Equipment Management Follow-Up

Requested by
Larry Orcutt, Division of Equipment

February 22, 2013

Summary

At Caltrans' request, CTC & Associates has conducted follow-up work on two previous Preliminary Investigations, "National Survey of Equipment Management Practices" (June 2012) and "Fleet Equipment Asset Management Performance Measures" (December 2012). Our new findings are presented in this report in three parts.

- **Part 1. National Survey Analysis and Follow-up** provides an analysis of selected questions from the national survey discussed in the June 2012 investigation. It also includes additional feedback solicited from participants of that survey.
- **Part 2, Fleet Asset Management Performance Measures** presents new information gathered from state DOTs previously interviewed for the December 2012 investigation on asset management. We collected more detail concerning their fleet programs and policies as requested by Caltrans.
- **Part 3, Fleet Replacement Analysis** is a review fleet replacement criteria drawn from several sources. It also compare Caltrans' own replacement criteria with other states for different asset categories.

Part 1. National Survey Analysis and Follow-up

In addition to proving a more detailed presentation and explanation of the June 2012 national survey responses of particular interest to Caltrans, this report also identifies which agencies provided which survey responses. We also reached out to several state and provincial representatives whose original survey answers prompted Caltrans' request for more detailed information, such as policy or process documentation. (Note that the states that participated the December 2012 investigation were contacted in Part 2 of this report.)

Contacts

The following five individuals provided further details on their responses to the June 2012 survey, as detailed throughout this report. Responses appear with the associated survey question, denoted with the indented header *February 2013 follow-up*.

Agency	Contact	Title	Phone	Email
Idaho DOT	Steve Spoor	Equipment Fleet Manager	(208) 334-8413	steve.spoor@itd.idaho.gov
Illinois DOT	Tim Peters	Winter Operations Engineer	(217) 782-8419	tim.peters@illinois.gov
Montana DOT	Jeff Gleason	Equipment Bureau Chief	(406) 444-6151	jegleason@mt.gov
South Carolina DOT	John White	Director of Supply and Equipment	(803) 737-6675	whitejf@dot.state.sc.us
South Dakota DOT	Brad Maupin	Equipment Manger	(605) 773-3690	brad.maupin@state.sd.us

The following three individuals did not respond to our email and phone requests for more information.

Agency	Contact	Title	Phone	Email
Connecticut DOT	James Chupas	Equipment General Supervisor	(860) 594-2639	james.chupas@ct.gov
Utah DOT	Steve McCarthy	Fleet Manager	(801) 965-4122	smccarthy@utah.gov
New Brunswick Department of Transportation & Infrastructure	Jay Cunningham	Assistant Director of Maintenance & Traffic Branch	(506) 453-2317	jay.cunningham@gnb.ca

Selected Survey Questions: Analysis and Follow-up

Survey Question 1. Please provide your name, organization and title. This information will not be published.

Twenty-nine individuals responded to this survey. These respondents represent 26 states (Idaho had two respondents: Tom Cole and Steve Spoor) as well as two Canadian provinces.

Respondents by budget size

The following table shows all 50 state DOTs and Washington D.C., with survey respondent states **in bold**. Two Canadian provinces that responded to this survey but not included in the table are **Ontario** and **New Brunswick**.

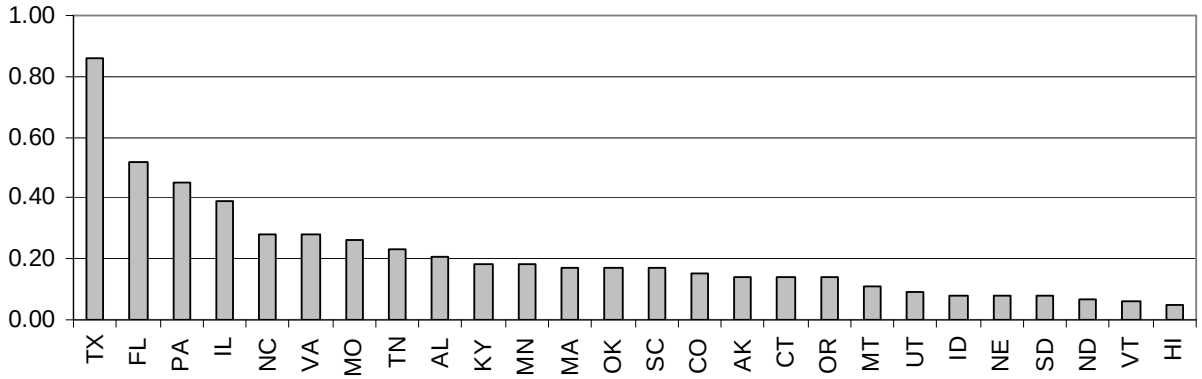
- The second column of the table lists the budgets of each state as measured by the total FY 2012 federal aid apportionment for each (http://www.fhwa.dot.gov/map21/table2012.cfm). We were unable to find data on fleet budgets or fleet sizes for all states to use as a metric for comparison.
- The third column of the table lists the relative size of each state budget compared with Caltrans. (Caltrans is represented as 1.00.)

All state DOTs with budgets. Survey respondents are in bold.

State	MAP-21 total federal aid apportionment for FY 2012 ($ million)	Size relative to California
Alabama	**733**	**0.21**
Alaska	**485**	**0.14**
Arizona	707	0.20
Arkansas	500	0.14
California	3,546	(1.00)
Colorado	**517**	**0.15**
Connecticut	**485**	**0.14**
Delaware	163	0.05
Florida	**1,831**	**0.52**
Georgia	1,248	0.35
Hawaii	**163**	**0.05**
Idaho	**276**	**0.08**
Illinois	**1,374**	**0.39**
Indiana	921	0.26
Iowa	465	0.13
Kansas	365	0.10
Kentucky	**642**	**0.18**
Louisiana	678	0.19
Maine	178	0.05
Maryland	579	0.16
Massachusetts	**587**	**0.17**
Michigan	1,017	0.29
Minnesota	**630**	**0.18**
Mississippi	467	0.13
Missouri	**915**	**0.26**
Montana	**396**	**0.11**

State	MAP-21 total federal aid apportionment for FY 2012 ($ million)	Size relative to California
(continued)		
Nebraska	**279**	**0.08**
Nevada	351	0.10
New Hampshire	160	0.05
New Jersey	965	0.27
New Mexico	355	0.10
New York	1,622	0.46
North Carolina	**1,006**	**0.28**
North Dakota	**240**	**0.07**
Ohio	1,295	0.37
Oklahoma	**613**	**0.17**
Oregon	**483**	**0.14**
Pennsylvania	**1,585**	**0.45**
Rhode Island	211	0.06
South Carolina	**607**	**0.17**
South Dakota	**272**	**0.08**
Tennessee	**817**	**0.23**
Texas	**3,049**	**0.86**
Utah	**311**	**0.09**
Vermont	**196**	**0.06**
Virginia	**983**	**0.28**
Washington	655	0.18
Washington, D.C.	154	0.04
West Virginia	422	0.12
Wisconsin	727	0.21
Wyoming	248	0.07

The following figure shows the states that responded to the survey in decreasing order of budget size.



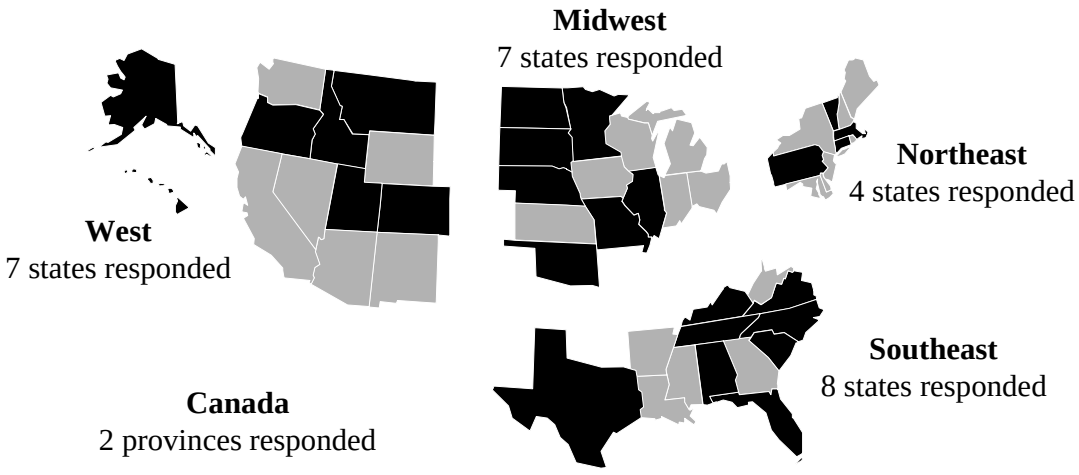
Respondent states budget size (in term of total federal apportionment) relative to California (California = 1.00).

As noted throughout the remainder of this document, we have sorted individual survey question responses from larger to smaller states as ranked on Page 2, followed by Canadian provinces Ontario (ON) and New Brunswick (NB).

Respondents names and contact information appear in Appendix 1A.

Respondents by region

Responding states have also been grouped by the four regions used by AASHTO's Equipment Management Technical Services Program (EMTSP):



Respondent states grouped by AASHTO EMTSP region.

SURVEY SECTION I. EQUIPMENT ACQUISITION

Survey Question 3. Are your agency's equipment needs determined in a consistent manner based on established work methods, business practices, allocation methods or formally defined standards?

Twenty-nine individuals responded to this question.

Yes	25	TX, FL, PA, IL, NC, VA, MO, TN, AL, KY, SC, CO, AK, CT, OR, MT, UT, ID (Cole), ID (Spoor), NE, SD, ND, HI, ON, NB
No	4	MN, MA, OK, VT

Follow-up: **Please explain.**

Free responses among those who answered "yes," sorted by decreasing state budget size.

- **Texas—**20 year operational database; 10 years using same structure replacement criteria based on sponsored research.
- **Pennsylvania—**Each of our county and district organizations annually complete a self developed fleet model that identifies our life cycles, average age and a number of other relevant indices.
- **North Carolina—**North Carolina DOT operates from a "revolving fund," i.e., we rent equipment to the field in order to receive funds to cover cost of operating equipment and replacement.
- **Virginia—**Equipment replacement modeling functionality in the fleet management system.
- **Tennessee—**Operational hours, miles or years of use.
- **Alabama—**We follow set standards in the equipment manual that is updated biannually to ensure improvements in the fleet management system.
- **Kentucky—**Utilization and replacement schedule.
- **South Carolina—**Assuming "your agency's equipment needs" in this question means "the items your agency purchases," our response is as follows: Our agency uses a consistent process to determine what vehicles and equipment to purchase or replace. The department owns and maintains approximately 3,800 licensed (on-road) vehicles and equipment, 2,762 construction/agricultural (off-road) equipment, and 5,685 non-licensed equipment assets/attachments. Throughout each year, the department evaluates the suitability of units in its fleet based age, miles (or hours) of operation, downtime, as well as operating and maintenance costs to identify items that are no longer economical to repair. Additionally, each year each of the seven districts request and fund the subsequent years new and replacement items. Monies for this come from their overall operating budgets. Management reviews and approves their requests before the items are centrally purchased. Factors considered before approving requests are: replacement cycle policies or guidelines; repair versus replacement; subjective input from equipment, maintenance, and field personnel; needs and approved budget funding; contract, rent, or buy analysis, availability of operators, safety and risk, and identified projects.
- **Colorado—**Age and usage with additional emphasis on older equipment replacement.
- **Connecticut—**Connecticut tracks usage and needs of the department to determine equipment needs.
- **Oregon—**However the final choice of what gets replaced is decided by the regions.

- **Montana—**We follow replacement criteria set forth.

  February 2013 follow-up
  Request by CTC: Could you please provide a copy of your criteria?
  Response from Jeff Gleason: As a general rule we look at several bits of information provided by our vehicle management system:
  - Life cycles—how many years are we going to depreciate out that vehicle and get the most miles on it during that time.
  - Miles—during the calculated life cycle has it met our minimum mileage criteria; if not we keep it until it does.
  - Repair costs—we look at how much have we spent to date on it during the life cycle.
  - Utilization—we look annual usage of the equipment to determine if it is even needed.

  Our life cycles and minimum miles per class follow:
  - 02 Class small SUV—6 years, 125,000 miles.
  - 06 Class Mid-sized sedans—6 years, 125,000 miles.
  - 07 Class ½ ton pickups—8 years, 150,000 miles.
  - 08 Class ¾ ton pickups—8 years, 175,000 miles.
  - 09 Class 1 ton dump trucks—9 years, 200,000 miles.
  - 12 Class mini vans—6 years, 130,000 miles.

- **Utah—**I would say it's based on defined standards, snow plan, mowing, number of FTEs (full time employees), etc.
- **Idaho (Cole)—**For the most part, but final budget submitted to and approved by legislature.
- **Idaho (Spoor)—**Equipment replacement is the responsibility of the central office headquarters. This process is defined and is consistent from year to year.

  February 2013 follow-up
  Request by CTC: Could you please provide a copy of the process documentation?
  Response from Steve Spoor: Attached is our Section 700 from our Maintenance Manual that establishes policies and procedures for our equipment fleet [Appendix 1B, Idaho DOT Maintenance Manual, Chapter 700—Road Equipment]. Contained within this section is our process documentation regarding equipment replacement. Please let me know if this is sufficient or if you have additional questions or needs.

  [Note: The replacement language referenced by Steve Spoor appears in Section 740.00—Equipment Replacement & Procurement.]

- **South Dakota—**South Dakota DOT has a policy in place for this.

  February 2013 follow-up
  Request by CTC: Could you please provide a copy of this policy?
  Response from Brad Maupin: Attached [Appendix 1C, South Dakota DOT Fleet Management Policy No. DOT—OS—OP—2.0] is the South Dakota DOT policy that covers this question.

  [Note: This is addressed specifically in Section III—Disposing of fleet assets (page 3 of the appendix), Section IV—Acquiring fleet assets: Equipment budget (page 6) and Section V—Acquiring fleet assets: Capital budget (page 7).]

- **Hawaii—**Based on established work methods and requirements.
- **Ontario—**Highway maintenance standards.
- **New Brunswick—**The province of New Brunswick has a Vehicle Management Agency (VMA) which procures the provincial fleet. New Brunswick Department of Transportation & Infrastructure (DTI) provides equipment replacement requirements to VMA. DTI submits requirements and procured assets are subject to departmental funding.

Free responses among those who answered "no," sorted by decreasing state budget size.

- **Massachusetts—**Budget driven.
- **Oklahoma—**Senior staff currently determines the amount and type of equipment to replace.
- **Vermont—**Mostly on precedent.

Survey Question 4. Does your agency use a process for identifying the most cost-effective means of meeting the need for an asset (e.g., own versus rent versus reimburse; assigned versus pool)?

Twenty-nine individuals responded to this question.

Yes	23	TX, PA, IL, NC, VA, MO, TN, AL, KY, MA, SC, AK, CT, OR, MT, UT, ID (Cole), NE, SD, ND, HI, ON, NB
No	6	FL, MN, OK, CO, ID (Spoor), VT

Follow-up: **Please explain.**

Free responses among those who answered "yes," sorted by decreasing state budget size.

- **Texas—**Lease versus buy; repair versus replace.
- **Pennsylvania—**On an individual county level, rental costs, projected utilization, and cost of ownership are part of the formula used to make that determination. Justifications are required for every piece of equipment that is requested to be purchased.
- **North Carolina—**We track utilization and urge divisions to rent equipment that has very low utilization from outside sources.
- **Virginia—**Cost analysis.
- **Alabama—**We have a fleet program set on the green fleet initiative and purchase vehicles and equipment according to life cycle costs.
- **Massachusetts—**Assets are almost exclusively owned and are assigned regionally and pooled or within the region.
- **South Carolina—**Items that are not used for emergency response, are not mission critical, and are not used often are candidates for rental or sub-contracting. Short term equipment rentals from vendors and equipment pool assignments exist throughout the state to minimize equipment purchases and encourage sharing of the items. In some areas, lack of available rental vendors results in decisions to purchase some items.

  February 2013 follow-up
  Request by CTC: Can you quantify this response related to rentals (quantities, dollar amounts) compared to the size of your entire fleet.
  Response from John White: No, we do not control or approve rentals statewide, and accounting codes used to rent items are not exclusively being used for equipment rental. Consequently, consistently reliable information is not available.

- **Connecticut—**All costs are looked at to determine best value to ConnDOT.
- **Oregon—**Yes, but we are fairly new at this. We are always seeking input from other DOTs as well as the vendor community for new and innovative ways to lower costs and improve utilization.
- **Montana—**We do a cost analysis.

  February 2013 follow-up
  Request by CTC: Could you please provide details or documentation on your analysis process or tool?
  Response from Jeff Gleason: When we look at vehicle replacement we look at our costs compared to the cost of leasing. We have a lot of special-need vehicles that we provide for our users such as pickups with radios, distance measuring instrument (DMI) units, laptop stands, special winch systems, and tommy gates, not to mention utility boxes which would require modifications to the vehicle—rental companies would rather you not do that to their vehicles. In addition, the mileage we put on some of our fleet in the period of a year would exceed their mileage requirements. Renting and leasing don't fit our need.

  We also look at reimbursement for mileage, and most people do not want to use their own vehicles, and our Motor Pool offers vehicle rental cheaper than paying mileage.

- **Utah—**We do evaluate which method is the most cost effective.
- **South Dakota—**Policy.

  February 2013 follow-up
  Request by CTC: Could you please provide a copy of this policy?
  Response from Brad Maupin: Attached [Appendix 1C, South Dakota DOT Fleet Management Policy No. DOT—OS—OP—2.0] is the South Dakota DOT policy that covers this question.

  [Note: This is addressed specifically in Section I—Annual review of all fleet assets and Section II—Managing fleet performance (page 2).]

- **Hawaii—**At present, due to budget constraints, all purchases shall be justified as per needs, rental and ownership.
- **New Brunswick—**Our Vehicle Management Agency establishes the provincial guidelines for all departments, including the Department of Transportation & Infrastructure, which does result in mostly purchased/owned assets and supplements needs through rentals, leases and other arrangements.

Free responses among those who answered "no," sorted by decreasing state budget size.

- **Colorado—**We are working on leasing now.
- **Idaho (Spoor)—**Some low use equipment is rented. Most equipment is purchased in lieu of other methods with the exception of our buyback program.
- **Vermont—**All are owned, most are permanently assigned.

SURVEY SECTION II. EQUIPMENT MAINTENANCE AND REPAIR

Survey Question 7. Please rate how well your agency is meeting its requirements in these staff-related areas.

Twenty-three individuals responded to one or more parts of this question.

Utilization-Related Area	Not meeting requirements	Meeting requirements	Exceeding requirements
Ratio of mechanics to vehicles	**11 states** TX, IL, VA, TN, MA, CO, CT, UT, ID (Cole), ID (Spoor), NE	**12 states** FL, PA, NC, AL, KY, OK, SC, OR, MT, SD, VT, HI	**0 states**
Mechanic productivity rate	**4 states** TX, SC, CO, NE	**17 states** FL, PA, IL, NC, TN, AL, MA, OK, CT, OR, MT, UT, ID (Cole), ID (Spoor), SD, VT, HI	**1 state** KY
Cost per in-house mechanic labor hour	**2 states** CO, NE	**18 states** TX, FL, PA, IL, NC, TN, MA, OK, SC, CT, OR, MT, UT, ID (Cole), ID (Spoor), SD, VT, HI	**2 states** AL, KY

Most states find their mechanic personnel sufficiently productive ("Mechanic productivity rate") and cost-effective ("Cost per in-house mechanic labor hour"), but about half of the states are understaffed (as indicated by "Ratio of mechanics to vehicles" failing to meet the agencies' requirements).

We did not request quantified answers from respondents on this question.

Survey Question 8. What method does your agency use for determining mechanic staffing levels? (Free response.)

Twenty-six individuals responded to this question. We have grouped similar responses into six categories.

Calculated and need-based (vehicle or staffing levels, comparison with other regions)

- **Texas—**Comparison with other shops.
- **Florida—**Based on the fleet inventory assigned to the shop.
- **North Carolina—**Staff levels are determined by the number of units in a district.
- **Virginia—**Vehicle equivalency analysis.
- **Missouri—**Primarily determined by location (county) and additional resources are allocated in the areas with large quantities of fleet units.
- **Tennessee—**Average shop work load.
- **Alabama—**We have a division and district level staffing program according to the needs of the area.
- **Kentucky—**Position availability equipment fleet.
- **Oregon—**Number of rolling stock pieces per full time employee.
- **Montana—**We look at a mechanic per equipment scenario.
- **Hawaii—**Depends on number and type of vehicle and equipment at each site.

Maintenance repair unit

- **Pennsylvania—**Maintenance Repair Unit (MRU).
- **South Carolina—**MRU analysis.

February 2013 follow-up

Request by CTC: Could you please provide a copy of the analysis tool or process?
Response from John White: We essentially use sedans as baseline for analysis. We can run the analysis for a region or the whole state. The process for the whole state is described below:

1. Average total mechanic hours needed to work on the number of sedans worked on for a time period—recommend using at least 3 years data. Result equals the average mechanic hours per sedan per year. Let this unit of effort be called a "mechanic resource unit" and equate it to one.
2. Average total mechanic hours needed to work on the each other type of equipment in the fleet for the same time period chosen above. Result is the average number of mechanic hours per type of equipment per year.
3. Divide result of Step 2 by result of Step 1 for each type of equipment. The result is the "sedan equivalent" for the amount of labor required for each type of equipment. This is just an easy term to use for conversation and presentations; the most important thing is the average number of mechanic hours needed for all pieces of equipment.
4. Beginning with 2080 hours per year, or whatever hours the agency works, subtract time you expect mechanics to not be at work (vacation, training, sick, military leave, etc.) to come up with total number of expected mechanic hours per mechanic per year. The way the analysis is done, mechanic experience factor is averaged in the numbers, so there is no need to account for that here.
5. For each repair shop, list all the types of vehicles and equipment they service and the quantity of each.
6. Multiply the average number of mechanic hours needed for each type of equipment from Step 3 above by the quantity of each type of equipment serviced by each repair shop from Step 5 above. Sum these products, and the result is total mechanic hours needed in each repair shop to service all the equipment assigned to it.
7. Divide result for each repair shop in Step 6 above by the amount of productive mechanic hours from Step 4 above. Round up to whole number. The result is the number of mechanics needed per repair shop for current workload.
8. Go back and compare results with several repair shops to see how results match actual value. You may have to slightly modify results to more closely match repair shop needs.

Driven by budgets or external agency

- **Illinois—**Mechanics are provided by another state agency. Historical practices and budgets are determining factors.
- **Massachusetts—**Budget driven.
- **South Dakota—**Upper management determines full time employee numbers required.
- **New Brunswick—** Left to our Vehicle Management Agency to determine.

Outsourcing

- **Utah—**We're currently outsourcing about 20 percent of our overall repair costs. So in order to keep with that, we've filled positions to maintain it.
- **Ontario—**All our maintenance work is privatized.

None or standardized/predefined

- **Minnesota—**We have not performed any staffing to equipment levels.
- **Oklahoma—**None. Staffing levels are set in stone.
- **Colorado—**Currently none.
- **Idaho (Cole)—**No defined method.
- **Idaho (Spoor)—**Currently mechanic staffing level is standardized in each District for a total quantity of mechanics. The quantity is not based on other factors such as total equipment in each District. This is now creating problems with equipment not being repaired in a timely manner.

  February 2013 follow-up
  Request by CTC: Can you provide any further details on your current methodologies?
  Response from Steve Spoor: As far as shop staffing levels, we do not have anything defined or documented regarding our current methodology. Basically, we are still operating until the premise of "we've had this many mechanics for so many years, so must be the right amount."

- **Vermont—**Historically authorized number.

Unknown

- **Nebraska—**Not sure.

Survey Question 9. In terms of cost, what percentage of your agency's equipment *preventive maintenance* is performed in-house compared with outsourced? (Free response.)

The responses of twenty-seven individuals to this question are grouped by similar answer.

State	Percent in-house
Pennsylvania, Kentucky, Colorado, Vermont	100 percent.
New Brunswick	Close to 100 percent.
Montana	99 percent.
North Carolina, Alabama	98 percent.
Idaho (Cole)	In excess of 95 percent.
Missouri, Massachusetts, Hawaii	95 percent.
Tennessee, Connecticut, South Dakota	90 percent.
South Carolina	85-95 percent.
Nebraska	85 percent.
Virginia, Oklahoma, Idaho (Spoor)	80 percent.
Illinois, Minnesota	75 percent.
Florida, Oregon	60 percent.
Utah	50 percent.
Texas	20 percent.
Ontario	0 percent.

The average among all respondents is 81 percent.

Eight among 27 respondents said all or nearly all (96 percent to 100 percent) of preventive maintenance work is performed in-house, with four respondents reporting fully 100 percent of such work performed in-house.

Survey Question 10. In terms of cost, what percentage of your agency's equipment *repairs* are performed in-house compared with outsourced?

The responses of twenty-seven individuals to this question are grouped by similar answer.

State	Percent in-house
Missouri, Kentucky, Montana	95 percent.
Idaho (Cole)	In excess of 90 percent.
North Carolina, Tennessee, Connecticut, Vermont	90 percent.
Minnesota, Massachusetts, South Dakota, Hawaii	85 percent.
South Carolina	75-90 percent.
Pennsylvania, Oklahoma, Utah	80 percent.
Virginia, Nebraska , New Brunswick	75 percent.
Oregon	70 percent.
Florida, Illinois, Idaho (Spoor)	60 percent.
Texas	10 percent.
Ontario	0 percent.
Colorado	Under warranty, 50 percent in-house; out of warranty, 90 percent in-house.
Alabama	Our labor costs per hour statewide in our maintenance facilities are at 30 percent below contract costs.

The average among all respondents is 75 percent.

While none of the respondents said that fully 100 percent of repairs are done in-house, eight of 25 respondents said that between 90 percent and 95 percent of repairs are performed in-house.

Among those who said that less than 50 percent of such work is performed in-house, Texas reported 10 percent, and Ontario said that all such work is outsourced.

Colorado respondent noted a difference based on warranty: "Under warranty, 50 percent in-house; out of warranty, 90 percent in-house."

SURVEY SECTION III: EQUIPMENT OPERATION AND REPLACEMENT

Survey Question 15. Please rate how well your agency is meeting its requirements in these *utilization-related* areas.

Twenty-five individuals responded to one or more parts of this question.

Utilization-Related Area	Not meeting requirements	Meeting requirements	Exceeding requirements	Total responses
Average asset age	**13 states** TX, IL, VA, MN, OK, SC, CO, CT, OR, ID (Spoor), SD, HI, NB	**12 states** FL, PA, NC, MO, TN, AL, KY, MA, MT, UT, VT, ON	**0 states**	25
Average asset utilization rate (time spent in use for assets available for use)	**5 states** MN, CO, OR, ON, NB	**18 states** TX, FL, IL, NC, VA, MO, TN, AL, KY, MA, OK, SC, MT, UT, ID (Spoor), SD, VT, HI	**2 states** PA, CT	25
Average asset cost per mile	**5 states** CO, OR, HI, ON, NB	**15 states** TX, FL, IL, NC, MO, TN, KY, MA, OK, SC, MT, UT, ID (Spoor), SD, VT	**3 states** PA, AL, CT	23

A significant majority of states find they are getting sufficient use out of their assets ("Average asset utilization rate") and the assets are cost-effective ("Average asset cost per mile"). About half of the states are concerned with the age of their fleets ("Average asset age").

We did not request quantified answers from respondents on this question.

Survey Question 16. How does your agency record equipment utilization? (Select all that apply.)

Twenty-five individuals responded to one or more parts of this question.

	Manually vs. Electronically		
Information recorded	**Manually**	**Electronically**	**Total responses**
Daily use	**7 states** TX, FL, MN, MA, SC, UT, HI	**11 states** FL, NC, VA, AL, OK, SC, CO, CT, MT, HI, NB	18
Emergency use	**5 states** FL, MA, MT, UT, HI	**7 states** FL, AL, SC, CO, CT, HI, NB	12
Idle time	**3 states** TX, FL, HI	**7 states** FL, NC, AL, MA, CT, OR, HI	10
Downtime	**4 states** TX, FL, MA, HI	**11 states** FL, NC, VA, AL, MN, SC, CT, MT, VT, HI, NB	15

States more commonly record these different classes of information (daily use, emergency use, idle time, downtime) electronically rather than locally. Four states that indicated that that they record data manually also do so electronically for the same class of information (Florida, South Carolina, Hawaii).

	Locally vs. Statewide		
Information recorded	**Recorded only locally**	**Entered into statewide database**	**Total responses**
Daily use	**0 states**	**19 states** TX, FL, PA, IL, VA, MO, TN, AL, KY, MN, OK, CO, OR, UT, ID (Spoor), SD, VT, HI, ON	19
Emergency use	**2 states** TX, PA	**12 states** FL, IL, MO, TN, AL, CO, OR, UT, ID (Spoor), SD, VT, HI	13
Idle time	**2 states** CO, MT	**6 states** TX, FL, PA, TN, AL, HI	8
Downtime	**2 states** CO, OR	**11 states** TX, FL, IL, VA, MO, TN, AL, KY, MN, SD, HI	13

States by far record these different classes of information (daily use, emergency use, idle time, downtime) into a statewide database rather than only locally.

Survey Question 18. Approximately what percentage of your agency's fleet is replaced annually?

This survey question did not specify whether "percentage of your agency's fleet" should be interpreted as "percentage of units" or "percentage of total asset value." Therefore, this was left to each respondent's individual interpretation; responses likely include both interpretations.

The responses of twenty-two individuals to this question are grouped by similar answer.

State	Percent replaced annually
Alabama	20 percent.
Ontario	12 percent.
Texas, Tennessee, Massachusetts, Oklahoma, Vermont	10 percent.
Montana	8 to 10 percent.
Missouri	7 percent to 10 percent (depending on fleet class being purchased).
Pennsylvania, Connecticut	8 percent.
Kentucky, New Brunswick	5 to 10 percent.
Illinois	6 percent.
Idaho (Spoor)	5 percent to 6 percent.
Florida, Virginia, Oregon	5 percent.
South Carolina	4 to 5 percent.

State	Percent replaced annually
Utah	3 to 4 percent on heavy duty; 12 to 15 percent on light duty.
Colorado	3 percent.
Hawaii	In a normal cycle 1.5 to 2 percent.

The average value among respondents was 7.9 percent.

Most respondents said that not more than 10 percent of their agencies' fleets are replaced annually, and none indicated a value greater than 20 percent. Missouri and Utah indicated that the response varied by vehicle class.

Survey Question 19. Approximately what percentage of your agency's fleet is currently overdue for replacement?

As with question 18, the survey did not specify whether "percentage of your agency's fleet" indicates "percentage of units" or "percentage of total asset value," leaving the interpretation to each respondent.

The responses of twenty-two individuals to this question are grouped by similar answer.

State	Percent currently overdue
Connecticut	56 percent.
Illinois, Virginia	50 percent.
South Carolina	50 to 55 percent.
Minnesota	40 percent.
Colorado	33 percent.
New Brunswick	Over 30 percent.
Massachusetts	25 percent.
Missouri	22 percent.
Oregon, Vermont	20 percent.
Utah	20 percent for heavy duty only. Light is current and meets its replacement cycle.
Idaho (Spoor)	18 percent.
Hawaii	15 percent.
Pennsylvania	14 percent.
Kentucky, Oklahoma	10 percent.
Montana	8 to 10 percent.
Ontario	5 percent.
Tennessee	2 percent.
Florida	This depends on the trade criteria. The fleet replacement cycle is about 17 years.
Alabama	We salvage sale our equipment to the public twice yearly so no equipment is overdue for replacement.

The average value among respondents was 25 percent, with responses as high as 56 percent. Nearly every state indicated that some percentage of its fleet was overdue for replacement. This average value (25 percent) well exceeds the average annual replacement rate of 7.9 percent (question 18).

The percentage overdue and percent replacement rate can be compared on a state-by-state for several states that provided numeric answers to questions 18 and 19. The *ratio of percent currently overdue to*

percent replaced may be a useful metric to gauge how well any individual program is keeping up with its demands to replace its inventory. These are shown in descending order in the table below.

- The ratio of percent overdue to percent replaced annually was as high as 11.7 to 1 (South Carolina).
- Utah was the only state that indicated it did not have fleet equipment overdue for replacement, and that was only in the case of light-duty equipment.

State	Percent currently overdue (Q. 19)	Percent replaced annually (Q. 18)	Ratio of overdue-to-replaced
South Carolina	50 to 55 percent.	4 to 5 percent.	11.7 to 1
Colorado	33 percent.	3 percent	11 to 1
Virginia	50 percent.	5 percent.	10 to 1
Hawaii	15 percent.	1.5 to 2 percent.	8.6 to 1
Illinois	50 percent.	6 percent.	8.3 to 1
Connecticut	56 percent.	8 percent.	7 to 1
Utah, heavy duty	20 percent.	3 to 4 percent.	5.7 to 1
Oregon	20 percent.	5 percent.	4 to 1
New Brunswick	Over 30 percent.	5 to 10 percent.	4 to 1
Idaho (Spoor)	18 percent.	5 to 6 percent	3.2 to 1
Missouri	22 percent.	7 to 10 percent.	2.6 to 1
Massachusetts	25 percent.	10 percent.	2.5 to 1
Vermont	20 percent.	10 percent.	2 to 1
Pennsylvania	14 percent.	8 percent.	1.8 to 1
Kentucky	10 percent.	5 to 10 percent.	1.3 to 1
Oklahoma	10 percent.	10 percent.	1 to 1
Montana	8 to 10 percent.	8 to 10 percent.	1 to 1
Tennessee	2 percent.	10 percent.	1 to 5
Ontario	5 percent.	12 percent.	1 to 6
Utah, light duty	0 percent.	12 to 15.	0

SURVEY SECTION V. FLEET POLICY, FINANCIAL MANAGEMENT AND BUSINESS PLANNING

Survey Question 25. What factors does your agency take into consideration for fleet asset capital expenditures? (Select all that apply.)

Twenty-four individuals responded to this question.

State	Life cycle cost analysis	Future use and need forecasting	Alternative capital financing approaches	Required approval or other requirements from another agency	Please specify or describe other factors.
TX	x	x		x	Legislative approval for a biannual budget.
FL		x			
PA	x	x			
IL	x	x		x	All fleet purchases go through our central management services agency.
NC		x			
VA					Available funding.
MO	x	x	x		
TN	x				
AL	x	x			
MN	x				
MA	x	x	x	x	Budget driven.
OK				x	Minimum age and mileage requirements within budgetary constraints.
SC	x	x			Replacement cycle policies or guidelines; repair versus replacement; subjective input from equipment, maintenance, and field personnel; needs and approved budget funding; contract, rent, or buy analysis; availability of operators; safety and risk; and identified projects. *(See follow-up below)*
CO	x	x	x	x	Leasing requires approval from the state attorney general.
CT		x	x		
OR	x	x			
MT	x	x			
UT		x			
ID (Spoor)	x				
SD	x	x			
VT	x	x			
HI	x	x	x	x	Governor, budget/finance, comptroller approvals are needed to purchase major and unbudgeted purchases.
ON	x	x			Fleet is capitalized asset
NB					Capital replacement budget is provided from the minister of finance.
Totals	**17**	**18**	**5**	**6**	

Five respondents noted that their agencies needed approval or had other requirements from another agency. These include a state legislature (Texas), a central management services agency (Illinois), the finance office or ministry (Hawaii, New Brunswick), and the offices of the governor (Hawaii), comptroller (Hawaii), or state attorney general (Colorado).

> *February 2013 follow-up*
> **Request to South Carolina by CTC:** Could you please provide any documentation of your agency's assessment or decision-making process?
> **Response from John White:** Replacement cycles for equipment with meters are based on specialized EUAC (Equivalent Uniform Annual Cost) analysis, where EUAC/average annual use versus accumulated meter reading is plotted. A second order curve is fitted to a scatter plot of the data. Comparison of accumulated repair costs to a plotted Mitchell curve for specific pieces of equipment is occasionally done too (plot accumulated repair costs/purchase price versus accumulated meter reading).
>
> Replacement analysis is generally done for large groups of similar items; however, each piece of equipment may have unique circumstances that justify early replacement or to keep it in service. The local mechanic, operator, and management are in the best position to offer guidance on this.
>
> When the equipment replacement budget is completely separate from the units' operating budgets, each unit typically requests many items in an attempt to obtain as much of the replacement funding for themselves as possible. Also, the amount of money set aside for replacement is somewhat arbitrary. What has worked better for us the last few years is the following (note that this discussion is primarily directed to maintenance—as opposed to construction, engineering, and administration—as they have the most equipment assigned to them and they have the most staff).
>
> District are given a total preliminary budget to work with. Considering their performance needs and other factors for the upcoming year, they determine how much to allocate for contract, resurfacing, equipment replacement, etc. They put together a prioritized equipment request and submit it to the HQ Supply and Equipment office for review. Face-to-face discussions are held to answer questions, discuss staffing and plans, and to get subjective information. The request is finalized and approved, then the budget office establishes the equipment replacement funding by transferring money from district operating accounts to form the equipment replacement budget.

Survey Question 27. By percentage increase or percentage decrease, please state how your agency's equipment management budget has changed in the past five years.

Twenty individuals responded to one or more parts of this question. Due to the various ways in which respondents phrased their answers, it is not possible to provide reliable averages.

Personnel budget. (Free response.)

Among personnel budgets, four respondents reported a decrease, seven reported an increase, and four reported no change. The greatest decrease was 30 percent (Texas), and the greatest increase was 50 percent.

Indicated a decrease

- **Minnesota—**3 percent decrease.
- **Texas—**30 percent decrease.
- **Hawaii—**Decrease.
- **Utah—**Down slightly.

Indicated an increase

- **South Carolina—**2 percent.
- **Pennsylvania—**Greater than 6 percent.
- **Montana—**5 to 10 percent.
- **Massachusetts—**10 percent.
- **Vermont—**15 percent.
- **Florida—**35 percent.
- **Connecticut—**50 percent.

Indicated no change

- **Oklahoma, Colorado, Oregon, Ontario—** No change.
- **Idaho (Spoor)—**Stagnant; mechanics did just receive a 3 percent pay increase as did all agency employees.

Other

- **Missouri—**Unknown.
- **New Brunswick—**Determined by our vehicle management agency.

Repair and maintenance budget. (Free response.)

Among repair and maintenance budgets, four respondents reported a decrease, nine reported an increase, and five reported no change. The greatest decrease was 23 percent (Missouri), and the greatest increase was 54 percent (Connecticut).

Indicated a decrease

- **Minnesota—**3 percent decrease.
- **South Carolina—**15 percent decrease.
- **Missouri—**23 percent decrease.
- **Hawaii—**Decrease.

Indicated an increase

- **Montana—**10 to 15 percent.
- **Utah, Vermont—**15 percent.
- **Texas, Alabama, Massachusetts—**20 percent
- **Florida—**35 percent.
- **Connecticut—**54 percent.
- **Idaho (Spoor)—**Increased based on need.

Indicated no change

- **Pennsylvania. Oklahoma, Colorado, Oregon, Ontario—**No change.

Other

- **New Brunswick—**Determined by our vehicle management agency.

Capital expenditures budget. (Free response.)

Among capital expenditures budgets, five respondents reported a decrease, 10 reported an increase, and three reported no change. The greatest decrease was 60 percent (New Brunswick), and the greatest increase was "100 percent increase for three fiscal years; back to original afterward" (Oklahoma).

Indicated a decrease

- **Missouri—**2 percent decrease.
- **South Dakota—**20 percent decrease.
- **Connecticut—**40 percent decrease.
- **Utah—**40 percent decrease last four years
- **New Brunswick—**60 percent decrease over the last five years.

Indicated an increase

- **Idaho—**4 percent per year.
- **Vermont—**15 percent.
- **Texas—**18 percent.
- **Montana—**15 to 25 percent.
- **Massachusetts—**20 percent.
- **Oregon—**20 percent over the last four years.
- **Florida—**35 percent.
- **Oklahoma—**100 percent increase for three fiscal years; back to original afterward.
- **Ontario—**Slight increase.
- **Hawaii—**Increase.

Indicated no change

- **Minnesota, South Carolina, Colorado—**No change.

Other

- **Pennsylvania—**Consistently less than the actual need.

SURVEY SECTION VI. FLEET HUMAN RESOURCES MANAGEMENT

Survey Question 30. How is repair staff productivity measured at your agency? Is it based upon manufacturers' time standards or some other standard? Please explain. (Free response.)

Twenty-one individuals responded to this question. We have grouped similar responses into three categories.

Internal standards or internal calculated rates

- **Texas—**An internally calculated shop rate.
- **Pennsylvania—**It is based on our own in house historic repair time data.
- **Virginia—**Internal standards.
- **Missouri—**We recently implemented a new management system to capture actual repair times by service reason so we're working to establish an internal baseline now. We'd like to benchmark against OEM standards but that is difficult for our core fleet (heavy duty trucks and off road equipment).
- **Alabama—**Through the use of work orders and time cards and cost analysis programs.
- **South Carolina—**Compared with other SCDOT mechanics in same and other SCDOT repair shops performing the same tasks. Time to complete repair and percent rework required.

- **Oregon—**Standard times and historical data.
- **Utah—**Percentage of wrench time charged to the actual work order.
- **New Brunswick—**Determined by our vehicle management agency. VMA has a facility performance recognition program.

Manufacturers' time standards or book standards

- **Illinois—**Book standards are used for garage mechanics; mechanics in the field are not monitored and measured.

  February 2013 follow-up
  Request by CTC: Could you please provide any further details or documentation about these standards?
  Response from Tim Peters: The book standards are typically referred to as "flat rate manuals" in the industry. Almost any car or truck dealership, the mechanics are paid based on their production. From what I understand the most common publisher of these standards is Mitchell. Here is a link to an explanation of their system:

  Mitchell OnDemand5® Estimator, Computerized Repair Information System User's Guide
  http://www.mitchellsupport.com/docs/OnDemand5%20Estimator.pdf

- **North Carolina—**Manufacturer's standards.
- **Tennessee—**Manufacturer's standards.
- **Colorado—**Manufacturer's standards and industry materials.
- **Hawaii—**Manufacturer time standard.

Productivity is not currently measured

- **Florida—**None.
- **Massachusetts—**It is not currently measured.
- **Oklahoma—**None.
- **Connecticut—**Not currently tracked.
- **Montana—**Currently we are lacking in this area.
- **Idaho (Spoor)—**Not measured at this time.
- **Vermont—**No objective standards.

Survey Question 31. Does your agency have difficulty *hiring* qualified repair and maintenance staff?

Twenty-three individuals responded to this question.

Yes	18	TX, FL, PA, IL, NC, VA, MO, TN, MN, MA, OK, SC, CT, MT, ID (Spoor), SD, VT, HI
No	5	AL, CO, OR, UT, NB

Survey Question 32. Does your agency have difficulty *retaining* qualified repair and maintenance staff?

Twenty-three individuals responded to this question.

Yes	15	TX, FL, PA, NC, VA, MO, AL, MA, OK, SC, MT, ID (Spoor), SD, HI, NB
No	8	IL, TN, MN, CO, CT, OR, UT, VT

Part 2. Fleet Asset Management Performance Measures

As a follow-up to the December 2012 Preliminary Investigation "Fleet Asset Management Performance Measures," we attempted to contact six state departments of transportation with questions concerning:

- Fleet sizes, backlogs, and replacement life cycle criteria (for all states).
- For Pennsylvania DOT, equipment category codes, how it enforces equipment sharing, and documentation as to how it determines mechanic staffing levels (as a follow-up to one of its responses to the June 2012 national survey).
- For Illinois DOT, its calculator for determining own-versus-rent thresholds.
- For New York DOT, its repair-versus-replacement thresholds and its "rightsizing" process.
- For Virginia DOT, how it determines the most cost-effective use of an asset (as a follow-up to one of its responses to the June 2012 national survey).

We were unable to reach New York State DOT or Virginia DOT.

For each state, the following table summarizes fleet size, backlog, and other information based on interviews for the original preliminary investigation, follow-up interviews, and the June 2012 national survey.

State	Fleet Size	Fleet Dollar Value	Replacement Budget for Previous Year	Replacement Life Cycle	Percent Overdue for Replacement	Percent Replaced Annually
Illinois	4,970	$200 million	$20.7 million	150,000 Miles for light vehicles; heavy trucks, 11 years or 6,000 engine hours.	50	6
New York			$40 million			
North Carolina	23,000	$650 million	$40 million this year; on average, 1500 to 2000 pieces a year at $35 to $60 million	Five to 10 years as a rule of thumb, but up to the discretion of each division (could not provide more details).	Interviewee did not know.	6
Pennsylvania	22,500; 8,600 motorized	$880 million (as of June 2012)	$38 million	See slide 6 of Appendix B.2 of the original preliminary investigation (12 years/14,000 hours for most equipment).	14	8

State	Fleet Size	Fleet Dollar Value	Replacement Budget for Previous Year	Replacement Life Cycle	Percent Overdue for Replacement	Percent Replaced Annually
Texas	15,558	$731 million	$40 to $50 million	For pickup trucks after 10 years, 110,000 miles, and when 100 percent of the original value has been spent in repairs. Will send a document detailing replacement lifecycle information for various equipment categories.	Interviewee did not know.	8
Virginia			$20 million before 2012; now $45 million		50	5

Additional findings from our follow-up efforts are summarized below.

- Pennsylvania DOT provided the following documents:
  - Equipment class codes (Appendix 2A) to help interpret Appendix B.2 of the original preliminary investigation.
  - Equipment Sharing Policy (Appendix 2B). The central equipment office enforces sharing by denying equipment purchase or rental requests to districts that have adjacent districts with low utilization for the same category of desired equipment. The districts are then instructed to share equipment, and whether sharing has occurred is checked during review of the equipment budget.
  - Method for determining mechanic staffing levels (Appendix 2C). Pennsylvania DOT uses past performance data to determine the average time it takes to make specific repairs to a category of equipment, and how many such repairs it will need over its lifetime. It uses this information to assign a certain number of maintenance repair units to that piece of equipment over its lifetime, and to determine the number of repair units a mechanic can provide in a given amount of time.
- Illinois DOT provided a link to its calculator for determining own-versus-rent thresholds (http://www2.illinois.gov/cms/agency/vehicles/Pages/TripCostCalculator.aspx). This calculator makes assumptions about the costs of state vehicles that are determined by Illinois DOT's Central Management Services (http://www2.illinois.gov/cms/Pages/ContactUs.aspx).
- We are awaiting a document from Texas DOT detailing its replacement lifecycle information for various equipment categories. We will forward it to Caltrans upon receipt.

Part 3. Fleet Replacement Analysis

In this part of the report, we present a comparison of California's current replacement criteria to six other states for a number of asset types. This is followed by a review of other information available in the documents compiled here.

Documentation

We reviewed fleet replacement criteria drawn from several sources:

- Documentation on western states provided by Caltrans' Terry Zeithamel. This includes individual state information as well as summary reports from the Western States Highway
- Equipment Managers Association (WSHEMA) conferences from the early 2000s.
- Other state data from Parts 1 of this report and from the December 2012 Preliminary Investigation, "Fleet Asset Management Performance Measures."

The following files are attached as appendices to this report:

Appendix	File	Year	Source
3A	California DOT replacement criteria	Current	Caltrans
3B	Arizona DOT replacement criteria	2013	Caltrans
3C	Idaho DOT replacement criteria	2007	Part 1 of this report
3D	Montana DOT replacement criteria	2013	Part 1 of this report
3E	New Mexico DOT replacement criteria	2012	Caltrans
3F	Oregon DOT replacement criteria	2012	Caltrans
3G	Pennsylvania DOT standard life cycles	2011	December 2012 Preliminary Investigation
3H	Washington State DOT fleet status presentation, including replacement criteria	2011	WSHEMA, via Caltrans
3I	Replacement criteria for 6 western states	2001	WSHEMA, via Caltrans
3J	Replacement criteria for 12 western states	2003	WSHEMA, via Caltrans
3K	Replacement criteria for 12 western states	2004	WSHEMA, via Caltrans

Analysis

Comparison of Replacement Criteria—Recent-year Data

We have compared equipment replacement criteria for recent-year (2007 and later) data. This includes data from California, Idaho, Montana, New Mexico, Oregon, Pennsylvania and Washington (Appendices 3A-3H)

The nine asset classes selected for the comparison table below are those that appear in the WSHEMA summary documents (Appendices 3I-3J). Some of the state documents list more than these nine assets, and in some cases many more.

Asset class	CA	ID	MT	NM	OR	PA standard	PA extended life cycle	WA
Sedans, midsize	7 yr	8 yr	6 yr	7 yr	8 yr			12 yr
	120,000 mi	100,000 mi	120,000 mi	115,000 mi	130,000 mi			
Passenger vans (7-8 passenger)	8 yr	8 yr	6 yr	7 yr	8 yr			12 yr
	120,000 mi	100,000 mi	130,000 mi	125,000 mi	130,000 mi			
Light trucks, (less than 15,000 GVW)	8-10 yr		8 yr	7 yr	8-12 yr	8 yr	10 yr	12 yr
	120,000-150,000 mi		150,000 mi	150,000 mi	130,000-230,000 mi			
Medium duty trucks (15,000-31,500 GVW)	Varies, see detailed list		9 yr	Varies, see detailed list	Varies, see detailed list	12 yr	14 yr	12 yr
	Varies, see detailed list		200,000 mi	Varies, see detailed list	Varies, see detailed list	14,000 hr		
Heavy duty trucks (31,600-80,000 GVW)	Varies, see detailed list			Varies, see detailed list	Varies, see detailed list	12 yr	14 yr	12 yr
	Varies, see detailed list			Varies, see detailed list	Varies, see detailed list	14,000 hr		
Graders	15-17 yr	15 yr		12 yr	12 yr	12 yr	14 yr	20 yr
	10,000-12,000 hr			4,500 hr.	6,000 hr	14,000 hr		
Loaders	12-15 yr	12-15 yr		12 yr	12-20 yr	15 yr	18 yr	20 yr
	9,000-10,000 hr			4,500 hr	4,500-5,000 hr	10,000 hr		
Dozers	19 yr	15 yr		16 yr	20 yr			20 yr
	10,000 hr			4,000 hr.	10,000 hr	14,000 hr	16,000 hr	
Excavators	19 hr	15 yr		15 yr	15 yr			20 yr
	18,000 hr				8,000 hr			

The next table shows a statistical comparison of California with the other states for seven of the nine asset classes; medium- and heavy-duty trucks were too variant to reliably compare. Statistics include the minimum, maximum and average values for the replacement criteria for the other states. The final column of the table indicated whether California is below or **above** the average of the other states. Note that Pennsylvania's standard criteria are used for this table.

Asset class	(Meter)	California	Other States			California compared with average
			Minimum value	Maximum value	Average	
Sedans, midsize	Years	7	6	12	8.2	15% below
	Miles	120,000	100,000	130,000	116,000	3% above
Passenger vans (7-8 passenger)	Years	8	6	12	8.2	2% above
	Miles	120,000	100,000	130,000	121,000	1% above
Light trucks, (less than 15,000 GVW)	Years	8-10	7	12	9.0	On par
	Miles	120,000-150,000	150,000	180,000	160,000	16% below
Graders	Years	15-17	12	20	14.2	13% above
	Hours	10,000-12,000	4,500	14,000	8,000	38% above
Loaders	Years	12-15	12	20	15.3	12% below
	Hours	9,000-10,000	4,500	47,500	21,000	55% below
Dozers	Years	19	15	20	17.8	7% above
	Hours	10,000	4,000	14,000	9,000	11% above
Excavators	Years	19	15	20	16.3	17% above
	Hours	18,000	*(insufficient data)*			

Additional Information—Recent-year Data

In addition to listing replacement criteria, some of the state documents in Appendices 3A-3H also include additional information, as summarized below.

Idaho DOT (Appendix 3C)

- Yearly target utilization, in terms of days and in terms of miles or hours (depending on the asset type).

New Mexico DOT (Appendix 3E)

- Life cycle resale estimate for each asset, stated as a percentage of original value. These range from 5 to 50 percent.
- Asset rental rates.

Oregon DOT (Appendix 3F)

- Quantities of each kind of asset, subtotaled by class.

Asset class	Count
Light fleet	1,118
Heavy fleet	1,571
Miscellaneous fleet	785
Attachments	2,265
Total	**5,739**

Pennsylvania DOT (Appendix 3G)

- Standard life cycles as well as extended life cycles, which is part of a life cycle extension pilot program in Pennsylvania. This is discussed in detail in the December 2012 Preliminary Investigation, "Fleet Equipment Asset Management Performance Measures."

Washington State DOT (Appendix 3H)

- Overview of the agency's entire fleet and related issues.
    - Total number of vehicles and construction equipment (4,800) and pieces of supporting equipment (10,000)
    - Expenditures for the 2011-2013 biennium

Expenditure	Cost ($ millions)
Fuel	48.5
Outside services	3.1
Capital	49.4
Fees to other agencies	0.6
Labor	30.3
Repair parts	10.7
Other	3.3
Total	**145.8**

    - Authorized full-time employees (FTEs). The total number of authorized FTEs is listed as 209.3, which exceeds the sum of 189 below.

Category	FTEs
Accounting and administrative staff	16
Repair parts specialists	13
Mechanics	145
Radio technicians	15
Total	**189**

    - Fuel usage and costs graphs over the past decade.
    - Fleet aging statistics
    - Performance measures

Western States Data—Early 2000s

Appendices 3I, 3J and 3K show summary fleet data for several western states for the following years:

- 2001 (Appendix 3I): Alaska, Arizona, California, Colorado, Idaho, Montana.
- 2003 (Appendix 3J) and 2004 (Appendix 3K): Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington State, and Wyoming.

The data on these summary tables are nine to 13 years old and will have limited value for drawing conclusions about the present-day status of state fleets.

The data categories vary from year to year but cover similar topics:

Table data	Years
Budgets (fleet replacement budgets, equipment operating budgets)	2001
Monthly utilization standards for different asset categories	2001, 2003, 2004
Fleet replacement criteria for different asset categories	2001, 2003, 2004
Percent of equipment due for replacement in the past year that was actually replaced	2001, 2003, 2004
Percent of each category underutilized in the past year	2003, 2004
Fleet replacement summary data	2003, 2004

Trends from 2001 to 2004 are difficult to establish. In many cases, states supplied identical data in 2001, 2003 and 2004. This might imply an unchanging status of agency fleets or possibly poor data sets. Data are also unavailable for a number of states in different categories.

APPENDIX 1A
Orignal Survey Participants

United States

Alabama DOT	Carlton Owens	Assistant Equipment Coordinator	owensc@dot.state.al.us
Alaska Department of Transportation and Public Facilities	Brad Bylsma	Parts Manager	brad.bylsma@alaska.gov
Colorado DOT	Roy Smith	Equipment Manager	roy.smith@dot.state.co.us
Connecticut DOT	James Chupas	Equipment General Supervisor	james.chupas@ct.gov
Florida DOT	Angel Birriel	Mobile Equipment Manager	angel.birriel@dot.state.fl.us
Hawaii DOT	Lew Honda	Equipment Superintendant/Safety Coordinator	llewellyn.honda@hawaii.gov
Idaho DOT	Tom E. Cole	Equipment Fleet Manager	tom.cole@itd.idaho.gov
Idaho DOT	Steve Spoor	Chief Engineer	steve.spoor@itd.idaho.gov
Illinois DOT	Tim Peters	Winter Operations Engineer	tim.peters@illinois.gov
Kentucky Transportation Cabinet	Rick Durham	Administrative Branch Manager	rick.durham@ky.gov
Massachusetts DOT	William Hurton	Director of Equipment	william.hurton@mhd.state.ma.us
Minnesota DOT	Robert Ellingsworth	Fleet Manager	robert.ellingsworth@state.mn.us
Missouri DOT	Jeannie Wilson	Fleet Manager	jeannie.wilson@modot.mo.gov
Montana DOT	Jeff Gleason	Equipment Bureau Chief	jegleason@mt.gov
Nebraska Department of Roads	Janie Vrtiska	Fleet Procurement Manager	janie.vrtiska@nebraska.gov
North Carolina DOT	R. Bruce Thompson	Director	rbthompson@ncdot.gov
North Dakota DOT	Paul Hanson	Fleet Manager	phanson@nd.gov
Oklahoma DOT	Kevin Bloss	State Maintenance Engineer	kbloss@odot.org
Oregon DOT	Bruce Erickson	Fleet Services Manager	bruce.d.erickson@odot.state.or.us
Pennsylvania DOT	W. James Smith	Chief, Fleet Management Division	walsmith@state.pa.us
South Carolina DOT	John White	Director of Supply and Equipment	whitejf@scdot.org
South Dakota DOT	Brad Maupin	Equipment Manger	brad.maupin@state.sd.us
Tennessee DOT	Robert Warren	Fleet Supervisor	robert.warren@tn.gov
Texas DOT	Johnie Muller	Fleet Coordinator	johnie.muller@txdot.gov
Utah DOT	steve Mccarthy	Fleet Manager	smccarthy@utah.gov
Vermont Agency of Transportation	Ken Valentine	State Equipment Manager	ken.valentine@state.vt.us
Virginia DOT	Erle W. Potter	Superintendent	erle.potter@vdot.virginia.gov

Canada

New Brunswick Department of Transportation & Infrastructure	Jay Cunningham	Assistant Director of Maintenance & Traffic Branch	jay.cunningham@gnb.ca
Ontario Ministry of Transportation	Shaf Khan	Manager	shaf.khan@ontario.ca

700.00 ROAD EQUIPMENT

710.00 EQUIPMENT MANAGEMENT

The management of the equipment fleet is divided between the six districts and the Headquarters Office of Highway Operations and Safety (OHOS) – Maintenance Services Section. Each district and the Maintenance Services are responsible for unique duties.

710.01 Headquarters. Maintenance Services provides, and administers all vehicle and equipment specifications and purchase requests required by the Department. The Section's goal is to provide economical equipment that is multi-functional, safe, and accomplishes the required tasks. To that end, Maintenance Services personnel are assigned administrative, financial, purchasing, and technical services. Maintenance Services is required to establish policy and procedures for fleet administration, budgets, purchasing and allocation of vehicles and equipment to district operations.

Maintenance Services equipment staff consists of the Maintenance Service Manager, two Equipment Analysts, and a Technical Records Specialist. The Maintenance Service Manager is responsible for the management of the equipment fleet including budget submittal and monitoring, policy development, complement status and inventory, maintenance and disposal. The Equipment Analyst's duties include specification development, warranty claims, various maintenance item contracts, overseeing the development and use of the Equipment Management System (EMS), and operator and mechanic training. The Technical Records Specialist is responsible for entering data into the computerized EMS, processing of equipment purchases and payments, and licensing of vehicles.

710.02 Districts. The District Engineer or designee is responsible for insuring that the equipment in the district is operated and maintained in accordance with established policies and procedures as well as making sure that the equipment is utilized to the greatest extent possible. Each District Engineer administers the operation of the District Shop that performs major and minor repair of vehicles and equipment assigned to that district.

714.00 EQUIPMENT MANAGEMENT OBJECTIVES

The equipment management objectives are to provide Idaho Transportation Department employees with the most cost efficient and well maintained vehicles and equipment available as well as the training necessary to operate this equipment so they can perform their required job assignments in the most efficient manner possible.

715.00 EQUIPMENT ASSIGNMENT

Equipment is assigned on the basis of need and usage. Accurate records provide information concerning the amount of usage. Employees with assigned equipment on either a permanent or temporary basis are responsible for keeping accurate records and performing the necessary preventive maintenance.

715.01 Equipment Complement. Road equipment is allocated to each district on the basis of need and availability. A complement system is used to establish the quantity of units assigned to each individual district.

The district complement is reviewed biannually by the Maintenance Services Manager and district personnel to determine if changes are required. The previous year's utilization figures and mileage reports as well as employee complement changes are used as consideration for adjustments made in the complement levels of each type of equipment. One for one category changes in complement for powered units will be allowed as needed. Requests for changes in complement resulting in an increase in the total number of power units must be made prior to the complement review meeting and shall be accompanied by supporting documentation justifying the need for additional equipment. All complement level increases shall be approved by the Chief Engineer and prior to the purchase of additional units.

The Headquarters complement is reviewed annually by the Maintenance Services Manager and Section personnel to determine if changes are required. Adjustments in complement levels require the same procedure as district complement adjustments.

715.01.01 On-Hand Inventory Levels. The District Engineer is responsible for maintaining the on-hand inventory level of equipment is equal to the established complement level for each category of equipment. As new equipment is received, the District is responsible for insuring that surplus equipment is disposed of in a timely manner. Surplus equipment can be retained for use during summer months of operation with planned disposal taking place during the fall of each year. All surplus equipment shall be disposed of by December 31 of each year resulting in the on-hand inventory level being equal to established complement levels.

715.02 Equipment Transfer Procedure. Equipment is transferred from one district to another district through the use of the ITD 0991 Equipment Transfer Request form. This form must be completed by the receiving district and signed by the Maintenance/Region Engineer. The form is then forwarded to the Maintenance Services Manager for approval.

Refer to Figure 700-1.

Figure 700-1

ITD 0991 (Rev. 3-06)
itd.idaho.gov

Road Equipment Transfer Request

Transfer is effective the first day of the following month

Equipment Number **T**	Date	
Equipment Description		
Transfer From ☐ District ☐ Category _____	Transfer To ☐ District ☐ Category _____	
	Unit Code / Old Org Code / Location	

Approval

☐ Yes ☐ No If No, Explain: _____

Receiving District Maintenance / Regional Engineer's Signature	Equipment Superintendent's Signature

Distribution to be made by Headquarters Maintenance

Original (White): Equipment Superintendent Copy (Green): Receiving District Copy (Yellow): Receiving District
Copy (Pink): Financial Services Copy (Goldenrod): Transferring District/Category
Photocopies of Original: Chemical Laboratory and Supply Services

ITD 0991 (Rev. 3-06)
itd.idaho.gov

Road Equipment Transfer Request

Transfer is effective the first day of the following month

Equipment Number T | Date
Equipment Description
Transfer From ☐ District ☐ Category _____ | Transfer To ☐ District ☐ Category _____
Unit Code / Old Org Code / Location

Approval

☐ Yes ☐ No If No, Explain: _____

Receiving District Maintenance / Regional Engineer's Signature | Equipment Superintendent's Signature

Distribution to be made by Headquarters Maintenance

Original (White): Equipment Superintendent Copy (Green): Receiving District Copy (Yellow): Receiving District
Copy (Pink): Financial Services Copy (Goldenrod): Transferring District/Category
Photocopies of Original: Chemical Laboratory and Supply Services

715.03 Criteria for Vehicle Assignment. Individual vehicles can be assigned to personnel or work crews based on need and usage. All assigned vehicles are to be utilized at or near 100 percent of the Department assigned target utilization level. It will be the responsibility of the individual or work crew lead worker to make sure that all utilization is recorded on the proper forms. Assigned vehicles not receiving at or near 100 percent of target utilization can be reassigned to another location at the discretion of the Maintenance Services Manager or District Maintenance Engineer responsible for that area.

