

APPENDIX C

COST METHODOLOGY

This appendix explains the methodology used by the Air Resources Board (ARB) staff to estimate the costs of the proposed “California Evaluation Procedure for New Aftermarket Diesel Particulate Filters Intended as Modified Parts for 2007 Through 2009 On-Road Heavy-Duty Diesel Engines.” Section A below provides an overview of the estimated costs of the proposed amendments. Sections B and C outline the methodology used to quantify the potential costs of the testing, warranty, and recordkeeping provisions. Section D describes the benefits to stakeholders and Sections E and F discuss the impact on small businesses and other businesses. Section H lists the references used.

Participation in this aftermarket program is voluntary in that no requirement exists forcing a company to participate. However, if a company wishes to sell aftermarket DPFs for model year 2007-2009 on-road heavy-duty diesel engines, it will be required to apply for an exemption under this proposed evaluation procedure; the current legal path for sale as replacement parts would be onerous and so expensive as to be cost-prohibitive. Although several companies have expressed interest in the market, only companies that anticipate economic benefits from aftermarket DPF sales are expected to ultimately join in. This would depend on many factors specific to each company.

Thus, there are no mandated costs to part manufacturers. Costs to these parties are incurred only if they choose to participate in the Program. Any costs would be offset from sales of aftermarket DPFs. Companies that choose to pursue aftermarket diesel particulate filters (DPFs) in California will have to follow the proposed procedure to receive approval to sell their aftermarket DPFs. The procedure includes multiple provisions the manufacturer must comply with that could incur costs to the company. These costs include the costs of testing, warranty, quality control, installation, and recordkeeping. Installers who choose to install aftermarket DPFs would have warranty and recordkeeping costs. However, this cost analysis will consider only the incremental costs of recordkeeping and warranty. In assembling these cost estimates, staff gathered information from public sources, manufacturers and installers, and reviewed Verification program data (Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines, Title 13, California Code of Regulations (13 CCR), Sections 2700-2711). Companies that opt not to participate in the aftermarket DPF program would not incur costs.

It must be noted that the program does not levy any requirements on end users. Costs to the end users are incurred only if they choose to purchase aftermarket DPFs and include the purchase price and related expenditures and maintenance costs. All these costs are typical operating expenses that are not affected by purchase of an aftermarket part. Those costs will vary according to the engine for which the aftermarket DPF is purchased.

Staff also calculated benefits to end users in terms of lower DPF costs generated by a more competitive market. These end users primarily include fleet operators and owner-operated trucks.

A. Estimated Costs and Benefits of the Proposed Amendments – Overview

Participation in this program is voluntary. Companies would participate only if they expect to benefit economically from this aftermarket program. If no company decides to enter the market, the total costs and benefits of the regulation would be zero. If companies do choose to participate, the actual cost to each manufacturer would depend on how many exemptions they want to pursue, the number of units sold, and the number of warranty claims. The benefits would depend on the profit margin of the DPFs, the number of units sold, and retail price paid by the end user.

1. Costs

Each application is limited to one emission control group (ECG), as defined in Section B, Table 3, below. The cost of the testing and documentation required for approval is a one-time cost. If approved, there will be ongoing costs that can be calculated on an annual basis. These annual costs include: manufacturer warranty, installer warranty, and recordkeeping costs. Audits or recalls may also be required under circumstances specified in the procedure, but they may not affect all companies and/or products, the extent of the audit or recall, and their potential costs are unpredictable, as explained below

Table 1. Estimated Costs per Company*

Category	Initial Cost (Average)		Annual Costs (Average)		Total Costs Over Lifetime of Regulation (NPV)
	DPF Manufacturer	DPF Installer	DPF Manufacturer	DPF Installer	
Initial Cost - Testing	\$ 150,042	N/A	N/A	N/A	\$1,050,291
Warranty (2 Years)	N/A	N/A	\$ 52,826	\$ 1,942	\$ 842,884
Recordkeeping (8 Years)	N/A	N/A	\$ 600	\$ 600	\$ 193,896
Total Potential Costs	\$ 150,042	\$0	\$ 53,426	\$ 2,542	\$2,087,071

* For an estimated seven manufactures, 43 installers, and 12,750 DPFs replaced

2. Benefits

The largest benefit is to the end-user, who will have options in the market place. This added market flexibility is expected to reduce costs to the end-user.

