Rig Earth Trailer Mounted	204	016000	H
31707	Drill Rig Tr Mounted Earth Concrete	204	016000	H
31792	Drill, Trk Mtd, 4WD, Off-Road Only	204	008700	H
31902	Penetrometer, Trailer Mnt.	180	010000	H
31903	Deflectometer, Trailer Mounted	264	012000	H
31909	Dyneffect System, Trailer Mounted	204	015000	H
35006	Forklift, 1-1/2 Ton	192	017000	H
35008	Forklift, 2 Ton	240	012000	H
35009	Forklift, 2 Ton, Towable	192	017000	H
35010	Forklift, 2-1/2 Ton	240	012000	H
35012	Forklift, 3 Ton	216	017000	H
35014	Forklift, 3 Ton, Towable	216	017000	H
35015	Forklift, 4 Ton	216	017000	H
35016	Forklift, 5 Ton, Towable	216	017000	H
35030	Forklift, 7-1/2 Ton	204	017000	H
35054	Forklift, 1 Ton, Electric, Sit	180	007000	H
35055	Forklift, 1 Ton, Electric, Stand-up	180	007000	H
35056	Forklift, 1-1/2 Ton, Electric	180	007000	H
35058	Forklift, 2 Ton, Electric, Sit	180	007000	H
35059	Forklift, 2 Ton, Electric, Sit	180	007000	H
35702	Generator 5 KW with Flood Light	276	004000	H
35706	Generator, Electric (to 5 KW)	216	007000	H
35720	Generator Electric 126 to 175 KW	180	004000	H
36102	Grader - Tandem Drive, 130 HP	204	012000	H
36108	Grader - All Wheel Drive, 125 HP	180	012000	H
36201	Grader -All Wheel Drv w/Plow, 125HP	204	012000	H
36301	Grader -6 Whl Drv w/Plow, 150 HP	180	010000	H
36304	Grader -6 Whl Drv, 2 Plows, 150 HP	180	010000	H
36401	Grader - 6 Whl Drv, 2 Plows, 175HP	180	010000	H
36550	Grinder, Asphalt, w/o Conveyor 14"	144	005000	H
36563	Grinder, Asphalt, w/Conveyor, 42"	180	009000	H
36564	Grinder, Asphalt, w/Conveyor, 60"	180	009000	H
36565	Grinder, Asphalt, with Conveyor, 78"	180	009000	H
36601	Guard Rail Straightener	192	008000	H
38801	Heavy Vehicle Simulator	540	011000	H
39104	Hot Mix Asphalt Htr & Patchr 4 Cu Yd	228	005000	H
39607	Kettle, Heat Transfer, Dbl Boiler	228	005000	H
39608	Kettle, Heat Transfer, 400 Gal.	228	005000	H
39610	Kettle Heat 301-400 Gal. w/Sp Br	228	005000	H
39612	Kettle Ht. 400 Gl w/Br w/o Eng. Hyd	228	005000	H

