

## WELCOME TO THE CTDOT PERFORMANCE MEASURES 2009 QUARTERLY UPDATE

The Connecticut Department of Transportation is committed to full transparency in its business of preserving, managing and developing the State's transportation system. Our customers have a high expectation of us, and it is our desire to exceed these expectations. The establishment of goals, and the achievement of them, is a fundamental cornerstone of any successful business. Meeting expectations and continuous improvement is the pathway to enhanced credibility and trust.

The publication, "*On the Move* - Performance Metrics Report, January 2009" which is located online at [www.ct.gov/dot](http://www.ct.gov/dot), was the first publicly available product that indicates we are stepping toward becoming a performance driven organization. The Metrics report addressed five policy objectives, which are linked to our core mission:

- Safety and Security
- Preservation
- Efficiency and Effectiveness
- Quality of Life
- Accountability and Transparency

A series of performance measure sheets, which are accessible below, is the latest progression in this effort to focus on results and accountability. These performance sheets will be revised quarterly, and additional measures will be added in the future. For instance, we will be adding specific measures related to all of the projects funded through the American Reinvestment and Recovery Act (ARRA) in the coming months. There will also be an annual publication, similar to the "Metrics..." report, that will become available at the beginning of 2010.

We expect further development and refinement of our core business practices, particularly in the financial and project delivery areas. In any event, we encourage your feedback. So, please tell us what you think by e-mail at [webmaster.conndot@po.state.ct.us](mailto:webmaster.conndot@po.state.ct.us) by telephone at (860) 594-3061, or from this website by clicking on - Contact Us.

Joseph F. Marie  
Commissioner, Connecticut Department of Transportation



## **Introduction**

The Connecticut Department of Transportation (CTDOT) has initiated a Performance Measures Program. Performance measurement is the use of statistical evidence to determine progress toward specific organizational objectives. This includes evidence of actual fact, such as measurement of external factors (e.g., pavement smoothness and customer satisfaction), as well as internal measurements of product delivery. The measures identified in 2009 that are posted below constitute the starting point for measuring and enhancing our performance in the future.

*The data shared in this document comes from many sources. Depending upon the source and type of data, the performance measures are tracked over different time intervals. The performance measure sheets that follow will be updated on a regular basis and will reflect the most recent dates of the source data collected based on the intervals when they are measured.*

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# Performance Measures



Objective: **Safety and Security**

Program: **Highway Safety**

Measure:

## Rate of Annual Highway Fatalities



**Reporting Period:** From: 1/1/2007 To: 12/31/2007

**Reporting Frequency:** Annually

**Target Value:** Less than or equal to 1.0 per 100 Million Vehicle Miles Traveled (VMT)  
Less than or equal to 7.7 per 100,000 Population

**Current Value:** 0.88 fatalities per 100 million vehicle miles traveled (VMT)  
8.1 fatalities per 100,000 population

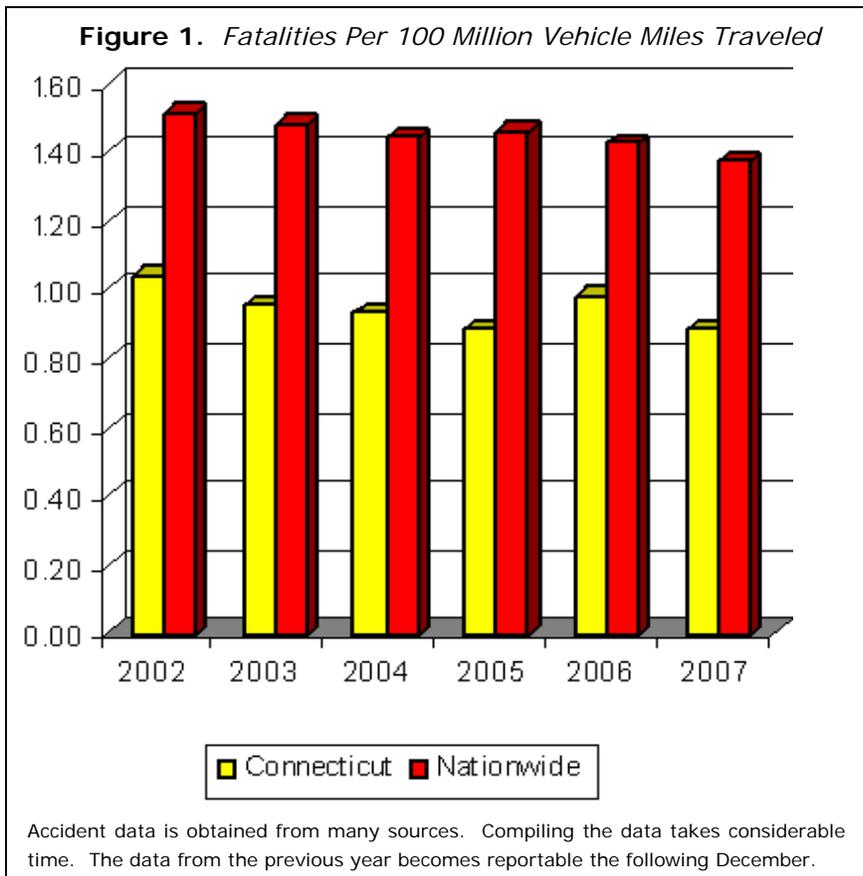
**Owner:** Bureau of Policy and Planning

**Contact:** Joseph Cristalli

### Purpose/Description of measure:

This measure tracks the fatality rate on Connecticut's highway system. By tracking fatality rates, the Department is able to gather information necessary to develop effective programs that ensure the safety and security of the traveling public.

**Discussion of trend:** In 2007, Connecticut's fatality rate was 0.88 fatalities per 100 million vehicle miles traveled compared with the national figure of 1.37 fatalities (see Figure 1). Overall, Connecticut continues to have one of the lowest vehicle fatality rates in the country, ranked as the fourth safest state for highway traffic fatalities with 8.1 per 100,000 population.



Revised: 08/12/2009



# Performance Measures



Objective: **Safety and Security**

Program: **Highway Safety**

Measure:

## Percent of Seat Belt Usage



**Reporting Period:** From: 1/1/2008 To: 12/31/2008

**Reporting Frequency:** Annually

**Target Value:** 90% Seat Belt Usage

**Current Value:** 88% Seat Belt Usage

**Owner:** Bureau of Policy and Planning

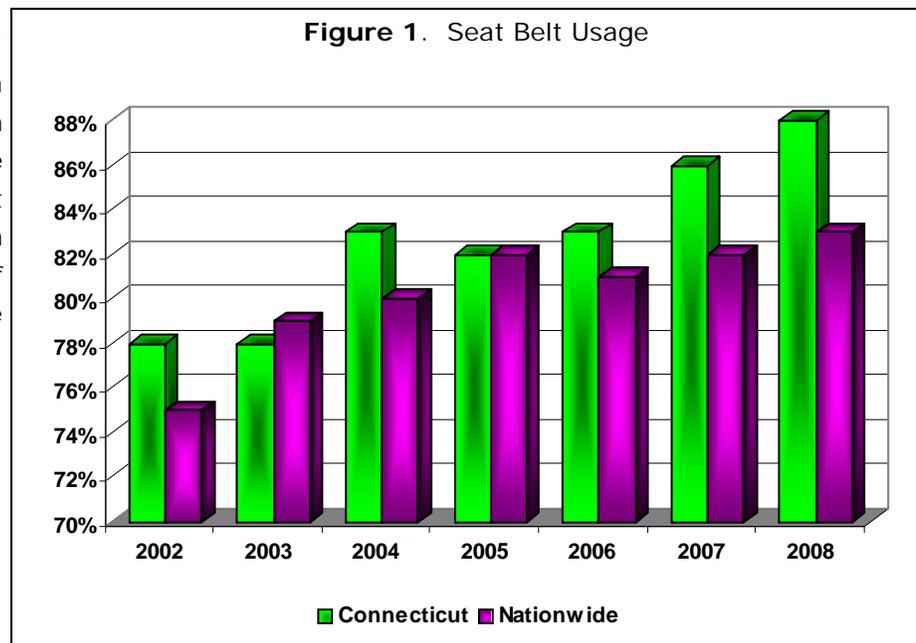
**Contact:** Joseph Cristalli

### Purpose/Description of measure:

This measure tracks seat belt usage by Connecticut's motorists. Drivers, front seat passengers and all rear seat passengers aged 4 to 16 are required to wear seat belts. Connecticut's primary enforcement law carries a fine of \$37 for not wearing a seat belt. When worn correctly, seat belts reduce risk of fatal injury to front seat occupants by 45-60 percent.

### Discussion of trend:

The "Click It or Ticket" program has assisted in increasing seat belt use in Connecticut. Seat belt use increased from 76 percent in 2000 to 83 percent in 2006 and an all time high of 88 percent in 2008 (see Figure 1).