715.04 Motor Pool Operations. Each of the six districts and headquarters maintains a motor pool of unassigned vehicles and equipment. These motor pools are to be utilized by Department personnel to conduct Department business.

The districts and headquarters are to assign a single individual to maintain the paperwork for checking out the individual vehicles. Prior to all business trips in excess of 100 miles, the employee wishing to check-out a pool vehicle must complete all sections of the ITD-9 for that vehicle with the exception of the ending mileage and total mileage columns before they are given the keys to the vehicle. Upon returning the vehicle, the ending mileage and total mileage columns are to be completed. For short business trips, the assigned individual maintaining the paperwork shall create a single entry recording all miscellaneous mileage on the vehicle for each month.

716.00 EQUIPMENT IDENTIFICATION, LICENSING AND REGISTRATION

Any equipment used for the management and/or maintenance of state highways, that uses fossil fuel and has an initial cost exceeding $1000 is considered road equipment and will be identified with an equipment number. Class and category numbers will also be assigned for inventory and rental designation purposes. Refer to Figure 700-5 in Section 744.00.

- Passenger vehicles shall be painted factory standard fleet white. The standard six-inch department door decal of the appropriate contrasting color (gold or black) shall be displayed on the center portion of each front door.
- Light duty utility vehicles include all categories of vehicles from Category 200 to 230 except those vehicles utilized by Port of Entry operations and Incident Response vehicles. Light duty vehicles shall be painted factory standard fleet white on the cab and factory installed beds. Aftermarket bodies and accessories mounted above the frame and behind the cab shall be “DuPont” No. 7893 yellow. A 4” to 6” horizontal reflective yellow stripe shall be applied to both sides and rear of all light duty vehicles on the white painted portion. Reflective yellow stripes are not required on yellow painted bodies. A department blue/orange reflective decal shall be installed on the center portion of each front door.

POE pursuit sedans and rover vehicles equipped with roof mounted warning lights shall be painted factory standard fleet white. A 4” to 6” horizontal reflective blue stripe shall be applied to both sides and rear. A department blue/orange door decal shall be displayed on the center portion of each front door.

Incident Response vehicles shall be painted factory standard white on the cab and factory installed beds. Aftermarket bodies and accessories mounted above the frame and behind the cab shall be "Dupont" No.7744A Environmental Lime Green. A 4" to 6" horizontal reflective green stripe shall be applied to both sides and rear of the white painted portion. Reflective green stripes are not required on green painted bodies. A department blue/orange reflective decal shall be installed on the center portion of each front door.

Heavy-duty truck vehicles include all categories of vehicles from Category 320 to 347 and Category 372 to 393. Truck cab, hood, and fenders shall be factory standard fleet white color. Painted portions of truck chassis and underbody components shall be black in the manufacturer's paint and finish. Other components may be finished according to the factory finish.

Other components may be finished according to the factory finish. Bodies and accessories mounted above the frame and behind the cab shall be "DuPont" No. 7893 yellow. A 6" horizontal reflective yellow stripe shall be applied to both sides of the cab. Yellow dump bodies and flatbeds shall have a reflective yellow stripe of the appropriate width applied to the lower longitudinal rail of the dump body. The tailgate perimeter shall be outlined with the appropriate width of reflective striping. A department blue/orange reflective decal shall be installed on each front door.

Street Sweepers, Categories 907 & 910, shall be factory standard fleet white color. A 6" horizontal reflective yellow stripe shall be applied to both sides and rear of the cab and sweeper body. A Department blue/orange reflective decal shall be installed on each front door.

Construction equipment shall be painted the manufacturer's standard safety yellow. If the manufacturer's standard color is not yellow, then the unit will be painted "DuPont" No. 7893 yellow. A department blue/orange reflective decal shall be installed on each side of unit.

All other ITD road equipment including rotary snow plows, snow plow blades, and trailers that are utilized on State of Idaho highways, shall be painted "DuPont" No. 7893 yellow. A department blue/orange reflective decal shall be installed on each side of unit.

Miscellaneous small equipment, such as lawn mowers, generators, water pumps, pavement breakers, and larger equipment that is utilized solely on department grounds such as forklifts, and lawn tractors are exempt from both paint and decal requirements.

Identification

Licensed equipment, except trailers, shall utilize the State of Idaho license number as the equipment identification number. If additional labels are required, they shall be positioned next to the front doors utilizing black decals. For all other equipment and trailers, the equipment number shall be affixed to the unit utilizing decals or painted stencil number, whichever is deemed appropriate.

Titles are held on file in the Maintenance Services office. A packet containing the vehicle registration, any overlegal permits, accident form ITD 0556, accident claim slip

and accident instruction slip is issued and will be kept in each vehicle displaying license plates.

717.00 EQUIPMENT MANAGEMENT SYSTEM

The automated equipment management system used by the Department aids in the management of fleet operations. The system provides information on all phases of the equipment life cycle, e.g., labor charges, parts, supplies, rental income and fuel usage. Data is gathered from the supply system, accounting system, automated fuel systems and equipment maintenance areas.

Output reports aid in determining replacement schedules and selecting equipment types. Other reports indicate utilization and downtime, which aid in complement determination. Various reports are used to track budget expenditures for operating and owning equipment. Reports on high and low costs for equipment use will aid in determination of disposal lists.

The system is intended to provide shop management information and aid in developing a needs-oriented budget for all phases of equipment management within the Department.

720.00 BUDGET PROCESS

720.01 Budget Requests. Maintenance Services submits to Executive Management a list of the vehicles and equipment that will be at or beyond the determined economic life for such equipment at the time the budget is finally approved. This list is accompanied by the estimated cost of replacement for the units to develop a proposed budget for road equipment replacement. This request is then submitted to the Governor's Office as part of the total Department budget request.

720.02 Approval Process. The budget request for road equipment must first be approved by the Governor before it is submitted to the Legislature for approval. Either the Governor or the Legislature may alter the request as they deem necessary. The budget as approved by the Legislature is then returned to the Department Director for implementation. The Department Director may at this time alter the approved budget if necessary to fund other needs of the department.

720.03 Budget Allocation District 61. The final approved equipment budget is allocated in a two step process. The first step is to determine the amount of money needed to sustain the headquarters fleet and Buy-Back programs for the districts. In addition to determining these requirements, any large purchases required by the districts are determined. Purchases such as truck fleets, crawler tractors, rotary snow plows and striping trucks are allocated at this time. After making all these determinations, the remaining money is allocated to funding replacement priorities recommended by the districts.

720.04 Budget Allocation Districts 1 to 6. The districts are allocated money to replace vehicles and equipment that is not included in the above section. Equipment such as sedans, pickups, individual pickups, loaders, motor graders, and other miscellaneous equipment is the district's responsibility to replace as money is allocated to them.

The money is allocated to the districts based on the amount of preventive maintenance performed by the district staff, the District complement level, and the average age of the district fleet.

720.04.01 Preventive Maintenance. Ten (10) percent of the total district allocation is based on the amount of preventive maintenance performed on the vehicles and equipment in the district fleet. Of the ten percent, half is allocated on the basis of the number of work units completed and the remaining half is allocated on the number of man-hours required to complete the preventive maintenance. All types of preventive maintenance activities are utilized in the analysis for all types of vehicles and equipment.

720.04.02 Individual Fleet Age. Forty-five (45) percent of the district allocation is based on the current age of the district fleet. Equipment that is replaced from the District 61 allocation such as truck fleets, crawler tractors, striping units and rotary snowplows are not utilized in this analysis since the district allocation is not utilized to replace this equipment.

The allocation involves using weighted averages based on individual equipment replacement cost.

720.04.03 District Complement Level. The remaining forty-five (45) percent of the district allocation is based on the current District complement level. As with the age allocation, equipment that is purchased from the District 61 allotment is not utilized in the analysis and the allocation is weighted on the basis of replacement value.

730.00 PURCHASING CONCEPTS

730.01 Fleet Purchase Concept. In the 1970's the Department began purchasing dump/sander trucks on a district fleet basis. This concept proved to be beneficial for both the individual districts and headquarters equipment management.

The benefits of purchasing trucks in fleets for the individual districts are as follows:

1. Trucks located in the same district are identical.
2. Fewer replacement parts have to be inventoried.
3. An operator can change from one truck to another and will be familiar with the controls and operation.
4. Operators and Mechanics can be trained at a lesser cost.
5. All service and preventive maintenance schedules are alike which eliminates confusion.
6. Headquarters personnel are made responsible for determining the replacement schedule of fleet equipment in lieu of the districts determining when a unit needs to be replaced.
7. By headquarters determining the replacement schedule, the equipment will be replaced on schedule and at the economic life instead of being retained past the economic life, which is the current situation.

8. The equipment fleet statewide will become more modernized through scheduled replacement.

730.02 Weighted Evaluation Bid Award Criteria. The weighted evaluation bid award criteria (Points System) is utilized on vehicle and equipment purchases where a large disparity exists in the quality of the various brands offered. This type of bid evaluation takes into consideration factors that normally are not considered in regular low bid evaluations. Items that offer a safer unit, maintenance cost savings, operator comfort, and reduced operation costs are awarded additional points in the evaluation process.

This type of bid award evaluation encourages all vendors to participate in the bid process. Since implementation of this type of bid evaluation, bid responses for trucks have increased. This increase in interest by other vendors provides the Department the opportunity to purchase better equipment at a more competitive price.

The Points System begins by awarding the low bid response a maximum number of predetermined points. Each point item is assigned a point value based on the expected payback of the item. If the bid response meets the points item criteria as established in the specifications, then the point value for that item is added to the point value for price. This is completed for all point items. The bid response ending with the highest total point value is then determined to be the successful bidder.

730.03 Buy-Back Criteria. The buy-back method of determining the low responsive bid offers the vendor an opportunity to repurchase road equipment that was sold to the Idaho Transportation Department. At the time of the bid, the vendor submits a bid proposal stating the selling price of the equipment and a guaranteed price that the vendor is willing to pay to repurchase the equipment at a specified date.

The buy-back method of purchasing equipment is utilized on equipment that has a high volume of sales in the contractor/construction market. The buy-back method has been successfully used to purchase motor graders, loaders, backhoes, and tractor trucks.

Purchasing equipment via the buy-back method offers ITD many advantages. Reduced ownership and maintenance costs are realized as well as several intangible benefits. Some of these benefits are less downtime for repairs and locating parts, fewer mechanics are required due to reduced workload, operator fatigue is reduced, employee moral is higher, and newer equipment is more efficient.

This form of equipment purchasing is effective due to the fact that ITD and the vendors are able to take advantage of municipality concessions on pricing and the absence of federal taxes that are not charged on equipment being purchased by municipalities. The vendor is able to repurchase the equipment after a short duration of time from ITD at a cost that is below the current market value of new units. The vendors are able to quickly sell equipment with low hours, extended warranties, and no excise taxes to the contractor/construction market at a fair price with a fair profit.

730.03.01 Buy-Back Bid Evaluation Process. The goal of the buy-back bid process is to reduce the ownership costs associated with the equipment fleet. Therefore, a financial analysis is performed by the Equipment Analysts on each bid response that contains a buy-back proposal to determine the lowest ownership cost of all bid responses.

When purchasing equipment via the buy-back method, full disclosure of the bid evaluation process is detailed within the specifications. The method for calculating the ownership cost is detailed along with the calculations for loss of interest on the purchase price. As part of the specifications, all buy-back bid responses are required to obtain a surety bond in the amount of 10% of the buyback amount. This protects ITD in the event the vendor is not able to repurchase the units at the specified date.

For direct purchase bid responses, the annual cost is calculated utilizing straight-line depreciation over the useful life of the equipment, and a 20% salvage value. A salvage value of 20% is utilized in the equipment analysis to provide a more accurate account of market value at the end of its useful life.

Buy-back bid responses are evaluated by taking the purchase price of the unit and subtracting the buy-back offer. The amount is then divided by the respective number of years that ITD will own the unit to arrive at the annual cost of ownership. This resultant value is then compared to the annual depreciation cost calculated for all direct purchase proposals. The bid proposal that offers ITD the lowest annual cost is awarded the bid.

Refer to Figure 700-2.

730.03.02 Buy-Back Boot Analysis. As each unit is sold to the vendor, a new unit must be purchased to maintain the complement level within the district fleet. The money generated from the sale of these units is utilized to purchase the replacement units. However, the value received for sold unit is usually less than the purchase price for the new unit. The additional cash needed to complete the purchase is referred to as the Buy-back Boot.

Each buy-back purchase is analyzed to determine how the purchase compares with the historical trend of the program. The analysis computes the expected cash flow of equipment as it relates to a direct purchase and also under the buy-back option.

The analysis calculates the future value of the required replacement (boot) cost as if the funds were deposited in a savings account to earn interest until the equipment needs to be replaced under the direct purchase bid. Actual purchase prices, buy-back values, replacement costs and the useful life of the equipment are utilized to conduct the analysis. The analysis is performed using the replacement (boot) cost for the specific bid along with a five-year average of the boot amounts.

The interest rate utilized to compute the future value of the buy-back boot is based on the interest rate received on Investment of Idle Monies, rounded to the nearest 1/2 percent. This rate is obtained from the state of Idaho Treasurer's Office. The duration of the buy-back proposal is considered in determining the interest rate used in the analysis.

The direct purchase option analysis takes into account the future value of the initial purchase cost as well as the cash received when the unit is sold at the end of its useful life. For analysis purposes, a residual value of 20% will be used. Additionally, the future value of the annual repair costs after the extended warranty is exhausted is also calculated and included in the total cost analysis for the direct purchase option. These repair costs will be determined by utilizing historical data obtained from ITD's Equipment Management System. Only data with an age within the useful life of the unit will be utilized to calculate repair costs.

Equipment will be acquired under the option with the least cost. The equipment will be replaced and purchased with the buy-back option as long as the future value (cost) analysis for the buy-back boot is less than the direct purchase option. If the computed value of the buy-back option is greater than the direct purchase option, then the decision to not replace the equipment currently on hand will be made.

Refer to Figure 700-3.

Figure 700-2
BACKHOE/LOADER

BACKHOE/LOADER EVALUATION

	VENDOR	Western States Caterpillar 420E	CESCO John Deere 310SG	Burks Tractor Case 580 SM	Tri-West Equipment Terex TX760B	Modern Machinery Komatsu WB146-5
Direct Purchase Analysis	Direct Purchase Price	$ 64,280.00	$ 68,462.00		$ 59,623.00	$ 73,706.00
	Annual Depreciation	$ 4,285.33	$ 4,564.13	$ -	$ 3,974.87	$ 4,913.73
	Monthly Depreciation	$ 357.11	$ 380.34	$ -	$ 331.24	$ 409.48
	Monthly Cost for Direct Purchase	$ 357.11	$ 380.34	$ -	$ 331.24	$ 409.48
Direct Purchase with Buy-Back Analysis	Buy-Back Purchase Price	$ 64,280.00	$ 68,462.00	$ 61,154.00		
	Buy-Back Amount	$ 64,826.00	$ 66,512.00	$ 59,154.00		
	Delivery Date	10/31/2006	10/23/2006	9/20/2006		
	Buy-Back Date	4/31/08	4/1/2008	3/20/2009		
	Months of Ownership	18	17	30		
	Monthly Ownership Cost	$ (30.33)	$ 114.71	$ 66.67		
	"Loss of Interest" (Purchase Price)	$ 19.40	$ 36.83	$ 6.38		
	Total Monthly Cost For Buy-Back	$ (10.93)	$ 151.54	$ 73.05		
Lowest Monthly Cost Bid		$ (10.93)	$ 151.54	$ 73.05	$ 331.24	$ 409.48

740.00 EQUIPMENT REPLACEMENT & PROCUREMENT

740.01 Equipment Request Lists. Approximately one month prior to the start of the fiscal year, the individual districts are furnished with a Road Equipment Request form and the amount of their allocation. This form is utilized by the districts to inform Maintenance Services of how they wish to spend their allocated money for equipment replacement. The Complement, On-hand, Useful Life, and Unit Cost columns of the form are completed by Maintenance Services for each district. The "No. Purchase This Year, Total Cost This Year, and Comments" columns are to be completed by the district and the form returned to Maintenance Services prior to the start of the fiscal year. The "Comments" column is to contain the equipment number of the unit(s) to be replaced.

In addition to completing the Road Equipment Request form, the district is required to complete a Form ITD 0230, Surplus Property Disposal Request, for each unit identified in the "Comments" column of the Road Equipment Request form. (See Section 780.00).

Refer to Figure 700-4.

740.01.01 Replacement Criteria. Units identified for replacement on Road Equipment Request form shall meet the replacement guidelines for age stated in Figure 700-5. Units not meeting the replacement criteria established are eligible for replacement if supporting documentation describing the unit's condition and reason for early replacement is provided and approved by Maintenance Services.

740.01.02 Documentation. All documentation for equipment sold prior to replacement guidelines will be retained by Maintenance Services and the requesting district. Documentation shall consist of but not limited to the justification for early disposal and equipment repair records.

740.02 Purchasing Schedule. A purchasing schedule is developed from the district equipment requests. This schedule is distributed to the districts to inform them when their equipment can be expected to arrive in the district.

The purchasing of equipment should be scheduled so the various types of equipment are received prior to the seasonal use of the equipment. Trucks should be scheduled so they are received in the latter part of the fiscal year and loaders and backhoes are to be purchased so delivery is made prior to November.

740.03 Purchasing Responsibilities. The purchasing responsibilities of the equipment fleet are divided between the six districts and the Headquarters Office of Highway Operations and Safety (OHOS) – Maintenance Services Section. Each District and Maintenance Services will be responsible for specifying and obtaining quotations for equipment based on the value of the total purchase amount.

740.03.01 Maintenance Services. Maintenance Services administers all vehicle and equipment specifications and purchase requests required by the Department. Maintenance Services is also responsible for the management of the equipment replacement budget.

Once the Purchasing Schedule has been established, Maintenance Services equipment staff will be responsible for the specification development, bidding, and purchasing of all

equipment types in which the total value of the statewide equipment procurement will exceed $50,000.00. Although a single District purchase may not exceed this value, the value of all district purchases shall be used to determine if Maintenance Services or District staff is responsible.

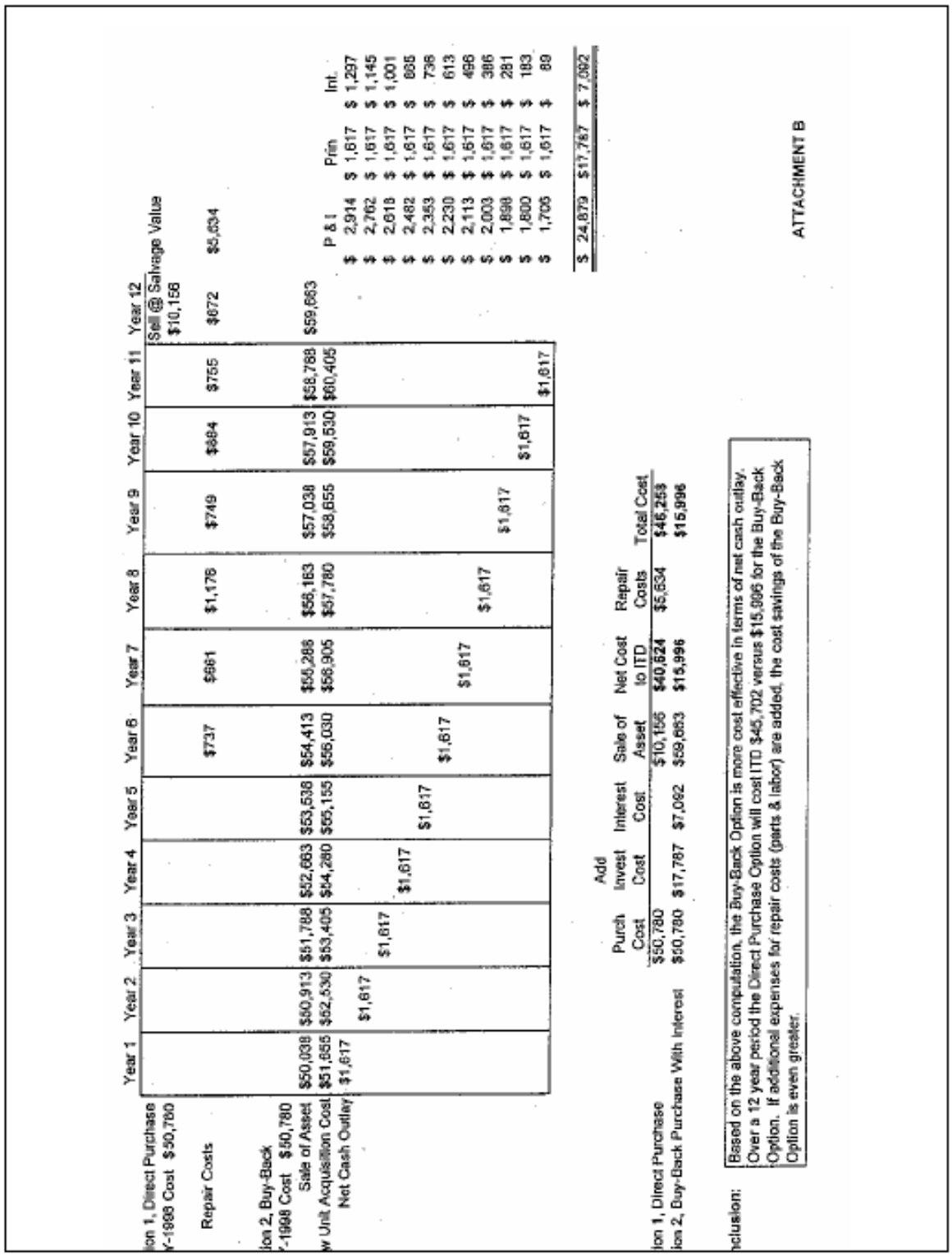
Maintenance Services will complete the requisition process for all Road Equipment purchases regardless of the value of the purchase.

740.03.02 Districts. The District Engineer or designee is responsible for the specification development, and obtaining quotations for each road equipment procurement with a value less than $50,000.00. The District shall obtain quotations, complete the ITD 0552 document, and forward the ITD 0552 document and quotations to Maintenance Services.

Figure 700-3

BACKHOES

PURCHASE/BUY-BACK ANALYSIS



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12				
Option 1, Direct Purchase												Sell @ Salvage Value				
5-Year-1998 Cost $50,780												$10,156				
Repair Costs						$737	$861	$1,176	$749	$884	$755	$672	$5,634			
Option 2, Buy-Back																
5-Year-1998 Cost $50,780													$59,663	P & I	Prin	Int.
Sale of Asset	$50,038	$60,913	$51,788	$52,683	$53,538	$54,413	$55,286	$56,163	$57,038	$57,913	$58,788			$ 2,914	$ 1,617	$ 1,297
New Unit Acquisition Cost	$51,655	$62,530	$53,405	$54,280	$55,155	$56,030	$56,905	$57,780	$58,655	$59,530	$60,405			$ 2,762	$ 1,617	$ 1,145
Net Cash Outlay	$1,617													$ 2,618	$ 1,617	$ 1,001
		$1,617												$ 2,482	$ 1,617	$ 865
			$1,617	$1,617										$ 2,353	$ 1,617	$ 736
					$1,617									$ 2,230	$ 1,617	$ 613
						$1,617								$ 2,113	$ 1,617	$ 496
							$1,617							$ 2,003	$ 1,617	$ 386
								$1,617						$ 1,898	$ 1,617	$ 281
									$1,617					$ 1,800	$ 1,617	$ 183
										$1,617				$ 1,705	$ 1,617	$ 89
											$1,617			$ 24,879	$17,787	$ 7,092

	Purch Cost	Add Invest Cost	Interest Cost	Sale of Asset	Net Cost to ITD	Repair Costs	Total Cost
Option 1, Direct Purchase	$50,780			$10,156	$40,624	$5,634	$46,258
Option 2, Buy-Back Purchase With Interest	$50,780	$17,787	$7,092	$59,663	$15,996		$15,996

Conclusion: Based on the above computation, the Buy-Back Option is more cost effective in terms of net cash outlay. Over a 12 year period the Direct Purchase Option will cost ITD $45,702 versus $15,996 for the Buy-Back Option. If additional expenses for repair costs (parts & labor) are added, the cost savings of the Buy-Back Option is even greater.

ATTACHMENT B

Figure 700-4

DISTRICT (D) ROAD EQUIPMENT REQUEST F.Y. 20XX

CATEGORY	DESCRIPTION	COMPLEMENT	ON-HAND	NO. PURCH. THIS YEAR	UNIT COST	TOTAL COST THIS YEAR	COMMENTS
100	SEDANS	6	7		$16,600		
102	SEDANS, ELECTRIC				$24,000		
200	PICKUPS SMALL 1/2 T	35	40		$15,250		
202	PICKUPS, LARGE 1/2 T	14	17		$15,250		
204	PICKUPS 3/4 T	11	14		$17,000		
207	PICKUPS, SMALL 4 X 4	0	0		$19,000		
208	PICKUPS, LARGE 4 X 4	1	1		$19,500		
209	TRUCK, UTILITY 4 X 4	0	0		$37,000		
210	VANS, SMALL	2	3		$16,000		
211	VANS, FULL SIZE	0	1		$20,500		
218	SUBURBANS	1	2		$32,000		
220	PICKUPS, 1 TON REG. CAB	1	1		$25,000		
221	PICKUPS, 1 TON CREW CAB	11	14		$26,500		
222	TRUCK, 1 TON FLATBED	2	2		$40,000		
223	TRUCK, 1 TON UTILITY	6	7		$50,000		
225	TRUCK, LO-PRO UTILITY	0	0		$70,000		
226	TRUCK, 1 TON DUMP REG. CAB	3	3		$42,000		
227	TRUCK 1 TON DUMP CREW CAB	0	0		$47,500		
228	TRUCK, LO-PRO DUMP	0	0		$60,000		
230	TRUCK STENCIL	0	0		$88,000		
324	FLATBED TRUCK	0	0		$75,000		
326	CRASH TRUCK	3	0		$82,000		
327	WATER TRUCK	0	2		$100,000		
335	HOT PATCHER TRUCK	4	3		$65,000		
336	UTILITY TRUCK	1	0		$65,000		
337	WEED SPRAY TRUCK	0	0		$125,000		
338	SMALL AERIAL TRUCK	1	1		$85,000		
339	LARGE AERIAL TRUCK	1	1		$147,500		
340	DIGGER DERRICK TRUCK	1	1		$220,000		
347	SCALE/POST DRIVER TRUCK				$75,000		
376	TRACTOR TRUCK	4	4		$90,000		
392	MULTIPURPOSE TRUCK	1	1		$115,000		
393	WATER TRUCK	0	0		$175,000		
401	BACKHOE	7	7		$64,280		
402	LOADER 1/2 CY, 3/4 CY	7	7		$42,500		
404	LOADER, SKID STEER	1	1		$46,000		
407	LOADER 3 CY	15	15		$100,000		
408	LOADER 4 CY	3	3		$155,000		
508	MOTORGRADER, 6 X 4	0	0		$225,000		
510	MOTORGRADER, 6 X 6	8	8		$225,000		
610	PULL WINDROWER				$6,000		
705	UUNDERBODY PLOW	3	2		$15,000		
706	PLOW WING, GRADER MT.	6	6		$9,800		
707	PLOW WING, TRUCK MT.	1	1		$15,000		
710	PLOW V-TYPE, FIXED	0	0		$15,500		
711	PLOW V-TYPE, FOLDING	6	5		$19,500		
714	PLOW ONE-WAY	50	51		$5,500		
715	PLOW TWO-WAY	32	31		$6,700		
799	COMPRESSOR 0 - 5 CFM	0	0		$1,900		
802	COMPRESSOR 161 + CFM	2	2		$17,000		
804	JACK HAMMER	1	1		$2,000		
805	PAVEMENT BREAKER	0	0		$2,000		
806	SANDBLASTER	1	1		$3,500		
812	HOT PATCHER, TRUCK MOUNT	4	4		$66,500		
813	TAR KETTLE	1	1		$41,500		
814	CRACK FILLER	1	1		$45,000		
822	PULL SPREADER	0	0		$30,500		

Figure 700-4 (Cont'd)

826	BOAT	0	0		$10,000		
827	BOAT MOTOR	0	0		$4,500		
828	BOAT TRAILER	0	0		$2,000		
831	CONCRETE MIXER	1	1		$3,800		
832	MORTAR MIXER	1	1		$3,000		
833	CONCRETE SAW	3	3		$3,000		
834	CUTOFF SAW	0	0		$1,900		
836	CRACK ROUTER	1	1		$8,500		
837	MISC. (COMPACTOR, WACKER)	16	17		$2,900		
841	EARTH AUGER	0	0		$6,000		
844	DIAMOND DRILL				$60,000		
846	EARTH AUGER/DRILL	2	2		$8,500		
847	FORKLIFT, TRUCK MT.	1	1		$52,500		
848	FORKLIFT, SMALL	1	1		$30,000		
849	FORKLIFT, MEDIUM	2	2		$40,000		
850	FORKLIFT, LARGE	1	1		$82,000		
851	YARD CRANE				$75,000		
852	YARD TUG	0	0		$15,000		
861	BELT LOADER	1	1		$85,000		
864	LAWN TRACTORS	5	5		$5,500		
866	SICKLE MOWER	6	6		$5,500		
867	ROTARY MOWER	0	1		$10,500		
868	BRUSH CHIPPER	4	4		$38,000		
870	FLAIL MOWER	5	2		$26,250		
872	WATER PUMP UP TO 3-1/2"	0	0		$2,600		
873	WATER PUMP 4" AND UP	1	1		$6,000		
880	SMALL VIBRATING ROLLER	5	8		$34,000		
881	LARGE VIBRATING ROLLER	1	1		$80,500		
902	EXCAVATOR	1	1		$150,000		
906	GRADER ATTACHMENTS	4	3		$15,500		
907	MECHANICAL STREET SWEEPER	3	3		$185,000		
908	TOW TYPE SWEEPER	5	4		$22,500		
909	SELF-PROP BROOM	2	2		$36,500		
910	VACUUM STREET SWEEPER	1	1		$186,000		
911	1000 GALLON DEICER TANK	16	16		$12,600		
912	2500 GALLON DEICER TANK	8	4		$60,000		
913	WEED SPRAYER TANK				$18,000		
915	SEMI LOW-BOY	5	5		$63,500		
918	TEST CAMPER	2	2		$5,000		
919	OFFICE AND TEST	6	6		$50,000		
920	TILT, RAMP 10 TON	7	7		$18,500		
921	UTILITY 921	21	22		$7,500		
922	SIGN	2	2		$7,000		
923	MESSAGE	2	2		$25,000		
926	LIGHT PLANT	2	2		$9,000		
930	GENERATORS	8	8		$2,200		
931	WELDER	1	2		$5,000		
953	GRAIN DRILL/HARROW				$4,500		
955	HYD PAVEMENT BREAKER	0	0		$10,000		
958	MISC. YARD EQUIPMENT	0	0		$1,250		
965	MINI-STRIPER	1	1		$44,000		
966	HAND STRIPER	0	0		$6,000		
967	SIGN WASHER	14	15		$4,300		
971	STRIPE REMOVER	1	1		$3,400		
972	ATV 4-WHEEL	1	1		$7,000		

740.04 Specification Development. Maintenance Services is responsible for developing bid specifications with assistance from the districts for procurement of vehicles and equipment. **740.04.01 Standard Vehicle Equipment**. All passenger type vehicles and trucks will be equipped with air conditioning, cruise control, tilt wheel, and split bench front seats to reduce driver fatigue. Other vehicle options may be specified if it has been determined by the Maintenance Services Section that it would be in the best interest of the Department in terms of cost and benefits to the operator.

Construction equipment such as motor graders, articulated loaders, backhoes, crawler tractors, farm type tractors, self-propelled brooms, skid-steer loaders and forklifts will be equipped with operator cabs that include heater and air conditioning.

Automatic transmissions will be purchased in all light-duty vehicles including sedans, pickups, vans, and trucks up to and including 15,000 GVW.

Consideration will be given to equipping single and tandem axle dump/sander snow plow trucks with automatic transmissions. Only trucks utilized on highways with high traffic volumes in densely populated areas will be considered (Coeur d'Alene area, Boise/Nampa/Caldwell, Pocatello, and Idaho Falls). The requesting district's equipment budget allotment will be charged for the additional cost of the transmission.

Automatic transmissions in other types of equipment will be given consideration if any of the following conditions exist:

1. If the unit comes equipped with an automatic transmission at no extra cost.
2. If vehicle design is not suitable for a standard transmission.
3. If working environment requires the slow even control of movement which an automatic transmission can provide.

740.05All Wheel Drive Vehicles. The purchase of all-wheel drive vehicles such as pickups, sport utility vehicles, and similar specialty vehicles shall be limited to situations where there is a clear business need. This need shall be documented and presented to the Maintenance Services Manager prior to the purchase of any of these vehicle types. Current business needs already identified that do not require justification include avalanche mitigation, location/survey work, and herbicide application sprayers utilized off road.

741.00 AIR QUALITY

The Department will purchase vehicles and road equipment that can provide reduced vehicle fuel Consumption emissions. The reduction in fuel use and emissions will be accomplished by purchasing alternative fueled vehicles that can operate on alternative fuel sources that are readily available within the infrastructure of Idaho. Vehicles equipped with bi-fuel engines capable of running on both 100% gasoline and E-85 (85% ethanol and 15% gasoline) will be purchased when available. These will include sedans, and ½ ton pickups and others as they are developed and made available. When E-85 is locally available, department personnel should refuel using this product in bi-fuel vehicles.

The purchase and use of hybrid gas/electric vehicles will also be increased where applicable. Sedans have been identified as an applicable use of this technology. Beginning with Fiscal Year 2009, all future sedan purchases will be hybrid gas/electric vehicles. Maintenance Services shall continue to evaluate other applicable uses for these types of vehicles.

The Department will purchase diesel powered units that can operate on B20 Fuel consisting of 20% bio-diesel fuel and 80% diesel fuel. The purchase and use of these types of vehicles will also assist the Department in meeting the requirement of the Energy Policy Act.

Unnecessarily idling of vehicles increases vehicle emissions and fuel consumption. Vehicle operators shall restrict vehicle idle times to no longer than 15 minutes except for those vehicles that require engine power to run auxiliary equipment such as aerial lift trucks, and etc. Vehicles and equipment equipped with idle shutdown timers will have those timers activated and set at the 15 minute maximum. Vehicles and equipment will be equipped with low amperage draw warning lights so that idling is not required to prevent battery draw down.

As vehicle emissions are the not only source of degrading air quality, the Department will also specify and purchase PM-10 certified road sweeping equipment. This equipment will be purchased on an as needed replacement basis and existing equipment will not be retrofitted at this time.

744.00 MANAGEMENT SYSTEM IDENTIFICATION

Vehicles and equipment are identified in the Equipment Management System (EMS) by Class, Category, and Equipment Number. Maintenance Services is responsible for assigning this information at the time bid specifications are developed for these units. This information is entered into the EMS along with a description of the equipment, and the acquisition cost of the equipment as it is received. Refer to Figure 700-5 for a listing of the various equipment Categories and Classes of equipment.

FIGURE 700-5

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
100	Primary	Automobiles	Miles	144	12,000 mi.	8	100,000
102	Primary	Automobiles, Electric	Miles	144	12,000 mi.	8	100,000
200	Primary	Pickup <6200 GVW, Small	Miles	144	12,000 mi.	8	100,000
202	Primary	Pickup <6200 GVW, Large	Miles	144	15,000 mi.	8	125,000
204	Primary	Pickup, 6300-9000 GVW	Miles	144	15,000 mi.	8	125,000
206	Primary	Truck, POE Rover	Miles	144	25,000 mi.	5	125,000
207	Primary	Pickup 4 x 4, Small	Miles	144	15,000 mi.	8	125,000
208	Primary	Pickup 4 x 4, Large	Miles	144	12,000 mi.	8	100,000
209	Primary	Truck, 4 x 4, Utility	Miles	144	12,000 mi.	8	100,000
210	Primary	Vans, 4 x 2, Small	Miles	144	12,000 mi.	8	100,000
211	Primary	Vans, 4 x 2, Full Size	Miles	144	12,000 mi.	8	100,000
212	Primary	Vans, 4 x 2, Testing	Miles	144	15,000 mi.	8	125,000
214	Primary	Vans, 4 x 2, Photolog	Miles	144	600 hrs.	8	200,000
215	Primary	Vans, 4 x 2, T2 Program	Miles	144	12,000 mi.	8	10,000
218	Primary	Suburbans 4 x 4	Miles	144	12,000 mi.	8	100,000
220	Primary	Pickup, >9000 GVW, Reg. Cab	Miles	144	12,000 mi.	8	100,000
221	Primary	Pickup, >9000, Crew Cab	Miles	144	15,000 mi.	8	125,000
222	Primary	Truck, >9000, Flatbed	Miles	144	12,000 mi.	8	100,000
223	Primary	Truck, 9000 - 15,000 GVW Utility	Miles	144	12,000 mi.	8	100,000
224	Primary	Truck, Incident Response Unit	Miles	144	30,000 mi.	5	150,000
225	Primary	Truck >15,000 GVW Utility	Miles	144	12,000 mi.	12	150,000
226	Primary	Truck, <15,000 GVW, Reg. Cab, Dump	Miles	144	12,000 mi.	8	100,000
227	Primary	Truck, <15,000 GVW, Crewcab, Dump	Miles	144	12,000 mi.	8	100,000
228	Primary	Truck, >15,000 GVW Dump	Miles	144	12,000 mi.	12	150,000
230	Primary	Stencil Truck	Miles	100	400 hrs.	8	100,000
		TRUCKS, 20-35,000 LB GVW					
321	Primary	Dump, Patrol 4x2 Diesel Truck	Miles	120	450 hrs.	12	200,000
322	Primary	Distributor 4x2 Truck	Miles	24	200 hrs.	24	300,000
324	Primary	Flatbed 4x2 Truck	Miles	30	300 hrs.	12	200,000
326	Primary	Crash Attenuator Truck	Miles	30	300 hrs.	24	300,000
327	Primary	Water Truck - Diesel	Miles	30	300 hrs.	12	300,000
328	Primary	De-Icer Truck	Miles	50	200 hrs.	24	300,000
329	Primary	Skid Test Truck	Miles	100	400 hrs.	12	150,000
335	Primary	Hot Patcher Truck	Miles	50	200 hrs.	24	300,000
336	Primary	Utility 4x2, 4x4 Truck	Miles	70	500 hrs.	24	300,000
337	Primary	Sprayer Truck	Miles	30	300 hrs.	12	150,000
338	Primary	Aerial Tower < 30 ft. Truck	Miles	144	550 hrs.	12	150,000
339	Primary	Aerial Tower > 30 ft. Truck	Miles	50	400 hrs.	12	200,000
340	Primary	Digger Derrick Truck	Miles	144	550 hrs.	12	200,000
342	Primary	Striping Unit Truck	Miles	120	800 hrs.	12	200,000
347	Primary	Scale Test/Post Driver-Diesel Truck	Miles	30	300 hrs.	24	300,000
352	Primary	Snow Plow V and Wing Truck	Hours	20	25 hrs.	20	
364	Primary	Rotary Snow Plow Truck	Hours	20	75 hrs.	20	
		TRUCKS, 3-AXLE 43 - 65,000 LB					

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
372	Primary	Sander/Dump Truck	Miles	120	800 hrs.	12	250,000
373	Primary	Rockbed Truck	Miles	120	800 hrs.	12	250,000
374	Primary	Sander/Dump Truck w/Wing Plow	Miles	120	800 hrs.	12	250,000
375	Primary	Core Drill Truck	Hours	30	300 hrs.	12	300,000
376	Primary	Tractor Truck	Miles	100	600 hrs.	12	300,000
379	Primary	Snooper Truck	Miles	100	450 hrs.	12	
390	Primary	Distributor > 1300 Gallons Truck	Miles	24	200 hrs.	12	300,000
392	Primary	Multipurpose Truck	Miles	120	800 hrs.	12	250,000
393	Primary	Water Truck >2500 Gallons	Miles	100	450 hrs.	12	250,000
		WHEEL TRACTORS					
401	Primary	Backhoe	Hours	50	350 hrs.	12	
402	Primary	Loader 1/2 C.Y.	Hours	20	150 hrs.	12	
404	Primary	Loader Skid-Steer	Hours	30	250 hrs.	12	
406	Primary	Loader 1-1/2 - 2 C.Y.	Hours	30	250 hrs.	15	
407	Primary	Loader 2 - 3 C.Y.	Hours	60	400 hrs.	15	
408	Primary	Loader 4 C.Y.	Hours	60	400 hrs.	15	
		CRAWLER TRACTOR					
424	Primary	Dozer, Medium	Hours	60	400 hrs.	15	
426	Primary	Dozer, Heavy	Hours	60	500 hrs.	15	
		MOTORGRADER					
506	Primary	Milling Machine	Hours	30	100 hrs.	15	
508	Primary	Motor Grader, 6 x 4	Hours	50	300 hrs.	15	
510	Primary	Motor Grader, 6 x 6	Hours	50	300 hrs.	15	
600	Attached	Pull Grader	None	None Required		15	
610	Attached	Pull Windrower	None	None Required		15	
		SNOWPLOWS					
705	Attached	Under Body SnowPlow	None	None Required		12	
706	Attached	Wing Plow, Grader Mt.	None	None Required		12	
707	Attached	Wing Plow, Truck Mt.	None	None Required		12	
710	Attached	Snow Plow, V-Type, Fixed	None	None Required		12	
711	Attached	Snow Plow, V-Type, Folding	None	None Required		12	
713	Primary	Rotary Snow Plow, Loader Mounted	Hours	20	75 hrs.	12	
714	Attached	Snow Plow, One-Way	None	None Required		12	
715	Attached	Snow Plow, Two-Way	None	None Required		12	
		AIR EQUIPMENT					
799	Attached	Compressor 0-50 CFM	None	None Required		12	
800	Primary	Compressor 50-160 CFM	Hours	20	100 hrs.	12	
802	Primary	Compressor 160 + CFM	Hours	25	150 hrs.	12	

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
804	Attached	Jackhammer/Rockdrill	None	None Required		8	
805	Attached	Breaker (Pavement), Tamper	None	None Required		8	
806	Attached	Sandblaster	None	None Required		12	
		ASPHALT EQUIPMENT					
810	Attached	Distributor < 1300 Gallons	None	None Required		12	
811	Attached	Distributor > 1300 Gallons	None	None Required		12	
812	Attached	Hot Patcher, Truck Mount	None	None Required		12	
813	Primary	Distributor, Tow Type	Hours	25	120 hrs.	12	
814	Primary	Crack Filler	Hours	25	120 hrs.	12	
815	Attached	Tail Gate Mixer/Patcher	None	None Required		12	
816	Attached	Portable Asphalt Mixer, Tow Type	None	None Required		12	
818	Primary	Laydown Machine, Self-Propelled	Hours	50	350 hrs.	15	
819	Attached	Laydown Machine, Pull Type	None	None Required		13	
821	Attached	Pavement Testing Trailers	None	None Required		12	
822	Attached	Chip Spreader, Pull Type	None	None Required		12	
823	Primary	Chip Spreader, Self-Propelled	Hours	15	50 hrs.	12	
		BOATS AND BARGES					
825	Primary	Barge	Hours	5	10 hrs.	10	
826	Primary	Boat	Hours	15	60 hrs.	10	
827	Attached	Boat Motor	None	None Required		10	
828	Attached	Boat Trailer	None	None Required		10	
		CONCRETE EQUIPMENT					
831	Primary	Concrete Mixer	Hours	10	40 hrs.	12	
832	Primary	Mortar Mixer	Hours	10	40 hrs.	12	
833	Primary	Concrete Saw	Hours	10	40 hrs.	10	
834	Primary	Concrete Cutoff Saw	Hours	10	40 hrs.	10	
835	Attached	Scabbler	None	None Required		10	
836	Primary	Crack Cleaner/Router	None	None Required		8	
837	Attached	Misc. Compactors (Screed, Trowel, Wacker, Compactor)	None	None Required		8	
		EARTH DRILLING EQUIPMENT					
841	Attached	Earth Drilling Auger	None	None Required		10	
844	Primary	Diamond Drill	Hours	5	10 hrs.	12	
846	Attached	Abrasive Drill	None	None Required		10	
		FORKLIFTS, YARD CRANES					
847	Primary	Forklift, Truck Mount	Hours	80	500 hrs.	12	
848	Primary	Forklift, <4,000 lb.	Hours	30	300 hrs.	13	
849	Primary	Forklift, 8,000 - 10,000 lb.	Hours	90	400 hrs.	13	

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
850	Primary	Forklift >10,000 lb.	Hours	90	400 hrs.	13	
851	Primary	Yard Crane	Hours	30	200 hrs.	12	
852	Primary	Yard Tug	Hours	30	200 hrs.	12	
853	Attached	Electric Warehouse Equipment	None	None Required		12	
		LOADER, CONVEYOR					
860	Primary	Conveyor (Belt) Screener Plant	Hours	30	150 hrs.	10	
861	Primary	Loader, Belt or Bucket	Hours	30	150 hrs.	10	
		MOWERS					
864	Primary	Self-Propelled Lawn Tractor	Hours	20	100 hrs.	5	
865	Attached	Lawn Mower, Push Type/Self-Propelled	None	None Required		5	
866	Attached	Road Side Mower, Sickle	None	None Required		12	
867	Attached	Road Side Mower, Rotary	None	None Required		12	
868	Primary	Chipper, Brush	Hours	30	300 hrs.	10	
869	Attached	Road Side Mower, Slope	None	None Required		12	
870	Attached	Road Side Mower, Flail	None	None Required		12	
		WATER PUMPS					
872	Primary	Water Pump, Light Duty < 3-1/2	Hours	10	20 hrs.	13	
873	Primary	Water Pump, Heavy Duty 4 and Up	Hours	10	20 hrs.	13	
		ROLLERS					
878	Primary	Roller, Pneumatic	Hours	10	50 hrs.	12	
879	Primary	Roller, Steel Flat, Self-Propelled	Hours	20	200 hrs.	12	
880	Primary	Roller, Small Dual Drum Vibrating Steel	Hours	20	200 hrs.	12	
881	Primary	Roller, Large Single Drum Vibrating	Hours	30	250 hrs.	12	
		SANDERS					
884	Attached	Tow-Type Sander	None	None Required		7	
885	Attached	5 C.Y. Slide-In Sander	None	None Required		12	
886	Attached	5 C.Y. Truck Mounted Sander	None	None Required		12	
887	Attached	9 C.Y. Truck Mounted Sander	None	None Required		12	
888	Attached	9 C.Y. Slide-In Sander	None	None Required		12	
889	Attached	Salt Spreader	None	None Required		7	

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
		SHOVELS					
902	Primary	Excavators	Hours	100	750 hrs.	15	
905	Primary	Trencher	Hours	10	50 hrs.	15	
906	Attached	Motorgrader Attachment	None	None Required		12	
		SWEEPERS					
907	Primary	Street Sweeper Mechanical	Hours	50	350 hrs.	13	
908	Primary	Tow-Type Sweeper	Hours	20	120 hrs.	12	
909	Primary	Self-Propelled Sweeper	Hours	30	250 hrs.	10	
910	Primary	Street Sweeper Vacuum	Hours	50	350 hrs.	13	
		WATER TANKS					
911	Attached	<1500 Gallon Skid-Mt De-Icer Tank	None	None Required		10	
912	Attached	> 1500 Gallon Skid-Mt Water Tank	None	None Required		12	
913	Attached	Weed Sprayer Tank	None	None Required		12	
		TRAILERS					
915	Attached	Trailer, Semi Low-Boy (Flatbed)	None	None Required		12	
916	Attached	Trailer, Semi Belly-Dump	None	None Required		12	
918	Attached	Test Camper	None	None Required		8	
919	Primary	Trailer, Test, and Office	Months	150	950 hrs.	12	
920	Primary	Trailer, Tilt Bed/Ramp	Months	30	150 hrs.	12	
921	Primary	Trailer, Utility, 2 & 4-Wheel	Months	25	120 hrs.	12	
922	Primary	Trailer, Sign, Warning	Months	25	120 hrs.	12	
923	Primary	Trailer, Message	Months	25	250 hrs.	10	
924	Attached	Attenuator	None	None Required		12	
		MISCELLANEOUS					
926	Primary	Light Plant	Hours	10	40 hrs.	10	
930	Primary	Generators	Hours	None Required		10	
931	Primary	Welder	Hours	30	200 hrs.	10	
932	Primary	Skid Mt. Generator	Hours	180	1500 hrs.	3	
953	Attached	Grain Drill, Harrow	None	None Required		15	
954	Attached	Chain Saw	None	None Required		5	
956	Attached	Tamper, Hydraulic	None	None Required		8	
958	Attached	Misc. Yard Equipment	None	None Required		5	
963	Primary	Hydroseed/Mulcher	Hours	10	50 hrs.	15	
965	Attached	Mini-Striper	None	None Required		8	
966	Attached	Hand Striper	None	None Required		10	
967	Primary	Sign Washer/Sprayer	Hours	5Req	25 hrs.	8	
971	Attached	Stripe Remover	None	5	25 hrs.	10	
972	Primary	ATV (4 Wheeler or Motor Vehicle)	Hours	50	200 hrs.	5	

745.00 BID AND AWARD

Bid specifications are submitted to the Supply Services Section for the bid process. For all requisitions in excess of $50,000, the specifications are forwarded to the Division of Purchasing (DOP) for bidding. The Division of Purchasing is responsible for responding to all questions regarding the bid and the opening of the bids at the stated time.

After the bids have been received and opened by the DOP, they are then returned to Maintenance Services for evaluation. The Highway Equipment Analysts make recommendations to the DOP as to the successful responsive bidder. The DOP in turns notifies all responding bidders of the intent to award and issues the Purchase Order for the equipment as well as notifies Supply Services. Supply Services will then create a Purchase Order in the ITD financial system so that ITD can pay the vendor when the equipment is delivered and received.

746.00 EQUIPMENT DELIVERY AND INSPECTION

As part of the bid specifications, the Maintenance Services will determine the delivery location of the vehicles and equipment. All light duty vehicles and truck cab and chassis will be delivered to headquarters so that licensing can be accomplished by the Headquarters' Garage. All equipment that is to be accompanied with operator training will be delivered to the district requesting the equipment.

746.01 Headquarters. All equipment delivered to headquarters will be inspected by Maintenance Services personnel for specification compliance. If the units meet specifications, they will then be tagged with the appropriate district and equipment number. The district will be notified that the unit is ready to be picked up and transferred to their location

746.02 Districts. Equipment that is delivered to the district will be inspected by District Shop personnel for specification compliance. The district is required to contact the Maintenance Services for a copy of the bid specifications so the inspection can be performed. Inspection time shall be charged to Activity EB84.

Once the district has determined that the unit complies with the specifications, the district is required to complete the EMS receiving report on-line. Once completed, the receiving report is automatically forwarded to HQ personnel for process of payment. IF the unit meets specifications, the district is required to affix the proper equipment number.

For all equipment that does not meet specifications, the Headquarters Garage or district is to inform the Maintenance Services of the specification deviations. Maintenance Services will contact the vendor and inform them of the non-compliance and that the units will not be paid for until all deviations are corrected.

750.00 EQUIPMENT TRAINING

750.01 Operator. Equipment operator training is provided to Department personnel on an on-going basis and as new equipment is received. New equipment training is provided by the vendor supplying the equipment while general operator training is developed jointly by the Division of Highways, Technical Training Group and Maintenance Services.

750.01.01 Vendor Provided. As new equipment is purchased, the Equipment Analysts will require as part of the bid specifications that the successful vendor provide a minimum of 4 hours of operation training to Department personnel. Additional hours of training will be required for more technical equipment.

If additional training regarding a specific piece of equipment is required, the District Training Committee is to contact the Division of Highways Technical Training Group requesting the training in accordance to the Training Catalog. This is not limited to just new equipment but pertains to existing equipment. The Division of Highways Technical Training personnel will do everything possible to coordinate a cost effective and viable training program.

750.01.02 ITD Training. The Division of Highways Technical Training Section in conjunction with the Maintenance Services is responsible for development of the training program for equipment operator. This training is developed to include all major types of equipment.

The training will coincide with the training requirements of the Transportation Technician Series and in accordance with the guideline in the Training Catalog.

750.02 Mechanic. Mechanics, Mechanic Assistants, Welder/Machinists, and Body/Fender persons, have very diverse training needs. A listing of possible courses is contained in the Training Catalog. Additional needs and training request will need to be submitted through the District Training Committee to the Training Steering Committee, allowing the DOH Training Section to identify possible training sources and needs.

750.03 Equipment Roadeo. The Division of Highway Technical Training Section is responsible for the continued development of an Equipment Roadeo program that is to be conducted by each district. All foremen, operators, and mechanics are encouraged to participate at the district level. Each district will organize a Roadeo to be held in the spring of each year. The three (3) highest scoring operators/mechanics along with the highest finishing foreman from each district competition will then progress to a statewide Roadeo that will rotate from district to district.

The top two (2) finishers of the statewide Roadeo will be asked to participate in a national or regional competition that is held during the Fall of each year.

760.00 EQUIPMENT MAINTENANCE

760.01 Shop Operations. Each district is responsible for performing maintenance on the equipment assigned to the district. The Shop Superintendent is to be responsible for the daily operation of the shop facility and it is their responsibility to ensure that all equipment is maintained in an efficient and safe manner.

Since the majority of the information received that is loaded into the Equipment Management System is derived from shop operations, the accuracy of this information is critical to determining the equipment needs of the district. Therefore, the Shop Superintendent is responsible for making sure that all necessary documentation is completed accurately.

760.01.01 Job Orders. The shop Job Order is the primary document for the Equipment Management System. It documents, by unit, specific data such as what repairs were completed, who did the work and the number of hours required. This document is to be

completed for all equipment repairs regardless of whether the repair was performed in house or outsourced. This document is used to determine repair hours, type of repair, and downtime.

760.01.03 Repair Privatization. The Shop Superintendent or designee is to determine the most economical approach possible for repairing vehicles and equipment. The Shop Superintendent is to determine if the repair is to be completed by Department personnel or to have the unit repaired by a private vendor. Each repair situation is to be considered on an individual basis, but it is encouraged that the private sector be contacted on a random basis to compare the costs of privatization versus Department performed repairs.

760.01.04 EMS Activity Codes. The Equipment Management System was designed to help supervisors monitor performance and cost of the equipment fleet without an excess of paperwork. In addition, it will also assist managers in making decisions regarding preventive maintenance, utilization and replacement.

In order for the system to work, fleet information must be collected and summarized. The majority of this information has to come from the field such as which units are being repaired and what types of repairs are being made.

EMS activity codes are used to describe the kinds of repair and maintenance work being performed on vehicles and equipment. When using the activity codes, remember the following:

1. Review the activities and descriptions. Become familiar with the basic structure and descriptions.
2. Make sure the correct activity code is recorded on the job order and preventive maintenance form. If uncertain, check with the Shop supervisor.
3. The activity codes are general in nature and may not specifically define the type of work you are performing. Utilize the descriptions to assist you in determining the correct activity.

Accurate reporting is essential to making sound logical decisions regarding the management of the equipment fleet.

Refer to Figure 700-7 and the EMS Manual.

760.01.05 Satellite Mechanics. The Department maintains a full service repair facility in each of the districts. It is at these or commercial facilities that vehicle and equipment repairs are to take place. However, it is recognized that some District Maintenance facilities are located a great distance from the central repair facility. At these locations, a mechanic can be stationed to perform routine maintenance of the vehicles and equipment located at that maintenance facility. All major repairs are to be performed at the main district repair facility as these facilities have been equipped to perform this type of work.

Before placing a mechanic at one of these remote locations, the district is to conduct a cost/benefit analysis showing the additional costs to the Department for a mobile shop vehicle and required tooling along with the expected pay-back period. Maintenance Services will review the analysis with final approval being that of the Assistant Chief Engineer (Operations).

760.01.06 Traveling Mechanics. As part of its equipment fleet, each district is to maintain a complement of at least one shop service truck. This unit is to be utilized to

conduct emergency repairs of equipment at various job sites located in the district. Each vehicle will be equipped with an electric arc welder, oxy/acetylene system, and stocked with minor repair parts.

It is the responsibility of the Shop Superintendent to determine if these units are to be staffed full time or on a part time basis.

760.01.07 Service Station Operations. The Shop Superintendents are responsible for assigning duties to the personnel assigned to the District Service Station. Typical duties include routine preventive maintenance such as oil changes, chassis lube miscellaneous tire work and other duties assigned.

760.01.08 Body and Fender Repair. Clean, well maintained, and nice appearing equipment is essential in maintaining a good public image. All equipment is to be kept painted in accordance with Section 716.00 of this manual.

It is the district's responsibility to ensure that as vehicles and equipment require body and fender repair, that that repair is completed in a timely manner.

Figure 700-7

SHOP ACTIVITIES

NOVEMBER 1993

DESCRIPTION	ACTIVITY CODE	WORK UNIT
Chassis		
BRAKE SYSTEM	E911	Each Labor Hour
FRAME COMPONENTS	E913	Each Labor Hour
STEERING COMPONENTS	E915	Each Labor Hour
SUSPENSION COMPONENTS	E916	Each Labor Hour
WHEEL COMPONENTS	E917	Each Labor Hour
WHEEL ALIGNMENT	E918	Each Labor Hour
Power Train		
AXLE COMPONENTS	E921	Each Labor Hour
CLUTCH COMPONENTS	E922	Each Labor Hour
DRIVESHAFTS FOR VEHICLE POWER TRAIN	E923	Each Labor Hour
POWER TAKE OFF	E924	Each Labor Hour
TRANSMISSION, MANUAL	E925	Each Labor Hour
TRANSMISSION, AUTOMATIC	E926	Each Labor Hour
TRANSMISSION, GEAR BOX	E927	Each Labor Hour
Engine		
AIR INTAKE SYSTEM	E931	Each Labor Hour
COOLING SYSTEM	E932	Each Labor Hour
EXHAUST SYSTEM	E933	Each Labor Hour
FUEL SYSTEM	E934	Each Labor Hour
ENGINE COMPONENTS	E935	Each Labor Hour
PERFORM OVERHEAD	E936	Each Labor Hour
TURBOCHARGER, SUPERCHARGER	E937	Each Labor Hour
RETARDERS	E938	Each Labor Hour

Figure 700-7 (Cont'd)

SHOP ACTIVITIES

NOVEMBER 1993

DESCRIPTION	ACTIVITY CODE	WORK UNIT
Electrical		
BATTERY	E941	Each Labor Hour
CHARGING SYSTEM	E942	Each Labor Hour
CRANKING SYSTEM	E943	Each Labor Hour
IGNITION SYSTEM	E944	Each Labor Hour
LIGHTING SYSTEM	E945	Each Labor Hour
ENGINE BELTS, IDLERS, PULLEYS	E946	Each Labor Hour
EMISSION CONTROL SYSTEM	E947	Each Labor Hour
Cab & Body		
AIRCONDITIONING, HEATING, VENTILATION	E951	Each Labor Hour
CAB & BODY, BODY PANELS	E952	Each Labor Hour
CAB & BODY, GLASS WORK	E953	Each Labor Hour
WIPER/WASHER	E954	Each Labor Hour
CAB & BODY, INTERIOR	E957	Each Labor Hour
Miscellaneous		
SNOWPLOW & HARNESS	E961	Each Labor Hour
BROOM COMPONENT REPAIR	E962	Each Labor Hour
CHAINS, SPROCKETS, AND BELTS	E963	Each Labor Hour
CLEANING, SANDBLASTING, PAINTING	E964	Each Labor Hour
CRAWLER UNDERCARRIAGE	E965	Each Labor Hour
PORTABLE AIR COMPRESSOR	E966	Each Labor Hour
HYDRAULIC SYSTEM COMPONENTS	E967	Each Labor Hour
ATTACHED EQUIPMENT	E968	Each Labor Hour
ASPHALT EQUIPMENT	E969	Each Labor Hour

Figure 700-7 (Cont'd)

SHOP ACTIVITIES

NOVEMBER 1993

DESCRIPTION	ACTIVITY CODE	WORK UNIT
Miscellaneous (Con't)		
SEASONAL CONVERSION	E971	Each Labor Hour
SHOP EQUIPMENT REPAIR	E972	Each Labor Hour
SPRAY SYSTEM REPAIR	E973	Each Labor Hour
PAINT STRIPER, WEED SPRAY MAINTENANCE	E974	Each Labor Hour
TIRES	E975	Each Labor Hour
MECHANIC TRAVEL	E976	Each Labor Hour
EQUIPMENT MINOR MAINTENANCE	E977	Each Labor Hour
Preventive Maintenance		
Report Hours on Timesheet	E980	
ENGINE OIL CHANGE PM TYPE "A"	EA81	Each Engine Oil change Performed
TRANSMISSION OIL CHANGE PM TYPE "A"	EB81	Each Transmission Oil change Performed
DIFFERENTIAL OIL CHANGE PM TYPE "A"	EC81	Each Differential Oil change Performed
HYDRAULIC OIL CHANGE PM TYPE "A"	ED81	Each Hydraulic Oil change Performed
CHASSIS LUBE PM TYPE "B"	EA82	Each Chassis Lube Performed
NON-SCHEDULED EQUIPMENT INSPECTION, PM TYPE "C"	EA83	Each Inspection Performed
MAJOR EQUIPMENT INSPECTION, PM TYPE "D"	EA84	Each Inspection Performed
NEW EQUIPMENT INSPECTION	EB84	Each Labor Hour
AERIAL EQUIPMENT INSPECTION	EC84	Each Unit Inspected

NOTE – E972, E977, AND E980 ARE ONLY REPORTED ON TIME SHEETS. E964, E974, E975, EB84, & EC84 CAN BE REPORTED ON TIMESHEETS OR JOB ORDERS.

760.02 Major Repair/Overhaul. For equipment needing major repairs or overhauls, an ITD 2736 must be submitted to the Maintenance Services Manager for his approval prior to making repairs. Refer to Figure 700-8.