Table 2. Benefits of Proposed Regulation

DPF Retail Price* (Estimated Average Retail Cost)		Cost Savings	
OEM	Aftermarket	per Unit	Total Statewide Benefits*
\$5,040	\$3,867	\$1,173	\$14,955,750

* Based on industry surveys

** For an estimated 12,750 DPFs replaced over the lifetime of the regulation

B. Initial Costs (DPF Testing for Exemption Application)

Application and testing are done on an ECG basis, with the groups defined in Table 3. ARB assessed the Original Equipment Manufacturer (OEM) engine and aftertreatment configuration for 2007-2009 model years to identify seven major ECGs based on OEM engine manufacturer, OEM market share, and aftertreatment configuration.

Table 3: Emission Control Groups¹

ECG#	Representative OEM Manufacturer or Emission Control Configuration	Testing Requirements
1	Cummins	Full testing required ²
2	Detroit Diesel Corporation	Full testing required ²
3	International/Navistar	Full testing required ²
4	Volvo/Mack	Full testing required ²
5	Caterpillar	Full testing required ²
6	Uncatalyzed DPF + Burner	Full testing required ³
7	General Motors/Isuzu/Mitsubishi	See note ⁴

¹ Hino is excluded from this evaluation procedure because its unique aftertreatment design is out of the scope of this aftermarket DPF evaluation procedure;

² Full testing requirements include laboratory aging, field demonstration and emission testing;

³ Only one minimum 500 hours field demonstration;

⁴ Applicants which only want ECG#7 must conduct full testing. Applicants that successfully complete all requirements for ECG#1, 2, 3, or 4, must only conduct field demonstrations for ECG#7.

The proposed procedure requires manufacturers to conduct the following testing of the candidate DPF:

- Perform laboratory aging (engine dynamometer) on a new, modified DPF for a minimum of 300 hours.
- Degreen the OEM DPF
- Conduct emission testing of the laboratory-aged, modified part and the OEM degreened part.
- Remove the laboratory-aged, modified part from the lab and install it on an appropriate vehicle for a field service accumulation period for a minimum of 500 hours.
- Remove the field-aged part and conduct emission testing.
- Conduct two additional field demonstrations, for a minimum 200 hours each, on different engines and applications from within the same ECG. These parts do not require emission testing.

Testing is done for only one ECG per application, as explained above.

Staff gathered cost information from nine testing laboratories estimating the costs of DPF testing. Staff assumed that material costs would be \$35,000 for the test engine, \$5,040 for the OEM DPF, and \$3,867 apiece for the three aftermarket DPFs. While the actual cost of the manufacturer's own aftermarket DPF would be less than the projected retail cost, ARB chose to set the value at the retail price. Laboratory fuel costs were estimated to be \$8,300 assuming seven miles per gallon with a speed of 20 miles per hour and price of \$2.92/gallon of diesel fuel¹. Average shipping and handling costs

¹ California Energy Commission, 2015. Energy Almanac: California Gasoline Statistics & Data <http://energyalmanac.ca.gov/gasoline/index.html>. Last accessed April 9, 2015.

were \$2,000, The FTP emissions testing costs also varied among the various manufacturers and ranged from \$2,500-\$19,500, engine setup costs ranged from \$3,500-\$47,000, and average price to run a durability/aging cell was \$100 per hour (range of \$59/hr-\$250/hr). These values are summarized in Tables 4 and 5, below.

Table 4. Summary of Estimated Testing Costs (Per Application for One ECG)

Item	Cost Per Item	
	Range	Average ¹
DPFs	\$8,205 to \$32,084	\$16,641
Degreening, Lab Aging, Emissions Testing, and Associated Costs	\$91,936 to \$169,890	\$146,526
Field Service Trials (3)	\$15,000 to \$47,000	\$ 26,167
Field Service Trial (1)	\$5,000 to \$35,000	\$ 14,813
Shipping & Handling ²	\$2,000	\$ 2,000
Total per ECG (for ECGs #1 through #5)³	\$117,140 to \$250,974	\$191,333
Total per ECG (for ECG #6)⁴	\$107,140 to \$238,974	\$179,979
Total per ECG (for ECG #7)⁵	\$15,000 to \$47,000	\$ 26,167
Typical Application for One ECG⁶		\$150,042