Revised: 08/12/2009

Objective: **Safety and Security**

Program: **Highway Safety**

Measure:  
**Number of Motorcycle Riders Trained**



**Reporting Period:** From: 1/1/2008 To: 12/31/2008

**Reporting Frequency:** Annually

**Target Value:** Increase Trained Riders

**Current Value:** 6,290 CONREP Trained Riders

**Owner:** Bureau of Policy and Planning

**Contact:** Joseph Cristalli

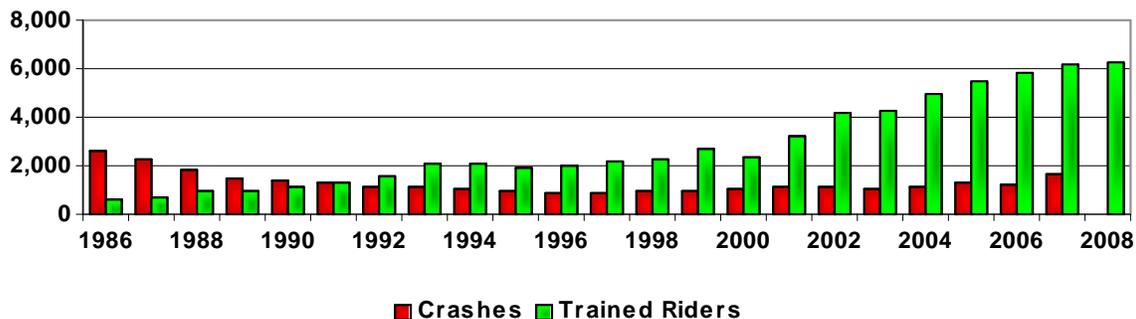
**Purpose/Description of measure:**

This measure tracks the motorcycle training program, which was developed in an effort to reduce the number of motorcycle crashes. The Connecticut Rider Education Program (CONREP) was established in 1982 by an act of legislation, and is administered by the Department's Transportation Safety Section. With motorcycle ridership gaining popularity as a recreational sport and as an alternative method of transportation, there has been an increase every year in the number of riders registering for training.

**Discussion of trend:**

Participation in CONREP has increased from approximately 2,000 in 1996 to over 6,000 in 2007. Figures from 2008 indicate that 6,290 persons were trained and CONREP is projecting an enrollment of 6,500 in 2009.

**Figure 1. Number of Motorcycle Riders Trained and Number of Motorcycle Crashes per Year**



Accident data is obtained from many sources. Compiling the data takes considerable time. The data from the previous year becomes reportable the following December.

Objective:

**Safety and Security**

Program:

**Customer Service**

Measure:

## Number of CHAMP Motorist Assists

**Reporting Period:** From: 1/1/09 To: 3/31/09

**Reporting Frequency:** Quarterly

**Target Value:** 6,000 assists (24,000 per year)

**Current Value:** 4,852 assists

**Owner:** Bureau of Highway Operations

**Contact:** Charles Drda



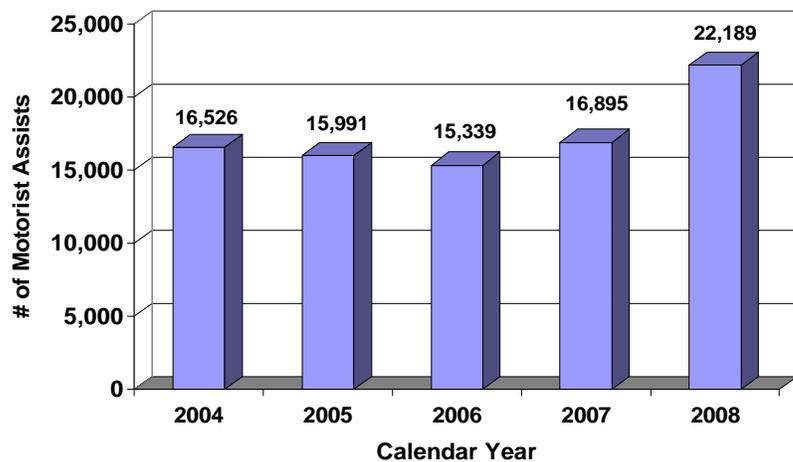
### Purpose/Description of measure:

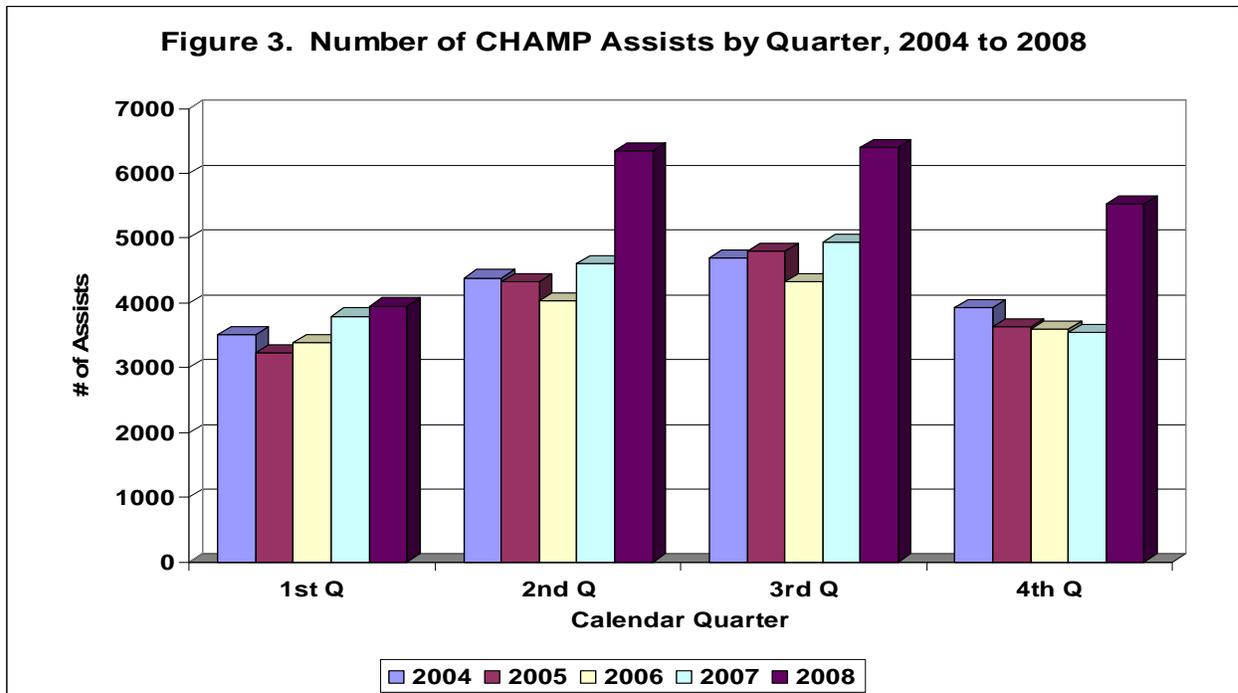
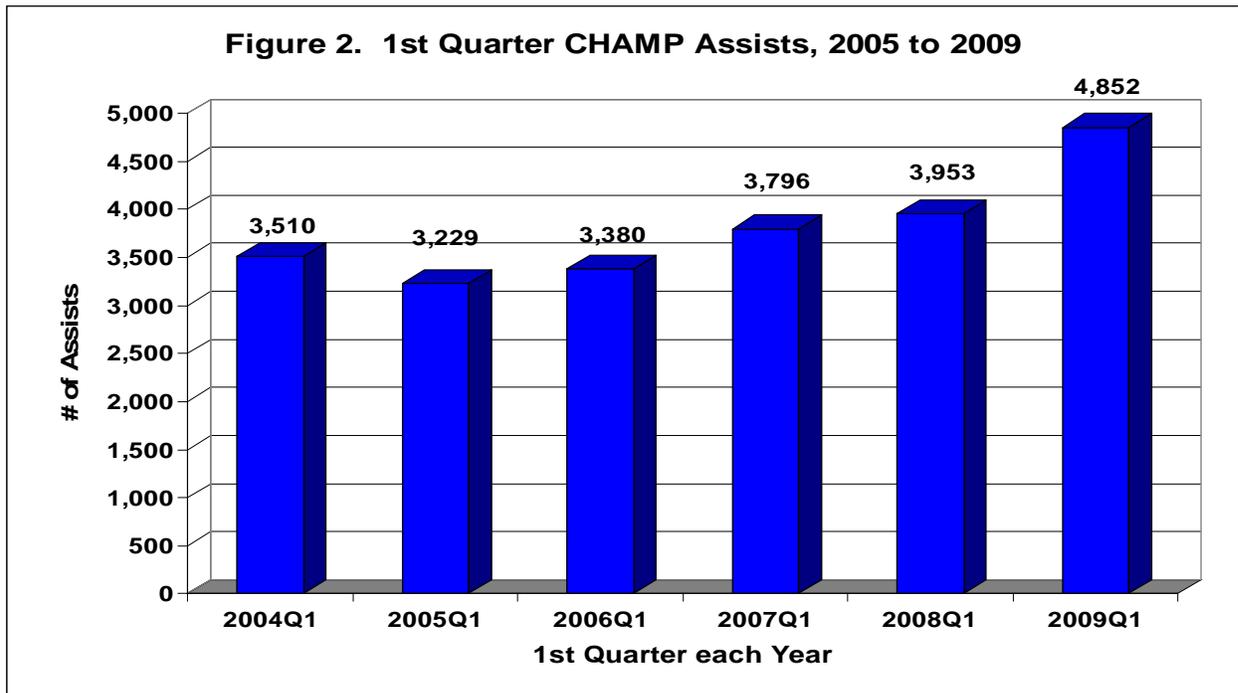
This measure tracks the use of the Connecticut Highway Assistance Motorist Patrol (CHAMP) program on Connecticut's highways. CHAMP is a roadway service patrol program operated by CTDOT, which provides assistance to motorists by changing flat tires, jump-starting, pushing vehicles to shoulders, providing fuel and offering shelter. The service patrols react to accidents and notify the Highway Operations Centers of the need for State Police, medical, fire and/or other emergency response. They ensure quick clearance of incidents to reduce traffic congestion and delays. Patrol drivers also remove highway debris and dead animals; report damaged guiderail, illumination and drainage problems; and provide travel assistance to motorists on the highway. Another benefit is that CHAMP assistance reduces the number of responses necessary by the Department of Public Safety. From July 2007 to June 2008, CHAMP provided assistance to 11,242 motorists along the I-95 corridor and 7,540 motorists in the greater Hartford area. CHAMP patrols also exist on Route 15 (Merritt Parkway) and the I-84 corridor in Waterbury/Danbury area.

