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An Examination of Costs and Test Prices in the "Drive Clean Pennsylvania" Emissions Inspection Program

(Conducted Pursuant to HR 577)

September 2004

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Report Summary

In 2002, Citizens for Pennsylvania's Future (PennFuture) and the Clean Air Council initiated two lawsuits over the Commonwealth's slow progress in implementing automobile emissions inspection procedures mandated by the U.S. Environmental Protection Agency (EPA). In May 2003, PENNDOT and the Department of Environmental Protection (DEP) announced an agreement to settle these lawsuits and bring the state's emissions testing program into compliance with federal air quality standards.

The resulting enhanced and expanded inspection and maintenance program relies heavily on the "on-board diagnostic" (OBD) computer systems installed on most model year 1996 and newer vehicles. The program was phased in between December 1, 2003, and June 30, 2004, and almost immediately upon start-up, questions and complaints arose from consumers concerning the fees that inspection station operators were charging for the tests.

House Resolution 577 of 2004 directed the LB&FC to study the actual costs incurred by emission inspection stations for performing the emissions tests that went into effect after November 30, 2003.[1] This report presents the results of our examination of emissions test pricing, the actual costs involved in performing these tests, and the cost factors that are used in establishing emissions testing fees.

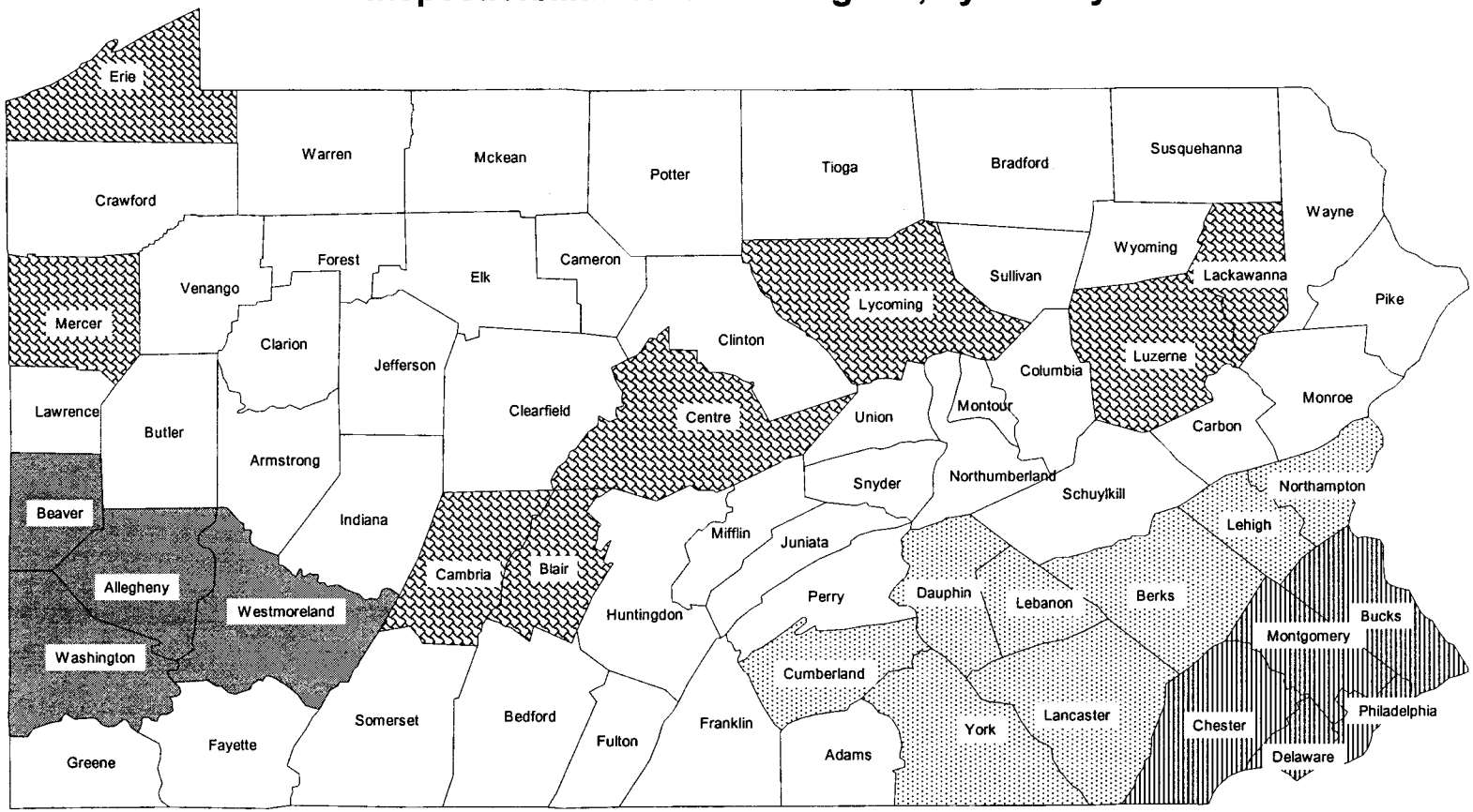
A. With the Implementation of the "Drive Clean Pennsylvania" Program, Vehicles in 25 Counties Are Now Subject to Some Form of Emissions Inspection.

"Drive Clean Pennsylvania" is the Commonwealth's enhanced and expanded Vehicle Emissions Inspection and Maintenance (I/M) Program. In total, vehicles in 25 counties are now subject to some form of annual emissions inspection. In the remaining 42 non-emissions inspection counties, vehicles receive a visual anti-tampering check of emissions system components as part of the annual safety inspection. (See map on the following page.)

Metropolitan areas with a population of 200,000 or more with poor air quality are subject to the program. Because several regions of Pennsylvania currently fail, by varying degrees, to meet federal health-based air quality standards, emissions inspections are required. From 1984 to 1997, an emissions testing program involving a basic tailpipe test was in operation in the Pittsburgh and Philadelphia Regions. In 1997, the tailpipe test using a dynamometer was implemented in the Philadelphia Region and a two-speed idle test was introduced in the Pittsburgh Region as part of the enhanced emissions inspection program.

[1]HR 577 also requested that the Attorney General investigate the possibility of collusion in the setting of motor vehicle emissions inspection fees. The Attorney General released the results of this investigation in June 2004.

Emissions Tests Required in Pennsylvania's "Drive Clean Pennsylvania" Vehicle Emissions Inspection/Maintenance Program, by County



In 2003, a court agreement extended emissions testing to 16 counties in what were designated as the Northern and South Central regions. (See map on page S-2.)

The tests which are conducted in various regions of the state as part of Pennsylvania's emissions inspection program include the following:

- *The On-Board Diagnostic Test (referred to as the OBD / Gas Cap Test)* is conducted on most 1996 and newer gasoline-powered passenger vehicles, vans, and light duty trucks. The check is done while the vehicle's engine is running to ensure the emissions components are working as required. Diagnostic components analyze the performance of the ignition, fuel metering, and emissions systems
- The *Visual Anti-Tampering Check* is a visual inspection for the presence of emission control components (e.g., catalytic converter) on a vehicle. This inspection determines if the components are properly connected and if they are the correct type for the vehicle being inspected.
- The *Gas Cap Test* is a functional check that tests whether harmful evaporative emissions (fumes) are escaping from a vehicle's gas tank into the atmosphere.
- A *Tailpipe Test* uses a probe to collect a sample of the tailpipe exhaust and an emissions analyzer to measure pollutants coming from the tailpipe while the engine is idling. The analyzer determines whether the vehicle is emitting excess pollutants based on the vehicle's model year.
- A *Tailpipe Test Using a Dynamometer* uses a probe, an emissions analyzer and a treadmill-like device called a dynamometer, which puts a load on the engine to simulate driving conditions at 15 miles per hour. The analyzer then determines whether the vehicle is emitting excess pollutants based on the vehicle's model year.

The applicability of these tests varies by region as described on the following page. The OBD diagnostic test is applicable in the Philadelphia, Pittsburgh, and South Central regions. The visual anti-tampering check and gas cap test are applicable in all regions except the 42 counties classified as "other." The 42 "other" counties must incorporate a visual test of the vehicle's major emission control systems as part of the annual safety inspection.

B. The Fees Charged for Emissions Testing in Pennsylvania Are Influenced Primarily by Market Forces and Competition Within the Regional and Local Market Areas in Which the Program Operates.

HR 577 was passed in response to numerous consumer complaints about the cost of emissions tests and allegations that high emissions testing fees were the

An Overview of the Vehicle Emissions Testing Program in Effect in Pennsylvania

(As of July 1, 2004)

Region	Counties	Annual Vehicle Emissions Inspection Tests Required for Passenger Vehicles		
		On-Board Diagnostic and Gas Cap	Visual and Gas Cap	Tailpipe, Visual, and Gas Cap
South Central Region	Berks, Cumberland, Dauphin, Lancaster, Lebanon, Lehigh, Northampton, York	1996 & Newer Models	1975-1995 Models	
Pittsburgh Region	Allegheny, Beaver, Washington, West-moreland	1996 & Newer Models	1975-1978 Models	1979-1995 Models
Philadelphia Region	Bucks, Chester, Delaware, Montgomery, Philadelphia	1996 & Newer Models	1975-1978 Models	1979-1995 Models
Northern Region	Blair, Cambria, Centre, Erie, Lackawanna, Luzerne, Lycoming, Mercer		1975 & Newer Models	
Non-Emissions Region	Remaining 42 Counties		Most Vehicles With a Regis-tered Gross Weight of 11,000 Pounds or Less (As part of en-hanced safety inspection only)	

Test Not Required

result of collusion among inspection station operators. In June 2004, the Pennsylvania Attorney General reported that although investigations continued in several specific communities, his office found no evidence of widespread collusion among inspection station operators. Similarly, we found that, as is the case for state safety inspections, the fees charged for emissions inspections appear to be market-driven. As of June 2004, the average fee for an OBD/Gas Cap Test ranged from a low of about $37 in the Pittsburgh Region to a high of $49 in the Philadelphia Region.

A total of 6,196 businesses, or about 53 percent of the official Pennsylvania state inspection stations located in the 25 emissions counties, are certified to perform emissions testing. Program regulations require that these inspection stations report to PENNDOT the emissions inspection fee they charge for each completed test. This price data is to include applicable sales tax and a $4.15 program management fee the inspection stations are required to pay to MCI, the Program Manager, for each initial test performed. PENNDOT posts this test fee information on its *"Drive Clean Pennsylvania"* website and updates it twice weekly.

The PENNDOT website provides a list of emissions inspection stations by county within regions and the current price charged at these stations for an emissions inspection so that motorists are able to "shop around" for the best test price. To facilitate price comparisons, the website highlights the three participating stations with the lowest emissions inspection fee in each county, and for each region as a whole.

Based on test fee data maintained on the PENNDOT website (as of December 16, 2003, March 18, 2004, and June 17, 2004), we analyzed pricing by test type and region. (See next page.) We found the following:

1. Most inspection station operators appear to be basing their emissions test fees on their cost of labor and equipment, plus overhead costs. Unlike state safety inspections, most stations are not using the emissions test as a "loss leader" to attract customers (i.e., providing the emissions test at a reduced fee below their actual cost knowing that these inspections will often generate parts and repair work for them).
2. As of June 17, 2004, the average fees being charged for the OBD/Gas Cap Test were as follows:
   - $37.06 in the Pittsburgh Region,
   - $40.40 in the South Central Region, and
   - $49.05 in the Philadelphia Region.

PA Emission Testing Fees, by Test Type and Region

On-Board Diagnostic/Gas Cap Testing

Region:	December 16, 2003			March 18, 2004			June 17, 2004		
	Low	High	*Average*	Low	High	Average	Low	High	Average
South Central.....	$19.95	$59.95	*$41.23*	$15.90	$87.10	*$40.51*	$15.90	$66.41	*$40.40*
Pittsburgh.....	45.00	45.00	*45.00*	19.26	79.50	*36.50*	19.26	75.00	*37.06*
Philadelphia	--	--	--	25.00	57.35	*46.04*	20.00	78.07	*49.05*

Visual/Gas Cap Testing

Region:	December 16, 2003			March 18, 2004			June 17, 2004		
	Low	High	*Average*	Low	High	Average	Low	High	Average
South Central.....	$25.60	$59.95	*$42.20*	$15.90	$60.83	*$40.12*	$15.90	$62.70	*$40.21*
Northern.....	--	--	--	16.75	49.95	*32.65*	16.75	81.80	*32.48*

Tailpipe/Gas Cap Testing

Region:	December 16, 2003			March 18, 2004			June 17, 2004		
	Low	High	*Average*	Low	High	Average	Low	High	Average
Pittsburgh.....	$14.99	$45.70	*$28.93*	$15.00	$68.89	*$34.14*	$15.00	$55.00	*$36.23*

Dynamometer Tailpipe/Gas Cap Testing

Region:	December 16, 2003			March 18, 2004			June 17, 2004		
	Low	High	*Average*	Low	High	Average	Low	High	Average
Philadelphia	$12.27	$80.00	*$44.07*	$18.70	$80.00	*$48.87*	$20.00	$80.00	*$49.31*

The average test fee in the Northern Region, where stations perform only Visual/Gas Cap Checks, was $32.48.

3. Within the regions as of June 17, 2004, OBD/Gas Cap test fees ranged from a low of $15.90 in the South Central Region to a high of $78.07 in the Philadelphia Region.

	June 17, 2004 OBD/Gas Cap Test Fee	
Region	Low	High
South Central	$15.90	$66.41
Pittsburgh	19.26	75.00
Philadelphia	20.00	78.07

Overall, however, there are relatively few stations reporting prices at either extreme. For example, as of July 21, 2004, only four stations in the South Central Region reported test prices lower than $19.99 and only seven stations reported test prices higher than $60. Some station operators explained that they were offering a lower price initially in order to attract customers and expected to raise their prices over time.

We also found that, in at least some cases, the highest fees are reported by businesses that maintain their own fleet of vehicles (for example, a rental car company). Because all inspection facilities are required to submit inspection pricing data, some businesses reportedly submit very high prices to the PENNDOT website so as to discourage the general motoring public from contacting them or coming to them for inspections.

4. Since the phase-in of the OBD testing program beginning on December 1, 2003, the average fees being charged for an OBD/Gas Cap Test have moderated slightly in the South Central Region but have risen in both the Philadelphia and Pittsburgh Regions.

   a. South Central Region – The average price charged for an OBD/Gas Cap Test in the South Central Region declined by 2 percent between December 2003 when it was $41.23 and June 2004 when it was reported at $40.40. As shown below, the overall moderation in this region's average price was influenced significantly by substantial declines in the average OBD testing price in Lebanon, Cumberland, and Dauphin Counties. These offset a nearly 8 percent increase in York County.

Average OBD Test Fees in the South Central Region			
	Average Prices		
County	Dec. 2003[a]	June 2004	% Change
Lebanon	$42.98	$39.26	-8.7%
Cumberland	42.38	40.04	-5.5
Dauphin	44.81	42.39	-5.4
Berks	39.95	39.69	-0.7
Lancaster	39.22	39.21	b/
Lehigh	41.02	41.00	b/
Northampton	42.96	42.67	-0.7
York	36.05	38.91	+7.9
Regional Average	$41.23	$40.40	-2.0%

[a]Price data is as of March 2004 for Lancaster, Lehigh, and Northampton Counties.
[b]A decrease of less than 0.1 percent.

b. Pittsburgh Region – The average price charged for an OBD/Gas Cap Test in the Pittsburgh Region rose by 1.5 percent between March 2004 when it was $36.50 and June 2004 when it was reported at $37.06. Two of the four counties in the Pittsburgh Region (Beaver and Allegheny) experienced an increase in the average OBD test price during the three-month period, while the other two (Washington and Westmoreland) saw prices decline slightly.

Average OBD Test Prices in the Pittsburgh Region			
	Average Prices		
County	March 2004	June 2004	% Change
Beaver	$38.41	$39.79	+3.6%
Allegheny	36.34	37.54	+3.3
Washington	34.90	34.75	-0.4
Westmoreland	36.36	36.17	-0.5
Regional Average	$36.50	$37.06	+1.5%

c. Philadelphia Region – In the Philadelphia Region, the average price charged for an OBD/Gas Cap Test increased by 6.5 percent between March 2004 when it was $46.04 and June 2004 when it was reported at $49.05. During this period, test fees increased in four of the five counties in the region.

Average OBD Test Prices in the Philadelphia Region			
	Average Prices		
County	March 2004	June 2004	% Change
Philadelphia	$40.58	$48.02	+18.3%
Chester	43.44	49.44	+13.8
Montgomery	44.96	49.68	+10.5
Bucks	48.24	49.69	+3.0
Delaware	53.00	48.42	-8.6
Regional Average	$46.04	$49.05	+6.5%

d. Northern Region – In the Northern Region, the average price of a Visual/Gas Cap Test (which is the only test required in this region) remained relatively steady between the initiation of the program in March 2004 (at $32.65) and June 2004 (at $32.48).

Average Visual/Gas Cap Test Prices in the Northern Region			
	Average Price		
County	March 2004	June 2004	% Change
Blair	$31.77	$31.44	-1.0%
Cambria	31.30	30.99	-1.0
Centre	34.65	34.18	-1.4
Erie	32.11	31.99	-0.4
Lackawanna	33.77	33.91	+0.4
Luzerne	30.60	30.97	+1.2
Lycoming	34.46	34.15	-0.9
Mercer	32.55	32.20	-1.1
Regional Average	$32.65	$32.48	-0.5%

5. Based on a limited survey of emissions inspection stations, we found the average price charged to issue an emissions exemption sticker[2] for the standard OBD/Gas Cap Test to be $21.03, with a low of $8.00 and a high of $42.99. Stations can only charge a fee to issue a waiver to motorists whose vehicle does not pass an emissions inspection after the vehicle owner has made the minimum $150 worth of emissions-related repairs. Through our questionnaire survey, we found that the average price for the issuance of a waiver in conjunction with an OBD/Gas Cap Test is about

[2]A vehicle is exempt from the annual emissions inspection requirement if it has been owned for one year and driven less than 5,000 miles in the prior year; or is a new car, not previously titled, and driven less than 5,000 miles before registration.