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
39615	Longitudinal Crack Sealing Sys	228	005000	H
39804	Kettle Emul Asphalt Trans Pump	216	007000	H
39806	Kettle, Bitum Dist 1-2000 G, Skd Mtd	288	008000	H
41514	Loader 1-1/2 C Y Crawler Trk Mtd	180	009000	H
41802	Loader, Front End, 1/4 Cu Yd	144	009000	H
41804	Loader, Front End, 1/2 Cu Yd	144	009000	H
41828	Loader, Front End, 1 Cu Yd, 3 Wheel	180	010000	H
41832	Loader, Front End, 1 Cu Yd	180	010000	H
41846	Loader, Front End, 1-1/2 Cu Yd	180	010000	H
41864	Loader, Front End, 2-1/2 C.Y.	144	009000	H
41866	Loader, 2 1/2 CY, Remote Control	144	009000	H
41870	Loader, Front End, 3 Cu Yd	144	009000	H
41880	Loader, Self Powrd w/Conveyr Belt	144	009000	H
42710	Marker, Traffic, Ride-on Hot Paint	180	005000	H
42716	Marker w/Prehtr, Thermppls, Hnd Pro	096	003000	H
42717	Marker w/Prehtr, Thermppls, Sif Pro	096	003000	H
43502	Mixer, Concrete, to 4 Cu Ft	216	002000	H
44308	Mower, Lawn, Power, 6 Ft	120	004500	H
44312	Mower, Lawn, Rotary	108	004500	H
44328	Mower, Rotary, 14'	096	004000	H
45501	Paver, Asphalt, Self Propelled	168	003500	H
45520	Profilograph Vehicle	144	001440	H
45521	Utility Vehicle, Off-Hwy, 6x4	096	002000	H
46238	Picker, Debris, Towable	180	003500	H
47706	Pump Unit, Centrif, 3 In	228	003000	H
47708	Pump Unit, Centrif, 4 In	300	004500	H
47710	Pump Unit, Centrif, 6 In	240	002000	H
47732	Pump, Mud Jack - Grouter	204	004000	H
47733	Pump, Mud Jack, Dual Pump, Trl, Mtd.	204	004000	H
47736	Pump Unit, Epoxy Applicator	096	004000	H
47738	Pump Unit, Asphalt Adhesive, Skd Mtd	084	003000	H
47739	Pump, Mud Shaker, Trailer Mount	240	010000	H
47740	Pump Grout Mix, Trailer Mount	240	003000	H
49608	Roller, Pneumatic Tired, Self-Prop	192	004000	H
49609	Roller, Pneumatic Tired, Diesel	180	006000	H
49614	Roller, Tandem, 3 Ton - 5 Ton	240	006000	H
49615	Roller, Tandem, 3 Ton - 5 Ton, Dsl	180	006000	H
49616	Roller, Tandem, 5 Ton - 8 Ton	240	006000	H
49617	Roller, Tandem, 5 Ton - 8 Ton, Dsl	180	006000	H
49618	Roller, Vib., Tandem 600-1400 Lbs.	108	004000	H
49620	Roller, Vibratory, Tandem 3 - 6 Ton	240	006000	H
49621	Roller, Vib., 2.5-5 Ton, Dsl	108	003000	H
49623	Roller, Vibratory, 5-8 Ton, Diesel	180	006000	H
50406	Sandblast Unit (301 to 500 Lbs)	252	007500	H
50418	Sandblast Unit 6 Ton Trl Mtd	192	005000	H
50612	Saw, Concrete	120	001500	H
52280	Scooter, Motor, 3 Wheel	228	017000	H
52281	Scooter, Motor, 4 Wheel, Elec	228	017000	H
52282	Scooter, Motor, 4 Wheel	228	013000	H
52713	Seeder Hydro	120	004000	H
54406	Shovel Power 1/2 Cu Yd Trk Mtd	180	016000	H
54408	Shovel, Power, 1/2 Cu Yd	180	016000	H
54801	Sign, Pass, Sequential, Arrow 4'	144	005000	H
54802	Sign, Portable Bulb Matrix, Trl 4'	144	008000	H
54803	Sign, Portable Bulb Matrix, Skid	144	008000	H
54804	Sign, Pass, Elec Seq. Skd Mtd 3'	144	005000	H
54806	Sign, Velcro-Message, Trl Mtd	120	008000	H
54807	Sign, Velcro-Message, Skd Mtd	120	008000	H
54808	Sign, Work, Trailer Mounted	144	005000	H
54810	Sign, Flip Disc-Message, Trl Mtd	144	005000	H
54811	Sign, Flip Disc-Message, Skd Mtd	144	005000	H
54812	Sign, LED, CMS, Brick Matrix, Sola	144	010000	H
54813	Sign, Sequential, Solar, Trl Mtd	144	010000	H
54814	Sign, CMS, Led, Truck Mtd.	144	008000	H
54815	Sign, CMS, Hybrid, Truck Mtd.	144	008000	H