### Discussion of trend:

The total number of assists increased during 2008 due to the addition of patrols on I-84, Waterbury/Danbury, the Merritt Parkway, and in southeast Connecticut (I-95/I-395) (See Figure 1). Assists for the first quarter of 2009 are 81% of target. (note: CHAMP assists vary by season, as can be seen in Figure 3)

Figure 1. Total CHAMP Assists by Year







# Performance Measures



Objective:

**Safety and Security**

Program:

**Customer Service**

Measure:

## Number of Oversize/ Overweight Permits Issued



**Reporting Period:** From: 1/1/2009 To: 3/31/2009

**Reporting Frequency:** Quarterly

**Target Value:** Meet previous year's quarterly number of permits issued (20,636)

**Current Value:** 15,905 permits issued

**Owner:** Bureau of Highway Operations

**Contact:** Charles Drda

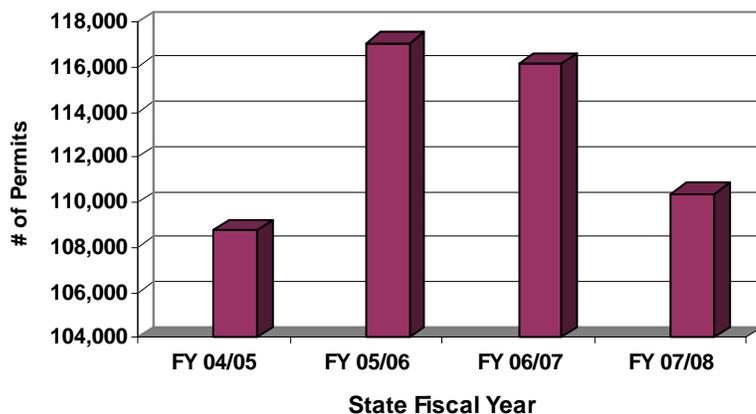
### Purpose/Description of measure:

This measure tracks the number of oversize/overweight permits issued in Connecticut. Permits are required for the transportation of vehicles and/or vehicle and load, which do not conform to the statutory limits for width, length, height or weight. CTDOT is the designated lead agency and coordinates with the Department of Motor Vehicles, the Department of Public Safety, and other State and local authorities to implement the Oversize/Overweight (OS/OW) program. Permit applications require a fee, which is a revenue source for the State. \$3,183,000 in permit fees were collected in state fiscal year 2007. CT-ePASS—is the web-based component of the Permit Administration Software System (PASS). PASS provides all the functionality needed to obtain and enter requests for permitted travel, analyzes the request, keeps track of communications related to the approval of a request, issues the permit, and provides extensive reporting capabilities. It allows carriers to electronically order permits 24/7 on-line, and pay by credit card, making the process much easier and faster.

### Discussion of trend:

The economic turndown has affected the movement of goods, and thus caused a reduction in the number of permit applications over the past year. The Department expects that when CT-ePASS is fully implemented, the time to submit, review and process OS/OW permits will be lowered by 50 percent. This will benefit the motor carrier industry, as well as reduce required CTDOT operational resources dedicated to permit issuance.

**Figure 1. Number of OS/OW Permits Issued by Fiscal Year**



Revised: 08/12/2009

Objective:

**Preservation**

Program:

**Road Condition**

Measure:

## Percent of Smooth Roads

**Reporting Period:** From: 1/1/2008 To: 12/31/2008

**Reporting Frequency:** Annually

**Target Value:** Increase percentage of roads with an IRI of less than 95 inches per mile

**Current Value:** 41% of roads with an IRI of less than 95 inches per mile

**Owner:** Bureau of Engineering and Construction

**Contact:** Edgardo Block

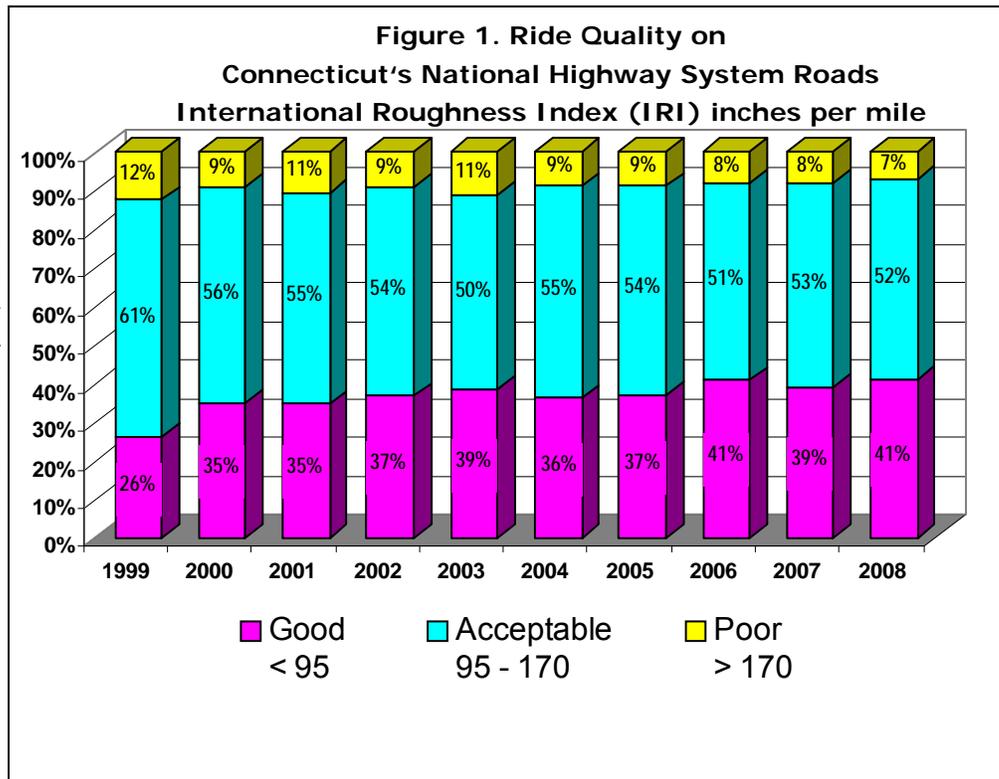


### Purpose/Description of measure:

This measure tracks the roughness (complement of smoothness) of pavements on Connecticut's state-maintained roads. The general public's perception of a good road is one that provides a smooth ride. Roughness is an important pavement characteristic because it affects not only ride quality but also vehicle delay costs, fuel consumption and both vehicle and roadway maintenance costs. The

Department uses a worldwide standard for measuring pavement smoothness called the International Roughness Index, or IRI. This index provides a consistent and comparable measure of pavement in terms of the number of vertical bump inches per mile driven. IRI is reported as inches per mile. The lower the IRI number, the smoother the ride.

( continued )

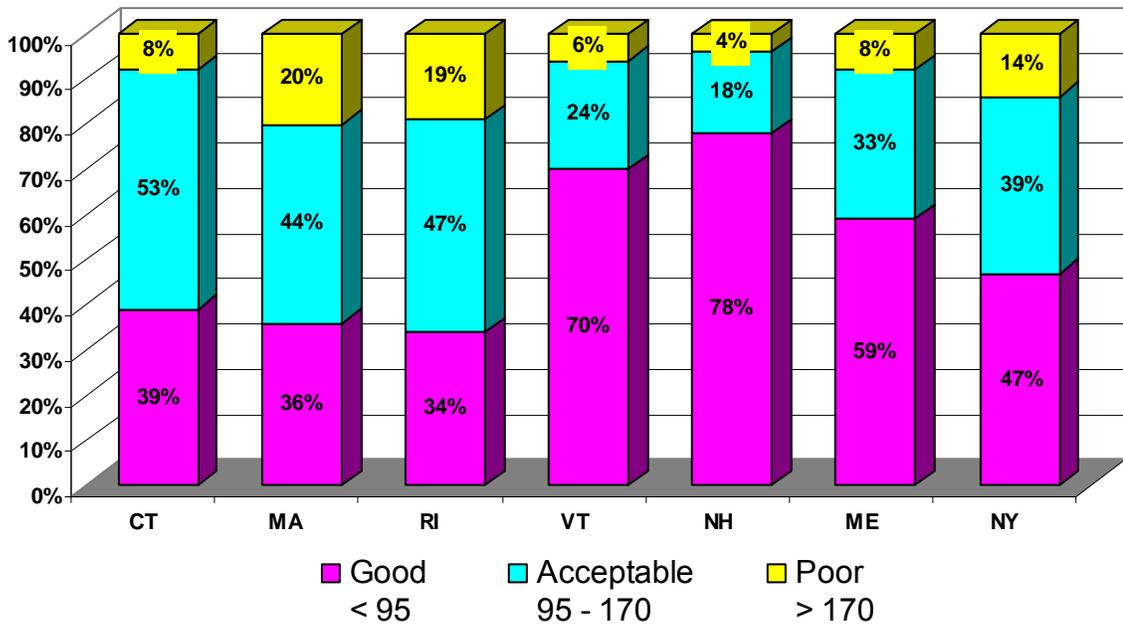


The Federal Highway Administration (FHWA) requires that all states measure and submit IRI data annually for the National Highway System (NHS). The NHS includes interstate and other routes identified as having strategic defense characteristics, as well as routes providing access to major ports, airports, public transportation and intermodal facilities.

