

# **2006 Gas Cap Testing and Replacement Program Summary Report**

## **Introduction**

In 2006, the Toledo Metropolitan Area Council of Governments (TMACOG) continued the Gas Cap Testing and Replacement Program for the sixth consecutive year. With over 2,400 cars tested, the 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 Lucas and Wood counties in Ohio and Monroe County, Michigan were invited to participate in the program by having their gas caps tested for leaks at local gas stations and community events in their area. Along with the physical testing of gas caps, the program provided motorists with information on preventative steps that, when taken, can help lower air pollution levels.

Throughout summer of 2006, program representatives successfully tested 2,436 gas caps at 49 testing sites. A total of 128 faulty or missing gas caps were replaced over the course of this year’s program. This translates to the prevention of approximately 25,472 pounds of evaporative emissions from entering the air. In total, motorists who had faulty gas caps will save approximately 256 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. In 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 battery of tests that vehicles must undergo 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. However, due to our region being designated as non-compliance for EPA ozone standards, motorists in our area could be experiencing E-Checks in the near future.

The Gas Cap Testing and Replacement Program works alongside 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) and 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 the efforts of each are well coordinated.

This year, two Ozone Action Days were declared. These days were July 16, 2006 and August 1, 2006. As a result, one testing event was cancelled due to an Ozone Action Day. July 16 was on a weekend and did not affect testing activities.

The purpose and ultimate goal of the Gas Cap Testing and Replacement Program is to reduce ground-level ozone pollution in our region through testing activities and public education.

At testing sites, the 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 the environmental benefits of public transportation, carpooling programs, and continued automotive maintenance.

### **Change in Program Format for 2006**

In 2006, the Gas Cap Testing and Replacement Program was reformatted to better serve its purpose. Instead of one full-time intern, who then was responsible for recruiting volunteers to assist him or her in the testing activities, two part-time interns were hired to more efficiently and cost-effectively accomplish the program's goals. Although having two interns helped the program run more efficiently, it resulted in a cutback from the original four-hour testing time to a three-hour testing time. In past years, representatives were able to test an average of 65 gas caps per event or about 16 caps per hour of testing. This year, the average was about 49 caps per event or about 16 caps per hour of testing. The change to the amount of testing time had no impact on the amount of caps that were tested per hour. More importantly, the program successfully tested 2,436 cars while running independent of outside assistance.

### **Sponsors**

As always, our 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 for us to carry out the duties of this program. Each sponsor is to be commended for assisting us in our efforts to help reduce air pollution in our region. We had financial, site, and gas cap sponsors all working together to help reduce ozone emissions.

**Financial Sponsors:** Our financial sponsors for the 2006 testing season included TMACOG, BP Oil Refinery, Sunoco, Barney's Convenience Mart, and WKKO K-100. Each company was listed on all of our promotional advertisements as well as on the back of the program shirts. This was done to show our appreciation for their efforts and dedication to our program.

**Site Sponsors:** Throughout the summer, we tested at various locations in Wood and Lucas counties in Ohio and in Monroe County, Michigan. There were six companies that allowed our program to conduct testing at their various locations. These include BP,

Sunoco, Barney's Convenience Mart, Kroger, Meijer, and Shell. We also had the opportunity to test at AAA Car Care Plus, the Jamie Farr Owens Corning Classic presented by Kroger, and at the Ohio Department of Transportation District Two offices in Bowling Green, Ohio. All of these sites were very hospitable. We were able to post signs, disseminate informational materials, and discuss the importance of clean air with the public at each testing site.

**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 countless types of gas caps; each designed to fit different makes, models, and years of vehicles. Our inventory only covered the six most common 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. We are extremely appreciative of AutoZone's efforts to help assist our program. At the season's end, they invoice the program for each voucher redeemed.

## **Marketing**

In order to effectively market the 2006 Gas Cap Testing and Replacement Program, we employed a combination of various marketing tools. These tools enabled us to communicate with the public while promoting the testing events. The effectiveness of our marketing efforts was made evident when program participants would state that they had read about it in the newspaper, heard about us from friends that were tested earlier, or that they heard about the program on the radio. Some individuals even stated that they had located the testing schedule on the TMACOG website.

