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**New York State Office of the State Comptroller**  
Thomas P. DiNapoli

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Division of State Government Accountability

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# **Selected Aspects of Alternative Fuel Vehicles: Purchases and Fueling**

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## **Thruway Authority**

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Report 2011-S-15

September 2012

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## Executive Summary

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### Purpose

To determine whether the New York State Thruway Authority (Authority) purchased alternative fuel vehicles in compliance with Executive Order 111 and used alternative fuels in these vehicles to obtain the intended benefits. This audit covers the period January 1, 2006 through September 30, 2011.

### Background

Executive Order 111 (Order) requires most State agencies and State public authorities (including the Authority) to shift purchases of light-duty vehicles to include alternative fuel vehicles. Starting in 2005, 50 percent of all new light-duty vehicle purchases were required to be alternative fuel, increasing to 100 percent in 2010. Between January 1, 2006 and June 6, 2011, the Authority purchased 731 light-duty vehicles, including 594 alternative fuel vehicles.

### Key Findings

- The Authority was not in compliance with the Order in 2006. It was in compliance from 2007 through 2011.
- The Authority has not developed any policy or given guidance to its employees on when to use alternative fuel E-85 in its vehicles. As a result, fuel selection is driven by employee choice rather than Authority direction. For the three divisions we tested, Authority employees at locations with E-85 pumps used E-85 between 30 percent and 60 percent of the time.

### Key Recommendations

- Develop a policy based on a formal analysis of the benefits and drawbacks of different fuels, consistent with Authority priorities and available resources.
- Provide guidance to Authority employees regarding the use of E-85 in the Authority's alternative fuel vehicles.

### Other Related Audits/Reports of Interest

[New York State Thruway Authority Vehicle Acquisition: Use and Disposition Report. \(2006-S-119\)](#)

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**State of New York  
Office of the State Comptroller**

**Division of State Government Accountability**

September 7, 2012

Mr. Howard P. Milstein  
Chairman  
Thruway Authority  
200 Southern Boulevard  
P.O. Box 189  
Albany, NY 12201-0189

Dear Mr. Milstein:

The Office of the State Comptroller is committed to helping State agencies, public authorities and local government agencies manage government resources efficiently and effectively and, by so doing, providing accountability for tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of State agencies, public authorities and local government agencies, as well as their compliance with relevant statutes and their observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations. Audits can also identify strategies for reducing costs and strengthening controls that are intended to safeguard assets.

Following is a report of our audit of *Selected Aspects of Alternative Fuel Vehicles: Purchases and Fueling*. This audit was performed pursuant to the State Comptroller's authority under Article X, Section 5 of the State Constitution and Section 2803 of the Public Authorities Law.

This audit's results and recommendations are resources for you to use in effectively managing your operations and in meeting the expectations of taxpayers. If you have any questions about this report, please feel free to contact us.

Respectfully submitted,

*Office of the State Comptroller  
Division of State Government Accountability*

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This report is also available on our website at: [www.osc.state.ny.us](http://www.osc.state.ny.us)

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## Background

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The New York State Thruway Authority (Authority) is a public benefit corporation created in 1950 to construct, operate, and maintain the Thruway system. The Authority is managed by an Executive Director who reports to a seven-member Board of Trustees. The State's 570-mile Thruway system is divided into four divisional offices across the State (Albany, Buffalo, New York and Syracuse) with its headquarters in Albany. The New York State Canal Corporation (Canal Corporation), a subsidiary public corporation of the Authority, was created by the Legislature in August 1992 to manage the State Canal System.

Executive Order 111 (Order), issued June 10, 2001, requires State agencies and public authorities (including the Authority) to shift purchases of light-duty vehicles (gross vehicle weight rating of 8,500 pounds or less) to alternative fuel vehicles. In 2005, 50 percent of all new light-duty vehicle purchases were required to be alternative fuel, increasing to 100 percent in 2010. The Order provides an exemption for vehicles that the New York State Division of the Budget designates as specialty, police or emergency vehicles. Executive Order 142 issued November 21, 2005, required State agencies and public authorities (including the Authority) to use E-85 whenever it is feasible to do so. On February 18, 2010, certain provisions of EO142 were rescinded.

The State originally began to use E-85 to reduce over-reliance on imported fuel, increase demand for State agricultural products, and provide investment and employment opportunities from production and distribution of bio-fuels. Also, the use of alternative fuel vehicles and alternative fuels is one of the Authority's environmental stewardship initiatives.

The Authority purchases vehicles for its use, the Canal Corporation, and the Division of State Police Troop T to patrol the Thruway. The Authority purchased 731 light-duty vehicles between January 1, 2006 and June 6, 2011. Of these, 594 were alternative fuel vehicles that can use either unleaded gasoline or E-85 (a blend of 85 percent ethanol and 15 percent unleaded gasoline).