**Discussion of trend:**

Figure 1 shows that ride quality on Connecticut roads has gradually been improving since 1999. The percentage of roads rated good has increased from 26 percent in 1999 to 41 percent in 2008, while the percentage of roads rated poor has decreased from 12 percent to 7 percent over the same period. The goal is to continue this trend by implementing pavement preservation principles and fully utilizing CTDOT's Pavement Management System. The chart below (Figure 2) compares Connecticut's ride quality with the New England states and New York, in 2007.

**Figure 2. Ride Quality on the National Highway System in New England and New York, 2007 inches per mile International Roughness Index (IRI)**





# Performance Measures



Objective:

**Preservation**

Program:

**Bridge Maintenance**

Measure:

## Number of Bridge Maintenance Memoranda (BMM)

**Reporting Period:** From: 1/1/2009 To: 3/31/2009

**Reporting Frequency:** Quarterly

**Target Value:** Slow the rate of increase in number of back-logged bridge maintenance memoranda

**Current Value:** BMMs received-212, completed-95, pending-1,985;

**Owner:** Bureau of Highway Operations

**Contact:** Charles Drda

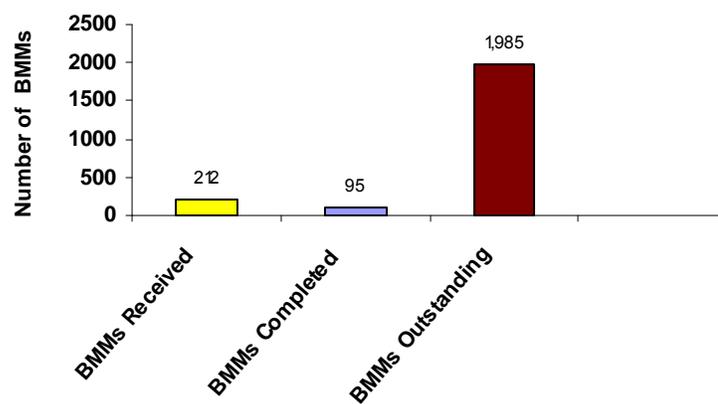


### Purpose/Description of measure:

This measure tracks the progress of maintaining and improving the condition of bridges on Connecticut's highways. The Department seeks to preserve and extend the useful life of existing bridge structures. Upon completion of the bridge inspection process, a Bridge Maintenance Memorandum (BMM) is prepared that identifies deficiencies and areas of deterioration needing repair. Individual work items identified on each BMM vary in complexity. Some items require specialized equipment and/or use of contractual services, and other items are programmed into the federally funded Bridge Preventive Maintenance Program. The repair work is scheduled based on criticality. Due to the advanced age of Connecticut's infrastructure, both the number of bridge inspections and needed repairs continues to increase.

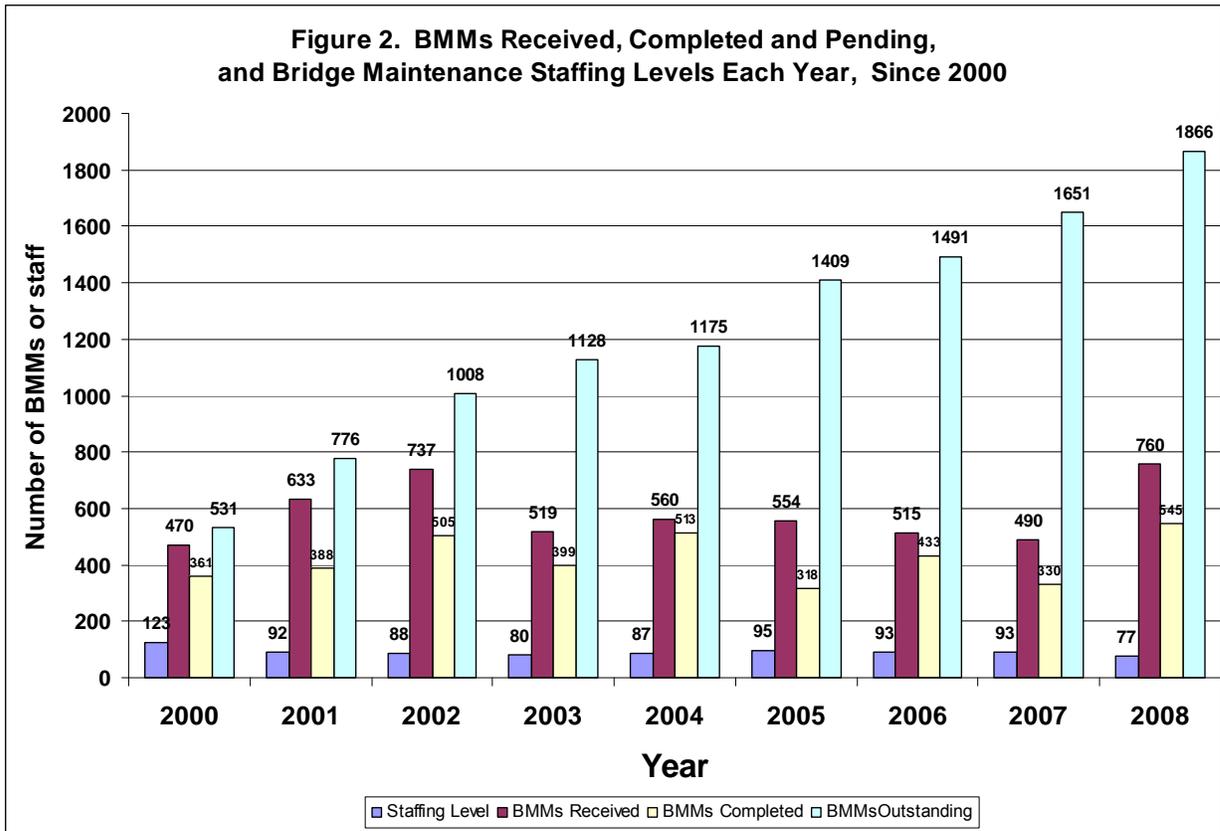
**Discussion of trend:** During the most recent quarter (see Figure 1) the BMM backlog increased to 1,985. In reality, this represents approximately 3,848 individual work items. Work Items are individual activities, whereas the BMMs are groups of work items. As shown in Figure 2, the backlog of BMMs has increased for the past nine years. Additional resources are needed in order to reverse the trend. In the long term the target should be to reduce the backlog, and to increase maintenance activities.

**Figure 1. BMMs Received, Completed and Pending for January through March 2009**



Revised: 08/12/2009

## Number of Bridge Maintenance Memoranda



*Revised: 08/12/2009*



# Performance Measures



Objective:

**Preservation**

Program:

**Bridge Condition**

Measure:

## Percent of Roadway Bridges in Good or Better Condition

**Reporting Period:** From: 1/1/2008 To: 12/31/2008

**Reporting Frequency:** Annually

**Target Value:** Increase percentage of bridges in good or better condition.

**Current Value:** 36% of bridges in good or better condition

**Owner:** Bureau of Engineering and Construction

**Contact:** Robert Zaffetti



### Purpose/Description of measure:

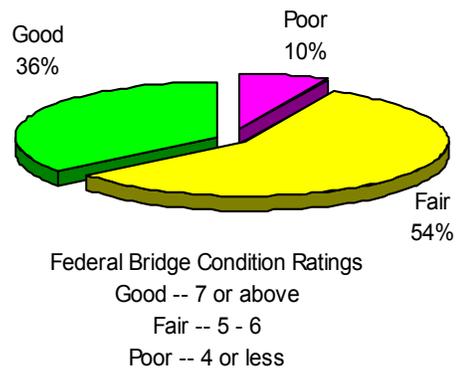
This measure tracks the overall condition of Connecticut's bridges. The Department inspects, evaluates and maintains an inventory of the structural condition, strength and functional capacity of over 5,000 state, local, and other types of bridges and structures in Connecticut.