The following is a brief description of the various marketing tools utilized throughout the 2006 testing campaign and the overall effect of each on the program.

**Mascot:** For the fifth 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.

**Signage:** Signs donated to the program two years ago by the City of Toledo, courtesy of Tom Kroma, Commissioner of Nuisance Abatement and Vice Chair of the Commuter Services Council were once again utilized. These signs stand about four feet tall and read "Free Gas Cap Testing." The signs were displayed at testing locations to encourage program participation from motorists. The signs also reassured interested motorists who had heard of the testing event that they were in the correct location.

**Raffles:** During our live broadcasts with the WKKO K100 morning program, motorists were given the opportunity to register to win prepaid fuel cards. Our sponsors donated these prizes to the program. The opportunity to win prizes would sometimes assist us in reaching a

skeptical motorist. With gasoline prices rising throughout the summer, the chance to win a pre-paid fuel card was always very popular with customers.

## **Media**

Another way the public was informed about program functions was through the media. This year, media was used to spark an interest in members of society and attract motorists to the designated testing events. At almost every testing event, participants notified program representatives of the information they received through each media outlet. Often, motorists would come out to testing locations specifically to have their gas caps tested because “Office Boy Bob” would be there or because they saw the schedule printed in area newspapers. Media outlets definitely gave the program a boost in participants.

**Print:** Print media played a key role in the program’s public outreach efforts. Throughout the summer, press releases were distributed to various print media in Wood and Lucas counties in Ohio and Monroe County in Michigan. The press releases contained information about the program, the program’s goals, and the upcoming testing dates, times, and locations. The press releases enabled us to reach our target audience with our message.

As always, brochures were distributed at testing events to educate the participants of the purpose of the program. The brochures were most helpful when explaining the dangers of ground level ozone and the various ways it can be prevented. Schedules of upcoming dates were also provided upon request.

Occasionally, program representatives were asked to provide brochures and informative materials to participants for reasons other than personal interest. We’ve encountered teachers and youth group leaders at several locations. They were given pamphlets, brochures, and contact information to share with their groups or classes. By educating teachers and mentors in the community, young people can learn proper air care procedures and keep the environment clean in the future.

The Gas Cap Testing and Replacement Program was also part of the Oregon Spring Fest. At this local festival, companies and organizations were able to display boards, signs, pamphlets, etc. at booths. Program representative talked to festival-goers about several different TMACOG commuter programs. Information was provided to the public on the Share A Ride, Ozone Action Day, and the Gas Cap Replacement Program.

**Radio:** For the past few years, the Gas Cap Testing and Replacement Program has continued to build a solid partnership with WKKO K100 to ensure excellent promotion. Since K100 is currently number one in morning drive ratings in the Toledo area, partnering with them through morning-drive live remote broadcasts definitely favored the success of the program. These live remote broadcasts were located in Toledo, Oregon, and Perrysburg. On-air radio personality “Office Boy Bob” attended each broadcast to encourage listeners of the Shores and Steele morning show to participate in the Gas Cap Testing and Replacement Program. Dedicated listeners of the K100 morning show often stopped by to quickly visit and have their gas caps checked. Public officials, such as Mayor Marge Brown of Oregon and Wood

County Commissioner Tim Brown also attended the broadcasts to show their support for the program and to encourage their constituents to have their gas caps tested.

**Television:** Due to budgetary constraints, we were unable to purchase television advertising for the Gas Cap Testing and Replacement Program in 2006. However, we did receive television coverage of one of our fleet testing events. While testing at the Ohio Department of Transportation's district offices, WTOL News Channel 11 attended to cover the activities. Terry Thill, a local news reporter, participated by having the station's Jeep Liberty tested to ensure that the gas cap was fully functional. The story aired on the morning news the following day. This kind of exposure helps to educate the public in the viewing area and encourages people to come out to participate in testing events.

### **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 25,472 pounds of pollution from entering the atmosphere by replacing 128 missing or faulty gas caps. With 2,436 tests conducted, we worked to educate our region's residents on the dangers of ground level ozone.

**Testing Events:** At various local sites, 49 testing events were held for the public to have their gas caps tested. At each event, the general public is welcome 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.