760.03 Preventive Maintenance. The preventive maintenance program establishes uniform operating procedures throughout the state for the following:

- Lubrication, cleanup, and inspection of vehicles at scheduled intervals. Each supervisor should set a time (two hours a week should be sufficient) to be used for equipment maintenance, cleanup, and safety inspections.

Refer to Figures 700-9 and 700-10.

- General service and tune-up of vehicles at scheduled intervals.
- Reporting vehicle and equipment deficiencies.

760.03.01 Theory. An important element of the Maintenance management program is the planning and scheduling of periodic preventive maintenance services on equipment. The purpose of preventive maintenance is to keep equipment in a safe and serviceable condition and to detect and correct minor deficiencies before they develop into costly repairs and costly downtime of crews.

Effective and economic preventive maintenance services require a systematic scheduling program that makes equipment available for mechanical inspections, lubrications, adjustments, and necessary repairs at predetermined intervals, minimizing downtime and resultant costly disruptions of work schedules due to equipment failures. Be aware that there is an economical point, at which the random failure of equipment can be reduced by preventive maintenance. Experience indicates that the optimum ratio is three scheduled services to one emergency repair, excluding tire and battery repair. At this rate, approximately 75 percent of the work can be planned and scheduled.

760.03.02 Objectives. The objectives of the preventive maintenance program are to increase utilization and minimize downtime; detect abnormal conditions or deficiencies before breakdown occurs; provide a method for scheduling services and routine repairs; and provide a uniform system for reporting and recording work accomplished.

Figure 700-8

ITD 2736 (Rev. 2-05)

Request For Major Repair On Equipment

Equipment Number	District Number	Date
Make	Model	Year
Type of Repair		
Estimated Repair Cost	Requested By (District Maintenance Engineer)	
Comments		

Headquarters' Maintenance Office Only

Complement Status	Utilization Average (Past 2 Years	Equipment Value After Repairs Completed
☐ Approved ☐ Disapproved	Equipment Supervisor's Signature	
Comments		

Figure 700-9

ITD 0685 (Rev. 9-06)
Supply # 27-032455-1

Preventive Maintenance Inspection

Equipment – Specifications

Equipment Number	Make/Model	Engine Size	Fuel Type	Fuel Capacity	Fuel Filter Number

Engine Oil	Oil Filter Number	Tire Pressure	Fan Belt	Power Steering Belt	Alternator Belt

Hydraulic Oil	Transmission Oil	Differential Oil	Preventive Maintenance
			☐ Miles ☐ Hours _____

PM (A) E981 - **Change engine oil and filters every 3,000/100 miles/hour for gasoline; 6,000/100 miles/hour for diesel trucks.** Items needing attention will be noted on ITD 0659 and scheduled for correction. Oil samples of crankcases, hydraulic systems, and gear cases will be taken at specified intervals to determine wear characteristics. When PM (A) is completed, forward white copy to District Shop. District Shop will forward to Data Entry. After Data Entry is completed, white copy may be filed in equipment file. The yellow copy stays in PM book. Chassis Lube done in conjunction with this oil change is included in this activity. Operator will perform this PM (A)

PM (B) E982 - **Chassis lube every 3,000/100 miles/hours.** Lubrication and inspection of all wear points as specified in owner's manual and the preventive maintenance lube sheet for the type of unit involved. This service includes a safety inspection of wear items, leaks, and abnormalities. Items needing attention will be noted on ITD 0659 and scheduled for correction. Forward white copy to shop as in PM (A). Operator will perform this PM (B)

PM (C) E983 - The "nonscheduled" equipment inspection is performed every 90 days without specified scheduling. Form No. ITD 1740 is used as a checklist for PM compliance and equipment condition report. District Traveling Mechanic will perform this PM (C)

PM (D) E984 - The "scheduled equipment" inspection is performed on a scheduled basis every other year or 18,000/600 miles/hours, whichever comes first. Form ITD 1741 is used as a checklist for items to be inspected and deficiencies corrected. Process white copy as instructed in PM (A) for shop superintendent to keep in his file.

District Main Shop Mechanic will perform this PM (D)

Driver Daily Checklist (Report Deficiencies on ITD 0659)

Leaks, General ..... Walk around and look
Belts/Hoses ..... Frayed, torn, leaking, etc.
Engine Oil ..... Carefully check dipstick
Engine Warm-up ..... 1 to 5 minutes
Fuel ..... Fill tank every evening
Gages ..... Check, must function
Lights/Signals ..... Check, must function
Radiator ..... Core clean
Tires/Wheels ..... Check cuts and loose lugs
Brakes ..... Test before leaving yard
Clutch ..... Check before leaving yard
Horn ..... Test
Steering ..... Jerks, pulls, wanders
Windshield Wipers ..... Motor, arms, and blades
Unusual Noises ..... Report
Taillights ..... Lens clean

Figure 700-10

ITD 0659 (Rev. 12-05)
Supply # 27-032411-4

Preventive Maintenance Equipment Management

Equipment Number	Meter Reading	Engine	
T-	☐ Miles ☐ Hours	☐ Primary ☐ Auxiliary	☐ Check if Service Was Outsourced
Vehicle/Equipment Description	Unit Code	Location	
Employee Number (0+4 digits)	Employee Name (Print)		
0			

Activity Codes
EA81 – Motor Oil
EB81 – Transmission Oil
EC81 – Differential/Final Drive Oil
ED81 – Hydraulic Oil
EA82 – Chassis Lube
EA83 – 90-Day Service

Date (mm-dd-yy)	Labor		Total Qts. Refilled	Oil		Oil Sample(s) Taken (Include a completed ITD 0945 with each sample)
	Activity Code (4)	Hours		Oil Brand	Oil Weight	
		.				☐
		.				☐
		.				☐
		.				☐
		.				☐
		.				☐

Comments: _____

Distribution: White copy – District Maintenance Clerk Yellow copy – Remains in Book

ITD 0659 (Rev. 12-05)
Supply # 27-032411-4

Preventive Maintenance Equipment Management

Equipment Number T-
Meter Reading ☐ Miles ☐ Hours
Engine ☐ Primary ☐ Auxiliary
☐ Check if Service Was Outsourced
Vehicle/Equipment Description
Unit Code
Location
Employee Number (0+4 digits) 0
Employee Name (Print)

Activity Codes
EA81 – Motor Oil
EB81 – Transmission Oil
EC81 – Differential/Final Drive Oil
ED81 – Hydraulic Oil
EA82 – Chassis Lube
EA83 – 90-Day Service

Date (mm-dd-yy) | Labor: Activity Code (4), Hours | Total Qts. Refilled | Oil: Oil Brand, Oil Weight | Oil Sample(s) Taken (Include a completed ITD 0945 with each sample)

Comments: _____

Distribution: White copy – District Maintenance Clerk Yellow copy – Remains in Book

760.03.03 Types of Service. All listed preventive maintenance activities (Daily inspection,EA81, EB81, EC81, ED81, EA82, EA83) and all oil sampling is the responsibility of the ITD employees assigned to operate the vehicle and/or equipment.

When changing oils and filters, note items needing attention on Form ITD 0659, from which the Shop Superintendent schedules corrections.

All preventive maintenance work shall be completed before scheduling an annual vehicle and/or equipment inspection with the shop.

760.03.03.01 Daily Equipment Inspection

This inspection is completed to insure that ITD equipment is in proper operating condition prior to the use of the equipment. It is the responsibility of the Maintenance Foreman to insure that all equipment is inspected prior to use. Before an employee accepts the assignment to operate a unit of equipment for the day, they are to perform a daily inspection of the equipment utilizing form ITD 1422 (Daily Equipment Inspection) as a guide for the items to be checked. Once a week and when deficiencies are discovered, complete the form and submit to your supervisor

Refer to Figure 700-11a.

760.03.03.02 Oil Change

EA81, EB81, EC81, ED81 (PM Type A). EA81, EB81, EC81, ED81 activities are divided into service and sampling intervals.

This PM (A) service is to be performed by ITD employees assigned to operate the vehicle and/or equipment. Items needing attention will be noted in the comment section on form ITD 0659. When PM (A) is completed, forward the first copy (white) of the form to the District shop. The District Shop Superintendent will data enter the information into the Equipment Management System (EMS). The second copy (yellow) remains in the PM book.

Service Intervals

EA81 - Engine oil drain and filter replacement is to be performed for all ITD units equipped with gasoline and diesel engines at the following specified intervals:

- Gasoline Engines: Every 3,000 miles or 100 hours of operation.
  - Small Horsepower Engines: Manufacturer's recommendation found in the operator's/owner's manual not to exceed 50 hours of operation.
- Diesel Engines:
  - Stationary Application: Manufacturer's recommendation found in the operator's/owner's manual **or** 100 hours of operation, whichever occurs first.
  - Light-Duty Truck (up to 26,000 GVW): Manufacturer's recommendation found in the operator's/owner's manual **or** 6,000 miles/200 hours of operation, whichever occurs first.
  - Medium and Heavy-Duty Truck: (> 26,00 GVW) Every 9,000 miles/250 hours of operation.
  - All Other Diesel-Powered Equipment: Every 100 hours of operation.
  - Buyback Equipment (Non-ITD): 100 hours of operation.

EB81 - Automatic transmission oil drain and filter replacement is to be performed for all ITD units equipped with gasoline and diesel engines at the following specified intervals:

Gasoline Engine: At the unit's first 24,000 miles/500 hours of operation.

- Diesel Engine:
  - Vehicle/Truck: At the manufacturer's recommendation found in the operator's/owner's manual.
  - Earth Moving/Construction Equipment (including hydrostatic and power-shift design, etc.): Manufacturer's recommendation found in the operator's/owner's manual.

EC81, ED81 - All other fluid compartment oil drains are to be performed for all ITD units:

- Hydrostatic drives, differentials, manual transmissions, hydraulic systems, gear boxes, etc., at the manufacturers recommended service interval found in the operator's/ owner's manual.
- When a visual inspection indicates a problem.
- When oil sample analysis report indicates a failed sample.
- At the request of the Highway Equipment Superintendent, Equipment Analyst, Shop Superintendent, or Chemical Lab.

Sampling Intervals

**Note: Random oil sampling for all compartments may be requested by the Highway Equipment Superintendent on specified equipment for possible interval extension or oil evaluation purposes.*

Engine oil sampling is to be performed for all ITD units equipped with gasoline and diesel engines at the specified intervals to determine wear characteristics:

- Gasoline Engine: At the first 12,000 and 24,000 miles of operation.
  - Small Horsepower Engines: At the first 25 hours of operation.
- Diesel Engines:
  - Stationary Application: Every 200 hours of operation.
  - Light-Duty Truck (up to 26,000 GVW): Every 6,000 miles/ 200 hours of operation.
  - Medium and Heavy-Duty Truck: (<26,000 GVW) Every 9,000 miles/250 hours of operation.
  - All Other Diesel-Powered Equipment: Every 100 hours of operation.
  - Buyback Equipment (Non-ITD): 100 hours of operation.

Figure 700-11a

Daily Equipment Inspection

See Maintenance Manual Sections 54.01 & 760.03.03.01

ITD 1422 (Rev. 11-10)
itd.idaho.gov

Use this form as a guide for daily equipment (pre-trip) inspections. When deficiencies are identified and once/week, complete the form and submit to the Shop Superintendent or Maintenance Foreman.

Date	Equipment Number	Shed Location	Employee

Check the Following

Truck Chassis	OK	Needs Attention
Engine Oil Level	☐	☐
Check for Engine Oil Leaks	☐	☐
Cooling System Level (check overflow container)	☐	☐
Check for Water Leaks	☐	☐
Accessory Belts / Hoses	☐	☐
Fuel Level	☐	☐
Hydraulic Oil Level	☐	☐
Check for Hydraulic Oil Leaks	☐	☐
Wipers & Windshield Fluid Level	☐	☐
Tire Pressure	☐	☐
Tread Depth	☐	☐
Mud Flaps	☐	☐
Back-Up Alarm & Horns	☐	☐

	OK	Needs Attention
Head & Plow Lights	☐	☐
Brake Lights	☐	☐
Turn Signals	☐	☐
Clearance Lights	☐	☐
Flashing & Strobe Lights	☐	☐
Seat Belts	☐	☐
Brake Adjustment/Parking Brake	☐	☐
Body Condition	☐	☐
Gauges Working	☐	☐
Rear View Mirrors	☐	☐
Vehicle Washed & Clean	☐	☐
Steps	☐	☐
Hand Holds	☐	☐

Snow Plow & Harness		
Snow Plow Harness	☐	☐
Snow Plow Blades	☐	☐
Snow Plow Lift Chain	☐	☐

Snow Plow Bolts	☐	☐
Snow Plow Pins	☐	☐
Snow Plow & Harness Welds	☐	☐

Wing Plows		
Wing Plow Mounts	☐	☐
Wing Plow Blades	☐	☐
Wing Plow Lift Cable	☐	☐

Wing Plow Bolts	☐	☐
Wing Plow Pins	☐	☐
Wing Plow Flashing Lights	☐	☐

Sander/De-Icer		
Condition/Damage	☐	☐
Spinner Operation	☐	☐
Conveyor Operation	☐	☐
Check for Chain Tension	☐	☐

Gate Opening	☐	☐
Spinner Flaps	☐	☐
Pre-Wet Operation	☐	☐
Spray Boom Condition	☐	☐

Remarks: (Provide information **on items needing attention**)

Automatic transmission oil sampling is to be performed for all ITD units at specified intervals to determine wear characteristics:

- Units designated 1 ton or over and equipped with:

- Mileage Odometer: At the first 12,000 and 24,000 miles of operation.
- Hour Meter: At the first 250 and 500 hours of operation.

- After the first specified hours of operation, reduce the sampling interval to once a year.

All other fluid compartment oil sampling is to be performed for all ITD units at specified intervals to determine wear characteristics:

- Units equipped with hydrostatic drives, differentials, manual transmissions, hydraulic systems, gear boxes, etc., and equipped with:
  - Mileage Odometer: At the first 12,000 and 24,000 miles of operation.
  - Hour Meter: At the first 250 and 500 hours of operation.

After the first specified hours of operation, reduce the sampling interval to once a year.

At the request of the Equipment Analyst, Shop Superintendent, or Chemical Lab.

Guidelines for submitting oil samples are:

- ITD-owned equipment:
  - Submit oil samples to the Central Chemistry Lab in Boise.
  - Samples can be sent via the U.S. Postal Service using the pre-addressed, self-adhesive mailing label included in the sample kit.
  - The oil analysis sample form ITD 0945 included in the sample kit must be completed and a copy returned with the sample.
- Buyback equipment:
  - Oil samples taken on buyback equipment are to be submitted to the Material Chemistry Lab.
  - Any required documentation included in the sample kit must be completed and returned with the oil sample.

Refer to Fig 700-11b

760.03.03.03 Chassis Lube EA82 (PM Type B).

Inspect and lubricate wear points as specified in the owner's manual and the preventive maintenance lube sheet for the type of unit involved. Inspect and service special equipment and hydraulic systems as necessary including a safety inspection of wear items, leaks and abnormalities.

This PM (B) service is to be performed by ITD employees assigned to operate the vehicle and/or equipment. Items needing attention will be noted in the comment section on form ITD 0659.

Forward the first copy (white) of form ITD 0659 to the District shop as outlined in PM (A).

760.03.03.04 90-Day Service EA83 (PM Type C).

The nonscheduled equipment inspection is performed every 90 days without specified scheduling. Form ITD 1740 is used as a checklist for PM compliance and equipment condition report.

This PM (C) service is to be performed by ITD employees assigned to operate the vehicle and/or equipment. Inspect and perform activities listed on form ITD 1740. Note all items needing attention.

A completed ITD 0659 form shall accompany the completed ITD 1740 form when reporting this activity. Forward the first copy (white) of form ITD 0659 along with the form ITD 1740 to the District shop as outlined in PM (A).

Refer to Figure 700-12.

760.03.03.05 Annual Inspection EA84 (PM Type D).

The scheduled equipment inspection is performed on a scheduled basis of every twelve months. The maximum amount of time allowed to pass between inspections shall be twenty-four months or 9,000 hours/18,000 miles, whichever occurs first. Form ITD 1741 is used as a checklist for items to be inspected and deficiencies corrected.

This annual inspection is to be performed by trained shop personnel and the time spent is to be recorded on a shop job order. Inspect special maintenance items and service emission control devices as specified by the manufacturer's recommendations. Items needing attention will be scheduled for correction.

Check for PM (A) EA81and PM (B) EA82 scheduled service and sampling intervals and perform if required. The completed ITD 1741 form shall be attached to the job order when reporting this activity for the District Shop Superintendent to keep in his file.

Refer to Figure 700-13.

Fig 700-11b

ITD 0945 (Rev. 5-05)
itd.idaho.gov

Preventive Maintenance Oil Analysis Sample

Equipment Number	Year	Make	Model	District Number
T-				

Fuel Type	Meter Type	Oil Brand	Oil Weight
☐ Gas ☐ Diesel	☐ Miles ☐ Hours		

Date Sampled	Sampled By	Employee Number	Employee Name

Location	Supervisor/ Foreman's Name

Oil must be warm and well mixed before sampling.

Please Check Compartment Sampled

☐ Main Engine	☐ Right Tandem	Graders, etc.
☐ Secondary Engine	☐ Left Tandem	☐ Left Front Hub
☐ Rear Differential	☐ Hydraulic	☐ Right Front Hub
☐ Front Differential	☐ Transfer Case	☐ Left Inner F.D.
☐ Main Transmission	☐ Torque Converter	☐ Left Outer F.D.
☐ Sec. Transmission (Aux.)	☐ Final Drive	☐ Right Inner F.D.
☐ Back Tandem	☐ Gear Box	☐ Right Outer F.D.
☐ Front Tandem	☐ Air Compressor	☐ Other: _____

Subtract Miles/Hours at Last Oil Change from Current Miles/Hours to get Total Miles/Hours on Oil Sample

Current Miles/Hours _____

Miles/Hours at Last Oil Change (-) _____

Total Miles/Hours on Oil Sample (=) _____

Was Oil Drained?	Amount of Oil Added Since Last Oil Change	Date Received in Lab	Lab Number
☐ Yes ☐ No	Qts.		

Comments

Distribution: White – With Sample Yellow – District Maintenance Clerk

ITD 0945 (Rev. 5-05)
itd.idaho.gov

Preventive Maintenance Oil Analysis Sample

Equipment Number T- | Year | Make | Model | District Number

Fuel Type ☐ Gas ☐ Diesel | Meter Type ☐ Miles ☐ Hours | Oil Brand | Oil Weight

Date Sampled | Sampled By | Employee Number | Employee Name

Location | Supervisor/ Foreman's Name

Oil must be warm and well mixed before sampling.

Please Check Compartment Sampled

☐ Main Engine ☐ Right Tandem Graders, etc.
☐ Secondary Engine ☐ Left Tandem ☐ Left Front Hub
☐ Rear Differential ☐ Hydraulic ☐ Right Front Hub
☐ Front Differential ☐ Transfer Case ☐ Left Inner F.D.
☐ Main Transmission ☐ Torque Converter ☐ Left Outer F.D.
☐ Sec. Transmission (Aux.) ☐ Final Drive ☐ Right Inner F.D.
☐ Back Tandem ☐ Gear Box ☐ Right Outer F.D.
☐ Front Tandem ☐ Air Compressor ☐ Other: _____

Subtract Miles/Hours at Last Oil Change from Current Miles/Hours to get Total Miles/Hours on Oil Sample

Current Miles/Hours _____

Miles/Hours at Last Oil Change (-) _____

Total Miles/Hours on Oil Sample (=) _____

Was Oil Drained? ☐ Yes ☐ No | Amount of Oil Added Since Last Oil Change Qts. | Date Received in Lab | Lab Number

Comments

Distribution: White – With Sample Yellow – District Maintenance Clerk

760.03.03.006 Equipment Antifreeze Replacement.

On or before September 15, the antifreeze solution shall be checked for required freeze protection in all water-cooled vehicles and/or equipment. This annual antifreeze inspection is to be performed by trained shop personnel and the time spent is to be charged to Preventative Maintenance activity E980 on the employee's time sheet.

Additional test requirements include the use of litmus test strips to test the acid content of the antifreeze solution. If the antifreeze is not acidic, it may be used until the next schedule antifreeze check. If the antifreeze is acidic, then the complete cooling system must be drained, flushed, and refilled with a new antifreeze solution mixture of required strength.

If the antifreeze solution has become diluted and does not pass the freezing requirement (but it does pass the litmus strip test), drain a portion of the radiator antifreeze solution and add enough straight antifreeze concentrate to obtain the required freeze protection.

Attach dated radiator tags or write with a marker to provide a record of antifreeze age and strength.

760.03.03.007 Air Filter Inspection.

Proper air filter inspection is essential to the life of an engine. Replacing the air filter too soon instead of when scheduled becomes expensive and can be just as detrimental to the engine as not replacing it enough or not at all. The more times the air intake system is open for inspection, the more chances there are for dirt to enter the engine. Air filter inspection should be conducted according to the manufacturer's recommendation found in the operator's/owner's manual.

- Do not tap or blow into the air filter when checking for dirt. Chances are the air intake system is still open and dirt may enter into the engine.
- Never clean and reuse an air filter. The cost of a new air filter is cheaper than the replacement cost of an engine.
- Before installing a new air filter, always check to make sure the new replacement filter has the same physical dimensions (exact match) as the old filter.
- All diesel engine trucks and off-road earth moving equipment are equipped with an "Air Cleaner Service Indicator."
    - This device allows the operator to monitor and check the condition of the air filter without opening the air intake system.
    - Please review the operator's/owner's manual for the proper use of the Air Cleaner Service Indicator in checking filter condition and testing the operation of the Air Cleaner Service Indicator.

760.03.03.008 Deficiencies.

Report all vehicle and/or equipment deficiencies to an immediate supervisor. Document all deficiencies by completing the comment section on form ITD 0659

Major deficiencies are those items that constitute a hazard to the operator or traveling public or that could result in further damage to the equipment if allowed to operate in that condition.

If you discover what you believe is a major deficiency, get clearance from your supervisor before further operation of the vehicle and/or equipment.

Minor deficiencies are those items that are not serious enough to create safety hazards to the extent of grounding the vehicle.

760.03.03.08 Unassigned District 61 Equipment (Traveling Equipment).

An equipment inspection is to be performed on District 61 equipment that is not district assigned and is shared throughout the state. Inspections will be performed when that District 61 equipment enters the district and again when it leaves. Form ITD 2758 is used as a check list for items to be inspected and deficiencies corrected. A copy of this check list is to be sent to the Maintenance Services upon completion. Items needing attention will be scheduled for correction by the District Shop Superintendent.

Preventative Maintenance PM (A) EA81 and PM (B) EA82 activities are to be included and performed by all ITD employees assigned to operate the vehicle and/or equipment.

Refer to Figure 700-14.

760.03.04 Preventive Maintenance Reporting. This section outlines preventive maintenance reporting procedures.

760.03.04.01 Equipment Specification Card ITD 0685.

The information listed on page 1 of the ITD 0778 booklet (To Be Completed by Shop Supervisor) is data required for field preventive maintenance, i.e., model numbers, capacities, sizes, filters, etc., of equipment components. When new vehicles and/or equipment arrive in your district, complete this information section of the booklet and keep the booklet with the unit at all times. When the booklet needs to be replaced, transfer this information to the new booklet.

Refer to Figure 700-9 in Section 760.03.

Figure 700-12

ITD 1740 (Rev. 3-05)

Non-Scheduled Equipment Inspection

See Maintenance Manual 05-110.4

Date	Equipment Number	Employee Number	Employee Name

To ensure proper inspection, conduct the inspection in the following sequence:

ITD 0778, Equipment Service Record, is Properly Used ☐ Yes ☐ No	Current Hours or Miles	Hours or Miles at Last Service

		Good	Fair	Poor	If Poor, Please Explain
Body Appearance	Outside	☐	☐	☐	
	Inside	☐	☐	☐	

Check	OK	Needs Attn.	Remarks
Engine Oil Level	☐	☐	
Cooling System Level (check overflow container)	☐	☐	
Accessory Belts / Hoses	☐	☐	
Battery Appearance	☐	☐	
Air Cleaner Assembly	☐	☐	
Tire Condition (abnormal wear)	☐	☐	
Tire Inflation (including spare)	☐	☐	
Inspect for Leaks			
Engine	☐	☐	
Transmission	☐	☐	
Differential	☐	☐	
Cooling System	☐	☐	
Hydraulic System	☐	☐	
Check for Operation			
Oil Pressure Gauge	☐	☐	
Volt/Ammeter Gauge	☐	☐	
Temperature Gauge	☐	☐	
Fuel Gauge	☐	☐	
Speedometer / Hour Meter	☐	☐	
Check Safety Devices			
Lights and Turn Signals	☐	☐	
Emergency Warning Lights	☐	☐	
Brakes / Emergency Brake	☐	☐	
Horn	☐	☐	
Wipers and Washers	☐	☐	
Windows	☐	☐	
Rear View Mirrors	☐	☐	
Seat Belts	☐	☐	

Comments

Figure 700-13

ITD 1741 (Rev. 11-03)

EA84 Annual Scheduled Equipment Inspection

Inspector	Equipment Number	Job Order Number	Date

Mileage/Operating Hours	Engine
	☐ Gas ☐ Diesel

Steam Clean
☐ Engine ☐ Undercarriage

Tires – Record Tire Tread Depth Measurements

Front Axle	/32	/32		
2nd Axle	/32	/32	/32	/32
3rd Axle	/32	/32	/32	/32

Engine Tune Up	OK	Repair	Comments
Distributor	☐	☐	
Spark Plugs	☐	☐	
Spark Plug Wires	☐	☐	
Battery	☐	☐	
Alternator	☐	☐	
Starter	☐	☐	
Carburetor	☐	☐	
Injection System	☐	☐	
Fuel Pump	☐	☐	
Emission Piping	☐	☐	
Emission Filters	☐	☐	
Fuel Cap	☐	☐	
Fuel Filters	☐	☐	
Air Cleaner	☐	☐	
Exhaust System			
Turbo Charger	☐	☐	
Manifolds	☐	☐	
Exhaust Pipe	☐	☐	
Cat. Converter	☐	☐	
Muffler	☐	☐	
Tailpipe	☐	☐	
Exhaust Hangers	☐	☐	
Power Train			
Engine	☐	☐	
Clutch	☐	☐	
Transmission	☐	☐	
Front Axle	☐	☐	
Front Drive Line	☐	☐	
Main Drive Line	☐	☐	
Fr. Diff. Tand.	☐	☐	
Driveline Tand.	☐	☐	
Rear Diff. Tand.	☐	☐	
Air Compressor	☐	☐	
Cooling System			
Water Pump	☐	☐	
Radiator	☐	☐	
Hoses	☐	☐	
Heater Hoses	☐	☐	
Anti-Freeze	☐	☐	
Thermostat	☐	☐	
Air Conditioning	☐	☐	
Block Heater	☐	☐	

Undercarriage	Ok	Repair	Comments
Power Steering Pump	☐	☐	
Steering Gear	☐	☐	
Shock Absorbers	☐	☐	
King Pins	☐	☐	
Ball Joints	☐	☐	
Drag Link	☐	☐	
Tie Rods	☐	☐	
Idler Arm	☐	☐	
Brakes	☐	☐	
Emergency Brake	☐	☐	
Brake Drums	☐	☐	
Brake Cans/Cyls.	☐	☐	
Wheels & Lug Bolts	☐	☐	
Wheel Bearings	☐	☐	
Walking Beam Bushings	☐	☐	
Springs	☐	☐	
Wheel Alignment	☐	☐	
Hydraulic System			
Pump	☐	☐	
P.T.O. Drive	☐	☐	
Hoses	☐	☐	
Valves	☐	☐	
Controls	☐	☐	
Cylinders	☐	☐	
Filter	☐	☐	
Safety Equipment			
Windshield	☐	☐	
Door Glass	☐	☐	
Rear Window	☐	☐	
Rearview Mirror	☐	☐	
Windshield Wipers	☐	☐	
Headlights	☐	☐	
Taillights	☐	☐	
Strobe Light	☐	☐	
Horn	☐	☐	
Gauges	☐	☐	
Speedometer	☐	☐	
Reflector Kit	☐	☐	
Seat Belts/Seats	☐	☐	
Back Alarm	☐	☐	
First Aid Kit	☐	☐	
Fire Extinguisher	☐	☐	

Comments

760.03.04.02 Fluid Use Record (ITD 0778 Booklet).

All ITD personnel are to perform daily checks before driving or operating any vehicle or piece of equipment. When performing daily or scheduled inspections, this record is used to record all fluids that were added.

In addition to recording all oils and coolant that were added to the unit, *the driver or operator is also required to enter the amount of fuel used at each refueling interval*. By recording fuel usage, the driver or operator can then verify:

- If the recorded meter/odometer reading is in correct sequence with previously entered meter/odometer readings.
- If the unit is equipped with multiple meters and if the correct meter/odometer is being used to record fuel purchases.
- If the meter/odometer has developed a problem or has quit working altogether.

760.03.04.03 Equipment Preventive Maintenance and Service.

Inspection Record (ITD 0778 Booklet). Record pre-trip inspection information or inspection of specific items that the manufacture has scheduled. Record the information for those items that have been inspected.

760.03.04.04 ITD 0659, Preventive Maintenance Equipment Management.

A pad of this form is required to be kept in every vehicle and/or piece of equipment unless otherwise specified by the District Shop Superintendent. Complete the form for any or all of the defined preventive maintenance activities that are performed. A copy of this form notifies a computerized scheduling program that preventive maintenance service has been completed and automatically updates the service record for each vehicle or piece of equipment.

If the vehicle or piece of equipment is outsourced for any preventive maintenance work, it is the responsibility of the individual overseeing and inspecting the work to complete and submit form ITD 0659.

Proper completion of this form is essential in determining the districts' equipment budget allocation.

Refer to Figure 700-10 in Section 760.03.

Form Distribution: First copy (white) is forwarded to District Shop for data entry into the Preventative Maintenance (PM) system; second copy (yellow) is retained in the PM book. The PM book is then kept in the vehicle and/or equipment for future reference.

760.03.04.05 ITD 1740, Non-Scheduled Equipment Inspection.

Complete this form for Preventive Maintenance service PM (C) EA83, 90-Day Service. This form provides an orderly means of inspecting and servicing the vehicle components and a means of reporting the service and vehicle condition to supervisory and/or District shop personnel.

Refer to Figure 700-12 in Section 760.03.03.03.

Form Distribution: Single copy sent to the District Shop Superintendent

760.03.04.06 ITD 1741, Scheduled Equipment Inspection.

Complete this form for preventive maintenance service PM (D) EA84, Annual Inspection. This scheduled inspection is to be conducted by trained shop personnel. The form provides an orderly means of inspecting and servicing the vehicle components. Any additional work discovered from the inspection can then be addressed by the District Shop.

Refer to Figure 700-13 in Section 760.03.03.04.

760.03.04.07 ITD 0945, Preventive Maintenance Oil Analysis Sample.

This form is used to record oil sampling information that is pertinent to the type of oil sampled and what vehicle or piece of equipment it was taken from.

Form Distribution: First copy accompanies sample to the Materials Chemistry Lab; second copy retained by the individual taking the sample.

Refer to Figure 700-11 in Section 760.03.03.01.

Figure 700-14

ITD 2758 (Rev. 9-06)
itd.itdaho.gov

Condition Report For District 61 Equipment

This report must be completed and signed by the Shop Superintendent when transferring this equipment to another District.

District	Foreman Assigned		Shop Superintendent	
Equipment Number	Date Received	Miles/Hour Meter Reading	Date Leaving	Miles/Hour Meter Reading

Description	OK	Comment
Clean Equipment	☐	
Complete Lubrication	☐	
Change Oil and Filter	☐	
Check All Fluid Levels	☐	
Drain Diesel Fuel Filter	☐	
Check Hydraulic Cyl. For Leaks	☐	
Repair Any Other Leaks	☐	
Check Brake Operation	☐	
Instruments and Lights Working	☐	
Steering Left and Right Operational	☐	
Track Pad Bolts Tight	☐	
Check Track and Undercarriage	☐	
Cutting Bits/Teeth Need Replacing	☐	
PM Book With Machine	☐ Yes ☐ No	
Overall Condition When Received		
Overall Condition On Departure		
General Comments:		

Distribution: Original (White) – Equipment Superintendent Copy (Yellow) – Receiving District Copy (Pink) – Sending District

760.03.05 Preventive Maintenance Service Scheduling. This section outlines the scheduling method and procedures.

760.03.05.01 Scheduling Method.

Data from the various reporting forms are entered into computer systems to update the service records on each vehicle or piece of equipment. A computer program schedules some service activities at regular time intervals throughout the year. Partial service (e.g., 90-day service) is scheduled to coincide with annual service to avoid duplicate effort. Other equipment services are based on and scheduled according to the mileage or running time accumulated by the vehicle or piece of equipment.

Reports are sent to appropriate personnel showing what service has been done to each piece of equipment and what should be done in the next time interval.

Review the reports and take necessary coordinated action to ensure that preventive maintenance services are accomplished.

See Figure 700-15.

760.03.05.02 PM Scheduling Procedure.

All operators will perform the following procedures when scheduling preventative maintenance work:

- Inspect the equipment before and after operation and ensure the equipment is in a safe, normal operating condition.
- Check the current hour meter/speedometer and date against the ITD 0659 located in pad form in the vehicle for the hour meter/speedometer reading and date when the last service was performed. Recommended service intervals for determining if servicing is needed begin on page 4 of this booklet.
- Upon completion of scheduled preventative maintenance activities, complete an ITD 0659 preventative maintenance form and note all known or discovered deficiencies in the comment section located at the bottom of the form.
    - Please refer to Section 760.03.03.07 of this manual for definition of deficiencies and how to report them.
    - Once completed, the first copy (white) of the ITD 0659 is removed from the book and is submitted to an immediate supervisor for review. The supervisor will then forward to the District Shop Superintendent for data entry into the Preventative Maintenance system.
    - The supervisor will then contact the District shop to make arrangements for all required repairs.
- If a commercial company is used to perform preventative maintenance activities, it is the responsibility of the operator to:
    - Recorded all services performed on the ITD 0659 form.
    - Note all deficiencies in the comment section of the ITD 0659 form.
    - Attached the sales receipt (or a copy) to the first copy (white) of the ITD 0659 form.

- Submit the ITD 0659 form and sales receipt to an immediate supervisor or District Shop Superintendent for data entry into the Preventative Maintenance system.

Shop Superintendent or Field Mechanic performs the following procedures:

- Ensure that the proper forms are available in vehicles/equipment and instruct individuals in the proper use of the forms and reporting preventive maintenance services.
- Review completed preventive maintenance forms and equipment operator reports to ensure that deficiencies recorded thereon are corrected.
- Review computer reports on scheduled preventative maintenance activities. In the case of vehicles/equipment reported as overdue for scheduled preventative maintenance, contact supervisory personnel assigned to the equipment and verify that a required service is performed or schedule an appointment in accord with the last service date or mileage/hours shown on the report.
- Maintain a maintenance history file on each piece of equipment for future reference regarding repairs or servicing.

Supervisory personnel assigned the equipment perform the following procedures:

- Assure that assigned equipment is serviced in compliance with the prescribed service intervals.
- When PM services are performed by ITD personnel or commercial stations, see that the proper forms are completed and forwarded to District Shop Superintendent for data entry of the information into the Preventative Maintenance system.
- Contact the District Shop Superintendent when a scheduled inspection or repair is necessary. Schedule the work in advance, if possible.

760.03.06 Preventive Maintenance Responsibilities. This section identifies headquarters and district responsibilities for preventive maintenance.

760.03.06.01 Maintenance Services – Headquarters.

Maintenance Services is responsible for providing an efficient, effective and track-able equipment preventive maintenance program for statewide use, and is also responsible for review of the district implementation of the program.

760.03.06.02 Equipment Manager – District.

The District Shop Superintendent is responsible for implementing the preventive maintenance program as outlined in Sections 760.03 through 760.03.05.02 of the Maintenance Manual.

760.03.07 Permanent Equipment Maintenance Record Form ITD 0778. Equipment is purchased to assist ITD employees to do their jobs more effectively and efficiently over a long period of time. The operators of the equipment are responsible for its safe operation, preventative maintenance and records at prescribed intervals as recommended by the Equipment Superintendent and the Operator's manual.

Form ITD 0778, Permanent Equipment Maintenance Record, is to be located in all motorized equipment units and is to be utilized by the operator(s) for a permanent record of any preventative maintenance performed, fluids added and/or fuel used.

Figure 700-15

Equipment Operator

1. Inspect the equipment before, during and after operation and ensure the equipment is in safe, normal operating condition.
2. Complete the equipment operators report, Form ITD-659, when operator Preventive Maintenance services are completed
   a) If a minor deficiency is noted that does not require grounding the vehicle until it is corrected, the first copy of ITD-659 is removed from the book and routed to supervisory personnel for scheduling or repair.
   b) If a major deficiency is discovered that should be corrected prior to further operation, the first copy of ITD-659 will be routed to supervisory personnel for scheduling of repairs.
3. Check the curent hour meter/speedometer and date against the ITD-659 located in pad form in the vehicle for the speedometer hour meter reading and date when the last service was performed. Recommended service intervals will be located on the cover for determination if a service is due.
4. If a commmercial service is performed, make sure that the service is recorded on the PM service form and a copy sent to supervisory personnel for an update to the Preventive Maintenance Scheduling System. Important: All services performed must be recorded on the ITD-659 Form and a copy sent to the supervisory personnel for an update to the Preventive Maintenance Scheduling System.

Personnel Responsible for Preventive Maintenance (Shop Supervisor or Field Mechanic

1. Ensure that the proper forms are available in the vehicles and appropriate facilities for reporting Preventive Maintenance services.
2. Review Preventive Maintenance services lube forms and equipment operatos's report fand ensure that deficiencies recorded thereon are corrected.
3. Review computer reports of services accomplished and services scheduled. In the case of delinquent vehicles, contact supervisory personnel asigned the equipment and verify that a service is performed or schedule an appointment in accord with the last service date or mileage/hours shown on the report.
4. Maintain a maintenance history file on each piece of equipment for reference in future repairs or servicing.

Supervisory Personnel Assigned the Equipment

1. Assure that assigned equipment is serviced in compliance with the prescribed service intervals.
2. If services are accomplished by operating personnel or commercial stations, see that the proper forms are completed and forwarded to personnel asigned the responbility for Preventive Maintenance (District Shop Superintendent or Field Mechanic).
3. Contact the appropriate shop personnel when a service or repair is necessary and schedule the work in advance, if possible.

764.00 EQUIPMENT TIRE MAINTENANCE

A regular program of inspecting tires is essential for providing the longest tire life for the lowest possible cost and in the prevention of rapid air loss resulting in subsequent tire failure.

All vehicle and/or equipment tires: Tire inspection is to be performed by ITD employees assigned to operate the vehicle and/or equipment. As a minimum, tires should be inspected at the time of the regular preventive maintenance checks. More frequent checks are required during cold weather periods.

The correct procedure in checking tires is to always check tire inflation pressures when tires are cold. Adjust tire pressures in compliance with the manufacturer's printed tire pressure information located on the sidewall of tire. Never bleed air from hot tires to relieve normal pressure build-up or to adjust tire pressure. Do not allow tires to become under inflated. Always maintain proper tire pressure by checking tire pressure at frequent intervals.

Operators are required to maintain at least 4/32" of tread groove depth on the front tires and 2/32" remaining tread depth on the other wheel positions.

Truck tires: The single tire cold inflation pressure should be 105 psi for 11R22.5 tires and 90 psi for dual tires. For the 315/80R22.5 tires, the cold inflation pressure should be 130 psi during winter operations and 115 psi during summer operations.

Make sure mated dual tires are at equal pressure levels. Use sealing-type valve caps. It is necessary to closely match tire revolutions per mile with tandem drive axle units coupled directly together, as when an inter axle differential does not exist or is locked out. The difference in circumference of the tires on a dual assembly should never exceed 1-1/2 inches.

When mounting duals on a truck, there will generally be some difference of the two tires (within the limits described above). Mount the small tire on the inside. The outside tire wears faster than the inside tire. When mounting the duals on a vehicle, locate the two valves diametrically opposite.

Caution: It is very important not to mix radials and bias ply tires on the same axle due to different load/deflection characteristics of these two types of tires.

764.01 Retreaded Tires on Highway Vehicles. Since it is becoming more and more difficult to dispose of used tires, the need to recycle tires is greater now than in previous years. Therefore, all on-highway tires with a 16 inch wheel diameter or larger will be submitted for retreading/recapping. Used tires with a wheel diameter of less than 16 inches and those with a wheel diameter of 16 inches and larger that are not suitable for retreading/recapping will be stored and sold at public auction.

Retreaded/recapped tries are to be utilized on drive axle and trailer axles only. Retreaded/recapped tires are not to be utilized on steering axles.

764.02 Studded Snow Tires. It is the policy of the Chief Engineer and Maintenance Services that the only vehicles allowed to operate with studded tires are Incident Management service patrol trucks and rotary snowplows. All other types of equipment shall not to be equipped with studded tires.

765.00 EQUIPMENT MODIFICATIONS

For any equipment modifications or design changes deemed necessary, a letter of request must be submitted to the Maintenance Services Manager describing in detail the intended modifications, the equipment number, the description, and the estimated cost. No modifications shall be accomplished without the approval of the Maintenance Services.

Modifications, whether electrical, mechanical or a hydraulic function directly affecting the performance, operation or safety of any vehicle or unit of road equipment shall be conducted by Shop Personnel under the direction of the Shop Superintendent only. Operators/users are not to be performing equipment modifications.

766.00 BROKEN METERS

It is the responsibility of the operator to ensure that hour meters and odometers are working properly. All deficient hour meters and odometers are to be reported to the Shop Superintendent as soon as the deficiency is discovered.

Upon receiving information that a unit has a malfunctioning hour meter or odometer, the District Shop is to repair the meter within fifteen (15) working days. The Shop Superintendent is to complete form ITD 2715 Odometer Replacement and submit it to the Highway Equipment Superintendent.

Refer to Figure 700-16.

770.00 OPERATION AND UTILIZATION

770.01 Equipment Design Limits. It is illegal to operate Department vehicles on public highways if weight or size exceeds the established legal limitations unless a special permit allows for greater weight. Legal allowable weight and size limits are set forth in Idaho motor vehicle laws, Title 49, Chapter 10, of the Idaho Code. Department vehicles are designed and procured to meet these requirements. Districts are responsible for controlling these limits on their assigned vehicles with the operator being responsible for overweight citations.

When Department vehicles are loaded in such a manner that the legal allowable weight and size limits as set forth in the Idaho motor vehicle laws , Title 49, Chapter 10 of the Idaho Code are exceeded, the District Equipment Manager is to contact the Special Permit Section and obtain a permit. Department vehicles are not exempt from laws governing size and weight and can be issued citations if the unit is in noncompliance.

770.02 Utilization Reporting Procedures. Proper reporting of equipment utilization is the responsibility of all employees who operate Department owned vehicles and equipment. Improper reporting misrepresents the true cost of operating the equipment fleet.

Utilization reporting will be required when an Asset Management System is implemented.

Figure 700-16

ITD 2715 (Rev. 2-06)

Meter Replacement And Management

Equipment Number **T-**	Meter Reading	Engine ☐ Primary ☐ Auxiliary
Vehicle/Equipment Description	Unit Code	Location
Employee Number (Mechanic Making Repairs) 0 (0 plus 4 digit employee number)	Employee Name (print)	
Meter: ☐ Repair ☐ Replace		

Date			New Meter Reading (6)	
Month (2)	Day (2)	Year (4)		

Comments		
Date Submitted	Signature	Title

ITD 2715 (Rev. 2-06)

Meter Replacement And Management

Equipment Number **T-**	Meter Reading	Engine ☐ Primary ☐ Auxiliary
Vehicle/Equipment Description	Unit Code	Location
Employee Number (Mechanic Making Repairs) 0 (0 plus 4 digit employee number)	Employee Name (print)	
Meter: ☐ Repair ☐ Replace		

Date			New Meter Reading (6)	
Month (2)	Day (2)	Year (4)		

Comments		
Date Submitted	Signature	Title

770.02.01 ITD-9 Unassigned Motor Pool Equipment Rental Charges. Headquarters and each district maintain a motor pool of automobiles and other general use equipment for Department business. Reporting of usage of these vehicles is accomplished through the use of the ITD-9 form.

All out-of-town trips are to be recorded on the form by the person utilizing the vehicle or equipment. Miles/hours of use on the vehicle are chargeable to a specific project, training class or to the organization of the operator of the vehicle or equipment.

Short trips to a local business establishment or meetings for Department business are charged to motor pool operations at the end of the reporting period as a single line entry on the ITD-9.

Refer to Figure 700-17.

770.03 Personal Auto Use. Employees, who conduct Department business at a location other than their assigned duty station may use their personal vehicle rather than Department motor pool vehicles when the use is convenient for the employee and economical for the Department. Use of personal vehicles requires pre-approval by the supervisor. Various modes of travel, more than one employee making the same trip, time factors, etc. must be considered before personal vehicle usage can be approved. The employee shall complete form ITD 0633, Travel Cost Comparison and Approval, before using their personal vehicle.

For those trips that are approved by the supervisor, the employee shall record business mileage on an ITD 0103, Individual Expense Account form. Reimbursement for usage of the personal vehicles shall be at the current mileage reimbursement rate at the time of travel and is based on the standard ground mileage between the employee's duty station and the destination point(s) of the trip.

770.04 Vehicle Speed Limits. Employees operating state owned vehicles are to obey all traffic laws including the posted speed limit. Traffic laws are also to be observed when using personal vehicles on department business.

Although Idaho law restricts trucks with 5 or more axles to a maximum speed of 65 MPH, the general public believes that all trucks are restricted to this speed. In order to promote a positive perception by the public, minimize fuel consumption and tire wear, and increase safety, all ITD trucks will be restricted to a maximum speed of 65 MPH. Trucks with computer controls will have the manual full throttle control set at a maximum of 68 MPH while the maximum cruise control setting will be set at 65 MPH.

770.05 Utilization Review. At the conclusion of each calendar year, Maintenance Services will provide each district with a report detailing the amount of utilization for each unit of equipment. The District Engineer or designee shall review the report to ensure that all equipment is being utilized to stated department standards. See Figure 700-5. For those units of equipment that were utilized below department standards, written justification shall be provided to Maintenance Services for retaining the unit within ITD's equipment fleet. Justification shall include a description of the vehicle's intended use and estimated annual mileage.

770.06 Rental of Department Vehicles and/or Equipment to Other Government Agencies. Any District considering renting/loaning vehicle(s) or equipment to another government agency for emergency or piece work must evaluate the vehicle/equipment complement within the District to ensure that the District's needs during the rental period

can be met. Department vehicles or road equipment may be rented to other government agencies by using the following rules:

The other Government Agency shall:

- For a State Agency: Agree that any damage losses that might occur will be reported against that particular agency's loss history. For a Non-State Agency: Provide certificates of insurance, verifying liability and physical damage coverage for the vehicle or equipment; and worker's compensation coverage or other suitable medical coverage for all occupants of the vehicle or equipment.
- Provide a statement of how the vehicle or equipment will be used and by whom. Identify any others who will be transported in the vehicle/equipment and certify that they will be covered by medical insurance.
- Verify that all drivers have a valid Idaho driver's license or other appropriate operator's license and a good driving record.
- Pay the department's established rental rate for the vehicle/equipment and pay for fuel during the rental period.
- Pay equipment damage, other than normal wear, and including any applicable deductibles.
- Pay an additional 7% administrative fee.
- Notify the department's designated official with all pertinent information, in the event of an accident involving the vehicle or equipment, or any other situation that may result in a claim.

Idaho Transportation Department shall:

- Complete an Intergovernmental Rental Agreement ITD 1234 that details the terms and conditions of the agreement prior to providing the vehicle or equipment (see attached).
- Verify that the other agency is completely responsible for any losses (claims) to third parties, that their insurance is primary, and that the certificate of insurance is in effect.
- Provide a vehicle or equipment that is in good operating condition and has a full tank of fuel.
- Provide all preventive maintenance (oil changes and servicing) and all repairs due to normal use of the vehicle or equipment.

Whenever equipment is rented, an ITD accounts receivable project number shall be assigned and an ITD-9, Unassigned Motor Pool Equipment Rental Charges, shall be completed for each vehicle/equipment. When the vehicle/equipment is returned to ITD, the completed ITD-9 shall be sent to the Financial Services' Projects Unit. A copy of the form shall also be sent to Revenue Operations who will bill the other agency for the rental rate of the vehicle/equipment and the 7% administrative fee.

Any questions on the appropriate rental rate for equipment should be directed to the Equipment Analysts.

Questions related to insurance or driving records should be directed to the department's Employee Safety/Risk Management office.

The District must review and either reissue or terminate the Intergovernmental Rental Agreement at least annually on the date that the agreement is signed.

Refer to Figure 700-19A

770.07 Towing and Hauling of Department Vehicles and/or Equipment. Trucks will be equipped with a towing rope, chain or cable in good condition and of sufficient capacity to pull vehicles without breaking. Towing of vehicles with towing rope, chain or cable will be limited to only assisting vehicles that are disabled or stuck.

All ITD vehicles and equipment that need to be towed or transported shall be hauled on an approved tow trailer. Properly sized safety chains and/or binders/tie-downs will be used whenever any vehicle or trailer is transported from one location to another by another ITD vehicle.

If it is absolutely necessary for one ITD vehicle to tow another ITD vehicle any distance, only a solid hitch will be used to prevent damage from the towed vehicle ramming the rear of the towing vehicle.

770.08 Towing of Public Vehicles. A towing device will be used only to remove a public vehicle from a hazardous location, when obstructing traffic, aiding law enforcement, opening lane(s) of traffic, or when endangering the traveling public, and only far enough to be parked in a place that will not obstruct traffic. Prior to towing the vehicle, have the owner/operator sign an ITD-1993, Emergency Assistance Release.

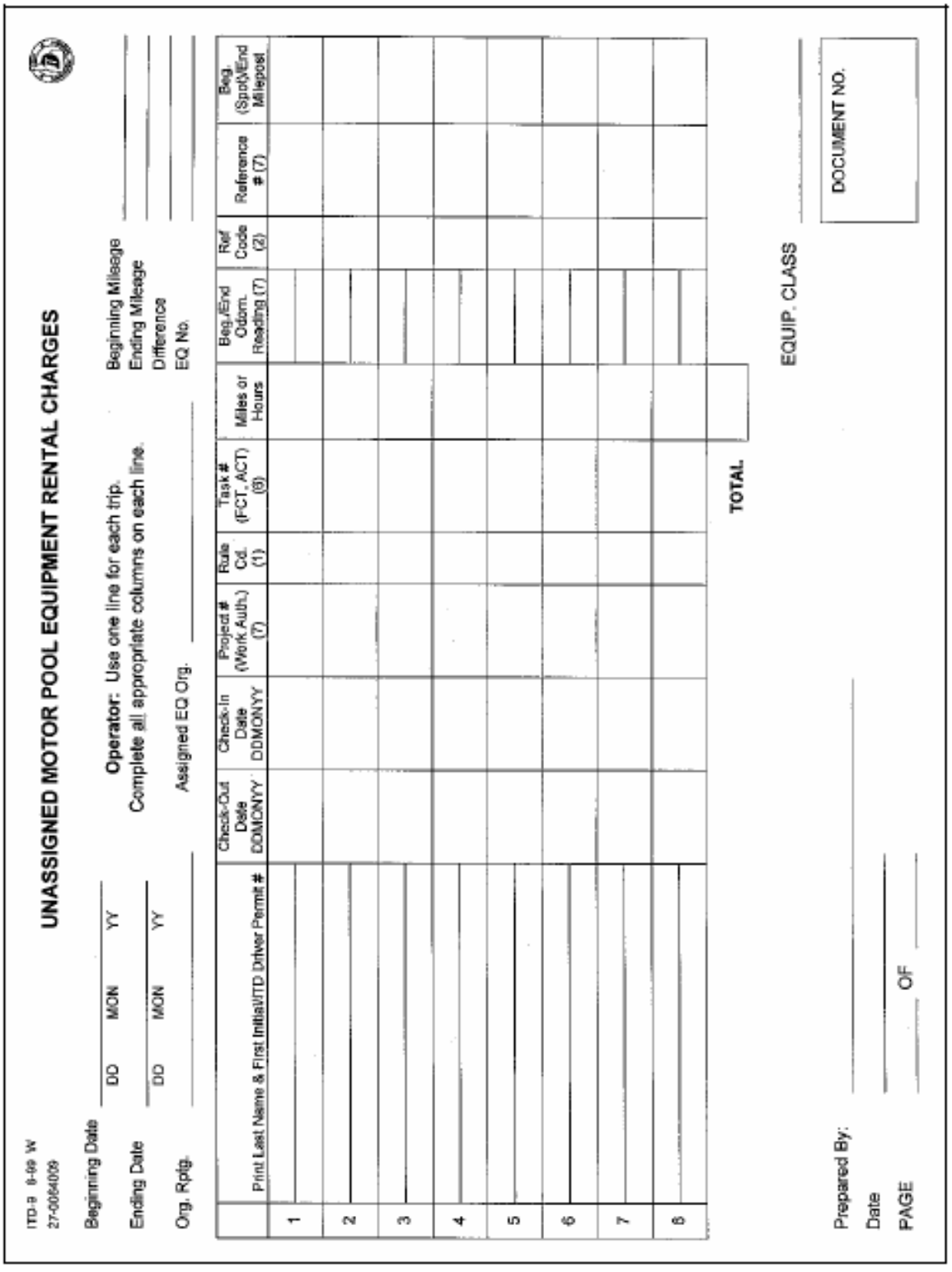
770.09 Fuel and Oil Additives. Department employees utilize various types of equipment while completing their assigned tasks. The fuel to power this equipment and the oils and lubricants utilized are provided via state contracts and commercial suppliers. The Department goes to great lengths to purchase the highest quality fuel and lubrication products. Fuel and lubrication products are specified to meet the requirements designated by equipment manufactures.

As all lubrication products utilized by the Department are specified to meet manufacturer's standards and requirements, the need for lubrication additives is not required. Therefore, the use of lubrication additives is prohibited in Department vehicles and equipment.

The Department purchases fuel via supply contracts for our private sites and from various commercial vendors. Fuel purchased for our private sites is specified to meet ASTM standards for unleaded gasoline, and No.1 & No. 2 diesel. Department fuel contracts also require diesel fuel suppliers to provide either blended diesel or chemical anti-gelling agents for use in cold weather. Since all fuel products purchased by the Department meet both equipment manufacture's and ASTM requirements, the use of fuel additives in bulk fuel storage tanks is prohibited.

Since cold weather is not always predictable, the Department may experience fuel gelling in vehicle and equipment fuel tanks prior to receiving winter blended diesel fuel. To combat this issue, personnel are authorized to utilize anti-gelling additives in vehicle fuel tanks as needed. All other fuel additives are prohibited.

Figure 700-17



ITD-9 6-99 W
27-0064029

UNASSIGNED MOTOR POOL EQUIPMENT RENTAL CHARGES

Operator: Use one line for each trip.
Complete all appropriate columns on each line.

Beginning Date ____ ____ ____ Beginning Mileage _____
DD MON YY
Ending Date ____ ____ ____ Ending Mileage _____
DD MON YY
Difference _____
Org. Rptg. _____ Assigned EQ Org. _____ EQ No. _____

	Print Last Name & First Initial/ITD Driver Permit #	Check-Out Date DDMONYY	Check-In Date DDMONYY	Project # (Work Auth.) (7)	Rule Cd. (1)	Task # (FCT, ACT) (9)	Miles or Hours	Beg./End Odom. Reading (7)	Ref Code (2)	Reference # (7)	Beg (Spot)/End Milepost
1											
2											
3											
4											
5											
6											
7											
8											
						TOTAL					

EQUIP. CLASS _____

Prepared By: _____
Date _____
PAGE _____ OF _____

DOCUMENT NO.

780.00 EQUIPMENT DISPOSAL

780.01 Surplus Equipment. Road equipment that is determined surplus to the Department should be submitted (use Form ITD 0230 Surplus Property Disposal Request) to the Maintenance Services for approval by May 30th each calendar year. Equipment identified for disposal shall meet the replacement criteria described in Section 740.01.01.

Once approved, the ITD 0230 will be forwarded to the Supply Services Section. The district submitting the request form is responsible for completing the form with one exception (current estimated value), the last column on the extreme right.* The estimated value is computed by the Maintenance Services using information entered in the condition code column, past sale history of like equipment, and used equipment value guidelines.

*Description column needs to briefly describe equipment as follows:

4-door sedan, 1/2-ton pickup, dump truck, flatbed truck, etc.

The condition codes with brief condition description are as follows:

E – Excellent

G – Good (normal operation with no apparent repairs needed)

F – Fair (operating condition but repairs may be required)

R – Repairs required for normal operation

U – Unusable scrap (sell as scrap or scrap for parts)

Refer to Figure 700-18.

780.02 Equipment Cannibalization. When determining equipment that would have more value to the Department by cannibalization, it must be submitted on form ITD 0230 to the Supply Services Section. Approval must be obtained from the State Board of Examiners before dismantling. After receiving approval, the equipment and Vehicle Identification numbers must be removed and the unit is ready for cannibalization. After removing the usable parts, the remainder of the unit can be sold at the next upcoming sale as scrap iron.

Figure 700-18

ITD 0230 (Rev. 2-03)

Surplus Property Disposal Request

Disposal Number (Assigned by Supply Services)	District/Section Number

Page _____ of _____

Equipment Or Tag Number	Make	Description	Serial Number	Cond Code*	Current Estimated Value

***Condition Code**

E – Excellent
G – Good
F – Fair
R – Repairable
U – Unusable

Check One

- ☐ Transfer/Donate to Another Agency
- ☐ Buy Back
- ☐ Trade-In – Please Attach Justification
- ☐ Public Sale (Auction or Bid)
- ☐ Scrap (Sell for Scrap or Scrap for Parts)
- ☐ Lost
- ☐ Stolen
- ☐ Replaced by Vendor – Beyond Economical Repair
- ☐ Unusable – Recycled
- ☐ Unusable – Shipped to Local Dump Site
- ☐ Other

Requested By	Title	Date
Approved by Section Supervisor/District Engineer		Date

Equipment Superintendent	Date	Supply Administrative Operations Supervisor	Date

790.00 EQUIPMENT COST ACCOUNTING

790.01 Rental Rate Procedure. Equipment rental rates will be calculated utilizing cost data and meter readings contained within the Equipment Management System. Data from the Equipment Management System is obtained from ITD's AMS Financial System and Fuel Link Application.

All costs charged to the Equipment Operations Program will be utilized to calculate rates for each Category of Equipment. See Figure 700-5. These costs will include the ownership costs of depreciation and insurance. Direct operating costs of maintenance, preventive maintenance, fuel, tires and direct charges will be included. Indirect costs will be allocated to each Category of equipment based on the pro-rata share of fleet value.

The rental rate base for each category will be the meter type contained within the Equipment Management System. This will be miles for those Categories of Equipment utilizing an odometer and hours for those utilizing an hour meter. For equipment Categories that do not have a meter, the rental base will be in months. Examples are $/Mile for pickups and trucks, $/Hour for construction type equipment, and $/Month for trailers and other small equipment. When all costs are summed to determine the total expenses for the category of equipment, then the total is divided by the previous year's utilization for the category to determine the new rental rate.

790.01.01 Attached Equipment. Attached equipment is equipment that cannot function in a direct manner without the assistance of another piece of equipment. This includes sanders and snow plows and all other equipment with a Type designation of A. Attached Equipment Categories are designated on Figure 700-5. Attached Equipment do not have an associated meter, therefore, a rental rate for these categories cannot be calculated. All costs associated with attached equipment will be distributed to the various primary units of the attached equipment. Listed below are the Attached Equipment Categories and their corresponding Primary Unit Category.

Attached Equipment Category	Primary Unit Category
600	508
610	510
705	372 & 374
706	508 & 510
707	374
710	508 & 510
711	508 & 510
714	321, 372, & 374
715	321, 372, & 374
804	802
805	802

806	802
810	322
811	390
812	335
815	321
816	321
819	818
821	329
822	823
827	826
828	826
836	814
837	880 & 881
841	844
846	844
853	850
866	402
867	402
869	402
870	402
884	321
885	321
886	321
887	372, 373, & 374
888	372, 373, & 374
889	321
906	372
911	321
912	372
913	337
915	376
916	376
918	204
924	326

953	402
956	321
958	864
965	342
966	342
971	230

790.01.02 Primary Power Unit. The primary power units are equipment with a Type designation of P.. As stated above, attached equipment costs are allocated to the various categories that are primary power units for the attached equipment such as dump trucks, and mower tractors.

790.02 Renting Supplemental Equipment. If additional equipment is needed for emergencies or other work, the District Engineer may rent such equipment within the limitations of his budget. Rental charges shall not exceed the maximum shown in the "Equipment Guide Book Company, Rental Rate Blue Book" without approval of the Highway Operations and Safety Engineer. Refer to the Standard Specifications for Highway Construction handbook for application of the "Rental Rate Blue Book" rental rates.

790.02.01 Estimated Equipment Rental Cost Less Than $25,000/Project (Refer Administrative Policy A-06-42). Oral bids shall only be used for equipment rental that is estimated to be less than $25,000 per project. Oral bids shall be documented through the use of Form ITD 0552, Request for Quotation. The original of this form shall go to Financial Control, the first copy shall go to the Highway Operations and Safety Engineer, and the second copy shall be kept on file by the district or section soliciting the bid.

An Idaho Transportation Department Rental Agreement (ITD 1232) form is required when renting supplemental equipment. An ITD-assigned rental equipment number must be obtained from Maintenance Services when renting any equipment that falls under the equipment categories listed in Figure 700-5 in Section 744.00. Equipment operation costs (fuel, oil, repairs, etc., from ITD sources) will be charged to the assigned rental equipment number on the standard ITD forms. Rental equipment usage should be shown under the equipment column on the Employee Time Sheet by the person responsible for the rented equipment. Refer to Figure 700-19a.

790.02.02 Estimated Equipment Rental Cost More Than $25,000/Project (Refer Administrative Policy A-06-42). Any required equipment rental that is estimated to be in excess of $25,000 per project shall be advertised through Contract Administration or Supply Services in accordance with standard contract bid procedures. Formal competitive bidding procedures may be waived in favor of oral bidding procedures in the event of emergency conditions upon approval of the Chief Engineer.