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
54816	Sign, CMS, LED, Trailer, MTD, SOL	144	010000	H
54820	Signal Unit, Portable, Pri, Trl Mtd	144	005000	H
54821	Signal Unit, Portable, Sec, Trl Mtd	144	005000	H
54823	Radio, Har, Trailer Mounted	120	006000	H
54824	Satellite Control Unit, Trlr Mtd.	120	006000	H
54830	Sign, Radar Speed Monitor, Trl. Mtd	120	006000	H
55180	Snow Vehicle, Passenger	108	002000	H
55300	Spray, 100 Gal, Skid Mounted	096	002500	H
55301	Spray, 150 Gal, Turbine, Skd Mtd	156	002500	H
55304	Spray, 200 Gal, Skid Mounted	144	002000	H
55306	Spray, 200 Gal, Trailer Mounted	144	002000	H
55308	Spray, 300 Gal, Skid Mounted	192	015000	H
55310	Spray, 300 Gal, Trailer Mounted	180	010500	H
55312	Spray, 400 Gal, Skid Mounted	168	011000	H
55314	Spray, 400 Gal, Trailer Mounted	156	012000	H
55315	Spray, 500 Gal, Skid Mounted	156	012000	H
55316	Spray, 500 Gal, Trailer Mounted	156	012000	H
55320	Spray, 1000 Gal, Trailer Mount	408	011000	H
55335	Spray, 2500 Gal, De-Ice, Skd Mtd	192	000000	H
55505	Screening Plant, Towable	168	002000	H
55513	Spreader, Chip, Self Propelled	168	002000	H
55514	Spreader, Asphalt, Box	192	003000	H
55522	Spreader, Hopper Type, 2 Cu Yd	240	013000	H
55525	Spreader, Hopper Type, 4 Cu Yd	240	013000	H
55528	Spreader, Hopper Type, 8 Cu Yd	240	013000	H
55530	Spreader, Hopper Type, 10 Cu Yd	240	013000	H
55531	Spreader, Shoulder	240	013000	H
56500	Scrubber Lane & Floor Rideable	108	002500	H
56501	Sweeper Turf	108	002500	H
56504	Sweeper, Rotary Towed Self-Pow Br	144	005000	H
56505	Sweeper, Rotary, Towed, Diesel	144	005000	H
56507	Sweeper, Rotary, Towed/Self Propld	144	005000	H
56702	Sweeper, Lot, 48 In	168	003000	H
56704	Sweeper, Lot, 54 In	168	004000	H
56808	Sweeper, Conv 3- 4 Cu Yd, Diesel	060	004000	H
56811	Sweeper, High Dump, 3 Cy, CNG	060	005000	H
56812	Sweeper, Street, Regenerative, Dsl	120	009000	B
59001	Excavator, 20 Ton	228	018000	H
59004	Tractor, Crawler, with Dozer, 75 HP	228	010000	H
59006	Tractor, Crawler, with Dozer, 105 HP	228	010000	H
59010	Tractor, Crawler, with Dozer, 165 HP	228	010000	H
59204	Tractor, Garden, with Loader	156	008000	H
59206	Tractor, Wheel, 20 HP, w/Rot Mower	156	008000	H
59209	Tractor, Wheel, 4000-4999 Lbs	156	008000	H
59210	Tractor, Wheel Hydro Dr 6000-7999 Lb	156	008000	H
59211	Tractor, w/Ldr &/or Flail Mower(s)	144	006500	H
59213	Tractor, Wheel, with Broom & Mower	144	006500	H
59214	Tractor, Wheel, Diesel	144	006500	H
59215	Tractor, Wheel w/Arm Mtd Mower	144	006500	H
59216	Tractor, Wheel, Dsl, w/Rear Mower	144	006500	H
59217	Tractor, Wheel, 75 HP, or Rear Mower	144	006500	H
59218	Tractor, Wheel, 120 HP, w/2 Mower	144	006500	H
59219	Tractor, Bi-Directional 105 HP	144	006500	H
59220	Tractor, Wheel w/Backhoe &/or Ld Att	216	009000	H
59222	Tractor, Wheel, with Boom Mtd Mower	132	004500	H
59224	Tractor, Wh, Dsl, Hyd Dr 8000-8999#	144	008000	H
59804	Traffic Line Remover	144	002500	H
60100	Trailer, Portable Chem Toilet	120	008000	H
60201	Trailer, Utility to 1 Ton	168	006000	H
60202	Trailer, Roller, 1 Ton	168	006000	H
60203	Trailer, Equipment, 1 Ton, Tilt	168	006000	H
60204	Trailer Incident Response 1 Ton	180	006000	H
60205	Trailer Equipment, 1-1/2 to 3 Ton	276	006000	H
60206	Trailer, Snow Vehicle	168	006000	H
60207	Trailer, Equipment, 4 to 7 Ton	276	007000	H