The Department is directly responsible for maintenance of almost 4,000 of these bridges. Upon completion of the bridge inspection and evaluation process, a Bridge Maintenance Memorandum (BMM) is prepared that identifies deficiencies and areas of deterioration needing repair. The condition of all bridge decks, superstructures and substructures are rated on a scale from 0 (failed condition) to 9 (excellent condition). The lowest rating of the components becomes the bridge's overall rating. Whenever the condition rating of a bridge falls into the "Poor" category (4), the Department further reviews its condition, assesses the inspection frequency, adds the structure to the Bridge Program List and initiates a project to address the needs.

### Discussion of trend:

The 2007 collapse of the I-35W bridge in Minnesota caused a heightened focus on bridge safety. Fortunately, the Department had already initiated a review of its inspection practices and the results were to increase inspections to every two years, with an understanding that the aging infrastructure (average bridge age in Connecticut is 50 years) will require considerable attention in the future.

**Figure 1 Condition of Connecticut's Highway Bridges, 2008**



Revised: 08/12/2009

Objective:

**Preservation**

Program:

**Rail Operations**

Measure:

## Mean Distance Between Failures (Rail)



**Reporting Period:** From: 1/1/2008 To: 12/31/2008

**Reporting Frequency:** Annually

**Target Value:** Locomotive—30,000 Miles; Coach-300,000 Miles;  
EMU M2-70,000 Mi.; M4-60,000Mi.; M6-70,000Mi.

**Current Value:** Locomotive—25,188 Miles; Coach-199,493 Miles;  
EMU M2-79,887 Mi.; M4-67,924Mi.; M6-56,976Mi.

**Owner:** Bureau of Public Transportation

**Contact:** Eugene Colonese

### Purpose/Description of measure:

This measure tracks the reliability of MetroNorth train service. Mean Distance between Failures (MDBF) is an industry standard for measuring the reliability of a rail car fleet. It is calculated by dividing the total miles operated by the total number of confirmed primary failures, by car or locomotive fleet. A confirmed primary failure is defined as a failure of any duration for mechanical cause that occurs to a revenue train that is reported late at its final terminal by more than 5 minutes and 59 seconds, which is also the commuter rail industry standard for reporting on-time performance (OTP). Generally speaking, the higher the MDBF, the higher the OTP.

**Figure 1. Rail Mean Distance Between Failures (Rail Miles Traveled) on the New Haven Line**

### Discussion of trend:

The high average age of the Electric Multiple Unit (EMU) passenger rail car fleet poses a significant challenge in providing reliable and on-time train service. Starting in 2001, the Department began the M2 Critical System Replacement (CSR) program, which has improved the MDBF for the M2 fleet dramatically. In 2004, the MDBF for M2 cars was just under 50,000 miles. In 2008, the MDBF for M2 rail cars is 79,887 miles.

Equipment Type & Model	2005	2006	2007	2008	2008 Goals
<b>Locomotives</b>					
P-32 (Genesis Dual Mode)	21,789	25,590	25,620	25,188	30,000
<b>Coaches</b>					
Bombardier	250,669	396,446	400,405	199,493	300,000
<b>EMUs</b>					
M2	57,614	66,849	76,892	79,887	70,000
M4	45,538	62,801	39,773	67,924	60,000
M6	51,555	70,249	70,680	56,976	70,000

Revised: 08/12/2009



# Performance Measures



Objective:

**Preservation**

Program:

**Transit Operations**

Measure:

## Mean Distance Between Transit Outages (Buses)

**Reporting Period:** From: 7/1/2008 To: 3/31/2009

**Reporting Frequency:** Annually—State Fiscal Year (SFY)

**Target Value:** 5000 Miles Mean Distance Between Outages

**Current Value:** 4752 Miles Mean Distance Between Outages State Fiscal Year to Date (SFY2009)

**Owner:** Bureau of Public Transportation

**Contact:** Michael Sanders

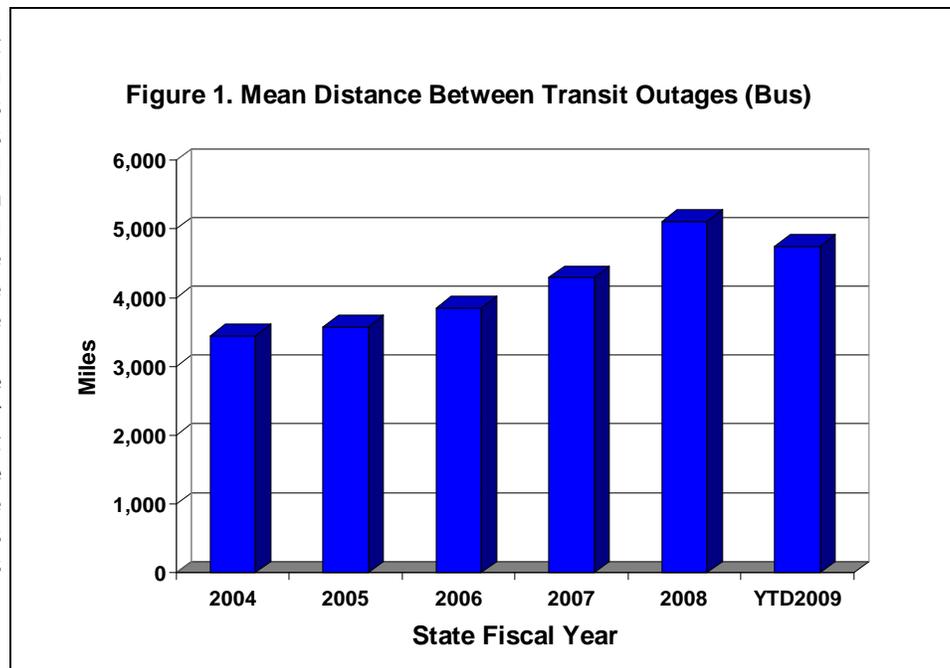


### Purpose/Description of measure:

This measure tracks the reliability of CTTransit bus service. Mean Distance Between Transit Outages, which is alternatively termed miles between road calls, is the standard performance metric used nationally by bus operators to measure availability and reliability of equipment. Road calls are traditionally counted when a bus misses one of its scheduled trips.

### Discussion of trend:

Figure 1 shows the recent trend for miles between road calls for CTTransit's largest operating divisions in Hartford, New Haven and Stamford. In any given year, the number of road calls can be affected by the age of the fleet, the occurrence of fleet-wide defects on a certain model or model year of buses, the weather, and many other factors. During the first three quarters of state fiscal year 2009, the distance between outages for CTTransit buses averaged 4,752 miles.



Revised: 08/12/2009



# Performance Measures



Objective: **Efficiency & Effectiveness**

Program: **Rail Operations**

Measure:

## Number of Rail Passengers



**Reporting Period:** From: 01/01/2009 To: 03/31/2009

**Reporting Frequency:** Quarterly

**Target Value:** 8,847,882 — NHL 127,371 — SLE

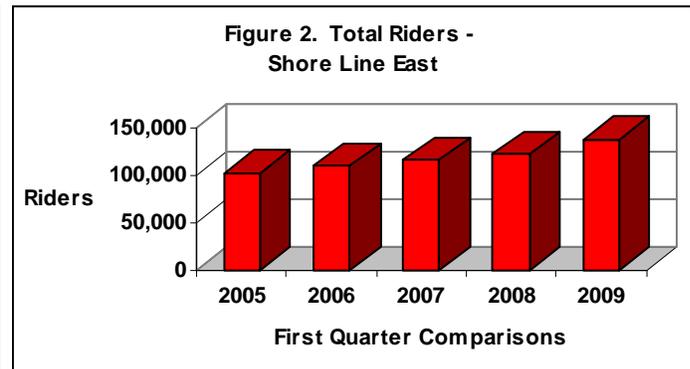
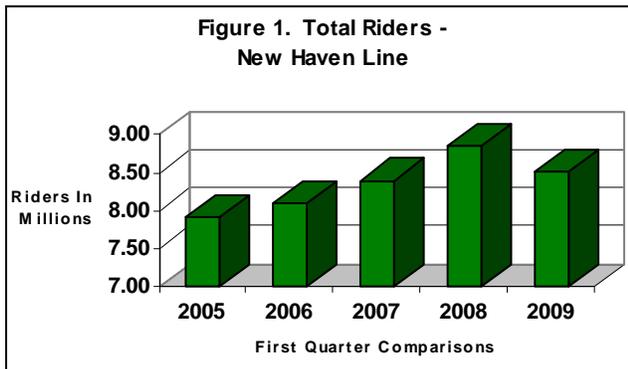
**Current Value:** 8,514,056 (-3.8%) 137,200 +12.5%

**Owner:** Bureau of Public Transportation

**Contact:** Eugene Colonese

### Purpose/Description of measure:

This measure tracks the usage of Connecticut's commuter rail passenger service on the New Haven Line (NHL) and the Shore Line East (SLE). Given the current economic turmoil, it is more important than ever to increase efficiency and effectiveness, thereby providing more service with less resources. By monitoring efficiency metrics in the form of rail ridership, load factors, market share, as well as on-time service rates, the Department of Transportation can maximize the performance and capacity of the existing systems. Adding additional capacity on the New Haven and branch lines, extending Shore Line East service to New London and increasing parking capacity at stations throughout the State are vital elements of the Department's strategy to attract and maintain riders on Connecticut's commuter rail network. Through resource identification, process improvement, technology advances, tracking human resources and financial data, the Department strives to contain costs and find innovative and efficient ways to deliver services.