Figure 700-19a

ITD 1232 (Rev. 1-07)
itd.idaho.gov

Equipment Rental Agreement

Idaho Transportation Department

THIS AGREEMENT, made and entered into, in quadruplicate, this _____ day of _____ 20____, between the Idaho Transportation Department, party of the first part, hereinafter referred to as the "State," and _____, a(n) _____, party of the second part, hereinafter referred to as "Renter," whose business and post office address is: _____

WITNESSETH: Whereas, the State requires the use of certain equipment and machinery on a rental basis for emergency and piece work; and

Whereas, the Renter of the following described equipment owns and will furnish to the State on a rental basis said machinery and equipment, the parties hereto agree as follows:

(1) That the Renter agrees to rent to the State and the State pay the Renter, for the use of the following items of equipment or machinery, with or without operators, for the periods and at the rate per unit, subject to added stipulations in (7), as follows:

	Equipment Description Make and Type	Capacity and/or Mfrs. Rating	Serial No.	Rental Rate Operator	ITD Assigned Rental Equip No.
1.					T
2.					T
3.					T
4.					T
5.					T
6.					T

(2) The state will provide liability and property coverage for the equipment in the state's care, custody and control and while operated by state personnel and the state will indemnify the lessor for the state's negligence acts. The state's liability coverage will be primary over any other collectible insurance on the leased equipment as long as the machine is in the state's care, custody and control and is being operated by state personnel.

(3) The State _____ to furnish any fuel or _____ to furnish repairs for the operation or maintenance in connection with the operation of rental equipment mentioned in this contract;

(4) This contract shall become effective and the work to be performed under it to start not later than the _____ day of _____ 20___, and to be completed not later than the _____ day of _____ 20___.

(5) The District Engineer or section head, where the work is located, shall be in charge and supervise the work and direct the operation of the rental equipment at all times. He shall make and keep a daily written report of the number of hours that each unit of equipment was in operation and chargeable to the job under this contract and shall furnish the Renter a copy of such report each day that this contract is in effect until the job is completed, signed by him or his agent designated to make such report, and such report shall be made a part of the permanent work record of the job under this contract. Time for which rent is paid on any particular piece of equipment shall be that during operation on the job only and shall not include time taken out for oiling and repairing.

(6) Acceptance of this contract binds the Renter to the terms and conditions of Section 601, Title VI, Civil Rights Act of 1964: In that, "No person in the United States shall, on the grounds of race, color, national origin, sex, or age, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance." In addition, "No otherwise qualified handicapped individual in the United States shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

(7) STIPULATIONS: _____

Any machinery or equipment or operators employed under this contract shall be used, employed on and charged to Project _____ in _____ County.

IN WITNESS WHEREOF, the parties hereto have set their hands and seal this _____ day of _____ 20___.

ATTEST:

_____

_____

IDAHO TRANSPORTATION DEPARTMENT

By _____

In the Presence of:

_____

_____

CORPORATION, PARTNERSHIP OR INDIVIDUAL

_____

By _____

Managing Agent

Figure 700-19b

ITD 1234 (Rev. 11-06)
itd.idaho.gov

Intergovernmental Rental Agreement

This agreement, made and entered into, in duplicate, this ____ day of _____, 20____, between the Idaho Transportation Department, Party of the first part, hereinafter referred to as the "ITD", and, _____, a (local, state or federal government agency), party of the second part, hereinafter referred to as "Renter" whose address is:

_____

_____

WITNESSETH:

Whereas, the Renter requires the use of certain vehicle(s), equipment, and/or machinery on a rental basis for emergency and piece work; and

Whereas, ITD owns and can furnish to the Renter the following described vehicle(s) or equipment on a rental basis, the parties hereto agree as follows:

ITD AGREES:

1. To rent the following vehicle(s) or item(s) of equipment, without operators, and at the rate per unit as follows:

Equipment Description Make and Model	Capacity and/or Mfrs. Rating	ITD Equip. No.	Rental Rate
1.			
2.			
3.			
4.			
5.			

2. To provide a vehicle or equipment that is in good operating condition and has a full tank of fuel.

3. To provide all preventive maintenance (oil changes and servicing) and all repairs due to normal use of the vehicle or equipment.

RENTER AGREES:

1. **For a State Agency Renter**: To report any damage losses that might occur against that particular agency's loss history. **For a Non-State Agency Renter:** To provide ITD with certificates of insurance, verifying liability and physical damage coverage for the vehicle; and worker's compensation coverage or other suitable medical coverage for all occupants of the vehicle.

2. To provide a statement of how the vehicle will be used and by whom. All others who will be transported in the vehicle must also be identified and the renter certifies that they will be covered by medical insurance.

795.00 EQUIPMENT ATTACHMENTS

795.01 Vehicle Warning Lights. All department vehicles working or utilized within the right-of-way shall be equipped with at least one amber, dual rotating LED light bar, LED light, or as described for each type of equipment listed. All warning lights must be visible from a distance of not less than 1,000 feet in normal sunlight and not less than 2,500 feet under normal atmospheric conditions at night unless otherwise specified. All lights utilized shall meet SAE Class 1 specifications. All lights shall be amber in color unless otherwise noted. Tail lamps, stop lamps, and clearance lamps on all vehicles must meet standards specified in applicable sections of the Idaho Code.

The warning light policies described within this revision for equipment other than winter maintenance equipment shall apply to new equipment purchased after the date of this revision. Existing ITD equipment may be modified or retrofitted to current policy standards, but is not required. Equipment warning lights that require repairs shall be repaired to comply with current policy standards at the time of repair.

All winter maintenance equipment shall be retro-fitted with red warning lights to meet the requirements of this lighting revision within six (6) months from the date of this revision. Winter maintenance equipment already equipped with red warning lights are not required to be retrofitted, but it is recommended.

The Maintenance Services equipment staff is responsible for developing all Warning Light specifications. Only those lights specified and under contract are to be utilized on ITD equipment.

795.01.01 Sedans. Sedans shall be equipped with a windshield front view and rear window rear view warning light mounted at the top of each window.Both lights shall be operated by a single switch.

795.01.02 Pickups. Small ½ ton, Category 200, pickups shall be equipped with one (1) 13” dual rotating LED-light bar. All other pickups will be equipped with two (2) 13” dual rotating LED light bars mounted side by side and spaced as far apart as possible. On units equipped with sign boards, either message or Type “B” arrow panels, the warning lights and sign boards shall be mounted in such a manner that warning lights are visible 360 degrees when the sign is stored. When the sign is displayed, the warning light visibility to the rear is not required or preferred.

795.01.03 Vans. All vans shall be equipped with two (2) 13” dual rotatingLED light barsOne mounted at the front to the curbside and the other mounted at the rear to the street side.

795.01.04 Service Body and Van Body Trucks. Trucks equipped with service or van bodies shall be equipped with two (2) 13” dual rotating LED light bars. Those without a canopy roof shall have the lights mounted side by side and spaced as far apart as possible. For trucks with a canopy or van body, one light shall be mounted at the curb side front of the canopy and other at the street side rear. Additionally, a minimum of two (2) and a maximum of four (4) LED alternating flashing lights shall be mounted to the rear of the body. These lights shall be mounted so that they are visible to the rear with body doors in the open position.

795.01.05 Incident Response Trucks. These trucks shall be equipped with four (4) red in color, 13” dual rotating LED light bars. Two (2) shall be mounted above truck cab and

spaced as far apart as possible. Two (2) shall be mounted at the top rear of the canopy, spaced as far apart as possible. In conjunction with the red flashing lights, each truck shall be equipped with a siren. Additionally, four (4) amber LED alternating flashing lights shall be mounted to the rear of the body and two (2) red LED alternating flashing lights shall be mounted in the front grill of truck chassis. Each truck shall be equipped with a variable message board displayed to the rear.

795.01.06 Dump Trucks <20,000 lbs GVW. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars mounted on the dump body cab guard, side by side and spaced as far apart as possible.

795.01.07 Dump Trucks >20,000 lbs GVW. These vehicles shall be equipped with one (1) warning light mounted in the center of dump body cab guard. This light shall be either a, 13" dual rotating LED light bar, or 360 degree LED type light. The Equipment Management Staff will determine the best light to use in regards to serviceability.

Refer to Figure 700-20.

795.01.08 Flatbed/Scissor Bed Trucks. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars. Both lights shall be mounted above truck cab side by side and spaced as far apart as possible. Additionally, four (4) alternating LED flashing lights shall be mounted at the rear of the vehicle. Two (2) shall be mounted to the truck frame and two (2) shall be mounted to the rear of body.

795.01.09 Aerial Device Trucks. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars mounted above truck cab side by side and spaced as far apart as possible. A minimum of one (1) and a maximum of two (2) 13" dual rotating LED light bars shall be mounted to the rear of the unit. Additional rear lights shall include a minimum of two (2) and a maximum of four (4) LED alternating flashing lights. These vehicles shall also be equipped with two (2) LED alternating flashing lights mounted on each side to insure 360 degree visibility when working in intersections.

795.01.10 Vehicles Equipped With Attenuators. Vehicles equipped with an energy absorption attenuator shall have two (2) 360 degree LED warning lights visible from both directions of travel. Lights shall be mounted above cab, side by side and spaced as far apart as possible. Additional rear lights shall include a minimum of two (2) and a maximum of four (4) LED alternating flashing lights. Each vehicle shall have a rear facing Type "B" Advanced Warning Arrow Panel, 60" wide x 30" high with 25 bulbs minimum and multi-flash capability (i.e. flash left, flash right, and non-directional flash).

795.01.11 Water Tank Trucks. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars mounted in the center of the vehicle, one mounted above the operators cab and the other mounted at the rear, above the water tank.

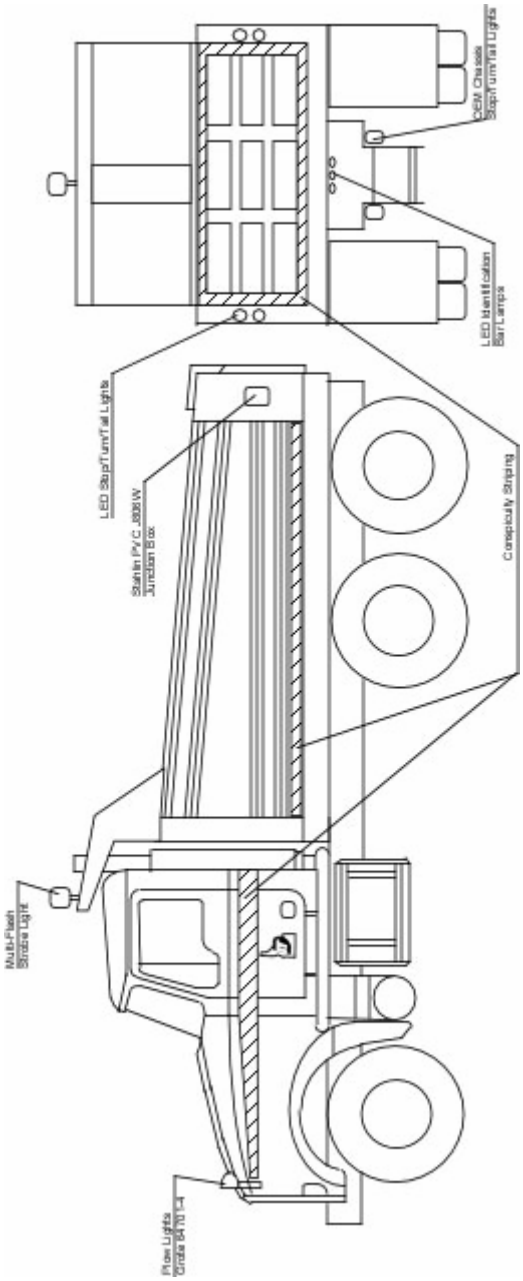
795.01.12 Weed Spray Truck <500 Gallon Capacity. These vehicles shall be equipped with two (2) 13" dual rotating LEDlight bars. Both lights shall be mounted above cab, side by side and spaced as far apart as possible.

795.01.13 Weed Spray Truck >500 Gallon Capacity. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars. These lights can be mounted in either of two configurations. Both lights shall be mounted above cab, side by side and spaced as far apart as possible or both shall be mounted on the vehicle centerline with one light mounted above the operator's cab and the other light mounted above the water tank.

Additionally, these vehicles shall be equipped with a rear mounted Type “B” Advanced Warning Arrow Panel, 60” wide x 30” high with 25 bulbs minimum.

Figure 700-20

ITD DUMP TRUCK LIGHT MOUNTING



795.01.14 Striping Trucks. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars mounted above cab, side by side and spaced as far apart as possible. Two (2) additional 13" dual rotating LED light bars shall be mounted at the rear of unit beside the variable message/arrow board. Additionally, these vehicles shall be equipped with either a rear mounted Type "B" Advanced Warning Arrow Panel, 60" wide x 30" high with 25 bulbs minimum or a Variable Message Board. Each paint carriage shall be equipped with a 360 degree LED or strobe light mounted to the top of the carriage.

795.01.15 Transport Trucks. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars mounted above cab, side by side and spaced as far apart as possible.

795.01.16 Miscellaneous Trucks. All trucks not previously defined shall be equipped with two (2) 13" dual rotating LED light bars mounted above cab, side by side and spaced as far apart as possible.

795.01.17 Motor Graders. This equipment shall be equipped with one (1) roof mounted 13" dual rotating LED light bar. Additionally, four (4) LED alternating flashing lights shall be mounted to the rear of the motor grader. These flashing lights will be operated from a separate switch and will deactivate when the turn signals or brakes are activated. All motor graders shall be equipped with the appropriate size "Slow Moving Vehicle" emblem mounted to the rear.

795.01.18 Construction Equipment. This equipment is defined as including the following: Backhoes, Loaders, Rollers, Excavators, Dozers, Skid Steer Loader, and Chip Spreaders. Asphalt pavers are excluded. Rubber tired construction equipment shall be equipped with one (1) 13" dual rotating LED light bar mounted on top of operator's cab. Backhoes shall have the light mounted to the street side of the unit to insure visibility to the rear. Non-rubber tired construction equipment shall be equipped with one (1) 360 degree LED light mounted above operator's cab or station.

795.01.19 Tractors. This equipment shall be equipped with one (1) 13" dual rotating LED light bar mounted above operator's cab. The appropriate sized Slow Moving Vehicle Emblem shall be mounted to the rear of the unit.

795.01.20 Street Pickup Sweepers. These vehicles shall be equipped with two (2) 13" dual rotating LED light bars mounted in the center of the vehicle, one mounted above the operators cab and the other mounted at the rear. Additional rear lighting shall include four (4) LED alternating flashing lights. The appropriate sized Slow Moving Vehicle Emblem shall be mounted to the rear of the unit.

795.01.21 Self-Propelled Broom. This equipment shall be equipped with one (1) 13" dual rotating LED light bar mounted above operator's cab. The appropriate sized Slow Moving Vehicle Emblem shall be mounted to the rear of the unit.

795.01.22 Forklifts. This equipment shall be equipped with an SAE Class 3 warning light as per OSHA requirements. For those units that are utilized on ITD right-of-way, one (1) 13" dual rotating LED light bar shall be mounted above operator's cab or station.

795.01.23 Port of Entry Vehicles. Port of Entry sedans shall be equipped with rear window, rear view amber warning lights, and "Wig-wag" head and tail lights. Additionally, Port pursuit sedans shall be equipped with a red LED 360 degree roof

mounted light bar. The light bar shall have a minimum of four (4) forward and four (4) rearward facing lamps. All warning lights shall be controlled from a single controller.

Port of Entry roving port vehicles shall be equipped with a red LED 360 degree roof mounted light bar. The light bar shall have a minimum of four (4) forward and four (4) rearward facing lamps. The light bars shall be equipped with two (2) rearward facing amber warning lights to warn motorists when the vehicle is working within the right-of-way. Additionally, two (2) amber LED flashing warning lights shall be mounted to the rear of the truck body. Each vehicle shall also be equipped with "Wig-wag" head and tail lights. All warning lights shall be controlled from a single controller .

795.02 Winter Maintenance Vehicle Warning Lights. All department vehicles utilized for winter maintenance (snowplowing, sanding, and/or deicing) shall be equipped with warning lights of the appropriate color as described for each vehicle type. All warning lights must be visible from a distance of not less than 1,000 feet in normal sunlight and not less than 2,500 feet under normal atmospheric conditions at night unless otherwise specified.

Tail lamps, stop lamps, and clearance lamps on all vehicles equipment, must meet standards specified in applicable sections of the Idaho Code.

The Maintenance Services equipment staff is responsible for developing all Warning Light specifications. Only those lights specified and under contract are to be utilized on ITD equipment.

795.02.01 Snowplow/Sander Trucks. Snowplow/Sander trucks shall be equipped with one (1) 360 degree amber LED light mounted on cab guard. A 23" 4-head LED light bar shall be mounted to rear of sander body. The 23" light bar . rear heads shall be Red with amber heads on the rear corners. Additionally, four (4) LED alternating flashing lights shall be mounted to the rear of the sander. The top left and lower right lights shall be Red and the two remaining lights shall be amber in color. These flashing lights will be operated from a separate switch and will deactivate when the turn signals or brakes are activated.

Trucks equipped with sander bodies may have a lamp that will illuminate the spinner assembly and the rear of the sander. The direct beam of the light from this lamp must not be visible to following vehicles. An additional lamp may be installed to illuminate the top of the sander for loading purposes. The direct beam of this light must face forward and not be visible to following vehicles.

These trucks will also be equipped with amber conspicuity stripes along the upper side rail of the sander body and red/white conspicuity stripes on the rear of the body.

Refer to Figure 700-21.

795.02.02 Snowplow/Sander Trucks Equipped with Wing Plows. All lighting and striping identified in Section 795.1.7 shall be required on these vehicles. Additionally, the wing plow shall have two (2) alternating flashing lights mounted to the outer most part of wing plow facing rearward. The upper light shall be Red and lower light shall be Amber. The wing plow rear push arms and rear facing edge shall have Red/White conspicuity striping.

Wing plows may be illuminated by the use of not more than two (2) flood lights mounted to the truck chassis. One light shall illuminate the rear of the wing plow and one light shall illuminate the area in front of the wing plow. All lights shall have separate switches

As an added safety device, all wing plow trucks shall be equipped with a color camera and monitor with the camera focused on the wing plow. All monitors shall be mounted to the truck cab roof.

795.02.03 Deicer Application Trucks. Vehicles equipped with liquid de-icing application tanks shall be equipped with one (1) 360 degree LED type light mounted on truck cab guard. A 23” 4 head LED light bar shall be mounted to rear of tank. The 23” light bar rear heads shall be Red with amber heads on the rear corners. Additionally, four (4) LED alternating flashing lights shall be mounted to the rear of the tank. The top left and lower right lights shall be Red and the two remaining lights shall be amber in color. The alternating lights shall activate only when de-icing application is activated. The alternating lights will deactivate when the turn signals or brakes are activated.

In addition to the warning lights, liquid de-icing application trucks are to be equipped with 48" x 18" "Anti-Icing" signs mounted to the sides of the tank as well as a 48" x 36" "Anti-Icing Caution Liquid Spray" sign, Catalog No. 546619309, mounted to the rear. A flashing arrow board sign of the equivalent size may be substituted for the rear sign.

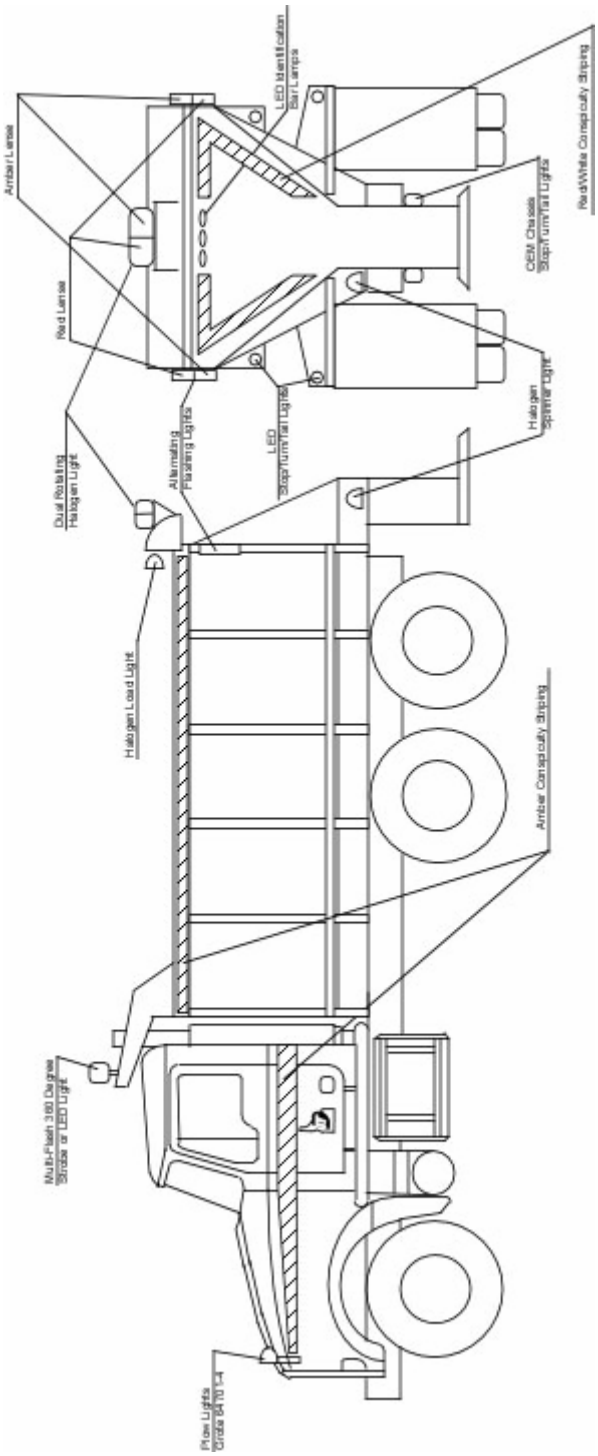
In the event the de-icing application tank is utilized to haul water during other times of the year, the "Anti-Icing" signs and Red warning light lenses are to be removed.

795.02.04 Motor Graders Utilized for Plowing Snow. This equipment shall be equipped with one (1) roof mounted 13” dual rotating amber LED light bar. Additionally, six (6) LED alternating flashing lights shall be mounted to the rear of the motor grader. Two (2) shall be mounted above the rear window with the streetside light red in color and the curbside light amber in color. The four (4) remaining lights shall be mounted along the rear engine cover. The top left and lower right lights shall be Red and the two remaining lenses shall be amber in color. These flashing lights will be operated from a separate switch and will deactivate when the turn signals or brakes are activated.

If the motor grader is equipped with a wing plow, the wing plow shall have two (2) LED alternating flashing lights mounted to the outer most part of wing plow facing rearward. The upper light shall be Red and lower light shall be Amber. The wing plow rear push arms and rear facing edge shall have Red/White conspicuity striping.

Figure 700-21

ITD SANDER TRUCK LIGHT MOUNTING



795.02.05 Rotary Snow Plows. This equipment shall be equipped with three (3) 13" dual rotating LED light bars. Two (2) shall be mounted on the roof of the cab side by side and spaced as far apart as possible and amber in color. The third light bar shall be mounted on the rear of the engine cover and red in color. Additionally, four (4) LED alternating flashing lights shall be mounted to the rear of the unit. The top left and lower right lightsshall be Red and the two remaining lights shall be amber in color. These flashing lights will be operated from a separate switch and will deactivate when the turn signals are activated. All rotary snow plows shall be equipped with the appropriate size "Slow Moving Vehicle" emblem mounted to the rear.

Refer to Figure 700-22

795.03 Forward Facing Lighting On Snow Removal Equipment. All snow plows trucks shall be equipped with two (2) forward facing hi/low beam halogen headlights mounted a minimum of 66" but no more than 78" above ground. Trucks may be equipped with auxiliary fog or spot type lamps.

Fog lamps shall be installed as per the following:

1. Lamp shall activate with the OEM dimmer switch on low beam and shall deactivate on high beam.
2. Lamps shall be mounted on the front of the truck and aimed so that when the vehicle is loaded, none of the high-intensity portion of the light shall be directed to the left of the prolongation of the extreme left side of the vehicle not more than twenty-five (25) feet ahead of the vehicle.

Spot type lamps shall be installed as per the following:

1. Lamp shall activate with the OEM dimmer switch on high beam and shall deactivate on low beam.
2. Shall be equipped with not more than three (3) spot lamps. Each lighted spot lamp shall be aimed and used upon approaching another vehicle that no part of the high-intensity portion of the beam will be directed to the left of the prolongation of the extreme left side of the vehicle nor more than one hundred (100) feet ahead of the vehicle.
3. Shall be used only during inclement weather while plowing.

795.04 Equipment Lighting Modifications and Testing. All modifications to this policy, testing of new lighting products, and special operating conditions that require other lighting must be forwarded to the Maintenance Services and approved by the Equipment Warning Light Committee. All equipment lighting modification or test lighting request must be made in writing using Form ITD-0402.

Refer to Figure 700-23.

Figure 700-22
EQUIPMENT WARNING LIGHT MOUNTING MATRIX

Equipment Type	Category(
Sedans	100, 102
Sm. 1/2 Ton Pickups	200, 207
Full Size Pickups	202, 204, 208 209, 220, 221 222
Port of Entry Rover Trucks	206
Vans	210, 211, 212 214, 218
Service and Van Body Trucks	223, 225, 33
Incident Response Trucks	224
Dump Trucks < 20,000 GVW	226, 227, 22

	Dump Trucks > 20,000 GVW	321, 372, 373 374
	Flatbed/Scissor Bed Trucks	324, 392
	Aerial Device Trucks	338, 339, 340 379
	Attenuator Trucks	326
	Water Tank Trucks	327, 393
	Weed Spray Trucks < 500 Gallons	Various
	Weed Spray Trucks > 500 Gallons	337
	Striping Trucks	342
	Transport Trucks	376

	Misc. Trucks	230, 322, 329 335, 347, 375 390
	Motor Graders	508, 510

	Equipment Type	Categor
	Construction Equipment	401, 404, 4 407, 408, 4 426, 506, 8 878, 879, 8 881, 90
	Tractors	402
	Street Pickup Sweepers	907, 91
	Self-Propelled Broom	909
	Forklifts	847, 848, 8 850, 85
	Snowplow/Sander Trucks	372, 37
	Snowplow/Sander Trucks w/ Wing Plows	374

	De-Icer Application Trucks	328, 372, 3 374, 39
	Motor Graders w/ Wing Plows	508, 51
	Rotary Snow Plows	364

Figure 700-22
EQUIPMENT WARNING LIGHT MOUNTING MATRIX
(Cont.)

Figure 700-23
EQUIPMENT WARNING LIGHT MODIFICATION REQUEST

ITD 0402 (Rev. 7-07)
itd.idaho.gov

Equipment Warning Light Modification Request

Submit completed form to the Highway Equipment Superintendent

Requester's Name	Section/District	Phone Number	Date	Equipment Number **T**
Requester's Supervisor's Signature				

Describe and Justify Requested Modification or Change

– Completed by Equipment Warning Light Committee –

☐ Approved Permanently ☐ Approved on Trial Basis ☐ Disapproved	
Reason for Disapproval	
Equipment Superintendent's Signature	Date

795.05 Implementation Process. The warning light policies described within this revision for equipment other than winter maintenance equipment shall apply to new equipment purchased after the date of this revision. Existing ITD equipment may be modified or retrofitted to current policy standards, but is not required. Equipment warning lights that require repairs shall be repaired to comply with current policy standards at the time of repair.

With the implementation of Red warning lights on Winter Maintenance equipment, all winter maintenance equipment shall be retro-fitted to meet the requirements of this lighting revision within six (6) months from the date of this revision.

796.00 REFLECTORS AND FLAGS ON SNOW PLOWS

1. The following guidelines are established to improve the safety of the traveling public and the visibility of our snow plows.
2. All snow plows that exceed the width of the truck or power unit they are attached to will be equipped with both bi-directional amber reflectors and 18" x 18" red or fluorescent orange flags on each end of the snow plow.
3. The reflectors/flags will be mounted on the top portion in such a manner to designate the extended edges of the snow plow and be visible to both on-coming traffic and traffic attempting to pass the vehicle.
4. All snow plows will be painted DuPont No.7893 Yellow for visibility.

797.00 BACK-UP ALARMS

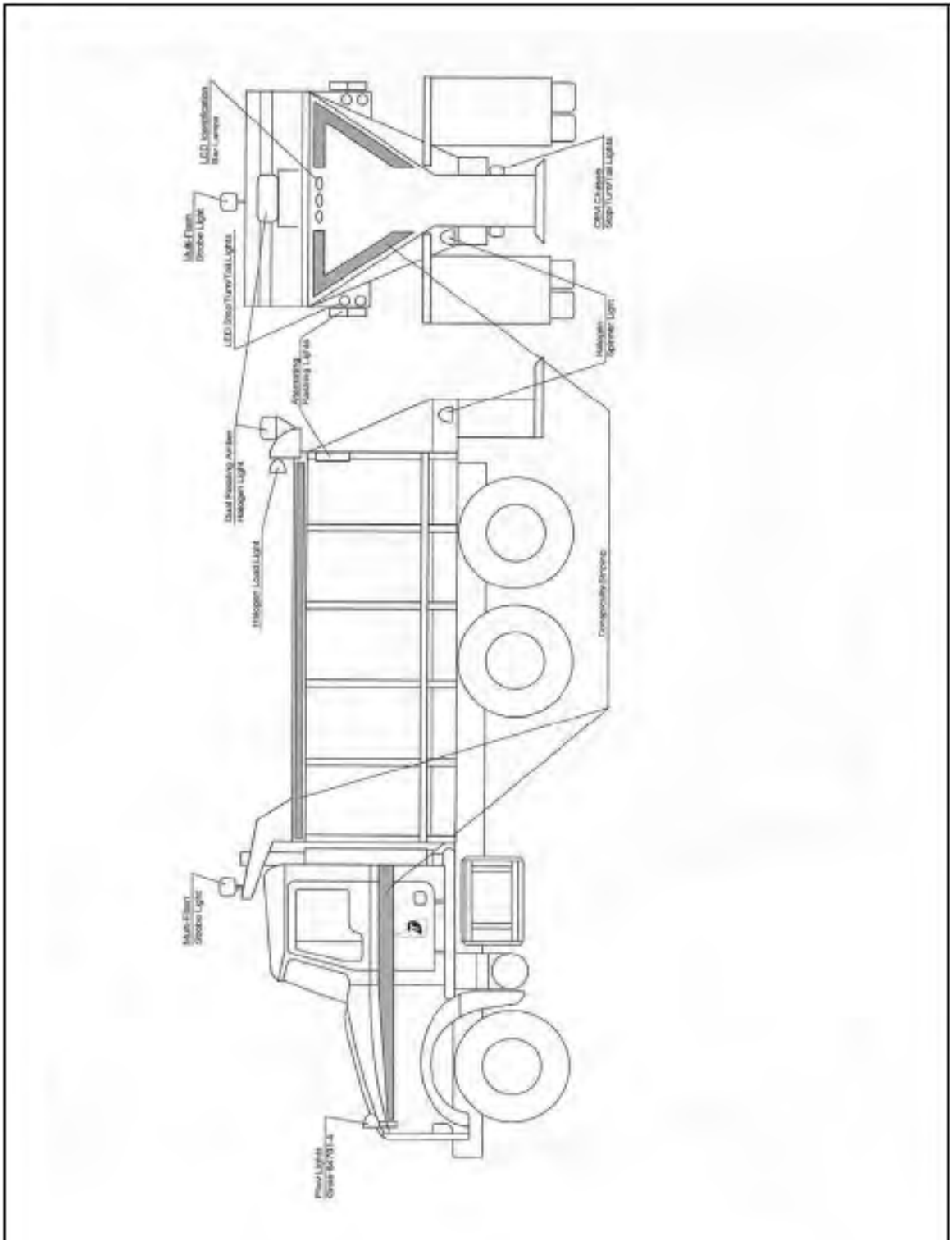
The following guidelines are established for back-up alarms to improve the safety of the individuals working on and around ITD equipment. These guidelines were established as policy for audible ambient self-adjusting back-up alarms on Department equipment.

Back-up alarms are to be installed on all Department pickups, vans, trucks above 10,000 lb. GVW, and construction equipment when the operator cannot see directly behind or out of the rear window and has to use outside mirrors while backing.

All the Department's self-propelled construction equipment (e.g., loaders, graders, backhoes, etc.) will be equipped with an audible ambient self-adjusting back-up alarm, to include equipment used in shops and warehouse areas such as tugs, cranes, and forklifts.

Figure 700-21

ITD SANDER LIGHT MOUNTING



South Dakota Department of Transportation
Policy
Distribution: DOT

Title	**SDDOT Fleet Management**
Policy No.	**DOT—OS—OP—2.0**
Persons Affected	All SDDOT divisions; Bureau of Administration Office of Procurement Management and Property Management
Policy Owner	Operations Support
Effective Date	10/11/2007
Supersedes	IS-2004-05
Next Review Date	10/11/2008

Purpose

To provide guidelines for managing South Dakota Department of Transportation (SDDOT) vehicles and other equipment defined as fleet assets in a reliable, cost-effective manner.

Background

As fleet assets age, maintenance costs rise and reliability becomes an issue. This reality has given rise to the concept of economic life, or the age at which it is more economical to replace a fleet asset than it is to continue to maintain it. Fleet assets are eligible for replacement when they are at the end of their economic life, unsafe to operate, not reliable enough to perform their intended functions, or there would be demonstrated cost savings to the State of South Dakota.

Policy

The SDDOT will follow these procedures to ensure standardized replacement and maximum use of fleet assets.

Definitions

Fleet assets	Vehicles and/or industrial equipment bought for SDDOT use that have value or add value to equipment and are paid for through the equipment or capital budgets, or are emergency purchases.
Equipment Maintenance Specialist	SDDOT Operations Support employee responsible for obtaining and managing fleet assets.

Procedures

I. Annual review of all fleet assets

Responsibility	Action
Equipment Maintenance Specialist	1. Review annually all vehicles and other fleet assets to determine if any items have met established replacement criteria. 2. If it is more economical to keep the asset another year, make sure the asset is retained or reassigned. 3. Consider reassigning a fleet asset to another location if the review finds it cost effective to do so because of low or high usage.

II. Managing fleet performance

Responsibility	Action
Equipment Maintenance Specialist	1. Ensure that rates established for each fleet asset are based on the current costs of owning and using the asset, including: • Depreciation, defined as the purchase cost plus any add-ons of a capital nature. • Costs of repair and maintenance. • Salaries charged to the equipment based on time sheets. • Anything else charged to the fleet asset. 2. Divide total costs by the usage to establish the rate. 3. Monitor the overall fleet age as an SDDOT performance measure. 4. Use the following criteria when considering replacement of a fleet asset: • Economic life, defined as the point where the cost to maintain a fleet asset exceeds the incremental costs of replacement, including repair, depreciation, replacement and resale value. • Age, in terms of the risk of large repair expenses, unavailability of replacement parts or a small resale value. • Unsafe assets found during annual safety inspections or any other manner are to be replaced. • SDDOT needs, including future technology, staffing and customer needs changes.

Managing fleet performance (continued)

5. Coordinate the once-every-even-year SDDOT fleet asset replacement criteria evaluation meeting to discuss the effect of inflation and process changes on existing replacement criteria for age, usage and repair costs. Include representatives of the Bureau of Finance and Management and the Bureau of Administration Fleet Services as well as SDDOT personnel.
6. Review specifications for fleet assets, with an eye toward changes that may affect parts procurement, usage, safety and other factors.
7. Monitor the time between a fleet asset's delivery and start of service as an SDDOT performance measure.
8. Identify low-usage fleet assets annually and present a plan to reassign units to ensure cost-effective use.

> Example: A fleet asset may get high usage in one area, while the same type asset gets low usage in another area. An asset with low usage therefore has a higher rate per use, and there is less desire to replace it when it meets the age criteria. This affects the average age of the SDDOT fleet and Department-wide rates. The Equipment Maintenance Specialist should look at moving low-usage assets to locations where they'll get high usage. High-usage equipment should be replaced with new equipment.

9. Provide EMS reports to SDDOT staff requesting them, including, but not limited to:
    - Equipment targeted for replacement based on established criteria.
    - Average age of fleet by Region and Department total.
    - Resale revenue generated annually.
    - Average time from delivery to in-service by Region.
    - Accident repair costs by Region.

III. Disposing of fleet assets

Responsibility	Action
Region Maintenance Coordinator or Shop Foreman	1. Coordinate disposal of all fleet assets.

Disposing of fleet assets (continued)

2. Notify the Equipment Maintenance Specialist of any fleet asset scheduled for disposal, whether sale, use for parts or to be taken to the landfill.

Equipment Maintenance Specialist

3. Notify Property Management and the Division of Finance and Management of the assets to be sold.
4. Ensure that all assets intended to be sold at normal State auctions are first placed on the intranet. If they are not first placed on the intranet, Property Management will not allow sale at auctions.

Region Maintenance Coordinator or Shop Foreman

5. Fill out a SD Vehicle Condition Report, DOT-222, and State of South Dakota Fixed Asset Maintenance Form: Transfers and Retirements Form for each fleet asset identified for sale.
6. Make sure a digital photograph is attached to the State of South Dakota Fixed Asset Maintenance Form: Transfers and Retirements Form.
7. When photographing an asset to be disposed, do all the following:
   a. Before taking the photograph, remove any attachments that are not going to be sold with the attachment.
   b. If attachments cannot be removed easily, include a disclaimer stating this on the condition report.
   c. Make sure the photograph shows the condition and all attachments offered with the asset.
   d. Make sure the photo gives the best impression of the quality of the asset. Photographs taken inside do not show the equipment very well.
8. Make sure the documents in Step 5 have your electronic signature and are copied to your respective folder on the U drive--U:\op\DOT Equipment Sale\Forms--along with a description of the asset, no later than April 1.
9. Make sure all documents have the equipment number of the asset being disposed of.
10. If an asset to be sold is still in use, note the date it will be available in the description part of the retirement form. If no availability date is provided, it is assumed the asset is available immediately.
11. Enter the current and following year’s asset request on EMS as surplus. This will remove the asset from the equipment replacement calculation.

Disposing of fleet assets (continued)

	12.	Use the prices that similar assets have sold for at recent State auctions as a starting point for an asset's appraised value, and strive for as accurate an amount as possible. The appraised value is the amount at which it will be offered to other governmental agencies. A lowball estimate will inaccurately reflect future potential revenues for SDDOT.
Equipment Maintenance Specialist	13.	Notify each Region when any DOT surplus fleet assets are posted on the U drive.
Region Maintenance Coordinator or Operations Engineer	14.	To acquire another Region's surplus fleet asset by asset transfer, contact the Equipment Maintenance Specialist within two weeks of the posting of the surplus equipment on the U drive.
Property Management	15.	Make sure that fleet assets in good condition are made available to other State government agencies on the Property Management Web site for 30 days.
	16.	Make sure surplus fleet assets not picked up by State agencies are made available on the Property Management Web site to city and county government agencies for 30 days.
	17.	If the asset is not acquired by a State, city or county entity, it may be listed for sale on eBay to the general public.
	18.	If the asset does not sell on eBay, it may be scheduled for auction.
Region Maintenance Coordinator or Shop Foreman	19.	Make sure Property Management has the name of an SDDOT contact person who will handle inquiries about a surplus fleet asset.
Region Office Contact Person	20.	Direct outside calls to Maintenance Supervisors if more information about an asset is required.
Property Management	21.	Contact Region Office contact person when asset is sold.
Region Maintenance Coordinator or Shop Foreman	22.	If an object is sold and something happens to it before the buyer picks it up, contact Property Management immediately to advise of its condition.
	23.	If the buyer does not pick up an item sold on the intranet or Internet with 30 days, contact Property Management. The buyer is then subject to the conditions described on the Web page.

Disposing of fleet assets (continued)

	24.	If an asset has little or no salvage value, complete and submit a State of South Dakota Fixed Asset Management Form: Transfers and Retirements Form to the Equipment Maintenance Specialist for approval.
	25.	After obtaining approval, destroy the asset sufficiently so that it cannot be salvaged. This needs to be done for liability reasons.
	26.	Transport the asset to be disposed of to a scrap yard, landfill or use it for parts.
Property Management	27.	Handle all vehicle or industrial asset purchases made through the Property Management Web site.
	28.	Handle purchases made through the Property Management Web site that are not vehicles or industrial assets.
Equipment Maintenance Specialist	29.	Track sales revenues separately for consideration during the budget process.
	30.	Document benchmarks for resale values.
Region Offices	31.	May contact the Equipment Maintenance Specialist or Finance and Management staff if there are questions about sales made through the Property Management Web site.

IV. Acquiring fleet assets: equipment budget

Responsibility		Action
Region Office	1.	Submit equipment budget to Equipment Maintenance Specialist.
Equipment Maintenance Specialist, and Construction and Maintenance Engineer	2.	Review Region budgets.
Director of Operations	3.	Approve proposed purchases of fleet assets.
Equipment Maintenance Specialist	4.	Begin process of obtaining fleet assets by submitting specifications to the Bureau of Administration Office of Procurement Management.
Procurement Management	5.	Administer bid letting.

Acquiring fleet assets: equipment budget (continued)

Equipment Maintenance Specialist	6.	Award bid.
	7.	Make out requisitions and submit to Finance and Management.
Region Office	8.	After receiving equipment, send receiving voucher, Data Sheet and attached paperwork for payment and licensing to the Equipment Maintenance Specialist.

V. Acquiring fleet assets: capital budget

Responsibility		Action
Operations Engineer or his or her designee	1.	Use the DOT Purchasing Procedures Manual to determine fleet asset price.
	2.	Submit the fleet asset request, with specifications, to the Region Maintenance Coordinator and Operations Engineer for approval.
Region Maintenance Coordinator and/or Operations Engineer	3.	Approve or disapprove of asset purchase request.
	4.	If approved, get quotes or determine if on contract.
	5.	Send requests to Equipment Maintenance Specialist.
Equipment Maintenance Specialist and/or Construction Maintenance Engineer	6.	Review and approve or disapprove of requests.
Equipment Maintenance Specialist or Construction and Maintenance Engineer	7.	Send approval to the Region Maintenance Coordinator and Operations Engineer.
Region Maintenance Coordinator,	8.	Prepare requisitions and submit to Finance and Management.
Operations Engineer or Business Manager	9.	Send receiving voucher, Data Sheet and attached paperwork for payment, licensing to the Equipment Maintenance Specialist upon receiving equipment at Region.

VI. Acquiring fleet assets: emergency purchases

Responsibility		Action
Region Office	1.	Send an e-mail to the Equipment Maintenance Specialist with the following information: • Nature of emergency. • Item(s) to be purchased. • Three quotes, each including: o Name of the company. o Contact person's name and telephone number. o Amount quoted.
Equipment Maintenance Specialist	2.	Obtain appropriate DOT approvals and forward to Procurement Management.
Procurement Management Buyer	3.	Send e-mail approval or disapproval to Equipment Maintenance Specialist and the original sender.
Region Office	4.	Upon receiving Procurement Management approval, may proceed with the purchase.
	5.	Attach a copy of the e-mail to the completed requisition form.
	6.	Include a letter signed by the Region Maintenance Coordinator or Operations Engineer, and then send requisition form to DOT Purchasing Administrator.
SDDOT Purchasing Administrator	7.	Enter the requisition and forward to Procurement Management.
Procurement Management	8.	Generate a "Confirmation Only" purchase order.
Region Office	9.	Match vendor invoice to the purchase order.
	10.	Upon receipt of equipment, send receiving voucher, Data Sheet and attached paperwork for payment, licensing to the Equipment Maintenance Specialist.

VII. Repairing fleet assets

Responsibility		Action
Equipment Maintenance Specialist	1.	Ensure that repairs of fleet assets are in the best interest of SDDOT with regard to the economic life of the asset, taking into account: • Age of fleet asset. • Total amount of repairs to the fleet asset to date. • Life expectancy of the fleet asset. • Type of repair requests.
	2.	As a general rule, use 50% of value to determine reparability.
Region Office	3.	Get Equipment Maintenance Specialist approval of emergency, single source or other types of repairs costing more than $1,000 before dismantling the asset.
	4.	Follow DOT Purchasing Procedures Manual guidelines on purchases described in Step 3.
DOT Region and Area Offices, Operations Engineers, Region Maintenance Coordinators and Equipment Shop Foremen	5.	Monitor asset maintenance, making sure that preventive maintenance is done.
Equipment Maintenance Specialist	6.	Monitor preventive maintenance activities and report to each Region on the general status of its preventive maintenance.
	7.	Recommend an annual budget amount for DOT replacement needs to the Construction and Maintenance Engineer. See Attachment 1 on p. 16 for annual timeline.
Construction and and Maintenance Engineer and Equipment Maintenance Specialist	8.	Present depreciable equipment budget to Division Directors and Secretary during the internal budget hearings process.
SDDOT Secretary	9.	Make final depreciable equipment budget determinations.
Equipment Maintenance Specialist	10.	Make sure that funds acquired through resale of equipment are tracked separately and reported to the Executive Team on an annual basis.

VIII. Managing the SDDOT fleet

Responsibility		Action
Construction and Maintenance Engineer	1.	Oversee the SDDOT fleet management process.
Equipment Maintenance Specialist	2.	Perform the following fleet performance management functions: • Work with Finance and Management Division to develop and implement appropriate equipment rates to recover expenses. • Coordinate the establishment and maintenance of economic life schedules, replacement timetables, and specifications for each asset class. • Monitor and assist in minimizing the time it takes to put an asset into operation once it is received. • Coordinate once-every-even-year SDDOT fleet asset replacement criteria evaluation meeting. • Conduct problem-solving sessions for fleet asset issues. • Recommend policy changes as needed. • Conduct administrative reviews of the fleet on a regular basis to monitor performance. • Recommend transfer of assets based on usage to move toward or maintain the targeted average life of the fleet.
	3.	Manage fleet asset information: • Maintain data in the EMS. • Make sure EMS data is accurate. • Provide information to customers and management as needed.
	4.	Manage fleet asset disposal: • Provide reports and recommendations to Regions on asset disposal. • Make sure necessary paperwork for disposals is completed. • Track revenue from sales.

Managing the SDDOT fleet (continued)

5. Manage acquisition of fleet assets:
    - Conduct specifications review meetings.
    - Recommend necessary budget to Construction and Maintenance Engineer.
    - Provide reports to Regions and Programs about fleet assets designated for replacement based on established criteria.
    - Initiate requests for proposals.
    - Initiate bid lettings.
    - Initiate purchases.
6. Manage fleet asset repairs with regard to economic life:
    - Review and approve major repairs to fleet assets.
    - Ensure timely preventive maintenance is done.

Operations Engineer

7. Manage performance of respective Region fleet:
    - Assist in establishing and maintaining economic life schedules, replacement timetables and specifications for each asset class.
    - Monitor the time it takes to put a fleet asset into operation after it is received.
    - Participate in the once-every-even-year SDDOT fleet asset replacement criteria evaluation meeting.
    - Conduct problem-solving sessions for asset issues.
    - Recommend policy changes to Equipment Maintenance Specialist.
    - Monitor rates for Region fleet performance.
    - Recommend asset transfers based on usage in order to move toward or maintain the targeted average life of the fleet.

Managing the SDDOT fleet (continued)

Operations Engineer, Region Maintenance Coordinator or Shop Foreman	8. Manage information about fleet assets: • Manage disposal of Region fleet assets. • Analyze low-use assets and determine the right types and numbers of assets to meet needs. • Gather input and provide feedback and recommendations to the Equipment Maintenance Specialist. • Make sure necessary paperwork for disposals is completed. • Manage acquisition of fleet assets. • Oversee Region fleet asset inspection program. • Ensure Region participation in specifications review meetings. • Solicit user input on purchases. • Provide input on budget needed to meet established criteria and performance. • Provide feedback on recommended purchases. • Manage fleet assets with regard to economic life, including ensuring that timely preventive maintenance is done.
Region Maintenance Coordinator or Shop Foreman	9. Manage performance of Region fleet, including: • Assist in establishing and maintaining economic life schedules, replacement timetables and specifications for each class. • Monitor the time it takes to put an asset into operation after it was received. • Minimize the time it takes to put an asset into operation after it has been received. • Conduct problem-solving sessions for asset issues. • Monitor Region fleet performance with regard to rates. • Recommend transfer of assets based on usage to move toward or maintain the targeted average life of the fleet. 10. Manage information about fleet assets: • Make sure data input to the EMS by Region employees is accurate. • Provide information about fleet assets to users and management.

Managing the SDDOT fleet (continued)

Region Maintenance Cooordinator and Shop Foreman	11.	Manage disposal of Region fleet assets: • Provide feedback and make recommendations to the Equipment Maintenance Specialist on asset disposal. • Make sure necessary paperwork is completed for disposals.
	12.	Manage acquisition of Region fleet assets: • Oversee Region asset inspection program. • Conduct review of the specifications and features of new assets. • Participate in specifications review meetings. • Solicit user input on recommended purchases.
	13.	Manage fleet repairs with regard to economic life, including ensuring that timely preventive maintenance is conducted.
Highway Maintenance Supervisor, Region Maintenance Coordinator or Shop Foreman	14.	Conduct annual fleet asset review meetings.
	15.	Review fleet asset reports.
	16.	Notify Equipment Maintenance Specialist of equipment transfers.
Shop Foreman	17.	Update the EMS with current assets for disposal by April 1.
Program Managers	18.	Provide requests for fleet asset replacements or additions to the Equipment Maintenance Specialist.

IX. Reviewing new asset specifications

Responsibility		Action
Equipment Maintenance Specialist	1.	Conduct an annual meeting with the Equipment Specification Committee—which is comprised of all Region Maintenance Coordinators, all Shop Foremen and the Equipment Maintenance Specialist—to review new asset specifications.
Equipment Specification Committee	2.	Prior to the meeting, gather input from respective Regions about what worked and what didn't for assets received in the past.
	3.	Review new technologies and make recommendations as to applicability, viability and cost effectiveness.

Related Documents

State of South Dakota Fixed Asset Maintenance Form: Transfers and Retirements
(Bureau of Administration—Property Management)
SD Vehicle Condition Report, DOT-222
DOT Purchasing Procedures Manual

Revision Log

DOT-OS-OP-2.0: **Changed:** Internal Services Program Manager responsibilities transferred to Construction and Maintenance Engineer. Responsibilities of DOT Fleet Manager transferred to Equipment Maintenance Specialist. **Deleted**: All appendixes. The "SD Vehicle Condition Report" form and "State of South Dakota Fixed Asset Maintenance Form" are made available through hot links. Digital photos must be taken of each asset proposed for disposal and included with the appropriate forms.
IS-2004-05: **Changed:** title of policy from "Policy for Budgeting and Purchasing Equipment" to "SDDOT Fleet Management."**Added:** Statement that SDDOT's policy will be based on the concept of economic life, i.e., the age at which it is more economical to replace a fleet asset than continue to maintain it. Also, the policy's objective is to ensure a practice of standardized replacement and maximum use of fleet assets. Fleet assets with high or low usage can be relocated for maximum use, cost effectiveness or to maintain the average age of the fleet. Rates are established for each fleet asset. Rates are the total costs of owning the asset, including depreciation, divided by usage. In turn, these rates are used to calculate the costs for Region projects, with lower equipment rates lowering costs of activities. Specific replacement criteria for SDDOT fleet assets will be reviewed every even-numbered year. SDDOT will monitor the time it takes to get a newly received piece of equipment operating as a performance measure. Equipment Management System (EMS) reports available from DOT Fleet Manager. New procedures for fleet asset disposal. DOT Fleet Manager is given explicit responsibility for acquiring all fleet assets, with approval of the Internal Services Manager. Fleet asset repairs exceeding $1,000 must first be approved by the DOT Fleet Manager. Region Area, Operations Engineer and Equipment Shop Foremen given responsibility for monitoring preventive maintenance. DOT Fleet Manager gets responsibility to develop replacement budget, which the Internal Service Manager will present to Division Directors and the Secretary during the normal internal budget hearings. Funds acquired through resale of equipment are to be tracked separately and reported to the Executive Team on annual basis. Detailed descriptions of roles and responsibilities for the Internal Services Program Manager, Internal Services DOT Fleet Manager, Operations Engineers, Region Maintenance Coordinators, Highway Maintenance Supervisors, Operations Region Specialists, Engineering Supervisors and Equipment Shop Foremen. Equipment Specification Committee to meet annually with DOT Fleet Manager. Operations to conduct annual meeting on minimum mileage requirements. New appendixes listing equipment replacement criteria, "SD Vehicle Condition Report" form "State of South Dakota Fixed Asset Maintenance" form, equipment usage guidelines and motorized equipment guidelines. **Changed:** Process timeline.
IS-2001-02: New policy.

Signatures

Darin Bergquist, Acting Secretary of Transportation	Date
Greg Fuller, Director of Operations	Date
Kellie Beck, Director of Finance and Management	Date
Jeff Karst, Manager, Property Management, Bureau of Administration	Date
Jeff T. Holden, Director, Office of Procurement Management	Date

Attachment 1

State government process for approving SDDOT equipment budget and capital asset budget

July 1	SDDOT Construction and Maintenance Engineer enters budget request into budget system.
August	SDDOT Secretary makes final decisions on budget requests.
September 1	Budget is submitted to State Bureau of Finance and Management.
Mid-September	Governor's budget hearings.
November	Governor's final budget decisions. Usage and replacement reports sent to Operations Engineers.
December	Governor submits budget to Legislature.
March	Usage and replacement reports distributed to Central Office programs. Legislature makes appropriations decisions.
April	Usage review and recommendations for any transfers of assets from the Equipment Maintenance Specialist. The Equipment Maintenance Specialist makes equipment budget requests.
May	Approved budget is entered into the accounting system. Specifications Committee meets.
June	Equipment specifications complete. Purchase orders prepared and entered for next fiscal year.