NEW OR INNOVATIVE EQUIPMENT IDEAS AND CONCEPTS

REPLACEMENT ANALYSIS (CA) (continued)

Maint. Class	Description	Age	Usage Mi/Hr	Usage Criteria
60208	Trailer, Roller, 6 Ton	264	008000	H
60209	Trailer, Equipment, 8 to 12 Ton	264	007000	H
60210	Trailer, Equipment 15 Ton	264	008000	H
60211	Trailer, Equipment, 13 to 20 Ton	264	008000	H
60212	Trailer, Roller Equipment	264	008000	H
60213	Trailer, Equipment, 21 to 30 Ton	264	008000	H
60214	Trailer, Equipment, 15 Ton Tilt	264	008000	H
60215	Trailer, Equipment to 40 Ton	264	008000	H
60216	Trailer, Equipment, 40-45 Ton	264	008000	H
60230	Trailer, Boat Carrier	240	008000	H
60231	Trailer, Bicycle Carrier	240	008000	H
60232	Trailer, Avalanche Control Unit	240	008000	H
60233	Trailer, Portable Scales	120	008000	H
60235	Trailer, Pile Test Beam	324	001000	H
60236	Trailer, Asphalt Tester	240	006000	H
60240	Trailer, Converter Dolly	324	004000	H
60245	Trailer, Drill Steel & Augers	264	008000	H
60246	Trailer, Barge, Pontoon	264	010000	H
60247	Trailer, Sign Carrier	324	004000	H
60248	Trailer, Pole	324	004000	H
60270	Trailer, Rear Dump, 10 Cu Yd	180	010000	H
60274	Trailer, Bottom Hopper, 20 Cu Yd	180	010000	H
60276	Trailer, Bottom Dump, 12 CY, 5th Whl	180	010000	H
60277	Trailer, Bottom Dump, 12 CY,P Hook	180	010000	H
60288	Trailer, Lube	240	008000	H
60806	Trailer, Office, 22'	228	000900	H
60810	Trailer, Office, 32'	228	000900	H
60813	Trailer, Office, 10' x 45'	228	000900	H
60814	Trailer, Office, 10' x 55'	228	000900	H
60815	Trailer, Mobile Classroom, 5th Wheel	180	012000	H
60816	Trailer, Personnel Showers	180	008000	H
61103	Trailer, Tank (400 Gal)	360	011000	H
61104	Trailer, Tank (500 - 750 Gal)	408	011000	H
61114	Trailer, Semi, Tank, (2000 Gal)	168	011000	H
61118	Trailer, Semi, Tank, Spray 2000 Gal	168	011000	H
61126	Trailer, Semi, Tank 3001 - 7000 Gal	168	011000	H
61128	Trailer, Semi, Emul-Heater 4000 Gal	168	011000	H
61130	Trailer Van High Cube to 27 Ft	192	011000	H
61132	Trailer, Cargo, to 12 Ton	180	010000	H
61136	Trailer, Semi, Mudjack Pump	240	015000	H
61420	Trailer, Laboratory Testing	216	015000	H
61430	Trailer, Storage	216	015000	H
62504	Trenching Machine	120	001500	H
64001	Welder, Arc, Shop Use	156	002500	H
64002	Welder, Arc Portable	156	004500	H

For more information contact: John LaCamera (916) 445-1178

Submitted by: John LaCamera, Chief,
Office of Fleet and Business Services
California Department of Transportation

5. TRAINING
a) MECHANIC AND OPERATOR TRAINING (PA)

MECHANIC AND OPERATOR TRAINING

The Pennsylvania Department of Transportation has implemented a mechanic training program for newly hired mechanics. This is an extension of the Department program currently used for training its experienced mechanics.

The "New Mechanic Training" course is 3 weeks in length which includes Department organizational information and instruction on engine, drive train, tire, cooling system and preventive maintenance. There is also instruction on shop safety and failure analysis.

The "New Mechanic Training" course parallels the Department's operator training concept. The operating training program for newly hired operators is 3 weeks in length and includes instruction on the operation of a dump truck and front-end loader.

