

## **2007 Gas Cap Testing and Replacement Program Summary Report**

### **Introduction**

Toledo Metropolitan Area Council of Governments (TMACOG) continued the Gas Cap Testing and Replacement Program for the eighth consecutive year in 2007. This program served to educate the general public on the importance of a functioning gas cap and its impact on ground level ozone pollution, commonly referred to as “smog.” Residents of Northwest Ohio, including the cities of Toledo, Bowling Green, Oregon, Rossford, Perrysburg, and Northwood were invited to participate in the program by having their gas caps tested for leaks at local gas stations and community events. This year’s program tested 1,897 different gas caps. Along with the physical testing of gas caps, the program provided motorists with information on the importance of replacing faulty gas caps and what they can do reduce air pollution.

Throughout summer of 2007, program representatives successfully tested 1,897 gas caps at 48 testing sites. A total of 87 faulty or missing gas caps were replaced over the course of this year’s program. This translates to the prevention of approximately 17,313 pounds of evaporative emissions from entering the air. In total, motorists who had faulty gas caps will save approximately 174 tanks of gas per year simply through the use of a properly functioning gas cap.

### **Background**

Gas cap testing and replacement programs were first implemented in areas of the country where ozone levels were not in compliance with the Environmental Protection Agency’s (EPA) standards. Within these regions, gas cap testing is included as one part of a series of tests known as emissions testing. Emissions testing, commonly known as the E-Check, consists of a series of tests that vehicles must pass in order to help reduce emissions from vehicle exhaust. These programs focus particularly on those emissions that contribute to ozone pollution. The overall goal of emissions testing is to improve the air quality of that particular region. In northwest Ohio and southeast Michigan, motorists do not have to undergo mandatory E-Checks.

The Gas Cap Testing and Replacement Program partners with the Ozone Action Day program, with the common goal of lowering the amounts of ground level ozone in our region’s air. Both programs focus on public education as the key to achieving this goal. The City of Toledo Department of Environmental Services declares an Ozone Action Day when ozone levels are expected to exceed the acceptable limit, as set forth by the U.S. EPA. This typically occurs on days where there is extreme heat (in excess of 90 degrees) with little or no wind present. Motorists are encouraged to carpool, reduce usage of gasoline-powered equipment, and refuel after dusk to help lower pollution levels. In compliance with the Ozone Action Day program, gas cap testing is not conducted on Ozone Action Days. In order to clearly communicate the key messages of both the Ozone Action Day and Gas Cap Testing and Replacement Program to the public, it is important

to make sure that efforts are well coordinated. Coordination between the two programs was achieved through joint advertising as well as utilizing printed materials that mention the importance of both programs. These materials were then distributed to the public.

At testing sites, the Gas Cap Testing and Replacement Program:

- Informs the participants of the negative impact that ground-level ozone pollution and high emission levels have on our health and the environment.
- Reduces the total amount of pollution emitted into our air by motorists through the replacement of faulty or missing gas caps.
- Educates the public on steps that can be taken to prevent air pollution, such as using public transit, carpooling, trip chaining, and proper vehicle maintenance.

### **Sponsors**

The 2007 sponsors played a huge role in the success of the Gas Cap Testing and Replacement Program. Without the support of each sponsor, it would be impossible to effectively run the program. Each sponsor is to be commended for assisting the efforts to help reduce air pollution in our region. This year, the program had financial, site, and gas cap sponsors all working together to help reduce ozone emissions.

**Financial Sponsors:** Financial sponsors for the 2007 testing season were TMACOG, BP Oil Refinery, Sunoco, Barney's Convenience Mart, and WKKO K-100. Each company was listed on all promotional advertisements as well as on the back of the program shirts. This was done to show appreciation for their efforts and dedication to our program.

**Site Sponsors:** Throughout the summer, gas caps were tested at various locations in Wood and Lucas counties in Ohio. There were six companies that allowed the program to conduct testing at their various locations. These include BP, Barney's Convenience Mart, Sunoco, Kroger, Meijer, and Shell. At these sites, the interns were able to post signs, disseminate informational materials, and discuss the importance of clean air with the public.