APPENDIX 2A
Pennsylvania DOT Equipment Class Codes

Category	Class	Total in Fleet	Category Name	Class Name	Concatonated Descriptions	Desc Length
A	04	6	TRUCK	CARGO STEP	TRUCK, CARGO STEP	17
	12	158	TRUCK	SPECIALIZED CREW CAB	TRUCK, SPECIALIZED CREW CAB	27
	13	1438	TRUCK	CREW CAB	TRUCK, CREW CAB	15
	15	1143	TRUCK	SINGL AXLE DUMP	TRUCK, SINGL AXLE DUMP	22
	36	533	TRUCK	PICK UP	TRUCK, PICK UP	14
	37	24	TRUCK	POST DRIVER	TRUCK, POST DRIVER	18
	46	22	TRUCK	SNOW BLOWER	TRUCK, SNOW BLOWER	18
	56	90	TRUCK	TRACTOR TRUCK	TRUCK, TRACTOR TRUCK	20
	94	1	TRUCK	SPEC PURPOSE	TRUCK, SPEC PURPOSE	19
	A1	1730	TRUCK	TANDEM DUMP	TRUCK, TANDEM DUMP	18
	A2	8	TRUCK	BRDG INSP	TRUCK, BRDG INSP	16
	A3	3	TRUCK	ASPHALT PREMIX	TRUCK, ASPHALT PREMIX	21
	A4	50	TRUCK	TRI AXLE DUMP	TRUCK, TRI AXLE DUMP	20
	A5	40	TRUCK	FUEL	TRUCK, FUEL	11
	A6	104	TRUCK	DISTRIBUTOR	TRUCK, DISTRIBUTOR	18
	A7	24	TRUCK	PONY	TRUCK, PONY	11
	A8	25	TRUCK	PAINT MACHINE	TRUCK, PAINT MACHINE	20
	B3	1	TRUCK	VACUUM	TRUCK, VACUUM	13
	B5	35	TRUCK	UTILITY	TRUCK, UTILITY	14
	B7	11	TRUCK	ROAD PATCHER	TRUCK, ROAD PATCHER	19
	B9	102	TRUCK	DUMP-UTILITY	TRUCK, DUMP-UTILITY	19
	BF	4	TRUCK	CORE DRILL CHASSIS	TRUCK, CORE DRILL CHASSIS	25
	BG	1	TRUCK	DELINEATOR	TRUCK, DELINEATOR	17
	BQ	1	TRUCK	CHASSIS	TRUCK, CHASSIS	14
	BU	46	TRUCK	GENERAL PURPOSE	TRUCK, GENERAL PURPOSE	22
	CD	5	TRUCK	HERB SPRAY CHASSIS	TRUCK, HERB SPRAY CHASSIS	25
	CG	10	TRUCK	HIGHWAY WRECKER	TRUCK, HIGHWAY WRECKER	22
	D1	148	TRUCK	ANTI-ICING	TRUCK, ANTI-ICING	17
	D2	375	TRUCK	SHADOW VEHICLE	TRUCK, SHADOW VEHICLE	21
	D4	142	TRUCK	SHOP SUPPORT	TRUCK, SHOP SUPPORT	19
	D7	53	TRUCK	MOB SERV VEHICLE	TRUCK, MOB SERV VEHICLE	23
	D8	57	TRUCK	AERIAL LIFT	TRUCK, AERIAL LIFT	18
	DI	23	TRUCK	PAINT SUPPLY	TRUCK, PAINT SUPPLY	19
	DN	10	TRUCK	PLATFORM	TRUCK, PLATFORM	15
	DQ	2	TRUCK	POST DRVR GUARDRAIL	TRUCK, POST DRVR GUARDRAIL	26
	EL	1	TRUCK	SNOW BLOWER CHASSIS	TRUCK, SNOW BLOWER CHASSIS	26
	EP	5	TRUCK	STONE CHIP	TRUCK, STONE CHIP	17
	FE	1	TRUCK	TUNNEL RINSER	TRUCK, TUNNEL RINSER	20
	FF	1	TRUCK	TUNNEL SCRUBBER	TRUCK, TUNNEL SCRUBBER	22
	FJ	2	TRUCK	UTILITY	TRUCK, UTILITY	14
	FK	4	TRUCK	UTILITY BODY	TRUCK, UTILITY BODY	19
	FO	19	TRUCK	WATER	TRUCK, WATER	12
	GI	3	TRUCK	SHOP	TRUCK, SHOP	11
	GP	3	TRUCK	HOPPER	TRUCK, HOPPER	13
	HV	2	TRUCK	CONE / SAFETY	TRUCK, CONE / SAFETY	20
	II	1	TRUCK	MULTI-BODY	TRUCK, MULTI-BODY	17
	IZ	9	TRUCK	GEN PUR W/CRANE	TRUCK, GEN PUR W/CRANE	22
	KW	1	TRUCK	STAKE BODY	TRUCK, STAKE BODY	17
B	46	46	WINTER CTRL EQ	SNOW BLOWER	WINTER CTRL EQ, SNOW BLOWER	27

Category	Class	Total in Fleet	Category Name	Class Name	Concatonated Descriptions	Desc Length
	47	5895	WINTER CTRL EQ	SNOW PLOW	WINTER CTRL EQ, SNOW PLOW	25
	50	3586	WINTER CTRL EQ	SPREADER	WINTER CTRL EQ, SPREADER	24
	94	4	WINTER CTRL EQ	SPEC PURPOSE	WINTER CTRL EQ, SPEC PURPOSE	28
	D1	65	WINTER CTRL EQ	ANTI-ICING	WINTER CTRL EQ, ANTI-ICING	26
	D3	26	WINTER CTRL EQ	BRINE MAKER	WINTER CTRL EQ, BRINE MAKER	27
C	08	264	RD SURF MNT EQ	COMPRESSOR	RD SURF MNT EQ, COMPRESSOR	26
	23	151	RD SURF MNT EQ	HEATER	RD SURF MNT EQ, HEATER	22
	25	217	RD SURF MNT EQ	KETTLE	RD SURF MNT EQ, KETTLE	22
	29	9	RD SURF MNT EQ	MILLING	RD SURF MNT EQ, MILLING	23
	34	50	RD SURF MNT EQ	PAVER	RD SURF MNT EQ, PAVER	21
	50	127	RD SURF MNT EQ	SPREADER	RD SURF MNT EQ, SPREADER	24
	63	63	RD SURF MNT EQ	WIDENER	RD SURF MNT EQ, WIDENER	23
	84	3	RD SURF MNT EQ	POTHLE PTCHR	RD SURF MNT EQ, POTHLE PTCHR	28
	95	60	RD SURF MNT EQ	STONE CHPR	RD SURF MNT EQ, STONE CHPR	26
	A6	6	RD SURF MNT EQ	DISTRIBUTOR	RD SURF MNT EQ, DISTRIBUTOR	27
	A9	66	RD SURF MNT EQ	PATCHER	RD SURF MNT EQ, PATCHER	23
	C2	182	RD SURF MNT EQ	PATCH ROLLER	RD SURF MNT EQ, PATCH ROLLER	28
	C4	2	RD SURF MNT EQ	MIXING PLANT	RD SURF MNT EQ, MIXING PLANT	28
	C6	1	RD SURF MNT EQ	PAVER, CURB	RD SURF MNT EQ, PAVER, CURB	27
	CM	4	RD SURF MNT EQ	CHPR-STONE	RD SURF MNT EQ, CHPR-STONE	26
	E7	1	RD SURF MNT EQ	WIDNR CONVR	RD SURF MNT EQ, WIDNR CONVR	27
	LE	2	RD SURF MNT EQ	PATCH MILLER	RD SURF MNT EQ, PATCH MILLER	28
	PL	26	RD SURF MNT EQ	PAVER LARGE	RD SURF MNT EQ, PAVER LARGE	27
	RA	157	RD SURF MNT EQ	PAV ROLR	RD SURF MNT EQ, PAV ROLR	24
	RP	205	RD SURF MNT EQ	PATCH ROLLER	RD SURF MNT EQ, PATCH ROLLER	28
	RT	138	RD SURF MNT EQ	RBR TR ROLR	RD SURF MNT EQ, RBR TR ROLR	27
	RW	60	RD SURF MNT EQ	3 WHL ROLR	RD SURF MNT EQ, 3 WHL ROLR	26
D	49	3	VEG CTRL EQ	SPRAYER	VEG CTRL EQ, SPRAYER	20
	54	17	VEG CTRL EQ	TRACTOR	VEG CTRL EQ, TRACTOR	20
	55	261	VEG CTRL EQ	TRACTOR MOWER	VEG CTRL EQ, TRACTOR MOWER	26
	64	128	VEG CTRL EQ	WOOD CHIPPER	VEG CTRL EQ, WOOD CHIPPER	25
	68	19	VEG CTRL EQ	EROSION CTRL EQ	VEG CTRL EQ, EROSION CTRL EQ	28
E	14	1	EARTH MOV EQ	DOZER	EARTH MOV EQ, DOZER	19
	18	120	EARTH MOV EQ	EXCAVATOR	EARTH MOV EQ, EXCAVATOR	23
	21	227	EARTH MOV EQ	GRADER	EARTH MOV EQ, GRADER	20
	27	684	EARTH MOV EQ	LOADER	EARTH MOV EQ, LOADER	20
	54	192	EARTH MOV EQ	TRACTOR	EARTH MOV EQ, TRACTOR	21
	B1	83	EARTH MOV EQ	BELT	EARTH MOV EQ, BELT	18
	B2	170	EARTH MOV EQ	SKID STEER	EARTH MOV EQ, SKID STEER	24
	C3	25	EARTH MOV EQ	MAINTAINER	EARTH MOV EQ, MAINTAINER	24
	D9	12	EARTH MOV EQ	MINI EXCAVATOR	EARTH MOV EQ, MINI EXCAVATOR	28
	ET	45	EARTH MOV EQ	TRACK EXCVTR	EARTH MOV EQ, TRACK EXCVTR	26
	TE	7	EARTH MOV EQ	EXCVTR TRK SML	EARTH MOV EQ, EXCVTR TRK SML	28
F	06	78	TRAF SERV EQ	CLEANER	TRAF SERV EQ, CLEANER	21
	17	18	TRAF SERV EQ	ERAD LINE	TRAF SERV EQ, ERAD LINE	23
	26	840	TRAF SERV EQ	LIGHT	TRAF SERV EQ, LIGHT	19
	28	28	TRAF SERV EQ	MARKER	TRAF SERV EQ, MARKER	20
	33	23	TRAF SERV EQ	PAINT MACHINE	TRAF SERV EQ, PAINT MACHINE	27
	37	2	TRAF SERV EQ	POST DRIVER	TRAF SERV EQ, POST DRIVER	25

- Flood lights

Category	Class	Total in Fleet	Category Name	Class Name	Concatonated Descriptions	Desc Length
	52	56	TRAF SERV EQ	ROTARY BROOM	TRAF SERV EQ, ROTARY BROOM	26
	53	345	TRAF SERV EQ	SWEEPER	TRAF SERV EQ, SWEEPER	21
	54	1	TRAF SERV EQ	TRACTOR	TRAF SERV EQ, TRACTOR	21
	57	82	TRAF SERV EQ	TRAILER	TRAF SERV EQ, TRAILER	21
	94	51	TRAF SERV EQ	SPEC PURPOSE	TRAF SERV EQ, SPEC PURPOSE	26
	D6	33	TRAF SERV EQ	BROOM TRUCK	TRAF SERV EQ, BROOM TRUCK	25
G	11	1	PER VEHICLE	BUS	PER VEHICLE, BUS	16
	45	745	PER VEHICLE	SEDAN	PER VEHICLE, SEDAN	18
	51	246	PER VEHICLE	STATION WAGON	PER VEHICLE, STATION WAGON	26
	59	349	PER VEHICLE	UTILITY	PER VEHICLE, UTILITY	20
	60	331	PER VEHICLE	VAN	PER VEHICLE, VAN	16
M	05	2	OTHR CONT EQ	CEMENT GUN	OTHR CONT EQ, CEMENT GUN	24
	10	12	OTHR CONT EQ	CORE DRILL	OTHR CONT EQ, CORE DRILL	24
	19	157	OTHR CONT EQ	FORKLIFT	OTHR CONT EQ, FORKLIFT	22
	20	2	OTHR CONT EQ	GENERATOR	OTHR CONT EQ, GENERATOR	23
	22	2	OTHR CONT EQ	HMR UNIVER	OTHR CONT EQ, HMR UNIVER	24
	26	359	OTHR CONT EQ	LIGHT	OTHR CONT EQ, LIGHT	19
	30	67	OTHR CONT EQ	MIXER	OTHR CONT EQ, MIXER	19
	40	32	OTHR CONT EQ	PUMP	OTHR CONT EQ, PUMP	18
	41	40	OTHR CONT EQ	ROAD RAKE	OTHR CONT EQ, ROAD RAKE	23
	44	90	OTHR CONT EQ	SAW	OTHR CONT EQ, SAW	17
	62	67	OTHR CONT EQ	WELD MACH	OTHR CONT EQ, WELD MACH	23
	90	461	OTHR CONT EQ	ATTENUATOR	OTHR CONT EQ, ATTENUATOR	24
	A2	2	OTHR CONT EQ	BRDG INSP	OTHR CONT EQ, BRDG INSP	23
	AD	2	OTHR CONT EQ	AERIAL LIFT	OTHR CONT EQ, AERIAL LIFT	25
	B3	39	OTHR CONT EQ	VACUUM	OTHR CONT EQ, VACUUM	20
	BH	15	OTHR CONT EQ	DUMP	OTHR CONT EQ, DUMP	18
	BO	9	OTHR CONT EQ	FLT BD/TILT DK	OTHR CONT EQ, FLT BD/TILT DK	28
	BP	718	OTHR CONT EQ	FLAT BED	OTHR CONT EQ, FLAT BED	22
	BY	2	OTHR CONT EQ	GUARD RAIL	OTHR CONT EQ, GUARD RAIL	24
	CT	92	OTHR CONT EQ	LO-BOY	OTHR CONT EQ, LO-BOY	20
	DB	1	OTHR CONT EQ	OIL BITUM	OTHR CONT EQ, OIL BITUM	23
	EJ	2	OTHR CONT EQ	SIGN	OTHR CONT EQ, SIGN	18
	EK	3	OTHR CONT EQ	SKID	OTHR CONT EQ, SKID	18
	FJ	148	OTHR CONT EQ	UTILITY	OTHR CONT EQ, UTILITY	21
	FL	2	OTHR CONT EQ	VACUUM	OTHR CONT EQ, VACUUM	20
	FO	18	OTHR CONT EQ	WATER	OTHR CONT EQ, WATER	19
	GS	5	OTHR CONT EQ	FALLING WEIGHT	OTHR CONT EQ, FALLING WEIGHT	28
	HA	1	OTHR CONT EQ	PROFILOGRAPH	OTHR CONT EQ, PROFILOGRAPH	26
	HJ	1	OTHR CONT EQ	CLNR-HIGH PRES	OTHR CONT EQ, CLNR-HIGH PRES	28
N	01	9	NON RENT EQ	AUGER EARTH	NON RENT EQ, AUGER EARTH	24
	02	8	NON RENT EQ	BREAKER PVMNT	NON RENT EQ, BREAKER PVMNT	26
	06	2	NON RENT EQ	CLEANER	NON RENT EQ, CLEANER	20
	07	1	NON RENT EQ	COMPACTOR	NON RENT EQ, COMPACTOR	22
	20	84	NON RENT EQ	GENERATOR	NON RENT EQ, GENERATOR	22
	23	1	NON RENT EQ	HEATER	NON RENT EQ, HEATER	19
	31	146	NON RENT EQ	MOWER	NON RENT EQ, MOWER	18
	37	1	NON RENT EQ	POST DRIVER	NON RENT EQ, POST DRIVER	24
	44	29	NON RENT EQ	SAW	NON RENT EQ, SAW	16

Category	Class	Total in Fleet	Category Name	Class Name	Concatonated Descriptions	Desc Length
	48	1	NON RENT EQ	FLAT BED	NON RENT EQ, FLAT BED	21
	49	4	NON RENT EQ	SPRAYER	NON RENT EQ, SPRAYER	20
	53	1	NON RENT EQ	SWEEPER	NON RENT EQ, SWEEPER	20
	57	11	NON RENT EQ	TRAILER	NON RENT EQ, TRAILER (Boat)	20
	58	11	NON RENT EQ	TRENCHER	NON RENT EQ, TRENCHER	21
	65	202	NON RENT EQ	WEIGHT SCALES	NON RENT EQ, WEIGHT SCALES	26
	66	70	NON RENT EQ	ROUTER VERTICAL	NON RENT EQ, ROUTER VERTICAL	28
	67	9	NON RENT EQ	POWER BRUSH	NON RENT EQ, POWER BRUSH	24
	70	1	NON RENT EQ	SPREADER DEVICE	NON RENT EQ, SPREADER DEVICE	28
	71	9	NON RENT EQ	RESCUE	NON RENT EQ, RESCUE (Boat)	19
	72	80	NON RENT EQ	TANK	NON RENT EQ, TANK	17
	78	2	NON RENT EQ	ATT	NON RENT EQ, ATT	16
	79	21	NON RENT EQ	IMPACTOR	NON RENT EQ, IMPACTOR	21
	92	1	NON RENT EQ	HEAT LANCE	NON RENT EQ, HEAT LANCE	23
	94	22	NON RENT EQ	SPEC PURPOSE	NON RENT EQ, SPEC PURPOSE	25
	98	6	NON RENT EQ	QUALITY IND	NON RENT EQ, QUALITY IND	24
	B6	5	NON RENT EQ	TAMPER	NON RENT EQ, TAMPER	19
	B8	1452	NON RENT EQ	MOTORCYCLE	NON RENT EQ, MOTORCYCLE	23
	C1	5	NON RENT EQ	ALL TERR VEH	NON RENT EQ, ALL TERR VEH	25
	C7	1	NON RENT EQ	THROWER SNOW	NON RENT EQ, THROWER SNOW	25
	C9	1	NON RENT EQ	SCRUBBER	NON RENT EQ, SCRUBBER	21
	E1	9	NON RENT EQ	LOADER ATT	NON RENT EQ, LOADER ATT	23
	E2	2	NON RENT EQ	BKHOE ATT	NON RENT EQ, BKHOE ATT	22
	E3	128	NON RENT EQ	SKID STEER ATT	NON RENT EQ, SKID STEER ATT	27
	E4	1	NON RENT EQ	TRACTOR ATT	NON RENT EQ, TRACTOR ATT	24
	E5	9	NON RENT EQ	EXCAVATOR ATT	NON RENT EQ, EXCAVATOR ATT	26
	E9	1	NON RENT EQ	UTILITY VEHICLE	NON RENT EQ, UTILITY VEHICLE	28
	HT	1	NON RENT EQ	COMMAND CENTER	NON RENT EQ, COMMAND CENTER	27
	IL	2	NON RENT EQ	MOB TRNG UNIT	NON RENT EQ, MOB TRNG UNIT	26
	JO	1	NON RENT EQ	MOB DRVR LICENS	NON RENT EQ, MOB DRVR LICENS	28
	ZZ	242	NON RENT EQ	CLASS NOT GIVEN	NON RENT EQ, CLASS NOT GIVEN	28
P	19	1	AIRPORT EQUIPMENT	FORKLIFT	AIRPORT EQUIPMENT, FORKLIFT	27
	77	4	AIRPORT EQUIPMENT	AIRPLANE	AIRPORT EQUIPMENT, AIRPLANE	27
Z	11	3	NON-DEPT-RENT-EQ	BUS	NON-DEPT-RENT-EQ, BUS	21
	15	1	NON RENT EQ	SINGL AXLE DUMP	NON RENT EQ, SINGL AXLE DUMP	28
	20	1	NON RENT EQ	GENERATOR	NON RENT EQ, GENERATOR	22
	29	2	NON RENT EQ	MILLING	NON RENT EQ, MILLING	20
	45	2	NON-DEPT-RENT-EQ	SEDAN	NON-DEPT-RENT-EQ, SEDAN	23
	46	1	NON RENT EQ	SNOW BLOWER	NON RENT EQ, SNOW BLOWER	24
	48	1	NON RENT EQ	FLAT BED	NON RENT EQ, FLAT BED	21
	53	6	NON RENT EQ	SWEEPER	NON RENT EQ, SWEEPER	20
	54	2	NON RENT EQ	TRACTOR	NON RENT EQ, TRACTOR	20
	B1	1	NON-DEPT-RENT-EQ	BELT	NON-DEPT-RENT-EQ, BELT	22
	ZZ	4	NON RENT EQ	CLASS NOT GIVEN	NON RENT EQ, CLASS NOT GIVEN	28

APPENDIX 2B

pennsylvania
DEPARTMENT OF TRANSPORTATION

461-09-01

DATE: February 13, 2009

SUBJECT: Specialized Equipment Policy

TO: District Executives
All Engineering Districts

FROM: Richard H. Hogg, P.E.
Deputy Secretary for Highway Administration

As a portion of the ongoing effort to minimize costs, improve efficiencies and maximize utilization of equipment the following policy is hereby established. This Strike-off letter will promote the sharing of equipment both inter and intra District and will be time neutral. The foundation for this policy is shown on the attached spread sheet that provides usage, production and rented equipment information. This document will be generated at the end of each fiscal year and be the basis for decisions made regarding approval or denial of the purchase of any specialized units requested.

The intent of this letter is not to provide the "how" it is to be accomplished. The intent of this letter is to promote and encourage the sharing of resources. It is also to serve to incite the review and analysis of ownership of the existing fleet. Low hour units should be purged from the fleet in order to minimize costs and allow for a more accurate representation of productivity. Where appropriate, alternate lower cost equipment should be considered for deployment for the same job function, i.e., towed (distributor) oil tanks in lieu of dedicated distributors.

The following policy is established and pertains to the following types of equipment: Athey Belt Loaders, Oil Distributors (self propelled), Milling Machines (self propelled), Finish Pavers (full size), Self Propelled Stone Chippers, Self Propelled and Loader/Grader Mounted Wideners:

Implement Upon Reciept of the SOL:

1) The use of rented equipment shall be prohibited in Districts where Department owned equipment is maintained if:
   a) All District units fail to meet 120% of the established average Statewide usage, or meet the minimum use standard, whichever is higher. Activities within the District must be scheduled so as to maximize equipment use.

2) The use of rented equipment shall be prohibited for any given class of equipment where one or more of the adjacent Districts:
   a) Maintain like equipment that does not meet 80% of the established average Statewide usage or meet the minimum use standard, whichever is higher AND
   b) Scheduling has not been established to maximize usage for the season for all applicable units.

Approvals to use rented equipment must be pre-approved by the Assistant District Executive for Maintenance. It is suggested and you are encouraged to rent equipment with payment being results based (i.e. pay by the foot from milling or the ton for paving etc.).

Implement with the 2010/2011 Equipment Budget Review (Fall of 2009):

1) No consideration will be given to the purchase of new equipment unless ALL of the following criteria are met:
   a) All like units within the District EXCEED the statewide "average hours per unit" or minimum use standard for that category of equipment whichever is higher AND
   b) The unit being replaced exceeds the useful life as defined by the Fleet Model Criteria AND
   c) All units within the District EXCEED the statewide "average production units/piece".

2) Where specialty units are requested justification must be provided in support of that request. That justification must include information regarding the status of owned equipment to include:
   a) Did all units meet or exceed state-wide average use?
   b) Did all units support functions that met or exceeded statewide production per unit?
   c) Did all units meet or exceed Average Production units per hour?

Savings realized through this initiative will need to be captured and entered into the worksheet found at this location: COST SAVINGS TRACKING (penndot shared\Highway Administration\Deputy Secretary Office\COST SAVINGS TRACKING).

If you have questions regarding application of the above policy, please contact Mr. Daryl R. St.Clair, Acting Director, Bureau of Maintenance and Operations at 717-787-6899.

Attachments

4610/WJS/wmh 7-4299

CC: Suzanne Itzko, Deputy Secretary for Administration, 8th fl CKB
Danielle Spila, Director, Policy Office, 8th fl CKB
Christine Reilly, Business Leadership Office Manager, 8th fl CKB
Assistant District Executives - Maintenance, All Engineering Districts
District Equipment Managers, All Engineering Districts
County Equipment Managers, All Maintenance Districts
County Maintenance Managers, All Maintenance Districts
Division Chiefs, Bureau Maintenance and Operations
Section Managers, Equipment Division
Regional Maintenance Advisors

Specialized Equipment Use / Production Overview F/Y 08/09

District	Athey						District	Distributor					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour		# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	4	328		845	211	0.64	1-0	7	487		1804973	257853	529
2-0	7	287		1224	175	0.61	2-0	5	327		901573	180315	551
3-0	7	383		1713	245	0.64	3-0	16	558		2095408	130963	235
4-0	6	276	708	855	143	0.36	4-0	5	623		986000	197200	317
5-0	3	280		374	125	0.45	5-0	3	525		291872	97291	185
6-0	2	279		238	119	0.43	6-0	2	481		185728	92864	193
8-0	6	368		1355	226	0.61	8-0	14	487		896704	64050	132
9-0	10	313		1447	145	0.46	9-0	10	413		600923	60092	146
10-0	5	487		1269	254	0.52	10-0	10	462		2105902	210590	456
11-0	3	339		452	151	0.44	11-0	5	619		1521069	304214	491
12-0	5	408		1420	284	0.70	12-0	8	508		2302159	287770	566
	58	341	708	11192	193	0.55		85	499		13691685	161079	323
Statewide Average Hours of Usage F/Y08		328			193	0.55			492			161079	323
	80%	263			154	0.44		80%	394			128863	258
	120%	394			232	0.66		120%	591			193294	387

Below Avg
Average
Exceeds Avg

District	Milling Mach						District	Paver					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour		# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	1	625	86	627	627	0.88	1-0	3	398		13855	4618	12
2-0	0		40	120		3	2-0	0					
3-0	2	1236	86	37883	18942	15	3-0	6	629		185016	30836	49
4-0	0		488	21417		44	4-0	2	248		4793	2397	10
5-0	1	285	2045	2249	2249	1.10	5-0	0		250	3158	5513	13
6-0	0		1751	12651		7	6-0	0					
8-0	2	490	485	62270	31135	43	8-0	6	397		136334	22722	57
9-0	0		255	2548		10	9-0	4	422	115	90474	22619	50
10-0	1	146		48	48	0.33	10-0	1	203	0	3490	3490	17
11-0	0		537	2113	2113	4	11-0	0		663	28314		43
12-0	1	451	745	12033	12033	10	12-0	2	170		22723	11362	67
	8	539	6518	153959	19245	14		24	352		488157	20340	58
Statewide Average Hours of Usage F/Y08		584			19245	14	Statewide Average Hours of Usage		411			20340	58
	80%	467			15396	11		80%	329			16272	46
	120%	701			23094	17		120%	494			24408	69

Below Avg
Average
Exceeds Avg

District	Chipper (oil)						District	Widener					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour		# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	3	285		1804973	601658	2111	1-0	6	262		627	105	0
2-0	2	131		901573	450787	3441	2-0	5	90		120	24	0
3-0	6	334		2095408	349235	1046	3-0	9	360		37883	4209	12
4-0	2	293		986000	493000	1683	4-0	1	739	338	21417	21417	20
5-0	3	227		291872	97291	429	5-0	5	444		2249	450	1
6-0	1	344		185728	185728	540	6-0	1	620	581	12651	12651	11
8-0	7	221		896704	128101	580	8-0	12	186		62270	5189	28
9-0	3	218		600923	200308	919	9-0	5	270		2548	510	2
10-0	5	313		2105902	421180	1346	10-0	4	243		48	12	0
11-0	4	706		1521069	380267	539	11-0	3	284		2113	704	2
12-0	3	606		2302159	767386	1266	12-0	6	295		12033	2006	7
	39	334		13692311	351085	1050		57	345		153959	2701	8
Statewide Average Hours of Usage F/Y08		337			351085	1050	Statewide Average Hours of Usage		281			2701	8
	80%	270			280868	840		80%	225			2161	6
	120%	404			421302	1260		120%	337			3241	9

Below Avg
Average
Exceeds Avg

Specialized Equipment Use / Production Overview F/Y 08/09

District	Athey					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	4	328		845	211	0.64
2-0	7	287		1224	175	0.61
3-0	7	383		1713	245	0.64
4-0	6	276	708	855	143	0.36
5-0	3	280		374	125	0.45
6-0	2	279		238	119	0.43
8-0	6	368		1355	226	0.61
9-0	10	313		1447	145	0.46
10-0	5	487		1269	254	0.52
11-0	3	339		452	151	0.44
12-0	5	408		1420	284	0.70
	58	341	708	11192	193	0.55
Statewide Average Hours of Usage F/Y08		328			193	0.55
	80%	263			154	0.44
	120%	394			232	0.66

Below Avg
Average
Exceeds Avg

District	Distributor					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	7	487		1804973	257853	529
2-0	5	327		901573	180315	551
3-0	16	558		2095408	130963	235
4-0	5	623		986000	197200	317
5-0	3	525		291872	97291	185
6-0	2	481		185728	92864	193
8-0	14	487		896704	64050	132
9-0	10	413		600923	60092	146
10-0	10	462		2105902	210590	456
11-0	5	619		1521069	304214	491
12-0	8	508		2302159	287770	566
	85	499		13691685	161079	323
		492			161079	323
	80%	394			128863	258
	120%	591			193294	387

Below Avg
Average
Exceeds Avg

District	Milling Mach					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	1	625	86	627	627	1
2-0	0		40	120		3
3-0	2	1236	86	37883	18942	15
4-0	0		488	21417		44
5-0	1	285	2045	2249	2249	1
6-0	0		1751	12651		7
8-0	2	490	485	62270	31135	43
9-0	0		255	2548		10
10-0	1	146		48	48	0.33
11-0	0		537	2113	2113	4
12-0	1	451	745	12033	12033	10
	8	539	6518	153959	19245	14
Statewide Average Hours of Usage F/Y08		584			19245	14
	80%	467			15396	11
	120%	701			23094	17

Below Avg
Average
Exceeds Avg

District	Paver					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	3	398		13855	4618	12
2-0	0					
3-0	6	629		185016	30836	49
4-0	2	248		4793	2397	10
5-0	0		250	3158	5513	13
6-0	0					
8-0	6	397		136334	22722	57
9-0	4	422	115	90474	22619	50
10-0	1	203	0	3490	3490	17
11-0	0		663	28314		43
12-0	2	170		22723	11362	67
	24	352		488157	20340	58
Statewide Average Hours of Usage		411			20340	58
	80%	329			16272	46
	120%	494			24408	69

Below Avg
Average
Exceeds Avg

District	Chipper (stone)					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	3	285		43705	14568	51
2-0	2	131		31946	15973	122
3-0	6	334		54772	9129	27
4-0	2	293		33782	16891	58
5-0	3	227		7526	2509	11
6-0	1	344		4652	4652	14
8-0	7	221		16025	2289	10
9-0	3	218		8794	2931	13
10-0	5	313		61385	12277	39
11-0	4	706		42982	10746	15
12-0	3	606		71251	23750	39
	39	334		376820	9662	29
Statewide Average Hours of Usage F/Y08		337			9662	29
	80%	270			7730	23
	120%	404			11594	35

Below Avg
Average
Exceeds Avg

District	Widener					
	# of Units	Avg Hours per unit F/Y08	Rented Equip Hours Of Use	Total Production Units	Avg Production Units/Piece	AVG Units /Hour
1-0	6	262		627	105	0
2-0	5	90		120	24	0
3-0	9	360		37883	4209	12
4-0	1	739	338	21417	21417	20
5-0	5	444		2249	450	1
6-0	1	620	581	12651	12651	11
8-0	12	186		62270	5189	28
9-0	5	270		2548	510	2
10-0	4	243		48	12	0
11-0	3	284		2113	704	2
12-0	6	295		12033	2006	7
	57	345		153959	2701	8
Statewide Average Hours of Usage		281			2701	8
	80%	225			2161	6
	120%	337			3241	9

Below Avg
Average
Exceeds Avg

APPENDIX 2C
Pennsylvania DOT Maintenance Repair Unit (MRU) Example

Mechanic Factor

Staffing Formula= No.of pieces of ECC x Factor for each ECC = No. of Mechanics

ECC	State hrs	Amount	hrs per ea	Factor	Mec State	3-1 Eq No	3-2 Eq No	3-3 Eq No	3-4 Eq No	3-5 Eq No	3-6 Eq No	3-7 Eq No	3-8 Eq No	3-9 Eq No	3-1 Mech	3-2 Mech	3-3 Mech	3-4 Mech	3-5 Mech	3-6 Mech	3-7 Mech	3-8 Mech	3-9 Mech
A04	105	4	26.25	0.016827	0.067308	**1**									**0.016827**	0	0	0	0	0	0	0	0
A-12	6422	140	45.87143	0.029405	4.116667	**3**	1	1	1	3	2	1	1	4	**0.088214**	0.029405	0.029405	0.029405	0.088214	0.05881	0.029405	0.029405	0.117619
A-13	47457	1321	35.92506	0.023029	30.42115	**17**	22	5	16	8	8	22	9	22	**0.391491**	0.506635	0.115144	0.368462	0.184231	0.184231	0.506635	0.20726	0.506635
A-15	84946	1109	76.59693	0.049101	54.45256	**10**	19	4	11	6	3	10	6	15	**0.491006**	0.932911	0.196402	0.540107	0.294604	0.147302	0.491006	0.294604	0.736509
A-36	8134	469	17.34328	0.011117	5.214103	**7**	5	2	5	2	1	5	2	3	**0.077822**	0.055587	0.022235	0.055587	0.022235	0.011117	0.055587	0.022235	0.033352
A37	1354	23	58.86957	0.037737	0.867949	**1**	1		1	1					**0.037737**	0.037737	0	0.037737	0.037737	0	0	0	0
A46	342	22	15.54545	0.009965	0.219231		1	1				1			**0**	0.009965	0.009965	0	0	0	0.009965	0	0
A-48	6819	142	48.02113	0.030783	4.371154		7	2	1	1		3		2	**0**	0.215479	0.061566	0.030783	0.030783	0	0.092348	0	0.061566
A94	11	1	11	0.007051	0.007051										**0**	0	0	0	0	0	0	0	0
A-56	4725	83	56.92771	0.036492	3.028846	**1**	1	2	2	1	2	2		1	**0.036492**	0.036492	0.072984	0.072984	0.036492	0.072984	0.072984	0	0.036492
AA1	171708	1583	108.47	0.069532	110.0692	**20**	24	8	20	8	10	21	10	23	**1.390641**	1.668769	0.556256	1.390641	0.556256	0.69532	1.460173	0.69532	1.599237
AA2	860	7	122.8571	0.078755	0.551282				1						**0**	0	0	0.078755	0	0	0	0	0
AA3	159	3	53	0.033974	0.101923										**0**	0	0	0	0	0	0	0	0
AA-4	6022	50	120.44	0.077205	3.860256										**0**	0	0	0	0	0	0	0	0
AA5	2756	39	70.66667	0.045299	1.766667		1		1		1	1	1	1	**0**	0.045299	0	0.045299	0	0.045299	0.045299	0.045299	0.045299
AA-6	7209	93	77.51613	0.04969	4.621154	**3**	3	1	3	1	1	2	1	3	**0.149069**	0.149069	0.04969	0.149069	0.04969	0.04969	0.09938	0.04969	0.149069
AA7	1908	20	95.4	0.061154	1.223077										**0**	0	0	0	0	0	0	0	0
AA8	882	25	35.28	0.022615	0.565385										**0**	0	0	0	0	0	0	0	0
AB-5	1166	31	37.6129	0.024111	0.747436	**1**	1	1	1	1			2		**0.024111**	0.024111	0.024111	0.024111	0.024111	0	0	0.048222	0
AB7	1249	11	113.5455	0.072786	0.800641	**1**								1	**0.072786**	0	0	0	0	0	0	0	0.072786
AB-9	5052	94	53.74468	0.034452	3.238462	**1**			1	1		1	1		**0.034452**	0	0	0.034452	0.034452	0	0.034452	0.034452	0
AD-1	10881	138	78.84783	0.050543	6.975	**1**	1	1	1				1		**0.050543**	0.050543	0.050543	0.050543	0	0	0	0.050543	0
AD-2	18847	349	54.00287	0.034617	12.08141	**3**	5	4	2	4		2	2		**0.103852**	0.173086	0.138469	0.069234	0.138469	0	0.069234	0.069234	0
AD-4	4772	138	34.57971	0.022166	3.058974	**2**	3			3		2	1	2	**0.044333**	0.066499	0	0	0.066499	0	0.044333	0.022166	0.044333
AD-7	2029	49	41.40816	0.026544	1.300641	**1**	1		1			1		1	**0.026544**	0.026544	0	0.026544	0	0	0.026544	0	0.026544
AD-8	3377	57	59.24561	0.037978	2.164744	**1**									**0.037978**	0	0	0	0	0	0	0	0
B-46	551	45	12.24444	0.007849	0.353205		1	1				1			**0**	0.007849	0.007849	0	0	0	0.007849	0	0
B-47	17571	5538	3.172806	0.002034	11.26346	**68**	102	27	73	31	31	87	36	103	**0.138302**	0.207453	0.054914	0.148471	0.063049	0.063049	0.176945	0.073219	0.209487
B-50	16629	3446	4.825595	0.003093	10.65962	**33**	46	14	34	20	15	46	20	45	**0.10208**	0.142293	0.043307	0.105173	0.061867	0.0464	0.142293	0.061867	0.1392
B-94	146	4	36.5	0.023397	0.09359										**0**	0	0	0	0	0	0	0	0
BD-1	612	64	9.5625	0.00613	0.392308	**1**	2		1	1		1			**0.00613**	0.01226	0	0.00613	0.00613	0	0.00613	0	0
BD-3	12	23	0.521739	0.000334	0.007692										**0**	0	0	0	0	0	0	0	0
C-08	3496	255	13.7098	0.008788	2.241026	**4**	6	1	2	1	1	2	2	2	**0.035153**	0.05273	0.008788	0.017577	0.008788	0.008788	0.017577	0.017577	0.017577
C-23	2166	142	15.25352	0.009778	1.388462	**3**	2		1	2	1	1	1	5	**0.029334**	0.019556	0	0.009778	0.019556	0.009778	0.009778	0.009778	0.048889

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Mechanic Factor

Staffing Formula= No.of pieces of ECC x Factor for each ECC = No. of Mechanics

ECC	State hrs	Amount	hrs per ea	Factor	Mec State	3-1 Eq No	3-2 Eq No	3-3 Eq No	3-4 Eq No	3-5 Eq No	3-6 Eq No	3-7 Eq No	3-8 Eq No	3-9 Eq No	3-1 Mech	3-2 Mech	3-3 Mech	3-4 Mech	3-5 Mech	3-6 Mech	3-7 Mech	3-8 Mech	3-9 Mech
C-25	4727	207	22.83575	0.014638	3.030128	**3**	4	1	2	1	1	2	1	5	**0.043915**	0.058553	0.014638	0.029277	0.014638	0.014638	0.029277	0.014638	0.073192
C29	2758	11	250.7273	0.160723	1.767949	**1**			1			1	1		**0.160723**	0	0	0.160723	0	0	0.160723	0.160723	0
C34	6285	72	87.29167	0.055956	4.028846	**1**	1		1	1	1	2		3	**0.055956**	0.055956	0	0.055956	0.055956	0.055956	0.111912	0	0.167869
C-43	14641	525	27.88762	0.017877	9.385256	**5**	13	2	10	7	6	9	3	14	**0.089383**	0.232397	0.035753	0.178767	0.125137	0.10726	0.16089	0.05363	0.250274
C-50	807	126	6.404762	0.004106	0.517308	**3**	4	1			1	2	1	1	**0.012317**	0.016422	0.004106	0	0	0.004106	0.008211	0.004106	0.004106
C-63	6853	60	114.2167	0.073216	4.392949	**1**	2		1	1		1	1	2	**0.073216**	0.146432	0	0.073216	0.073216	0	0.073216	0.073216	0.146432
C84	42	3	14	0.008974	0.026923										**0**	0	0	0	0	0	0	0	0
C-95	4043	59	68.52542	0.043927	2.591667	**1**	1		1	1		1		1	**0.043927**	0.043927	0	0.043927	0.043927	0	0.043927	0	0.043927
CA6	7	2	3.5	0.002244	0.004487										**0**	0	0	0	0	0	0	0	0
CA-9	2015	65	31	0.019872	1.291667									7	**0**	0	0	0	0	0	0	0	0.139103
CC-2	1264	173	7.306358	0.004684	0.810256	**4**	1	3	2	1			2	1	**0.018734**	0.004684	0.014051	0.009367	0.004684	0	0	0.009367	0.004684
CC4	157	2	78.5	0.050321	0.100641										**0**	0	0	0	0	0	0	0	0
CC6	0	1	0	0	0										**0**	0	0	0	0	0	0	0	0
D49	24	3	8	0.005128	0.015385	**1**									**0.005128**	0	0	0	0	0	0	0	0
D54	350	17	20.58824	0.013198	0.224359									1	**0**	0	0	0	0	0	0	0	0.013198
D-55	14407	249	57.85944	0.037089	9.235256	**5**	6	1	5	3	2	15	5	8	**0.185447**	0.222536	0.037089	0.185447	0.111268	0.074179	0.556341	0.185447	0.296715
D-64	2636	118	22.33898	0.01432	1.689744	**3**	2	1	2		1	1	2	4	**0.04296**	0.02864	0.01432	0.02864	0	0.01432	0.01432	0.02864	0.057279
D68	132	19	6.947368	0.004453	0.084615		1					1			**0**	0.004453	0	0	0	0	0.004453	0	0
E14	25	1	25	0.016026	0.016026										**0**	0	0	0	0	0	0	0	0
E-18	11433	150	76.22	0.048859	7.328846	**1**	4	1	3	1	1	2	1	2	**0.048859**	0.195436	0.048859	0.146577	0.048859	0.048859	0.097718	0.048859	0.097718
E-21	12242	213	57.47418	0.036842	7.847436	**2**	6	1	4	1	3	6	3	4	**0.073685**	0.221055	0.036842	0.14737	0.036842	0.110527	0.221055	0.110527	0.14737
E-27	31760	641	49.54758	0.031761	20.35897	**8**	10	3	7	4	3	10	4	10	**0.25409**	0.317613	0.095284	0.222329	0.127045	0.095284	0.317613	0.127045	0.317613
E-54	9844	175	56.25143	0.036059	6.310256	**2**	2	1	1	1	1	2	1	2	**0.072117**	0.072117	0.036059	0.036059	0.036059	0.036059	0.072117	0.036059	0.072117
EB-1	8025	79	101.5823	0.065117	5.144231	**1**	3		1	1		2	1	1	**0.065117**	0.195351	0	0.065117	0.065117	0	0.130234	0.065117	0.065117
EB-2	5813	149	39.01342	0.025009	3.726282	**3**	6	2	4	3	1	4	3	5	**0.075026**	0.150052	0.050017	0.100034	0.075026	0.025009	0.100034	0.075026	0.125043
EC3	1336	24	55.66667	0.035684	0.85641				1					1	**0**	0	0	0.035684	0	0	0	0.035684	0
ED9	569	16	35.5625	0.022796	0.364744						1	2	1	1	**0**	0	0	0	0	0.022796	0.045593	0.022796	0.022796
F-06	1309	73	17.93151	0.011495	0.839103	**1**	1		1			1			**0.011495**	0.011495	0	0.011495	0	0	0.011495	0	0
F17	7	18	0.388889	0.000249	0.004487		1								**0**	0.000249	0	0	0	0	0	0	0
F-26	5852	708	8.265537	0.005298	3.751282	**12**	10	5	7	3		8	7	5	**0.063581**	0.052984	0.026492	0.037089	0.015895	0	0.042387	0.037089	0.026492
F28	71	28	2.535714	0.001625	0.045513				1			1		1	**0**	0	0	0.001625	0	0	0.001625	0	0.001625
F33	365	23	15.86957	0.010173	0.233974										**0**	0	0	0	0	0	0	0	0
F37	0	2	0	0	0										**0**	0	0	0	0	0	0	0	0
F52	3533	50	70.66	0.045295	2.264744	**2**	4	1	3	2	1	2	2	2	**0.09059**	0.181179	0.045295	0.135885	0.09059	0.045295	0.09059	0.09059	0.09059

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Mechanic Factor

Staffing Formula= No.of pieces of ECC x Factor for each ECC = No. of Mechanics																						
ECC	State hrs	Amount	hrs per ea	Factor	Mec State	**3-1 Eq No**	3-2 Eq No	3-3 Eq No	3-4 Eq No	3-5 Eq No	3-6 Eq No	3-7 Eq No	3-8 Eq No	3-9 Eq No	**3-1 Mech**	3-2 Mech	3-3 Mech	3-4 Mech	3-5 Mech	3-6 Mech	3-7 Mech	3-8 Mech	3-9 Mech
F-53	5987	335	17.87164	0.011456	3.837821		5	2	3		1	3		5	**0**	0.057281	0.022912	0.034369	0	0.011456	0.034369	0	0.057281
F54	0	1	0	0	0										**0**	0	0	0	0	0	0	0	0
F-57	108	53	2.037736	0.001306	0.069231										**0**	0	0	0	0	0	0	0	0
F-94	96	47	2.042553	0.001309	0.061538	**1**									**0.001309**	0	0	0	0	0	0	0	0
FD-6	3192	32	99.75	0.063942	2.046154									1	**0**	0	0	0	0	0	0	0	0.063942
G45	5987	557	10.74865	0.00689	3.837821	**1**	1		2	2		1		1	**0.00689**	0.00689	0	0.01378	0.01378	0	0.00689	0	0.00689
G51	2044	157	13.01911	0.008346	1.310256	**1**									**0.008346**	0	0	0	0	0	0	0	0
G-59	4730	324	14.59877	0.009358	3.032051	**2**	5	1	3	2	2	7	1	4	**0.018716**	0.046791	0.009358	0.028075	0.018716	0.018716	0.065507	0.009358	0.037433
G-60	2819	180	15.66111	0.010039	1.807051							1			**0**	0	0	0	0	0	0.010039	0	0
M-10	97	11	8.818182	0.005653	0.062179										**0**	0	0	0	0	0	0	0	0
M-19	1977	127	15.56693	0.009979	1.267308	**2**	1	1	1	1	1	1	1	1	**0.019958**	0.009979	0.009979	0.009979	0.009979	0.009979	0.009979	0.009979	0.009979
M-22	70	2	35	0.022436	0.044872										**0**	0	0	0	0	0	0	0	0
M-26	905	337	2.68546	0.001721	0.580128	**2**	7	3	2	4		2	3	1	**0.003443**	0.01205	0.005164	0.003443	0.006886	0	0.003443	0.005164	0.001721
M-30	269	65	4.138462	0.002653	0.172436	**1**	2			1			1		**0.002653**	0.005306	0	0	0.002653	0	0	0.002653	0
M-40	20	25	0.8	0.000513	0.012821										**0**	0	0	0	0	0	0	0	0
M-41	95	40	2.375	0.001522	0.060897	**1**	2				1	3		3	**0.001522**	0.003045	0	0	0	0.001522	0.004567	0	0.004567
M-44	988	88	11.22727	0.007197	0.633333				3			2	1		**0**	0	0	0.021591	0	0	0.014394	0.007197	0
M-57	12752	931	13.6971	0.00878	8.174359	**16**	16	11	18	16	10	17	11	21	**0.140483**	0.140483	0.096582	0.158043	0.140483	0.087802	0.149263	0.096582	0.184384
M-62	346	65	5.323077	0.003412	0.221795	**3**	2		1		1	1			**0.010237**	0.006824	0	0.003412	0	0.003412	0.003412	0	0
M-90	1681	400	4.2025	0.002694	1.077564	**2**	5	4	2	5		2	3	1	**0.005388**	0.01347	0.010776	0.005388	0.01347	0	0.005388	0.008082	0.002694
MA2	58	2	29	0.01859	0.037179										**0**	0	0	0	0	0	0	0	0
MB3	349	36	9.694444	0.006214	0.223718										**0**	0	0	0	0	0	0	0	0
Totals	638277	23395	3260.387		409.1519										**5.090106**	**6.983923**	**2.055205**	**5.273502**	**2.853388**	**2.179944**	**5.998899**	**3.048443**	**6.376742**	**39.86015**
															5	**7**	**2**	**6**	**3**	**3**	**6**	**3**	**7**	**42**

JW 2/22/2013

APPENDIX 3A
Caltrans Replacement Criteria

CLASS_CLASS_CODE	DESCRIPTION	CT_EST_LIFE	CT_MILES_HOURS_LIFE
00100	SEDAN SUB COMPACT	84	120000
00101	SEDAN COMPACT	84	120000
00103	SEDAN (INTERMEDIATE)	84	120000
00104	SEDAN INTERMDTE W/TRACKNG DEVI	84	120000
00106	SEDAN HYBRID	84	120000
00107	SEDAN SUB COMPACT ELECTRIC	60	120000
00108	ALTERNATE FUEL VEHICLE	84	120000
00134	VAN MINI COMMUTER CNG	96	120000
00144	VAN MINI 7 PASSENGER COMMUTER	96	120000
00150	VAN MINI PASS NON-POOL	96	120000
00158	VAN MINI PASS FLEX FUEL	96	120000
00184	VAN 12 PASSENGER COMMUTE CNG	96	150000
00194	VAN 12-15 PASSENGER COMMUTER	108	150000
00195	VAN COMMUTER LIFT EQUIPED	96	150000
00200	VAN DELIVERY 1/2 TON	96	150000
00208	VANy 1/2 TONy FLEX FUEL	96	150000
00210	VAN 12-15 PASS NON-COM GAS/CNG	108	150000
00250	VAN 12-15 PASSENGER NON-COMMU	108	150000
00252	VAN CULVERT INSPECTION	120	150000
00261	VAN WITH PROFILER	60	150000
00301	STATION WAGON COMPACT	84	120000
00302	STATION WAGON	108	120000
00308	STATION WAGON AFV	84	120000
00400	PICKUP MINI	96	120000
00404	PICKUP MINI CREW CAB GAS	96	120000
00407	PICKUP MINI ELECTRIC	60	120000
00408	PICKUP MINI AFV	96	120000
00410	PICKUP MINI GAS/CNG	96	120000
00420	PICKUP MINI EXTENDED CAB	96	120000
00428	PICKUP MINI EXT CAB AFV	96	120000
00470	VAN MINI	96	120000
00478	VAN MINI DELIVERY FLEX FUEL	96	120000
00480	SUV MINI SIZE	84	120000
00521	BUS 21-36 PASSENGER	108	150000
00580	SUV SMALL SIZE	84	120000
00604	PICKUP CREW CAB 1/2 TON GAS	108	150000
00607	PICKUP W/A/C 1/2 TON	108	150000
00608	PICKUP 1/2-TON AFV	108	150000
00610	PICKUP 1/2 TON GAS/CNG	108	150000
00627	PICKUP 1/2 TON EXTENDED CAB	108	150000
00628	PICKUP 1/2 TON AFV EXTD CAB	108	150000
00664	PICKUP CREW CAB 1/2 TON FLEX	108	150000
00680	SUV MID SIZE	84	150000
00688	SUV FULL SIZE 4 DOOR 2WD	108	150000
00690	SUV MID SIZE 2WD	84	150000
00697	SUV MID-SIZE 2WD ELECTRIC	72	150000
00707	PICKUP 1/2 TON A/C DIESEL	120	150000
00708	PICKUP SUPER 1/2-TON AFV	108	150000
00728	PICKUP SUPER 1/2TON EXTCAB AFV	108	150000
00801	PICKUP W/PLOW	96	150000
00804	PICKUP CREW CAB	120	150000
00807	PICKUP W/A/C 3/4 TON	120	150000

00808	PICKUP 3/4-TON AFV	120	150000
00810	PICKUP 3/4 TON GAS/CNG	120	150000
00827	PICKUP 3/4 TON EXTENDED CAB	120	150000
00828	PICKUP 3/4 TON AFV EXTD CAB	120	150000
00830	UTILITY BODY	108	150000
00831	UTILITY BODY W/PLOW	96	150000
00833	UTILITY BODY 3/4 TON GAS/CNG	108	150000
00835	UTILITY BODY SURVEY 3/4 TON	108	150000
00836	MECHANIC BODY 3/4 TON GAS	108	150000
00840	VAN SURVEY	120	150000
00841	VAN SURVEY VANGUARD	120	150000
00844	UTILITY BODY CREW CAB	120	150000
00860	VAN WITH DEFLECTOMETER	120	150000
00870	VAN DELIVERY	120	150000
00877	VAN MECHANICS	120	150000
00880	SUV FULL SIZE	84	150000
00901	PICKUP W/PLOW DIESEL	120	150000
00904	PICKUP CREW CAB DIESEL	120	150000
00907	PICKUP W/A/C DIESEL	120	150000
00927	PICKUP 3/4 TON EXTD CAB DIESEL	120	150000
00930	UTILITY BODY DIESEL	120	150000
00931	UTILITY BODY W/PLOW DIESEL	120	150000
00940	VAN SURVEY DIESEL	144	150000
00941	VAN SURVEY VANGUARD DIESEL	144	150000
00944	UTILITY BODY CREW CAB DIESEL	120	150000
00970	VAN DELIVERY DIESEL	120	150000
01000	PICKUP 1 TON	120	150000
01001	PICKUP W/PLOW	108	150000
01004	PICKUP CREW CAB	108	150000
01009	PICKUP CREW CAB W/TR MTD SKIDT	96	150000
01020	PICKUP 1 TON EXTENDED CAB	120	150000
01028	VAN MOBILE TELECOMMUNICATIONS	144	150000
01030	UTILITY BODY	96	150000
01031	SERVICE BODY W/PLOW	96	150000
01033	UTILITY BODY W/PLOW GAS/CNG	96	150000
01034	UTILITY BODY CREW CAB	96	150000
01035	PAINT STRIPER 1-TON GAS	108	150000
01036	MECHANIC BODY	144	150000
01037	CONE BODY	132	150000
01039	SURVEY BODY	144	150000
01040	VAN SURVEY	120	150000
01041	PLUMBING TRUCK	108	150000
01047	UTILITY-CONE SETTER 1-TON GAS	96	150000
01049	CARGO BODY W/O HOIST	144	150000
01050	CARGO BODY 9 FT W/HOIST	144	150000
01051	CARGO BODY W/O HOIST W/PLOW	108	150000
01052	CARGO BDY W/ HOIST W/PLOW	108	150000
01054	CARGO BODY W/O HOIST UTILITY	144	150000
01055	CARGO BODY W/O HST UTILITY W/P	108	150000
01056	CARGO BODY W/HOIST UTIL W/O PL	108	150000
01057	CARGO BODY W/HOIST LITTER	108	150000
01059	CARGO BODY 9 FT W/O HOIS GAS/C	144	150000
01060	CARGO BODY 9FT W/HOIS GAS/CNG	144	150000

01063	CARGO BODY CREW CAB W/O HOIST	144	150000
01064	CARGO BODY CREW CAB	144	150000
01065	CARGO BODY CREW CAB W/PLOW	144	150000
01070	VAN DELIVERY	108	150000
01071	VAN DELIVERY HIGH-CUBE BODY	144	150000
01080	PERSONNEL HOIST 28FT ELEC.	108	150000
01082	DRILL CORE TESTING	144	10000
01100	PICKUP DIESEL	120	175000
01101	PICKUP W/PLOW DIESEL	108	175000
01104	PICKUP CREW CAB DIESEL	120	175000
01120	PICKUP 1 TON EXTD CAB DIESEL	120	175000
01130	UTILITY BODY DIESEL	120	175000
01131	UTILITY BODY W/PLOW DIESEL	120	175000
01134	UTILITY BODY CREW CAB DIESEL	120	175000
01136	MECHANIC BODY DIESEL	120	175000
01137	CONE BODY DIESEL	120	175000
01139	SURVEY BODY DIESEL	120	175000
01147	UTILITY-CONE SETTER ONE-TON D	108	175000
01149	CARGO BODY W/O HOIST DIESEL	120	175000
01150	CARGO BODY W/HOIST DIESEL	120	175000
01151	CARGO BODY W/O HOIST W/PLOW DS	108	175000
01152	CARGO BDY W/HOIST W/PLOW DIESE	108	175000
01154	CARGO BODY W/O HOIST UTIL DSL	108	175000
01155	CARGO BODY W/O HST UTIL W/PL D	108	175000
01157	CARGO BODY LITTER PICKUP W/O H	108	175000
01163	CARGO BODY CR CAB W/O HOIST DS	120	175000
01164	CARGO BODY W/CREW CAB DIESEL	120	175000
01170	VAN CARGO DIESEL	120	175000
01180	PERSONNEL HOIST 28FT UB ELEC D	108	175000
01230	UTILITY BODY 1-TON GAS	108	150000
01235	CONE BODY AUTOMATIC SUPER	108	150000
01236	MECHANIC BODY	108	150000
01237	CONE BODY	108	150000
01238	SIGN BODY GAS	120	150000
01239	SURVEY BODY 1-TON GAS SUPER DU	108	150000
01241	PLUMBING TRUCK GAS	144	150000
01242	SUPER DUTY CARGO WORK W/PLOW	108	150000
01245	SUPER DUTY CARGO WORK	108	150000
01246	SUPER DUTY CARGO WORK W/HOIST	108	150000
01247	UTILITY CONE-SETTER SUPER 1 TO	108	150000
01249	CARGO BODY	108	150000
01250	CARGO BODY W/HOIST	108	150000
01252	CARGO BODY W/PLOW	108	150000
01257	CARGO BODY W/HST LITTER PICK-	108	150000
01264	CARGO BODY CREWCAB SUPER DUTY	108	150000
01265	CARGO WORK CREW CAB GAS	108	150000
01280	PERSONNEL HOIST 28FT UB ELEC.	108	150000
01282	PERSONNEL HST 34FT ART TELESCO	108	150000
01283	PERSONNEL HST 38FT-40FT GAS	108	150000
01330	UTILITY BODY SUPER 1TON DIES	120	175000
01336	MECHANIC BODY	108	175000
01337	CONE BODY	108	175000
01338	SIGN BODY	108	175000

01339	SURVEY BODY 1-TON DIESEL	120	175000
01341	PLUMBING TRUCK	108	175000
01345	UTILITY WORK TRUCKy 9` DIESEL	108	175000
01347	UTILITY CONE-SETTER 1-TON DSL	108	175000
01349	CARGO BODY 9` DIESEL	108	175000
01350	CARGO BODY 9 FT W/HOIST DIESEL	108	175000
01352	CARGOBDY W/UNDERBDY LITTER DIE	108	175000
01357	CARGO BODY W/HOIST LITTER	108	175000
01360	TRUCK MOUNTED FWD	144	175000
01364	CARGO BODY 9` W/ UNDERBDY DIE	120	175000
01380	PERSONNEL HOIST 28FT UB ELEC D	108	175000
01382	PERSONNEL HST 34FT ART TELESCO	108	175000
01383	PERSONNEL HST 38FT-40FT	108	175000
01390	DRILL RIG TRUCK MOUNTED	144	150000
01428	VAN MOBILE TELECOMMUNICATIONS	144	150000
01436	MECHANIC BODY STEP	144	150000
01437	CONE BODY	132	150000
01441	PLUMBING TRUCK	144	150000
01470	STEP VAN PERSONNEL	144	150000
01477	STEP VAN MECHANICS	144	150000
01478	STEP VAN MOBILE LABORATORY	144	150000
01479	STEP VAN SIGNAL LOOP REPAIR	144	150000
01497	WRECKER	72	150000
01498	WRECKER CNG	72	150000
01500	PICKUP BODY W/FIFTH WHEEL	120	175000
01530	UTILITY BODY	120	175000
01536	MECHANIC BODY DIESEL	120	175000
01537	CONE BODY DIESEL	132	175000
01538	SIGN BODY	120	175000
01541	PLUMBING TRUCK DIESEL	120	175000
01549	CARGO BODY 9FT. W/O HOIST	120	175000
01550	CARGO BODY 9FT W/HOIST	144	175000
01562	STEP VAN CULVERT INSPE. DIESEL	144	175000
01570	STEP VAN DIESEL	132	175000
01577	STEP VAN MECHANICS DIESEL	144	175000
01578	STEP VAN MOBILE LAB DIESEL	144	175000
01583	STENCIL W/PAINT UNIT DIESEL	168	175000
01597	WRECKER DIESEL	72	175000
01802	BARRIER VEHICLE	144	150000
01837	CONE PICKER	96	150000
01838	SIGN BODY	144	150000
01849	CARGO BODY W/O HOIST	144	150000
01850	CARGO BODY W/HOIST	144	150000
01882	DRILL RIG PAVMT CORE TRUCK MTD	144	100000
01883	STENCIL W/PAINT UNIT	144	150000
01886	THERMOPLASTIC TRFC STPR TILT C	156	150000
01887	THERMOPLASTIC STENCIL W/MARKER	144	150000
01898	DRILL TRUCK 2 AXLE	144	150000
01930	UTILITY BODY SUPER 1-TON DSL	120	175000
01931	UTILITY BODY 1-TON W PLOW DSL	120	175000
01936	MECHANIC TRUCK 2-TON DIESEL	120	175000
01937	CONE BODY (BAY BRIDGE SPECIAL)	144	175000
01938	SIGN BODY	168	175000

01949	CARGO BODY W/O HOIST DIESEL	120	175000
01983	STENCIL W/PAINT UNIT DIESEL	168	175000
01996	WRECKER CAR CARRIER DIESEL	72	175000
01997	WRECKER 8-TON DIESEL	72	175000
01998	DRILL RIG TRUCK MOUNTED DIESEL	168	175000
02220	DUMP BODY	144	175000
02221	DUMP BODY W/PLOW	120	175000
02222	DUMP BODY W/SPREADER	144	175000
02223	DUMP BODY W/PLOW & SPREADER	120	175000
02236	MECHANIC BODY	144	175000
02238	SIGN INSTALLATION GAS	144	175000
02249	CARGO BODY W/O HOIST	144	175000
02250	CARGO BODY W/HOIST	144	175000
02255	CARGO BODY PAVEMENT MARKER-DOT	144	175000
02258	TREE TRIMMER	144	175000
02260	CARGO BODY TILT CAB	144	175000
02280	PERSONNEL HOIST	144	175000
02287	THERMOPL STENCIL W/MARKER GAS	144	175000
02288	LUBE TRUCK	144	175000
02293	LANDSCAPE SPRAY TILT CAB 1000	144	175000
02294	LANDSCAPE SPRAY TILT CAB 500	144	175000
02302	BARRIER VEHICLE	144	175000
02320	DUMP BODY	168	175000
02321	DUMP BODY W/PLOW	120	175000
02322	DUMP BODY W/SPREADER	168	175000
02323	DUMP BODY W/PLOW & SPREADER	120	175000
02330	UTILITY BODY	168	175000
02336	MECHANICS BODY 11FT DIESEL	168	175000
02338	SIGN INSTALLATION DIESEL	168	175000
02349	CARGO BODY W/O HOIST 12FT DIES	168	175000
02350	CARGO BODY W/HOIST12FT DIESEL	168	175000
02355	CARGO BODY MARKER-DOT DIESEL	168	175000
02358	CARGO BODY TREE TRIM DIESEL	168	175000
02363	CARGO BDY CREW W/O HOIST DIES	168	175000
02364	CARGO BDY CREW W/HOIST DIESEL	168	175000
02382	PERSONNEL HOIST W/UTIL BDY 35F	168	175000
02383	LANDSCAPE SPRAY 400 GAL.	168	175000
02387	THERMOPL STENCIL W/MARKER DIES	168	175000
02393	LANDSCAPE SPRAY TILT CAB 1000	168	175000
02402	BARRIER VEHICLE	144	175000
02438	SIGN INSTALLATIONY GAS	168	175000
02439	MECHANIC BODY	144	175000
02449	CARGO BODY W/O HOIST	144	175000
02450	CARGO BODY 12` W/HOIST AFV	144	175000
02452	CARGO BODY 12 FT SCISSOR HOIST	144	175000
02454	CARGO BDY W/COMPRESSOR AIR DRI	144	175000
02455	TREE TRIMMER W/HOIST	144	175000
02456	TENDER THERMOPLST W/2PREHEAT	168	175000
02457	CARGO BODY W/COMPRSR & SANDBLS	144	175000
02466	COMPRESSOR UNIT 125-200 CFM	144	175000
02478	VAN BODY MOBILE LABORATORY	144	175000
02482	PERSONNEL HOIST	144	175000
02490	DIGGER DERRICK W/ UTILITY BODY	144	175000

02497	LANDSCAPE SPRAY	144	175000
02549	CARGO BODY 15FT W/O HOIST	168	180000
02550	CARGO BODY 15FT W/HOIST	168	180000
02551	CARGO BODY 15FT W/HOIST W/PLOW	168	180000
02552	CARGO TRUCK 15 FT W/SCISSOR LI	168	180000
02553	CARGO BODY SCISSOR LIFT W/PLO	144	180000
02554	CARGO BODY W/COMPRSR AIR DRILL	168	180000
02555	CARGO BODY PAVEMENT MARKER DO	168	180000
02556	TENDER THERMOPLASTIC W/2 PREHT	168	180000
02558	CARGO BODY TREE TRIMMER	168	180000
02564	CARGO BODY 15FT W/HOIST CREW	168	180000
02580	PERSONNEL HOIST 50FT W/TREE TR	168	180000
02582	PERSONNEL HOIST 45FT W/UTIL BD	168	180000
02587	THERMOPL STENCIL W/PRE HEAT CA	168	180000
02590	DIGGER DERRICK W/UTILITY BODY	168	180000
02591	WRECKER	72	180000
02592	LANDSCAPE SPRAY 500-1000 GL	168	180000
02593	LANDSCAPE SPRAY TILT CAB 1000	168	180000
02594	DIGGER DERRICK W/SIGN BODY	168	180000
02849	CARGO BODY 15` ALT FUEL	168	180000
02850	CARGO BODY 15FT W/HOIST AFV	168	180000
02902	BARRIER VEHICLE	144	180000
02920	DUMP BODY	168	180000
02922	DUMP BODY W/SPREADER	168	180000
02982	P.H. BRIDGE INSPECTION SMALL	120	180000
02987	PERSONNEL HOIST 45FTTELE UTIL	168	180000
03017	DUMP BODY W/LOADER TILT CAB	144	180000
03020	DUMP BODY	144	180000
03052	CARGO BODY W/SCISSORS LIFT	144	180000
03059	CRANE	144	180000
03060	CHIPPER BODY TREE TRIMMER GAS	144	180000
03080	TANK SPRAY RIG	144	180000
03098	FENCE REPAIR	144	180000
03099	FENCE REPAIR TILT CAB	144	180000
03300	TRACTOR TRUCK	168	250000
03302	BARRIER VEHICLE	168	250000
03304	BARRIER VEHICLE CNG	168	250000
03317	DUMP BODY W/LOADER TILT CAB	168	180000
03320	DUMP BODY	168	180000
03321	DUMP BODY W/PLOW	120	180000
03322	DUMP BODY W/SPREADER	168	180000
03323	DUMP BODY W/PLOW & SPREADER	120	180000
03324	DUMP BODY W/2 PLOWS	120	180000
03325	DUMP BODY W/2 PLOWS & SPREADER	120	180000
03328	MULTI BODY 4 CY WITH PLOW	120	180000
03329	MULTI BODY 4 CY WITH PLOWS	120	180000
03330	DUMP BODY ROLL OFF	120	180000
03331	DUMP BODY ROLL OFF W/PLOW	120	180000
03332	DUMP BODY ROLL OFF W/SPREADER	120	180000
03333	DUMP BODY 4 CY ROLLOFF W/SPRDR	120	180000
03334	DUMP BODY ROLL OFF W/ 2 PLOWS	120	180000
03336	MECHANIC BODY	120	180000
03349	CARGO BODY 15FT W/O HOIST	144	180000

03350	CARGO BODY 15` WITH UNDERBODY	144	180000
03351	CARGO BODY W/PLOW	168	180000
03352	CARGO BODY W/SCISSOR LIFT	144	180000
03356	TENDER THERMOPLASTIC W/2 PREHT	144	180000
03358	STRIPER TENDER	168	180000
03359	CARGO BODY W/CRANE	168	180000
03360	TREE TRUCK CHIPPER BODY	120	180000
03361	TREE TRUCK CHPR BODY W/ CRANE	120	180000
03362	TREE TRUCK W/ PERS. HOIST	120	180000
03368	TRUCK 4CY HOOK-LIFT	120	180000
03375	EMULSION DISTRIBUTER 800 GAL	144	180000
03378	PERSONNEL HOIST ART BRIDGE INS	168	180000
03379	PERSONNEL HOIST ART 45FT UB EL	168	180000
03380	PERSONNEL HOIST 65FT TREE TRIM	168	180000
03381	TANK SP RIG CONTOURMATIC BOOM	168	180000
03382	PERS HST ART W/UTL BODY ELEC 6	168	180000
03383	PERSONNEL HOIST W/WORK PLATFOR	168	180000
03384	TRASH COMPACTOR 16 CY REAR LO	168	180000
03385	TRASH COMPACTOR 20 CY SIDE LO	168	180000
03386	TRASH COMPACTOR REAR LOAD W/PL	168	180000
03387	PERSONNEL HOIST ART 50FT T/TRM	168	180000
03389	MOBILE FUEL SUPPLY	168	180000
03390	DIGGER DERRICK W/ UTILITY BODY	168	180000
03391	WRECKER	72	180000
03393	LANDSCAPE SPRAY TILT CAB 1000	168	180000
03394	DIGGER DERRICK TILT CB SIGN BO	168	180000
03396	WRECKER ROLL BACK	72	180000
03398	FENCE REPAIR	168	180000
03417	DUMP BODY 4 CY W/LDR TILT AFV	168	180000
03420	DUMP BODY 4 CY ALT FUEL	168	180000
03421	DUMP BODY W/PLOW CNG	120	180000
03422	DUMP BODY W/SPREADER AFV	144	180000
03423	DUMP BDY W/PLOW & SPREADER CNG	120	180000
03452	CARGO BDY 15` W/SCISSOR AFV	144	180000
03459	CARGO BODY 15` W/CRANE CNG	168	180000
03460	TREE TRUCK CHIPPER BODY	120	180000
03461	TREE TRIMMER CHIPPER BODY CNG	0	180000
03462	TREE TRIMMER CHIPPER BODY W/HO	0	180000
03479	PERSONNEL HOIST ART 45FT UB AF	168	180000
03484	TRASH COMPACTOR 16 CY CNG	168	180000
03487	PERSONNEL HOIST 50FT T/TRM ALT	168	180000
03498	FENCE TRUCK CNG	168	180000
03579	PERS HOIST ART 45FT UB HYBRID	168	180000
03720	DUMP BODY	168	180000
03722	DUMP BODY W/SPREADER	168	180000
03784	LITTER BAG MACHINE	168	180000
03794	DIGGER DERRICK	168	180000
04300	TRACTOR TRUCK	168	250000
04320	DUMP BODY	168	250000
04350	CARGO BODY W/HOIST	168	250000
04355	CARGO BODY W/COMPRSR & SANBLST	168	250000
04375	EMULSION DISTRIBUTOR	168	250000
04382	PENETROMETER	180	250000