### Discussion of trend:

Overall, ridership on our public transportation network has been growing steadily by 3 percent to 5 percent in recent years. Significant ridership growth on both of the Connecticut commuter rail networks has been experienced over the last four years and is illustrated in Figures 1 and 2. The reduction of riders on the NHL for the first quarter in 2009 may likely be due to the economic downturn in the greater New York Metro area.

Revised: 08/12/2009

Objective: **Efficiency & Effectiveness**

Program: **Rail Operations**

Measure:

## Percent of Rail On-Time Performance

**Reporting Period:** From: 1/1/2009 To: 3/31/2009

**Reporting Frequency:** Quarterly

**Target Value:** 97.0% — NHL 95.0% — SLE

**Current Value:** 96.0% 95.5%  
 (-1.0%) +0.5%

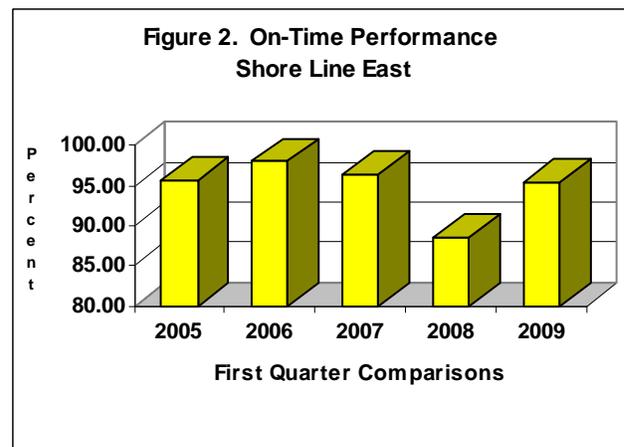
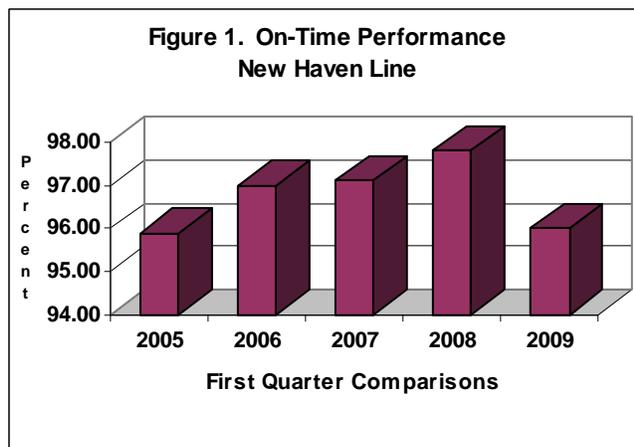
**Owner:** Bureau of Public Transportation

**Contact:** Eugene Colonese



### Purpose/Description of measure:

This measure tracks the On-Time Performance (OTP) of Connecticut's commuter rail service on the New Haven Line (NHL) and the Shore Line East (SLE). OTP is a key measure for service reliability to its customers and is the industry standard used to compare existing services with other similar competitors. A commuter train is considered "on-time" if it reaches its final destination within 5 minutes and 59 seconds of its scheduled arrival time.



### Discussion of trend:

The OTP for both commuter services over the past four years remains high. The New Haven Line has consistently exceeded 95% OTP and Shore Line East has remained in the mid-90's. The lower OTP was a result of periodic equipment and signal failures that lead to reduced speed restrictions on SLE trains. At times, the speed restrictions placed by Amtrak, which operates the northeast corridor, delays SLE arrivals to rail stations.

Objective: **Efficiency & Effectiveness**

Program: **Airport Operations**

Measure:

## Number of Bradley International Airport Passengers



**Reporting Period:** From: 01/01/2009 To: 03/31/2009

**Reporting Frequency:** Quarterly

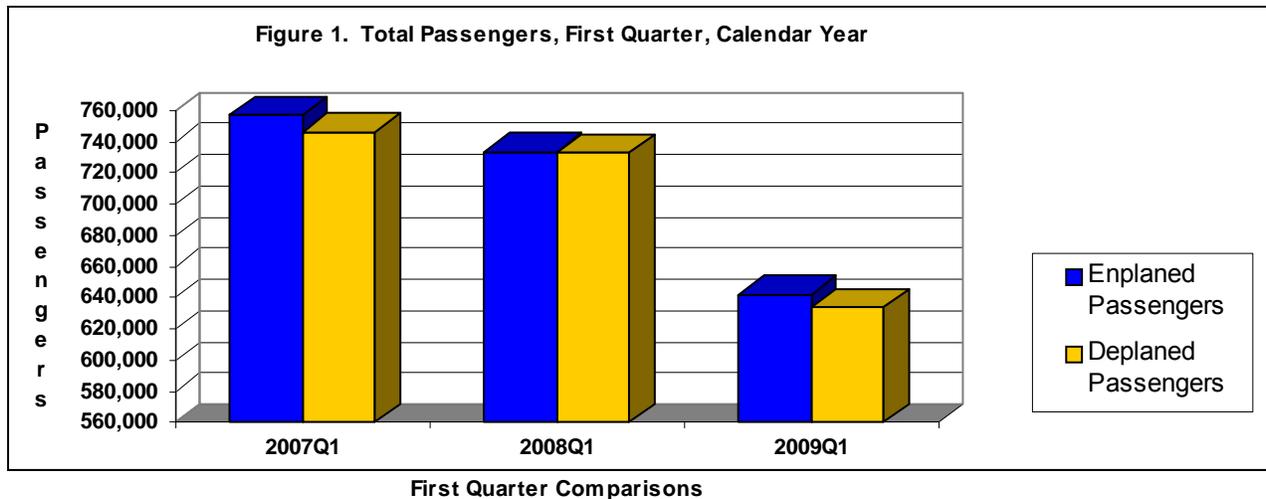
**Target Value:** Maintain or Exceed 2008 First Quarter Values  
 Enplaned 733,547  
 Deplaned 733,125

**Current Value:** Enplaned (2009) 642,018 (-12.5%)  
 Deplaned (2009) 634,154 (-13.5%)

**Owner:** Bureau of Aviation & Ports  
 Jeffrey Stewart

### Purpose/Description of measure:

This measure tracks the number of passengers boarding (enplanements) or arriving (deplanements) at Connecticut's Bradley International Airport.



### Discussion of trend:

Bradley, like most of the nation, has experienced a decline in air passenger travel over the last several years due to the slowing economy and volatile jet fuel costs. In response to these circumstances, the airlines have withdrawn capacity from that market, resulting in fewer departing seats available to fill. The reduction in departing seats has outpaced the reduction in enplaned passengers. This manifests itself in higher load factors, which simply represent the percentage of seats on an airplane that are filled.

Objective: **Efficiency & Effectiveness**

Program: **Airport Operations**

Measure:

## Revenue Generated from Bradley International Airport Parking

**Reporting Period:** From: 01/01/2009 To: 03/31/2009

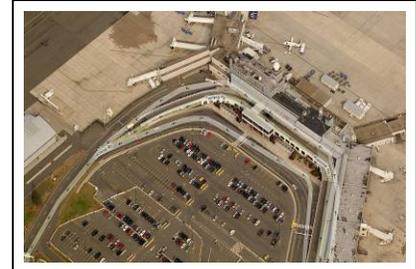
**Reporting Frequency:** Quarterly

**Target Value:** (2008) \$5,567,826

**Current Value:** (2009) \$4,927,723  
(-11.5%)

**Owner:** Bureau of Aviation & Ports

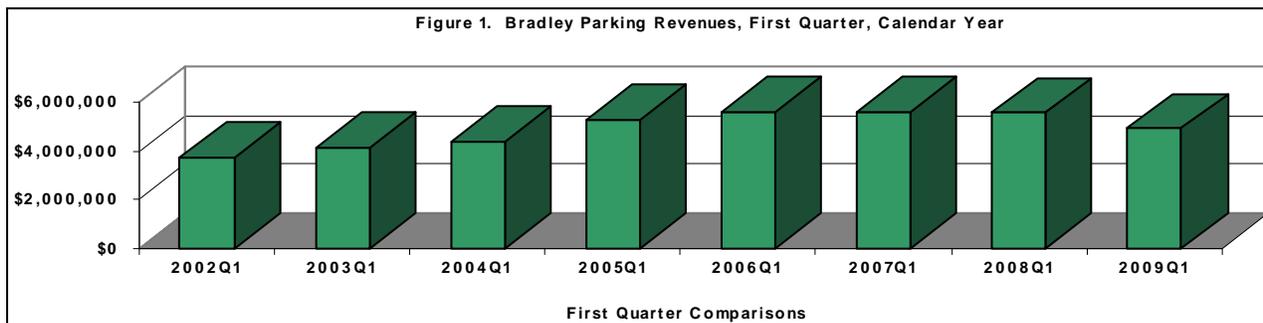
**Contact:** Jeffrey Stewart



### Purpose/Description of measure:

This measure tracks the use of state-owned parking facilities at Bradley International Airport via parking revenue. With over 400 daily flights, Bradley International Airport is the second busiest airport in New England after Logan Airport in Boston Massachusetts. Bradley Airport is the gateway to New England and its preservation is critical for Connecticut's economic vitality and well being.

