



# 2010 Gas Cap Summary Report



# **2010 Gas Cap Testing and Replacement Program Summary Report**

## **Introduction**

Toledo Metropolitan Area Council of Governments (TMACOG) teamed up with the City of Toledo Division of Environmental Services to continue the Gas Cap Testing and Replacement Program for the tenth consecutive year in 2010. 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, Maumee, Sylvania, Perrysburg and Oregon as well as Lambertville, Michigan 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 375 gas caps altogether. 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 to reduce air pollution.

Throughout the summer of 2010, program representatives successfully tested 375 gas caps at 24 testing sites. A total of 43 faulty or missing gas caps were replaced over the course of this year’s program. This translates to the prevention of approximately 8,557 pounds of evaporative emissions from entering the air. In total, motorists who had faulty gas caps will save approximately 86 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.

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 2010 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 ozone emissions.

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

## **Marketing**

In order to effectively communicate to the public about the 2010 Gas Cap Testing and Replacement Program, the Division of Environmental Services and 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 news broadcasts, radio programs, and print media. The Gas Cap Testing and Replacement Program was also effectively advertised on the TMACOG website, where a list of testing events and information about the importance of this program was posted.

**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 93-Q WRQN and K-100 to hold a live remote radio broadcast at two different testing sites. By attending these events, participants were able to 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.

**Local Events:** This year, the Gas Cap Testing and Replacement was featured at the third annual Frogtown Fair hosted by the City of Toledo. The Gas Cap Testing and Replacement Program had its own area designated for easy entrance and egress. Testing also took place at the Jamie Farr Classic.

**Television:** At least one event was covered by a local news station.

## **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 8,557 pounds of pollution from entering the atmosphere by replacing 43 missing or faulty gas caps. With 375 tests conducted, program representatives worked to educate the region's residents on the dangers of ground level ozone.

At various local sites, 24 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. Program representatives also helped educate the public by simply discussing the reasons for the testing and the importance of clean air.

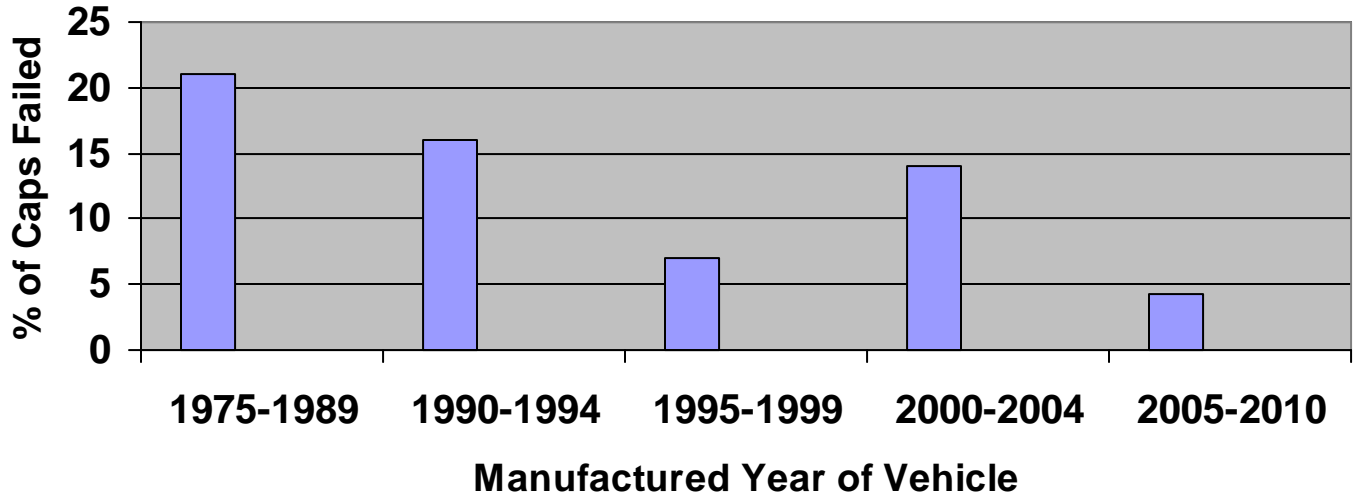
## **Test Results**

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. These data are analyzed at the end of the season. For 2009, the average failure rate for each testing site was approximately 15.2%, compared to this year's average of 9.9%. This was the tenth year for the Gas Cap Testing and Replacement Program, and as each year passes, public awareness and participation increases. We were able to test 375 cars over the course of the summer.

After analyzing all of the data collected, it was apparent that one characteristic of a vehicle affected the likelihood 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. However, the only significant conclusion that could be drawn from this year's data is that "new" cars – those produced in the past four to five years – are much less likely to have faulty gas caps than older vehicles.