$39. PENNDOT's *Drive Clean Pennsylvania* website does not contain comparative price data for exemptions or waivers.

6. Prices charged for the tailpipe emissions test and dynamometer/tailpipe emissions test for 1975-1995 model year vehicles in the Pittsburgh Region and Philadelphia Region respectively, have increased substantially since the initiation of OBD testing in these regions. As shown on the next page, prices for the tailpipe emissions test and dynamometer/tailpipe emissions test increased by 25 percent in the Pittsburgh Region and by 12 percent in the Philadelphia Region. In both regions, the June 2004 average fee for an OBD/Gas Cap Test differed by less than one dollar from the average fee for a tailpipe test or dynamometer/tailpipe test.

Tailpipe/Gas Cap Testing Fees in the Pittsburgh Region

County	Average Fee December 2003	Average Fee June 2004	% Change
Allegheny	$30.88	$37.02	+19.9%
Beaver	28.50	38.33	+34.5
Washington	27.95	34.90	+24.9
Westmoreland	28.37	34.66	+22.2
Region	$28.93	$36.23	+25.2%

Dynamometer Tailpipe/Gas Cap Testing Fees in the Philadelphia Region

County	Average Fee December 2003	Average Fee June 2004	% Change
Bucks	$46.35	$50.18	+8.3%
Chester	44.31	50.90	+14.9
Delaware	44.17	49.56	+12.2
Montgomery	45.53	50.76	+11.5
Philadelphia	39.99	45.13	+12.9
Region	$44.07	$49.31	+11.9%

C. Initial Uncertainty Concerning Interested Vendors and Equipment Requirements Contributed to the Discrepancy Between PENNDOT's Initial Cost Estimates for the Equipment Needed to Conduct OBD Emissions Testing and the Amounts Actually Paid by Inspection Station Operators.

In May 2003, PENNDOT used a posting on its website to advise station operators of the estimated per unit costs of the equipment and customized software

needed to conduct emissions testing in the South Central Region ($2,500 to $7,500) and in the Northern Region ($750 to $1,800). In the case of the South Central Region equipment, PENNDOT based its low-end equipment estimates on prices quoted by a single equipment vendor who later chose not to participate in the program. In the case of the equipment needed to conduct testing in the Northern Region, actual prices were higher than original estimates because the prices that the manufacturers initially supplied to PENNDOT assumed that computerized equipment and associated software would not be needed to perform the required Visual/Gas Cap tests. This was not the case.

Based on our contacts with 98 certified emissions inspection station operators statewide, we determined that their average per unit equipment costs for the OBD testing program were $6,662, which is within PENNDOT's revised estimated range of $4,500 to $8,000.

D. In Some Cases, a Vehicle's OBD System Is "Not Ready" for Emissions Testing Resulting in Additional Testing Time and Costs to Station Operators and Motorists.

While a routine OBD inspection usually takes 20 to 30 minutes to complete, a significantly longer testing time results if the vehicle's emissions monitors are "not ready" and the vehicle must undergo a "drive cycle" procedure to continue the test. Each vehicle has a drive cycle specific to a particular make, model and, in some cases, even year of production. When necessary, such drive cycle procedures can add up to several additional hours to the time required to complete an emissions inspection.

Inspection station operators deal with such situations in several ways. Most stations notify the customer if a readiness issue is preventing completion of the test. A service manager or technician speaks with the customer to explain the drive cycle problem and discuss the alternatives. In most cases, the motorist has two choices: (1) to pick up the car and drive it through the cycle and return on another day for the emissions inspection; or (2) to have the service station technician perform the drive cycle and then proceed with the test. In cases where the technician drives the car for the customer, the station may charge the customer a fee (e.g., at their established labor rate) for the time involved in performing the drive cycle.

There are, however, exceptions in which some inspection station operators do not bring drive cycle issues to the attention of their customers. Instead, they have their technicians drive the vehicles through the cycle to clear the codes. Inspection stations that handle the issue in this way consider it to be a matter of customer service and do not charge an extra fee for dealing with the drive cycle. One new car

dealer with whom we spoke provides the customer a loaner car if the station's technicians cannot clear the drive cycle and complete the test the same day.

The drive cycle issue has not been widely publicized and many, if not most, motorists may be unaware of this unless their vehicle cannot be tested until a drive cycle is completed. In dealing with drive cycle problems, station operators incur additional costs which must be considered when setting testing fees.

E. The Actual Costs to Conduct an Emissions Test Involve Factors That Vary Considerably From One Station to Another and Can Result in Testing Fees That Are Substantially Higher Than PENNDOT Originally Anticipated.

A number of cost factors must be considered when attempting to identify actual testing costs incurred by emissions inspection stations. These include the shop labor rate (which typically accounts for overhead costs and profit), equipment acquisition and maintenance costs, technician training, dedicated phone line costs, the program management fee, related tools and supplies, and miscellaneous and other indirect costs (e.g., billing and office personnel who support the testing process).

The actual costs incurred in conducting an emissions test can vary considerably from one station to another. For example, significant variations can exist among various stations' hourly labor rates and overhead costs depending on the type, size, and geographic location of the businesses. The number of tests conducted, the time required to conduct a test, the equipment amortization schedule, and the station's provisions for covering the costs of handling retests and drive cycle problems are also important cost factors which must be considered when setting testing fees.

PENNDOT's January 2004 estimate of the price point at which test-related revenues equal test-related costs (the $13.76 "break-even" fee) did not account for all of the above factors and underestimated the required testing time. In particular,

- the time it takes to complete the test (20 to 30 minutes) is greater than PENNDOT's original estimate of 12 minutes;
- many stations have chosen to amortize equipment costs over a one- or two-year period rather than three years assumed in the estimate;
- the original estimate did not reflect any finance charges on equipment purchases, the costs of inspector recertification, or any expenses related to equipment maintenance agreements; and
- the original estimate did not take into account the costs incurred in performing retests or dealing with drive cycle issues.

Because it was stated as a "break-even" fee, it also did not account for overhead costs and profit.

When considering all of these factors, it is not difficult to see how an inspection station might arrive at a fee of approximately $35 for an OBD test. Using PENNDOT's estimated "break-even" test fee factors as a starting point, we made the following adjustments to account for overhead costs and profit and a longer time frame needed to complete a test.

- The use of a $56[3] per hour shop labor rate to account for technician salary, overhead, and profit (PENNDOT's $13.76 "break even" estimate did not include overhead costs or profit margin); and
- A 25 minute rather than 12 minute time frame required to complete the test (based on actual experience among inspection station operators).

For the remaining cost factors, we used the same assumptions and amounts presented in the PENNDOT estimate. On this basis, an inspection station operator might calculate an OBD test fee as follows:

1. Technician salary, overhead, and profit - $23.35 per test (based on a $56 per hour labor rate and 25 minutes required to conduct the test.
2. Equipment - $4.44 per test (based on an equipment cost of $8,000 divided by 1,800 inspections over three years).
3. Program Management Fee - $4.15 per test (standard fee).
4. Training - $.11 per test (based on a $200 training fee for 1 technician divided by 1,800 inspections).
5. Dedicated Phone Line - $.63 per test ($200 installation fee and an approximate cost of $26 per month times 36 months = $1,136 divided by 1,800 inspections).
6. Subtotal - $32.68
7. Sales Tax - $1.96
8. Total Test Fee - $34.64

We do not suggest that the above analysis is the only way to calculate a testing fee or that approximately $35 is the correct or ideal fee that should be charged for the OBD test. As discussed on the previous page, numerous cost factors must be taken into account and actual costs associated with these factors vary by station depending on the type, size, and geographic location of the business. In the final analysis, however, once all these factors are considered, a station's test fees will also be significantly influenced by market forces and competition within the regional and local market areas in which it operates.

[3]Based on responses to the LB&FC's study survey, this was the average labor rate in the South Central Region as of mid-2004.

F. Relatively Little Change Occurred in Average Emissions Test Prices Between June and September 2004.

Most of the data in this report is based on program implementation between December 2003 and June 2004. This includes an analysis of emissions testing price data as of December 16, 2003, March 18, 2004, and June 17, 2004. Prior to finalizing this report, we also obtained pricing data from PENNDOT's "Drive Clean PA" website as of September 13, 2004. We did not attempt to incorporate this information in the body of the report. We are, however, presenting this information here and, in more detail, in Appendix D in order to provide the reader a direct source of more current pricing data.

As shown below, there has been relatively little change in the average prices charged for the OBG/Gas Cap Test between June and September 2004.

	Average OBD/Gas Cap Test Fee	
Region	June 17, 2004	September 13, 2004
South Central	$40.40	$40.29
Pittsburgh	37.06	36.77
Philadelphia	49.05	49.22

Likewise, the reported price range is relatively unchanged with a reported low test fee of $15.14 in the Philadelphia Region to a high of $75.00 reported in all three regions.

	September 13, 2004 OBD/Gas Cap Test Fee	
Region	Low	High
South Central	$15.90	$75.00
Pittsburgh	21.99	75.00
Philadelphia	15.14	75.00

As of September 13, 2004, the average test fee in the Northern Region, where inspection stations perform only Visual/Gas Cap checks, was $32.36. The June 17, 2004, average was $32.48.

The average prices on September 13, 2004, for the Tailpipe/Gas Cap Test (in the Pittsburgh Region) and the Dynamometer Tailpipe/Gas Cap Test (in the Philadelphia Region) are also virtually unchanged from their June 2004 levels.

	June 17, 2004	September 13, 2004
Philadelphia-Dynamometer Tailpipe/Gas Cap Test	$49.31	$49.73
Pittsburgh – Tailpipe/Gas Cap Test	36.23	36.44

In both regions, the average fees for the tailpipe tests differ by less than one dollar from the average fees charged for the OBD/Gas Cap Test.

I. Introduction

House Resolution 577 of 2004 (see Appendix A) directs the Legislative Budget and Finance Committee (LB&FC) to study and issue a report on the actual costs incurred by emissions inspection stations for performing emissions tests implemented after November 30, 2003.

Study Objectives

1. To identify the actual costs incurred by emissions inspection stations in performing the emissions tests implemented after November 30, 2003, considering all cost elements, such as the cost of the testing equipment, the time required to complete the test, appropriate overhead, and other costs of doing business.

2. To review the costs of the equipment required to perform emissions testing and determine the reason(s) for significant differences between initial Department of Transportation estimates and final actual costs as certified by the Department.

3. To develop and submit a report to the General Assembly.

Scope and Methodology

This study focused on cost and pricing issues in Pennsylvania's enhanced Vehicle Emissions Inspection and Maintenance Program during its phase-in period (i.e., between December 1, 2003, and June 30, 2004). To provide perspective on the current program, we also reviewed the legal history and chronology of the state's vehicle emissions inspection program since its initiation in 1984.

In the survey phase of the study, we reviewed the 2003 court settlement agreement regarding implementation of the state's emissions testing program and the revised State Implementation Plans. We also met with officials and staff of the Pennsylvania Department of Transportation to obtain a detailed understanding of the structure, funding, and overall administration of the emissions testing program.

During this phase of the study, we also examined all pertinent program regulations, including regional testing requirements, inspection station bulletins, and public information and descriptive program materials. We also obtained materials pertaining to emissions testing and the specific test procedures that are in use in Pennsylvania.

LB&FC staff also visited the Dauphin County Technical School to see the equipment used to conduct an On-Board Diagnostic/Gas Cap Test and to observe the performance of a test using this equipment. Discussions were also held with interested statewide associations and stakeholder groups concerning the emissions testing program and related cost and pricing issues. These groups included the Petroleum Retailers and Auto Repair Association, the Pennsylvania Automotive Association, the Pennsylvania AAA Federation, and the Pennsylvania Independent Auto Dealers Association.

To obtain data on the test fees being charged in the Pennsylvania emissions testing program and pricing practices and trends, we monitored PENNDOT's "Drive Clean Pennsylvania" website. We derived test fee data for various dates between December 2003 and July 2004, and analyzed this data by test type, region, and county.

To identify the actual costs incurred by emissions inspection stations in performing emissions tests, we examined the testing process and all of its associated cost elements. We then reviewed these cost factors with inspection station operators during site visits and discussed the rationale they employ in determining their test fees. In conjunction with this activity, we also reviewed and analyzed: (1) a testing cost estimate that PENNDOT prepared in January 2004 and distributed as guidance to inspection stations; and (2) an assessment of PENNDOT's January 2004 cost estimate done by a certified public accounting firm for the Alliance of Automotive Service Providers of Pennsylvania. We also collected test fee data during site visits to certified emissions inspection stations and through a questionnaire sent to a sample of inspection station owners and operators.

During the study, we visited 11 emissions inspection stations, covering various types of facilities (e.g., new car dealers and independent service stations) in the testing program's regions. During these visits, we observed and timed the testing process and obtained information on their test-related costs and how each station owner/operator had arrived at the price they charge to conduct emissions inspections. We also distributed a questionnaire to a sample of approximately 10 percent of the more than 6,000 certified emissions inspection stations to obtain similar information (i.e., information on the number and type of emissions tests conducted, the prices charged for those tests, the costs incurred by the station to offer emissions inspections, and the methods used to determine their testing fees).

We also obtained information from PENNDOT, inspection station operators, and equipment manufacturers on the cost of the equipment which inspection stations had to purchase in order to participate in the program. Using this information, we determined the reasons for the differences which occurred between PENNDOT's initial equipment cost estimates and the final actual costs incurred by the inspection station operators.

Acknowledgements

LB&FC staff gratefully acknowledges the excellent cooperation and assistance provided by officials and staff of the Department of Transportation during this study. We wish to thank Betty Serian, Deputy Secretary for Safety Administration; Kurt Myers, Director of the Bureau of Motor Vehicles; Robert Shea, Assistant Chief Counsel; John Munafo, Manager of the Vehicle Inspection Division; and Cindy Cashman, Executive Assistant to the Deputy Secretary for Safety Administration. Additionally, we would like to recognize and acknowledge the excellent assistance provided by the owners, operators, and staff of the emissions inspection stations that we visited or obtained input from through questionnaires. Finally, we acknowledge the statewide associations and other interested persons who worked with us to identify issues and provide input and data for this study.

Important Note

This report was developed by Legislative Budget and Finance Committee staff. The release of this report should not be construed as an indication that the Committee or its individual members necessarily concur with the report's findings and recommendations.

Any questions or comments regarding the contents of this report should be directed to Philip R. Durgin, Executive Director, Legislative Budget and Finance Committee, P.O. Box 8737, Harrisburg, Pennsylvania 17105-8737.

II. A Brief History of Pennsylvania's Vehicle Emissions Inspection Program[1]

In 1990, Congress set the requirement for an enhanced program in the Clean Air Act Amendments. This centralized testing plan was considered inconvenient to motorists and unresponsive to Pennsylvania's needs. The citizens and industry overwhelmingly rejected this program in 1994.

In October 1995, the Commonwealth announced Pennsylvania's decentralized Vehicle Emissions Inspection and Maintenance Program (I/M). This decentralized program was designed to be a "customer-focused" process that was affordable, convenient to motorists, and meet Pennsylvania's regional clean air goals.

In 1997, the Commonwealth initiated an enhanced auto emissions testing program that was designed and implemented to improve the air quality in nine counties in the Philadelphia and Pittsburgh regions. The service industry played a key role in making the deployment of the emissions program a success.

In November 1999, an expanded emissions program was to be implemented in the South Central and Lehigh Valley areas. The Commonwealth did not proceed at that time because the programs in Philadelphia and Pittsburgh were relatively new and stakeholder groups had not yet been given an opportunity to guide the overall air-quality improvement plan for the South Central and Lehigh Valley areas.

In January 2000, the stakeholder groups made their recommendations. They suggested an emissions program similar to the program already in place in the Pittsburgh region. It was announced in March 2000, that a program would be implemented in the South Central and Lehigh Valley areas in the summer of 2001.

In January 2001, faced with technology advances and other factors, PENNDOT and the Department of Environmental Protection (DEP) announced the creation of a Vehicle Emissions Inspection Policy Review Group to determine the impact of the changes on state plans for an expanded vehicle emissions inspection program. One of the key technology developments is the presence in new cars of on-board diagnostic technology. On-board diagnostics have the potential to be used for emissions tests that are both cheaper and easier.

On October 18, 2002, the United States District Court for the Eastern District of Pennsylvania ordered the Commonwealth to fully implement the original final emissions inspection cutpoints or the newly developed alternative final

[1]As presented on PENNDOT's *Drive Clean Pennsylvania* website.

cutpoints in emissions analyzers in the five county Philadelphia area (Bucks, Chester, Delaware, Montgomery, and Philadelphia) by September 1, 2003. Cutpoints are the standards used to determine if a vehicle passes or fails the required annual emissions inspection. The Pittsburgh four-county area is not impacted by the courts ruling since the standards mandated by the court only affect the test type used in the Philadelphia region. The original final cutpoints were not implemented because of concerns over "false failures" and the high failure rates that would follow. As a result, Pennsylvania asked EPA to investigate alternative final cutpoints, which they did, and made them available for use. PENNDOT implemented the alternative final cutpoints developed and supplied by EPA on September 1, 2003.

In the State Implementation Plan (SIP) and implementing state regulations, the Commonwealth had certified that enhanced I/M would occur in 25 counties, the 5 counties in and around Philadelphia and 4 counties in and around Pittsburgh by October 1, 1997, and the remaining 16 counties by November of 1999. The program was not implemented in the remaining 16 counties. In 2001, Citizens for Pennsylvania's Future (PennFuture) filed a citizen suit against Pennsylvania for ongoing violations of emission standards and limitations under the Clean Air Act. The specific claim against the Commonwealth was that it had not moved forward with the enhanced vehicle inspection and maintenance program required under the Pennsylvania SIP. A similar suit by the Clean Air Council was filed in the United States District Court for the Middle District of Pennsylvania and the litigation was then consolidated. Summary judgment was granted by this court in favor of the plaintiffs in these actions. On December 18, 2002, the United States District Court for the Eastern District of Pennsylvania ordered the parties to conclude any fact discovery relevant on the remedy by February 15, 2003, to confer on an appropriate remedy, and to file a joint proposed order or separate memoranda no later than February 28, 2003.