For more information contact: Ronald N. Klose
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Technical Training Manager
E-mail: rklose@state.pa.us

Submitted by: Nickolas Fazio
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6. PREVENTIVE MAINTENANCE
a) QUALITY ASSURANCE (PA)

EQUIPMENT PREVENTIVE MAINTENANCE
Quality Assurance

The Pennsylvania Department of Transportation (PennDOT) restructured the Preventive Maintenance Quality Assurance (PM/QA) evaluation of its in-house repair facilities in 1988. Included in the new evaluation is the inspection of recently serviced equipment to verify that key items related to equipment reliability and safety have been performed correctly. Also included is inspection of the paperwork and procedures associated with maintaining the preventive maintenance program at each location.

The PM/QA evaluation awards points for paperwork and procedures that have been done correctly and deducts points for items found deficient during the equipment inspection. This process assigns a numerical score or value to each location's PM program, making it possible for each District to compare its maintenance facilities and address the problems in locations earning low scores.

The PM/QA evaluation items are reviewed each year by a cross-section of PennDOT equipment maintenance personnel and adjusted to reflect the changing needs of the Department. The revised form is then issued to the Districts for their information prior to beginning each year's PM/QA process.

In the five years this program has been in effect the Districts have reported significant improvements in equipment reliability and safety along with a decrease in major repairs linked to poor maintenance practices.

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Eastern Regional Equipment Manager
E-mail: wfenkner@state.pa.us

Submitted by: Richard Dolbin
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7. WORK ZONE PROTECTION
a) Improved Worker Safety (CA)

Mobile Work zone Protection Device
“Balsi Beam”
Improved Worker Safety

The California Department of Transportation has designed and is deploying for testing a new mobile, work zone protection device. The device is known as the “Balsi Beam” after a California Department of Transportation worker who lost a leg in a work zone accident.

The device is integrated into a portable trailer that can be transported on the California highways without requiring a permit. The device uses two telescopic, rotating, steel beams that, once deployed, are able to provide a 30 feet long zone shielded from moving traffic in adjacent lanes. The device can be used either on the shoulder or the median. A patent is pending.

For more information contact Lisa Kunzman, Chief, California Department of Transportation, Division of Equipment, (916) 227-9600.

Submitted by Kris Teague, Chief, Office of Engineering and Production, California Department of Transportation, Division of Equipment

B. CONCEPTS

1. CONTRACTING OF VEHICLE REPAIR (TX)

CONTRACTING OF VEHICLE MAINTENANCE AND REPAIRS

In September 1991 the Texas Department of Transportation (TxDOT) was mandated to contract not less than 25% of the total amount expended for repair and maintenance in a given fiscal year. This mandate was with the provisions that private entities could provide the necessary services in sufficient quantity and quality, and at less than 90% of the total cost for the department.

To facilitate cost effective analysis in comparing in-house costs to commercial quotes, an hourly "shop rate" was developed. This rate includes all elements of cost that would normally be quoted by commercial enterprises as their hourly shop rate, and is used for cost comparison purposes. Because of geographical (urban vs. rural) and economic factors across the state, an hourly shop rate is computed monthly for use by each of the (25) districts in making effective repair decisions. Emphasis is placed on performing cost analysis for each repair opportunity and making sound and consistent decisions as to repair in-house or contract out.

Private entities are used whenever the repair is more efficient and cost effective than when accomplished by state forces; when state facilities, personnel, or expertise is not available; or when emergency repairs are required and state forces are not available.

The department's contracting percent for vehicle repairs has risen from 8.7% in fiscal year 1991 to 37.8% in fiscal year 2002. While it is difficult to determine cost savings, contracting of vehicle repairs has resulted in increased fiscal responsibility; improved preventive maintenance practices; and allowed equipment managers to gain further insight into costs of fleet operations.

Monthly district and statewide summary reports are available to keep department management up to date with changes as to our mandate for contracting of vehicle maintenance and repairs. Beginning with fiscal year 2000, the contract percentage was amended to not less than 35% (previously 25%).

For more information contact: Karen Dennis

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Submitted by:

Scott D. Buford
General Services Division
Texas Department of Transportation

VII. CONFERENCES

A. REGIONAL CONFERENCES

**1. WESTERN STATES EQUIPMENT MANAGERS CONFERENCE
(09-2001)**

Western States Equipment Managers Conference

In September, 2001, the California Department of Transportation sponsored the Western States Highway Equipment Managers Association Conference in San Diego, California. The eleven (11) states in attendance were:

Arizona	Idaho	New Mexico	Washington
California	Montana	Oregon	Wyoming
Colorado	Nevada	Utah	

The conference addresses current issues facing State Fleet including Environmental Emission Reductions, Western States Benchmarking, New Technologies, Maximizing Human Resources, Best Management Practices and Equipment Management Systems.