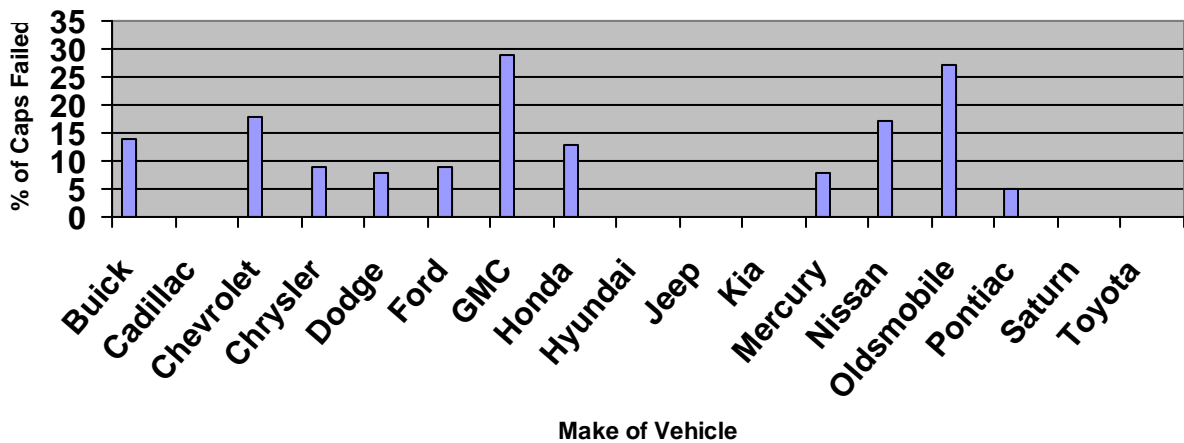
The following graph depicts those conclusions and the relationship between the ages of the vehicles and failing gas caps:

## Failures by Year



Among makes of vehicles, GMC, Chevrolet, and Oldsmobile had the highest failure rates. Cadillac, Hyundai, Jeep, Kia, Saturn, and Toyota boasted no failures among the vehicles that were tested. Makes with a sample size of three vehicles or less were omitted from the analysis. These comprised Audi, Acura, Lexus, Lincoln, Mazda, Mercedes, Metro, Mitsubishi, Plymouth, Volkswagen, and Volvo.

## Failures by Make



## **Testing Figures**

In 2010, 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. Following are detailed figures of all the results from the 2010 testing season.

### **2010 Gas Cap Replacement Program Testing Results**

#### **6/4/2010 Sunoco – 3503 Hill, Toledo**

26 tested  
4 failed  
15.3% failure rate

#### **6/7/2010 Sunoco – 4810 Suder Ave, Toledo**

12 tested  
2 failed  
16.7% failure rate

#### **6/11/2010 Sunoco – 1455 Byrne, Toledo**

15 tested  
3 failed  
20.0% failure rate

#### **6/14/2010 Sunoco – 1855 Woodville, Oregon**

10 tested  
0 failed  
0.0% failure rate

#### **6/14/2010 Sunoco – 1455 Byrne, Toledo**

31 tested  
3 failed  
9.7% failure rate

#### **6/28/2010 Shell – 298 Dussel, Maumee**

4 tested  
0 failed  
0.0% failure rate

#### **6/30/2010 Shell – 6760 W. Central, Toledo**

4 tested  
1 failed  
25.0% failure rate

**7/2/2010 Jamie Farr Classic – Centennial and Brint, Sylvania**

5 tested  
1 failed  
20.0% failure rate

**7/7/2010 Kroger – 3301 Navarre, Oregon**

18 tested  
1 failed  
5.6% failure rate

**7/12/2010 Shell – 1041 Reynolds, Toledo**

8 tested  
1 failed  
12.5% failure rate

**7/14/2010 Shell – 933 W. Boundary, Perrysburg**

57 tested  
7 failed  
12.2% failure rate

**7/19/2010 Shell – 4310 W. Central, Toledo**

4 tested  
0 failed  
0.0% failure rate

**7/21/2010 Shell – 5473 Monroe, Toledo**

11 tested  
0 failed  
0.0% failure rate

**7/26/2010 Kroger – 3462 W. Sterns, Lambertville, MI**

7 tested  
1 failed  
14.3% failure rate

**7/26/2010 Kroger – 6235 Monroe, Toledo**

10 tested  
1 failed  
10.0% failure rate

**7/28/2010 Kroger – 2257 N. Holland-Sylvania, Toledo**

12 tested  
1 failed  
8.3% failure rate

**7/28/2010 Kroger – 7545 Sylvania, Sylvania**

14 tested  
1 failed  
7.1% failure rate

**7/29/2010 TDES Fleet – 348 S. Erie, Toledo**

12 tested  
0 failed  
0.0% failure rate

**8/2/2010 Kroger – 1415 Byrne, Toledo**

19 tested  
4 failed  
21.1% failure rate

**8/2/2010 Kroger – 27386 Corronade, Perrysburg**

6 tested  
0 failed  
0.0% failure rate

**8/4/2010 Kroger – 4633 Suder, Toledo**

20 tested  
0 failed  
0.0% failure rate

**8/4/2010 TDES Employees – 348 S. Erie, Toledo**

11 tested  
2 failed  
18.2% failure rate

**8/7/2010 Frogtown Fair – Erie Street, Toledo**

46 tested  
10 failed  
21.7% failure rate

**8/9/2010 Kroger – 1094 Main St, Bowling Green**

13 tested  
0 failed  
0.0% failure rate