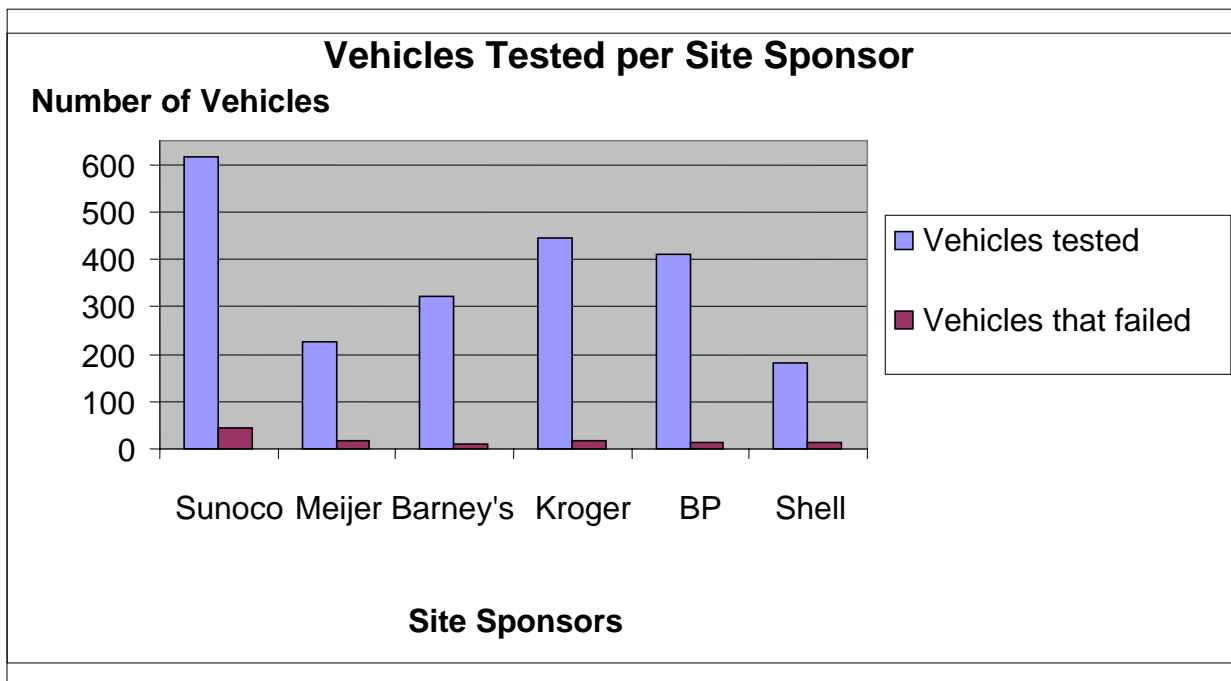
**Vehicle Fleets:** Aside from public testing sites, the program also held testing events with local vehicle fleets. At fleet events, program representatives are given the opportunity to test a large number of cars in a small amount of time. These events are extremely helpful to the program's goal of educating motorists of the importance of proper car care for the environment. This year, we were able to test gas caps at the Jamie Farr Owens Corning Classic sponsored by Kroger. At this event 91 cars were tested, and one gas cap was replaced.

Additionally, gas caps were tested at the TMACOG office on June 28, 2006. We tested the gas caps of TMACOG employees, as well as those belonging to various committee members. No gas caps were found to be faulty during these tests.