In May 2003, PENNDOT and DEP announced an agreement to settle the pending lawsuits over Pennsylvania's program for automobile emissions testing. The changes called for in this settlement agreement were to bring the state's emissions testing program into compliance with federal air quality standards and remove the threat of federal sanctions, while having a minimal effect on most of the state's drivers. As of June 30, 2004, all 25 counties will have fully implemented a vehicle emission testing program. A new SIP has been submitted to EPA and is pending.

III. The *"Drive Clean Pennsylvania"* Vehicle Emissions Inspection and Maintenance (I/M) Program[1]

A. Program Summary

"Drive Clean Pennsylvania" is the Commonwealth's Vehicle Emissions Inspection and Maintenance (I/M) Program. Metropolitan areas with a population of 200,000 or more with poor air quality are subject to the program. Since several regions of Pennsylvania currently fail, by varying degrees, to meet federal health-based air quality standards, emissions inspections are required. The following question and answer format provides a summary overview of the program.

When are motorists required to get their vehicle emissions inspected?

The emissions inspection is required annually in conjunction with the annual safety inspection. A vehicle must get an emissions inspection or exemption before a safety inspection can be completed and a sticker issued.[2] If a vehicle is required to undergo an emissions inspection, the message "Emissions Inspection Required/ Diesel Vehicles Exempt" will be printed on the vehicle's registration card to remind the motorist that an emissions inspection is required for his/her vehicle.

Who must participate?

Motorists with gasoline-powered cars, vans, and light-duty trucks (9,000 lbs. or less gross vehicle weight) with a model year 1975 and newer registered in Allegheny, Beaver, Berks, Blair, Bucks, Cambria, Centre, Chester, Cumberland, Dauphin, Delaware, Erie, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, Lycoming, Mercer, Montgomery, Northampton, Philadelphia, Washington, Westmoreland, and York counties are required to participate in Pennsylvania's Emissions Inspection Program.

Where do motorists go to have inspections done?

As with the safety inspection program, motorists can choose an emissions inspection station from a network of certified service stations, auto dealers, and neighborhood garages (listed on PENNDOT's *"Drive Clean Pennsylvania"* website).

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[1]Portions of this section of the report are adapted from PENNDOT I/M program materials.

[2]Includes gasoline-powered vehicles only. The requirement to have the emissions inspection completed prior to receiving a new safety inspection sticker was the result of an agreement between Pennsylvania and the federal Environmental Protection Agency (EPA). Each state required to administer an emissions inspection program must also prove to the EPA that the program will be strictly enforced. The majority of states that have emissions inspection programs use a vehicle registration denial system as a means of enforcing their program.

How much do vehicle emissions inspections cost?

PENNDOT program materials state that inspection fees are market driven and recommend that motorists shop around for the best price. As is the case for safety inspections, individual stations and dealers determine the emissions inspection fee. Stations may charge a fee for an exemption. PENNDOT materials state that competition enables motorists to choose an inspection station based on price, service, convenience, and trust. (See Section IV for a regional breakdown of prices being charged to Pennsylvania motorists.)

Are any gasoline-powered vehicles exempt from Pennsylvania's emissions program?

Vehicles are exempt from the program if:

- The vehicle has been owned for one year and driven less than 5,000 miles in the prior year. However, motorists must go to an emissions inspection station to verify the vehicle's mileage and receive an exemption sticker. Motorists can do this when they get their safety inspection if the station performs both types of inspections.
- The vehicle is a new car, not previously titled and has less than 5,000 miles before registration; motorists should receive an exemption sticker valid for up to 12 months upon receipt of the new car from the new car dealer.

Exemptions are determined by a certified emissions inspector. (See Section IV for additional information on exemptions.)

Do motorists still need an emissions sticker if their vehicle is exempt from the emissions inspection program?

Even if the vehicle is exempt from the emissions inspection program, motorists still need to go to an inspection station to receive an exemption sticker for the vehicle. The station can charge a fee to issue an exemption sticker.

Are any vehicles excluded from Pennsylvania's emissions program?

Vehicles are excluded from the program if the vehicle is registered as a street rod, classic, collectible, antique, or specially constructed vehicle; motorcycles are also excluded. Vehicles excluded from the program do not have the "Emissions Inspection Required/Diesel Vehicles Exempt" message on their registration card.

Do motorists still need an emissions inspection sticker if their vehicle is excluded from the emissions inspection program?

If the vehicle is excluded from the program, no emissions message will appear on the registration card, and, as a result, no sticker is needed.

How do motorists know if their vehicle passed or failed the emissions inspection?

Motorists receive a computer-generated report which lists inspection results. A computer-generated report for a vehicle that fails the inspection will also include information on the cause of the failure. This information is provided to help the person repairing the vehicle. In addition to the computer-generated report, a passing vehicle will also have an emissions sticker affixed to its windshield.

What happens if a vehicle fails the emissions inspection?

If a vehicle does not pass the emissions inspection, the motorist must make emissions-related repairs. After these repairs are made, the vehicle can be re-inspected for free, within 30 calendar days, at the station that initially conducted the inspection. If a motorist waits longer than 30 days, or takes the vehicle to a different emissions inspection station, the re-inspection is not free. In addition, if the vehicle does not pass the re-inspection after qualifying repairs were made, in most cases the motorist can get a one-year waiver if he/she has spent a minimum of $150 on qualifying emissions-related repairs. In some cases, the motorist may be required to spend more than the $150 prior to re-inspection to ensure that required emissions-related components are in place, such as a catalytic converter.

What is a waiver?

A certified emissions inspection station with a certified repair technician on staff may issue a waiver for a vehicle that does not pass an emissions inspection after the vehicle owner has made a minimum of $150 worth of emissions-related repairs. A waiver is valid for one-year. Waivers are not issued to vehicles that do not pass the Visual Anti-Tampering Check. (See Section IV for more information on waivers.)

What costs count towards the waiver?

Costs that count toward the waiver amount include:

- diagnosis fees;
- parts installed and labor performed at a recognized repair location; and
- cost of parts installed by the vehicle owner/operator.

Why are there different emissions standards for different model-year vehicles?

From one model-year to another, advances in technology can change; therefore, an older vehicle would not be required to meet the same manufacturing standards as a newer vehicle. For example, a 1982 vehicle is not required to meet a 1998 model-year emissions allowance. Inspection requirements are based on each vehicle's model-year and engine size, with an allowance for normal wear.

Why did Pennsylvania incorporate OBD I/M Checks into its emissions inspection program?

The federal Environmental Protection Agency (EPA) issued rules requiring states to incorporate OBD I/M Checks into their emissions inspection programs. These checks are intended to modernize Pennsylvania's current vehicle emissions inspection programs and ensure that today's computer-controlled vehicles continue to generate lower levels of air pollution. An OBD I/M Check can be performed on most 1996 and newer gasoline-powered passenger vehicles, vans, and light-duty trucks weighing 8,500 pounds and less, since the EPA required that these vehicles be manufactured with the OBD systems.

Why aren't diesel-fueled vehicles required to participate in Pennsylvania's emissions program?

Diesel-fueled vehicles are not required to participate in Pennsylvania's emissions inspection program because the federal EPA has not yet approved, and required, an emissions inspection for diesel-fueled vehicles. Current Pennsylvania law states that the Department cannot implement more stringent requirements than mandated by the EPA.

B. Types of Emissions Inspections

Pennsylvania's emissions program utilizes the four basic test types described below.

On-Board Diagnostics (OBD) Check

On-Board Diagnostics (OBD)[3] is a system comprised of a computer with diagnostic software and sensors. The OBD system monitors the performance of the ignition, fuel metering, and emissions systems, including the sensors and the computer itself, while a vehicle's engine is being run to ensure they are working "as designed."

[3]The On-Board Diagnostic inspection program currently in place is also referred to as OBD II. On-board diagnostics began in 1981. With changes to the program, it became known as OBD I in 1987. When the EPA further modified emissions inspection requirements in 1996, this new program was referred to as OBD II. This is the program Pennsylvania implemented in December 2003.

The on-board computer has the ability to identify a problem well before the driver may recognize symptoms. The computer illuminates a light on the dash to notify the driver of a problem. Most dash lights will display a "Check Engine," "Service Engine Soon," or an engine symbol. When the OBD system detects a problem, a diagnostic trouble code is stored in the vehicle's computer. When a vehicle is brought in for an official OBD inspection, those trouble codes help a technician properly diagnose and, if necessary, repair the problem.

The OBD Check can be performed on most 1996 and newer model-year gasoline-powered passenger vehicles, vans, and light-duty trucks weighing 8,500 pounds and less, since these vehicles have been required by the EPA to be manufactured with OBD systems. It is conducted by a certified technician who attaches a cable to the vehicle's on-board computer through a data link connector, usually found under the dashboard. While the vehicle is being run, this cable connection downloads information to a computer to assess how well the vehicle's emissions system is functioning. The vehicle's on-board computer generates diagnostic trouble codes if there are malfunctions or other problems present in the vehicle's emissions system.

Gas Cap Test

A Gas Cap Test is a functional check that tests whether harmful evaporative emissions (fumes) are escaping from a vehicle's gas tank into the atmosphere. In conducting this test, a certified technician removes the gas cap and inserts it into a device that applies pressure to the gas cap. The testing unit will verify that the gas cap holds pressure for a period of approximately 45 seconds, and a determination will be made as to whether fumes are escaping.

Visual Inspection

This test, also known as a Visual Anti-Tampering Check, is a visual inspection for the presence of emission control components on a vehicle. The Visual Inspection determines if these components are properly connected and if they are the correct type for the vehicle being inspected. A certified technician looks specifically for the presence of the following emission control devices:

- catalytic converter;
- exhaust gas recirculation (EGR) valve;
- positive crankcase ventilation (PCV) valve;
- fuel inlet restrictor;
- air pump; and
- evaporative control system components, such as vapor canisters and lines.

These components may be original vehicle equipment or an equivalent aftermarket replacement component meeting the same standards. Only those

components (listed above) that were part of the original certified vehicle configuration are subject to this portion of the inspection. If a component was not originally on a vehicle at the time of manufacturer, it will pass inspection without it.

Any modifications to the emissions system that change the vehicle from a certified configuration to a non-certified configuration will be considered tampering. This applies to both vehicle owners and repair facilities and is a federal offense. Replacing a catalytic converter with a straight pipe is one traditional example of tampering. Likewise, overriding the OBD system through the use of high-tech defeat devices, non-certified computer chips, etc., is also considered to be tampering.

Tailpipe Tests

A Tailpipe Test uses a probe to collect a sample of the tailpipe exhaust and an emissions analyzer to measure pollutants coming from the tailpipe while the engine is idling. The Tailpipe Test can be performed on many gasoline-powered passenger vehicles, vans, and light-duty trucks. Inspection requirements are based on each vehicle's model year, with an allowance for normal wear.

In conducting this test, the technician verifies that the vehicle's engine is running at operating temperature. The technician then inserts a probe into the tailpipe to capture a sample of the engine's exhaust. After approximately 30-45 seconds, the analyzer will determine whether the vehicle is emitting excess pollutants based on the vehicle's model year.

A Tailpipe Test Utilizing a Dynamometer uses an emissions analyzer and a treadmill-like device, called a dynamometer, which puts a load on the engine to simulate driving conditions at 15 miles per hour.[4] In conducting this test, the technician verifies that the vehicle's engine is running at operating temperature and then places the vehicle's drive wheels on the dynamometer rollers. A probe is then inserted into the tailpipe to capture a sample of the engine's exhaust. After approximately 30-45 seconds, the analyzer will determine whether the vehicle is emitting excess pollutants based on the vehicle's model year. In all cases involving either a tailpipe test or a tailpipe test using a dynamometer, the visual anti-tampering test and the gas cap test are also performed.

C. Regional Program Requirements

Pennsylvania's vehicle emissions inspection program is conducted on a regional basis. The following summarizes the inspection program requirements for

[4]In the Philadelphia region, where air pollution is more severe, it is necessary to reduce harmful oxides of nitrogen. To do this, 1975–1995 model vehicles must have their engines tested while under load. The treadmill-like device is the only method of applying a load to the vehicle's drive wheels to test for nitrogen oxides.

passenger vehicles and light-duty trucks in each region of the Commonwealth as of June 30, 2004.

South Central Region

In the eight-county South Central Region (Berks, Cumberland, Dauphin, Lancaster, Lebanon, Lehigh, Northampton, and York), passenger vehicles and light-duty trucks are subject to the following tests:

Passenger Cars	Tests Required		Light-Duty Trucks	Tests Required
1975-1995	Visual/Gas Cap[a]		1975-1995	Visual/Gas Cap[a]
1996 and Newer 8,500 lbs and less GVWR	OBD/Gas Cap[a]		1996 and Newer 8,500 lbs and less GVWR	OBD/Gas Cap[a]
1996 and Newer 8,501-9,000 lbs GVWR	Visual/Gas Cap[a]		1996 and Newer 8,501-9,000 lbs GVWR	Visual/Gas Cap[a]

[a]These tests must be performed on the OBD Analyzer.

Pittsburgh Region

In the four-county Pittsburgh Region (Allegheny, Beaver, Washington, and Westmoreland), passenger vehicles and light-duty trucks are subject to the following tests:

Passenger Cars	Tests Required		Light-Duty Trucks	Tests Required
1975-1978	Visual/Gas Cap		1975-1978	Visual/Gas Cap
1979-1980	Single-Speed Idle[a]		1979-1983	Single-Speed Idle[a]
1981-1995	Two-Speed Idle[a]		1984-1995	Two-Speed Idle[a]
1996 and Newer 8,500 lbs and less GVWR	OBD/Gas Cap[b]		1996 and Newer 8,500 lbs and less GVWR	OBD/Gas Cap[b]
1996 and Newer 8,501-9,000 lbs GVWR	Two-Speed Idle[a]		1996 and Newer 8,501-9,000 lbs GVWR	Two-Speed Idle[a]

[a]Also referred to as the Tailpipe Test.
[b]These tests must be performed on the OBD Analyzer.

Philadelphia Region

In the five-county Philadelphia Region (Bucks, Chester, Delaware, Montgomery, and Philadelphia), passenger vehicles and light-duty trucks are subject to the following tests:

Passenger Cars	Tests Required		Light-Duty Trucks	Tests Required
1975-1978	Visual/Gas Cap		1975-1978	Visual/Gas Cap
1979-1980	Single-Speed Idle[a]		1979-1983	Single-Speed Idle[a]
1981-1995	ASM/Two-Speed Idle[a, b]		1984-1995	ASM/Two-Speed Idle[a, b]
1996 and Newer 8,500 lbs and less GVWR	OBD/Gas Cap[c]		1996 and Newer 8,500 lbs and less GVWR	OBD/Gas Cap[c]
1996 and Newer 8,501-9,000 lbs GVWR	Two-Speed Idle[a]		1996 and Newer 8,501-9,000 lbs GVWR	Two-Speed Idle[a]

[a]Also referred to as the Dynamometer Test.

[b]A Two-Speed Idle test must be performed on vehicles where the AWD/4WD or Traction Control systems cannot be disengaged.

[c]These tests must be performed on the OBD Analyzer.

Northern Region

In the eight-county Northern Region (Blair, Cambria, Centre, Erie, Lackawanna, Luzerne, Lycoming, and Mercer), passenger vehicles and light-duty trucks are subject to the following tests:

Passenger Cars	Tests Required		Light-Duty Trucks	Tests Required
1975 and Newer	Visual/Gas Cap[a]		1975 and Newer	Visual/Gas Cap[a]

[a]Must be performed on the OBD Analyzer.

Other Counties

In the remaining 42 counties, emissions testing is not required. (See Exhibit 1.) Rather, beginning December 1, 2003, most passenger vehicles and light trucks weighing 11,000 pounds and less and registered in one of these counties must pass a visual anti-tampering check as part of an enhanced safety inspection. The visual anti-tampering check is a visual inspection for the presence of emission control components that were installed on a vehicle by the manufacturer.

This visual anti-tampering check is performed during the course of the regular safety inspection, and a separate inspection fee is not charged to the motorist. Only one sticker is applied to the windshield.

Exhibit 1

Non-Inspection/Maintenance Emissions Counties

Adams	Forest	Perry
Armstrong	Franklin	Pike
Bedford	Fulton	Potter
Bradford	Greene	Schuylkill
Butler	Huntingdon	Snyder
Cameron	Indiana	Somerset
Carbon	Jefferson	Sullivan
Clarion	Juniata	Susquehanna
Clearfield	Lawrence	Tioga
Clinton	McKean	Union
Columbia	Mifflin	Venango
Crawford	Monroe	Warren
Elk	Montour	Wayne
Fayette	Northumberland	Wyoming

Source: Developed by LB&FC staff using information obtained from PENNDOT.

In these counties, six major components of the emission control system are checked under the "anti-tampering" section of the Vehicle Code during the safety inspection. The inspection mechanic is required to examine the fuel inlet restrictor, the catalytic converter, the PCV valve, the AIR system, the ERG valve, and the evaporative system to determine if the components are in place and appear to be connected and operating properly. If a device is missing, it must be replaced before a safety inspection sticker can be issued for the vehicle.

D. Number of Authorized Inspection Stations, by Region

PENNDOT licenses a total of 11,664 businesses as official state safety inspection stations in the 25 emissions counties. These include new car dealers, used car dealers, and independent service stations. Of this number, 6,196 businesses, or 53 percent, also conducted emissions inspections as of June 30, 2004. Participation in the emissions inspection program was not mandatory. For those stations that wish to participate in the program, an application has to be made to PENNDOT, and the station works with the pertinent Quality Assurance Officer to meet all necessary regulatory requirements. See Table 1 for a listing of the number of stations participating in the vehicle emissions inspection program by county.