**Gas Cap Sponsor:** The Gas Cap Testing and Replacement Program once again teamed up with AutoZone to assist in the replacement of faulty gas caps. There are dozens of types of gas caps; each designed to fit different makes, models, and years of vehicles. Interns carried with them the six most common types of gas caps. In the event that a cap failed, it would be replaced on-site to reduce pollution while not inconveniencing the motorists. If a gas cap was faulty and there were no matching caps in our inventory, the motorist was presented with a voucher redeemable at any AutoZone location to replace the motorist's gas cap. At the season's end, AutoZone invoices TMACOG for each voucher redeemed. This season, two vouchers were distributed to two area motorists.

### **Marketing**

In order to effectively communicate to the public about the 2007 Gas Cap Testing and Replacement Program, TMACOG employed a combination of various marketing tools. These tools enabled communication with the public while promoting the testing events. Program participants were able to learn about the program through various mediums, including billboard advertisements, radio programs, and print media. The Gas Cap Testing and Replacement Program was also effectively advertised on the TMACOG website, where we posted a list of testing events and information about the importance of this program and the Ozone Action Program.

**Radio:** Like previous years, radio was used to interest citizens of Northwest Ohio and attract motorists to the designated testing events. The Gas Cap Testing and Replacement Program teamed with WKKO K100 to hold a live remote radio broadcast at three different testing sites. These live remotes attracted fans of WKKO K100 and radio personalities “Office Boy Bob” and Cliff Smithers. By attending these events, participants were able to register for giveaways of gas cards, get their gas cap tested, and learn about the program and its impact on air quality.

**Print:** In order to expand the reach of the program’s message, TMACOG sent press releases to different weekly and daily print and radio outlets. These releases contained information about the importance of gas cap testing, a schedule of testing sites, and information about the program, including contact information.

**Mascot:** For the sixth consecutive year, Gas Cap Man was used as the program’s mascot. At each event, program representatives wore t-shirts displaying his image. In addition, his image was used on all promotional materials, including outdoor billboards, posters, buttons, brochures, and signage.

**Local Events:** This year, the Gas Cap Testing and Replacement Program traveled to the Oregon Spring Fest in Oregon, Ohio. At this event, promotional and informational materials were distributed in the Quality of Life tent concerning the Ozone Action Day and the Gas Cap Testing and Replacement Program. Also, citizens were also given materials on other TMACOG programs, including the Share A Ride Program. Various citizens who obtained schedules from the festival met up with the program at various testing sites throughout the summer. This was made evident when motorists would mention having stopped at our display at the festival. The Gas Cap Testing and Replacement Program also performed testing at the Jamie Farr Owens Corning Classic.

**Billboards:** The Gas Cap Testing and Replacement Program advertised on various billboards throughout the Toledo area. These billboards featured the gas cap mascot and a reminder to citizens of northwest Ohio that it is important to get your gas cap checked for faultiness. This type of advertisement communicated to a large number of citizens and served as a reminder to have each cap tested.

## Testing Information

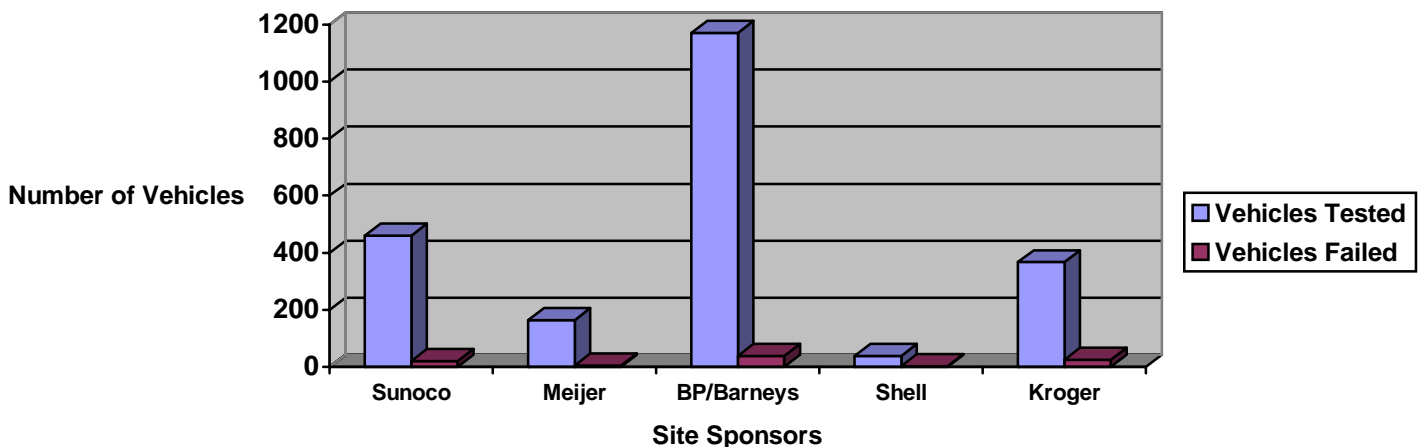
The purpose of the Gas Cap Testing and Replacement Program is to reduce evaporative emissions from light-duty, gasoline-powered vehicles. This year, the program helped to prevent approximately 17,313 pounds of pollution from entering the atmosphere by replacing 87 missing or faulty gas caps. With 1,897 tests conducted, program representatives worked to educate the region's residents on the dangers of ground level ozone.