Included in Bradley International Airport's Master Plan is the demolishing of the Murphy Terminal, or Terminal B and replacing it with an entirely new and updated terminal, which will essentially double existing capacity to 24 passenger gates. A new parking garage is also planned during this renovation.



**Discussion of trend:** Parking revenue tends to correlate with the number of passengers served. Due to the current economic downturn, the passengers served and the parking revenue has declined since 2007.

As Bradley International Airport continues its expansion and modernization program along with increased marketing efforts, parking revenue is expected to trend upward in the coming years due to an increased usage of the airport.



# Performance Measures



Objective: **Efficiency & Effectiveness**

Program: **Photolog Operations**

Measure:

## Cost Savings from Photolog Usage

**Reporting Period:** From: 01/01/2009 To: 03/31/2009

**Reporting Frequency:** Quarterly

**Target Value:** \$2,000,000 per year

**Current Value:** \$412,000 first quarter 2009

**Owner:** Bureau of Engineering & Construction

**Contact:** Brad Overturf

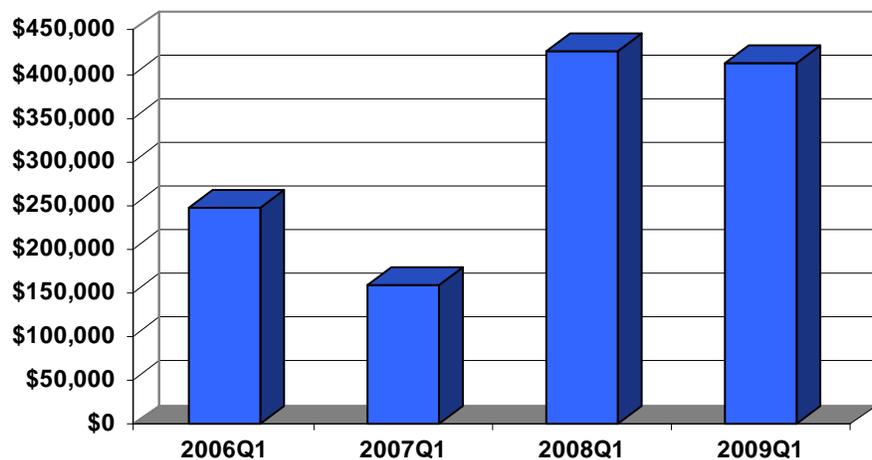


### Purpose/Description of measure:

This measure tracks the money saved through the use of the photolog imaging system. Photolog is a sequence of forward-facing, driver's eye view, high definition roadway images collected at a constant interval, in an automated fashion. Annually, the entire state-maintained roadway network is photologged with two sophisticated customized vehicles that record the images and data. The engineering data collected include downward-facing high resolution pavement images, rut-depth measurements, International Roughness Index, GPS coordinates, horizontal and vertical geometry, pavement cross slope, grade, and laser bridge under-clearance measurements.

CTDOT employees along with FHWA and other state agency employees have access to the Photolog system to lookup and download roadway images and data. A total of over 500 users save the State an estimated \$1.5 — \$2.0 million dollars per year in reduced expenses as a result of a reduction of field trips (see Figure 2). This results in a 3:1 benefit-cost ratio, comparing the costs of the photolog data collection with the user savings.

**Figure 1. Photolog Usage  
First Quarter Comparisons of Dollars Saved**

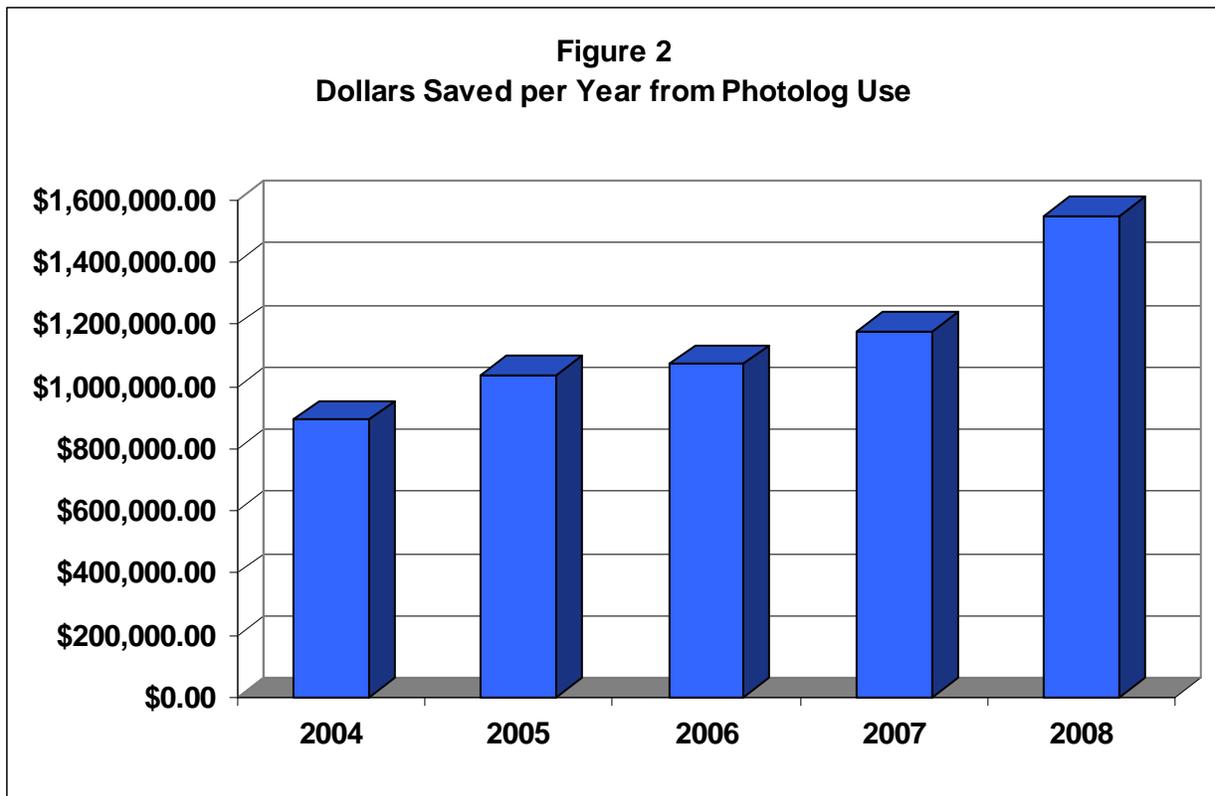


Revised: 08/12/2009

**Discussion of trend:**

Figure 1 illustrates the usage by CTDOT employees of the photolog system for the first quarter of the current fiscal year and compares usage with the past three years.

Figure 2 below, shows that the yearly savings to the State continues to increase significantly each year as more photolog stations come on-line and additional users have access to these data and images.





# Performance Measures



Objective:

**Efficiency and Effectiveness**

Program:

**Geographic Information System**

Measure:

## Percent of Statewide Roadway Network Digitized

**Reporting Period:** From: 1/1/2009 To: 3/31/2009

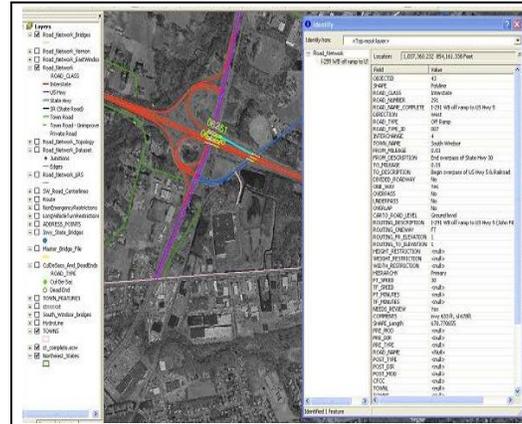
**Reporting Frequency:** Quarterly

**Target Value:** Digitize 4.5% (1,180 miles) of Statewide Roadway Network per quarter

**Current Value:** 2.20% (577 miles) digitized

**Owner:** Bureau of Policy and Planning

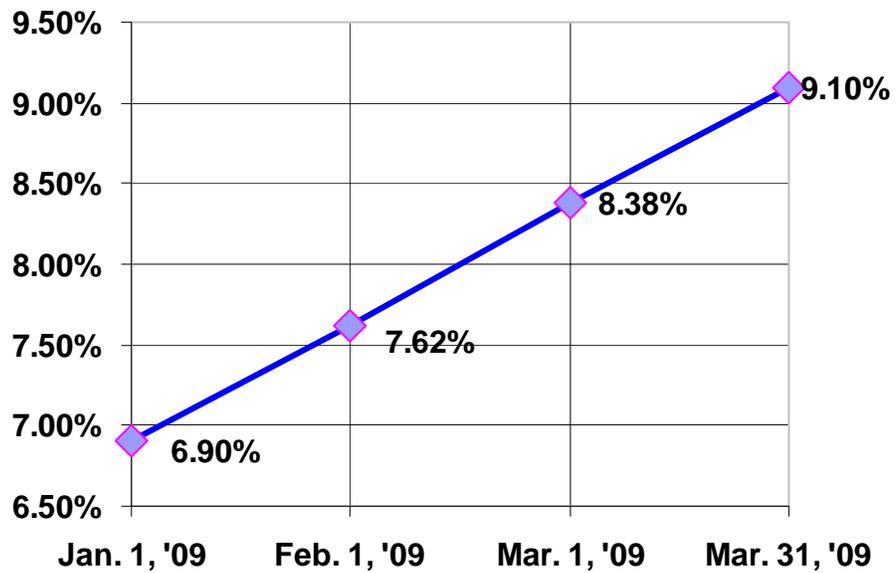
**Contact:** James Spencer



### Purpose/Description of measure:

This measure tracks the development of a new digitized, geographically accurate and consistent statewide street centerline Geographic Information System (GIS) base layer. A GIS is a system of computer hardware, software, and data that is used to capture, create, store, manage, analyze and display maps and associated data using the characteristics of an object's location. With GIS, the resulting road network will be designed to support routing and address location, emergency (enhanced 911) response, preparedness, crisis or evacuation planning, and to efficiently move goods and people throughout the state. The total network centerline mileage for Connecticut State, Municipal and Private roads is 26,230 miles. More than 80% of this mileage is town and private, with less than 20% state-maintained.