Table 1

Number and Percentage of Authorized PA Safety Inspection Stations That Also Conduct Emissions Testing*
(By Region and County)

County	Number of Safety Inspection Stations	Number That Also Offer Emissions Tests	% That Offer Emissions Tests
South Central Region:			
Berks	523	316	60.4%
Cumberland	293	182	62.1
Dauphin	399	231	57.9
Lehigh	406	223	54.9
Northampton	345	195	56.5
Lancaster	714	404	56.6
Lebanon	178	120	67.4
York	521	338	64.9
Subtotal – South Central Region	3,379	2,009	59.5%
Pittsburgh Region:			
Allegheny	1,321	761	57.6%
Beaver	231	101	43.7
Washington	281	153	54.4
Westmoreland	562	252	44.8
Subtotal – Pittsburgh Region	2,395	1,267	52.9%
Philadelphia Region:			
Bucks	685	310	45.3%
Chester	565	223	39.5
Delaware	533	260	48.8
Montgomery	901	373	41.4
Philadelphia	823	398	48.4
Subtotal – Philadelphia Region	3,507	1,564	44.6%
Northern Region:			
Blair	264	149	56.4%
Cambria	270	155	57.4
Centre	192	114	59.4
Erie	387	223	57.6
Lackawanna	350	196	56.0
Luzerne	503	280	55.7
Lycoming	217	131	60.4
Mercer	200	108	54.0
Subtotal – Northern Region	2,383	1,356	56.9%
Totals	11,664	6,196[a]	53.1%

*Includes only those safety inspection stations located in the 25 emissions counties.

[a]Does not include 218 inspection stations in 28 of the 42 "non-emissions counties." These are safety inspection stations that are not in the emissions-required counties but chose to participate in the emissions program primarily because they border an emissions county.

Source: Developed by LB&FC staff using information obtained from PENNDOT.

E. Program Administration

PENNDOT[5]

Pennsylvania's Vehicle Emissions Inspection and Maintenance (I/M) Program is administered within PENNDOT's Bureau of Motor Vehicles under the Deputy Secretary for Safety Administration. Within the Bureau of Motor Vehicles, the Vehicle Inspection Division administers the emissions inspection program along with the safety inspection program. While the expanded emissions inspection program was being implemented, PENNDOT assigned a Project Manager to the program from the Deputy Secretary for Safety Administration's office. At present, the equivalent of 9.75 employees administer the emissions inspection for PENNDOT on a full-time basis. PENNDOT estimated that it cost approximately $190,000 to implement the emissions inspection program during calendar year 2003, and that it will cost nearly $1.0 million each fiscal year to continue administration of the program. (See Table 2.)

Table 2

Costs to PENNDOT to Implement and Maintain the Emissions Inspection Program

Item	One-Time Costs to Implement Expanded Emissions Inspection Program	Estimated Annual Costs to Administer Emissions Inspection Program
Personnel Costs	$80,373[a]	$451,946[b]
Sticker Costs	25,000	375,000[c]
Postage	34,900	77,800
Printing	105,000	700
Travel	7,600	1,000
Contracted Services (Training)	19,360	61,000
Less MOU Reimbursement	(81,000)[d]	0
Total	$191,233	$967,446

[a]Includes salary and benefits of one full-time Project Manager.

[b]Includes salaries and benefits of 9.75 FTE management and clerical staff from the Vehicle Inspection Division for activities such as program management, sticker distribution, violation revenues, and station and mechanic certification.

[c]Does not account for possible increased sticker usage in future years.

[d]The Department of Environmental Protection entered a Memorandum of Understanding with PENNDOT to reimburse PENNDOT for costs for printing brochures explaining the emissions inspection program.

Source: Developed by LB&FC staff from information obtained from PENNDOT.

[5]The Pennsylvania Department of Environmental Protection (DEP) has also been involved in program development and administrative functions related to the emissions testing program. For example, DEP, along with PENNDOT, divided the Commonwealth into five regions for purposes of the program and worked with PENNDOT to devise a test program appropriate to each region's needs.

MCI-The Program Manager

In 1997, when the enhanced emissions inspection program began in Pennsylvania, PENNDOT contracted with MCI Telecommunications Corporation to manage the state's emissions inspection program. A list of the responsibilities performed by MCI in their role as the contracted emissions inspection program manager is shown on Exhibit 2.

Exhibit 2

Responsibilities of MCI as the Contracted Emissions Inspection Program Manager

The Emissions Inspection Program Manager is responsible for all aspects of administering the Emissions Program within Pennsylvania under the direction of the Department of Transportation. MCI's responsibilities under its contract with PENNDOT include:

1. developing/building or acquiring a Vehicle Inspection Information Database (VIID) for data collection and reporting capabilities;
2. operating and maintaining the database (VIID);
3. maintaining the capability to receive and transmit data between the VIID and PENNDOT's data systems;
4. conducting safety auditing and oversight of the 25 I/M counties;
5. performing emissions auditing, oversight, and quality assurance control of all emissions stations throughout Pennsylvania;
6. designing and distributing reporting applications needed to support the program;
7. establishing an infrastructure within Pennsylvania to handle all inspection station and customer services;
8. operating an ongoing public information and education campaign to clarify and define current program requirements as well as any future changes;
9. operating "On Road Testing" to help determine the effectiveness of the program;
10. holding hearings and issuing suspensions;
11. conducting motorist compliance enforcement;
12. managing the process of the I/M program; and
13. maintaining contractor and system flexibility to adapt to program changes as needed.

Source: Pennsylvania Department of Transportation.

PENNDOT's original contract was for five years, from July 1997 until July 2002. The contract provided for payments from PENNDOT to MCI (and its subcontractor) of $10,361,047 for the auditing of the safety inspection stations, plus the collection of $3.70 per emission inspection from the inspection stations. The estimated revenues to MCI and its subcontractors from administering the emission

program were anticipated to amount to $50 million for this five-year period. This estimate was based on administering the emissions program in 25 counties.

The new emissions inspection program began in October 1997 in nine counties and was not extended into the remaining 16 counties until December 2003. It was originally proposed that this expansion occur in 1999, and such a proposal was part of the five-year contract with MCI. Additionally, as a result of a lawsuit, PENNDOT was required to change the test procedure in the five-county Philadelphia area, which required significant modifications by MCI to the administrator computer system.

PENNDOT faced implementation problems based on the time constraints of the lawsuit which made it necessary to continue with the existing contractor and data base. Additionally, there was the possibility of a lawsuit by MCI against PENNDOT for failure to expand the emissions program as originally proposed, resulting in significant loss of revenue to MCI. Therefore, after negotiation with MCI, the decision was made to extend the contract until April 2005. This permitted PENNDOT and MCI to meet the requirements to modify the Philadelphia area test and also provided MCI with additional revenue to make up for the shortfall caused by failure to expand the program to the additional 16 counties within the timeframes of the original contract.

As part of these negotiations, language was added to the contract that allowed MCI to request an increase in the program management fee. The original program management fee was $3.70. In September 2003, MCI asked that the price be raised because of the additional counties that had to join the program, and the fee was approved at $4.15.

IV. An Examination of Emissions Inspection Prices Being Charged to Pennsylvania Motorists

A. Test Fees

We examined and compiled test fee data maintained on the PENNDOT website for each region and county as of December 16, 2003, March 18, 2004, and June 17, 2004.

South Central Region

The emissions inspection program was extended to the South Central Region (*Berks, Cumberland, Dauphin, Lancaster, Lebanon, Lehigh, Northampton, and York Counties*) on a phased schedule beginning on December 1, 2003:

- December 2003 – Cumberland, Dauphin
- January 2004 – Berks, Lehigh, Northampton
- February 2004 – Lancaster, Lebanon, York

Testing required in the South Central Region includes:

- Most 1996 and newer model-year vehicles are required to have an OBD I/M Check and a Gas Cap Test performed annually. (These are classified as OBD/Gas Cap (O) on the *"Drive Clean Pennsylvania"* website.)
- Most 1975-1995 model-year vehicles are required to have a Visual Anti-Tampering Check of the emissions components and a Gas Cap Test performed annually. (These are classified as Visual/Gas Gap (V) on the website.)

Using test fee data reported to PENNDOT, we compiled a summary of the prices being charged to motorists in the South Central Region for the above referenced tests. We found that the average price charged for an OBD test region-wide declined by 2 percent between December 2003 and June 2004. (See Table 3.) On December 16, 2003, the average price for the OBD test in the South Central Region was $41.23. By March 18, 2004, this price had decreased to $40.51, and on June 17, 2004, the average price for an OBD test in the South Central Region was reported at $40.40.

The overall moderation in the South Central Region's average price for an OBD test was due to declines in the average testing price in Lebanon, Cumberland, and Dauphin Counties which offset an increase of nearly 8 percent in York County.

Table 3

South Central Region Vehicle Emissions Testing Prices, by Test Type and County*

(December 2003, March 2004, and June 2004)

On-Board Diagnostic/Gas Cap Testing:[a]

County	December 16, 2003[b]			March 18, 2004			June 17, 2004		
	Low	High	Average	Low	High	Average	Low	High	Average
Berks	$39.95	$39.95	$39.95	$15.90	$55.60	$39.62	$15.90	$52.95	$39.69
Cumberland	19.95	59.95	42.38	24.96	57.39	41.18	25.00	52.95	40.04
Dauphin	22.00	53.00	44.81	20.00	87.10	42.17	22.00	60.83	42.39
Lancaster	--	--	--	20.00	57.40	39.22	16.06	66.41	39.21
Lebanon	25.15	49.15	42.98	20.00	59.99	38.92	20.00	52.10	39.26
Lehigh	--	--	--	26.48	57.40	41.02	19.99	49.95	41.00
Northampton	--	--	--	20.00	52.09	42.96	34.65	49.99	42.67
York	26.50	49.15	36.05	19.95	52.95	38.99	20.00	57.15	38.91
Region	$19.95	$59.95	$41.23	$15.90	$87.10	$40.51	$15.90	$66.41	$40.40

Visual/Gas Cap Testing:[a]

County	December 16, 2003[b]			March 18, 2004			June 17, 2004		
	Low	High	Average	Low	High	Average	Low	High	Average
Berks	--	--	--	$15.90	$55.60	$40.07	$15.90	$52.95	$39.53
Cumberland	$25.60	$59.95	$41.92	21.20	57.39	39.54	26.44	52.95	40.29
Dauphin	34.95	53.30	44.48	20.00	60.83	42.12	24.95	60.83	42.16
Lancaster	--	--	--	20.00	57.38	38.39	16.06	62.70	38.26
Lebanon	49.15	49.15	49.15	20.00	57.39	38.67	20.00	51.04	39.25
Lehigh	--	--	--	24.95	49.95	41.39	21.12	57.40	40.87
Northampton	--	--	--	25.00	52.09	42.12	29.95	49.95	42.49
York	30.00	37.10	33.25	19.00	57.15	38.65	20.00	57.17	38.79
Region	$25.60	$59.95	$42.20	$15.90	$60.83	$40.12	$15.90	$62.70	$40.21

*In the South Central Region, an OBD/Gas Cap test and a Visual/Gas Cap test are required. Dynamometer and tailpipe emissions inspections are not required. However, if they choose to do so, inspection stations in the South Central Region may provide these tests for out-of-region vehicles.

[a]Only stations in Cumberland and Dauphin Counties were required to begin the OBD/Gas Cap and Visual/Gas Cap tests on December 1, 2003. Those in Berks, Lehigh, and Northampton Counties had to begin by January 1, 2004, and those in Lancaster, Lebanon, and York Counties had to begin by February 1, 2004.

[b]Inspection stations in Cumberland and Dauphin Counties were required to begin testing on December 1, 2003, and these programs were in place as of December 16, 2003. However, Berks, Lehigh, and Northampton Counties had until January 1, 2004, to begin emissions testing; and, Lancaster, Lebanon, and York had until February 1, 2004. In some of these counties (e.g., Lancaster County), testing had not yet begun as of December 16, 2003. Therefore, the data shown for certain of these counties as of December 16, 2003, is from only those stations that chose to begin testing prior to the established date for their county.

Source: Developed by LB&FC staff using information obtained from PENNDOT.

In Berks, Lancaster, Lehigh, and Northampton Counties, the average OBD test fee remained relatively steady.

A similar pattern is evident in test prices for Visual/Gas Cap tests performed on most 1975-1995 model-year vehicles in the South Central Region. Between December 2003 and June 2004, the average region-wide price for this type test declined by 4.7 percent from $42.20 to $40.21 (see Table 3). Many of the station operators with whom we had contact stated that they charge the same price for the visual/gas cap inspection as they do for the OBD test, in part because this test requires much of the same equipment as the OBD test.

Price extremes are also evident from the PENNDOT website data. For example, the lowest price reported for both the OBD/Gas Cap test and the Visual/Gas Cap test in the South Central Region as of June 2004 was $15.90. Prices in this range, however, are not commonplace. For example, as of July 21, we found only four stations in the South Central Region with a test price less than less than $19.99. In speaking with some station operators, we learned that they were offering a lower price initially for the emissions inspections in order to attract customers and expected to raise their prices over time. For example, one station in Dauphin County initially offered the emissions inspection for $14.98. After six months, this station raised its emissions inspection fee to $24.95.

On the high end, two counties (Dauphin and Lancaster) had stations that reported both an OBD/Gas Cap and Visual/Gas Cap test price in excess of $60. As of July 21, 2004, we found a total of seven stations in the eight county region reporting test prices higher than $60. We learned that, in at least some of these cases, the highest fees are reported by businesses that maintain authorized inspection facilities in order to inspect their own fleet of vehicles (e.g., a limousine company, a rental car company, a rental center, and a city parking authority). Because all inspection facilities are required to submit inspection pricing data, some businesses reportedly submit a high price to PENNDOT so as to discourage the general motoring public from contacting them or coming to them for emissions inspections.

We found that, although not required, some inspection stations in the South Central Region also offer the "Pittsburgh tailpipe test" and the "Philadelphia dynamometer test." For example, we noted that some stations in Berks, Lancaster, Lehigh, and Northampton Counties offer the dynamometer test that is required of vehicles registered in the Philadelphia Region. In some cases, only one garage in a county may offer the test. Typically, such stations are in areas that are adjacent to or near counties in which these tests are required. We also found a few isolated cases of tailpipe tests being performed in Lancaster and Berks Counties.

Pittsburgh Region

Since 1984, motorists in the Pittsburgh Region (*Allegheny, Beaver, Washington, and Westmoreland Counties*) have been required to have vehicle emissions tests conducted at the same time as safety inspections. The inspection program in effect in the Pittsburgh Region involved Tailpipe Tests (which also included Gas Cap Tests and Visual Anti-Tampering Checks).

Under the enhanced emissions testing program, the Pittsburgh Region was required to update its emissions inspection program to include the on-board diagnostic (OBD) I/M Check. This upgrade began in January 2004 and had to be completed by March 31, 2004. If stations in the region did not begin offering the OBD I/M Check to motorists by March 31, 2004, they would no longer be authorized to offer any emissions inspections.

By March 31, 2004, the following emissions inspections were required in the Pittsburgh Region:

- Most 1996 and newer model-year vehicles are required to have an OBD/IM Check and a Gas Cap Test performed annually. (These are classified as OBD/Gas Cap (O) on the website.)
- Most 1975-1995 model-year vehicles are required to have an inspection with an emissions tailpipe analyzer to measure pollutants while the engine is idling. This inspection also includes a Gas Cap Test and a Visual Anti-Tampering Check of the emissions components. (These are classified as Tailpipe/Gas Cap (T) on the website.)

Using test fee data reported to PENNDOT, we compiled a summary of the prices being charged to motorists in the Pittsburgh Region for the above referenced tests. The average price charged for an OBD test region-wide increased by 1.5 percent between March 2004 and June 2004. (See Table 4.) On March 18, 2004, the average price for the OBD test was $36.50. By June 17, 2004, the reported average price for an OBD test in the Pittsburgh Region increased to $37.06. Two of the four counties in the Pittsburgh Region (Beaver and Allegheny) experienced an increase in the average OBD test price during the three-month period, while the other two (Washington and Westmoreland) saw prices decline slightly.

As is the case in other regions, price extremes are also evident. The lowest price reported for OBD/Gas Cap testing in the Pittsburgh Region as of June 2004 was $19.26, and the highest was $75.00 (both reported in Allegheny County). The lowest price reported for a Visual/Gas Cap test was also $19.26, and the highest was $55.00. Test prices lower than $20 are, however, not common. Based on price data on the PENNDOT website on July 22, 2004, only two stations in the region reported testing prices of less than $20. More than one-half of the reporting stations (56

Table 4

Pittsburgh Region Vehicle Emissions Testing Prices, by Test Type and County*
(December 2003, March 2004, and June 2004)

On-Board Diagnostic/Gas Cap Testing:[a]

County	December 16, 2003[b]			March 18, 2004			June 17, 2004		
	Low	High	Average	Low	High	Average	Low	High	Average
Allegheny	$45.00	$45.00	$45.00	$19.26	$64.20	$36.34	$19.26	$75.00	$37.54
Beaver	--	--	--	20.00	52.95	38.41	22.00	68.00	39.79
Washington	--	--	--	24.15	49.10	34.90	24.15	50.88	34.75
Westmoreland	--	--	--	20.00	79.50	36.36	21.00	53.00	36.17
Region	$45.00[b]	$45.00[b]	$45.00[b]	$19.26	$79.50	$36.50	$19.26	$75.00	$37.06

Tailpipe/Gas Cap Testing:[c]

County	December 16, 2003			March 18, 2004			June 17, 2004		
	Low	High	Average	Low	High	Average	Low	High	Average
Allegheny	$15.00	$44.40	$30.88	$19.26	$60.41	$34.76	$19.26	$55.00	$37.02
Beaver	15.00	43.00	28.50	22.00	68.89	37.02	22.00	49.95	38.33
Washington	15.00	45.70	27.95	15.00	51.50	32.27	15.00	47.70	34.90
Westmoreland	14.99	36.70	28.37	15.00	53.00	32.50	21.99	53.00	34.66
Region	$14.99	$45.70	$28.93	$15.00	$68.89	$34.14	$15.00	$55.00	$36.23

*In the Pittsburgh Region, an OBD/Gas Cap inspection or a Tailpipe/Gas Cap test is required. Neither a visual anti-tampering test nor a dynamometer test are required. However, if they choose to do so, inspection stations may perform these tests for out-of-region vehicles needing such inspections.

[a]Stations in the Pittsburgh Region could begin offering the OBD test anytime during January, February, and March 2004.