¹ The average is taken of all of the estimates, not just the high and low estimates

² Staff estimated at \$500 per DPF, including shipping, handling, and insurance

³ ECGs #1 through #5 require emissions testing and three field service trials

⁴ ECG #6 requires laboratory testing and one field service trial

⁵ ECG #7 requires laboratory only three field service trials (no emissions testing)

⁶ Typical ECG – Average cost of three primary ECGs (#1 through #5) and the smallest ECG (#7)

As shown in Table 4, the average total testing cost for a primary ECG (ECGs #1 through #5, which require full testing) is \$191,333 per ECG. ECG#6 requires only one field trial, instead of three, so its average cost would be \$179,979. For ECG#7, which requires only three field tests and no emission testing, the average cost would be \$26,167. Testing costs were identified based on each element of testing with input from up to nine laboratories. One estimate for field aging was nearly four times the next-highest estimate. Staff investigated and found that the lab had misunderstood the requirements and, therefore, did not include the estimate in the average costs. Staff surveyed aftermarket and OEM DPF manufacturers and/or installers to determine the approximate average current or projected retail prices used in the above calculations.

Currently there is no cost-effective path for modified part DPF sales in California. As such there are no direct businesses operating legally which supply these. Staff used the number of companies which successfully verified a DPF and their authorized installers as surrogates. The two programs require similar level of technical expertise and ability to conduct testing, support warranty recall, et cetera.

Staff made the following assumptions in calculating the costs:

- Fifty percent of the fourteen companies that successfully verified a DPF-type system will participate.
- The aggregate sales of these companies will equal 50% of the market share over the lifetime of the regulation;
- Fifty percent of the 85 current manufacturer- authorized installers of verified DPFs located in California will participate. Installers do change over time, so this number was based on the most current list².
- Fifty percent of DPFs currently on the road will be replaced over the lifetime of the regulation.
- Each company will target potentially three primary ECGs, including the largest, and also the smallest category (several companies combined), as its testing cost is minimal; however, this is difficult to predict so staff is basing estimates on the basis of a single emission control group. Therefore, staff uses the average of the costs of those three primary ECGs and ECG#6 (\$150,042) as the most reasonable scenario for calculating the average cost per application.
- Warranty costs were based on a maximum annual rate of four percent that triggers additional actions by ARB. Staff assumes that after a four-percent trigger, corrective action would result in fewer claims in subsequent years and estimated a 0.5 percent claim rate based on historical warranty claims from similar programs. Labor costs, part costs, and investigation costs were estimated based on industry feedback.
- Audits or recalls may also be required under circumstances specified in the procedure, but they may not affect all companies and/or products and their potential costs are unpredictable.

² ARB, 2015. *Frequently Asked Questions - Heavy-Duty DECS Installation and Maintenance, List of Verified DECS Installers, on-road, off-road, and TRU.*
<http://www.arb.ca.gov/msprog/decsinstall/faq.htm#9>. (Last reviewed February 3, 2015)

Table 5. Detailed Cost Estimates for Testing

Item	Cost per Item	Quantity
Test Engine	\$0 to \$36,000	x 1
OEM DPF	\$5,040 (average)	x 1
Aftermarket DPF	\$3,867 (average)	x 3
Field Trial Service	\$15,000 to \$45,000	Includes 3 units
Engine Setup	\$3,500 to \$47,000	x 2 to x 4
FTP Emissions Test	\$2,500 to \$19,500	x 4
Degreening	\$59 to \$250 per hour	x 50 hours
Shipping & Handling ¹	\$2,000	x 1
Aging Cell	\$59 to \$250 per hour	x 300 hours
Lab Fuel Cost ²	\$2.92/gal x 1000 h x 20 mph / 7 mpg	
QA/QC/Reports	\$0 ³ to \$20,000	

¹ Staff estimate for shipping, handling, and insurance

² Staff estimate based on current commercial fuel costs and estimated usage

³ QA/QC costs are built into the charges for individual services; no separate fee is charged

Testing costs for some manufacturers may be less if they use their own testing facilities. These manufacturers would essentially experience greatly reduced testing costs compared to manufacturers who must contract out their testing from outside testing facilities.