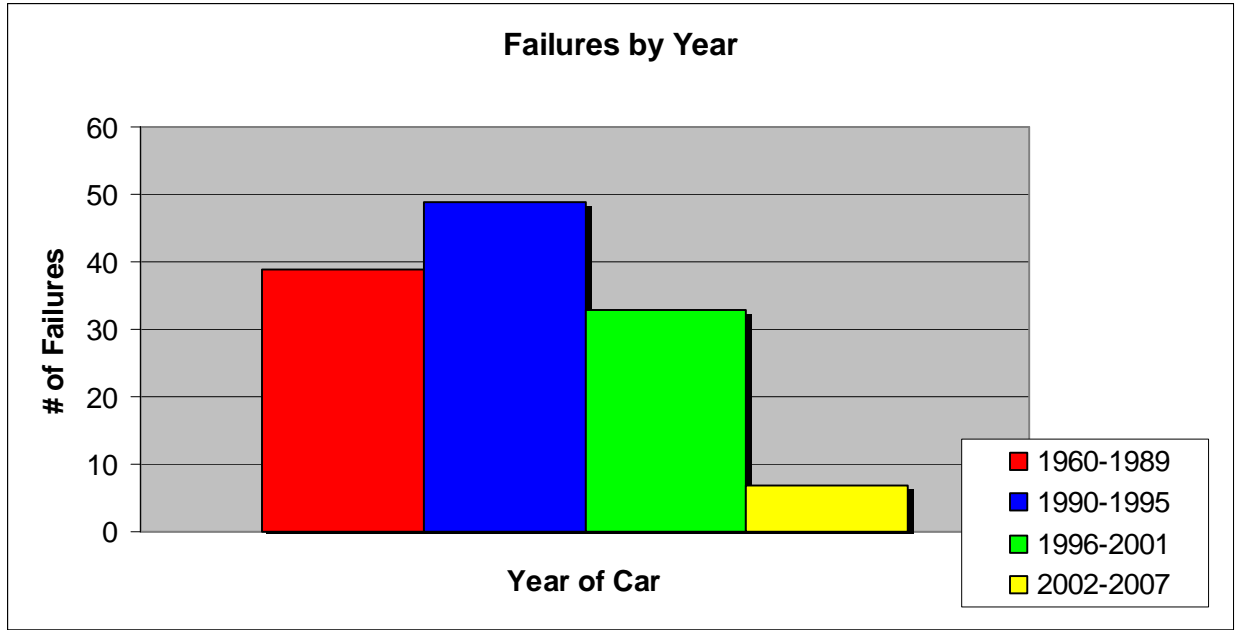
For the first time in the program's history, the Gas Cap Testing and Replacement Program teamed up with the Ohio Department of Transportation, District Two offices in Bowling Green to test the gas caps of city and state vehicles. The Ohio State Highway Patrol was also present to conduct vehicle safety checks. In addition to state and city vehicles, the public was also invited to participate at this event. Even Sidney Ribeau, president of Bowling Green State University, and his wife had their gas cap tested at this event.

## 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 last year's average of 5.78%. 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 sixth year for the Gas Cap Testing and Replacement Program, and as each year passes, public awareness and participation increases. We were able to test over 2,400 cars over the course of the summer. Below is a graph illustrating the number of cars program representatives were able to test and the number of those that failed according to each sponsoring testing site.



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 gas cap, similar to the conclusions in previous years of the program. This year, we concluded that cars made in years 1990-1995 had a higher failure rate than those in other years. The following graph depicts those conclusions and the relationship between the age of the vehicles with failing gas caps.



**Testing Figures**

In 2006, 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 2006 testing season.