[b]Represents pricing from a select few stations that began the testing program early.

[c]Stations in the Pittsburgh Region have been performing tailpipe inspections since 1984.

Source: Developed by LB&FC staff using information obtained from PENNDOT.

percent) listed prices in the $30 to $39.99 range. Six stations reported prices of $60 or more.

In the Pittsburgh Region, a Tailpipe Test has also been required since 1984 for most 1975 to 1995 model-year vehicles.[1] In order to put the OBD price data in regional perspective, we also examined the reported data on prices charged for the tailpipe emissions testing program. We found that as of June 2004, the average price region-wide for an OBD test and a tailpipe test differed by less than one dollar ($37.06 for an OBD test compared to $36.23 for a tailpipe test). We also noted, however, that the regional average price for a tailpipe test rose by more than 25 percent between December 2003 and June 2004, from $28.93 to $36.23. In Beaver County, the average price for the tailpipe test rose by more than one-third (34.5 percent) to $38.33. Although the enhanced emissions testing program did not change or result in additional requirements in the tailpipe test routine, it appears that some inspection station operators have used the implementation of the enhanced program as an opportunity to increase tailpipe testing fees that had been in place for many years.

While not required of vehicles from the Pittsburgh Region, we found that some inspection stations do offer the Visual/Gas Cap Test. In some cases, a resident of a county that requires the visual test may be in the Pittsburgh Region during inspection time, and can obtain these tests from those stations offering it. The dynamometer tests required of vehicles in the Philadelphia Region is not required in the Pittsburgh Region, nor is it offered by any inspection stations in the region.

Philadelphia Region

Since 1984, motorists in the Philadelphia Region (*Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties*) have been required to have vehicle emissions tests conducted at the same time as safety inspections. The inspection program in effect in the Philadelphia Region included Tailpipe Tests Utilizing a Dynamometer, Gas Cap Tests, and Visual Anti-Tampering Checks.

Under the enhanced emissions testing program, the Philadelphia Region was required to update its emissions inspection program to include the on-board diagnostic (OBD) I/M Check. This upgrade began in April 2004 and had to be completed by June 30, 2004. If stations in the region did not begin offering the OBD I/M Check to motorists by June 30, 2004, they would no longer be authorized to offer any emissions inspections.

By June 30, 2004, the following emissions inspections were required in the Philadelphia Region:

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[1]Prior to the initiation of the enhanced emissions testing program, model-year 1996 and newer vehicles also were required to get the tailpipe test.

- Most 1996 and newer model-year vehicles are required to have an OBD/IM Check and a Gas Cap Test performed annually. (These are classified as OBD/Gas Cap (O) on the website.)
- Most 1975-1995 model-year cars and 1975-1995 model-year light-duty trucks are required to have a tailpipe inspection with an emissions analyzer and a treadmill-like device called a dynamometer, which simulates driving conditions. This inspection also includes a Gas Cap Test and a Visual Anti-Tampering Check of the emissions components. (These are classified as Dynamometer Tailpipe/Gas Cap (D) on the website.)

Using test fee data reported to PENNDOT, we compiled a summary of the prices being charged to motorists in the Philadelphia Region for the above referenced tests. As shown on Table 5, the average price charged for an OBD test region-wide increased by 6.5 percent between March 2004 and June 2004. On March 18, 2004, the average price for the OBD test was $46.04. By June 17, 2004, the reported average price for an OBD test in the Philadelphia Region increased to $49.05. OBD test prices increased in four of the five counties in the Philadelphia Region during this period.

Although there are relatively few stations reporting prices at either extreme, the lowest price reported for an OBD test in the Philadelphia Region as of June 2004 was $20.00 at stations in both Philadelphia and Chester Counties, while the highest reported price was $78.07 in Delaware County.

In the Philadelphia Region, most 1975 to 1995 model-year vehicles must have a tailpipe inspection with an emissions analyzer while on a dynamometer (referred to as a Dynamometer Tailpipe/Gas Cap Test). In order to put the OBD price data in regional perspective, we also examined the reported data on prices charged for the dynamometer emissions testing program. (See Table 5.)

We found that as of June 2004, the average region-wide price for an OBD test and a dynamometer test differed by just 26 cents ($49.05 for an OBD test compared to $49.31 for a dynamometer test). We also observed that the June 2004 regional average price for a dynamometer test was about 12 percent higher than it was in December 2003. A similar pattern was evident in the Pittsburgh Region.

Table 5

Philadelphia Region Vehicle Emissions Testing Prices, by Test Type and County*
(December 2003, March 2004, and June 2004)

On-Board Diagnostic/Gas Cap Testing:

County	December 16, 2003			March 18, 2004[a]			June 17, 2004		
	Low	High	Average	Low	High	Average	Low	High	Average
Bucks	OBD testing had not begun in this region as of December 2003			$39.95	$52.99	$48.24	$22.73	$63.60	$49.69
Chester				31.80	57.35	43.44	20.00	73.25	49.44
Delaware				53.00	53.00	53.00	24.99	78.07	48.42
Montgomery				25.00	52.95	44.96	21.09	65.72	49.68
Philadelphia				39.95	51.36	40.58	20.00	68.59	48.02
Region				$25.00	$57.35	$46.04	$20.00	$78.07	$49.05

Dynamometer Tailpipe/Gas Cap Testing:[b]

County	December 16, 2003			March 18, 2004			June 17, 2004		
	Low	High	Average	Low	High	Average	Low	High	Average
Bucks	$19.05	$60.00	$46.35	$19.95	$63.60	$50.29	$22.73	$62.65	$50.18
Chester	18.70	64.95	44.31	18.70	63.60	48.97	31.75	62.70	50.90
Delaware	20.00	80.00	44.17	20.00	80.00	48.83	25.00	80.00	49.56
Montgomery	18.00	74.95	45.53	24.95	66.28	50.35	25.00	65.72	50.76
Philadelphia	12.27	64.10	39.99	20.00	70.00	45.92	20.00	68.59	45.13
Region	$12.27	$80.00	$44.07	$18.70	$80.00	$48.87	$20.00	$80.00	$49.31

*In the Philadelphia Region, an OBD/Gas Cap inspection or Dynamometer Tailpipe/Gas Cap test is required. Visual anti-tampering and tailpipe tests alone are not required. Inspection stations can, however, perform these tests for out-of region vehicles needing such inspections.

[a]Although stations in the Philadelphia Region could phase-in OBD testing anytime during April, May, and June 2004, some stations began testing during March 2004.

[b]Stations in the Philadelphia Region have been performing dynamometer inspections since 1984.

Source: Developed by LB&FC staff using information obtained from PENNDOT.

Northern Region

The phased implementation of emissions testing in the Northern Region *(Blair, Cambria, Centre, Erie, Lackawanna, Luzerne, Lycoming, and Mercer Counties)* began in January 2004, according to the following schedule:

- January 2004 – Erie, Mercer
- February 2004 – Blair, Cambria, Centre
- March 2004 – Lackawanna, Luzerne, Lycoming

Beginning in January 2004, most 1975 and newer model-year vehicles are required to have a Visual Anti-Tampering Check of the emissions components and a Gas Cap Test performed annually. (These are classified as Visual/Gas Cap (V) on the PENNDOT website.)

Using test fee data reported to PENNDOT, we compiled a summary of the prices being charged to motorists in the Northern Region for the above referenced tests. As shown on Table 6, the average price charged for a Visual Anti-Tampering test region-wide remained relatively steady between the initiation of the program in March 2004 and June 2004. On March 18, 2004, the average price for the visual test was $32.65. On June 17, 2004, the average price for this test was $32.48, slightly less than 1 percent lower than three months before. During the three-month period, prices remained relatively constant in all of the eight counties in the Northern Region, with most price changes being less than one dollar.

The lowest reported price was $16.75 in Blair County (March and June) while the highest price was $81.80 (June), also in Blair County, although prices at either extreme are not common. For example, we checked the PENNDOT website on July 22, 2004, and found that nearly three-quarters of the stations were reporting testing prices in the $30 to $39.99 range.

Although no other emissions inspection tests are required in the Northern Region, some inspection stations do offer the OBD test. Because the inspection equipment for the visual/gas cap test is so similar to the equipment used for the OBD test, some garages in the Northern Region purchased the components that also allow them to do an OBD test. In cases where a resident of a county that requires the OBD test may be in the Northern Region during inspection time, that person can obtain the OBD test from those stations offering it. We found relatively few instances of the OBD test being performed in the Northern Region.

Neither the Pittsburgh-type tailpipe nor the Philadelphia-type dynamometer tests are required in the Northern Region. Accordingly, such tests are not available from any inspection stations in this region.

Table 6

Northern Region Vehicle Emissions Testing Prices, by Test Type and County*
(December 2003, March 2004, and June 2004)

Visual Anti-Tampering/Gas Cap Testing:[a]

County	December 16, 2003			March 18, 2004			June 17, 2004		
	Low	High	Average	Low	High	Average	Low	High	Average
Blair				$16.75	$42.40	$31.77	$16.75	$81.80	$31.44
Cambria	Testing had not begun			17.00	37.10	31.30	20.00	42.40	30.99
Centre				17.45	45.15	34.65	21.19	49.95	34.18
Erie	in this region			24.00	41.50	32.11	24.38	41.50	31.99
Lackawanna				18.00	49.95	33.77	19.95	53.00	33.91
Luzerne	as of December 2003.			21.19	46.64	30.60	20.00	46.50	30.97
Lycoming				24.15	49.00	34.46	20.30	47.65	34.15
Mercer				25.50	40.00	32.55	20.83	51.07	32.20
Region				$16.75	$49.95	$32.65	$16.75	$81.80	$32.48

*Only the Visual Anti-Tampering Inspection is required in the Northern Region; OBD tests are not required. Some inspection stations do, however, offer OBD testing for out-of-region vehicles. Neither tailpipe nor dynamometer tests are required nor are they offered.

[a]Stations in Erie and Mercer Counties were required to begin the program in January 2004, those in Blair, Cambria, and Centre Counties entered in February 2004, and those in Lackawanna, Luzerne, and Lycoming Counties had until the end of March 2004.

Source: Developed by LB&FC staff using information obtained from PENNDOT.

B. Prices for Exemptions and Waivers

Exemptions

Some vehicles are exempt from the annual emissions inspection requirement. Specifically, a vehicle is exempt if it has been owned for one year and driven less than 5,000 miles in the prior year; or is a new car, not previously titled, and driven less than 5,000 miles before registration.

However, even if the vehicle is exempt from the emissions inspection program, the motorist must still take the vehicle to an emissions inspection station to both verify the vehicle's mileage and to receive an exemption sticker. This sticker is valid for up to 12 months.

Stations can charge a fee to issue an exemption sticker but are not required to transmit the amount of the fee charged to PENNDOT. Accordingly, the PENNDOT *Drive Clean Pennsylvania* website does not contain comparative price data for exemptions.

We requested information on the amounts being charged for exemptions through a questionnaire sent to a sample of authorized emission inspection stations. We received 60 usable survey responses pertaining to the OBD test, and from these, we found the average exemption price for the OBD/Gas Cap test to be $21.03, with a low of $8.00 and a high of $42.99. These figures compare to the price charged for the OBD inspections as follows:

	OBD Test Fee	OBD Exemption Fee
Average	$39.00	$21.03
High	54.70	42.99
Low	28.30	8.00

Overall, 58 of the 60 respondents reported that they charge less for exemptions than for the standard OBD/Gas Cap test. We found several cases where the exemption fee was significantly lower than the standard OBD inspection fee. For example, one garage charged $19.95 for the exemption but charged $54.70 for the OBD inspection. In another example, the exemption fee was $15 while the emissions inspection fee was $35, and in another case, the exemption fee was $14 whereas the OBD inspection fee was $45.

In issuing an exemption sticker, a certified emissions inspector must examine the vehicle odometer to verify the mileage. During this process, the station's emission inspection equipment is used only to transmit the exemption qualification to PENNDOT, for which the MCI $4.15 program management fee applies.

Most of the inspection stations that commented on exemptions stated that because the exemption process takes less time to complete, the fee they charge is lower than the full OBD check. For example, one station that reported an exemption fee of $16.50 based its rate on .3 hours of technician time to process the exemption as compared to .5 hours for a standard emissions test.

Another said that the station charges about one-half its regular inspection fee because:

> I figured I would charge about half as much because there are a lot of senior citizens that only travel less than 5,000 miles and they are the ones who can least afford this program. I know I still have to look up what is on the vehicle and find it, enter in into the machine, and do the paperwork, but I figure anyone with less than 5,000 miles deserves a break.

Another station operator (a new car dealer) stated the following rationale for charging the same amount for an exemption ($36.40) as for a regular OBD/Gas Cap check.

> We felt we would have so few waivers and exemptions that it would simplify matters to charge the same price as the standard test. We came to this decision knowing waivers and exemptions would increase documentation time.

Among stations reporting exemption prices for the Visual/Gas Cap test, prices averaged $21 with a reported low of $5.00 and a high of $42.99. We received 66 responses that were usable. We found that the exemption fee for the visual test compared to the standard price for the visual test as follows:

	Visual Test Fee	Visual Exemption Fee
Average.....	$32.59	$21.00
High.....	49.95	42.99
Low	6.30	5.00

We also determined that, among those who responded to our questionnaire, the average price for an exemption on both a dynamometer and tailpipe test was about $18.00. This compares to an average price for the full tailpipe test of $36.17 and an average fee for the dynamometer test at $45.94. (These averages are based on the number of usable questionnaire responses and vary from those presented in Section V.)

Waivers

If a vehicle doesn't pass the emissions inspection, the motorist must make emissions-related repairs. After these repairs are made, the vehicle can be re-inspected for free, within 30 calendar days, at the station that initially conducted the inspection. If the vehicle does not pass the re-inspection after qualifying repairs were made, in most cases the motorist can get a one-year waiver if he/she has spent a minimum of $150 on qualifying emissions-related repairs.[2] Costs which count toward the waiver amount include:

- diagnosis fees,
- parts installed and labor performed at a recognized repair location, and
- cost of parts installed by the vehicle owner/operator.

A waiver is valid for one year, and then the car must be inspected again the following year. Waivers are not provided to vehicles that do not pass the Visual Anti-Tampering Check or the Gas Cap test. Since these are the only items tested in the Northern Region, there are no waivers granted to vehicles registered in these counties. Those motorists need to make all necessary repairs to the vehicle, regardless of cost, in order to pass the emissions inspection.

Stations can charge a fee to issue a waiver. We found that stations base this fee on the time required to complete the work in issuing the waiver. This generally exceeds the time involved in a regular emissions inspection. With the issuance of a waiver, not only must the initial emissions inspection be performed, but any necessary repairs must also be made, and a retest must be conducted. There is also additional paperwork and documentation associated with the repairs and retesting tasks. As is the case with exemption prices, stations are not required to report to PENNDOT the amounts they charge to process and issue a waiver.

Through our questionnaire survey, we found that the average price for the issuance of a waiver in conjunction with an OBD/Gas Cap test was about $39, about the same as the average price for the actual OBD/Gas Cap test itself. Of the 23 stations that provided information on waiver fees related to OBD tests, 6 charge the same price for the waiver as they do for the regular inspection; 10 charge less than the inspection price, and 7 reported they charge more.

One station operator who responded to our questionnaire reported charging the same amount to issue a waiver as for the actual inspection.

> A waiver is actually more work for me than an inspection but I charge only the test fee. I should actually charge more because a lot of shops can't issue waivers but as I said, I'm trying to be fair. I deduct $10 off the test price for exemptions. My only reasoning for that was I thought that was fair.

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[2]In some cases, the motorist may be required to spend more than the $150 prior to re-inspection to ensure that required emissions-related components are in place, such as a catalytic converter.

V. An Analysis of the Cost Factors and Actual Costs Involved in Performing Emissions Inspections

This section includes an examination of PENNDOT's initial estimate of a "break even" fee amount for an OBD test, a cost assessment done by a certified public accountant for the Alliance of Automotive Service Providers of Pennsylvania, and LB&FC staff review of OBD emissions inspection cost factors and test fee determination.

A. PENNDOT's Initial Estimate of a "Break Even" Test Fee

The emissions inspection program's regulations do not establish a fee schedule for emissions testing. Rather, PENNDOT materials state that the fees for emissions inspections, as is the case for safety inspections, are to be "market-driven." PENNDOT did, however, issue a program bulletin (EB04-1) to all official inspection stations in January 2004 to provide data to help station operators determine . . . "a fair [emissions] inspection fee for your customers while affording you the opportunity to recoup your investment." In this bulletin, PENNDOT estimated the "break-even" test fee amount at $13.76. (See Exhibit 3.)

Exhibit 3

PENNDOT Estimate of the "Break Even" Test Fee Amount to Conduct an OBD/Gas Cap Emissions Inspection

1. Labor (Technician Salary) – the labor cost for performing an emissions inspection would be at a rate of $4.42 for a 12-minute test ($22.12 hourly technician rate).
2. Equipment Investment – Capital investment of $8,000 (using highest price for equipment) divided by 1,800 inspections over three years = a per test charge of $4.45.
3. Program Management Fee – $4.15 per test.
4. Training – $200 for technician training ($200 divided by 1,800 inspections = a per test charge of $0.11).
5. Dedicated Phone Line – $200 installation fee and an approximate cost of $26 per month for service multiplied by 36 months = $1,136 (the $1,136 divided by 1,800 inspections = a per test charge of $0.63).
6. Summary – PENNDOT Estimate of Per Test "Break Even" Amount:

Labor	$ 4.42
Equipment	4.45
Program Management Fee	4.15
Training	.11
Dedicated Phone Line	.63
Total	$13.76[a]

[a]PENNDOT noted that this figure does not include: the cost of repairs made to failing vehicles, the cost of inspectors recertifying every two years, finance charges for equipment, or the costs of any maintenance agreement the operator may have purchased beyond the equipment manufacturers' warranty (maintenance agreements are not required by PENNDOT regulation). LB&FC staff noted that it also does not include any overhead or profit allowance.

Source: Based on PENNDOT Bulletin EB04-1, January 2004.