At various local sites, 48 testing events were held for the public to have their gas caps tested. At each event, the general public is invited to have a test done on their gas cap to ensure that it is sealing properly. Along with the test, they are given educational pamphlets to help answer their questions regarding ground level ozone. Program representatives also helped educate the public by simply discussing the reasons for the testing and the importance of clean air.

## Test Results

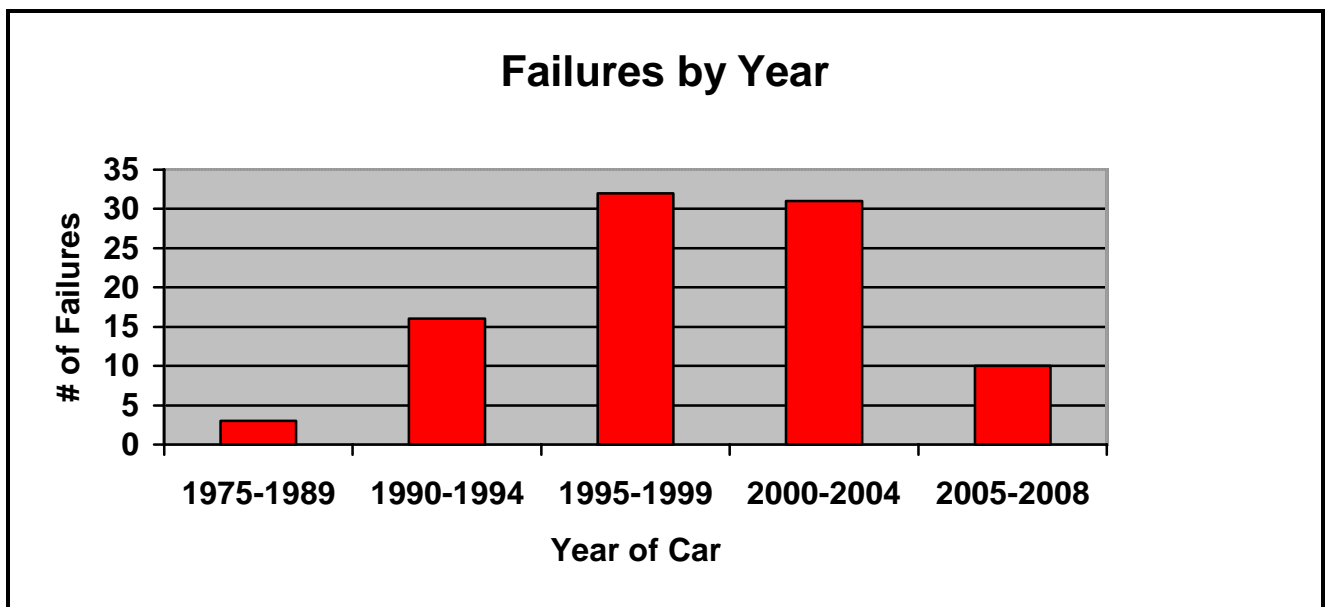
At each testing event, a program representative records the year, make, and model of each vehicle being tested. This information is compiled according to date of testing and the location of the testing site. At the end of the season, this data is analyzed and many inferences are drawn from it. For 2006, the average failure rate for each testing site was approximately 5.25%, compared to this year's average of 3.9%. This reduction in failure rate could be due in part to the increasing popularity of the program and the program's public education efforts. This was the seventh year for the Gas Cap Testing and Replacement Program, and as each year passes, public awareness and participation increases. We were able to test 1,897 cars over the course of the summer.