Presentations were provided by:

California ("Fleet Greening", New Technologies, Best Business Practices and Human Resource Maximization);

Arizona ("Fleet Greening" and Western States Benchmarking);

Nevada ("Fleet Greening" and Best Business Practices);

Idaho ("Fleet Greening", Best Business Practices and New Technologies);

Utah (Best Business Practices).

Round table discussions regarding the agenda topics provided interesting insights to solutions and planned enhancements to current processes involving decisions to refurbish or purchase, lease or purchase, pursue purchases of more environmentally friendly vehicles and mobile equipment standard specifications development for message signs, fleet vehicle color, striping delineation and lighting to name a few.

Caltrans mobile fleet displays of implemented new technologies, and environmentally friendly ("Greened") fleet as well as a tour of the San Diego Automotive Museum, including a lecture by the curator, were enjoyed by all.

The week of the conference included September 11, 2001. All participants and support personnel exhibited an extremely professional and compassionate attitude through the ordeal. All returned home safely after deciding to complete the conference.

Submitted by: John LaCamera, Chief
Office of Fleet and Business Services
Division of Equipment
California Department of Transportation

**2. MIDWESTERN STATES EQUIPMENT MANAGERS CONFERENCE
(04-2003)**

Midwestern States Equipment Managers Conference

Michigan Department of Transportation hosted the 15th Annual Midwestern States Equipment Manager's Conference August 24-27, 2003 at the Amway Grand Plaza in Grand Rapids, Michigan. Twelve states and two Canadian provinces were represented, with 27 attendees making up over 443 years of combined service in transportation.

States and provinces represented:

Delaware	Michigan	North Dakota	South Dakota
Indiana	Minnesota	Ohio	Wisconsin
Iowa	Missouri	Pennsylvania	
Manitoba	Nebraska	Saskatchewan	

Conference attendees submitted agenda topics and offered ideas for roundtable discussion. The following items were covered:

Fleet Management

- Fleet management/non-capitalized asset software
- Management information; Collecting, reviewing, editing, reporting and follow up
- Performance measurement; How do you know if what you are doing is right?
- Garage production; Mechanic's time, what standards are used?
- Outsourcing traditional in-house work, shop, inventory, fleet management, and field maintenance operations
- Home to office use of state vehicles: Who is approved? Reimbursement? IRS reporting?
- Fleet management training; Recommended schools & seminars
- Impact and reaction on the October 2002 lower emission standards for diesel trucks: How to fund? Effects on budgets?
- Pre-approval vendor lists (qualified products list)
- Budget distributions; What factors go into the formula (lane miles, employees, etc.) when allocating funds?
- Equipment standards: Do you keep equipment at a standard? What is the standard?

Winter Maintenance Trucks

- Hydraulic driven pre-wet systems
- Snow plows; Down pressure and extra wide
- Multi-purpose bodies; What types? Experiences? Costs?
- Dump truck bodies; Aluminum or steel-pros/cons?
- Zero velocity salt application systems
- Mid-mount wing plows (including hydraulic valving)
- Dump truck tailgate latch release mechanism (air cylinder release)
- Tracking devices on snow plow trucks
- Corrosion inhibitors and corrective actions; Chemical treatments, protective coatings, general cleaning
- Salt and sand storage for snow and ice removal
- Fender systems on snow trucks
- Automated central hydraulic systems on snow trucks; Calibration & accuracy

Environmental and Alternative Fuel

- Bio-diesel and E-85 flex fuel; Specifications? Pros/cons? Requirements?