PENNDOT also cautioned, however, that this information was being provided as a guide and that differences among inspection stations in operational expenses and their volume of inspections would impact the "break even" test fee amount cited in the bulletin. The cost-related information pertaining to the OBD/Gas Cap tests as well as assumptions upon which the PENNDOT estimate was calculated are listed below:

1. OBD/Gas Cap testing equipment prices range from $5,000 to $8,000, with recovery of equipment costs over three years.
2. The Program Management Fee paid to PENNDOT's program management contractor (MCI) is $4.15 for each initial test performed. No fee is assessed for a vehicle being retested at the same station as long as the retest is performed within 30 days of the initial fail. The phone number called to access the Vehicle Inspection Information Data Base (VIID) is a toll free number and there is no per call charge.
3. The cost of training for inspectors who perform the OBD/Gas Cap test is approximately $200 per person. The cost of the web-based training is approximately $50 for those inspectors that perform the Visual/Gas Cap test only. Assumed that only one person per station needed to be trained.
4. Emission inspection stickers are provided free of charge by PENNDOT.
5. Technician salary and benefits of $46,000 (2,080 hours (40-hour work week for 52 weeks) = an hourly technician rate of $22.12).
6. Each OBD/Gas Cap test takes approximately 12 minutes and could be completed in as little as 7.5 minutes.
7. Based upon safety inspection records, the average station performs approximately 600 inspections per year (this represents 1,800 tests over a three-year period).
8. The average cost of a dedicated phone line for use with the emissions analyzer to transmit test results to the VIID is $26 per month. Additionally, there is a one-time installation fee of approximately $200.

B. A Third-Party Assessment of PENNDOT's "Break Even" Test Fee

Following the release of PENNDOT Bulletin EB04-1, the Alliance of Automotive Service Providers of Pennsylvania engaged a certified public accounting firm[1] to read and evaluate the bulletin's content. The CPA's review was to determine the "reasonableness" of the guidance the bulletin provided inspection station operators in setting emissions inspection fees.

[1]Lewis and Associates, P.C., Certified Public Accountants, Harrisburg, PA.

Because the bulletin's assumptions were not supported by references to sources from which the data was derived, the CPA firm stated that it could not evaluate the assumptions as to reasonableness. The CPA did, however, conclude that

> PENNDOT's estimated per test cost in Bulletin EB04-1 does not represent a break even point and its use by shops to determine price would produce a loss on emissions testing. If pricing decisions were based solely on direct costs, a shop would dissolve in losses.

The CPA firm supported its assessment based on the following accounting principles and observations regarding emissions testing costs and fees.

1. The costs listed in Bulletin EB04-1 are those directly identified by PENNDOT with emissions testing and represent only direct or variable costs.
2. PENNDOT's estimated per test cost of $13.76 was set forth as the "break even" for the test fee. Break even is defined as the point at which revenues equals costs.
3. The components of cost are the sum of variable and fixed, and all costs (including variable, as well as a fair share of fixed costs) are relevant to the pricing decision.
4. PENNDOT did not consider indirect and overhead costs in Bulletin EB04-1 and omitted these components in providing "break even" and pricing guidance.
5. Before a shop establishes a price for emissions testing, it should determine the "break-even point." This amount will vary by shop.
6. The per test cost for a technician's salary is determined based upon the technician's average time for performing the test and cannot be fully determined by OBD/Gas Cap Testing Machine time. The resulting payroll cost or unit direct labor cost becomes the basis for determining allocable fixed/overhead cost for emissions testing.
7. The sum of the per test variable cost and fixed cost represents the total per test cost for the shop's emissions testing.
8. Price should be determined based upon the need to recover the shop's total costs balanced against market forces, such as competitive pricing and the need to make a profit.

C. LB&FC Staff Review of Inspection Cost Factors and Test Fee Determination

In reviewing emissions test cost factors and price determination, LB&FC staff visited emissions inspection stations in each of the four regions in which

testing is required. During these visits, we observed the testing process and met with the owners, operators, and/or service managers at 11 business locations to discuss relevant cost factors and their pricing rationale. We also sent a questionnaire survey to a random sample of authorized emissions inspection station operators to solicit additional input and information.[2]

Cost Factors

A basic accounting concept is that the price normally charged for a product or service must be high enough to cover all costs and still provide a reasonable return on the owner's investments. Given this, all costs are relevant to the pricing decision. As noted by the CPA firm that assessed test costs for the Alliance of Automotive Service Providers, all costs—variable (both direct and indirect) as well as a fair share of fixed—must be considered when determining price. Variable costs are costs and expenses which vary directly with the number of tests conducted. Fixed costs do not vary with test volume. (See Exhibit 4.)

Exhibit 4

Emission Test Cost Components

A. Variable Costs (Per Test Cost or Unitized)

1. Direct
   a. Technician Salary
   b. Benefits for Technician
      i. Payroll Taxes
      ii. Workers Compensation Insurance
      iii. Fringe Benefits (Health Insurance, Pension, etc.)
   c. Equipment (Unitized Over Pay-Back Period)
   d. Program Management Fee
   e. Technician Training
   f. Dedicated Phone Line
2. Indirect
   a. Service Manager Salaries (Scheduling)
   b. Office Salaries (Billing)
   c. Employee Benefits for Service and Office Personnel
   d. Equipment Maintenance and Repairs

B. Fixed Costs/Overhead (Annual Sum)

1. Facility (Rent/Building Depreciation, Real Estate Taxes, Insurance, Mortgage Interest, Utilities, Building Maintenance and Cleaning, etc.)
2. Shop (Supervisory Salaries and Benefits, Uniforms, General Liability Insurance, etc.)
3. General and Administrative (Licenses and Fees, Telephone, Legal and Accounting, Dues and Subscriptions, Advertising, General Office Expenses, etc.)

Source: Lewis and Associates, P.C., Certified Public Accountants, Harrisburg, PA.

[2]The questionnaire was sent to 581 authorized Pennsylvania emissions inspection stations, which represented 10 percent of the total at the time the questionnaire was mailed. Since that time, additional stations have joined the program. The response rate to this survey was 15.8 percent.

The following discusses the various variable and fixed cost elements involved in the emissions testing process.

Technician Salary and Benefits. A portion of the salary and benefit costs for automotive technicians employed at authorized emission inspection stations is a primary factor in establishing the emissions testing fee. Salary and benefit costs are factored into an automotive repair shop's labor rates along with numerous other overhead costs. During our study, we found labor rates that varied from $30 to $80 per hour.

In applying a shop's labor rate to the price equation, it is necessary to first establish the amount of a technician's time that is required to conduct a single OBD emissions test. Based on the actual tests we observed during our site visits, a routine test without complications takes a minimum of 20 to 30 minutes to complete. This time frame includes the time required for the vehicle to be moved near or adjacent to the testing equipment, the actual time required to conduct the test and transmit the results to PENNDOT and, as is usually necessary, to move the vehicle to another service bay in the facility.

Our site visit observations on testing time are consistent with the testing times reported to us in questionnaires returned by inspection station operators.[3] Inspection stations operators reported the following average testing times to us: OBD – 22 minutes; Visual – 26 minutes; Tailpipe Test – 21 minutes; and Dynamometer Test – 25 minutes.

The OBD testing time differs substantially from the 12 minute time frame included in PENNDOT's EB04-1 Bulletin on OBD test fees. PENNDOT based its time factor on data from the "real time" clocks installed in the emissions inspection equipment. These clocks record the inspection time from the time the technician accesses the first computer screen until the computer registers the "pass/fail" determination (i.e., the actual connection time between the inspection station and the program's central database). It does not, for example, account for the time required to bring the vehicle into the service area, attach the OBD device to the vehicle, or to remove or relocate the vehicle upon test completion.

In discussing the emissions testing procedure with technicians at the stations we visited, we also found that there are instances in which testing time can significantly exceed 20 to 30 minutes if the vehicle's emissions monitors are "not ready" and the vehicle must undergo a "drive cycle" procedure in order for the emissions inspection to continue.

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[3]This is also consistent with findings the Pennsylvania Office of Attorney General communicated to the General Assembly in June 2004. The Attorney General concluded that an OBD emissions test takes 20 to 30 minutes to complete.

Each vehicle that has an on-board diagnostic connector (1996 and newer) has an internal computer which monitors the vehicle's emissions sensors. If any of these sensors are not ready, either because the OBD has been reset due to service work, or in many cases, because a new battery has been installed, the vehicle is not able to be tested until these monitors are reset through a drive cycle. There is, however, no generic drive cycle common to all vehicles. Rather, each vehicle has a drive cycle specific to that particular make, model, and in some cases, even year of the vehicle; therefore, every drive cycle is different for every vehicle. When such drive cycles must be performed, they can potentially add up to several additional hours to the time required to complete the vehicle's emissions inspection. For example, during one site visit, we witnessed a drive cycle that took nearly two hours to complete before the vehicle could be tested. These drive cycles stop the emissions inspection process, and once the drive cycle is completed, the emissions inspection has to be restarted from the beginning. (See Appendix B for further information on OBD testing and drive cycles.)

The potential for additional testing time due to the drive cycle situation is, of course, not reflected in the previously stated 20 to 30 minute test time averages or in PENNDOT's 12 minute time estimate.[4] The drive cycle issue has not been widely publicized and many, if not most, motorists may be unaware of this unless their vehicle cannot be tested until a drive cycle is completed. Inspection station operators deal with such situations in several ways.

We found that most stations notify the customer if a readiness issue is preventing completion of the test. A service manager or technician speaks with the customer to explain the drive cycle problem and discuss their alternatives. In most cases, the motorist has two choices: (1) to pick up the car and drive it through the cycle and return on another day for the emissions inspection; or (2) to have the service station technician perform the drive cycle and then proceed with the test. In cases where the technician drives the car for the customer, the station may charge the customer a fee (e.g., at their established labor rate) for the time involved in clearing the drive cycle.

There are, however, exceptions in which some inspection station operators do not bring drive cycle issues to the attention of their customers. Instead, they have their technicians drive the vehicles through the cycle to clear the codes. Inspection stations that handle the issue in this way consider it to be a matter of customer service and do not charge an extra fee for dealing with the drive cycle. One new car dealer with whom we spoke provides the customer a loaner car if the station's technicians cannot clear the drive cycle and complete the test the same day.

[4]These time estimates also do not take into consideration the time required to perform free retests on vehicles that fail.

Equipment. Pennsylvania's enhanced emissions inspection program relies heavily on the on-board diagnostic (OBD) systems present in most vehicles manufactured since 1996. In order to integrate the OBD-test into the emissions inspection program, PENNDOT mandated that inspection stations wishing to participate as an authorized emissions testing facility purchase specific OBD testing equipment. PENNDOT established the equipment requirements in amendments to Title 67 of the Pennsylvania Code entitled "Final Stand Alone Equipment and Software Specifications."

The specifications of the testing equipment were established to meet the requirements of the court settlement agreement. All OBD equipment had to be certified by PENNDOT as being in compliance with these specifications before manufacturers could sell the equipment to Pennsylvania inspection station operators. As set forth in program regulations, Pennsylvania OBD emissions equipment has to contain the following components:

- Personal Computer (this can be a desktop, laptop, or handheld model),
- Laser Printer,
- Pennsylvania Emissions Inspection Program-Specific Software,
- Bar Code Scanners,
- Real Time Clock/Calendar,
- OBD Scan Tool,[5] and
- Fuel Cap Test Equipment.

A further description of the required OBD testing equipment is provided in Appendix C.

Seven equipment manufacturers successfully completed the certification process, and PENNDOT provided each inspection station a list of these equipment providers. In a "Frequently Asked Questions" bulletin entitled *Emissions and Safety Program Changes* issued in November 2003, PENNDOT stated that "There is no set price for the emissions equipment; each equipment provider decides the cost of the equipment. Competition permits stations to choose equipment based on price, service and convenience."

The prices individual stations paid for the equipment varied depending upon any "add-on" pieces that a station may have decided to purchase. These were discretionary purchases made by the station operators and included items not specifically required for the emissions testing program (e.g., a wireless transmitter and upgraded cabinets).

In May 2003, as PENNDOT moved forward with planning the new emissions inspection program, the Department began to notify service stations about the

[5]Not required on equipment to be used in the Northern Region.

program's requirements. In doing so, they presented information on equipment needed to participate in the program and initial estimates of the cost of this equipment.

This information was presented in the form of two separate fact sheets, one distributed to stations in the South Central Region of the state and another to stations in the Northern Region. According to PENNDOT, these fact sheets were posted on the PENNDOT website; they were not mailed out to individual service stations in these two regions.

The May 2003 fact sheet for the South Central Region stated that the per unit cost of OBD equipment was anticipated to range from $2,500 and $7,500. The May 2003 fact sheet pertaining to the Northern Region advised station operators that emissions testing equipment costs for that region were expected to be in the $750 to $1,800 range for each machine purchased.

However, as service stations began to purchase the required testing equipment, they found that the prices were considerably higher than first advised by PENNDOT. For example, none of the participating equipment vendors offered the required OBD equipment for $2,500, the low-end of PENNDOT's original estimate. Rather, the seven manufacturers certified by PENNDOT offered the equipment for prices ranging from $4,900 to $8,000 for the OBD analyzer and $4,500 to $8,000 for the equipment needed for the Northern Region's visual inspection process.

It appears that several circumstances factored into the discrepancy between initial equipment cost estimates and the amounts actually paid by station operators. PENNDOT officials stated that during the program's early planning stages, one prospective supplier of the OBD analyzer equipment informed PENNDOT that it could market its equipment to Pennsylvania stations at an estimated per unit price of $2,500. This was one of three companies that had supplied equipment for the pilot testing phase of Pennsylvania's program. Because of the tight timeframe within which the program had to be initiated, PENNDOT reported this initial estimate in a factsheet in order to quickly get information out to interested station operators.

At that time, PENNDOT apparently did not know that the company that provided the initial $2,500 estimate would later choose not to participate in the Pennsylvania program and to not submit its equipment to PENNDOT for certification. According to PENNDOT officials, this firm chose to withdraw from participation because the Department would not allow them to market their equipment through a partnership with MCI, the contracted manager for Pennsylvania's program.

In the case of the equipment needed in the Northern Region, the equipment cost estimates that were initially posted were lower than the final actual prices because the equipment manufacturer's original estimates assumed that computerized equipment would not be needed and provided their estimates on that basis. PENNDOT published these estimates on their website before realizing that the equipment manufacturer had not included the computer equipment and associated software in their estimates. PENNDOT posted a revised fact sheet with adjusted cost estimates on its website in September 2003.

Through our site visits and questionnaire survey, we found that the per unit OBD equipment prices reported by station operators ranged from $4,600 (for a discounted demonstration model) to, in one case, $12,000. The average per machine cost among all those stations for which we obtained information was $6,662. Among these, about 40 percent reported that they financed the equipment for from one to five years at varying rates of interest.

Program Management Fee. As described in Section III, the MCI Telecommunications Corporation has a contract with PENNDOT to manage the state's emissions inspection program through 2005. Among its program manager responsibilities, MCI developed and is responsible for operating and maintaining a Vehicle Inspection Information Database (VIID). Each time an authorized inspection station conducts an emissions test and transmits the results to the central database, the inspection station operator must pay MCI a program management fee of $4.15. Station operators pass along this program management fee to motorists. PENNDOT and MCI negotiated the current amount of this fee when the enhanced emissions inspection program was initiated. The prior amount of this fee was $3.70.

Technician Training. Stations wishing to participate in the emissions inspection program are required to have at least one "certified emissions inspector" employed at their facility in order to be eligible for designation as an Official Emissions Inspection Station.

To become a certified emissions inspector,[6] a person must be at least 18 years of age, have a valid driver's license, attend a PENNDOT-approved certification course, and successfully complete the prescribed tests. The Emission Inspector Certification training is a 16.5-hour course, which covers all aspects of Pennsylvania's Emissions Inspection Program. It consists of 15 hours of classroom lessons and 1.5 hours of testing. The testing includes a 50 question written test and a hands-on proficiency test with the equipment.

Because vehicles in the Northern Region are not required to undergo an OBD inspection, training requirements for technicians in this region are not as extensive.

[6]PENNDOT also certifies a classification entitled "emissions repair technician." Unless a station employs an emissions repair technician, it is not authorized to issue waivers.

PENNDOT has designed a special Emissions Inspector Certification Course for the Northern Region to enable technicians to perform only the Visual Anti-Tampering Check and Gas Cap Test. This course is a home study training program that is available via a three-to-four hour web-based course or by obtaining a printed manual. No matter which study method is chosen, the final examination is administered at vocational-technical schools and community colleges in the eight Northern Region counties. PENNDOT provides a list of testing facilities in the Northern Region on the *Drive Clean Pennsylvania* website.[7]

Costs for the Certified Emissions Inspector training generally ranges from $180 to $200 per person and approximately $50 per person for the abbreviated version of the training program offered in the Northern Region. Persons who attain this certification must receive recertification training every two years, at a cost of approximately $75. Recertification involves a three-hour training course and successful completion of a 35-question exam.

We found that, in most cases, the inspection station owners we contacted paid for the training for their employees. In some cases, the station owners also paid their employees an hourly wage rate to attend the training during non-business hours. For example, one independent service station location we visited incurred training costs of $3,240 (18 inspectors trained at $180 per person). Two new car dealerships we visited also incurred several thousand dollars in training costs. One location trained four technicians at a cost of $2,370, which included not only the $180 per person cost of the training session, but also wages for each person to attend this training during evenings and weekends. Another new car dealership reported training ten technicians at a cost of $4,540, which included the training session at $190 per person plus wages for attending this training during non-business hours.

Dedicated Phone Line. PENNDOT's OBD equipment specifications require that "each emissions inspection station will be equipped with a dedicated telephone line to which the emissions testing equipment will be connected at times specified by PENNDOT." The specifications go on to state that "the dedicated phone line can only be used for the emissions testing equipment and it is recommended that no more than two OBD units share the same dedicated phone line."