### Vehicles Tested per Site Sponser



After analyzing all of the data collected, it was evident that one characteristic of a vehicle affected the possibility of it having a faulty gas cap. We found that the year of a car had an impact on the condition of the gas cap, similar to the conclusions in previous years of the program. This year, we concluded that cars made in years 1995-1999 had a higher failure rate than those in other years.

The following graph depicts those conclusions and the relationship between the ages of the vehicles with failing gas caps:



### Testing Figures

In 2007, the Gas Cap Testing and Replacement Program helped to educate the public on the importance of clean air care and its affect on ground level ozone pollution. By testing the gas caps of light-duty, gasoline-powered vehicles, we were able to reduce evaporative emissions in the Toledo metropolitan area. Below are detailed figures of all the results from the 2007 testing season.

### 2007 Gas Cap Replacement Program Testing Results

#### **5/15/07 BP/Barneys – 4128 Monroe St., Toledo**

33 tested

4 failed

12.0% failure rate

#### **5/16/07 Kroger – 7545 Sylvania Ave., Sylvania**

47 tested

4 failed  
8.5% failure rate

**5/17/07 BP/Barneys – 1565 E. Alexis Rd., Toledo**

22 tested  
3 failed  
13.6% failure rate

**5/21/07 Sunoco – 2445 W. Alexis Rd., Toledo**

31 tested  
3 failed  
9.6% failure rate

**5/22/07 Kroger – 1094 N. Main St., Bowling Green**

66 tested  
4 failed  
6.0% failure rate

**5/23/07 BP/Barneys – 497 Dussel Dr., Maumee**

34 tested  
1 failed  
2.9% failure rate

**5/24/07 Sunoco – 2515 W. Laskey Rd., Toledo**

51 tested  
2 failed  
3.9% failure rate

**5/29/07 BP/Barneys – 1130 Buck Rd., Rossford**

59 tested  
3 failed  
5.0% failure rate

**5/30/07 Sunoco – 2205 N. Holland-Sylvania Rd., Toledo**

45 tested  
0 failed  
0.0% failure rate

**5/31/07 BP/Barneys – 6986 Airport Hwy., Toledo**

55 tested  
5 failed  
9.0% failure rate

**6/4/07 BP & Barneys – 1602 E. Wooster St., Bowling Green**

60 tested  
2 failed

3.3% failure rate

**6/5/07 BP/Barneys – 103 Anthony Wayne Trail, Waterville**

29 tested

2 failed

6.8% failure rate

**6/6/07 Sunoco – 6504 Airport Hwy., Holland**

34 tested

2 failed

5.8% failure rate

**6/7/07 Shell – 822 Monroe St., Toledo**

38 tested

2 failed

5.2% failure rate

**6/11/07 Meijer – 7240 W. Central Ave., Toledo**

54 tested

1 failed

1.8% failure rate

**6/12/07 TMACOG Employee Parking Lot**

13 tested

0 failed

0.0% failure rate

**6/13/07 BP/Barneys – 2 N. Reynolds Rd., Toledo**

41 tested

0 failed

0.0% failure rate

**6/14/07 Sunoco – 1455 S. Byrne Rd., Toledo**

66 tested

4 failed

6.0% failure rate

**6/18/07 BP/Barneys – 3211 Briarfield Blvd., Maumee**

**\*\* EVENT CANCELLED – OZONE ACTION DAY\*\***

**6/19/07 Meijer – 2111 E. Wooster St., Bowling Green**

76 tested

5 failed

6.5% failure rate

**6/20/07 Kroger – 3301 Navarre Ave., Oregon**

72 tested  
5 failed  