The Authority operates 40 fueling stations at its maintenance facilities along the Thruway. Of these, five located at Albany, Buffalo, Syracuse, Newburgh and Nyack also have E-85 fuel pumps. For the period January 1, 2006 through September 30, 2011, the Authority purchased about 9 million gallons of unleaded gasoline and 374,000 gallons of E-85 for its fueling stations.

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# Audit Findings and Recommendations

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## Executive Order 111

The Authority did not meet the 50 percent requirement in 2006, but met or exceeded the requirements of the Order for 2007 through 2011. In 2006, it achieved 47 percent and attributed the shortfall to the vehicles it purchased for Troop T. According to Authority officials, gasoline model vehicles were ordered in 2005 under a Division of State Police contract, because an E-85 model was not yet available. Even after an E-85 model became available in 2006, the Authority continued to receive gasoline models because they had been ordered under the contract for gasoline models. As a result, of the 116 Troop T vehicles acquired in 2006, only 53 (or 32 percent) were alternative fuel vehicles. While the Order does allow the Division of Budget to exempt police vehicles, we found no evidence that it had done so for the Troop T vehicles.

## Alternative Fuels

Our analysis showed the Authority used E-85 about 45 percent of the time on average during a nearly five year period ended September 30, 2011. Our analysis was based on a sample of light-duty alternative fuel vehicles at three divisions with E-85 pumps. However, usage varied considerably among the three divisions from about 30 percent at one division, to 40 percent at the second, and 60 percent at the third. E-85 usage varies so significantly because the type of fuel used is based on employee choice rather than guidance from the Authority on whether and when to use E-85. As a result, the intent of the Authority's environmental initiative to use E-85 and the potential benefits of E-85 vehicles may not be fully realized.

The Authority has not formally analyzed the advantages and disadvantages of using E-85 and unleaded gasoline to develop a policy based on its priorities and available resources. Identifying and weighing the advantages and disadvantages of E-85 can be difficult given the volume and sometimes conflicting information. However, the Alternative Fuels and Advanced Vehicles Data Center (AFDC) offers a collection of unbiased alternative fuel information that can be used by transportation decision makers. The AFDC is provided under the U.S. Department of Energy's Clean Cities Initiative.

According to the AFDC, ethanol produced from corn results in about a 20 percent reduction in greenhouse gas emissions compared to gasoline, and is helping reduce the dependence on oil. The data also shows that there are 204 ethanol plants including two in New York with a production of about 160 million gallons per year. The impact of these plants and ethanol distribution on New York's agricultural industry and overall economy could also be considered.

On the other hand, vehicles get fewer miles per gallon on E-85 than on gasoline. Authority officials told us their experience shows about a 20 percent reduction in miles per gallon with E-85. Additionally, E-85 typically costs more per gallon than unleaded gasoline, though this price differential has declined over time. In January 2006, the Authority paid an average of 75 percent more per gallon for E-85 (\$2.32 for E-85 versus \$1.33 for unleaded gasoline) but was only paying

about two percent more per gallon of E-85 by September 2011 (\$2.57 for E-85 versus \$2.52 for unleaded gasoline).

In accordance with its Environmental Stewardship initiative, the Authority needs to weigh such information along with its operational needs and resources to develop a policy on the use of E-85 in its alternative fuel vehicles.

## Recommendations

1. Develop a policy based on a formal analysis of the benefits and drawbacks of different fuels, consistent with its priorities and available resources.
2. Provide guidance to Authority employees regarding the use of E-85 in the Authority's alternative fuel vehicles.

## Audit Scope and Methodology

We determined whether the Authority purchased light-duty alternative fuel vehicles in compliance with Executive Order 111. We also determined whether the Authority used E-85 in its alternative fuel vehicles to obtain the intended benefits of the vehicles. To accomplish our objectives, we interviewed Authority officials and reviewed Authority records. We reviewed laws, regulations, policies and procedures. We also interviewed Division of State Police officials and Division of Budget officials. Our audit covered the period from January 1, 2006 through September 30, 2011.

We analyzed light-duty vehicle purchases from January 1, 2006 to June 6, 2011 to determine the percentage of alternative fuel vehicles in each year. We also identified 199 light-duty alternative fuel vehicles that were fueled at the three Authority locations with an E-85 fueling station and analyzed the fueling records for a random sample of 48 of these vehicles.