In some situations, PENNDOT permits a station to use a splitter on their current phone line. However, to do this, the station operator must submit documentation from the phone company indicating the unavailability of an additional phone line. Additionally, for those stations in the Pittsburgh and Philadelphia Regions that are existing emissions stations, PENNDOT allows the use of a splitter on a

[7]PENNDOT officials stated that they have received requests for the full 16.5 hour certification course in the Northern Region, and in particular, from technicians in Centre and Luzerne Counties. PENNDOT is accommodating these requests.

current dedicated phone line between two emissions analyzers (i.e., OBD and tail-pipe analyzer or OBD and dynamometer).

With both our field visits and our questionnaire survey, we found that the majority of inspection stations in the Philadelphia and Pittsburgh Regions did not incur any additional telephone costs as a result of the implementation of the OBD program. Also, some stations in the South Central and Northern Regions of the state already had a second phone line in their station and began to use this as the dedicated phone line required for the OBD program.

However, we did find that some stations did incur new expenses for the dedicated telephone line. Based on the responses we received from our questionnaire survey, the annual additional telephone expense some inspection stations incurred averaged $500.

Miscellaneous Equipment/Tools and Other Expenses. The Vehicle Emissions Inspection Program regulations require that "official emission inspection stations shall have tools and equipment in good satisfactory operating condition to be able to conduct emission inspections upon a subject vehicle. Equipment required shall include wheel chocks and approved emission inspection and maintenance textbooks/workbooks or electronic or computerized medium with supplements and current changes and approved handbooks and manuals."

While not a significant expense, these items represent an additional cost to inspection stations to participate in the emissions inspection program. For example, one new car dealer in the South Central Region reported that his business spent $200 on required textbooks and another $400 on wheelchocks. These were typical costs cited by other stations for purchasing such items.

While inspection stations anticipated the obvious expenses of equipment, training, and supplies, many station operators, especially those in the South Central and Northern Regions, told us that they have experienced other unanticipated costs. For example, a new car dealership in the South Central Region reported incurring an additional $41,600 in annual salary and benefit costs due to the need to hire an additional employee. According to the station operator, this employee was needed to compensate for the loss of technician time involved in driving vehicles to correct drive cycle issues.

Two independent service stations reported that they incurred an additional cost of approximately $7,000 to purchase equipment that is needed to fix emissions failures. Other additional expenses that were noted included garage remodeling and rewiring to make accommodations for the emissions testing machines.

Indirect Costs. Additional costs that must be considered include the salary and benefit costs of inspection station personnel who support the testing process but are not directly involved in it. This includes, for example, office and billing personnel and the service manager. Equipment maintenance and repair must also be accounted for when identifying all variable costs. As discussed in the "equipment" section, some stations purchased service or maintenance agreements on their equipment.

Fixed Costs/Overhead. Fixed or overhead costs must also be factored into the calculation of total actual costs involved in conducting an emissions inspection. As previously stated (see Exhibit 4), fixed or overhead costs include three components: facility, shop, and general and administrative:

- Facility: rent, building depreciation, real estate taxes, insurance, mortgage interest, utilities, building maintenance, and cleaning, etc.
- Shop: supervisory salaries and benefits, uniforms, general liability insurance, etc.
- General and Administrative: licenses and fees, telephone, legal and accounting, dues and subscriptions, advertising, general office expenses, etc.

In most cases, overhead costs (i.e., the costs of doing business) as well as a profit factor are included in a station's labor rate. Labor rates among those stations we visited and which responded to our questionnaire ranged from a low of $28 per hour to a high of $80 per hour. The average reported hourly rates were approximately $45 for the Northern Region, $55 for the Pittsburgh Region, $56 for the South Central Region, and $72 for the Philadelphia Region.

Test Fee Determination

In establishing the Emissions Inspection Program, PENNDOT advised all participating inspection stations that the fee charged for the emissions inspection should be "market driven." Information to the service stations stated that "it is up to a station to determine what they want to charge customers for an emissions inspection, although the station must post a price list in an area visible to customers."

Several different business models (e.g., new and used car dealerships, independent service stations, and franchise service centers) are competing to provide the new enhanced emissions testing service in the various regional markets. These businesses differ considerably in the size and nature of their operations and the types and number of emissions tests they conduct.

Typically, most inspection station operators are basing their price for the emissions test on the cost of labor and equipment, plus overhead costs. Unlike the case with state safety inspections, most inspection stations are not using the emissions test as a "loss leader" (i.e., providing the inspections at a reduced fee below

their actual cost) to attract customers. Many stations use the "loss leader" approach with safety inspections because these inspections have the potential to generate considerable repair work. With the emissions inspection, however, the overall failure rate is in the 2 to 3 percent range[8] and billable repair work, if any, is often limited to low cost (usually about $10) gas cap replacements. Station operators, therefore, have little incentive to discount the emissions test as they do with safety inspections.

We found, nevertheless, that a relatively small number of stations have offered the OBD test for $15 or less. Testing services at these price levels, however, are generally provided as specials or limited time offers. Some franchised service facilities may use this approach to increase volume and the potential of servicing a vehicle that requires some other parts or services. Lower testing prices reportedly may also be used in attempting to attract potential customers to a business for other products such as tires, batteries, and mufflers. These do not, however, appear to be widespread practices.

During our field visits and through a questionnaire survey, we sought information on the basis and methods inspection station operators are using to set their fees. We found there are many different bases and approaches for setting the testing fees. The stations also differ significantly in the level of cost-accounting detail and sophistication they employ.

As illustrated in Exhibit 5, on page 48, station operators, in some cases, provided us an itemized line-item breakdown of the components of their testing fee. At the other extreme, some operators explained the basis of their testing fee by simply stating "it is market-driven," or it "reflects the cost of doing business with a fair profit added in" or that it was set "a little lower than our competitors." In virtually all cases, however, their common objective is to cover their labor, equipment, and other overhead costs while at the same time remaining competitive and making a profit.

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[8]Important Note on Test Failure Rates: The failure rate for the OBD emissions inspection is generally cited at 2 to 3 percent. We found, however, that the fail rate would actually be higher if all vehicles would be tested "as presented." However, some inspection stations are repairing a vehicle's emission equipment before conducting the emissions inspection. According to program regulations (Chapter 177.201), vehicles must be tested in "as received condition." PENNDOT has conveyed this information to service stations through a statewide bulletin on the DriveCleanPA website. In most cases, when the "Check Engine Soon" light (the Malfunction Illuminator Lamp) comes on in a vehicle, it is related to emissions equipment. If this light is on when a car is presented for an emissions inspection, the car must (by regulation) be emissions-inspected before station technicians fix the problem that caused the light to come on. Because it is emissions equipment that caused the light to go on, generally the vehicle would have failed the emissions test. However, some station operators told us that they will fix the problem prior to conducting the emissions test, and in these cases a failure will not be recorded. As such, the failure rate is most likely higher than the generally reported 2 to 3 percent.

While some station operators acknowledge that they have surveyed[9] other stations in their area or even discussed pricing issues with other stations, the test pricing process does appear to be market-driven, as PENNDOT originally announced it should be. Allegations that high emission testing fees resulted from collusion[10] among inspection station operators have not been proven. In a June 2004 report to the House of Representatives, the Office of Attorney General stated that his office:

> . . . found no evidence of widespread collusion among inspection station operators. In fact, the variety of prices available in most communities and the general reduction in prices which has occurred since the tests initially were required, suggests the opposite. We cannot say, at this time, that there is no collusion in setting prices in specific local communities. We have not reviewed the price practices in each local community. There have been allegations of several instances where groups of three or four operators have met and agreed on emission testing fees. We are in the process of reviewing the evidence in specific communities where there is some claim that prices have been set by collusion. We will report back to the General Assembly should we find enough evidence to warrant action.

While the Attorney General found no evidence to date of collusion, emissions testing is more expensive than PENNDOT originally projected. This is primarily because the inspection stations have incurred actual testing-related costs that are greater than PENNDOT originally estimated in its "break-even" analysis (i.e., the point at which test-related revenues equal test-related costs) due primarily to several factors (1) the time it takes to complete the test (20 to 25 minutes) is greater than PENNDOT's original estimate of 12 minutes; (2) the estimate did not include overhead costs; (3) many stations have chosen to amortize equipment costs over a one- or two-year period rather than three years assumed in the estimate;[11] (4) the original estimate did not reflect any finance charges station operators may have paid on their equipment purchases, the costs of inspector recertification, or any expenses related to equipment maintenance agreements station operators may have purchased; and (5) the PENNDOT estimate did not account for the costs a station

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[9]Such surveying is facilitated by the posting of prices on the DriveCleanPA website and some operators acknowledge using the website to determine the prices being charged by their competitors.

[10]According to the Office of Attorney General, unlawful collusion under the federal antitrust law occurs when two or more competing businesses agree to fix or stabilize prices. The key to proving collusion is proving an agreement.

[11]Many of the station operators reported that they chose to amortize the equipment over a one-year period (rather than over three-years) for several reasons: (a) the stations had relatively little notice and lead-time to purchase and acquire the equipment and the purchase resulted in a significant cash outlay (or financing transaction) that operators, especially small dealers, need to recoup as soon as possible; (b) the OBD workstation is essentially a personal computer which will generally lose value quickly as prices of personal computers decline; and (c) according to the Office of Attorney General, there is considerable uncertainty about whether the testing standards will be changed by future litigation over Pennsylvania's compliance with the Clean Air Act. This uncertainty is highlighted by the experience of Philadelphia area operators with the past purchase of expensive dynamometers for which some are still paying.

operator incurs in conducting retests of failed vehicles or in dealing with drive cycle problems. If adjustments are made to PENNDOT's original estimate taking the above listed factors into consideration, the estimated test fee would be substantially higher.

From our analysis, it is also apparent that it is not possible to arrive at an actual "break-even" cost figure for conducting an emissions test that would be applicable to all stations in all regions and local markets within the state. Calculating actual costs to conduct an emissions test involves factors that vary considerably from one station to another. Significant variations exist among the hourly salary rates stations pay their technicians and the overhead costs they must cover.

When considering all of these factors, it is not difficult to see how an inspection station might arrive at a fee of approximately $35 for an OBD test. Using PENNDOT's estimated "break-even" test fee factors as a starting point, we made the following adjustments to account for overhead costs and profit and a longer time frame needed to complete a test.

- The use of a $56[12] per hour shop labor rate to account for technician salary, overhead, and profit (PENNDOT's $13.76 "break even" estimate did not include overhead costs or profit margin); and
- A 25 minute rather than 12 minute time frame required to complete the test (based on actual experience among inspection station operators).

For the remaining cost factors, we used the same assumptions and amounts presented in the PENNDOT estimate. On this basis, an inspection station operator might calculate an OBD test fee as follows:

1. Technician salary, overhead, and profit - $23.35 per test (based on a $56 per hour labor rate and 25 minutes required to conduct the test.
2. Equipment - $4.44 per test (based on an equipment cost of $8,000 divided by 1,800 inspections over three years).
3. Program Management Fee - $4.15 per test (standard fee).
4. Training - $.11 per test (based on a $200 training fee for 1 technician divided by 1,800 inspections).
5. Dedicated Phone Line - $.63 per test ($200 installation fee and an approximate cost of $26 per month times 36 months = $1,136 divided by 1,800 inspections).
6. Subtotal - $32.68
7. Sales Tax - $1.96
8. Total Test Fee - $34.64

[12]Based on responses to the LB&FC's study survey, this was the average labor rate in the South Central Region as of mid-2004.

We do not suggest that the above analysis is the only way to calculate a testing fee or that approximately $35 is the correct or ideal fee that should be charged for the OBD test. Actual costs vary by station and some stations have labor rates higher than the $56 used above and many have labor rates which are lower. Overhead costs that must be covered by a particular inspection station vary depending on the type, size, and geographic location of the business. Also, the number of tests conducted, the time required to conduct a test, the equipment amortization schedule, and the station's provisions for covering the costs of handling retests and drive cycle problems are key determining factors in setting testing fees. In the final analysis, however, once all these factors are considered, a station's test fees will also be significantly influenced by market forces and competition within the regional and local market areas in which it operates.

Exhibit 5

Selected Case Examples of Methods Used by PA Emissions Inspection Stations to Set Test Fees

Through site visits and a questionnaire survey, we asked authorized emissions inspection station operators to explain how they arrived at the fee amount they were charging to do an OBD emissions inspection. The following are selected examples and commentary station operators provided in response to this question.

Calculating actual costs to conduct an emissions test involves factors that vary widely from one inspection station to another. For example, significant variations can exist in a station's hourly labor rate and overhead costs depending on the type, size, and geographic location of the business, the number of tests conducted, the time required to conduct a test, the equipment amortization schedule, and the station's provisions for covering the costs of handling retests and drive cycle problems.

Example A: Independent Service Station – Fee for OBD Test:[a] $36.15

Fee Basis:

	Per Test
1. Labor Rate (assumes .5 hour to complete test and $30 labor rate, along with an additional profit calculation)	$16.32
2. Equipment (machine cost of $5,830, 169 inspections per year, and a three-year payoff)	11.50[b]
3. Training ($50 training cost dividend by 507 inspections over three years)	.10
4. Telephone charges (installation fee of $100 plus $972 monthly charges over three years (at $27.00 per month) divided by 507 inspections)	2.11
Subtotal	$30.03
5. MCI Program Management Fee	4.15
6. State Sales Tax	1.97
Total Test Fee	$36.15

Example B: Independent Service Station – Fee for OBD Test:[a] $38.83

Fee Basis:

	Per Test
1. Labor Rate (.4 hour at $70 per hour)	$28.00
2. Profit (20 percent)	5.60
3. MCI Program Management Fee	4.15
4. State Sales Tax	2.27
Subtotal	$40.02
5. Adjustment by station owner to bring price under $40.00	(1.19)[c]
Total Test Fee	$38.83

Exhibit 5 (Continued)

Example C: Independent Service Station – Fee for OBD Test:[a] $36.15

Fee Basis:

	Per Test
1. Price of Tailpipe Emissions Inspection (used as basis for OBD fee)	$29.95[d]
3. MCI Program Management Fee	4.15
4. State Sales Tax	2.05
Total Test Fee	$36.15

Example D: Independent Service Station and Used Car Dealer – Fee for OBD Test:[a] $31.70

Fee Basis:

	Per Test
1. Labor (assumes .3 hour to complete test and $27.09 per hour for technician salaries and benefits)	$ 8.13
2. Equipment ($13,547 cost of two machines divided by 2,856 tests per year—one year payoff)	4.72[b]
3. Training for 16 Technicians ($2,880 divided by 2,856 tests per year)	1.01
4. Wages for Retests (assumes 5 percent failure rate)	0.41
5. Telephone Charges and Supplies	1.00
Subtotal	$15.27
6. MCI Program Management Fee	4.15
Subtotal	$19.42
7. Sales Tax	1.17
Subtotal	$20.59
8. Profit and Overhead Allowance	11.11
Total Test Fee	$31.70

E. Other Miscellaneous Examples:

Independent Service Station – Fee for OBD Test: [a] $49.95

Fee Basis:

	Per Test
1. Program Management Fee	$ 4.15
2. Labor (.67 hours at $30 per hour)	20.00
3. Emission Program Expenses (supplies, phone line, maintenance contract, manuals, training)	5.00
4. Shop Overhead (taxes, heat, electricity, maintenance, insurance) and Profit	5.80
5. Test Equipment ($6,000 cost; 2 year return on investment @200 inspections/year)	15.00
Total Test Fee	$49.95

Exhibit 5 (Continued)

Independent Service Station – Fee for Test: [a] **$30.00**
Fee Basis: "We currently charge $20 for a PA safety inspection. This is a "loss leader"; however, we do expect to profit from the likely chance that the vehicle will need some type of repair and that the customer will choose to have us perform the repair. As for the PA emissions test, we charge $30; $20 covers the time it takes for the technician and service writer to perform the inspection and do the paperwork. $4.15 belongs to [MCI], and $5.85 is profit."
Independent Repair Shop – Fee for OBD Test: [a] **$38.00**
Fee Basis: "My normal charge for a diagnostic check with my scan tool is $34.00. In essence, the OBD test is a scan tool diagnostic so I applied the $34 charge to the test and added the $4.15 (rounding off) MCI charge for a total of $38. I felt that was fair to me and my customers. I don't care what other shops charge. That's their business."
Independent Service Station – Fee for Test: [a] **$35.00**
Fee Basis: "We set it a little lower than our competitors."
Used Car Dealer – Fee for Test: [a] **$35.00**
Fee Basis: "We charge $35.00 per emission inspection. If the vehicle passes without a glitch, we give the customer a $10.00 discount. Cost to customer is then $25. Glitches include a retest or any other reason that the test would take more than 15 or 20 minutes. 15 to 20 minutes is based on the time it takes technician to pick up keys and work order, bring car in shop, run the test, deliver car to parking spot, keyup (and send) work order to service counter. *Alldata*, the service manual system we use, gives a time of .8 hours (.8 x $50 = $40) to run emission system diagnosis with a scan tool. Using *Alldata* as a guide, the charge is a bargain."
New Car Dealer – Fee for Test: [a] **$45.00**
Fee Basis: "It is the same rate we have charged for the dynamometer test. It is competitive in our market."
Independent Service Station – Fee for Test: [a] **$36.20**
Fee Basis: "We talked to local shops and customers, checked on our losses which were due to not doing other work like wheel alignment, brake work, new tire sales, and other services performed by us and priced in middle."

Exhibit 5 (Continued)

New Car Dealer – Fee for Test: [a] **$42.35**
Fee Basis: "We initially arrived at $49.95 + tax+ MCI by comparison to our Philly stores. After 2 months or so, we did a market survey regarding other dealers in our area/street. We dropped to $39.95 + tax + MCI. We conducted another survey & print copy of report & decided to lower it to $35.80 + $2.40 tax + $4.15 MCI for a total of $42.35. With the overhead expenses everyone encounters, and all being different, independent, franchise or dealer, this could or should be market driven but be fair to consumer."

[a]Includes $4.15 MCI program management fee and state sales tax.

[b]Excludes finance charges.

[c]Although this reduction lowered this station owner's profit rate, he wanted to keep his test price under $40 in order to maintain his customer base. This was not the only station we found that reported charging a lower fee than their initial calculations indicated. One new car dealer told us that he lowered his original calculations by $10 per test to avoid negative publicity but that the lower price does not generate an adequate profit.