04384	STRIPER LOW ENTRY THERMOPLASTI	168	250000
04385	TRASH COMPACTOR 16 CY REAR LO	168	250000
04484	TRASH COMPACTOR 16 CY CNG	168	250000
04498	CARGO BODY 15` FENCE ALT FUEL	168	250000
04700	TRUCK TRACTOR	168	350000
04720	DUMP BODY	168	250000
04721	DUMP BODY W/PLOW	120	250000
04722	DUMP BODY W/SPREADER	168	250000
04749	CARGO BODY 15FT W/O HOIST	168	250000
04753	MUD-JACK TENDER W/TANK & CGO B	168	250000
04759	DRILL TENDER	168	250000
04790	DIGGER DERRICK	168	250000
04794	DIGGER DERRICK 4WD	168	250000
04795	CRANE SHOP USE TRUCK MOUNTED	168	250000
04796	GUARDRAIL TRUCK	144	250000
04891	DRILL	144	250000
04920	DUMP BODY	168	250000
05280	TANK SPRAY RIG	144	250000
05300	TRUCK TRACTOR	168	350000
05301	TRUCK TRACTOR W/PLOW	168	350000
05302	TRUCK TRACTOR MOVABLE BARRIER	168	350000
05310	TRUCK DRIVING SIMULATOR	168	350000
05320	DUMP BODY	168	250000
05321	DUMP BODY W/PLOW	120	250000
05322	DUMP BODY W/SPREADER	168	250000
05323	DUMP BODY W/PLOW & SPREADER	120	250000
05324	DUMP BODY W/2 PLOWS	120	250000
05325	DUMP BODY W/2 PLOWS & SPREADER	120	250000
05328	MULTI USE BODY 10 CY W/PLOW	120	250000
05329	MULTI USE BODY 10 CY W/2 PLOWS	120	250000
05330	ROLL OFF DUMP 10CY	120	250000
05331	ROLL OFF BODY 10 CY W/PLOW	120	250000
05332	ROLL OFF BODY 10 CY W/SPREADER	120	250000
05333	ROLL OFF BODY 10 CY PLOW/SPRDR	120	250000
05334	ROLL OFF 10 CY W/2 PLOWS	120	250000
05349	CARGO BODY W/O HOIST	168	300000
05351	CARGO BODY W/PLOW	168	300000
05356	TENDER THERMOPLASTIC	168	300000
05358	STRIPER TENDER PAINT	168	300000
05359	DRILL TENDER W/ INTEG WATER TA	156	300000
05360	STRIPER LOW ENTRY CAB HOT PAI	168	300000
05364	STRIPER THERMOPLASTIC	168	300000
05368	TRUCK 10CY HOOK-LIFT	120	250000
05370	CATCH BASIN & SEWER LINE CLEAN	168	250000
05380	TANK SPRAY RIG 3 000 GAL	192	250000
05381	TANK SPRAY RIG W/CONTOUR BOO	192	250000
05382	PERSONNEL HOIST BRIDGE INSPEC	168	250000
05383	CATCH BASIN & SEWER LINE CLEAN	168	250000
05384	TRUCK LITTER PICKUP	168	250000
05385	PERSONNEL HOIST W/WORK PLATFOR	168	250000
05386	VACUM DEBRIS REMOVAL MACHINE	168	250000
05389	TRUCK ROLL OFF W/CRANE	180	250000
05390	BRIDGE REPAIR	168	250000

05391	WRECKER HEAVY DUTY	240	250000
05392	DRILL TRK MTD	168	150000
05393	TANK SPRAY RIG 3 000 GAL	192	200000
05395	CRANE SHOP USE	168	250000
05396	CRANE MOBIL STRUCTURAL HANDLI	168	250000
10101	SEDAN COMPACT 4WD	84	120000
10150	VAN MINI PASS. NON-POOL 4WD	96	120000
10208	VAN 1/2TON PASS AWD FLEX FUEL	96	120000
10301	STATION WAGON COMPACT AWD	84	120000
10400	PICKUP COMPACT 4WD	96	120000
10404	PICKUP MINI CREW CAB 4X4 GAS	96	120000
10420	PICKUP MINI EXTENDED CAB 4X4	96	120000
10480	SUV MINI SIZE 4WD	84	120000
10580	SUV SMALL SIZE	84	120000
10604	PICKUP CRW CAB 1/2 TON 4WD	120	150000
10607	PICKUP W/A/C 1/2 TON 4WD	120	150000
10608	PICKUP 1/2 TON 4WD AFV	120	150000
10627	PICKUP 1/2 TON EXTD CAB 4WD	120	150000
10628	PICKUP 1/2 TON 4WD AFV EXT CAB	120	150000
10664	P/UP CRW CAB 1/2 TON 4WD FLEX	120	150000
10680	SUV MID-SIZE 4WD	120	150000
10688	SUV FULL SIZE 4 DOOR 4WD	108	150000
10690	SUV MID-SIZE 4-DOOR 4WD	108	150000
10691	SUV 4 DOOR 4WD W/NAV SYS	108	150000
10704	P-UP 1/2-T CREWCAB 4X4 GAS/LPG	120	150000
10708	PICKUP 4WD SUPER 1/2-TON AFV	120	150000
10728	PICKUP 4WD SUP 1/2T EXTCAB AFV	120	150000
10801	PICKUP 3/4 TON W/PLOW	96	150000
10804	PICKUP 3/4 TON CREW CAB	108	150000
10807	PICKUP W/A/C 3/4 TON 4WD	108	150000
10808	PICKUP 3/4 TON 4WD AFV	108	150000
10821	PU 3/4TON EXT CAB 4WD W/PLOW	108	150000
10827	PICKUP 3/4 TON EXTD CAB 4WD	108	150000
10828	PICKUP 3/4 TON 4WD AFV EXT CAB	108	150000
10830	UTILITY BODY	108	150000
10831	UTILITY BODY W/PLOW	96	150000
10835	UTILITY BODY SURVEY 4WD	108	150000
10836	UTILITY BODY GAS	108	150000
10837	UTILITY BODY W/PLOW EXT CAB	108	150000
10838	UTILITY BODY 4 X4 EXTENDED CAB	108	150000
10839	UTILITY BODY 4X4 W/PLOW EXT CB	108	150000
10844	UTILITY BODY CREW CAB	108	150000
10845	SURVEY BODY CREW CAB 3/4 TON 4X4	108	150000
10880	SUV FULL SIZE 4WD	120	150000
10901	PICKUP W/PLOW DIESEL	120	175000
10904	PICKUP CREW CAB DIESEL	120	175000
10907	PICKUP W/AIR COND DIESEL	120	175000
10921	PU 3/4T EXT CAB 4WD W/PLOW DSL	120	175000
10927	PICKUP 3/4 TON EXT CAB 4WD DSL	120	175000
10930	UTILITY BODY DIESEL	120	175000
10931	UTILITY BODY W/PLOW DIESEL	120	175000
10944	UTILITY BODY 4WD W/CREW CB DIE	120	175000
10980	SUV FULL SIZE CARRYALL 4WD DSL	120	175000

11001	PICKUP W/PLOW 4 WD	96	150000
11004	PICKUP 1-TON CREW CAB GAS 4WD	120	150000
11005	PICK UP CREW CAB W/PLOW	108	150000
11021	PICKUP EXT CAB W/PLOW 4WD	120	150000
11030	UTILITY BODY	120	150000
11031	UTILITY BODY W/PLOW	108	150000
11034	UTILITY BODY CREW CAB	144	150000
11035	UTILITY BODY SURVEY 1T 4X4 GAS	108	150000
11036	MECHANIC BODY	144	150000
11037	DRILL AUGER	120	150000
11039	SURVEY BODY	120	150000
11051	CARGO BDY W/O HST W/PLOW 4X	144	150000
11052	CARGO BODY W/HOIST & PLOW 4W	144	150000
11100	PICKUP 1-TON DIESEL 4WD	144	175000
11101	PICKUP W/PLOW 4WD DIESEL	144	175000
11121	PICKUP 1 TON EXT CAB 4WD PLOW	120	175000
11130	UTILITY BODY	144	175000
11131	UTILITY BODY W/PLOW DIESEL	144	175000
11134	UTILITY BODY CREW CAB 4WD DIES	144	175000
11136	MECHANIC BODY DIESEL	144	175000
11139	SURVEY BODY DIESEL 4WD	144	175000
11149	CARGO BODY W/O HOIST UTILITY	120	175000
11151	CARGO BODY W/O HOIST W/PLOW DS	144	175000
11154	CARGO BODY W/O HOIST UTILITY	120	175000
11163	CARGOBODY CREW CAB W/O HOIST D	120	175000
11164	CARGO BODY CREW CAB 4WD DIES	120	175000
11204	PICKUP S-DUTY CREW CAB 4X4 GAS	144	150000
11231	UTILITY BODY W/PLOW GAS	144	150000
11236	MECH TRUCK SUPER 1-TON 4X4 GAS	144	150000
11239	SURVEY BODY SUPER 1TON 4WD GAS	120	150000
11242	UTILITY WORK TRUCK 9` 4WD W/PL	144	150000
11245	SUPER DUTY CARGO WORK 4X4 GAS	120	150000
11246	SUPER DUTY CARGO WORK W/HOIST	120	150000
11251	CARGO BODY 4WD W/PLOW NO HOIST	120	150000
11252	UTILITY WORK CARGO W/PLOW 4WD	120	150000
11264	CARGO BODY 9 FT W/UB HOIST GAS	120	150000
11336	MECH BODY SUPER 1TON 4WD DSL	144	175000
11339	SURVEY BODY SUPER 1TON 4WD DSL	144	175000
11342	UTILITY WORK TRUCK 9` 4WD W/PL	144	175000
11349	CARGO BODY 9FT 4X4 DIESEL	120	175000
11351	CARGO BODY 4WD W/PLOW DIESEL	120	175000
11364	4X4 CARGO 9` CREWCAB W/ UNDERBDY HST	120	175000
11382	DRILL CORE TESTING 4X4	144	175000
11434	UTLTY BDY CREWCAB 1.5T 4WD GAS	144	175000
11534	UTILITY TRK CREWCAB 1.5TON 4WD	144	175000
11564	CARGO BODY CRW CAB 1.5 TON 4X4	144	175000
11589	TUNNEL WASHER UNIMOG	144	175000
11904	PICKUP CREW CAB LO PRO DIESEL	144	175000
11930	UTILITY BODY 4WD 1 1/2 TON	144	175000
12330	UTILITY BODY 2.5TON 4WD DIESEL	144	175000
12336	MECHANICS BODY 11FT 4X4 DIESEL	168	175000
12388	LUBE TRUCK 4WD	168	175000
12536	MECHANICS BODY 11FT 4X4 DIESEL	168	175000

13321	DUMP BODY W/PLOW	120	180000
13322	DUMP BODY 4YD W/SPREADER 4WD	144	180000
13323	DUMP BODY W/PLOW & SPREADER	120	180000
13324	DUMP BODY W/2 PLOWS 4WD	144	180000
13330	DRILL TENDER W/SERVICE BODY	168	180000
13349	CARGO BODY 15` HVY DUTY 4 WD	120	180000
13357	DRILL TENDER W/INTEG WATER TAN	168	180000
13390	DRILL RIG	156	150000
13391	WRECKER	72	180000
13721	DUMP BODY W/PLOW	120	180000
13723	DUMP BODY W/PLOW & SPREADER	120	180000
13724	DUMP BODY W/2 PLOWS	120	180000
13725	DUMP BODY W/2 PLOWS AND SPREAD	120	180000
14290	DRILL	168	16000
15321	DUMP BODY TAG AXLE W/ PLOW	120	200000
15324	DUMP BODY 4WD TAG AXLE W/2 PLO	120	200000
15490	DRILL	168	16000
15721	DUMP BODY W/PLOW 6WD	120	200000
15723	DUMP BODY W/PLOW & SPREADER 6W	120	200000
15724	DUMP BODY W/2 PLOWS 6WD	120	200000
15725	DUMP BODY 6WD W/2 PLOWS SPREAD	120	200000
17002	ROTARY SNOWPLOW FWD CONVENTION	228	15000
17003	ROTARY SNOWPLOW LDR MTD 1200T/	228	15000
17004	ROTARY SNOWPLOW CONVENTIONAL	228	15000
17005	ROTARY SNOWPLOW LDR MTD 1400T/	228	7000
17006	ROTARY SNOWPLOW LDR MTD ARTICL	228	15000
17007	ROTARY SNOWPLOW SNOWBLAST	228	7000
17010	ROTARY SNOWPLOW NORLAND	228	7000
17011	ROTARY SNOWPLOW ROLBA 5000 T/	228	7000
17101	ROTARY SNOWPLOW CONV MT 2200T/	228	8000
17102	ROTARY SNOWPLOW CONV MT 2600T/	228	8000
17103	ROTARY SNOWPLOW CONV MT 3500T/	228	8000
17104	ROTARY SNOWPLOW CHS MT 5000TPH	240	7000
17105	ROTARY SNOWPLOW CAB OVR 2600T/	228	8000
17106	ROTARY SNOWPLOW CAB OVR 3500T/	228	8000
22000	BOAT FERRY	240	100000
22022	BOAT TRAILERABLE	240	0
22023	BOAT 17FT TRAILERABLE	240	10000
22024	BOAT NON-TRAILERABLE	240	0
22025	BOAT TRAILERABLE 25FT	240	10000
22026	BOAT TRAILERABLE 25`-30`	180	5000
24402	WEEDBURNER TRL MTD	120	0
25010	CAMPER CHAIN CONTROL	120	0
25202	CHIPPER BRUSH	156	10000
25204	CHIPPER BRUSH DISC ARTICULATIN	144	8000
25205	CHIPPER BRUSH DIESEL	156	10000
25206	CHIPPER W/LOADING ARM DIESEL	144	12000
25212	STRAW BLOWER TRAILER MOUNT	168	11000
25214	MULCH BLOWER TRAILER MOUNT	168	11000
26103	CLEANER CULVERT 50 GAL TLR MTD	144	6000
26302	CLEANER SIGN TO 124 GAL	144	4000
26402	CLEANER SIGN 350GAL TRLR MTD	144	4000
26604	CLEANER STEAM 151-300 GALPER H	144	1000

26606	CLEANER STEAM 301+ GAL/HR	144	7000
27000	COMBINATION PWR SUPPLY SYSTEM	180	3000
27106	COMPRESSOR AIR 125 CFM TRLR M	192	6000
27108	COMPRESSOR AIR 185 CFM TRLR M	192	8000
27110	COMPRESSOR AIR 200 CFM TRLR M	192	10000
27111	COMPRESSOR AIR 250-300 CFM SKI	192	10000
27112	COMPRESSOR AIR 300 CFM TRLR MT	192	10000
27114	COMPRESSOR AIR 600 CFM TRLR M	168	10000
27120	COMPRESSOR AIR 1200 CFM TRLR	192	10000
27402	CONVEYOR BELT TRLR MTD	276	2000
27412	CONVEYOR BELT W/GRAVEL SCREEN	180	6000
27621	CRANE DIESEL SELF PROPELLED 1	180	12000
27631	CRANE SELF PROPELLED 12 T	180	10000
27651	BARRIER TRANSFER UNIT DIESEL	240	8000
27652	BARRIER TRANSFER DIESEL 14FT	240	8000
27682	PERS HOIST BRIDGE INSP SLF PRO	180	4000
27690	SCISSOR LIFT 1 TON ELECTRIC	144	4000
28508	CUTTER STUMP	192	4000
28510	CUTTER PAVEMENT RIDE-ON	120	5000
31702	DRILL RIG HORIZ CRAWLER TRC MT	204	8700
31704	DRILL RIG CONCRETE TRLR MTD	204	6700
31705	DRILL RIG CONCRETE SKID MOUNTE	204	6700
31706	DRILL RIG EARTH TRAILER MTD	204	16000
31707	DRILL RIG TR MTD EARTH CONCRET	204	16000
31708	DRILL RIG TRLR MOUNT TRACK S	204	16000
31792	DRILL TRK MTD 4WD OFF ROAD ONL	204	8700
31902	PENETROMETER TRAILER MNT	180	10000
31903	DEFLECTOMETER TRAILER MTD	264	12000
31909	DYNEFLECT SYSTEM TRAILER MTD	120	0
35005	FORKLIFT 2TON TRUCK HAULED	240	12000
35006	FORKLIFT 1-1/2 TON	192	17000
35008	FORKLIFT 2 TON	240	12000
35009	FORKLIFT 2 TON TOWABLE	192	17000
35010	FORKLIFT 2-1/2 TON	240	12000
35012	FORKLIFT 3 TON	216	17000
35014	FORKLIFT 3 TON ROUGH TERRAIN	216	17000
35015	FORKLIFT 4 TON	216	17000
35016	FORKLIFT 5 TON TOWABLE	216	17000
35030	FORKLIFT 7-1/2 TON	204	17000
35035	FORKLIFT 10 TON	216	17000
35054	FORKLIFT 1 TON ELECTRIC SIT	180	7000
35055	FORKLIFT 1-TON ELECTRIC STAND	180	7000
35056	FORKLIFT 1-1/2 TON ELECTRIC	180	7000
35058	FORKLIFT 2 TON ELECTRIC STAND	180	7000
35059	FORKLIFT 2TON ELECTRIC SIT	180	7000
35702	GENERATOR 5KW W/FLOOD LIGHT	276	4000
35703	GENERATOR TRAILER MOUNT 15KW	180	17000
35706	GENERATOR ELECTRIC (TO 5 KW.)	216	7000
35720	GENERATOR ELECTRIC 126 TO 175	180	4000
36102	GRADER-TANDEM DRIVE 130	204	12000
36108	GRADER-ALL WHL DRIVE 125	180	12000
36201	GRADER-ALL WHL DRV W/PLOW 125H	204	12000
36301	GRADER-6 WHL DR W/ PLOW 150	180	10000

36304	GRADER-6 WHL DR-2 PLOWS 150	180	10000
36401	GRADER 6WHL DR W/2 PLOWS 175 H	180	10000
36421	GRADER 6WHL DR W/2 PLOWS 210HP	180	10000
36550	GRINDER ASPHALT W/O CONVEYR 14	144	5000
36563	GRINDER ASPHALT W/CONVEYOR 42I	180	9000
36564	GRINDER ASPHALT W/CONVEYOR 60I	180	9000
36565	GRINDER ASPHALT W/CONVEYOR 78I	180	9000
36601	GUARD RAIL STRAIGHTENER	120	0
38801	HEAVY VEHICLE SIMULATOR	540	11000
39104	HOT MIX ASPHLT HTR&PATCHR 4CU	120	0
39607	KETTLE HEAT TRANSFER DBL BOILE	228	5000
39608	KETTLE HEAT TRANSFER 400 GAL	228	5000
39609	KETTLE HEAT. 301-400 GAL W/TR	228	5000
39610	KETTLE EMULSION W/SPRAY BAR TRLR MTD	228	5000
39612	KETTLE HT 400GL W/BR W/O ENG H	228	5000
39615	LONGITUDINAL CRACK SEALING SYS	228	5000
39804	KETTLE EMUL ASPHALT TRANSPUMP	216	7000
39806	KETTLE BITUM DIST 1-2000G SKDM	288	8000
41514	LOADER 1-1/2C Y CRAWLER TRAC M	180	9000
41802	LOADER SKID STEER	144	9000
41804	LOADER FRONT END 1/2 C.Y.	144	9000
41828	LOADER FRONT END 1 CU YD 3 WHE	180	10000
41832	LOADER FRONT END 1 C.Y.	180	10000
41846	LOADER FRONT END 1-1/2 C.Y.	180	10000
41864	LOADER FRONT END 2-1/2 C.Y.	144	9000
41866	LOADER 2 1/2 CY REMOTE CONTR	144	9000
41870	LOADER FRONT END 3 CU YD	144	9000
41880	LOADER SELF POWRD W/CONVEYR BE	144	9000
42710	MARKER TRAFFIC RIDE-ON HOT PAI	180	5000
42716	MARKER THERMPLS HAND PROPELD	120	0
42717	MARKER W/PREHTR THERMPLS SLF P	96	3000
43502	MIXER CONCRETE TO 4 CU.FT.	120	0
44308	MOWER LAWN POWER 6 FT.	120	4500
44312	MOWER LAWN ROTARY	108	4500
44328	MOWER ROTARY 14FT	96	4000
45501	PAVER ASPHALT SELF PROPELLED	168	3500
45520	PROFILOGRAGH VEHICLE	120	0
45521	UTILITY VEHICLE OFF-HWY 6X4	96	2000
46238	PICKER DEBRIS TOWABLE	180	3500
47706	PUMP UNIT CENTRIF. 3 IN	228	5000
47708	PUMP UNIT CENTRIF. 4 IN	300	4500
47710	PUMP UNIT CENTRIF. 6 IN	240	2000
47732	PUMP MUD JACK-GROUTER	204	4000
47733	PUMP MUD JACK DUAL PUMP TRL MT	204	4000
47736	PUMP UNIT EPOXY APPLICATOR	96	4000
47738	PUMP UNIT ASPHALT ADHESIVE SKI	84	3000
47739	PUMP MUD SHAKER TRAILER MOUN	240	10000
47740	PUMP GROUT MIX TRAILER MOUNT	240	3000
49608	ROLLER PNEU. TIRED SELF-PROP	192	4000
49609	ROLLER PNUEMATIC TIRE DIESEL	180	6000
49614	ROLLER TANDEM 3T - 5T	240	6000
49615	ROLLER TANDEM 3 T - 5 T DIESEL	180	6000
49616	ROLLER TANDEM 5T - 8T	240	6000

49617	ROLLER TANDEM 5 T - 8 T DIESEL	180	6000
49618	ROLLER VIB. TANDEM 600-1400 L	108	4000
49620	ROLLER VIBRATORY TANDEM 3-6	240	6000
49621	ROLLER VIBRATORY 2.5T-5T DIESE	108	3000
49623	ROLLER VIBRATORY 5-8 TON DIESE	180	6000
50406	SANDBLAST UNIT (301 TO 500 LBS	240	7500
50418	SANDBLAST UNIT 6 TON TRLR MTD	192	5000
50612	SAW CONCRETE	120	0
52280	SCOOTER MOTOR 3 WHEEL	228	17000
52281	SCOOTER MOTOR 4 WHEEL ELEC	228	17000
52282	SCOOTER MOTOR 4 WHEEL	228	13000
52713	SEEDER HYDRO	120	4000
54406	SHOVEL POWER 1/2 C.Y.	180	16000
54408	SHOVEL POWER 1 C. Y.	180	16000
54801	SIGN PASS SEQUENCIAL ARROW 4FT	120	0
54802	SIGN PORTABL BULB MATRIX TRL	120	0
54803	SIGN PORTABLE BULB MATRIX SK	120	0
54804	SIGN PASS ELEC SEQ SKID MTD 3F	120	0
54806	SIGN VELCRO-MESSAGE TRLR. MTD.	120	0
54807	SIGN VELCRO-MESSAGE SKID MTD.	120	0
54808	SIGN WORK TRAILER MOUNTED	120	0
54810	SIGN FLIP DISC-MESSAGE TRLR MT	120	0
54811	SIGN FLIP DISC-MESSAGE SKID MT	120	0
54812	SIGN LED CMS BRICK MATRIX SOLA	120	0
54813	SIGN SEQUENTIAL SOLAR TRLR MTD	120	0
54814	SIGN CMS LED TRUCK MOUNTED	120	0
54815	SIGN CMS HYBRID TRUCK MOUNT	120	0
54816	SIGN CMS LED TRAILER MTD SOL	120	0
54817	SIGN CMS LED TRAILER MTD SOL	120	0
54820	SIGNAL UNIT PORTABLE PRI TRL M	144	5000
54821	SIGNAL UNIT PORTABLE SEC TRL M	144	5000
54823	RADIO HAR TRAILER MTD	120	0
54824	SATELLITE CONTROL UNIT TRLR MT	120	0
54826	SIGN CMS LED TRAILER MTD GAS	144	10000
54830	SIGN RADAR SPEED MONITOR TRL M	120	10000
55180	SNOW VEHICLE PASSENGER	108	2000
55300	SPRAY 100 GAL SKID MOUNTED	96	2500
55301	SPRAY 150 GAL TURBINE SKID	156	2500
55304	SPRAY 200 GAL SKID MOUNTED	144	7500
55306	SPRAY 200 GAL TRAILER MOUNTE	144	2000
55308	SPRAY 300 GAL SKID MOUNTED	192	15000
55310	SPRAY 300 GAL TRAILER MOUNTE	180	10500
55312	SPRAY 400 GAL SKID MOUNTED	168	11000
55314	SPRAY 400 GAL TRAILER MOUNTE	156	12000
55315	SPRAY 500 GALLON SKID MTD.	156	12000
55316	SPRAY 500 GALLON TRLR. MTD.	156	12000
55317	SPRAY WEED SEEKER SKID MOUNTED	156	12000
55320	SPRAY 1000 GAL TRAILER MOUNT	408	11000
55322	SPRAYER CHEM INJECTION SKID MT	192	11000
55335	SPRAY 2500 GAL. DE-ICE SKID MT	192	11000
55340	HYDRO SEEDER TRAILER MOUNT	168	13000
55505	SCREENING PLANT TOWABLE	168	2000
55513	SPREADER CHIP SELF PROPELLED	168	2000

55514	SPREADER ASPHALT BOX	120	0
55522	SPREADER HOPPER TYPE 2 CY.	120	0
55525	SPREADER HOPPER TYPE 4 CY.	120	0
55528	SPREADER HOPPER TYPE 8 CY.	120	0
55529	SPREADER HOPPER ROLLOFF	120	0
55530	SPREADER HOPPER TYPE 10 CU.Y	120	0
55531	SPREADER SHOULDER	240	13000
55532	SPREADER SHOULDER SELF PROPEL	240	13000
56500	SCRUBBER LANE & FLOOR RIDEABLE	108	2500
56501	SWEEPER TURF	108	2500
56504	SWEEPER ROTARY TOWED SELF-POW	144	5000
56505	SWEEPER ROTARY TOWED DIESEL	144	5000
56507	SWEEPER ROTARY TOWED/SLF PROP	144	5000
56702	SWEEPER LOT 48 IN.	168	3000
56704	SWEEPER LOT 54 IN.	168	4000
56808	SWEEPER CONV. 3-4 CY DIESEL	60	4000
56811	SWEEPER HIGH DUMP 4CY CNG	60	4000
56812	SWEEPER STREET REGENERATIVE DI	120	9000
59000	EXCAVATOR 11-14 TONS	228	18000
59001	EXCAVATOR 20 TON	228	18000
59004	TRACTOR CRAWLER W/DOZER 75H	228	10000
59006	TRACTOR CRAWLER W/DOZER 105	228	10000
59010	TRACTOR CRAWLER W/DOZER 165	228	10000
59204	TRACTOR GARDEN W/LOADER	156	8000
59206	TRACTOR WHEEL 20 HP W/ROT MOW	156	8000
59209	TRACTOR WHEEL 4000-4999 LBS.	156	8000
59210	TRACTOR WH HYDRO DR 6000-7999	156	8000
59211	TRACTOR W/LDR&/OR FLAIL MOWER-	144	6500
59213	TRACTOR WHL W/BROOM & MOWER	144	6500
59214	TRACTOR WHEEL DIESEL	144	6500
59215	TRACTOR WH W/ARM MOUNTED MOWER	144	6500
59216	TRACTOR WHEEL DIESL W/REAR MOW	144	6500
59217	TRACTOR WH 75HP SIDE OR REAR M	144	6500
59218	TRACTOR WHEEL 120 HP W/2 MOWER	144	6500
59219	TRACTOR BI-DIRECTIONAL 105 HP	144	6500
59220	TRACTOR WH W/BAKHOE &/OR LDR A	216	9000
59221	TRACTOR WHEEL FRONT ATTACHMEN	132	7500
59222	TRACTOR WHEEL W/BOOM MT MOWER	132	4500
59224	TRACTOR WH DIE HY DR 8000-9999	144	8000
59230	TRACTOR WH W/BAKHOE &/OR LDR A	216	9000
59300	TRACTOR TUG	180	10000
59804	TRAFFIC LINE REMOVER	144	2500
59806	LINE REMOVER RIDE ON VACUM	144	2500
60100	TRAILER PORTABLE CHEM TOILET	120	0
60101	TRAILER TOILET W/ CARGO	120	0
60102	TRAILER PORTABLE RESTROOM	120	0
60201	TRAILER UTILITY TO 1 TON	120	0
60202	TRAILER ROLLER 1 TON	120	0
60203	TRAILER EQUIPMENT 1 TON TILT	120	0
60204	TRAILER INCIDENT RESPONSE 1 TO	144	0
60205	TRAILER EQUIPMENT 1-1/2 TO 3	144	0
60206	TRAILER SNOW VEHICLE	144	0
60207	TRAILER EQUIPMENT 4 TO 7 TON	144	0

60208	TRAILER ROLLER 6 TON	144	0
60209	TRAILER EQUIPMENT 8 TO 12 TON	144	0
60210	TRAILER EQUIPMENT 15 TON	144	0
60211	TRAILER EQUIPMENT 13 TO 20 TO	144	0
60212	TRAILER ROLLER EQUIPMENT	144	0
60213	TRAILER EQUIPMENT 21 TO 30 T	144	0
60214	TRAILER EQUIPMENT 15-TON TILT	144	0
60215	TRAILER EQUIPMENT TO 40 TON	144	0
60216	TRAILER EQUIPMENT 40-45 TON	144	0
60230	TRAILER BOAT CARRIER	144	0
60231	TRAILER BICYCLE CARRIER	144	0
60232	TRAILER AVALANCHE CONTROL UNI	144	0
60233	TRAILER ENCLOSED TANDEM AXLE	144	0
60234	TRAILER PAINT CONTAINMENT SYS	144	0
60235	TRAILER PILE TEST BEAM	144	0
60236	TRAILER ASPHALT TESTER	144	0
60240	TRAILER CONVERTER DOLLY	144	0
60245	TRAILER DRILL STEEL & AUGERS	144	0
60246	TRAILER WITH BARGE PONTOON	144	0
60247	TRAILER SIGN CARRIER	144	0
60248	TRAILER POLE	144	0
60250	TRAILER THERMOPLASTIC	144	0
60270	TRAILER REAR DUMP 10 CU. YD.	144	0
60274	TRAILER BOTTOM HOPPER 20 CU	144	0
60276	TRAILER BOTTOM DUMP 12CY 5TH W	144	0
60277	TRAILER BOTTOM DUMP 12 CY P HO	144	0
60280	TRAILER CONTAINER	144	0
60288	TRAILER LUBE	144	0
60806	TRAILER OFFICE 22FT	144	0
60810	TRAILER OFFICE 32FT	144	0
60813	TRAILER OFFICE 10FT X 45FT	144	0
60814	TRAILER OFFICE 10FT X 55FT	144	0
60815	TRAILER MOBILE CLASSRM 5TH WHE	144	0
60816	TRAILER PERSONNEL SHOWERS	144	0
61103	TRAILER TANK (400 GAL)	144	0
61104	TRAILER TANK (500-750 GAL.)	144	0
61118	TRAILER SEMI TANK SPRAY 2000GA	144	0
61126	TRAILER SEMI TANK 3001-7000 GA	144	0
61128	TRAILER SEMI EMUL-HEATER 400	144	0
61130	TRAILER VAN HIGH CUBE TO 27FT	144	0
61132	TRAILER CARGO TO 12 TON	144	0
61136	TRAILER SEMI MUDJACK PUMP	144	0
61420	TRAILER LAB. TESTING	144	0
61421	TRAILER EMERGCY INCIDENT COMND	144	0
61430	TRAILER STORAGE	144	0
61500	TRAILER BARRIER	144	0
62504	TRENCHING MACHINE	120	1500
64002	WELDER ARC PORT.	156	4500

APPENDIX 3B
Arizona DOT Replacement Criteria

Class	Description	Meter	Max Months	Miles/Hours	Fuel Type
0032	SEDAN: COMPACT CNG BI-FUEL	125,000	108	Miles	UNL
0033	SEDAN: COMPACT CNG DEDICATED	135,000	108	Miles	CNG
0034	SEDAN: COMPACT HYBRID ELEC/UNL	135,000	108	Miles	UNL
0040	SEDAN: MID SIZE	125,000	108	Miles	UNL
0041	SEDAN: MID SIZE E85 FFV	125,000	108	Miles	UNL
0043	SEDAN: MID SIZE POLICE PACKAGE	125,000	108	Miles	UNL
0045	SEDAN: LARGE	135,000	108	Miles	UNL
0047	SEDAN: POLICE O/H & OP ONLY	125,000	108	Miles	UNL
0111	PICKUP: 1/2 TON SMALL W/AC	125,000	108	Miles	UNL
0114	PU: 1/2 TON MID EXT CAB 4X4 FF	135,000	108	Miles	UNL
0115	PICKUP:1/2 TON EXT CAB 4X2 FFV	135,000	108	Miles	UNL
0115FY12A	PICKUP:1/2 TON EXT CAB 4X2 FFV	135,000	108	Miles	UNL
0121	PICKUP: 1/2 TON W/AC	135,000	108	Miles	UNL
0122	PICKUP: 1/2 TON W/EXT CAB	135,000	108	Miles	UNL
0123	PICKUP: 1/2 TON 4X4	135,000	108	Miles	UNL
0123FY11A	PICKUP:1/2 TON, 4X4 REG. CAB, FFV, 8` BODY	135,000	108	Miles	UNL
0123FY12A	PICKUP:1/2 TON, 4X4 REG. CAB, FFV, 8` BODY	135,000	108	Miles	UNL
0124	PICKUP: 1/2 TON CNG BI-FUEL	135,000	108	Miles	CNG/UNL
0125	PICKUP: 1/2 TON LPG BI-FUEL	135,000	108	Miles	LPG/UNL
0126	PICKUP: 1/2 TON 4X4 W/EXT CAB	135,000	108	Miles	UNL
0126FY12A	PICKUP: 1/2 TON 4X4 W/EXT CAB	135,000	108	Miles	UNL
0127	PICKUP: 1/2 TON CREW CAB 4X2	135,000	108	Miles	UNL
0128	PICKUP: 1/2 TON, CREW CAB 4X4	135,000	108	Miles	UNL
0128FY12A	PICKUP: 1/2 TON 4X4 CREW CAB FFV	135,000	108	Miles	UNL
0129	PICKUP: 1/2 TON EXT CAB LPG	135,000	108	Miles	UNL
0130	PICKUP: 1/2 TON 4X2 8` BED FF	135,000	108	Miles	UNL
0130FY11A	PICKUP:1/2 TON,4X2, FFV, REG. CAB, 8` BODY	135,000	108	Miles	UNL
0130FY12A	PICKUP:1/2 TON,4X2, FFV, REG. CAB, 8` BODY	135,000	108	Miles	UNL
0131	PICKUP: 3/4 TON W/AC	145,000	120	Miles	UNL
0132	PICKUP: 3/4 TON DSL	145,000	120	Miles	UNL
0133	PICKUP: 3/4 TON W/EXT CAB	145,000	120	Miles	UNL
0133D	PICKUP:3/4 TON EXT CAB DSL 4X2	145,000	120	Miles	UNL
0133FY11A	PICKUP: 3/4 TON EXT CAB FFV	145,000	120	Miles	UNL
0133FY12A	PICKUP: 3/4 TON EXT CAB FFV	145,000	120	Miles	UNL
0135	PU: 3/4 4X2 DSL PUR W/FED FUND	145,000	120	Miles	UNL
0137	PICKUP: 3/4 TON W/UTIL BODY	145,000	120	Miles	UNL
0137D	PU: 3/4 TON UTILTIY 4X2 DSL	250,000	120	Miles	DSL
0137FY12A	PICKUP: 3/4 TON W/UTIL BODY	145,000	120	Miles	UNL
0138	PICKUP: 3/4 TON W/ARROWBOARD	145,000	120	Miles	UNL
0139	TRUCK: 3/4T EXT CAB UTILITY	145,000	120	Miles	UNL
0140	TRK:3/4T EXT CAB UTILITY DSL	250,000	120	Miles	DSL
0141	PICKUP: 3/4 TON W/AC 4X4	145,000	120	Miles	UNL
0142	PICKUP: 3/4 TON W/EXT CAB 4X4	145,000	120	Miles	UNL
0142FY11A	PICKUP: 3/4 TON 4X4 EXTENDED CAB FFV	145,000	120	Miles	UNL
0142FY12A	PICKUP: 3/4 TON 4X4 EXTENDED CAB FFV	145,000	120	Miles	UNL
0143	PICKUP: 3/4 TON DSL 4X4	250,000	120	Miles	DSL
0144	PICKUP: 3/4 REG 4X4 ALLISON	145,000	120	Miles	UNL
0145	PICKUP: 3/4 TON 4X4 EXT CAB DSL	250,000	120	Miles	DSL
0146	3/4 TON PICKUP 4X4	250,000	120	Miles	DSL
0147	PICKUP: 3/4 TON W/UTIL BODY4X4	145,000	120	Miles	UNL
0147FY11A	PICKUP:3/4 TON 4X4 EXT CAB UTILITY	145,000	120	Miles	UNL
0148	PU:3/4TON 4X4 UTILITY DSL	250,000	120	Miles	DSL
0151	PICKUP: 3/4 TON CREWCAB 4X2	145,000	120	Miles	UNL
0152	TRUCK:3/4 CREW CAB 6`BED DSL	250,000	120	Miles	DSL
0159	PICKUP: 3/4 TON CREWCAB 4X4	145,000	120	Miles	UNL
0159FY12A	PICKUP: 3/4 TON CREWCAB 4X4	145,000	120	Miles	UNL
0160	PICKUP: 3/4 CREW 4X4 ALLISON	145,000	120	Miles	UNL
0161	PICKUP: 3/4 TON 4X4 CREW CAB DSL	250,000	120	Miles	DSL
0162	PU: 3/4 TON UTILITY 4X4 DSL UT	250,000	120	Miles	DSL
0174	SUV: W/AC 4X2	135,000	108	Miles	UNL
0175	SUV:MIDSIZE 4X4 HYBRID	125,000	108	Miles	UNL
0176	SUV: 1/2 TON W/AC 4X4	135,000	108	Miles	UNL
0176FY12A	SUV: 1/2 TON W/AC 4X4	135,000	108	Miles	UNL
0177	SUV: FULL SIZE POLICE PKG 4X4	135,000	108	Miles	UNL
0178	SUV:POLICE SPECIAL SERVICE. 4X4	135,000	108	Miles	UNL
0179	VAN: 7 PASSENGER ALL WHEEL DR	145,000	108	Miles	UNL
0180	VAN: 1/2 TON 4X2 FFV-E85	135,000	108	Miles	UNL
0182	MINI VAN: 1/2 TON FWD 7 PASS	135,000	108	Miles	UNL
0183	VAN:1/2 TON 8 PASSENGER FFV	135,000	108	Miles	UNL
0184	VAN: 8 PASS LPG BI-FUEL	135,000	108	Miles	LPG/UNL
0185	VAN: 3/4 TON CARGO LPG BI-FUEL	135,000	120	Miles	LPG/UNL
0186	VAN:3/4 TON	135,000	120	Miles	UNL
0187	VAN: 7 PASS E85 FFV	135,000	120	Miles	UNL

Class	Description	Meter	Max Months	Miles/Hours	Fuel Type
0188	VAN: 1 TON CARGO EXT	250,000	120	Miles	DSL
0189	VAN: 1 TON CARGO UNL	145,000	120	Miles	UNL
0190	VAN: 12 PASSENGER	135,000	120	Miles	CNG/UNL
0191	VAN: 3/4 T CARGO MVD FED FUNDS	145,000	120	Miles	UNL
0210	TRUCK: 1 TON DUMP UNL	150,000	120	Miles	UNL
0211	TRUCK:DUMP 2CY ALLISON 4X2	150,000	120	Miles	UNL
0213	TRUCK: DUMP 4X2 2 CY CREW CAB	150,000	120	Miles	UNL
0215	TRUCK: 1 TON DUMP DSL	250,000	120	Miles	DSL
0216	TRUCK: DUMP CREW CAB 2CY DSL	250,000	120	Miles	DSL
0220	TRUCK: 1 TON FLATBED	150,000	120	Miles	UNL
0221	TRUCK: 1 TON FLATBED DSL	250,000	120	Miles	DSL
0222	TRUCK: 15K GVW LANDSCAPE DUMP	150,000	120	Miles	UNL
0223	TRUCK: 15000GVW LANDSC ALLISON	150,000	120	Miles	UNL
0230	TRUCK: 1 TON UTILITY	150,000	120	Miles	UNL
0231	TRUCK:1 T UTIL EXT CAB 4X4 DS	250,000	120	Miles	DSL
0232	TRUCK: 1 TON CC W/UTIL BOD DSL	250,000	120	Miles	DSL
0234	TRUCK: 1 TON EXT CAB UTIL DSL	250,000	120	Miles	DSL
0235	TRUCK: FLATBED 11000 GVW 4X4	250,000	120	Miles	DSL
0235U	TRUCK :FLAT BED, 11000 GVWR, UNL, 4X4, ALUM & STEEL	150,000	120	Miles	UNL
0236	TRUCK: DUMP 2CY ALLISON DSL	250,000	120	Miles	DSL
0237	TRUCK: 1T UTILITY 4X4 ALLISON	150,000	120	Miles	UNL
0238	TRUCK:1T CREWCAB UTIL ALLISON	250,000	120	Miles	DSL
0239	TRK:1.5T,4X2 SIGN TRUCK W/CRAN	150,000	120	Miles	UNL
0241	TRUCK: 15K GVW SIGN DSL	250,000	120	Miles	DSL
0242	TRUCK: 15K GVW SHOP UTIL DSL	250,000	120	Miles	DSL
0243	TRUCK: 15K GVW UTIL	250,000	120	Miles	DSL
0245	TRUCK: 1 TON DUMP DSL 4X4	250,000	120	Miles	DSL
0246	TRUCK:1 T UTIL DSL 4X4 W/CRANE	250,000	120	Miles	DSL
0247	TRUCK: 1 TON DUMP 4X4 UNL	150,000	120	Miles	UNL
0248	PICKUP 1 TON 4X2 DRW	150,000	120	Miles	UNL
0249	CREW CAB 1.5 TON GUARDRAIL	250,000	120	Miles	DSL
0251	TRUCK: 15K GVW 35 FT DSL	200,000	120	Miles	DSL
0253	15K GVW DSL SIGN BODY W/CRANE	250,000	120	Miles	DSL
0254	TRK:1.5T 4X4 SERV TRK W/CRANE	250,000	120	Miles	DSL
0255	TRUCK:4X2,DSL SIGN BODY W/CRAN	250,000	120	Miles	DSL
0256	TRUCK:4X4 DSL SIGN BODY W/CRAN	250,000	120	Miles	DSL
0257	1 TON UTILITY DSL W/ALLISON	250,000	120	Miles	DSL
0258	SIGN TRUCK 4X4 CRANE 30 AERIAL	250,000	120	Miles	DSL
0259	TRUCK:1.5 TON UTILITY,CREW CAB	250,000	120	Miles	DSL
0260	TRUCK: 1 TON CONE	150,000	120	Miles	UNL
0261	TRK:4X2 FB STAKESIDE 18000 DSL	250,000	120	Miles	DSL
0262	DUMP TRUCK CREW CAB 4CY 18,000	150,000	120	Miles	UNL
0263	DUMP TRUCK REG CAB 4X2	150,000	120	Miles	UNL
0264	STAKE TRUCK 4X2 18,000 GVWR	150,000	120	Miles	UNL
0265	DUMP TRUCK 4X4 REG CAB	150,000	120	Miles	UNL
0268	TRK:DUMP,LANDSCAPE 18,000 GVWR	150,000	120	Miles	UNL
0269	TRK:SIGN 4X2 18,000 GVWR W/ALI	150,000	120	Miles	UNL
0272	TRK: DUMP CREW CAB 18000 GVWR	250,000	120	Miles	DSL
0273	ARFF TRK W/AUX EQUIPMENT	100,000	120	Miles	DSL
0274	TRUCK; RUNWAY AIR STAIRS	100,000	120	Miles	UNL
0291	TRUCK: 15K GVW VAN DSL	225,000	120	Miles	DSL
0355	TRUCK: 2 AXLE PLOW HD DSL	300,000	144	Miles	DSL
0356	TRUCK:DUMP 2A 6.5CY MAN W/P&S	300,000	144	Miles	DSL
0357	TRUCK:DUMP 2A 6.5CY AUTO W/P&S	300,000	144	Miles	DSL
0360	TRUCK: 2 AXLE DUMP DSL	300,000	144	Miles	DSL
0370	TRUCK: 2 AXLE FLATBED DSL	300,000	144	Miles	DSL
0371	TRUCK: 2 AXLE LUBE DSL	300,000	144	Miles	DSL
0373	TRUCK: 2 AXLE AERIAL DSL	300,000	144	Miles	DSL
0374	TRUCK: 2A CC FLATBED 33K GVW D	300,000	144	Miles	DSL
0375	TRUCK: 4X2 GUARD RAIL 26,000 +	300,000	144	Miles	DSL
0376	TRK:LANDSCAPE 8+ CY 4X2	300,000	144	Miles	DSL
0377	MOBILE COMMAND CENTER 4X2 36`	225,000	120	Miles	UNL
0380	TRUCK TRACTOR: 2 AXLE DSL	300,000	144	Miles	DSL
0381	TRK:WATER 4X4 2000 GAL NO REP	300,000	144	Miles	DSL
0382	AARF TRK 4X4, WATER/FOAM	10,000	144	Hours	DSL
0383	FIRE TRUCK; STRUCTURES	10,000	144	Hours	DSL
0410	TRUCK: 3 AXLE DUMP W/PLOW DSL	350,000	144	Miles	DSL
0411	TRUCK: 3 AXLE DUMP PLOW WING D	350,000	144	Miles	DSL
0412	TRUCK: 6X4 DUMP MAN W/P S	350,000	144	Miles	DSL
0413	TRUCK:6X4 DUMP MAN W/P S W	350,000	144	Miles	DSL
0414	TRUCK: 6X4 DUMP AUTO W/P S	350,000	144	Miles	DSL
0415	TRUCK: 6X4 DUMP AUTO W/ P S W	350,000	144	Miles	DSL
0417	TRK: 6X4 DUMP MAN W/P S & W	350,000	144	Miles	DSL

Class	Description	Meter	Max Months	Miles/Hours	Fuel Type
0425	TRUCK: 3 AXLE DESERT DUMP DSL	350,000	144	Miles	DSL
0426	TRUCK:3 AXLE DESERT DUMP- ALLISON	350,000	144	Miles	DSL
0430	TRUCK: 3 AXLE FLATBED DSL	350,000	144	Miles	DSL
0432	TRK:SCALE SERVICE & MAINTENACE	350,000	144	Miles	DSL
0440	TRUCK: 3 AXLE WATER CARRIER	300,000	144	Miles	DSL
0441	3AXLE DUMP W/2500G SLIPIN TANK	350,000	180	Miles	DSL
0520	TRUCK: 3 AXLE TRACTOR DIESEL	400,000	144	Miles	DSL
0522	TRACTOR: 3 AXLE W/SLEEPER DSL	400,000	144	Miles	DSL
0630	TRUCK: 2 AXLE 4X4 DUMP	300,000	144	Miles	DSL
0810	TRUCK: AERIAL PLATFORM	300,000	144	Miles	DSL
0811	TRK:TELESCOPIC AERIAL PLATFORM	300,000	144	Miles	DSL
0812	TRK:TELESCOPIC PLATFORM 55`	300,000	144	Miles	DSL
0911	TRUCK: WITH R.O. CRANE	300,000	144	Miles	DSL
0914	TRUCK: HERBICIDE 3 AXLE 6X4	300,000	144	Miles	DSL
0915	TRUCK: 6X4 DIGGER DERRICK	300,000	144	Miles	DSL
1010	GRADER: ARTICULATED	10,000	144	Hours	DSL
1015	GRADER: 6X4 150+HP GTD MAINT	10,000	144	Hours	DSL
1071	GRADER: 6 X 6 W/WING	12,000	144	Hours	DSL
1110	LOADER: SKID STEER	10,000	120	Hours	DSL
1130	LOADER: 1 TO 2 YD	10,000	144	Hours	DSL
1140	LOADER: 2 YD AND OVER	10,000	144	Hours	DSL
1141	LOADER: 2 YD & OVER GTD MAINT	6,000	84	Hours	DSL
1142	LOADER 4X4 2CY W/TOOL CARRIER -TCB/GM	6,000	84	Hours	DSL
1200	LOADER: 4 YD SNOWBLAST CARRIER	12,000	144	Hours	DSL
1201	LOADER:4X4 ART.5CY TCB/GRP/GM	6,000	84	Hours	DSL
1300	DOZER: UP TO 149 HP	12,000	144	Hours	DSL
1610	BACKHOE: WHEELED 1-1.5 CY	10,000	144	Hours	DSL
1611	BACKHOE: WHEELED 4X4 1-1.5 CY - TCB/GM	6,000	84	Hours	DSL
1625	WHEELED HYDRAULIC EXCAVATOR	10,000	144	Hours	DSL
2100	BROOM: SELF-PROPELLED	8,000	120	Hours	DSL
2101	BROOM:SELF-PROP W/CAB TCB/GM	6,000	84	Hours	DSL
2211	SWEEPER: TRUCK MOUNTED MOBILE	10,000	120	Hours	DSL
2212	SWEEPER: TRK MTD PM-10 COMP	10,000	120	Hours	DSL
2213	SWEEPER, PARKING LOT	6,500	84	Hours	DSL
2500	STRIPER: SELF PROPELLED	5,000	84	Hours	DSL
2511	STRIPER: 4X2 DISTRICTWIDE	300,000	120	Hours	DSL
2600	STRIPER:DSL TRK 6X4 INTERSTATE	350,000	120	Hours	DSL
3000	MOWERS: LAWN & GARDEN	N/A	72	N/A	UNL
3100	MOWER EQUIP INDUSTRIAL TRACTOR	10,000	120	Hours	DSL
3101	TRACTOR: HIGHWAY MOWING, AWD, W/CAB, 95 PTO HP OR LESS	10,000	120	Hours	DSL
3102	TRACTOR: HIGHWAY MOWING DIESEL, W/CAB, 95 PTO HP OR GREATER	10,000	144	Hours	DSL
3210	ATTACHMENTS: LOADER	0	120	N/A	NONE
3211	22` RUNWAY BROOM ATTACHMENT	0	120	N/A	NONE
3215	ATTACHMENTS: BROOM	0	72	N/A	NONE
3220	ATTACHMENTS: AUGER	0	120	N/A	NONE
3230	ATTACHMENTS: BLADE	0	120	N/A	NONE
3240	ATTACHMENTS: MOWER SIDE ROTARY	0	120	N/A	NONE
3241	ATTACHMENTS: MOWER REAR ROTARY	0	120	N/A	NONE
3242	MOWER: FLEX WING 15` -20` WIDE	0	120	N/A	NONE
3243	ATTACHMENTS: MOWER REAR FLAIL	0	120	N/A	NONE
3245	ATTACHMENTS: BOOM AXE	0	120	N/A	NONE
3246	ATTACHMENTS: MOWER SIDE FLAIL	0	120	N/A	NONE
3247	MOWER: HYDRAULIC REAR	0	120	N/A	NONE
3248	MOWER: HYDRAULIC SIDE	0	120	N/A	NONE
3249	ATTACHMENT: ROTARY BOOM AXE	0	120	N/A	NONE
3250	ATTACHMENTS: SEED DRILL	0	144	N/A	NONE
3600	WEED SPRAYER: TRAILER/SKID MTD	0	144	N/A	NONE
3700	WEED BURNER: TRAILER/SKID MTD	0	144	N/A	NONE
3800	CHIPPER: BRUSH	9,000	144	Hours	DSL
4108	SNOWPLOW: 8 FT	0	144	N/A	NONE
4111	SNOWPLOW: 11 FT	0	144	N/A	NONE
4119	SNOWPLOW: MISCELLANEOUS	0	144	N/A	NONE
4120	SNOWPLOW: 11 FT FOR 3 AXLE TRK	0	144	N/A	NONE
4121	SNOW PLOW: REVERS 11` 34-37" H	0	144	N/A	NONE
4130	SNOWPLOW: "V"	0	144	N/A	NONE
4140	SNOWPLOW: WING	0	144	N/A	NONE
4220	SPREADER, CROSS BODY CONVEYOR	0	120	N/A	NONE
4230	SPREADER, HOPPER, 1 TO 5 YD	0	120	N/A	NONE
4240	SPREADER: HOPPER 5 TO 9 YD	0	120	N/A	NONE
4241	SPREADER: HOPPER 6.5CY 10" SS	0	144	N/A	NONE
4250	SPREADER: HOPPER 10 YD & OVER	0	144	N/A	NONE
4251	SPREADER:10+ V BOX STAIN STEEL	0	144	N/A	NONE
4400	BLADE: U FOR DOZER	0	144	N/A	NONE

Class	Description	Meter	Max Months	Miles/Hours	Fuel Type
4500	SNOWBLAST	8,000	144	Hours	DSL
4501	SNOW BLOWER HIGH PROD 4X4	10,000	144	Hours	DSL
5010	WATER TANK: PORTABLE	0	120	N/A	NONE
5011	WATER TANK: SLIP-IN 2500 GAL	0	120	N/A	NONE
5015	WATER TANK: CHASSIS MOUNTED	0	144	N/A	NONE
5016	TANK: CHAS MTD >3500G W/FG	0	144	N/A	NONE
5017	WATER TANK: 2000 GAL NO REPLA	0	120	N/A	NONE
5020	GLASS BEAD TANK - 15,000LB CAPACITY	0	144	N/A	NONE
5030	TANK: TRAILER MTD >2000 GAL	0	144	N/A	NONE
5110	TRAILER: 1/2 TO 2 TON SHOPMADE	0	144	N/A	NONE
5111	TRAILER: 1/2 - 2 TON W/MISC EQ	0	144	N/A	NONE
5112	TRAILER: 1/2 TON	0	144	N/A	NONE
5113	TRAILER: 2 WHEEL SIGN	0	144	N/A	NONE
5114	TRAILER: PROFILOGRAPH	0	144	N/A	NONE
5120	TRAILER: 1-6 TON	0	144	N/A	NONE
5130	TRAILER: 2-9 TON MISC	0	144	N/A	NONE
5131	TRAILER: 2 AXLE TILT 7 TON	0	144	N/A	NONE
5141	TRAILER: MOBILE ENFORCEMENT	0	120	N/A	NONE
5142	SCALE TRAILERS FOR 12 FOOT AND 14 FOOT PORTABLE SCALES	0	120	N/A	NONE
5160	TRAILER: 16 TON	0	144	N/A	NONE
5210	TRAILER: 20 TON	0	144	N/A	NONE
5211	TRAILER: 20 TON HYD ROLL BACK	0	144	N/A	NONE
5220	TRAILER: FLATBED SEMI	0	144	N/A	NONE
5221	TRAILER: 40T FLATBED HYD RAMP	0	144	N/A	NONE
5222	TRAILER: 50 TON EQUIP TRANSFER	0	144	N/A	NONE
5230	TRAILER: SEMI DUMP	0	144	N/A	NONE
5302	TRAILER: WATER TANK 6000+ GAL	0	144	N/A	NONE
5400	TRAILER: VAN TYPE	0	144	N/A	NONE
5610	ARROWBOARD: TRAILER	10,000	108	Hours	DSL
5611	ARROWBOARD: TRLR MTD SOLAR	0	120	N/A	SOLAR
5612	ARROWBOARD TRAILER:SOLAR	0	120	N/A	SOLAR
5622	VMS: SOLAR TRLR MTD	0	120	N/A	SOLAR
5623	VMS:SOLAR CELL&RADAR TRLR MTD	0	120	N/A	SOLAR
5700	ARROWBOARD: TRUCK MOUNTED	0	120	N/A	NONE
5701	ARROWBOARD:TRK MT. 180 DEGREE	0	120	N/A	NONE
5702	SOLAR LED EMERGENCY LIGHTING PACKAGE	0	72	N/A	SOLAR
5702FY12A	SOLAR LED EMERGENCY LIGHTING PACKAGE	0	72	N/A	SOLAR
5703	VMS: 2 AND 3 LINE TRUCK MOUNTED	0	108	N/A	NONE
5750	ATTENUATOR: TRUCK MOUNTED	0	96	N/A	NONE
5751	ATTENUATOR: TAILGATE MOUNTED	0	96	N/A	NONE
5752	ATTENUATOR: CHASSIS MTD	0	96	N/A	NONE
5753	ATTTENUATOR TRAILER 100KM W/AB	0	96	N/A	NONE
6000	SPREADER: CHIP, DROP BOX	0	144	N/A	NONE
6140	OIL DISTRIBUTOR: CHASSIS MOUNT	8,000	120	120	LPG
6221	TRUCK: OIL DIST CHASSIS DSL	250,000	144	Miles	DSL
6500	SPREADER: SELF PROPELLED	8,000	144	Hours	DSL
6520	PAVER	8,000	144	Hours	DSL
6710	ROLLER: TOWED STEEL GRID	0	144	N/A	NONE
6820	ROLLER: SELF-PROPEL VIB 2 DRUM	8,000	120	Hours	DSL
6840	ROLLER: PNEUMATIC 9 WHEEL	8,000	144	Hours	DSL
7010	AIR COMPRESSOR: SHOP GAS	0	144	N/A	UNL
7011	AIR COMP TRK MOUNTED 35 CFM	0	144	N/A	UNL
7020	AIR COMPRESSOR: SHOP ELECTRIC	0	144	N/A	ELE
7110	AIR COMPRESSOR:TRAILER MTD GAS	8,000	144	144	UNL
7120	AIR COMPRESSOR:TRL MTD 200 CFM	8,000	144	Hours	DSL
7205	LIGHT TOWERS: PORTABLE	8,000	144	Hours	DSL
7220	GENERATOR: 6-20 KW	0	144	N/A	NONE
7230	GENERATOR: 21-30 KW DSL	7,000	144	Hours	DSL
7240	GENERATOR: OVER 30 KW DSL	20,000	144	Hours	DSL
7310	WELDER: PORT ELEC UND 600 AMP	0	144	N/A	ELE
7315	WELDER: STAT ELEC UND 600 AMP	0	144	N/A	ELE
7600	CART: GOLF	9,000	144	Hours	ELE
7601	ELECTRIC UTILITY WORK TRUCK	9,000	144	Hours	ELE
7602	ALL TERRAIN VEHICLE 6X6	5,000	72	Hours	DSL
7700	SHOP TUG	10,000	144	Hours	DSL
7701	AIRCRAFT TUG	10,000	144	Hours	DSL
7800	FORKLIFT UNDER 8000 LBS	10,000	144	Hours	DSL
7801	FORKLIFT: ELECTRIC	8,000	144	Hours	ELE
7802	MANLIFT: TRAILER MOUNTED 50`	8,000	144	Hours	UNL
7803	FORKLIFT OVER 8000 LBS	10,000	144	Hours	DSL
7804	VERTICAL PERSONEL LIFT-ELEC	8,000	96	Hours	UNL
7900	CRANE	8,000	144	Hours	DSL
7905	CRANE: CARRY DECK 17K LB DSL	8,000	144	Hours	DSL

Class	Description	Meter	Max Months	Miles/Hours	Fuel Type
8310	CONCRETE MIXER	0	144	N/A	UNL
8340	MORTAR MIXER (HI-USE)	0	144	N/A	UNL
8521	DRILL RIG:TRK MNT 13K+ FT.LB	10,000	180	Hours	DSL
8531	DRILL RIG: HEAVY DUTY 6X4	350,000	180	Miles	DSL
8590	CORE DRILL: PAVEMENT HYDRAULIC	8,000	144	Hours	DSL
9100	WASHER: EQUIPMENT	0	144	N/A	DSL
9310	PUMP: MUD JACKS	0	144	N/A	NONE
9330	PUMP: CENTRIFUGAL 3" AND UNDER	0	144	144	NONE
9500	HYDROSEEDER	8,000	120	120	DSL
9600	GUARD RAIL RUNNER	8,500	144	Hours	DSL
9700	CONCRETE SAW	9,000	144	Hours	DSL
9810	SAND BLASTER	0	144	N/A	NONE
9825	ROCK BUCKET/SCARIFIER	0	144	N/A	NONE

FIGURE 700-5

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
100	Primary	Automobiles	Miles	144	12,000 mi.	8	100,000
102	Primary	Automobiles, Electric	Miles	144	12,000 mi.	8	100,000
200	Primary	Pickup <6200 GVW, Small	Miles	144	12,000 mi.	8	100,000
202	Primary	Pickup <6200 GVW, Large	Miles	144	15,000 mi.	8	125,000
204	Primary	Pickup, 6300-9000 GVW	Miles	144	15,000 mi.	8	125,000
206	Primary	Truck, POE Rover	Miles	144	25,000 mi.	5	125,000
207	Primary	Pickup 4 x 4, Small	Miles	144	15,000 mi.	8	125,000
208	Primary	Pickup 4 x 4, Large	Miles	144	12,000 mi.	8	100,000
209	Primary	Truck, 4 x 4, Utility	Miles	144	12,000 mi.	8	100,000
210	Primary	Vans, 4 x 2, Small	Miles	144	12,000 mi.	8	100,000
211	Primary	Vans, 4 x 2, Full Size	Miles	144	12,000 mi.	8	100,000
212	Primary	Vans, 4 x 2, Testing	Miles	144	15,000 mi.	8	125,000
214	Primary	Vans, 4 x 2, Photolog	Miles	144	600 hrs.	8	200,000
215	Primary	Vans, 4 x 2, T2 Program	Miles	144	12,000 mi.	8	10,000
218	Primary	Suburbans 4 x 4	Miles	144	12,000 mi.	8	100,000
220	Primary	Pickup, >9000 GVW, Reg. Cab	Miles	144	12,000 mi.	8	100,000
221	Primary	Pickup, >9000, Crew Cab	Miles	144	15,000 mi.	8	125,000
222	Primary	Truck, >9000, Flatbed	Miles	144	12,000 mi.	8	100,000
223	Primary	Truck, 9000 - 15,000 GVW Utility	Miles	144	12,000 mi.	8	100,000
224	Primary	Truck, Incident Response Unit	Miles	144	30,000 mi.	5	150,000
225	Primary	Truck >15,000 GVW Utility	Miles	144	12,000 mi.	12	150,000
226	Primary	Truck, <15,000 GVW, Reg. Cab, Dump	Miles	144	12,000 mi.	8	100,000
227	Primary	Truck, <15,000 GVW, Crewcab, Dump	Miles	144	12,000 mi.	8	100,000
228	Primary	Truck, >15,000 GVW Dump	Miles	144	12,000 mi.	12	150,000
230	Primary	Stencil Truck	Miles	100	400 hrs.	8	100,000
		TRUCKS, 20-35,000 LB GVW					
321	Primary	Dump, Patrol 4x2 Diesel Truck	Miles	120	450 hrs.	12	200,000
322	Primary	Distributor 4x2 Truck	Miles	24	200 hrs.	24	300,000
324	Primary	Flatbed 4x2 Truck	Miles	30	300 hrs.	12	200,000
326	Primary	Crash Attenuator Truck	Miles	30	300 hrs.	24	300,000
327	Primary	Water Truck - Diesel	Miles	30	300 hrs.	12	300,000
328	Primary	De-Icer Truck	Miles	50	200 hrs.	24	300,000
329	Primary	Skid Test Truck	Miles	100	400 hrs.	12	150,000
335	Primary	Hot Patcher Truck	Miles	50	200 hrs.	24	300,000
336	Primary	Utility 4x2, 4x4 Truck	Miles	70	500 hrs.	24	300,000
337	Primary	Sprayer Truck	Miles	30	300 hrs.	12	150,000
338	Primary	Aerial Tower < 30 ft. Truck	Miles	144	550 hrs.	12	150,000
339	Primary	Aerial Tower > 30 ft. Truck	Miles	50	400 hrs.	12	200,000
340	Primary	Digger Derrick Truck	Miles	144	550 hrs.	12	200,000
342	Primary	Striping Unit Truck	Miles	120	800 hrs.	12	200,000
347	Primary	Scale Test/Post Driver-Diesel Truck	Miles	30	300 hrs.	24	300,000
352	Primary	Snow Plow V and Wing Truck	Hours	20	25 hrs.	20	
364	Primary	Rotary Snow Plow Truck	Hours	20	75 hrs.	20	
		TRUCKS, 3-AXLE 43 - 65,000 LB					