C. Ongoing Annual Costs

1. Warranty

The proposed procedure requires product and installation warranties of 2 years from the date of installation. Annual warranty costs will depend on how many units are actually sold the length of the warranty period and what percentage of those units require warranty repair or replacement. Staff estimated projected sales of the aftermarket DPF based on several assumptions. Using ARB engine certification data, staff estimated that approximately 51,000 vehicles could be affected. This is a conservative estimate as some truck owners are already phasing out these 2007-2009 trucks and buses in favor of newer trucks to meet upcoming fleet rules deadlines. As the Truck and Bus Regulation (ARB 2014) 2023 deadline which requires owners to replace all truck engines with 2010 or newer model years approaches, it becomes more likely that owners may opt to spend additional funds to purchase a newer truck, meeting the 2023 requirements instead of spending money on a replacement DPF. Therefore, staff assumed that fifty percent of the DPFs would be replaced over the lifetime of the proposed regulation.

Staff assumes that the OEM DPFs currently installed in these trucks will be replaced when the DPF fails after warranty expires. Currently OEMs have a 100 percent share of the replacement DPF market, as no procedure exists to approve aftermarket DPFs.

Therefore, it is not expected that introduction of aftermarket DPFs will completely or immediately eliminate OEMs from the market. Staff thus expects the penetration of aftermarket DPFs to occur on a staggered basis over the next 6 years. Staff assumes, then, that one-sixth of the DPFs currently on the road will be replaced each year. For the purposes of providing a conservative cost estimate, staff will assume a 50-percent aftermarket DPF market share. Over a period of time, the OEM's DPFs will deteriorate and replacements will be needed. Therefore, it is expected that the 50% penetration of replacement DPF's will occur over a period of time and not immediately. The share of aftermarket DPFs is expected to increase over time due to their lower prices.

a. Manufacturer Warranty

Warranty costs were based on a maximum annual rate of four percent, as the Procedure specifies that a four percent claim rate triggers additional actions by ARB and the manufacturer which should address these issues. Labor costs, part costs, investigation costs were estimated based on industry feedback. Staff assumed that after a 4 percent trigger, corrective action would result in less claims in subsequent years and estimated 0.5 percent claim rate based on historical warranty claims from similar programs. The verification program has 5 year/150,000 mile product and installation warranties, but for retrofit DPFs intended for older model diesel engines that were not originally equipped with DPFs. An analysis of verification warranty reports over a five-year period shows that less than one percent of the total amount from sales was spent on warranty claims for DPF core workmanship issues. Additionally, product warranty claims accounted for 0.5% percent of total units sold. Staff only included retrofit systems that were DPFs in this determination. Verified devices are DPFs that are retrofitted onto older diesel engines that did not originally come equipped with a DPF. Therefore, data from verification can be considered as worst case because these engines were not originally designed to be used with DPFs (in contrast to 2007 and newer engines) and as such are likely to experience higher warranty claims.

The total cost to any given manufacturer would be proportional to the number of units sold. Staff assumed an equal market share to each participant (7 companies) and the claim rates explained above, yielding an average cost of \$174 per unit, or \$52,826 per manufacturer, and did not attempt to apportion each company's market share among multiple ECGs. This would result in a total annual cost of \$369,782 for all seven manufacturers expected to participate. Over the lifetime of the regulation, the total cost would be \$687,576 (net present value).

b. Installation Warranty

Staff also surveyed independent installers who performed both OEM replacement part DPF installations and retrofit DPF installations. The average labor rate (including in some cases a higher labor rate for location travel) was \$142/hour. Installers reported that total replacement of an OEM replacement part filter for an installation claim ranged from zero to very low. The amount of man-hours to evaluate whether a claim was valid ranged from two to five hours. The amount of man-hours to resolve a valid claim varied

depending on the issue but ranged from one to four hours. Staff assumed that a very rare occurrence such as a total filter replacement would be approximately five percent of total installation warranty claims and that the maximum cost would be for nine hours of labor and the filter cost for a total of \$5,145. More typical claims, accounting for the remaining 95 percent of claims, would be approximately \$852, using average labor costs and average time to assess and resolve a valid warranty claim. Thus, the weighted average cost for an installation claim would be \$873. The proposed procedure establishes a four percent threshold for installation warranty reporting. Thus four percent would be the worst case claim rate for installation warranties. As with the manufacturer warranty, staff assumes that the corrective action taken for a 4-percent trigger would result in minimal (0.5%) claims for the second year. Based on a review of warranty claims for the Verification program, staff believes this to be a reasonable estimate of the aftermarket DPF claims.