[d]This station owner stated that he did not want to raise the fee for the emissions test, even though the cost of the equipment warranted it, as he feared losing customers that would not understand the change in equipment from tailpipe to OBD. He said he did not consider what competitors were charging.

Source: Developed by LB&FC staff from information provided by Pennsylvania emissions inspection station operators in response to an LB&FC staff questionnaire and during LB&FC staff site visits to testing facilities.

VI. Appendices

APPENDIX A

House Resolution 577 of 2004

PRIOR PRINTER'S NO. 3340 PRINTER'S NO. 3472

THE GENERAL ASSEMBLY OF PENNSYLVANIA

HOUSE RESOLUTION

No. 577 Session of 2004

INTRODUCED BY GEIST AND McCALL, MARCH 8, 2004

AS REPORTED FROM COMMITTEE ON TRANSPORTATION, HOUSE OF REPRESENTATIVES, AS AMENDED, MARCH 17, 2004

A RESOLUTION

1 Requesting the Attorney General of the Commonwealth to
2 investigate the possibility of collusion in the establishment
3 of fees within this Commonwealth as it pertains to motor
4 vehicle emissions testing and any potential violations of the
5 Unfair Trade Practices and Consumer Protection Law; and
6 directing the Legislative Budget and Finance Committee to
7 prepare a report on the actual costs incurred by emission
8 inspection stations.

9 WHEREAS, In 2002, Citizens For Pennsylvania's Future
10 (PennFuture) and the Clean Air Council initiated two lawsuits
11 over the Commonwealth's slow progress in implementing auto
12 emissions inspection procedures mandated by the Environmental
13 Protection Agency; and
14 WHEREAS, In May 2003, the Department of Transportation and
15 the Department of Environmental Protection announced an
16 agreement to settle these lawsuits over Pennsylvania's program
17 for automobile emissions testing. The changes called for in this
18 agreement bring the State's emissions testing program into
19 compliance with Federal air quality standards while having a
20 minimal effect on most of the State's drivers; and

Appendix A (Continued)

1 WHEREAS, The Commonwealth has begun to implement emissions
2 testing changes by expanding the test to additional counties
3 within this Commonwealth where emissions testing did not
4 previously occur; and
5 WHEREAS, The garages conducting the emissions tests are left
6 to establish their own fees; and
7 WHEREAS, The garages in the Philadelphia and Pittsburgh
8 regions have been conducting emissions testing for over ten
9 years with an average fee for such tests of between $28 and $44.
10 These fees are based on equipment purchased at a cost of
11 approximately $16,000 to $60,000; and
12 WHEREAS, The garages in the counties where emissions testing
13 was initiated in December 2003 are charging consumers anywhere
14 from $20 to $70. These fees are based on equipment purchased at
15 a cost of approximately $5,000 to $8,000; and
16 WHEREAS, Media reports have shown that garage owners in the
17 expanded regions have communicated with one another in order to
18 establish fees; and
19 WHEREAS, Consumers may be experiencing artificially high fees
20 for emissions testing as a result of complicity among the
21 garages; therefore be it
22 RESOLVED, That the House of Representatives request that the
23 Attorney General of the Commonwealth investigate the possibility
24 of collusion among the garage owners in the establishment of
25 their emissions testing fees and whether there may be any
26 violation of the Unfair Trade Practices and Consumer Protection
27 Law or any other statutes; and be it further
28 RESOLVED, That the Attorney General report the progress of
29 the investigation to the House of Representatives within 90 days
30 following the adoption of this resolution, including any

Appendix A (Continued)

1 recommendations for legislative changes necessary to provide
2 consumer relief and protection; and be it further
3 RESOLVED, That the Legislative Budget and Finance Committee
4 study and issue a report on the actual costs incurred by
5 emission inspection stations for the performance of emissions
6 tests implemented after November 30, 2003. In preparing this
7 study, the Legislative Budget and Finance Committee shall
8 consider the cost of the testing equipment as well as other
9 factors such as the total amount of time necessary to complete
10 the test, APPROPRIATE OVERHEAD AND OTHER COSTS OF DOING <—
11 BUSINESS; and be it further
12 RESOLVED, IN REVIEWING THE COST OF TESTING EQUIPMENT, THAT <—
13 THE LEGISLATIVE BUDGET AND FINANCE COMMITTEE REPORT ON THE
14 REASON FOR THE SIGNIFICANT DIFFERENCES BETWEEN INITIAL
15 DEPARTMENT OF TRANSPORTATION ESTIMATES OF $750-$1,200 AND
16 $2,500-$7,000 PER UNIT AND THE $5,000-$7,000 PER UNIT COST FOR
17 EQUIPMENT AS FINALLY CERTIFIED BY THE DEPARTMENT; AND BE IT
18 FURTHER
19 RESOLVED, That the Legislative Budget and Finance Committee
20 submit its report to the Transportation Committee of the House
21 of Representatives within 120 days following the adoption of
22 this resolution.

APPENDIX B

PENNDOT On-Board Diagnostics Inspection and Maintenance (OBD I/M) Check Fact Sheet

OBD I/M Check Fact Sheet

What is On-Board Diagnostics (OBD)

The OBD system is a computer equipped on most model year 1996 and newer vehicles. The system is comprised of a computer with diagnostic software and sensors. The OBD system monitors the performance of the ignition, fuel metering and emissions systems, including the sensors and the computer itself, while the vehicle is being driven to ensure they are working "as designed." The on-board computer has the ability to identify a problem well before the driver may recognize symptoms. The computer will illuminate a light on the dash to notify the driver of a problem. Most dash lights will display a "Check Engine," "Service Engine Soon," or an engine symbol. When the OBD system detects a problem, a diagnostic trouble code is stored in the vehicle's computer. When a vehicle is brought in for an official OBD I/M Check, those trouble codes will help a technician properly diagnose and, if necessary, repair the problem. The OBD I/M Check can be performed on most 1996 and newer model-year gasoline-powered passenger vehicles, vans and light-duty trucks weighing 8,500 pounds and less, since these vehicles were required by the EPA to be manufactured with OBD systems. Additionally, if your vehicle's check engine light is not illuminated, this doesn't mean that your vehicle will pass. This could occur for several reasons; an example could be that the check engine light bulb is not functioning.

The OBD I/M Check

During the OBD I/M Check, a certified technician will attach a cable to the vehicle's on-board computer through a data link connector (DLC), usually found under the dashboard, and download information to a computer to assess how well the vehicle's emissions system is functioning. The vehicle's on-board computer will generate diagnostic trouble codes (DTC's) if there are malfunctions or other problems present in the vehicle's emissions system.

Readiness Monitors

A vehicle's OBD system has up to 12 monitors within the OBD computer. These monitors are designed to check the running condition of all key emissions components of the engine. Three monitors run all the time when the engine is running, the remaining monitors run intermittently during normal driving. These monitors report to the OBD computer if the engine's emission performance is, or is not, in compliance with federal EPA regulations. These monitors also report to the On-board computer as being "ready" or "not ready". If they are "not ready," they are not yet in a condition to determine if the associated emissions systems are working correctly. When a vehicle is taken to an emissions inspection station to receive the OBD I/M Check, the first thing the testing equipment does is check these monitors. For model year vehicles 1996-2000, a vehicle with two monitors that are "not ready" will be accepted for the OBD test and the test can continue; for model year vehicles 2001 and newer, only one "not ready" monitor will be accepted for testing and the test can continue. Any vehicle that has more than the allowable number of "not ready" monitors will be rejected from testing until the monitors have been set to "ready" which is accomplished by performing a drive cycle specific to the vehicle.

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Appendix B (Continued)

Drive Cycles

If a 1996 or newer vehicle is not ready for testing because too many readiness monitors are not set, the vehicle must be put through a "drive cycle". The drive cycle is a prescribed driving routine specified by the vehicle manufacturer. There is no generic drive cycle. Each vehicle has drive cycles specific to the make and model of the vehicle, therefore, every drive cycle will be different for every vehicle. If your vehicle is not ready for testing, check with your service provider or the vehicle manufacturer to determine the correct drive cycle for the monitor that is "not ready" for your make and model vehicle. Simply driving the vehicle does not guarantee the monitors will be set to "ready."

The "Check Engine" Light

When your vehicle's check engine light illuminates it means that something is wrong. At the very least, you may be using more fuel than you need to. If you have your vehicle serviced when the check engine light is illuminated, you are taking the right steps towards repairing the problem while contributing to improving Pennsylvania's air quality. Ignoring the check engine light and continuing to drive the vehicle may result in more costly repairs down the road. You may have heard that if the "check engine" light is illuminated, the way to make a vehicle ready to have the OBD test is to disconnect the battery for a few minutes, then reconnect it to make the "check engine" light go out. Nothing could be further from the truth. Whatever you do, DO NOT disconnect the battery! Disconnecting the battery will cancel the OBD systems monitors and make the vehicle "not ready" for testing. This practice will only add time and expense when you take your vehicle to be tested. If your "check engine" light is on and your vehicle is due for inspection, it would be beneficial for you to take your vehicle in for the OBD inspection early in the cycle. If it fails the OBD inspection, this will help assure that there is sufficient time to repair the vehicle and to re-set any needed monitors prior to a reinspection.

Source: Pennsylvania Department of Transportation.

APPENDIX C

A Summary Description of the Required Components of OBD/Gas Cap Testing Equipment

1. **Personal Computer** (this could be a desktop, laptop, or handheld model)

   - Intel® 2.0 GHz. Processor
   - Intel® Next-Generation Motherboard
   - Windows® XP Embedded Operating System
   - Secured Software to Prevent Tampering
   - Solid-state 32MB USB Removable Media Drive for Data Backup and Restoration
   - CD-ROM Drive With Multimedia Capabilities
   - 104-Key Enhanced Keyboard
   - Mouse
   - 56K V.92 Internal Modem
   - RJ-45 Ethernet Port for Network Connection
   - High Resolution Color Monitor

2. **Laser Printer**

   - Stations are required to provide a copy of the Vehicle Inspection Report to customers for a vehicle that passes the inspection and with a Vehicle Inspection Report and Repair Data Form for vehicles that fail the inspection.

3. **Pennsylvania Emissions Inspection Program Specific Software**

   - Manufacturers will supply PENNDOT (or make available to PENNDOT) the equipment with the software loaded.
   - The inspector will not have to load the operating or applications software to operate the computer system. Each time the system is turned on, it will automatically do all component diagnostics, memory checking, and loading of all necessary operating software without intervention by the inspector.
   - Some manufacturer's incorporated the ability to allow the station to add additional software that the station may want for diagnostic purposes and other information. This is something new that earlier emissions testing equipment would not allow. The manufacturer installed a partition to keep the emissions software secure while allowing other software to be loaded, thus allowing more use of the equipment.

4. **Bar Code Scanners**

   - Non-contact bar code scanners are required on the equipment. The information scanned will be stored on the test record and will be used to identify the vehicle.
   - In addition to the use for collecting the VIN from the vehicle's registration, scanners will be required to enter vehicle inspection report information and other emissions information as required.
   - Another function will include reading emissions inspector licenses and PENNDOT inspector identification badges.

5. **Real Time Clock/Calendar**

   - Both time and date will be in standard "IBM PC format" and used to set the computer system's date and time when the machine is turned on.
   - The equipment will store the date and time on the test record.

Appendix C (Continued)

- The date/time, along with the time the inspection or test started and when it ended, is to be included on the test record. The start time is when the connection to PENNDOT was established or when the attempt to establish the connection to PENNDOT failed. The end time is when the test record is saved.
- The equipment clock/calendar will be equipped with a battery backup feature and a battery with a five (5)-year expected life.

6. **OBD Scan Tool** (Not necessary for the Northern Region)

- The computer system must be equipped with a standard connector and communications link to allow an RPM signal, readiness monitors, fault codes, Malfunction Indicator Light (MIL) Command Status, Parameter Identification (PID), Powertrain Control Module (PCM ID), and OBD VIN (where available) to be downloaded from the onboard computer for applicable vehicles.
- The equipment design and operation must meet all Federal requirements and recommended Society of Automotive Engineers (SAE) practices for OBD system inspections.
- The OBD interrogation process must be automated and require no inspector intervention to collect and record OBD data retrieved via the OBD diagnostic link. An RPM signal, OBD readiness monitors, failure codes, MIL status, and PID, PCM ID, and OBD VIN (where available) numbers will be automatically retrieved through a standard interface and vehicle connector.

7. **Fuel Cap Test Equipment**

- The system must be equipped with a fuel cap tester that has the ability to test the vehicle fuel cap as set forth by the EPA and transmit the results of the test to the computer electronically.
- The Fuel Cap Test Equipment will come with the necessary adapters to allow the station to test fuel caps on most vehicles with a model year of 1975 or later.

Source: "Final Stand-Alone Equipment and Software Specifications," PENNDOT, October 17, 2003.

APPENDIX D

Vehicle Emissions Testing Prices, by Test Type and County

(As of September 13, 2004)

South Central Region

County	OBD Min	OBD Max	OBD Average	Visual/Gas Cap Testing Min	Visual/Gas Cap Testing Max	Visual/Gas Cap Testing Average
Berks	$15.90	$57.39	$39.99	$25.60	$57.39	$40.76
Cumberland	24.96	52.95	40.12	24.96	52.95	38.20
Dauphin	19.99	75.00	41.19	19.99	60.83	40.40
Lancaster	16.06	66.41	39.18	25.60	57.39	37.79
Lebanon	21.20	46.80	38.77	26.50	52.10	39.81
Lehigh	21.20	49.95	41.31	24.95	49.95	41.27
Northampton	25.00	52.95	42.56	29.95	47.50	42.05
York	20.00	49.95	39.18	19.95	52.95	38.75
Region	15.90	75.00	40.29	19.95	60.83	39.88

Pittsburgh Region

County	OBD Min	OBD Max	OBD Average	Tailpipe/Gas Cap Min	Tailpipe/Gas Cap Max	Tailpipe/Gas Cap Average
Allegheny	$24.56	$75.00	$37.89	$24.15	$75.00	$37.39
Beaver	26.50	68.89	38.20	22.00	49.95	38.23
Washington	24.15	50.88	34.85	24.15	47.70	35.21
Westmoreland	21.99	53.00	36.15	25.00	47.70	34.93
Region	21.99	75.00	36.77	22.00	75.00	36.44

Philadelphia Region

County	OBD Min	OBD Max	OBD Average	Dynamometer Tailpipe/Gas Cap Min	Dynamometer Tailpipe/Gas Cap Max	Dynamometer Tailpipe/Gas Cap Average
Bucks	$22.74	$63.60	$50.74	$24.60	$82.95	$51.30
Chester	24.99	63.60	49.37	29.95	62.65	50.64
Delaware	24.99	75.00	48.99	25.00	75.00	50.83
Montgomery	21.09	65.72	49.22	25.00	62.70	50.48
Philadelphia	15.14	68.58	47.79	20.00	62.37	45.39
Region	15.14	75.00	49.22	20.00	82.95	49.73

Northern Region

County	Visual Anti-Tampering/Gas Cap Min	Visual Anti-Tampering/Gas Cap Max	Visual Anti-Tampering/Gas Cap Average
Blair	$23.27	$37.10	$30.98
Cambria	20.00	42.40	31.52
Centre	20.00	49.95	34.30
Erie	24.00	39.33	31.79
Lackawanna	19.99	53.00	33.37
Luzerne	20.00	46.50	30.54
Lycoming	21.20	49.00	34.52
Mercer	20.83	51.04	31.87
Region	19.99	53.00	32.36

Source: Developed by LB&FC staff using information obtained from PENNDOT.

APPENDIX E

Pending Legislation Relating to Vehicle Emissions Inspection

(As of September 15, 2004)

Senate Bill 338: Provides a sales tax exemption for the cost of parts and labor necessary for a motor vehicle to comply with emissions inspection standards.

Senate Bill 341: Provides a tax credit up to $25 for emissions inspection fees.

Senate Bill 976: Provides a sales tax exemption for vehicle emissions diagnostic equipment.

Senate Bill 1011: Exempts certain low mileage vehicles from the emissions inspection requirements and sets the maximum fee for emissions inspections at $20, not including the program management fee and applicable state sales tax.

House Bill 123: Directs DEP to implement a zero-emissions vehicle program.

House Bill 706: Provides that the emissions inspection program includes motorcycles and vehicles utilizing diesel fuel.

House Bill 708: Provides that the emissions inspection program may not require more than a biennial inspection.

House Bill 1217: Sets a moratorium on the implementation or continued use of a vehicle emissions inspection program until certain standards and studies of on-board vehicle emissions diagnostic testing systems are completed.

House Bill 1509: Provides for an emissions inspection program that includes only vehicles that have been in service for more than four years.

House Bill 1810: Exempts vehicles five or less model-years old from emissions inspections.

House Bill 2344: Sets the maximum fee for emissions inspections at $20.

House Bill 2696: Requires emissions inspection stations to display a certificate of appointment; provides for a sales and use tax exclusion for enhanced emissions inspections after January 1, 2005.

House Bill 2283: Provides for a waiver amount for vehicles failing certain emissions equipment inspections and for gas cap testing.

Source: Developed by LB&FC staff from a review of legislative bills.

APPENDIX F

Response to This Report

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
HARRISBURG, PENNSYLVANIA 17120

OFFICE OF
SECRETARY OF TRANSPORTATION

September 21, 2004

Mr. Philip R Durgin, Executive Director
Legislative Budget and Finance Committee
Room 400 Finance Building
Harrisburg, PA 17120

Dear Mr. Durgin:

Thank you for providing the Department of Transportation with a copy of your draft report on "An Examination of Costs and Test Prices in the 'Drive Clean Pennsylvania' Emissions Inspection Program." I appreciate the time and effort you and your staff put into this report.

Ms. Betty Serian, Deputy Secretary for Safety Administration, Mr. Kurt Myers, Director of the Bureau of Motor Vehicles and Ms. Cindy Cashman, Executive Assistant to the Deputy Secretary for Safety Administration will be representing the Department at the meeting of the Legislative Budget & Finance Committee.

Sincerely,

Allen D. Biehler

Allen D. Biehler, P.E.
Secretary of Transportation