General Equipment

- Equipment warranty
- Warranty work performed immediately following delivery; Street sweepers, dump trucks and paint strippers
- Aerial lift trucks (traffic signal and highway lighting maintenance); insulated vs. non, covered vs. open bodied utility, lift height, chassis size
- Attenuator support vehicles; Options? Ballast (pros/cons)?
- By-pass oil filtration systems
- Back-up cameras on trucks
- Light duty cab and chassis trucks with service bodies; Bidding and specifications
- Ingram nine wheel rollers
- Dynamic Message Signs; Training on several different systems
- Dump truck idle time reduction with air conditioning

The following presentations were made:

- Minnesota's Fleet Dashboard Presentation; John Howard, MN
- Succession Planning in Saskatchewan Fleet Services (presentation on a joint management/union process)

CONFERENCES

- employed to invoke changes to the organizational structure-staffing/location/delivery mode); Allan Churko, Saskatchewan
- Michigan's In-House Winter Maintenance Truck Build-Up Program; Jeff Turner, MI

3. NORTHEASTERN STATES EQUIPMENT MANAGERS CONFERENCE

Northeastern States Equipment Managers Conference

The first and very successful Northeastern Regional Conference was hosted by Ronald D. Doemland, Chief, Equipment Division of the Commonwealth of Pennsylvania-DOT in Harrisburg, PA, on September 12-14, 1995: (717-787-4299)
No meetings have been held since.

4. SOUTHEASTERN STATES EQUIPMENT MANAGERS CONFERENCE

2004 SSEMC Minutes – June 17
By Barry Rawls – TDOT
615-741-7909

➤ **Delegates in attendance;**

Deborah Clark	Alabama
Ken Parker	Arkansas
Michael Malcom	Georgia
Ed Yawn	Georgia
Rick Durham	Kentucky
William Schear	Louisiana
Ferdinand Theriot	Louisiana
Reed McAtee	Mississippi
Drew Harbinson	North Carolina
Bruce Thompson	North Carolina
Sam Riddle	South Carolina
John White	South Carolina
Eddie Evans	Tennessee
Barry Rawls	Tennessee
Bryan Sweeney	Tennessee
Johnie Muller	Texas
Dick Bonistalli	Virginia
Blair Kinker	Virginia
Fred Humphreys	West Virginia

- **Mission Discussion:** Delegates discussed the mission of the conference and whether the conference had stayed consistent with the mission. The original intent of the conference was to share spec comparisons and discuss equipment issues affecting the various states. Delegates felt for the most part the mission and conferences had stayed on track. However, it may be beneficial for delegates and states to examine and strengthen their affiliations to AASHTO.
- **Evolution of Equipment Management:** Job duties and responsibilities have changed over the years. For example a mechanic is now more of a technician because of all the electronics and computer based systems involved with equipment. Also, managers have to be savvy in human resources and environmental areas.
- **Challenges for Mechanics/Technicians:** Mechanics/Technicians by nature want to be involved with tangible items like tools and equipment. However, in today's transportation departments, documentation is key for various reasons. Ideas were discussed on how to change paradigms.
- **Trailer Standards:** South Carolina discussed a program they use for trailering which accomplishes several objectives including; ensuring the equipment users load, haul, and unload trailered equipment properly, avoid overloading trailer, and avoid over or under loading truck axle.
- **Need for Operator Input:** In order to analyze to today's equipment management process, managers need to rely more on operator input in making decisions. Like a lot of other things communication is not what is should be in these areas.
- **Cost of vehicle operations:** Most states have an antiquated system for determining

- equipment operating costs which relies heavily on manual input. The problem is whether it is justifiable for these departments to spend tremendous amounts of money on systems designed to capture these costs and manage the equipment better. This is somewhat of a vicious circle.
- **Mechanic Certification:** Equipment managers and/or operations managers have a mammoth responsibility in making department heads aware of the importance of mechanic/technician certification. Safety and liability issues are at stake regarding various types of certifications.
 - **Fleet Management:** Fleet management is becoming very involved including; equipment purchases, maintenance, repair, life cycle costing, determining operating rates, staffing, training, and human resources matters. Because this is so important, SSEMC needs to stay abreast of latest trends. Drew Harbinson gave an overview of where North Carolina was with their fleet management system.
 - **Motion:** A motion was made to appoint a Program Committee to report results of SSEMC annual conference to AASHTO. The committee appointed was as follows;
Delegates from - Mississippi, Tennessee, Virginia, and North Carolina.
Co-chairs for this committee are; Reed McAtee and Blair Kinker
 - **2005 Conference:** Reed McAtee gave a presentation on the 2005 meeting which will take place in Natchez, MS.
 - **Adjournment:** A motion was made to adjourn