Assuming 2,125 aftermarket DPFs are sold each year at a retail price of \$3,867 apiece, the installer two-year warranty would cost \$39 per unit. Staff assumes 50 percent participation of the 85 companies that are currently manufacturer-authorized DPF installers servicing vehicles operating in California, and that each installer has an equal market share. The average annual cost would then be \$1,942 per installer, or a total of \$83,525 per year for all 43 installers that are expected to participate. Over the lifetime of the regulation, the total cost would be \$155,307 (net present value).

2. Quality Control (QC) Procedures

The proposed procedure specifies minimum requirements for monitoring the quality of production units before they are released for sale. These specifications include monitoring precious metal content and checking for leaks. Staff does not believe following these quality control procedures would have a significant economic impact. Manufacturers already follow QC procedures in order to monitor their production process and produce high quality products for sale to the end user. Additionally, any added expense from the QC process would likely be offset by a reduced number of warranty claims and potential recall costs.

3. Installation Requirements

Criteria that must be followed prior to installation of the aftermarket DPF are specified in the proposed procedure. This includes requiring that the installer be authorized by the manufacturer, checking that the engine is appropriate for the aftermarket DPF and in a proper state of maintenance, and verifying that the OEM engine emission warranty period has expired. Staff does not believe these requirements would result in a significant economic impact. Engine maintenance and evaluation activities should be a part of the existing practice. The procedure lets the manufacturer decide how it will authorize their installers and what criteria it will have its installers follow for determining proper state of maintenance. Therefore, it is not possible to provide a cost estimate because individual manufacturers may establish different policies. A manufacturer may choose to invest more in training their authorized installers, for example, in order to

reduce the chances and associated costs of in-field issues. Staff expects that, overall, a determination of the appropriateness and state of maintenance of the candidate engine prior to installation of the aftermarket DPF will reduce the number of in-field problems for both manufacturers and installers, likely resulting in lower costs for remedial actions.

4. Recordkeeping

Manufacturers and installers are required to submit annual warranty reports. To ensure appropriate recall and warranty support, the procedure requires record keeping for 6 years past the warranty period, which is consistent with engine certification requirements. Title 13, CCR, Division 3, Chapter 4, Article 2, Section 2222(f) also requires basic record keeping. Additionally, as part of normal business practices, collection and maintenance of information on the sale and support of products should be occurring.

These records include end user contact information, a description of the engine and modified part, pre-installation assessment results, warranty claims, and quality control documentation. Although maintaining records incurs some cost, these costs are minor and not significant relative to other costs of the procedure. Staff assumes it would take approximately one day to generate an annual report provided the company was maintaining records over the course of the year as part of its normal business process. The recordkeeping costs are estimated as follows.

a. Manufacturers

Assuming a management level employee is required to compile the report and is paid \$75 per hour³, and this work takes 1 full day, this would cost each manufacturer approximately \$600 per year.

b. Installers

Assuming a management level employee is required to compile the installation warranty report and is paid \$75 per hour, and this work takes 1 full day, this would cost approximately \$600 per year for each authorized installer.

5. Audit Testing

Audit costs are extremely variable given audit is not mandated by the Procedure and is an optional action ARB may take to ensure compliance with the Procedure and also ensure that the products do not deviate from the approved version. Although ARB can commence an audit at any time, ARB does not anticipate routinely (e.g. yearly) requiring

³ State of California Employment Development Department, Occupational Wages, State of California, 2014 1st Quarter, Marketing Manager Mean Hourly Wage, SOC Code 11-2021, <http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/AreaSelection.asp?tableName=oeswage> (Last accessed February 11, 2016)

audits as this is intended as an additional quality assurance and compliance tool. It is less likely that ARB would randomly audit products which have low warranty claims and no consumer complaints. However, if ARB had excessive end-user complaints, denied warranty claims, overall high warranty claims or reason to suspect the product being sold was not representative of the approved product, ARB could invoke an audit to investigate. The scope of the audit is variable with the manufacturer typically simply providing systems and/or supporting information. Audit testing also ensures continued emissions compliance. Since it is unlikely that all products would be audited, the potential costs are unpredictable and staff has not estimated the costs associated with this.