**2006 Gas Cap Replacement Program Testing Results**

**3/25/06 AAA Car Care Plus Grand Opening - Airport Hwy., Holland**

17 tested  
 4 failed  
 24% failure rate

**5/22/06 Sunoco Gateway Express - Clayton St., Toledo**

34 tested  
 8 failed  
 23.5% failure rate

**5/23/06 Meijer - Wooster St., Bowling Green**

57 tested  
 4 failed  
 7.0% failure rate

**5/24/06 Sunoco - Holland Sylvania Rd., Toledo**

54 tested

5 failed

9.3% failure rate

**5/25/06 Barney's - Wooster St., Bowling Green**

30 tested

2 failed

6.7% failure rate

**5/30/06 Barney's - Dussel Dr., Maumee**

60 tested

3 failed

5% failure rate

**5/31/06 Kroger - Main St., Bowling Green**

31 tested

1 failed

3.2% failure rate

**6/1/06 Barney's - West Central Ave., Toledo**

32 tested

0 failed

0% failure rate

**6/6/06 BP - Briarfield Blvd., Maumee**

30 tested

1 failed

3.3% failure rate

**6/7/06 Sunoco - Woodville Rd., Oregon**

68 tested

3 failed

4.4% failure rate

**6/8/06 BP - Clark Dr., Rossford**

22 tested

1 failed

4.5% failure rate

**6/9/06 Barney's - Anthony Wayne Trail, Waterville**

48 tested

1 failed

2.1% failure rate

**6/12/06 Sunoco - West Alexis Rd., Toledo**

59 tested

1 failed

1.7% failure rate

**6/13/06 Kroger - Main St., Bowling Green**

36 tested

0 failed

0.0% failure rate

**6/14/06 BP - Monroe St., Sylvania**

38 tested

2 failed

5.3% failure rate

**6/15/06 Meijer - Wheeling St., Oregon**

53 tested

3 failed

5.7% failure rate

**6/19/06 Shell - Monroe St., Toledo**

56 tested

4 failed

7.1% failure

**6/20/06 Kroger - Jackman Rd., Toledo**

100 tested

6 failed

6.0% failure rate

**6/21/06 Barney's - Dussel Dr., Maumee**

33 tested

2 failed

6.1% failure rate

**6/22/06 BP - Clark Dr., Rossford**

21 tested

3 failed

14.3% failure rate

**6/26/06 Kroger - Carronade Dr., Perrysburg**

69 tested

1 failed

1.4% failure rate

**6/27/06 Sunoco Gateway Express, Clayton St., Toledo**

48 tested

4 failed

8.3% failure rate

**6/28/06 TMACOG Employees and Committee Members**

33 tested

0 failed

0.0% failure rate

**6/29/06 BP - Monroe Street, Sylvania**

24 tested

0 failed

0% failure rate

**7/5/06 Meijer - Wheeling St., Oregon**

65 tested

5 failed

7.7% failure rate

**7/6/06 Shell - Monroe St., Toledo**

70 tested

4 failed

5.7% failure rate

**7/10/06 Sunoco - West Alexis Rd., Toledo**

42 tested

1 failed

2.4% failure rate

**7/11/06 Barney's - Anthony Wayne Trail, Waterville**

24 tested

0 failed

0% failure rate

**7/12/06 BP - Fremont Pike, Perrysburg**

45 tested

3 failed

6.7% failure rate

**Jamie Farr Owens Corning Classic**

91 tested

1 failed

1.1% failure rate

**7/17/06 Sunoco - Woodville Rd., Oregon**

60 tested

7 failed

11.7% failure rate

**7/18/06 Kroger - North Main St., Bowling Green**

36 tested

1 failed

2.8% failure rate

**7/19/06 BP - Briarfield Blvd., Maumee**

44 tested

1 failed

2.3% failure rate

**7/20/06 Kroger - Navarre Ave., Oregon**

68 tested

3 failed

4.4% failure rate

**7/24/06 BP - Sylvania Ave., Toledo**

47 tested

1 failed

2.1% failure rate

**7/25/06 Barney's - West Central Ave., Toledo**

33 tested

1 failed

3.0% failure rate

**7/26/06 Barney's - West Dussel Dr., Maumee**

56 tested

1 failed

1.8% failure rate

**7/27/06 Barney's - Wooster St., Bowling Green**

7 tested

0 failed

0.0% failure rate

**7/31/06 Kroger - Jackman Rd., Toledo**

106 tested

5 failed

4.7% failure rate

**8/1/06 BP - Monroe St., Sylvania **\*\*EVENT CANCELLED, OZONE ACTION DAY****

**8/2/06 Meijer - Wheeling St., Oregon**

46 tested

4 failed

8.7% failure rate

**8/3/06 Sunoco - Holland Sylvania Rd., Toledo**

141 tested

8 failed

5.7% failure rate

**8/7/06 BP - Ottawa River Rd., Toledo**

58 tested

3 failed

5.2% failure rate

**8/8/06 Ohio Department of Transportation, District Two Offices**

93 tested

7 failed

7.5% failure rate

**8/9/06 Sunoco - Luna Pier, MI**

54 tested

4 failed

7.4% failure rate

**8/10/60 Shell - Monroe St., Toledo**

57 tested

5 failed

8.8% failure rate

**8/14/06 BP - Briarfield Blvd., Maumee**

56 tested

0 failures

0% failure rate

**8/15/06 Sunoco Gateway Express - Clayton St., Toledo**

54 tested

3 failures

5.6% failure rate

**8/16/06 BP - Fremont Pike, Perrysburg**

25 tested

0 failures

0.0 % failure rate