6.9% failure rate

**6/21/07 Sunoco – 3510 SR 795, Millbury**

41 tested  
4 failed  
9.7% failure rate

**6/25/07 BP/Barneys – 3369 Navarre Ave., Oregon**

53 tested  
2 failed  
3.7% failure rate

**6/26/07 Meijer – 10055 Meijer Rd., Rossford**

34 tested  
0 failed  
0.0% failure rate

**6/27/07 BP/Barneys – 4306 Sylvania Ave., Toledo**

23 tested  
1 failed  
4.3% failure rate

**6/28/07 Kroger – 4925 Jackman Rd., Toledo**

140 tested  
8 failed  
5.7% failure rate

**7/2/07 Sunoco – 1855 Woodville Rd., Oregon**

64 tested  
2 failed  
3.1%

**7/3/07 Kroger – 27386 Carronade Dr., Perrysburg**

42 tested  
4 failed  
9.5% failure rate

**7/5/07 BP/Barneys – 2010 Ottawa River Rd., Toledo**

36 tested  
1 failed  
2.7% failure rate

**7/9/07 Sunoco – 3503 Hill Ave., Toledo**

**\*\*EVENT CANCELLED DUE TO EXTREME HEAT\*\***

**7/10/07 Meijer- 1725 Wheeling St., Oregon**

**\*\* EVENT CANCELLED DUE TO EXTREME HEAT\*\***

**7/12/07 Jamie Farr Owens Corning Classic, Sylvania**

4 tested

0 failed

0.0% failure rate

**7/13/07 BP/Barneys – 1 Main St., Toledo**

26 tested

0 failed

0.0% failure rate

**7/16/07 Sunoco – 4810 Suder Ave., Toledo**

50 tested

1 failed

2.0% failure rate

**7/17/07 BP/Barneys – 6127 Monroe St., Toledo**

30 tested

1 failed

3.3% failure rate

**7/18/07 BP/Barneys – 5760 Lewis Ave., Toledo**

46 tested

1 failed

2.2% failure rate

**7/19/07 BP & Barneys – 3126 Secor Rd., Toledo**

69 tested

0 failed

0.0% failure rate

**7/24/07 BP & Barneys – 996 S. Main St., Bowling Green**

48 tested

1 failed

2.1% failure rate

**7/25/07 BP & Barneys – 7349 W. Central Ave., Toledo**

47 tested

1 failed

2.1% failure rate

**7/26/07 BP & Barneys – 4306 Sylvania Ave., Toledo**

26 tested

1 failed  
3.8% failure rate

**7/27/07 Sunoco – 1407 Manhattan Blvd., Toledo**

47 tested  
2 failed  
4.3% failure rate

**7/30/07 BP & Barneys – 5821 N. Detroit Ave., Toledo**

39 tested  
1 failed  
2.6% failure rate

**7/31/07 BP/Barneys – 501 W. Dussel Dr., Maumee**

60 tested  
2 failed  
3.3% failure rate

**8/1/07 BP/Barneys – 26475 Dixie Hwy., Perrysburg**

**\*\*OZONE ACTION DAY\*\***

**8/2/07 BP/Barneys – 3532 Stickney Ave., Toledo**

**\*\*OZONE ACTION DAY\*\***

**8/6/07 BP & Barneys – 1091 N. Main St., Bowling Green**

59 tested  
1 failed  
1.7% failure rate

**8/7/07 Sunoco – 541 N. Reynolds Rd., Toledo**

30 tested  
0 failed  
0.0% failure rate

**8/8/07 BP & Barneys – 9566 Clark Dr., Rossford**

34 tested  
0 failed  
0.0% failure rate

**8/9/07 BP/Barneys – 5104 Suder Ave., Toledo**

39 tested  
1 failed  
2.6% failure rate

**8/13/07 BP/Barneys – 28311 Crossroads Pkwy., Rossford**

53 tested

2 failed  
3.8% failure rate

**8/14/07 BP/Barneys – 6437 W. Central Ave., Toledo**

43 tested  
0 failed  
0.0% failure rate

**8/15/07 BP/Barneys – 3808 Woodville Rd., Northwood**

68 tested  
1 failed  
1.5% failure rate

**8/16/07 BP/Barneys – 1456 S. Holland-Sylvania Ave., Maumee**

39 tested  
1 failed  
2.6% failure rate