6. Recall

Recall is not expected for the typical manufacturer or installer and would occur only in cases where a problem arises. The procedure provides the Executive Officer with recall authority to ensure that if a problem, incompatibility, or safety concern is found with product which has been sold into commerce, the product can be potentially fixed, removed, or have another appropriate remedy enacted. Since recalls may not affect all companies and/or products, their potential costs are unpredictable, and this would be considered an enforcement action not a regulatory cost, staff has not estimated the cost.

7. Summary of Ongoing Annual Costs

Table 6: Required Annual Cost to Manufacturers

Category	Estimated Cost per Manufacturer
Warranty	\$52,826
Recordkeeping	\$ 600
Total	\$53,426

Table 7: Annual Cost to Installers

Category	Estimated Cost per Manufacturer
Warranty	\$1,942
Recordkeeping	\$ 600
Total	\$2,542

D. Benefits

It is difficult to quantify the total statewide benefits of the regulation and any alternatives. No party is forced to participate in this procedure or purchase a DPF. No end-user is forced to purchase a DPF should the OEM DPF on their vehicle break. Additionally,

when an end-user does purchase a DPF, it is impossible to predict the preference for an OEM rather than an aftermarket part.

1. Benefit to Aftermarket Part Manufacturers

As this is a voluntary program, manufacturers will participate only if they believe it will be economically advantageous. Therefore, the only manufacturers who participate will be companies that expect the revenue from sales of their aftermarket DPFs to exceed the costs associated with applying for an exemption and maintaining warranties and records. It is not possible to quantify this benefit, as each company's business model may be unique and some of the costs of implementing this new program—research and development, advertising, employee training, etc.—are not known.

2. Benefit to Installers

Businesses that install OEM DPFs or retrofit DPFs for older diesel engines may expand to accommodate aftermarket DPFs. The market is impossible to predict at this time, so it is not possible to quantify this benefit.

3. Benefit to the End User

The largest benefit is to the end-user who will have options in the market place. Due to the increasingly competitive DPF market, staff anticipates that prices to the end user will decrease. Staff surveyed aftermarket and OEM DPF manufacturers and/or installers to determine the approximate average current or projected retail prices. The projected benefit would be about \$1,173 per aftermarket DPF purchase compared to an OEM DPF purchase. Staff assumes: a maximum of approximately 51,000 vehicles registered in California which may still be in state and which have a DPF; that fifty percent of these will be replaced over the lifetime of the regulation; and that aftermarket DPFs gain a fifty percent market penetration. The total end-user benefit is projected to be \$14,955,750.

4. Other Benefits

This proposed Procedure will open the California market to additional DPF manufacturing businesses, increasing competition and innovation. For those businesses located in California, it will increase investment and innovation here. Opening the California market to these companies will increase their sales, thus providing incentive for their participation. Only companies that project economic advantage will participate.

This new market for California aftermarket DPF sales will increase competition among manufacturers. Staff believes that this will result in lower-cost purchasing options to the end users. This lower cost, along with a longer warranty than the typical OEM DPF, will make it less onerous to replace a failing DPF, and it will be replaced with a DPF of

known quality. This will assist vehicle owners in maintaining emissions compliance, thus benefiting public health.

E. References

ARB, 2012. Proposed Amendments to the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines: Appendix C: Cost Methodology. Air Resources Board, August 23, 2012. <http://www.arb.ca.gov/regact/2012/verdev2012/verproappc.pdf>.

ARB, 2014. The Truck and Bus Regulation Amendments Background Materials on Air Emissions, Health Impacts, and Economic Impacts. Air Resources Board, April 24-25, 2014. <http://www.arb.ca.gov/msprog/onrdiesel/background/2014/Materials>. Last accessed December 21, 2015.

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State of California Employment Development Department, Occupational Wages, State of California, 2014 1st Quarter, Marketing Manager Mean Hourly Wage, SOC Code 11-2021, <http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/AreaSelection.asp?table Name=oeswage> (Last accessed February 11, 2016)