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
372	Primary	Sander/Dump Truck	Miles	120	800 hrs.	12	250,000
373	Primary	Rockbed Truck	Miles	120	800 hrs.	12	250,000
374	Primary	Sander/Dump Truck w/Wing Plow	Miles	120	800 hrs.	12	250,000
375	Primary	Core Drill Truck	Hours	30	300 hrs.	12	300,000
376	Primary	Tractor Truck	Miles	100	600 hrs.	12	300,000
379	Primary	Snooper Truck	Miles	100	450 hrs.	12	
390	Primary	Distributor > 1300 Gallons Truck	Miles	24	200 hrs.	12	300,000
392	Primary	Multipurpose Truck	Miles	120	800 hrs.	12	250,000
393	Primary	Water Truck >2500 Gallons	Miles	100	450 hrs.	12	250,000
		WHEEL TRACTORS					
401	Primary	Backhoe	Hours	50	350 hrs.	12	
402	Primary	Loader 1/2 C.Y.	Hours	20	150 hrs.	12	
404	Primary	Loader Skid-Steer	Hours	30	250 hrs.	12	
406	Primary	Loader 1-1/2 - 2 C.Y.	Hours	30	250 hrs.	15	
407	Primary	Loader 2 - 3 C.Y.	Hours	60	400 hrs.	15	
408	Primary	Loader 4 C.Y.	Hours	60	400 hrs.	15	
		CRAWLER TRACTOR					
424	Primary	Dozer, Medium	Hours	60	400 hrs.	15	
426	Primary	Dozer, Heavy	Hours	60	500 hrs.	15	
		MOTORGRADER					
506	Primary	Milling Machine	Hours	30	100 hrs.	15	
508	Primary	Motor Grader, 6 x 4	Hours	50	300 hrs.	15	
510	Primary	Motor Grader, 6 x 6	Hours	50	300 hrs.	15	
600	Attached	Pull Grader	None	None Required		15	
610	Attached	Pull Windrower	None	None Required		15	
		SNOWPLOWS					
705	Attached	Under Body SnowPlow	None	None Required		12	
706	Attached	Wing Plow, Grader Mt.	None	None Required		12	
707	Attached	Wing Plow, Truck Mt.	None	None Required		12	
710	Attached	Snow Plow, V-Type, Fixed	None	None Required		12	
711	Attached	Snow Plow, V-Type, Folding	None	None Required		12	
713	Primary	Rotary Snow Plow, Loader Mounted	Hours	20	75 hrs.	12	
714	Attached	Snow Plow, One-Way	None	None Required		12	
715	Attached	Snow Plow, Two-Way	None	None Required		12	
		AIR EQUIPMENT					
799	Attached	Compressor 0-50 CFM	None	None Required		12	
800	Primary	Compressor 50-160 CFM	Hours	20	100 hrs.	12	
802	Primary	Compressor 160 + CFM	Hours	25	150 hrs.	12	

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
804	Attached	Jackhammer/Rockdrill	None	None Required		8	
805	Attached	Breaker (Pavement), Tamper	None	None Required		8	
806	Attached	Sandblaster	None	None Required		12	
		ASPHALT EQUIPMENT					
810	Attached	Distributor < 1300 Gallons	None	None Required		12	
811	Attached	Distributor > 1300 Gallons	None	None Required		12	
812	Attached	Hot Patcher, Truck Mount	None	None Required		12	
813	Primary	Distributor, Tow Type	Hours	25	120 hrs.	12	
814	Primary	Crack Filler	Hours	25	120 hrs.	12	
815	Attached	Tail Gate Mixer/Patcher	None	None Required		12	
816	Attached	Portable Asphalt Mixer, Tow Type	None	None Required		12	
818	Primary	Laydown Machine, Self-Propelled	Hours	50	350 hrs.	15	
819	Attached	Laydown Machine, Pull Type	None	None Required		13	
821	Attached	Pavement Testing Trailers	None	None Required		12	
822	Attached	Chip Spreader, Pull Type	None	None Required		12	
823	Primary	Chip Spreader, Self-Propelled	Hours	15	50 hrs.	12	
		BOATS AND BARGES					
825	Primary	Barge	Hours	5	10 hrs.	10	
826	Primary	Boat	Hours	15	60 hrs.	10	
827	Attached	Boat Motor	None	None Required		10	
828	Attached	Boat Trailer	None	None Required		10	
		CONCRETE EQUIPMENT					
831	Primary	Concrete Mixer	Hours	10	40 hrs.	12	
832	Primary	Mortar Mixer	Hours	10	40 hrs.	12	
833	Primary	Concrete Saw	Hours	10	40 hrs.	10	
834	Primary	Concrete Cutoff Saw	Hours	10	40 hrs.	10	
835	Attached	Scabbler	None	None Required		10	
836	Primary	Crack Cleaner/Router	None	None Required		8	
837	Attached	Misc. Compactors (Screed, Trowel, Wacker, Compactor)	None	None Required		8	
		EARTH DRILLING EQUIPMENT					
841	Attached	Earth Drilling Auger	None	None Required		10	
844	Primary	Diamond Drill	Hours	5	10 hrs.	12	
846	Attached	Abrasive Drill	None	None Required		10	
		FORKLIFTS, YARD CRANES					
847	Primary	Forklift, Truck Mount	Hours	80	500 hrs.	12	
848	Primary	Forklift, <4,000 lb.	Hours	30	300 hrs.	13	
849	Primary	Forklift, 8,000 - 10,000 lb.	Hours	90	400 hrs.	13	

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
850	Primary	Forklift >10,000 lb.	Hours	90	400 hrs.	13	
851	Primary	Yard Crane	Hours	30	200 hrs.	12	
852	Primary	Yard Tug	Hours	30	200 hrs.	12	
853	Attached	Electric Warehouse Equipment	None	None Required		12	
		LOADER, CONVEYOR					
860	Primary	Conveyor (Belt) Screener Plant	Hours	30	150 hrs.	10	
861	Primary	Loader, Belt or Bucket	Hours	30	150 hrs.	10	
		MOWERS					
864	Primary	Self-Propelled Lawn Tractor	Hours	20	100 hrs.	5	
865	Attached	Lawn Mower, Push Type/Self-Propelled	None	None Required		5	
866	Attached	Road Side Mower, Sickle	None	None Required		12	
867	Attached	Road Side Mower, Rotary	None	None Required		12	
868	Primary	Chipper, Brush	Hours	30	300 hrs.	10	
869	Attached	Road Side Mower, Slope	None	None Required		12	
870	Attached	Road Side Mower, Flail	None	None Required		12	
		WATER PUMPS					
872	Primary	Water Pump, Light Duty < 3-1/2	Hours	10	20 hrs.	13	
873	Primary	Water Pump, Heavy Duty 4 and Up	Hours	10	20 hrs.	13	
		ROLLERS					
878	Primary	Roller, Pneumatic	Hours	10	50 hrs.	12	
879	Primary	Roller, Steel Flat, Self-Propelled	Hours	20	200 hrs.	12	
880	Primary	Roller, Small Dual Drum Vibrating Steel	Hours	20	200 hrs.	12	
881	Primary	Roller, Large Single Drum Vibrating	Hours	30	250 hrs.	12	
		SANDERS					
884	Attached	Tow-Type Sander	None	None Required		7	
885	Attached	5 C.Y. Slide-In Sander	None	None Required		12	
886	Attached	5 C.Y. Truck Mounted Sander	None	None Required		12	
887	Attached	9 C.Y. Truck Mounted Sander	None	None Required		12	
888	Attached	9 C.Y. Slide-In Sander	None	None Required		12	
889	Attached	Salt Spreader	None	None Required		7	

FIGURE 700-5 (Cont'd)

EQUIPMENT CATEGORIES, LIFE, RENTAL RATE

			Meter	Yearly Target Utilization		Replacement Life	
Category	Type	Description	Type	Days	Miles/Hours	Years	Mileage
		SHOVELS					
902	Primary	Excavators	Hours	100	750 hrs.	15	
905	Primary	Trencher	Hours	10	50 hrs.	15	
906	Attached	Motorgrader Attachment	None	None Required		12	
		SWEEPERS					
907	Primary	Street Sweeper Mechanical	Hours	50	350 hrs.	13	
908	Primary	Tow-Type Sweeper	Hours	20	120 hrs.	12	
909	Primary	Self-Propelled Sweeper	Hours	30	250 hrs.	10	
910	Primary	Street Sweeper Vacuum	Hours	50	350 hrs.	13	
		WATER TANKS					
911	Attached	<1500 Gallon Skid-Mt De-Icer Tank	None	None Required		10	
912	Attached	> 1500 Gallon Skid-Mt Water Tank	None	None Required		12	
913	Attached	Weed Sprayer Tank	None	None Required		12	
		TRAILERS					
915	Attached	Trailer, Semi Low-Boy (Flatbed)	None	None Required		12	
916	Attached	Trailer, Semi Belly-Dump	None	None Required		12	
918	Attached	Test Camper	None	None Required		8	
919	Primary	Trailer, Test, and Office	Months	150	950 hrs.	12	
920	Primary	Trailer, Tilt Bed/Ramp	Months	30	150 hrs.	12	
921	Primary	Trailer, Utility, 2 & 4-Wheel	Months	25	120 hrs.	12	
922	Primary	Trailer, Sign, Warning	Months	25	120 hrs.	12	
923	Primary	Trailer, Message	Months	25	250 hrs.	10	
924	Attached	Attenuator	None	None Required		12	
		MISCELLANEOUS					
926	Primary	Light Plant	Hours	10	40 hrs.	10	
930	Primary	Generators	Hours	None Required		10	
931	Primary	Welder	Hours	30	200 hrs.	10	
932	Primary	Skid Mt. Generator	Hours	180	1500 hrs.	3	
953	Attached	Grain Drill, Harrow	None	None Required		15	
954	Attached	Chain Saw	None	None Required		5	
956	Attached	Tamper, Hydraulic	None	None Required		8	
958	Attached	Misc. Yard Equipment	None	None Required		5	
963	Primary	Hydroseed/Mulcher	Hours	10	50 hrs.	15	
965	Attached	Mini-Striper	None	None Required		8	
966	Attached	Hand Striper	None	None Required		10	
967	Primary	Sign Washer/Sprayer	Hours	5Req	25 hrs.	8	
971	Attached	Stripe Remover	None	5	25 hrs.	10	
972	Primary	ATV (4 Wheeler or Motor Vehicle)	Hours	50	200 hrs.	5	

APPENDIX 3D

Montana DOT life cycles and minimum miles per class:

- 02 Class small SUV—6 years, 125,000 miles.
- 06 Class Mid-sized sedans—6 years, 125,000 miles.
- 07 Class ½ ton pickups—8 years, 150,000 miles.
- 08 Class ¾ ton pickups—8 years, 175,000 miles.
- 09 Class 1 ton dump trucks—9 years, 200,000 miles.
- 12 Class mini vans—6 years, 130,000 miles.

NEW MEXICO DEPARTMENT OF TRANSPORTATION

FLEET MANAGEMENT BUREAU

CLASS TABLE

EFFECTIVE 01/01/2011

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
01		**MOTOR GRADERS**				
01	A	Motor Graders, Art. Frame, Up to 125 HP	144	40	4,500 Hours	$ 46.00
01	B	Motor Graders, Art. Frame, 126 to 150 HP	144	20	4,500 Hours	$ 35.50
01	C	Motor Graders, Art. Frame, 151 to 175 HP	144	20	4,500 Hours	$ 42.20
01	D	Motor Graders, Art. Frame, 176 to 200 HP	144	20	4,500 Hours	$ 42.60
01	E	Motor Graders, Art. Frame, Over 200 HP	144	20	4,500 Hours	$ 46.30
02		**AUTOMOTIVE**				
02	A	Sedan, Compact	84	20	115,000 Miles	$ 3.00
02	B	Sedan, Intermediate	84	20	115,000 Miles	$ 3.00
02	C	Sedan, Intermediate, 4WD	84	20	115,000 Miles	$ 3.75
02	D	Sedan, Standard, Full Size	84	20	115,000 Miles	$ 4.25
02	E	Station Wagon	84	20	115,000 Miles	$ 4.50
02	F	Station Wagon, 4WD	84	20	115,000 Miles	$ 4.75
03		**LIGHT DUTY VEHICLES**				
03	B	Pickup, Economy	84	20	125,000 Miles	$ 3.00
03	C	Pickup, 1/2 Ton, 2WD	84	20	125,000 Miles	$ 5.10
03	D	Pickup, 1/2 Ton, 4WD	84	20	125,000 Miles	$ 7.70
03	E	Pickup, 3/4 Ton, 2WD	84	20	125,000 Miles	$ 6.90
03	F	Pickup, 3/4 Ton, 4WD	84	20	125,000 Miles	$ 7.70
03	G	Pickup, 3/4 Ton, Crew Cab, 2WD	84	20	125,000 Miles	$ 7.70
03	H	Pickup, 3/4 Ton, Crew Cab, 4WD	84	20	125,000 Miles	$ 8.50
03	I	Pickup, 3/4 Ton, Utility Body, 2WD	84	20	125,000 Miles	$ 7.70
03	J	Pickup, 3/4 Ton, Utility Body, 4WD	84	20	125,000 Miles	$ 8.50
03	K	Suburban, 1/2 Ton, 2WD	84	20	125,000 Miles	$ 5.50
03	L	Suburban, 1/2 Ton, 4WD	84	20	125,000 Miles	$ 5.75
03	M	Suburban, 3/4 Ton, 2WD	84	20	125,000 Miles	$ 5.75
03	N	Suburban, 3/4 Ton, 4WD	84	20	125,000 Miles	$ 6.00
03	O	Utility Vehicle, S/M, 4WD	84	20	125,000 Miles	$ 4.75
03	P	Utility Vehicle, Std, 4WD	84	20	125,000 Miles	$ 5.50
03	Q	Van, Mini	84	20	125,000 Miles	$ 3.25
03	R	Van, 1/2 Ton	84	20	125,000 Miles	$ 4.00
03	S	Van, 3/4 Ton	84	20	125,000 Miles	$ 4.50

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
04		**TRUCKS, DUMP (AND OTHER)**				
04	A	Truck, Dump, 5 CY (DIESEL)	96	20	175,000 Miles	$ 24.80
04	B	Truck, Dump, 10 CY	144	20	200,000 Miles	$ 37.60
05		**TRUCKS, MEDIUM/HEAVY DUTY, MISCELLANEOUS**				
05	A	Truck, 1 Ton/1.5 Ton	84	20	150,000 Miles	$ 25.00
05	B	Truck, Crew Cab, 1 Ton	84	20	150,000 Miles	$ 8.00
05	C	Truck, Utility Body, 1 Ton/1.5 Ton	84	20	150,000 Miles	$ 8.00
05	D	Truck, Crew Cab, Utility Body, 1 Ton	84	20	150,000 Miles	$ 8.00
05	E	Truck, Flatbed, 1 Ton/1.5 Ton	84	20	150,000 Miles	$ 12.00
05	F	Truck, Flatbed, 28/35K	120	20	125,000 Miles	$ 17.10
05	G	Truck, Flatbed, 50K	120	20	125,000 Miles	$ 27.30
05	H	Truck, 5th Wheel, 28/35K	120	20	125,000 Miles	$ 26.50
05	I	Truck, 5th Wheel, 50K	144	20	200,000 Miles	$ 32.50
05	J	Truck, Salt Spreader, 5 CY	96	20	100,000 Miles	$ 20.00
05	K	Truck, Salt Spreader, 10 CY	120	20	150,000 Miles	$ 30.00
05	L	Truck, Welder	120	20	N/A	$ 12.25
05	M	Truck, Cone Body	96	20	N/A	$ 5.00
05	N	Truck, Service	120	20	N/A	$ 22.75
05	O	Truck, Aerial Lift/Bucket or Platform	120	20	N/A	$ 25.50
05	P	Truck, Van Body	96	20	125,000 Miles	$ 8.60
05	Q	Truck, Water	96	20	N/A	$ 15.25
05	R	Truck, Trash Compactor	120	20	125,000 Miles	$ 12.00
05	S	Truck, Herbicide Sprayer	96	20	125,000 Miles	$ 11.70
05	T	Truck, Rotary Snow Plow	144	20	N/A	$ 50.00
05	U	Truck, Courtesy (Help)	96	20	150,000 Miles	$ 16.00
05	V	Street Sweeper	96	20	N/A	$ 85.00
05	W	Truck, Jet Rodder/Catch Basin Cleaner	144	40	175,000 Miles	$ 30.00
05	X	Van, 1 Ton & Over	96	20	125,000 Miles	$ 4.50
05	Y	Truck, C & C, Up to 35K (W/Miscellaneous Attachments)	120	20	150,000 Miles	$ 23.00
05	Z	Truck, C & C, Over 35K (W/Miscellaneous Attachments)	120	20	150,000 Miles	$ 23.00
06		**TRUCKS, OIL DISTRIBUTOR**				
06	A	Truck, Oil Distributor, 600 Gallons	144	20	N/A	$ 9.20
06	B	Truck Oil Distributor, 1200 Gallons	144	20	N/A	N/A
06	C	Truck Oil Distributor, 1800 Gallons	144	20	N/A	$ 9.40
06	D	Truck Oil Distributor, 3500 Gallons	144	20	N/A	$ 11.10
07		**TRUCKS, CRANE & BRIDGE INSPECTION**				
07	A	Truck, Crane	180	20	N/A	N/A
07	B	Truck, Bridge Inspection Unit	180	20	N/A	$ 200.00

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
08		**TRUCKS, C&C W/HEAVY-DUTY DRILLING EQUIPMENT**				
08	A	Truck, Single Axle, C&C for Drill Rig, Small	120	20	N/A	$ 20.00
08	B	Truck, Tandem Axle, C&C for Drill Rig, Large	120	20	N/A	$ 30.00
08	C	Truck, Core Drill	96	20	N/A	$ 30.00
09		**EXCAVATING EQUIPMENT**				
09	A	Excavator, Crawler	180	20	N/A	$ 44.70
09	B	Excavator Wheeled	180	20	N/A	$ 44.70
10		**ROLLERS**				
10	A	Roller, Steel Wheel, 4 to 6 Ton	180	20	2,000 Hours	$ 17.00
10	B	Roller, Combination, 4 to 6 Ton (Steel Wheel & Pneumatic)	180	20	2,000 Hours	$ 15.60
10	C	Roller, Steel Wheel, 8 to 12 Ton	180	20	2,000 Hours	$ 17.30
10	D	Roller, Steel Wheel, Vibratory	180	20	2,000 Hours	$ 26.20
10	E	Roller, Pneumatic, 8 to 12 Ton	180	20	2,000 Hours	$ 17.00
10	F	Roller, Pneumatic, 15 Ton	180	20	2,000 Hours	N/A
10	G	Roller, Pneumatic, 25 Ton	180	20	2,000 Hours	N/A
10	H	Roller/Compactor, Padfoot, Vibratory	180	20	2,000 Hours	$ 33.60
10	I	Roller/Compactor, Padfoot, Tow Type	180	20	N/A	N/A
10	J	Roller, Grid, Tow Type	180	20	N/A	N/A
10	K	Roller, Steel Wheel, Tow Type	180	20	N/A	N/A
11		**CRAWLER TRACTORS**				
11	A	Crawler Tractor/Dozer, up 75 Horsepower inc. blade/ripper	192	20	4,000 Hours	$ 29.50
11	B	Crawler Tractor/Dozer, 76 to 100 Horsepower inc. blade/ripper	192	20	4,000 Hours	N/A
11	C	Crawler Tractor/Dozer, 101 to 150 Horsepower inc. blade/ripper	192	20	4,000 Hours	$ 35.60
11	D	Crawler Tractor/Dozer, 151 to 300 Horsepower inc. blade/ripper	192	20	4,000 Hours	$ 57.90
11	E	Crawler Tractor/Dozer, Over 300 Horsepower inc. blade/ripper	192	20	4,000 Hours	N/A
11	F	Crawler Tractor/Loader	192	20	4,000 Hours	$ 34.70
11	G	Track Mounted Trencher	192	20	4,000 Hours	N/A
11	H	Trencher/Backhoe (Wheel or Track)	192	20	4,000 Hours	N/A
13		**SWEEPERS**				
13	A	Rotary Broom Self Propelled	144	40	N/A	$ 19.20
13	B	Rotary Broom, Truck Mounted	144	40	N/A	N/A
13	C	Rotary Broom, Tow Type	144	40	N/A	N/A
13	D	Pick-Up Broom, Self Propelled	144	40	N/A	$ 55.90
13	E	Air or Vacuum Sweeper	96	40	N/A	$ 61.10
13	F	Industrial Rider, Power Sweeper	120	40	N/A	N/A
13	G	Industrial Walk-Behind, Power Sweeper	120	40	N/A	N/A
13	H	Litter Pickup Machine, Towable	96	40	N/A	N/A

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
17		**MULCH SPREADERS**				
17	A	Mulch Spreader	180	20	N/A	N/A
18		**AIR COMPRESSORS**				
18	A	Air Compressor, up to 125 CFM	144	25	N/A	$ 14.80
18	B	Air Compressor, 126 to 300 CFM	144	25	N/A	$ 17.50
18	C	Air Compressor, over 300 CFM	144	25	N/A	$ 22.20
19		**BODIES**				
19	A	Dump Bed, 5 CY	96	40	N/A	$ 2.50
19	B	Dump Bed, 10 CY	144	40	N/A	$ 3.50
19	C	Dump Body, Utility	84	40	N/A	$ 1.00
19	D	Platform, Dump Bed	84	40	N/A	$ 3.25
19	E	Body, Trash Compactor	96	40	N/A	$ 1.40
19	F	Dump Bed/Spreader Combo, 5-7 CY	120	40	N/A	$ 4.00
19	G	Body, Cover/Shell	84	40	N/A	$ 1.30
19	H	Water Tank, 3500 Gallon	144	40	N/A	$ 2.70
19	I	Automotive Carrier	120	40	N/A	$ 1.00
19	J	Welding Body	120	40	N/A	$ 1.00
19	K	Platform Bed With Crane	120	40	N/A	$ 1.90
19	L	Hydraulic Hook Hoist Body Swapping Assembly	144	40	N/A	$ 10.00
19	M	Van Body	144	40	N/A	$ 1.75
19	N	Jet Rodder/Catch Basin Cleaner	144	40	N/A	$ 75.00
20		**CURB MACHINES**				
20	A	Curb Machines	240	10	N/A	$ 6.60
21		**CONCRETE SAWS**				
21	A	Concrete Saw, up to 30 Horsepower	96	20	N/A	N/A
21	B	Concrete Saw, over 30 Horsepower	96	20	N/A	$ 5.70
21	C	Concrete Saw, Portable Hand Unit	96	20	N/A	N/A
22		**CONCRETE MIXERS**				
22	A	Concrete Mixer, up to 5 CF	120	20	N/A	$ 6.40
22	B	Concrete Mixer, 6 to 10 CF	120	20	N/A	$ 6.40
22	C	Concrete Mixer, Over 10 CF	120	20	N/A	N/A

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
24		**CHIP SPREADERS**				
24	A	Chip Spreader, Self Propelled	144	20	N/A	$ 57.40
24	B	Chip Spreader, Tailgate	144	20	N/A	$ 5.40
25		**SCRAPERS**				
25	A	Scraper, 10 to 12 CY	192	25	4,000 Hours	$ 137.60
26		**MATERIAL SPREADERS**				
26	A	Salt Spreader, 5 CY	96	10	N/A	$ 4.10
26	B	Salt Spreader, 10 CY	144	10	N/A	$ 4.70
26	D	Material Spreader, up to 2 CY	96	10	N/A	$ 3.50
27		**SEED DRILLS**				
27	A	Seed Drill	120	10	N/A	$ 3.10
28		**DRILL RIGS**				
28	A	Truck Mounted, Rotary Auger Drill	120	25	N/A	$ 39.70
28	B	Truck Mounted, Rotary Auger Pavement Drill	120	25	N/A	$ 46.40
28	D	Truck Mounted, Vertical Earth Drill	120	25	N/A	$ 39.70
28	E	Posthole Digger/Auger	120	25	N/A	N/A
28	F	Truck Mounted, Rotary Auger Drill large	120	25	N/A	N/A
28	G	Drill, Core Hydraulic	120	20	N/A	N/A
28	H	Drill, Rock Air Driven	120	20	N/A	N/A
30		**AERIAL LIFT/BUCKETS**				
30	A	Aerial Lift/Bucket, Hydraulic, Small	120	20	N/A	$ 7.80
30	B	Aerial Lift/Bucket, Hydraulic, Large	120	20	N/A	$ 15.50
30	C	Hydra Lift, Platform	120	20	N/A	$ 22.40
30	D	Aerial Platform, Scissors Lift, Self-Propelled	120	20	N/A	$ 18.00
34		**LUBRICATION UNITS**				
34	A	Lubrication Unit	120	10	N/A	$ 25.30
35		**TRAFFIC LINE REMOVERS**				
35	A	Traffic Line Remover	240	10	N/A	$ 3.90
36		**BORING UNITS**				
36	A	Boring Unit	240	10	N/A	$ 6.00

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
37		**INDUSTRIAL TRACTORS**				
37	A	Industrial Tractor, up to 50 Horsepower	120	30	3,000 Hours	$ 12.80
37	B	Industrial Tractor, over 50 Horsepower	144	30	3,000 Hours	$ 22.10
37	C	Industrial Tractor w/Backhoe Loader	144	30	3,000 Hours	$ 16.90
37	D	Industrial Tractor w/Special Attachment	120	30	3,000 Hours	$ 23.00
37	E	Industrial Tractor w/Backhoe/Trencher	120	30	3,000 Hours	$ 15.10
37	F	Towable Backhoe	120	30	3,000 Hours	$ 15.60
38		**GUNITE UNITS**				
38	A	Gunite Unit	144	10	N/A	N/A
39		**LIGHT PLANTS**				
39	A	Light Plant	180	10	N/A	NA
41		**MOWERS**				
41	A	Mower, 15 Foot, Rotary, Tow Type	144	10	N/A	$ 14.10
41	B	Mower, 15 Foot, Flail, Gang Type	144	10	N/A	$ 9.90
41	C	Mower, up to 10 Foot, Rotary, Tow Type	144	10	N/A	$ 9.90
41	D	Mower, Side Mounted, Rotary	144	10	N/A	$ 9.90
41	E	Mower, Side Mounted, Flail	144	10	N/A	$ 9.90
41	F	Mower, Side Mounted, Sickle Bar	144	10	N/A	$ 4.10
41	G	Mower, Side Mounted, Boom	144	10	N/A	$ 4.10
42		**TRUCK SCALES**				
42	A	Truck Scales, Portable	240	10	N/A	$ 13.30
45		**MUD JACKS**				
45	A	Mud Jack	240	10	N/A	$ 2.00
46		**ELECTRIC GENERATORS**				
46	A	Generator, Electric	120	60	N/A	$ 5.60
49		**HEATERS**				
49	A	Heater, Asphalt	180	10	N/A	$ 7.60
50		**PUMPS**				
50	A	Pump, Asphalt	180	25	N/A	$ 2.00
50	B	Pump, Water	180	25	N/A	$ 2.40

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
52		**ASPHALT PAVERS**				
52	A	Asphalt Paver	180	15	N/A	$ 116.40
52	B	Asphalt Windrow Elevator	180	15	N/A	$ 24.90
54		**FORKLIFTS**				
54	A	Forklift, Electric, up to 5000 Lbs.	144	50	N/A	$ 8.50
54	B	Forklift, Hydraulic, up to 10 Ton	144	50	N/A	$ 23.10
54	C	Forklift, Hydraulic, over 10 Ton	144	50	N/A	$ 27.00
55		**LOADERS**				
55	A	Wheel Loader, up to 2 CY	144	30	4,500 Hours	$ 27.30
55	B	Wheel Loader, 2.1 to 3 CY	144	30	4,500 Hours	$ 32.50
55	C	Wheel Loader, over 3 CY	144	30	4,500 Hours	$ 51.30
55	D	Skid Steer Loader	144	30	4,500 Hours	$ 11.00
55	E	Loader/Backhoe, Large	144	30	4,500 Hours	$ 39.60
55	I	Integrated Tool Carrier, up to 2.5 CY	144	30	4,500 Hours	$ 32.00
55	J	Integrated Tool Carrier, over 2.5 CY	144	30	4,500 Hours	$ 41.00
59		**ROD DRIVERS**				
59	A	Rod Driver, Manual	240	10	N/A	$ 1.00
60		**STABILIZING MIXERS**				
60	A	Stabilizing Mixer, Portable Plant	144	25	N/A	$ 50.00
60	B	Stabilizing Mixer, Self Propelled	144	25	N/A	$ 50.00
60	C	Milling Machine, Towable	144	25	N/A	$ 35.00
60	D	Cold Planer, Self-Propelled	168	25	N/A	$ 275.00
61		**SNOW PLOWS**				
61	A	Snow Plow, Stationary, 10 Ft.	144	10	N/A	$ 14.10
61	B	Snow Plow, Stationary, 12 Ft.	144	10	N/A	$ 13.30
61	C	Snow Plow, Stationary, 14 Ft.	144	10	N/A	$ 13.30
61	D	Snow Plow, Reversible, 10 Ft.	144	10	N/A	$ 14.10
61	E	Snow Plow, Reversible, 12 Ft.	144	10	N/A	$ 13.30
61	F	Snow Plow, Reversible, 14 Ft.	144	10	N/A	$ 17.00
61	G	Snow Plow, Rotary	144	10	N/A	$ 13.10
61	H	Snow Plow, Uni-Mount, 8 1/2 Ft.	144	10	N/A	$ 15.70

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
62		**TRACTOR/LOADER/SKID STEER ATTACHMENTS**				
62	A	Backhoe (ATTACHMENT)	120	40	N/A	$ 4.00
62	B	Backhoe/Loader, Hammer	120	40	N/A	$ 2.60
62	C	Loader Bucket (Ind. Tractor Mounted)	120	40	N/A	$ 9.40
62	D	Hydraulic Breaker	120	40	N/A	$ 4.90
62	E	Auger	120	40	N/A	$ 3.70
62	F	Loader Quick Attach Forks	120	40	N/A	$ 4.00
62	G	Asphalt Screed, Loader Mounted	180	40	N/A	$ 3.50
62	H	Hydraulic Pickup Sweeper Attachment	120	40	N/A	$ 2.50
62	I	Hydraulic Backhoe Attachment	120	40	N/A	$ 1.90
62	J	Hydraulic Trencher Attachment	120	40	N/A	$ 4.00
62	K	Hydraulic Milling Machine Attachment	120	40	N/A	$ 4.00
62	L	Hydraulic Stump Grinder Attachment	120	40	N/A	$ 4.00
62	M	Snow Blade Attachment	120	40	N/A	$ 2.00
62	N	Hydraulic Mower Attachment	120	40	N/A	$ 4.00
62	O	Hydraulic Cement Mixer Attachment	120	40	N/A	$ 3.00
62	P	Hydraulic Brush Chipper Attachment	120	40	N/A	$ 4.00
62	Q	Box Scraper Attachment	120	40	N/A	$ 4.00
62	R	Vibratory Padfoot Roller Attachment	120	40	N/A	$ 4.00
62	S	Hydraulic Angle Broom Attachment	120	40	N/A	$ 4.00
62	T	Skid Steer Attachments Misc.	120	40	N/A	$ 4.00
64		**SCREENING PLANTS**				
64	A	Screening Plant, Conventional	144	20	N/A	$ 33.50
64	B	Screening Plant, Non-Conveyor, Portable	144	20	N/A	$ 20.00
66		**PAVEMENT STRIPERS**				
66	A	Pavement Striper, Truck Mounted, Tandem Axle	120	15	N/A	$ 47.20
66	B	Pavement Striper, Truck Mounted, Single Axle	120	15	N/A	$ 39.40
66	C	Pavement Striper, Portable/Trailer Mounted	120	15	N/A	$ 38.90
67		**SNOW WINGS**				
67	A	Snow Wing, Grader Mounted	168	5	N/A	$ 15.70
67	B	Snow Wing, Truck Mounted	144	5	N/A	$ 15.70

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
68		**TRAILERS**				
68	A	Trailer, Platform, 10 to 15 Ton	144	20	N/A	$ 4.00
68	B	Trailer, Platform, over 15 Ton	144	20	N/A	$ 4.50
68	C	Trailer, Lowboy, 20 to 40 Ton	144	20	N/A	$ 8.70
68	D	Trailer, Lowboy, 50 Ton	144	20	N/A	$ 14.00
68	E	Trailer, Oil Distributor, 600 Gallon	144	20	N/A	$ 5.00
68	F	Trailer, Office	144	20	N/A	$ 2.00
68	G	Trailer, Lab	144	20	N/A	$ 2.30
68	H	Trailer, Storage	144	20	N/A	$ 2.00
68	I	Trailer, Asphalt Tank	144	20	N/A	$ 11.45
68	J	Trailer, Fuel Tank	144	20	N/A	$ 10.00
68	K	Trailer, Water Tank	144	20	N/A	$ 10.00
68	L	Trailer, Asphalt/Water Pump	144	20	N/A	$ 5.00
68	M	Trailer, Mud Jack	144	20	N/A	$ 2.60
68	N	Trailer, Air Compressor	144	20	N/A	$ 2.00
68	O	Trailer, Generator	144	20	N/A	$ 3.50
68	P	Trailer, Welder	144	20	N/A	$ 2.00
68	Q	Trailer, Sign/Cone	144	20	N/A	$ 2.50
68	R	Trailer, Traffic Alerting Device	144	20	N/A	$ 2.00
68	S	Trailer, Jet Rodder	144	20	N/A	$ 16.00
68	T	Trailer, Dump/Flowboy	144	20	N/A	$ 17.00
68	U	Trailer, Pup	144	20	N/A	$ 11.45
68	V	Trailer, Mulch Spreader/Wood Chipper	144	20	N/A	$ 4.20
68	W	Trailer, Cement Mixer	144	20	N/A	$ 1.00
68	X	Trailer, Flatbed/Utility	144	20	N/A	$ 2.50
68	Y	Trailer, Roller	144	20	N/A	$ 2.50
68	Z	Trailer, Miscellaneous	144	20	N/A	$ 2.00
70		**TRAFFIC ALERTING DEVICES**				
70	A	Variable Message Board	96	20	N/A	
70	B	Sequential Arrow Board	96	20	N/A	
72		**OIL DISTRIBUTORS**				
72	A	Oil Distributor, 600 Gallon	144	15	N/A	$ 20.90
72	B	Oil Distributor, 1200 Gallon	144	15	N/A	$ 37.00
72	C	Oil Distributor, 1800 Gallon	144	15	N/A	$ 38.00

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE
72	D	Crack Sealer	144	15	N/A	$ 11.50
72	E	Oil Distributor, 3500 Gallon	144	15	N/A	$ 43.00
74		**WELDERS**				
74	A	Welder, up to 300 AMP	180	30	N/A	$ 4.40
74	B	Welder, over 300 AMP	180	30	N/A	$ 5.70
75		**COMPACTION CUTTERS**				
75	A	Pavement Router	120	10	N/A	N/A
75	B	Disc Harrow	180	10	N/A	$ 1.00
76		**SPRAYERS**				
76	A	Sprayer, Herbicide, up to 500 Gallon	96	10	N/A	$ 7.70
76	B	Sprayer, Herbicide, over 500 Gallon	96	10	N/A	$ 7.80
76	C	Sprayer, Chemical/Liquid Deicer, up to 1000 Gallon	96	10	N/A	$ 11.10
76	D	Sprayer, Chemical/Liquid Deicer, over 1000 Gallon	96	10	N/A	$ 11.40
76	E	Sprayer, Combo, Herbicide/Deicer, up to 1000 Gallon	96	10	N/A	$ 11.10
76	F	Sprayer, Combo, Herbicide/Deicer, over 1000 Gallon	96	10	N/A	$ 11.40
77		**WINDROW SIZERS**				
77	A	Windrow Sizer	144	15	N/A	$ 1.40
78		**COMPACTORS**				
78	A	Compactor, Portable	120	10	N/A	$ 14.10
80		**ATTENUATORS**				
80	A	Attenuator, Truck Mounted	120	50	N/A	$ 4.10
82		**ALL TERRAIN VEHICLES**				
82	A	All Terrain Vehicle, up to 600 CC	96	50	N/A	$ 3.20
82	B	Mobile Data Recorder (ATV MOUNTED)	96	20	N/A	$ 19.50

CLASS	SUB-CLASS	DESCRIPTION	LIFE CYCLE MONTHS	LIFE CYCLE % RESALE ESTIMATE	REPLACEMENT CRITERIA	RENTAL RATE

APPENDIX 3F

Oregon Department of Transportation
Class Table Standards

Class	Description	Total Quantity in each Class	Age Standard Years	Age Standard Months	Usage Standard	Standard Measure
	LIGHT FLEET					
101	SEDAN	229	8	96	130000	Miles
103	STATION WGN, 4X2	7	8	96	130000	Miles
105	VAN	109	8	96	130000	Miles
107	LG UTILITY VEH, 4X4	9	8	96	130000	Miles
108	UTILITY VEH, 4X2	7	8	96	130000	Miles
109	UTILITY VEH, 4X4	55	8	96	130000	Miles
110	MINI VAN, 4X2	19	8	96	130000	Miles
111	MINI VAN, AWD	37	8	96	130000	Miles
120	PICKUP, COMPACT 4X2	199	8	96	130000	Miles
121	PICKUP, COMPACT 4X4	152	8	96	130000	Miles
123	PICKUP, 3/4T 4X2,NLG	108	8	96	130000	Miles
623	PICKUP,3/4T 4X2 DSL	22	12	144	230000	Miles
124	PICKUP, 3/4T 4X4 NLG	93	8	96	130000	Miles
624	PICKUP, 3/4T 4X4 DSL	72	12	144	230000	Miles
	Group Totals	1118				
	HEAVY FLEET					
125	PICKUP, 1T 4X2 NLG	20	8	96	130000	Miles
625	PICKUP, 1T 4X2 DSL	9	12	144	230000	Miles
126	PICKUP, 1T 4X4 NLG	37	8	96	130000	Miles
626	PICKUP, 1T 4X4 DSL	22	12	144	230000	Miles
127	IR PICKUP1/2T 4X4NLG	5	4	48	150000	Miles
128	IR PICKUP3/4T 4X4NLG	13	4	48	150000	Miles
628	IR PICKUP 3/4T 4X4 DSL	3	4	48	230000	Miles
629	IR PICKUP 1T 4X4 DSL	19	4	48	230000	Miles
141	TRUCK, LT 4X2 NLG	151	8	96	130000	Miles
641	TRUCK, LT 4X2 DSL	104	12	144	230000	Miles
142	TRUCK, LT 4X4 NLG	14	8	96	130000	Miles
642	TRUCK, LT 4X4 DSL	43	12	144	230000	Miles
146	TRUCK, MED 4X2 DSL	162	15	180	300000	Miles
147	TRUCK, MED 4X4	7	15	180	300000	Miles
148	TRUCK, HVY DSL	380	15	180	300000	Miles
648	TRUCK, TRANSPORT	16	15	180	500000	Miles
150	TRUCK, HVY 4X4	28	15	180	300000	Miles
158	TRUCK, BRDG HVY	16	14	168	8000	Age
161	TRUCK, HVY S&E 6X4	5	14	168	8000	Miles
162	TRUCK, LT S&E 4X4NLG	1	14	168	8000	Miles
662	TRUCK, LT S&E 4X4DSL	15	14	168	8000	Miles
164	TRUCK, LT S&E 4X2NLG	1	14	168	8000	Miles
664	TRUCK, LT S&E 4X2DSL	6	14	168	8000	Miles
165	TRUCK, MED S&E 4X2	21	14	168	8000	Miles
167	TRUCK, HI-RANGER	1	14	168	8000	Age
168	SIGN TRK W/MANLIFT	11	14	168	8000	Age

Class	Description	Total Quantity in each Class	Age Standard Years	Age Standard Months	Usage Standard	Standard Measure
190	GRADER, PULL	1	20	240	Age	Age
191	GRADER, MOTOR 6X4	30	12	144	6000	hours
192	GRADER, MOTOR 6X6	36	12	144	6000	hours
244	ROLLER 2-4 TON	16	15	180	2000	hours
245	ROLLER 5-7 TON	1	15	180	2000	hours
246	ROLLER 8-12 TON	25	15	180	2000	hours
258	UNDER BRDG INSP	2	10	120	9000	Age
259	BRDG INSP TRL MTD	2	12	144	Age	Age
265	S-BLWR	25	20	240	Age	Age
270	SWEEPER, SELF PROPEL	29	10	120	5000	hours
277	SWEEPER, BIKE PATH	1	10	120	5000	hours
278	BROOM, SELF PROPEL	44	10	120	5000	hours
282	SNOW TRACK	5	15	180	Age	Age
285	EXCAVATOR	14	15	180	8000	hours
296	BULLDOZER	1	20	240	10000	hours
297	TRK, STRIPER	8	12	144	9000	Age
312	LOADER FORCEFEED TRK	1	20	240	5000	Hours
313	LOADER, UNDER 2 CY	19	12	144	4500	Hours
314	LOADER, 2-4 CY	1	12	144	4500	Hours
315	LOADER, W/BACKHOE	5	12	144	4500	Hours
318	T/CARRIER SM 80 HP	79	12	144	4500	Hours
320	T/CARRIER LG 110 HP	102	12	144	4500	Hours
431	JET RODDER, TRK MTD	10	12	144	8000	Age
432	JET RODDER TRL MTD	4	12	144	8000	Age
	Group Totals	1571				
	MISCELLANEOUS FLEET					
211	TRACTOR, 20-45 HP	17	12	144	5000	Hours
212	TRACTOR, 46-85 HP	22	12	144	5000	Hours
213	TRACTOR, 86-100+ HP	55	12	144	5000	Hours
216	MOWER, RIDING	17	12	144	5000	Hours
227	TRACTOR, W/BACKHOE	35	12	144	5000	Hours
271	SWEEPER, TOW-BEHIND	8	10	120	5000	Hours
303	TRL, COVERED	50	20	240	Age	Age
304	TRL, 5TH-WHL	24	20	240	Age	Age
305	TRL, POLE	1	20	240	Age	Age
306	TRL, BELLY DMP	21	20	240	Age	Age
307	TRL, TILT	171	20	240	Age	Age
308	TRL, TANK	9	20	240	Age	Age
309	TRL, LT UTILITY	176	20	240	Age	Age
310	TRL, PUP	7	20	240	Age	Age
357	BOAT W/TRL NO MOTOR	9	15	180	Age	Age
358	BOAT W/TRL WITH MOTOR	6	15	180	Age	Age

Class	Description	Total Quantity in each Class	Age Standard Years	Age Standard Months	Usage Standard	Standard Measure
370	FORKLIFT	34	15	180	Age	Age
371	FORKLIFT ARTICULATED	1	15	180	Age	Age
376	GENERATOR, LT PLANT	70	20	240	Age	Age
382	SPREADER, ROCK CHIP	3	20	240	Age	Age
383	OILER, SLIP-IN MTR	12	20	240	Age	Age
384	OILER, TRK MTD	1	15	180	Age	Age
385	OILER, SLIP-IN N-MTR	11	20	240	Age	Age
389	BRUSH CHIPPER	15	12	144	Age	Age
425	GRINDER, PAVEMENT,SM	6	20	240	Age	Age
426	GROUTING MACHINE	1	20	240	Age	Age
427	GRINDER,PAVEMENT,LG	3	20	240	Age	Age
	Group Total	785				
	ATTACHMENTS					
176	COMPRESSOR	18	15	180	Age	Age
180	KETTLE, ASPHALT	14	15	180	Age	Age
181	CRACK SEALER	10	15	180	Age	Age
182	HOT BOX, PATCHER	33	15	180	Age	Age
186	PAVER	14	15	180	Age	Age
195	ATTACH, DITCH BLADE	1	20	240	Age	Age
196	ATTACH, SCARIFIER	2	20	240	Age	Age
197	ATTACH, DOZER BLADE	47	20	240	Age	Age
198	ATTACH, WING PLOW	24	20	240	Age	Age
219	ATTACH, BROOM	17	15	180	Age	Age
220	ATTACH, FLAIL MOWER	65	15	180	Age	Age
221	ATTACH, ROTARY MOWER	10	15	180	Age	Age
222	ATTACH, BRUSH CUTTER	29	12	144	Age	Age
223	ATTACH, SICKLE BAR	1	15	180	Age	Age
229	ATTACH, LDR FRT END	11	12	144	Age	Age
230	ATTACH,BRUSH CHIPPER	1	15	180	Age	Age
249	SANDER, TOW TYPE	12	15	180	Age	Age
251	SANDER, CHASSIS MTD	27	15	180	Age	Age
254	SANDER, SLIP-IN	355	15	180	Age	Age
261	SNOWPLOW, PUSH TYPE	795	20	240	Age	Age
267	ATTACH, S-BLWR MTR	5	20	240	15000	Age
268	ATTACH, S-BLWR N-MTR	1	20	240	Age	Age
269	ATTACH, BROOM	1	15	180	Age	Age
286	ATTACH, DITCHING BKT	5	15	180	Age	Age
298	APPL, THERMOPLAST SM	3	12	144	9000	Age
299	PREMELTER	2	12	144	9000	Age
300	APPL,THERMOPLAST,LG	5	12	144	9000	Age

Class	Description	Total Quantity in each Class	Age Standard Years	Age Standard Months	Usage Standard	Standard Measure
335	ATTACH, TRK CONVEYOR	4	20	240	Age	Age
336	ATTACH, GP BKT	53	20	240	Age	Age
337	ATTACH, HI DMP BKT	3	20	240	Age	Age
338	ATTACH, 4-IN-1 BKT	40	20	240	Age	Age
339	ATTACH, FORKS	70	20	240	Age	Age
340	ATTACH, BROOM	29	15	180	Age	Age
341	ATTACH,BRSH CUTR T/C	5	15	180	Age	Age
344	ATTACH, MAT ARM	83	20	240	Age	Age
345	ATTACH, GRAPPLE RAKE	25	20	240	Age	Age
346	ATTACH, VIB COMPACT	5	20	240	Age	Age
351	ATTACH, BACKHOE	3	20	240	Age	Age
352	ATTACH, HAMMER	7	20	240	Age	Age
353	ATTACH, AUGER	5	20	240	Age	Age
354	ATTACH, POST DRIVER	8	20	240	Age	Age
362	CRUSHER/SHAKER	4	20	240	Age	Age
363	CONVEYOR, RADIAL	10	20	240	Age	Age
368	DRILL, TRUCK MTD	2	12	144	9000	Age
369	DRILL, TRACK MTD	2	12	144	9000	Age
394	ARROWBOARD	15	12	144	Age	Age
396	VARI MSG SIGN MTR	3	10	120	Age	Age
397	VARI MSG SIGN TRK	21	10	120	Age	Age
398	VARI MSG SIGN SOLAR	120	10	120	Age	Age
399	ARROWBOARD, SOLAR	16	10	120	Age	Age
400	RADAR SPD CONTROL	12	10	120	Age	Age
401	SIGN SPD CONTROL CHG	6	10	120	Age	Age
416	SPRAYER, WEED	41	20	240	Age	Age
420	DEICER TANK	81	12	144	Age	Age
424	ATTENUATOR	47	12	144	Age	Age
435	HYDROSEEDER/MULCHER	2	12	144	Age	Age
439	GARD-RL CLEANER	12	20	240	Age	Age
440	GARD-RL DRIVER	1	20	240	Age	Age
443	SKID TEST, PU & TRL	1	12	144	Age	Age
444	DEFLECTOMETER	1	12	144	Age	Age
445	PROFILOGRAPH	1	12	144	Age	Age
449	EPOXY MIXR,APPL,NMTR	3	12	144	Age	Age
456	BARGES	2	99	1188	Age	Age
459	ATV, 4WD	13	10	120	Age	Age
632	IR COMMAND TRAILER	1	20	240	Age	Age
		2265				
	GRAND TOTAL	5739				

Life Cycle Extension Pilot Districts 5, 9, and 10

pennsylvania DEPARTMENT OF TRANSPORTATION

	ECC	Standard Life Cycle	Extended Life Cycle	Capture the Number of Units officially approved for extension by ECC for each County/District
Single Axle Dump Trucks	A15*	12Years/14,000 Hours	14 Years	
Tandem Dump Trucks	AA1*	12Years/14,000 Hours	14 Years	
Tri-Axle Dump Trucks	AA4*	12 Years/14,000 Hours	14 Years	
Loaders	E27*	15 Years/10,000 Hours	18 Years	
Excavators	EETCHHBC* EETCHHBD* * E18*	14,000 Hours	16,000 Hours	
Crew Cabs	A13*	8 Years	10 Years	

Record the number of units enrolled by ECC, Units officially approved for enrollment must be removed from slides 4, 5 and 7 to prevent negative impact of extension on Fleet Model Scores. Average Age scores must be mathematically calculated with exclusion of the enrolled units. Score Must be entered in whole numbers round down if below (.5) or round up if (.5) and above.

43rd Annual Western States Highway Equipment Managers Association Conference

Washington State Department of Transportation Presentation

Greg Hansen
Fleet Administrator

August 29, 2011

Washington State Department of Transportation

Equipment Plays a Critical Role in Operating and Maintaining The Highway System











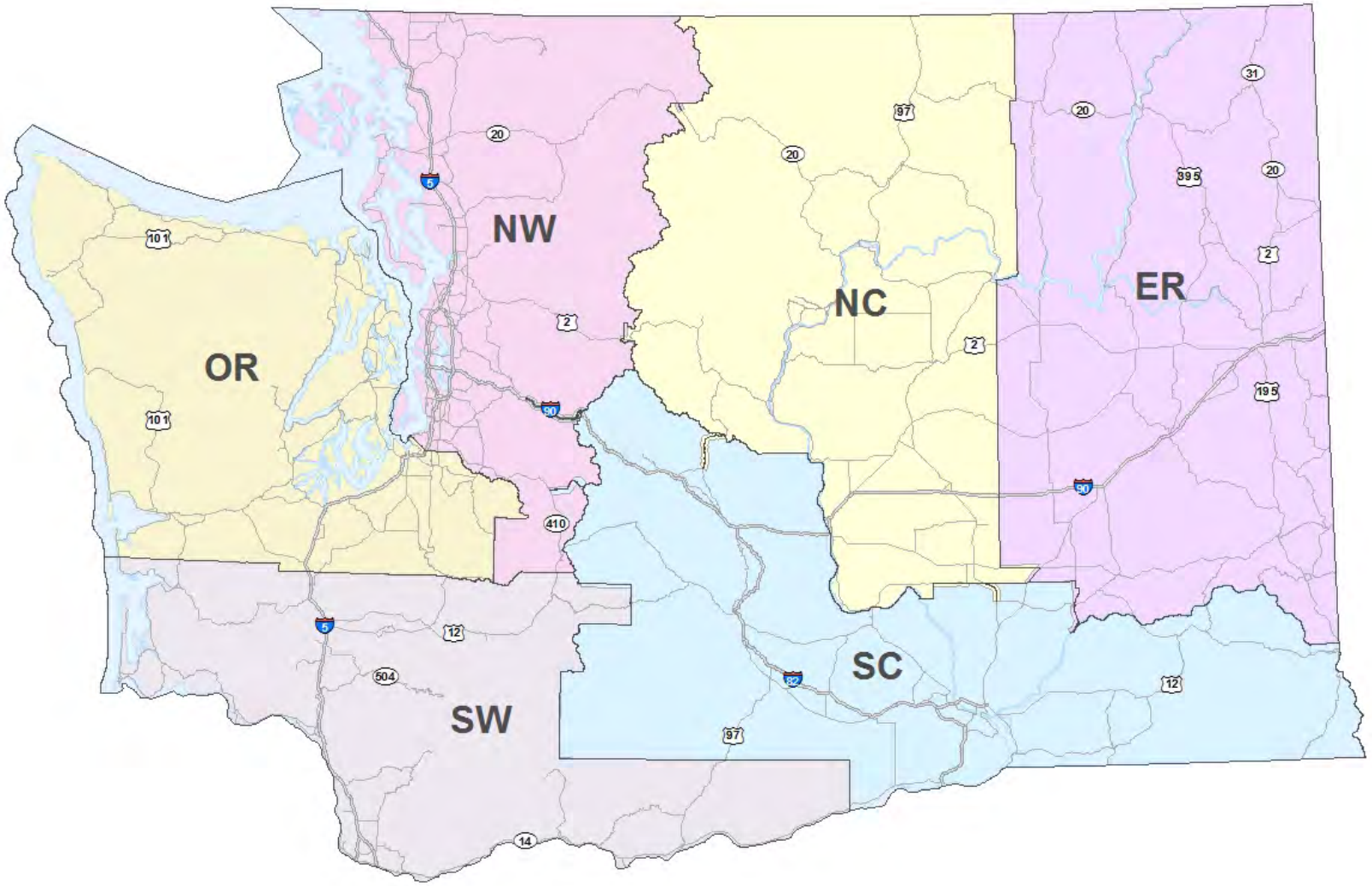

TEF Equipment

4,800 Vehicles & Construction Equipment

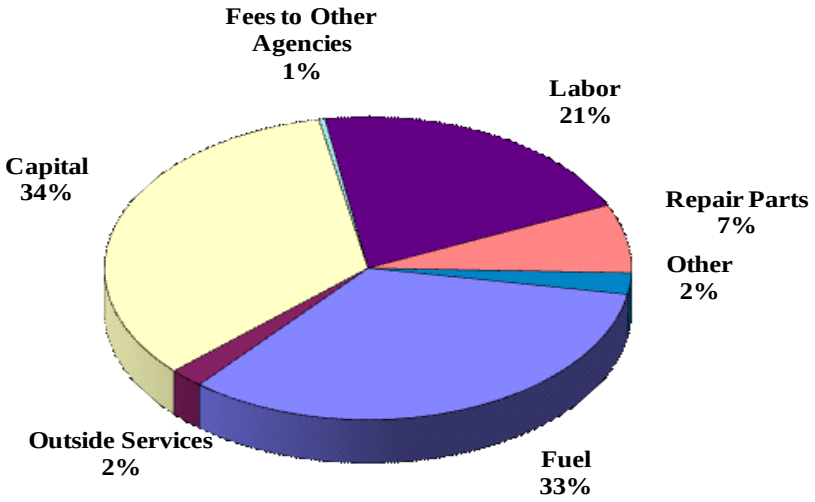
10,000 Pieces of Supporting Equipment

4,500 - Wireless Radio System Components
1,350 - Equipment Attachments (primarily snow and ice)
410 - Fuel System Components and Generators
40 - Reproduction and Photogrammetry Pieces
500 - Field Engineering Survey Equipment
1,700 - Materials Lab Testing Equipment
1,110 - Message Signs and Impact Attenuators
390 - Equipment and Lab Trailers

Washington State Department of Transportation



Expenditures Planned For The 11-13 Biennium
$145.8 Million To Deliver Essential Program Services



(All dollar amounts are in thousands)		
Labor	$30.3	209.3 FTE
Outside Services Includes glass replacement, body work, radio installation, fuel site service and repairs, man lift inspections and repairs and power generation maintenance.	$3.1	
Other Supplies and materials; motor oil and other petroleum products; propane; safety items to include clothing and footwear; laundry; fleet management software and licenses; fuel management software and licenses; towing; tool replacements; travel and per diem.	$3.3	
Fees to other Agencies GA disposal, Attorney General, Risk Management, Department of Licensing	$0.6	
Capital	$49.4	
Fuel	$48.5	
Repair parts	$10.7	
	$145.8	

Supported Customers

• Highway Maintenance (M)	73.4%
• Preservation (P)	17.5%
• Improvements (I)	1.5%
• Facilities (D)	1.3%
• Traffic (Q)	3.3%
• Ferries (W & X)	1.4%
• All Other Programs (B, C, F, H, S, T, V, Y, Z)	1.7%
	100.0%

Work Force

209.3 FTE Authorized

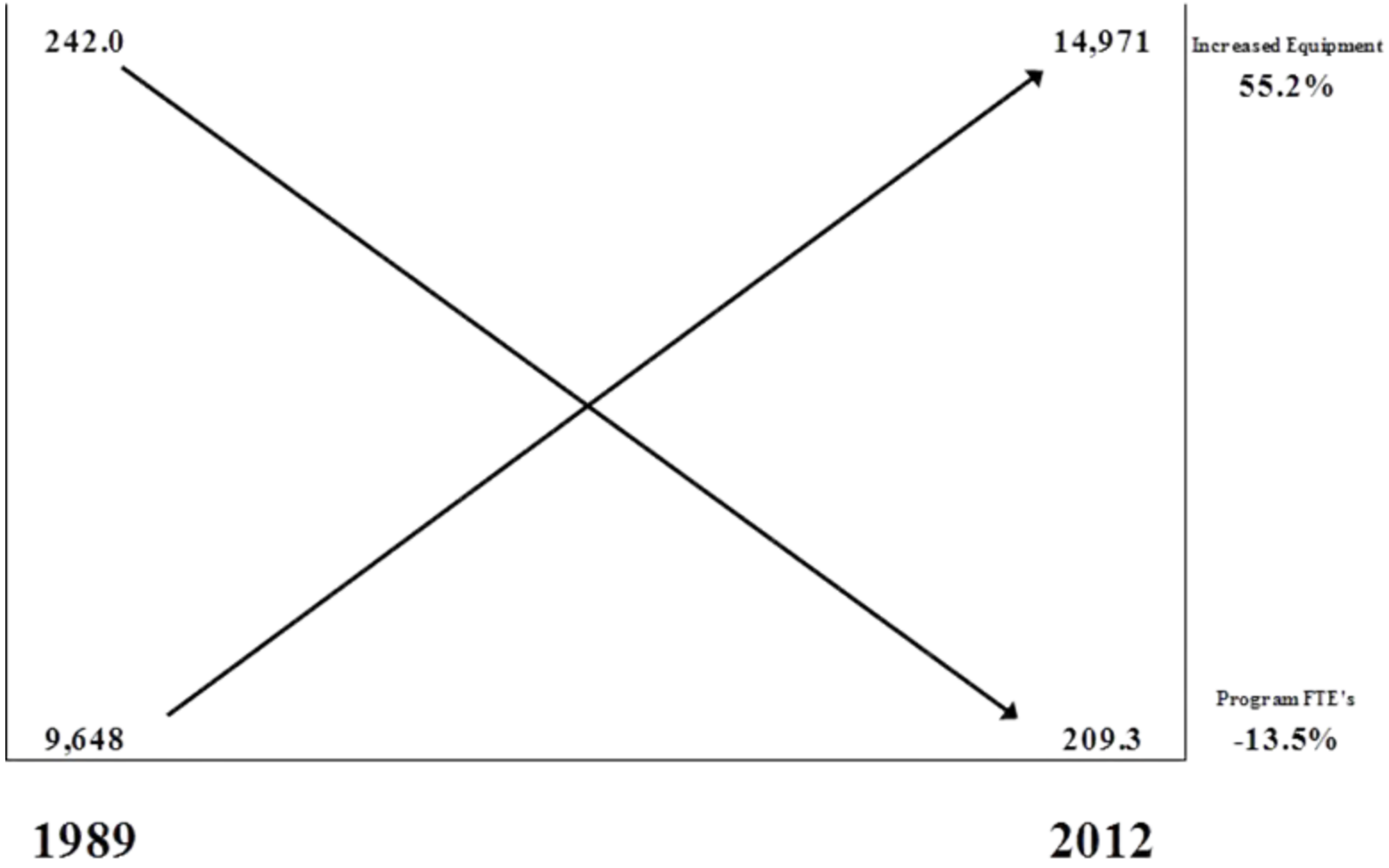
16 Accounting and Administrative Staff

13 Repair Parts Specialists

145 Mechanics

15 Radio Technicians

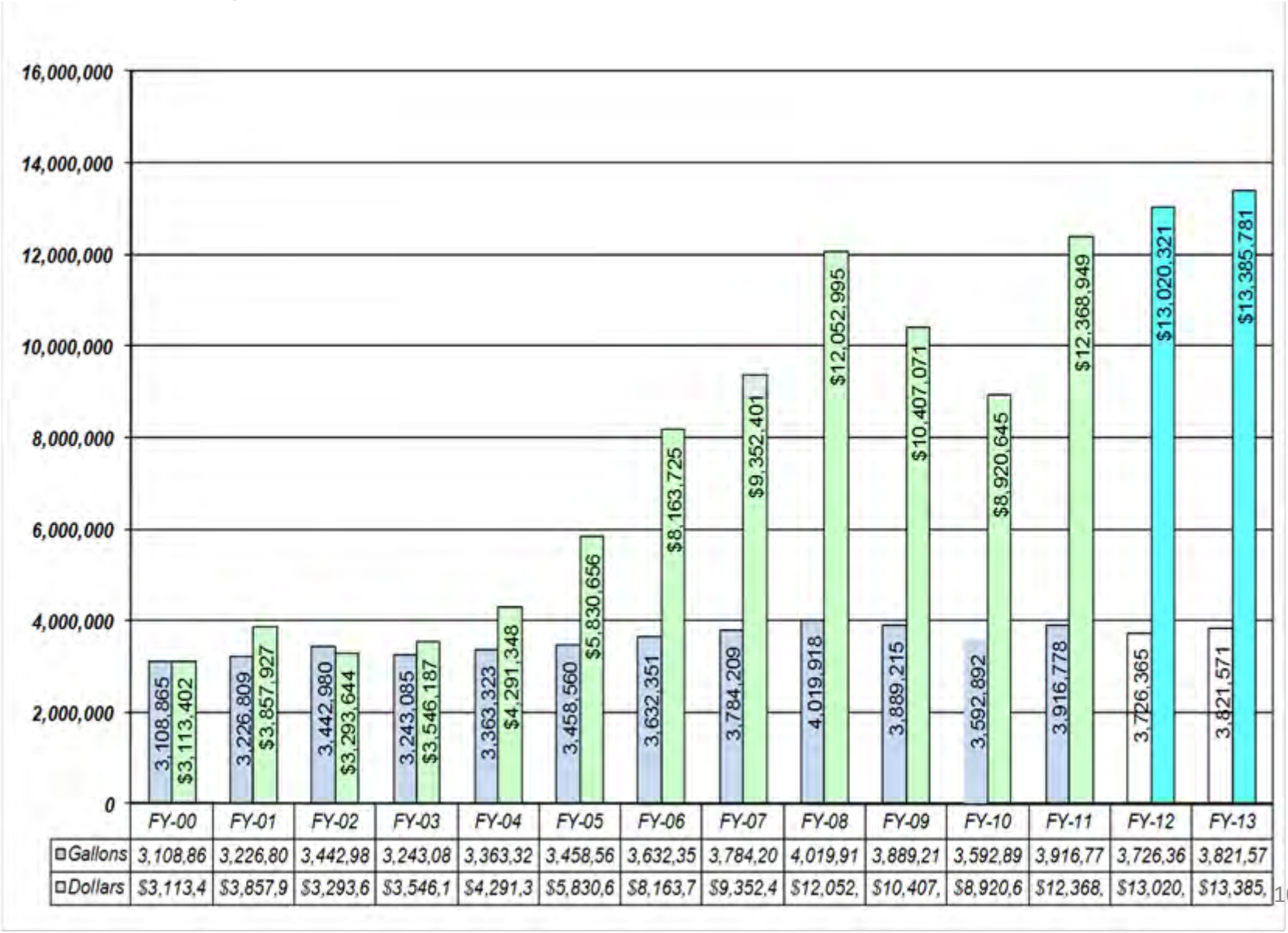
Doing More … With Less



Expenditures Planned For The 11-13 Biennium
$145.8 Million To Deliver Essential Program Services

Fuel	$48.5	M	33.3%
Outside Services	$3.1	M	2.1%
Capital	$49.4	M	33.9%
Fees to Other Agencies	$0.6	M	0.4%
Labor	$30.3	M	20.8%
Repair Parts	$10.7	M	7.3%
Other	$3.3	M	2.3%
Total Planned Expenditures	$145.8	M	100.0%

Fuel Usage and Cost



Where we've been

Because of budget constraints across all department programs over the past several biennia, the department limited the total amount of revenues that TEF was authorized to collect from rental charges to department programs. As a result, TEF has not been able to increase equipment rental rates to fully match the significant increases in equipment costs, fuel, labor, and other operating costs that occurred.

