

# **2023 GAS CAP TESTING AND REPLACEMENT PROGRAM SUMMARY REPORT**

## **Introduction**

The Toledo Metropolitan Area Council of Governments (TMACOG) took on the Gas Cap Testing and Replacement Program for the twenty-first consecutive year in 2023. This program served to educate the general public on the importance of a properly functioning gas cap and its impact on preventing ground level ozone pollution, commonly referred to as “smog.” Residents of Northwest Ohio – which includes the cities of Toledo, Bowling Green, Holland, Maumee, Northwood, Oregon, Perrysburg, Rossford, Sylvania, Waterville, and Whitehouse, as well as Lambertville, Michigan – were invited to participate in the program by having their gas caps tested for leaks at local gas stations. This year’s program tested 213 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 to reduce air pollution.

## **Background**

Gas cap testing and replacement programs were first implemented in areas of the country where ozone levels were not in compliance with the United States Environmental Protection Agency’s (USEPA) 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. Motorists in northwest Ohio and southeast Michigan do not have to undergo mandatory E-Checks. However, the Gas Cap Testing and Replacement Program provides a simple, quick, and free way for motorists to potentially cut back on their emissions without difficulties.

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, broken, or missing gas caps.
- Educates the public on steps that can be taken to prevent air pollution, such as using public transit, carpooling and trip chaining, refueling at cooler hours of the day, not topping off the tank, and performing proper vehicle maintenance.

## **Sponsors**

The 2023 sponsors were integral to 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, and Monroe County in Michigan. There were four properties that allowed the program to conduct testing at their various locations: The Westgate Shopping Center in Toledo, Perrysburg Junior High School in Perrysburg, Bowling Green State University in Bowling Green and Monroe County Community College in Temperance, MI. At these sites program representatives were able to post signs, disseminate informational materials, test and replace gas caps, and discuss the importance of clean air with the public.

## **Marketing**

In order to effectively communicate to the public the existence and importance of the 2023 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 media outlets which include local news broadcasts, radio programs, and print media. The Gas Cap Testing and Replacement Program was effectively advertised on the TMACOG websites where a schedule of testing events as well as information about the importance of this program was posted.

*Radio:* Like previous years, radio was used to reach out to citizens of Northwest Ohio and Southeast Michigan to attract motorists to the designated testing events. By attending these events participants were able to get their gas caps tested, learn about the program, and discover the impact ground level ozone can have on air quality and public health.

*Print:* In order to expand the reach of the program's message, TMACOG sent press releases to different weekly and daily print outlets in the area. These releases contained a schedule of testing sites and information about the program, which included contact information.

*Television:* Several local news stations covered multiple gas cap events. The news stations promoted the events Tuesday through Thursday. The news stations provided information on the site location and the time of the event, as well as the importance of getting your gas 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 at 3 local testing events the program helped to prevent approximately 3,282 pounds of pollution from entering the atmosphere by replacing 17 or faulty gas caps. With 213 tests conducted, program representatives worked to educate the region's residents on the dangers of ground level ozone.

## **Testing 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 the date of testing and the location of the testing site. This data is analyzed at the end of the season. This summer's average failure rate was 8.0% compared to a failure rate of 8.1% for 2022.

After analyzing all of the data collected, it became apparent that there was one vehicular characteristic that increases the probability of a car having a damaged gas cap: the age of the vehicle. There is a relationship between the year of a car and the condition of the gas cap, which is similar to the concluding remarks from years prior. While there are clear outliers and contradictory data points when taking the entire set into account, the most verifiable conclusion that can be drawn from our analysis is that “newer” cars – those produced in the past four to five years – are much less likely to have faulty gas caps than older vehicles. However, no sweeping claims can be made from this finding, and it is advised that everyone should have their gas cap checked regardless of the vehicle’s year.

### **Testing Figures**

In 2023, the Gas Cap Testing and Replacement Program helped 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. The following are detailed figures for all of the results from each respective location during the 2023 testing season.

## **2022 GAS CAP REPLACEMENT PROGRAM TESTING RESULTS**

### **7/19/23: Bowling Green State University, Bowling Green, OH**

Tested: 23

Failed: 2

Percent Failure: 8.7 %

### **7/20/23: Westgate Shopping Center, Toledo, OH**

Tested: 122

Failed: 11

Percent Failure: 9.0 %

### **7/26/21: Perrysburg Junior High School, Perrysburg OH**

Tested: 33

Failed: 0

Percent Failure: 0 %

### **7/28/21: Monroe County Community College, Temperance, MI**

Tested: 35

Failed: 4

Percent Failure: 11.4 %

**Total Tested: 213**

**Total Replaced: 17**

**Percent Failure: 8%**