We conducted our performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In addition to being the State Auditor, the Comptroller performs certain other constitutionally and statutorily mandated duties as the chief fiscal officer of New York State. These include operating the State's accounting system; preparing the State's financial statements; and approving State contracts, refunds, and other payments. In addition, the Comptroller appoints members to certain boards, commissions and public authorities, some of whom have minority voting rights. These duties may be considered management functions for purposes of evaluating organizational independence under generally accepted government auditing standards. In our opinion, these functions do not affect our ability to conduct independent audits of program performance.

## Authority

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The audit was performed pursuant to the State Comptroller's authority as set forth in Article X, Section 5, of the State Constitution and Section 2803 of the Public Authorities Law.

## Reporting Requirements

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A draft copy of this report was provided to Authority officials for their review and comment. Their comments were considered in preparing this final report and are attached in their entirety to the end of this report. A State Comptroller's Comment to the Authority's response is also attached at the end of this report.

Within 90 days of the final release of this report, as required by Section 170 of the Executive Law, the Chairman of the New York State Thruway Authority shall report to the Governor, the State Comptroller, and the leaders of the Legislature and fiscal committees, advising what steps were taken to implement the recommendations contained herein, and where recommendations were not implemented, the reasons why.

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## Contributors to This Report

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**Carmen Maldonado**, Audit Director  
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### Vision

A team of accountability experts respected for providing information that decision makers value.

### Mission

To improve government operations by conducting independent audits, reviews and evaluations of New York State and New York City taxpayer financed programs.

# Agency Comments



Howard P. Milstein  
Chairman

**New York State Thruway Authority**  
**New York State Canal Corporation**

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Thomas J. Madison, Jr.  
Executive Director

July 2, 2012

Carmen Maldonado  
Audit Director  
Office of the State Comptroller  
Division of State Government Accountability  
123 William Street – 21<sup>st</sup> Floor  
New York, NY 10038

Dear Ms. Maldonado:

On behalf of Chairman Milstein, I am submitting the following in response to your draft audit report (2011-S-15) forwarded to his attention on June 4, 2012, *Selected Aspects of Alternative Fuel Vehicles Purchases and Fueling*.

Since the 1980's, the Authority has been a leader in the use of alternative fuels in New York State. Our success is demonstrated each year through the Authority's accumulation of U.S. Department of Energy credits for the use of alternative fuels and the procurement of alternative fuel vehicles. Since the early 1990's, the Authority's alternative fuel program has involved a number of fuels, including M-85, CNG, E-85, P Series, biodiesel, electricity and propane. As a result, the Authority was using alternative fuels and purchasing vehicles that utilize such fuels long before the issuance of Executive Order (EO) 111, which established statewide agency and public authority requirements regarding the use of alternative fuels and the procurement of related vehicles.

While we appreciate recognition of our achievements in your audit, we would like to provide context to the finding in your audit whereby you state the Authority did not comply with EO 111 requirements in 2006. As we discussed with OSC staff, we spoke with Division of State Police regarding EO 111 who informed us that all State Police vehicles were exempt. With this understanding, Purchase Orders were issued in early 2005 for Ford Crown Victoria Police Interceptors (CVPI). In 2005, the CVPI was only available as gasoline powered. Due to production delays, Ford manufactured these vehicles as 2006 models. Unfortunately we were not notified by Ford that E-85 became an option for the 2006 model. It was only after this purchase that we learned that the Division of Budget (DOB) did not approve an exemption for State Police vehicles. As a result, we were not compliant with the requirements of EO 111 in 2006. However, as your audit notes, we have complied with this Order ever since that misunderstanding.

In addition, your audit recommends the Authority develop a policy based on a formal analysis of the benefits and drawbacks of alternative fuel use, principally the use of E-85. As we mentioned to your staff, when it comes to the use of ethanol, there is no shortage

of disagreement over the proper level of E-85 use in large fleets, such as the Authority's, given differences in price and fuel economy compared to conventional grades of gasoline. While we can develop a policy and will continue to stress the use of E-85 in our fleet, we would prefer that your recommendation be altered to suggest a more holistic, statewide analysis be conducted for all state agencies and authorities. Based on our research, there currently exists no real, right answer for us to develop a model on.

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Comment

I would like to thank you for the professionalism that your staff exhibited during the performance of this audit. We remain committed to complying with any requirements or regulations related to the use of alternative fuels as a means to reduce our carbon footprint and our dependence on foreign oil.

Sincerely yours:



Thomas J. Madison  
Executive Director

\* See State Comptroller's Comment, page 11.

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## State Comptroller's Comment

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In the absence of an E-85 usage mandate and a standardized analysis model, we believe it is appropriate for the Authority to develop its own analysis to determine the extent to which it should use E-85. By doing so, the Authority has the flexibility to tailor the analysis to its own operational needs as well as its overall environmental policies and initiatives. We appreciate the suggestion for a more holistic, statewide analysis with statewide applicability and will consider this as we plan future audits.