In order to make up the funding shortfall, equipment lifecycles were extended and equipment purchases were deferred. While that worked in the short term to plug the gap, it did not solve the problem long-term, as there is now a significant backlog of equipment that needs to be replaced.

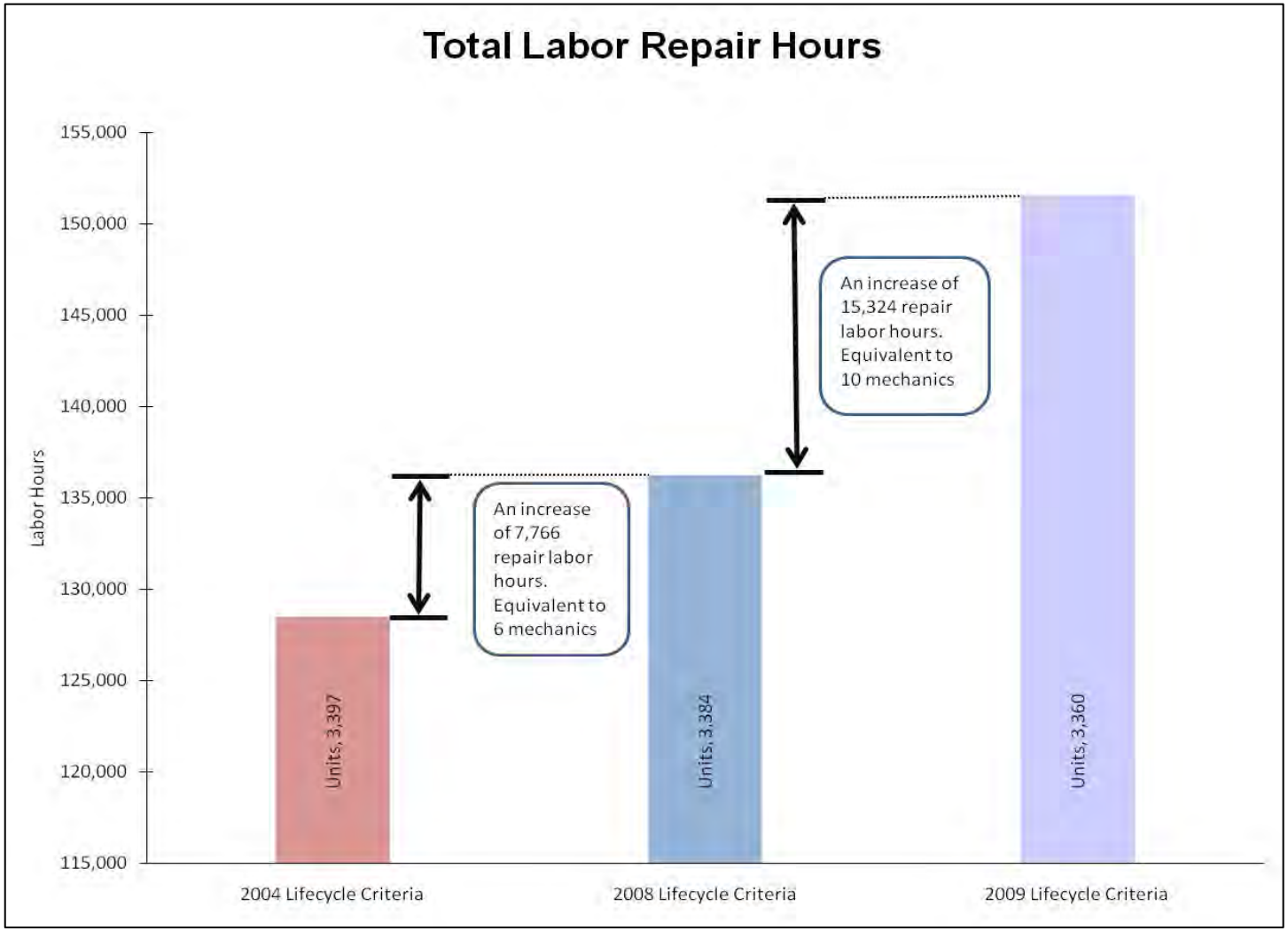
Equity In The Fleet Has Been Depleted

Pressures on TEF Program								
	99-01	01-03	03-05	05-07	07-09	09-11	11-13	Comments
Legislature transfers funds	*-$3,500,000*		*-$5,000,000*					Transferred to MVF
Unfunded fuel costs			*-$6,000,000*	*-$2,000,000*				Fuel costs were not fully funded
Unplanned increase in fuel usage				-$1,300,000				Increases occurred due to the Construction Programs tempo
Unfunded COLA increases				*-$1,400,000*				OFM oversite
Inventory adjustment			*-$1,000,000*					Non cash working capital adj.
Unfunded inflationary equipment costs			*-$1,000,000*	*-$1,500,000*	*-$300,000*			
Inadequate funding available to purchase all "Meets Criteria" equipment					*-$14,000,000*	*-$12,000,000*	*-$17,000,000*	Leadership Team decision
Subtotal			*-$13,000,000*	*-$6,200,000*	*-$14,300,000*	*-$12,000,000*	*-$17,000,000*	
Actions Taken								
Deferred "Meets Criteria" equipment			*$4,000,000*	*$2,000,000*	*$3,300,000*	*$12,000,000*	*$17,000,000*	Aged beyond its economic life
Extended equipment life cycles			*$9,000,000*	*$4,200,000*	*$11,000,000*			Defers replacement to out years
Subtotal			*$13,000,000*	*$6,200,000*	*$14,300,000*	*$12,000,000*	*$17,000,000*	
Variance	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	

Why Do We Need To Invest In Equipment Replacment?

Time and Effort Repairing Equipment has Dramatically Increased Repair Hours and Dollars

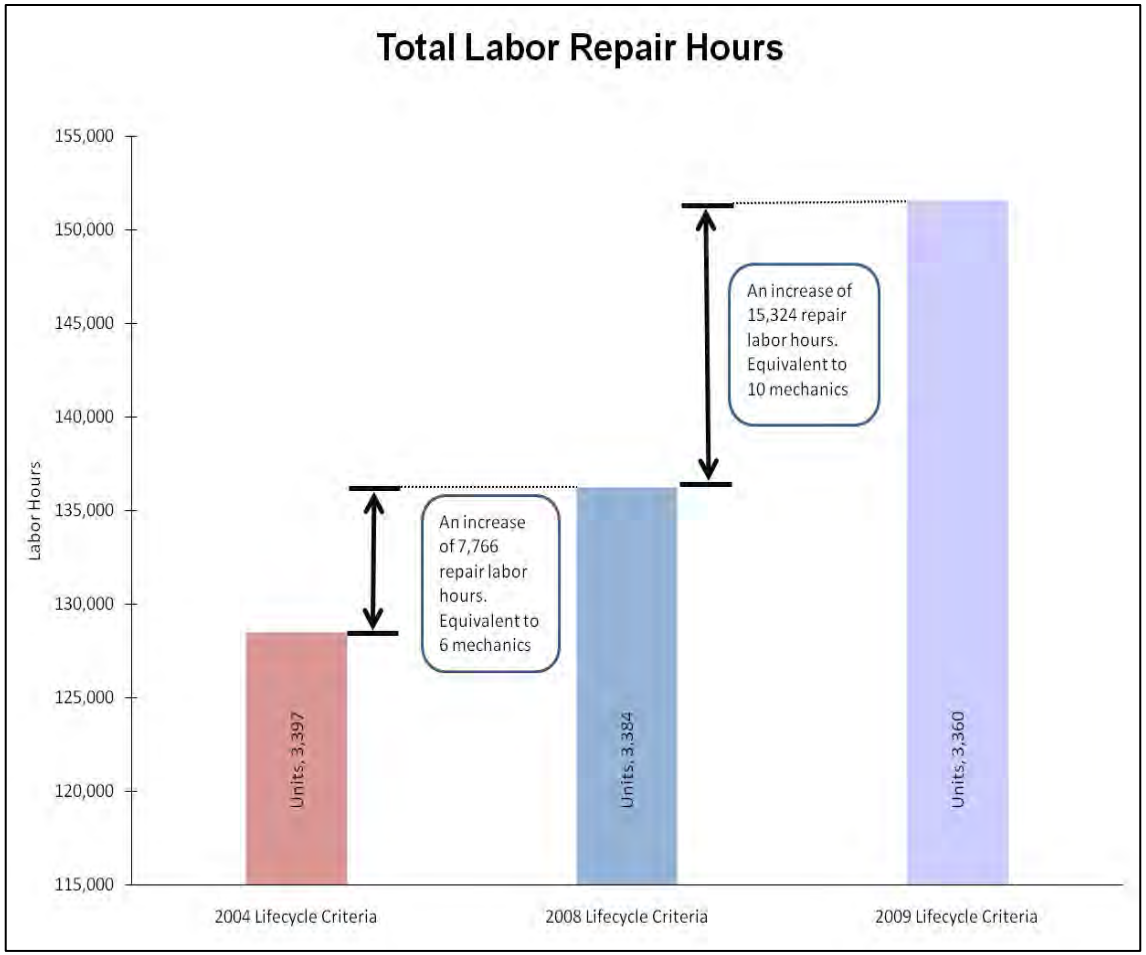
- The life cycle of the existing fleet have been substantially extended. Equipment breakdowns are now common. For instance, 2009 required the equivalent of 10 additional mechanics to keep up with required repair work.

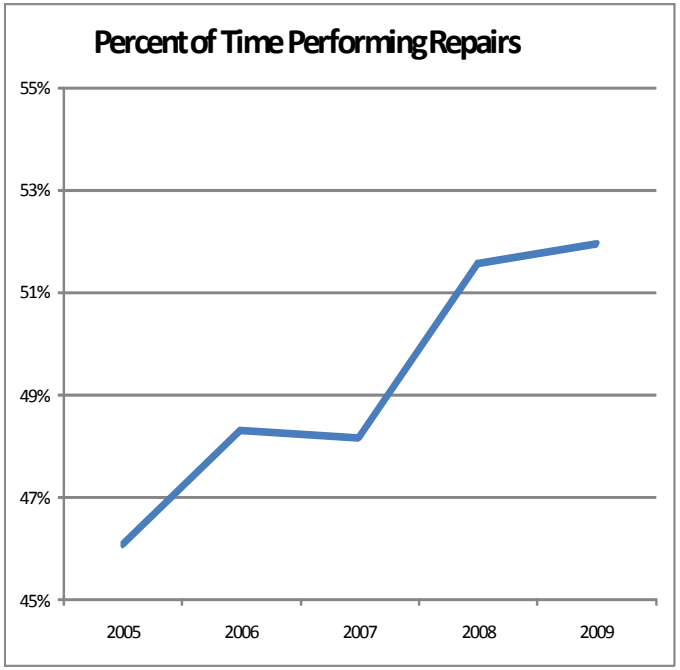


Why do we need to fund now?

We've reached the tipping point

- Time and Effort Repairing Equipment has Dramatically Increased Repair Hours and Dollars
  - The life cycle of the existing fleet have been substantially extended. Equipment breakdowns are now common. For instance, 2009 required the equivalent of 10 additional mechanics to keep up with repair work





Aging the Fleet

Vehicle Classification	Description	Lifecycle	Ferguson Target Age	Fleet Average Age		
				2004	2008	2009
Passenger Carrying Vehicles	Passenger Carrying Vehicles	12 years	6	3.1	5.3	8.5
Light Work Trucks	Cargo Vans and Trucks 1/4 ton thru 1/2 ton	12 years	6	4	5.2	8.8
Medium Work Trucks	Trucks 3/4 ton thru 2 ton	12 years	6	3.2	4.8	7.7
Heavy Duty Vehicles	Vehicles 19,500 GVW or greater. Includes Medium and Heavy Duty Dump Trucks, Bucket Trucks, Sweepers, Flushers,Snowblower, ect	12 years	6	4.4	6.2	10.6
Off Road and Construction Equipment	Mower,Backhoe,Grader,Forklift,Roller, Compressor,ect	20 years	10	5.9	7.7	13.2

The Ferguson Report, conducted in 1984, found that TEF equipment was excessively aged and contributed to excessive downtime and inefficient operations.

The recommendation was to reduce the average age of the fleet to 50 percent of the established economic life.

A Tale of Two Trucks

Plow Truck Comparison	Avg. Yearly Repair Costs	Average Labor Hrs	Average DownTime
12 Year Old Plow Truck (Data based on 19 trucks)	$13,616	172	26%
14 Year Old Plow Truck (Data based on 15 trucks)	$21,492	250	44%
Data from Jan.-Dec. 09	($7,876)	(78)	-17%

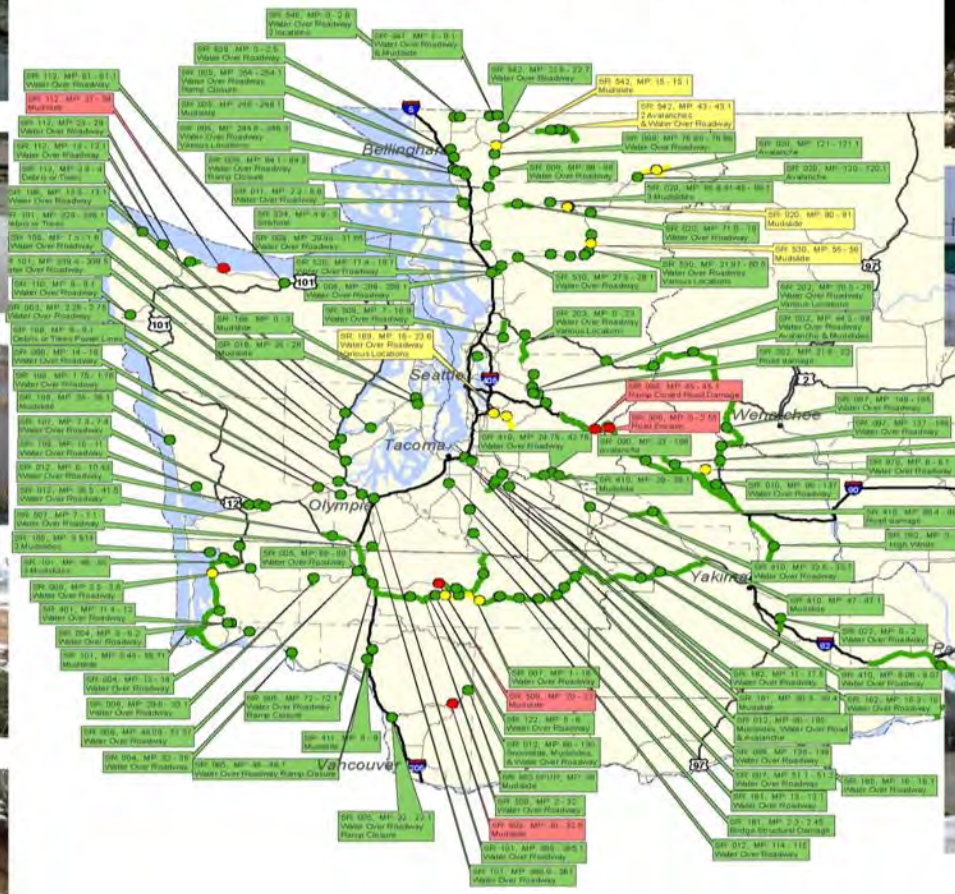
12 Year Old Plow Truck

Things You Don't See

Worn Out Brake and Electrical Parts

January Floods 2009

Time of Production 1:00 PM Date: 1/20/2009



State Route Incident Tracking

- Closed - 5
- Open (Restricted) - 10
- Open - 126

Total Events - 141

During the last two weeks of December, record levels of snow fell in virtually every part of the state. Following the snow, record or near-record levels of rain fell the first week of January, melting the snow and causing significant flooding and creating avalanches and slides around the state

WSDOT responded with over 1250 employees working around the clock, compiling 115,000 hours of regular time and 48,000 hours of overtime, most of it in the last two weeks of January.

During the snow event we placed approximately 44,000 tons of liquid and solid deicers and 32,000 tons of sand on state routes throughout Washington

We sent ten operators and five plow trucks from Olympic Region to Eastern Region to assist Spokane County in their snow fighting efforts.

During the flooding events of early January, 139 state highway segments were closed for some period of time due to a combination of flooding, mudslides, snow slides, rock fall, or wash-outs

At one point during the storm, I-5 between Centralia and Chehalis, the three major passes, and all state routes through Southwest Washington were closed, effectively isolating the Puget Sound Basin from road access by the rest of the state and the country.

We went to extraordinary efforts to keep the travelling public informed of road conditions. We used all resources available to us, including cameras, variable message signs, highway advisory radio, the web, as well as taking and answering hundreds of phone calls.

We communicated with the freight community via the list serve, getting information out to the freight community to minimize impacts to the movement of goods, to the extent possible.

We coordinated communication efforts with Idaho, Oregon and California, providing traveler information about the conditions in Washington that were then communicated through their respective information systems.

Emergency operation centers in five regions and HQ were activated, allowing the effective coordination of information and operational response to occur. We were able to then provide accurate, timely information to County EOCs, the State EOC at Camp Murray, and to the Governor's Office.

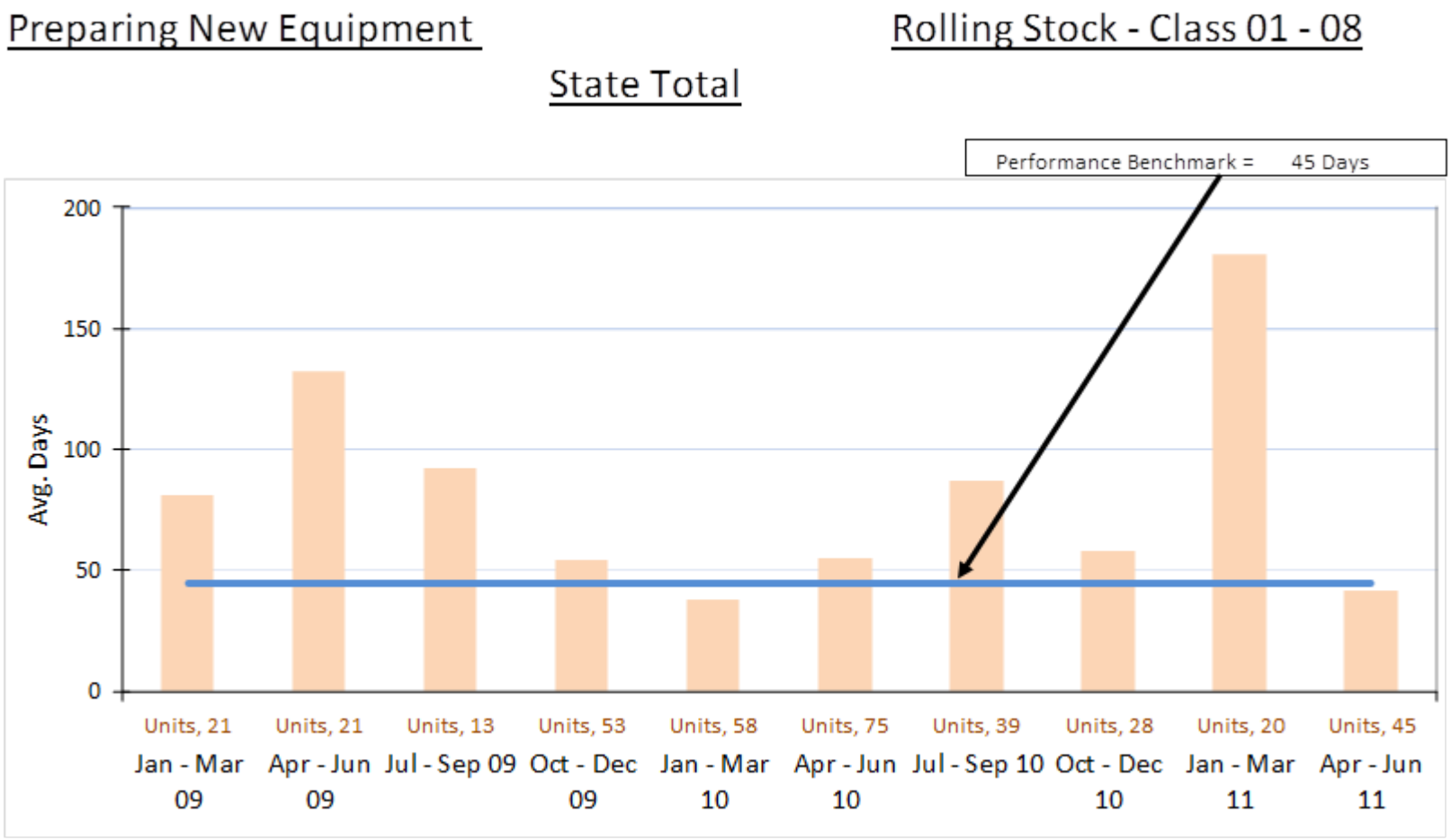
Public response has been overwhelmingly positive. We have received many emails, letters, and phone calls thanking us for our efforts despite the challenges that the numerous closures created for the public.

Washington State Department of Transportation

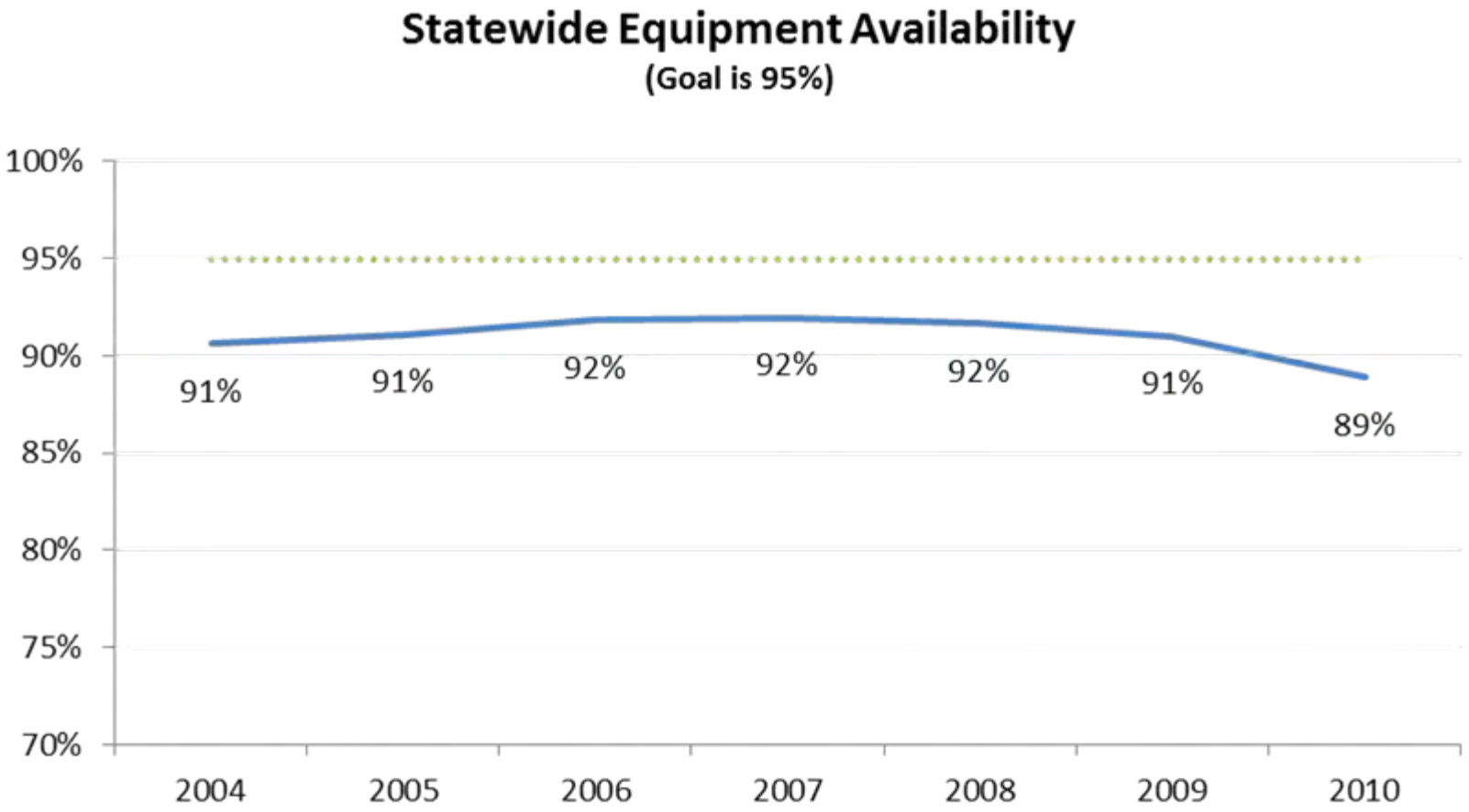
Performance Measures

- In Service Time
- Equipment Availability
- Preventive Maintenance
- Labor Pie Charts

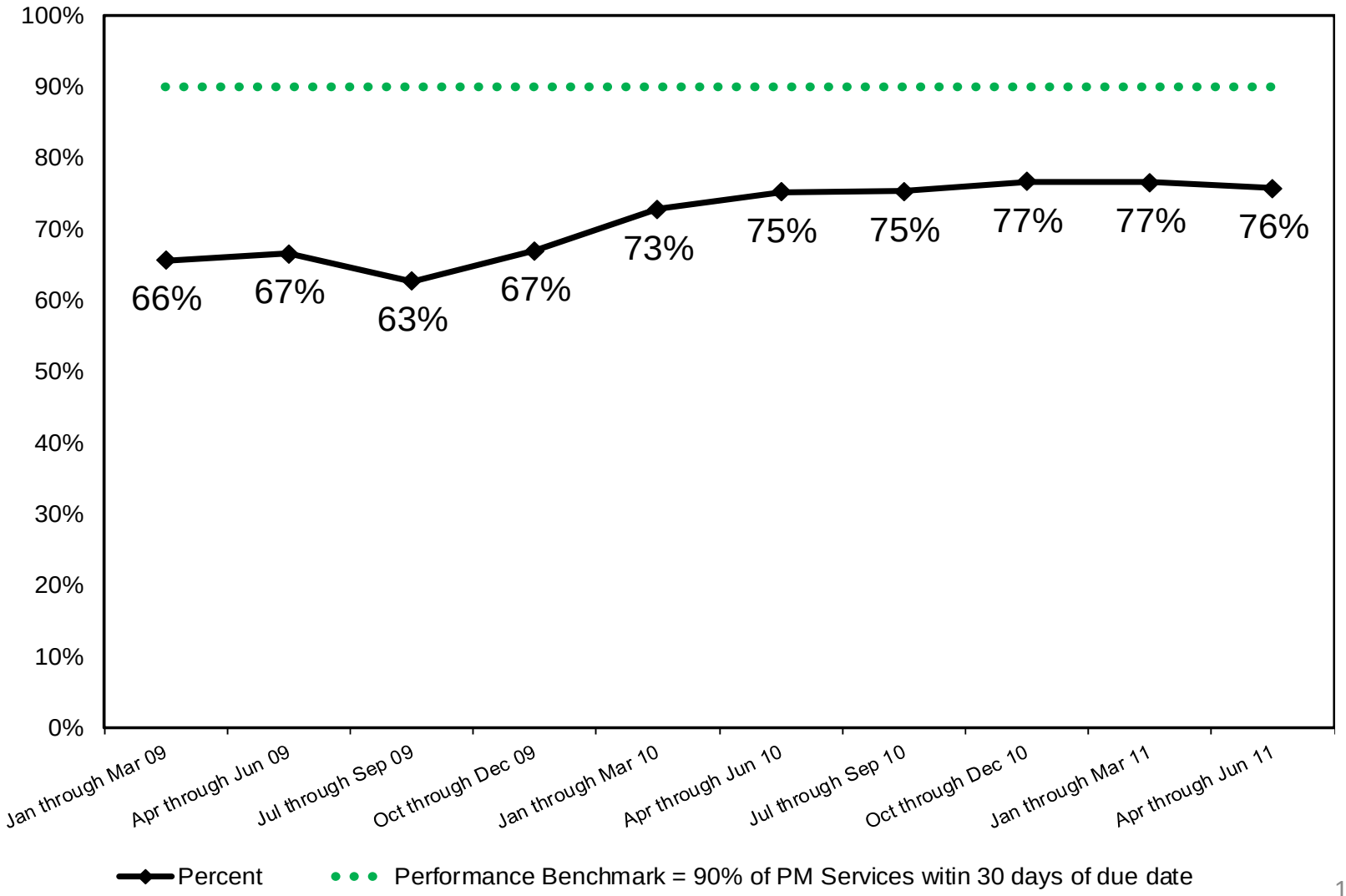
In Service Time



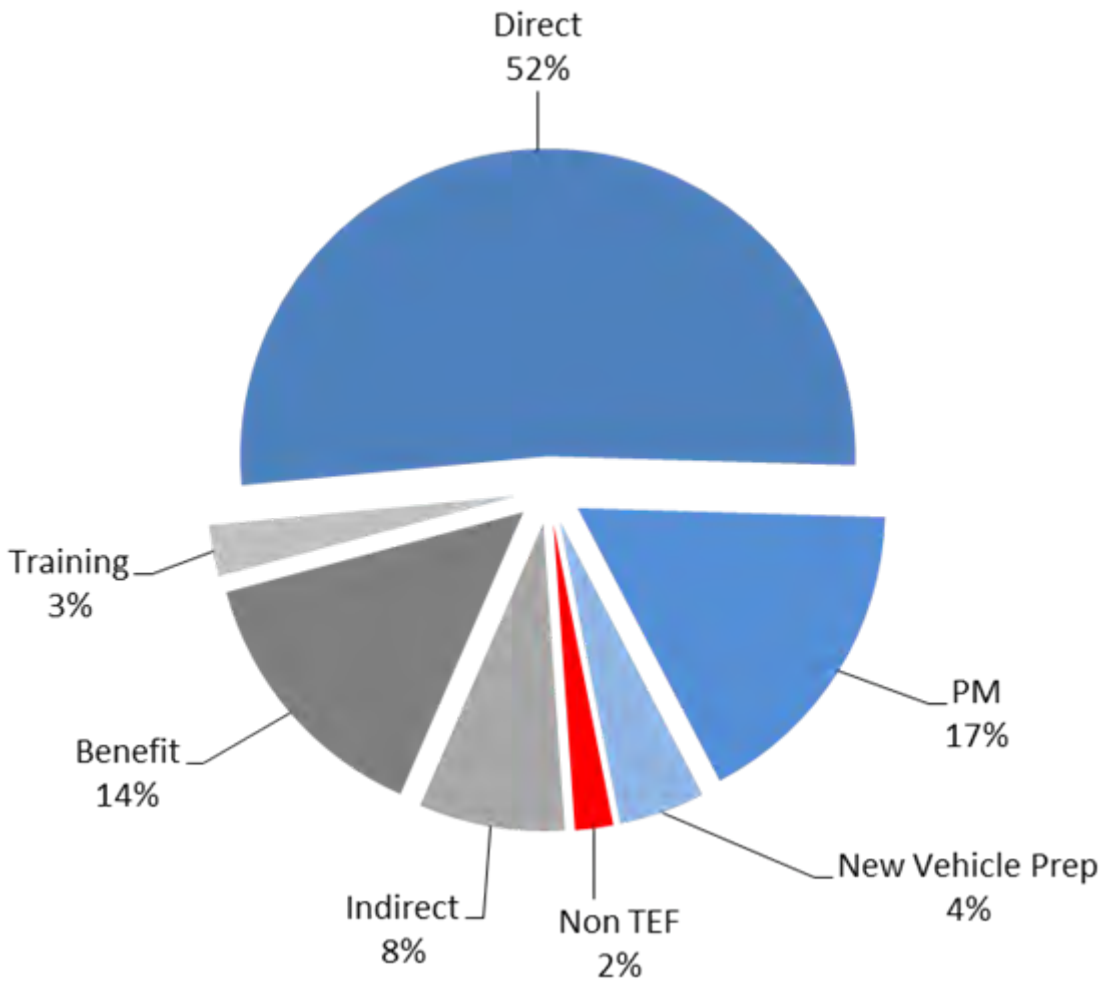
Equipment Availability



Statewide PM Completed on Time



Mechanic Labor Hours



Fuel Additives

•Energy conservation and air quality concerns continue to be significant issues for our agency. Over the years, policies have been developed and implemented to ensure that limited resources are utilized in the most cost-effective, efficient manner possible.

•Therefore, results of third party analysis and testing of new products, devices and technology for fuel savings and emission reductions must be provided by the vendor(s) prior to implementing the use of a new products, devices and technology with regards to the agency's fleet and equipment. Prior to using a new fuel additive or fuel and emission reduction device and technology, testing and product evaluation from the U.S. Environmental Protection Agency's (EPA) "Gas Saving and Emission Reduction Devices Evaluation" program is required. WSDOT will review the evaluation and determine if the product merits field testing.

•The link to the EPA's "Gas Saving and Emission Reduction Devices Evaluation" program is http://www.epa.gov/otaq/consumer/reports.htm.

Questions?

Contact: Greg Hansen

- Title: Fleet Administrator
- Phone: 360-491-2453
- Email: Hanseng@wsdot.wa.gov

WESTERN STATES 2001 Fleet Data

	ALASKA	ARIZONA	CALIFORNIA	COLORADO	IDAHO	MONTANA
I. Equipment Management System & Inventory						
c. Is funding for your budget appropriated or is it a revolving fund?	Revolving	Modified Revolving	Revolving fund	Appropriated	Appropriated	Revolving
6. Replacement Budget last fiscal year:						
a. Funds allocated last FY for vehicle & equipment replacement were what % of Total Fleet replacement value?	5%	5%	4.9%	5%	13.5%	9%
b. What has your annual average equipment replacement expenditure been for the past 5 years?	$15.3M	$7.1M	$32.3M	$8.9M		$5.2M
c. How many center lane miles does your state DOT support?		6,641	15,200	9,800	4,979	10,500
d. How many TOTAL lane miles does your state DOT support?	14,400 + 227 Aprts	17,398	48,800	28,000	11,806	25,000
	& 5,000 mi Ferry					
7. Operating Budget last fiscal year:						
a. What was your percentage of administrative overhead costs to total operating costs?	6.3%	18.8%	14.1%	N / A		N/A
b. What percentage of total operating costs= fuels?	6.7%	30.1%	11%	N / A		N/A
c. What was your percentage of fully burdened mechanic labor costs to total operating costs?	61%	22.5%	22.5%	N / A		N/A
8. What are your utilization standards (Miles/Hours/Trips/Days) for the following light vehicle grouping?	N/A		3,000 miles or 70% of days over 6 months			
a. Sedans - Compact		800 miles/month	"	12,600 avg annual	Not Applicable	No Utilization Strds
b. Sedans - Midsize		"	"	"	1,200 Miles/Month	"
c. Vans - Mini (7-8 passenger)		"	"	"	"	"
d. 1/2 ton Pickup Trucks (full size)		"	"	"	"	"
e. 3/4 ton Pickup Trucks		"	"	"	"	"
9. Of the light fleet groupings listed, what percentages were driven LESS than your specified utilization standards?	N/A					
a. Sedans - Compact		22%	6%	7%	N/A	N/A
b. Sedans - Midsize		13%	5%	4%	75%	N/A
c. Vans - Mini (7-8 passenger)		16%	4%	10%	100%	N/A
d. 1/2 ton Pickup Trucks (full size)		15%	9%	8%	82%	N/A
e. 3/4 ton Pickup Trucks		19%	N / R	8%	64%	N/A
III. Fleet Replacement and Shop Data						
1. What is your fleet's average replacement criteria (Utilization/Age) for for the following equipment categories?						Based on FY2002-2003 Criteria
a. Sedans- Compact		9 years / 100,000 miles	100,000 Miles & 7 Years	100,000 miles/ 8 years.	Not Applicable	N/A

WESTERN STATES 2001 Fleet Data

	ALASKA	ARIZONA	CALIFORNIA	COLORADO	IDAHO	MONTANA
I. Equipment Management System & Inventory						
b. Sedans - Midsize	7yrs or 100,000 mi	9 years / 125,000 miles	100,000 Miles & 7 Years	100,000 miles/ 8 years.	8 Years/120,000 miles	110,000 miles
c. Passenger (7-8) Vans	7yrs or 100,000 mi	9 years / 135,000 miles	130,000 Miles & 9 Years	100,000 miles/ 8 years.	8 Years/140,000 miles	145,000 miles
d. Light Trucks (Less than 15,000 GVW)	7yrs or 100,000 mi	9 years / 135,000 miles	150,000 Miles & 12 Years	100,000 miles/ 8 years.	8 Years/150,000 miles	145,000 miles
e. Medium Duty Trucks (15,000-31,500GVW)	10yrs or 5,000 hrs or 100,000 mi	10 years / 150,000 miles	175,000 Miles & 13 Years	150,000 miles/ 10 Years	12 Years	190,000-Diesel; 140,000 Gas
f. Heavy Duty Trucks (31,600-80,000GVW)	12yrs or 10,000 hrs	12 years / 350,000 miles	200,000 Miles & 14 Years	216,000 miles / 12 Years	12 Years	385,000 miles
g. Heavy Highway Tractors	12yrs or 10,000 hrs	15 years / 400,000 miles	200,000 Miles & 14 Years	240,000 miles / 12 Years	12 Years/250,000 miles	20 years
h. Graders	15yrs or 15,000 hrs	7 years/84months 12 years/144 months	11,000 Hours & 15 Years	4,500 hrs/ 15 Years	15 Years	20 years
i. Loaders	15yrs or 6,000-10,000 hrs	7 years/84months 12 years/144 months	10,000 Hours & 14 Years	5,250 hrs/ 15 Years	15 Years	20 years
j. Dozers	15yrs or 10,000 hrs	12 years/144 months	10,000 Hours & 19 Years	4,500 hrs/ 15 Years	15 Years	20 years
k. Backhoes	15yrs or 5,000 hrs	7 years/84months 12 years/144 months	9,000 Hours & 18 Years	3,000 hrs/ 15 Years	12 Years	20 years
2. What percentage of the equipment identified at optimum replacement point (as specified in response to 1 above) is actually being replaced in the current fiscal year?	N / R					
					N/A	N/A
a. Sedans- Compact		21%	6%	N/A	100%	90%
b. Sedans - Midsize		24%	66%	N/A	100%	90%
c. Passenger (7-8) Vans		20%	29%	N/A	73%	90%
d. Light Trucks (Less than 15,000 GVW)		40%	21.5%	N/A	100%	90%
e. Medium Duty Trucks (15,000-31,500GVW)		31%	9.5%	7%	100%	90%
f. Heavy Duty Trucks (31,600-80,000GVW)		19%	16%	11%	0%	90%
g. Heavy Highway Tractors		10%	13%	27%	100%	10%
h. Graders		14%	6.4%	11%	27%	10%
i. Loaders		15%	3%	7%	None Identified	10%
j. Dozers		0%	0%	17%	None Identified	10%

WSHEMA 2003 Data Call

	ALASKA	ARIZONA	CALIFORNIA	COLORADO	IDAHO	MONTANA
III. Fleet Use & Replacement						
1. Monthly utilization standards for following vehicle categories:	N/A		3,000 miles or 70% of days over 6 months			
a. Sedans - Compact		800 miles/month	"	12,600 avg annual	Not Applicable	No Utilization Strds
b. Sedans - Midsize		"	"	"	1,200 Miles/Month	"
c. Vans (7 to 15 passengers)		"	"	"	"	"
d. 1/2 ton Pickup Trucks		"	"	"	"	"
e. 3/4 ton Pickup Trucks		"	"	"	"	"
2. Percentage of category under utilized during past year:	N/A					
a. Sedans - Compact		22%	Not/Avail	7%	N/A	N/A
b. Sedans - Midsize		13%	Not/Avail	4%	75%	N/A
c. Vans (7 to 15 passenger)		16%	Not/Avail	10%	100%	N/A
d. 1/2 ton Pickup Trucks (full size)		15%	Not/Avail	8%	82%	N/A
e. 3/4 ton Pickup Trucks		19%	N / R	8%	64%	N/A
3. What is your fleet's average replacement criteria (Utilization/Age) for the following equipment categories?						Based on FY2002-2003 Criteria
a. Sedans- Compact		9 years / 100,000 miles	100,000 Miles & 7 Years	100,000 miles/ 8 years.	Not Applicable	N/A
b. Sedans - Midsize	7yrs or 100,000 mi	9 years / 125,000 miles	100,000 Miles & 7 Years	100,000 miles/ 8 years.	8 Years/120,000 miles	110,000 miles
c. Vans - 7 & 8 passenger	7yrs or 100,000 mi	9 years / 135,000 miles	130,000 Miles & 9 Years	100,000 miles/ 8 years.	8 Years/140,000 miles	145,000 miles
d. Light Trucks (Less than 15,000 GVW)	7yrs or 100,000 mi	9 years / 135,000 miles	150,000 Miles & 12 Years	100,000 miles/ 8 years.	8 Years/150,000 miles	145,000 miles
e. Medium Duty Trucks (15,000-31,500GVW)	10yrs or 5,000 hrs or 100,000 mi	10 years / 150,000 miles	175,000 Miles & 13 Years	150,000 miles/ 10 Years	12 Years	190,000-Diesel; 140,000 Gas
f. Heavy Duty Trucks (31,600-80,000GVW)	12yrs or 10,000 hrs	12 years / 350,000 miles	200,000 Miles & 14 Years	216,000 miles / 12 Years	12 Years	385,000 miles
g. Heavy Highway Tractors	12yrs or 10,000 hrs	15 years / 400,000 miles	200,000 Miles & 14 Years	240,000 miles / 12 Years	12 Years/250,000 miles	20 years

WSHEMA 2003 Data Call

	ALASKA	ARIZONA	CALIFORNIA	COLORADO	IDAHO	MONTANA
III. Fleet Use & Replacement con't						
h. Graders	15yrs or 15,000 hrs	7 years/84months 12 years/144 months	11,000 Hours & 15 Years	4,500 hrs/ 15 Years	15 Years	20 years
i. Loaders	15yrs or 6,000-10,000 hrs	7 years/84months 12 years/144 months	10,000 Hours & 14 Years	5,250 hrs/ 15 Years	15 Years	20 years
j. Dozers	15yrs or 10,000 hrs	12 years/144 months	10,000 Hours & 19 Years	4,500 hrs/ 15 Years	15 Years	20 years
k. Backhoes	15yrs or 5,000 hrs	7 years/84months 12 years/144 months	9,000 Hours & 18 Years	3,000 hrs/ 15 Years	12 Years	20 years
4. Percent equipment due replacement actually replaced last FY:	N / R					
a. Sedans- Compact		21%	6%	N/A	100%	90%
b. Sedans - Midsize		24%	66%	N/A	100%	90%
c. Passenger (7-8) Vans		20%	29%	N/A	73%	90%
d. Light Trucks (Less than 16,001 GVW)		40%	21.5%	N/A	100%	90%
e. Medium Duty Trucks (16,001-33,000 GVW)		31%	9.5%	7%	100%	90%
f. Heavy Duty Trucks (over 33,600 GVW)		19%	16%	11%	0%	90%
h. Graders		14%	6.4%	11%	27%	10%
i. Loaders		15%	3%	7%	None Identified	10%
j. Dozers		0%	0%	17%	None Identified	10%
k. Backhoes						
5. Fleet replacement summary data:						
a. Replacement eligible total number:		1180	1761	991	601	N/R
b. Fleet percentage eligible for replacement:		25.2%	0.0%	35%	14%	N/R
IV. Maintenance Operations						
1. Shop & Field Data						
a. Number of DOT maintenance locations statewide	80 Maint. Camps - 48 with mechanic	21	Caltrans has 12 main shops with 11 subshops	9	7	12 Areas Shops and 4 Satellite Shops
b. How many of your DOT shops are manned full time?	48	21	2 subs =winter only	9	7	All
c. Percent of mechanic direct labor hours = ?	46% Direct 54% Indirect	70% Direct	3.2 Direct to 1 Indirect	N / R		65% Direct

WSHEMA 2003 Data Call

	NEVADA	NEW MEXICO	OREGON	UTAH	WASHINGTON	WYOMING
III. Fleet Use & Replacement						
1. Monthly utilization standards for following vehicle categories:						
a. Sedans - Compact	7,700 miles/year	1,000 miles/month	1,000/month	1000 miles/month	1,000 Month	18,000miles/year
b. Sedans - Midsize	7,700 miles/year	"	"	"	"	"
c. Vans (7 to 15 passengers)	9,200 miles/year	"	"	"	"	"
d. 1/2 ton Pickup Trucks	9,200 miles/year	"	"	900 miles/month	"	24,000miles/year
e. 3/4 ton Pickup Trucks	10,500 miles/year	"	"	"	"	18,000miles/year
2. Percentage of category under utilized during past year:						
a. Sedans - Compact	10%	None in Fleet		15%	86%	N/A
b. Sedans - Midsize	10%	15%	31%	20%	51%	75%
c. Vans (7 to 15 passenger)	0	15%	29%	10%	51%	75%
d. 1/2 ton Pickup Trucks (full size)	0	0%	54%	10%	66%	70%
e. 3/4 ton Pickup Trucks	0	2%	18%	10%	29%	70%
3. What is your fleet's average replacement criteria (Utilization/Age) for the following equipment categories?						
a. Sedans- Compact	100,000 miles or 8 years	7 YEARS OR 125,000 MILES		5 years or 90,000 miles	7 Years, 100,000 Miles	
b. Sedans - Midsize	100,000 miles or 8 years	"	100,000 miles/ 5 years	5 years or 90,000 miles	7 Years, 100,000 Miles	110,000 miles
c. Vans - 7 & 8 passenger	150,000 miles or 8 years	"	100,000 miles/ 5 years	6 years or 100,000 miles	7 Years, 100,000 Miles	100,000 miles
d. Light Trucks (Less than 15,000 GVW)	200,000 miles or 8 years	"	150,000 miles/ 8 years	6 years or 100,000 miles	7 or 8 Years Depending on	100-125,000 miles
e. Medium Duty Trucks (15,000-31,500GVW)	200,000 miles or 8 years	8 YEARS or 175,000 MILES	250,000 miles/ 12 years	12 years	10 or 12 Years Depending on	10,000 hours
f. Heavy Duty Trucks (31,600-80,000GVW)	400,000 miles or 12 years	12 YEARS or 200,000 MILES	300,000 miles/ 15 years	14 years	10 or 12 Years Depending on	17,500 hours
g. Heavy Highway Tractors	400,000 miles or 15 years	12 YEARS or 200,000 MILES	300,000 miles/ 15 years	12 years	12 Years	15,000 hours

WSHEMA 2003 Data Call

	NEVADA	NEW MEXICO	OREGON	UTAH	WASHINGTON	WYOMING
III. Fleet Use & Replacement con't						
h. Graders	17 years	14 YEARS or 8,000 HOURS	12,000 hours/ 12 years	20 years	15 Years	10,000 hours
i. Loaders	17 years	12 YEARS or 7,000 HOURS	10,000 hours/ 15 years	12 years	15 Years	10,000 hours
j. Dozers	25 years	14 YEARS or 4,000 HOURS	5000 hours/ 15 years	18 years	20 Years	5,000 hours
k. Backhoes	25 years	10 YEARS ONLY	8,000 hours/ 15 years	12 years	10 Years	5,000 hours
4. Percent equipment due replacement actually replaced last FY:		N / R				
a. Sedans- Compact	50%		22%		100%	95%
b. Sedans - Midsize	100%		25%		100%	95%
c. Passenger (7-8) Vans	0%		31%		100%	95%
d. Light Trucks (Less than 16,001 GVW)	44%		32%		100%	90%
e. Medium Duty Trucks (16,001-33,000 GVW)	60%		26%		100%	85%
f. Heavy Duty Trucks (over 33,600 GVW)	79%		N/A	0.92	100%	95%
h. Graders	100%		7%	0.18	100%	90%
i. Loaders	0%		N/A	0.16	100%	90%
j. Dozers	100%		27%		100%	90%
k. Backhoes						
5. Fleet replacement summary data:						9%
a. Replacement eligible total number:	747	2,125 (Age Criteria)	1786		800	No Response
b. Fleet percentage eligible for replacement:	29.5%	39%	36%		10%	No Response
IV. Maintenance Operations						
1. Shop & Field Data						
a. Number of DOT maintenance locations statewide	8	7	3 Main Shops, 30 Field Mechanics operating out of Maint. facilities	7	35	
b. How many of your DOT shops are manned full time?	8	7	All	7	35	
c. Percent of mechanic direct labor hours = ?	No Response	4 TO 1	6 to 1 or 84%	57% Direct	63 % Direct to 37% Indirect	2 to 1

APPENDIX 3K

WESTERN STATES 2004 FLEET DATA

	ALASKA	ARIZONA	CALIFORNIA	COLORADO	IDAHO	MONTANA
			(2002 data)	(2002 data)		
1. Monthly utilization standards for following vehicle categories:	N/A		3,000 miles or 70% of days over 6 months	Light Vehicles vary by utilization code		
a. Sedans - Compact		800 miles/month	"	12,600 avg annual	Not Applicable	No Utilization Strds
b. Sedans - Midsize		"	"	"	1,000 Miles/Month	"
c. Vans (7 to 15 passengers)		"	"	"	"	"
d. 1/2 ton Pickup Trucks		"	"	"	"	"
e. 3/4 ton Pickup Trucks		"	"	"	"	"
2. Percentage of category under utilized during past year:	N/A			No 03 data til Sep?		
a. Sedans - Compact		22%	Not/Avail	7%	N/A	N/A
b. Sedans - Midsize		13%	Not/Avail	4%	75%	N/A
c. Vans (7 to 15 passenger)		16%	Not/Avail	10%	100%	N/A
d. 1/2 ton Pickup Trucks (full size)		15%	Not/Avail	8%	82%	N/A
e. 3/4 ton Pickup Trucks		19%	N / R	8%	64%	N/A
3. What is your fleet's average replacement criteria (Utilization/Age) for the following equipment categories?	Or for all below: **Mx $ >100% orig buy**					
a. Sedans- Compact		9 years / 100,000 miles	100,000 Miles & 7 Years	100,000 miles/ 8 years.	Not Applicable	N/A
b. Sedans - Midsize	7yrs or 100,000 mi; Mx >100% orig	9 years / 125,000 miles	100,000 Miles & 7 Years	100,000 miles/ 8 years.	8 Years/100,000 miles	110,000 miles
c. Vans - 7 & 8 passenger	7yrs or 100,000 mi; Mx >100% orig	9 years / 135,000 miles	130,000 Miles & 9 Years	100,000 miles/ 8 years.	9 Years/100,000 miles	145,000 miles
d. Light Trucks (Less than 15,000 GVW)	7yrs or 100,000 mi; Mx >100% orig	9 years / 135,000 miles	150,000 Miles & 12 Years	100,000 miles/ 8 years.	8 Years/150,000 miles	145,000 miles
e. Medium Duty Trucks (15,000-31,500GVW)	10yrs or 5,000 hrs or 100,000 mi	10 years / 150,000 miles	175,000 Miles & 13 Years	150,000 miles/ 10 Years	12 Years	190,000-Diesel; 140,000 Gas
f. Heavy Duty Trucks (31,600-80,000GVW)	12yrs or 10,000 hrs	12 years / 350,000 miles	200,000 Miles & 14 Years	216,000 miles / 12 Years	12 Years	385,000 miles
g. Heavy Highway Tractors	12yrs or 10,000 hrs	15 years / 400,000 miles	200,000 Miles & 14 Years	240,000 miles / 12 Years	12 Years/250,000 miles	20 years
III. Fleet Use & Replacement con't						

	ALASKA	ARIZONA	CALIFORNIA	COLORADO	IDAHO	MONTANA
			(2002 data)	(2002 data)		
h. Graders	15yrs or 15,000 hrs	7 years/84months 12 years/144 months	11,000 Hours & 15 Years	4,500 hrs/ 15 Years	15 Years	20 years
i. Loaders	15yrs or 6,000-10,000 hrs	7 years/84months 12 years/144 months	10,000 Hours & 14 Years	5,250 hrs/ 15 Years	15 Years	20 years
j. Dozers	15yrs or 10,000 hrs	12 years/144 months	10,000 Hours & 19 Years	4,500 hrs/ 15 Years	15 Years	20 years
k. Backhoes	15yrs or 5,000 hrs	7 years/84months 12 years/144 months	9,000 Hours & 18 Years	3,000 hrs/ 15 Years	12 Years	20 years
4. Percent equipment due replacement actually replaced last FY:	N / R					
a. Sedans- Compact		21%	6%	17%	100%	90%
b. Sedans - Midsize		24%	66%	N/A	100%	90%
c. Passenger (7-8) Vans		20%	29%	N/A	73%	90%
d. Light Trucks (Less than 16,001 GVW)		40%	21.5%	N/A	100%	90%
e. Medium Duty Trucks (16,001-33,000 GVW)		31%	9.5%	N/A	0%	90%
f. Heavy Duty Trucks (over 33,600 GVW)		19%	16%	N/R	100%	90%
h. Graders		0%	6.4%	N/R	75%	10%
i. Loaders		0%	3%	N/R	66%	10%
j. Dozers		0%	0%	N/R	0%	10%
k. Backhoes				N/R		
5. Fleet replacement summary data:						
a. Replacement eligible total number:		1817	1761	1060	733	N/R = Not Tracked ??
b. Fleet percentage eligible for replacement:		40.2%	0.0%	35%	14%	N/R = Not Tracked ??
IV. Maintenance Operations						
1. Shop & Field Data						
a. Number of DOT maintenance locations statewide	82 Maint Camps - 55 with mechanic	21	Caltrans has 12 main shops with 11 subshops	355+	7	12 Areas Shops and 4 Satellite Shops
b. How many of your DOT shops are manned full time?	55	21	2 subs =winter only	9 Central Repair	7	All
c. Percent of mechanic direct labor hours = ?	73.5% Direct	73% Direct	3.2 Direct to 1 Indirect	N / R	no reply	60% Direct
d. Number of mobile (field) mechanics				45 est.		none ?
IV. Maintenance Operations con't						

WESTERN STATES 2004 FLEET DATA

	NEVADA	NEW MEXICO	OREGON	UTAH	WASHINGTON	WYOMING
1. Monthly utilization standards for following vehicle categories:						
a. Sedans - Compact	7,700 miles/year	800-1000 mi/mo	1,000/month	1000 miles/month	1,000 Month	18,000miles/year
b. Sedans - Midsize	7,700 miles/year	800-1000 mi/mo	"	"	"	"
c. Vans (7 to 15 passengers)	9,200 miles/year	800-1000 mi/mo	"	"	"	"
d. 1/2 ton Pickup Trucks	9,200 miles/year	800-1000 mi/mo	"	900 miles/month	"	24,000miles/year
e. 3/4 ton Pickup Trucks	10,500 miles/year	800-1000 mi/mo	"	"	"	18,000miles/year
2. Percentage of category under utilized during past year:						
a. Sedans - Compact	10%	O%	16%	38%	81%	N/A
b. Sedans - Midsize	10%	0%	20%	44%	51%	75%
c. Vans (7 to 15 passenger)	0	11%	34%	25%	51%	75%
d. 1/2 ton Pickup Trucks (full size)	0	0%	23%	25%	66%	70%
e. 3/4 ton Pickup Trucks	0	2%	20%	32%	29%	70%
3. What is your fleet's average replacement criteria (Utilization/Age) for the following equipment categories?						
a. Sedans- Compact	100,000 miles or 8 years	7 YEARS OR 125,000 MILES		90,000 miles	10 Years/ 100,000 Miles	
b. Sedans - Midsize	100,000 miles or 8 years	"	100,000 miles/ 5 years	90,000 miles	10 Years/ 100,000 Miles	110,000 miles
c. Vans - 7 & 8 passenger	150,000 miles or 8 years	"	100,000 miles/ 5 years	90,000 miles	10 Years/ 100,000 Miles	100,000 miles
d. Light Trucks (Less than 15,000 GVW)	200,000 miles or 8 years	"	150,000 miles/ 8 years	90,000 miles	10 Years/ 150,000 miles	100-125,000 miles
e. Medium Duty Trucks (15,000-31,500GVW)	200,000 miles or 8 years	8 YEARS or 175,000 MILES	250,000 miles/ 12 years	12 years	12 Years	10,000 hours
f. Heavy Duty Trucks (31,600-80,000GVW)	400,000 miles or 12 years	12 YEARS or 200,000 MILES	300,000 miles/ 15 years	14 years	12 Years	17,500 hours
g. Heavy Highway Tractors	400,000 miles or 15 years	12 YEARS or 200,000 MILES	300,000 miles/ 15 years	12 years	12 Years	15,000 hours
III. Fleet Use & Replacement con't						

WESTERN STATES 2004 FLEET DATA

	NEVADA	NEW MEXICO	OREGON	UTAH	WASHINGTON	WYOMING
h. Graders	17 years	14 YEARS or 8,000 HOURS	12,000 hours/ 12 years	20 years	15 Years	10,000 hours
i. Loaders	17 years	12 YEARS or 7,000 HOURS	10,000 hours/ 15 years	12 years	15 Years	10,000 hours
j. Dozers	25 years	14 YEARS or 4,000 HOURS	5000 hours/ 15 years	18 years	20 Years	5,000 hours
k. Backhoes	25 years	10 YEARS ONLY	8,000 hours/ 15 years	12 years	15 Years	5,000 hours
4. Percent equipment due replacement actually replaced last FY:		N / R				
a. Sedans- Compact	50%	100%		100%	100%	95%
b. Sedans - Midsize	100%	7%	53%	100%	100%	95%
c. Passenger (7-8) Vans	0%	0%	52%	100%	100%	95%
d. Light Trucks (Less than 16,001 GVW)	44%	9%	66%	100%	100%	90%
e. Medium Duty Trucks (16,001-33,000 GVW)	0%	27%	100%	9%	100%	85%
f. Heavy Duty Trucks (over 33,600 GVW)	0%	7%	74%	58%	100%	95%
h. Graders	100%	7%	100%	17%	100%	90%
i. Loaders	0%	4%	100%	26%	100%	90%
j. Dozers	100%	0%	0%	0%	100%	90%
k. Backhoes		0%	75%	Going to Lease		NR
5. Fleet replacement summary data:						9%
a. Replacement eligible total number:	747	2415	615	695	800	NR
b. Fleet percentage eligible for replacement:	29.5%	38%	12%	17%	10%	NR
IV. Maintenance Operations						
1. Shop & Field Data						
a. Number of DOT maintenance locations statewide	8	7	3 Main Shops+ 30 Field Mechanics operating out of Maint. facilities	7	35	NR
b. How many of your DOT shops are manned full time?	8	7	All	7	35	NR
c. Percent of mechanic direct labor hours = ?	70%	80%	84%	68% Direct	63%	65%
d. Number of mobile (field) mechanics	6	38	34	10	35	6
IV. Maintenance Operations con't						