**Figure 1.** Cumulative Percentage of Street Centerline Mileage Digitized



Revised: 08/12/2009

## Percent of Statewide Roadway Network Digitized

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### **Discussion of trend:**

The CTDOT initiated the creation of a new statewide street centerline base layer in January 2007, using in-house resources. The effort includes dedicated GIS unit staff augmented with other DOT staff, with a goal to digitize the entire State Highway System by June 2010 to concur with the submittal deadline for the Highway Performance Monitoring System (HPMS) data as set by the Federal Highway Administration (FHWA). Completion of the entire network inclusive of both local and private roads is predicated on existing resources and assistance from municipalities, looking towards a completion date of July 2014. The target completion dates require that 4.5% (approximately 1180 miles) of the remaining network be digitized per quarter. Figure 1, shows the cumulative percentage of digitized mileage since 2007. During the first quarter of calendar 2009, 2.2% of the network was digitized, for a cumulative total of 9.10% (2,387 miles) to date.

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*Revised: 08/12/2009*



# Performance Measures



Objective:

**Quality of Life**

Program:

**Recycling**

Measure:

## Amount of Recycled Material Used in Projects



**Reporting Period:** From: 1/1/2008 To: 12/31/2008

**Reporting Frequency:** Annually

**Target Value:** Maximize Recycling and Reuse of Materials

**Current Value:** Demolition Debris 99,421 Tons  
Wood 1,703 tons  
Steel 617 Tons

**Owner:** Bureau of Policy and Planning

**Contact:** Paul Corrente

### Purpose/Description of measure:

This measure tracks the amount of construction/maintenance material recycled in CTDOT operations. Since the transportation network includes large quantities of pavement and bridge materials, all rehabilitation/reconstruction activities affect a significant quantity of construction materials; in particular, concrete, steel, and wood. Fortunately, all of these materials are recyclable or re-usable. Nearly 100 percent of bituminous pavements that are milled or removed from roadways are reused in pavements. The construction demolition debris for concrete road and bridge replacements, airport runways and, in some cases, buildings can be reused as roadway base material or as structural fill. All steel and aluminum is 100 percent recyclable, and all brush and trees that are removed from the roadsides are chipped and handled in an environmentally acceptable way. When economically feasible, even recycled glass beverage containers have been incorporated into construction projects.

### Discussion of trend:

**Figure 1. Recycling in Construction and Maintenance for Concrete, Bituminous Concrete, Wood and Steel**

Item	2002	2003	2004	2006	2007	2008
Demolition Debris (Tons)*	424,377	393,984	364,816	232,679	396,483	99,421
Wood (Tons)	2,172	7,352	470	85	380	1,703
Steel (Tons)	2,339	2,547	1,372	5,922	12,654	617

\* Demolition Debris contains generated and reused Portland Cement Concrete and Bituminous Concrete. **Note:** All steel and aluminum were surplus and sold for scrap recycling.

CTDOT has collected information on generation, re-use and recycling of construction materials since 1996. The materials shown in Figure 1 are generated onsite or within a Department project or property, and reused onsite or transported to another Department project or property for reuse. None of these materials are disposed of in landfills. The decrease of demolition and steel recycling in 2008 is most likely the result of a reduction in the number of active construction projects.

Revised 08/12/2009



# Performance Measures



Objective:

**Quality of Life**

Program:

**Congestion Management**

Measure:

## Percent of Road Network with Traffic Volumes Greater than Capacity

**Reporting Period:** From: 1/1/2007 To: 12/31/2007

**Reporting Frequency:** Annually

**Target Value:** Maintain current percentage

**Current Value:** 9.35% miles over Capacity

**Owner:** Bureau of Policy and Planning

**Contact:** Michael Connors



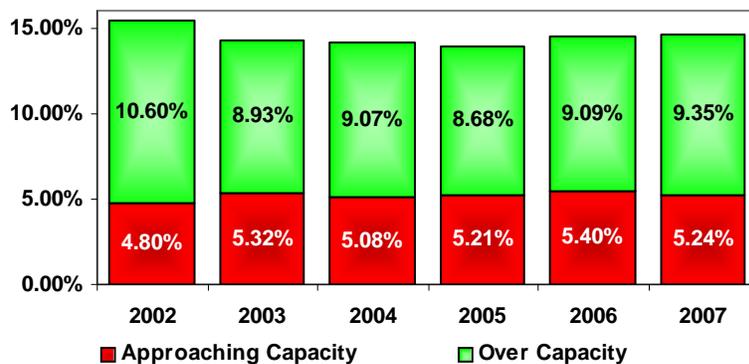
### Purpose/Description of measure:

This measure tracks the congestion on Connecticut roadways. Highway congestion is caused when traffic demand approaches or exceeds the available capacity of the highway system. Traffic demands vary significantly, depending on the season of the year, the day of the week, and even the time of day. Congestion can also be measured in a number of ways – level of service, speed, travel time, and delay are commonly used measures. Travelers, however, have indicated that more important than the severity or magnitude of congestion is the reliability of the trip travel time. People in a large metropolitan area may accept that a 20 mile freeway trip takes 40 minutes during the peak period, so long as this predicted travel time is reliable and is not 25 minutes one day and two hours the next.

### Discussion of trend:

Demand for highway travel continues to grow. Construction of new highway capacity to accommodate this growth in travel has not kept pace and is not likely to in the future. Between 1980 and 1999, route miles of highways increased 1.5 percent, while vehicle miles of travel increased 76 percent.

**Figure 1. Percent of Miles Approaching or Above Capacity**



2008 Data not available until October 2009

Revised: 08/12/2009



# Performance Measures



Objective:

**Quality of Life**

Program:

**Congestion Management**

Measure:

## Average Highway Incident Duration Time

**Reporting Period:** From: 1/1/2009 To: 3/31/2009

**Reporting Frequency:** Quarterly

**Target Value:** Cars: <45 minutes; Jackknifed Tractor Trailers: <3 hours; Overturned Tractor Trailers: <4 hours

**Current Value:** Cars: 45 minutes; Jackknifed Tractor Trailers: 1hr 56min; Overturned Tractor Trailers: No occurrences

**Owner:** Bureau of Highway Operations

**Contact:** Charles Drda



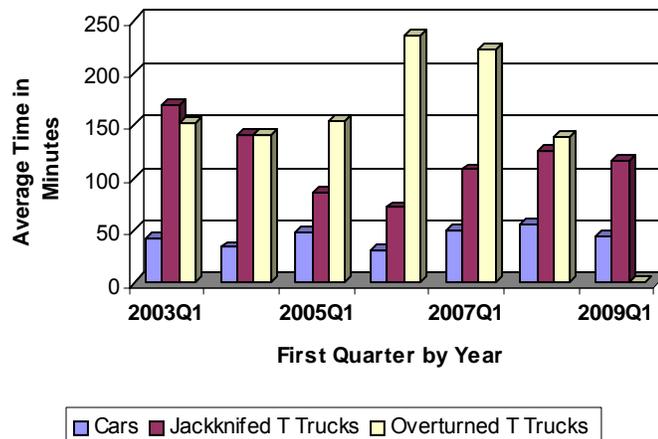
### Purpose/Description of measure:

This measure tracks incident clearance time on Connecticut's state highway system. Traffic Incident Management (TIM) is a planned and coordinated process to detect, respond to, and remove traffic incidents and restore traffic capacity as safely and quickly as possible. This coordinated process involves a number of public and private sector partners, including law enforcement, emergency medical services, public safety communications, transportation and others. TIM is an important tool in lessening the impact of non-recurring congestion, as well as providing for a safer environment for drivers. The sooner an incident is removed, the sooner the highway system returns to normal capacity. Incident duration is defined by CTDOT as the time elapsed from notification until all blocked travel lanes are open.

### Discussion of trend:

The clearance time for cars this quarter is on target. Average clearance time for jackknifed tractor trailer trucks is better than the target. There were no overturned tractor trailer truck incidents during the quarter. There is a large variation in clearance time for overturned or jackknifed trucks, depending on each situation. This variation is evident in Figures 1 and 3. Figure 2 shows that there are very few truck incidents relative to automobiles.

Figure 1. 1st Quarter Incident Duration Times, 2003 to 2009



Revised: 08/12/2009

Figure 2. Number of Incidents by Vehicle Type

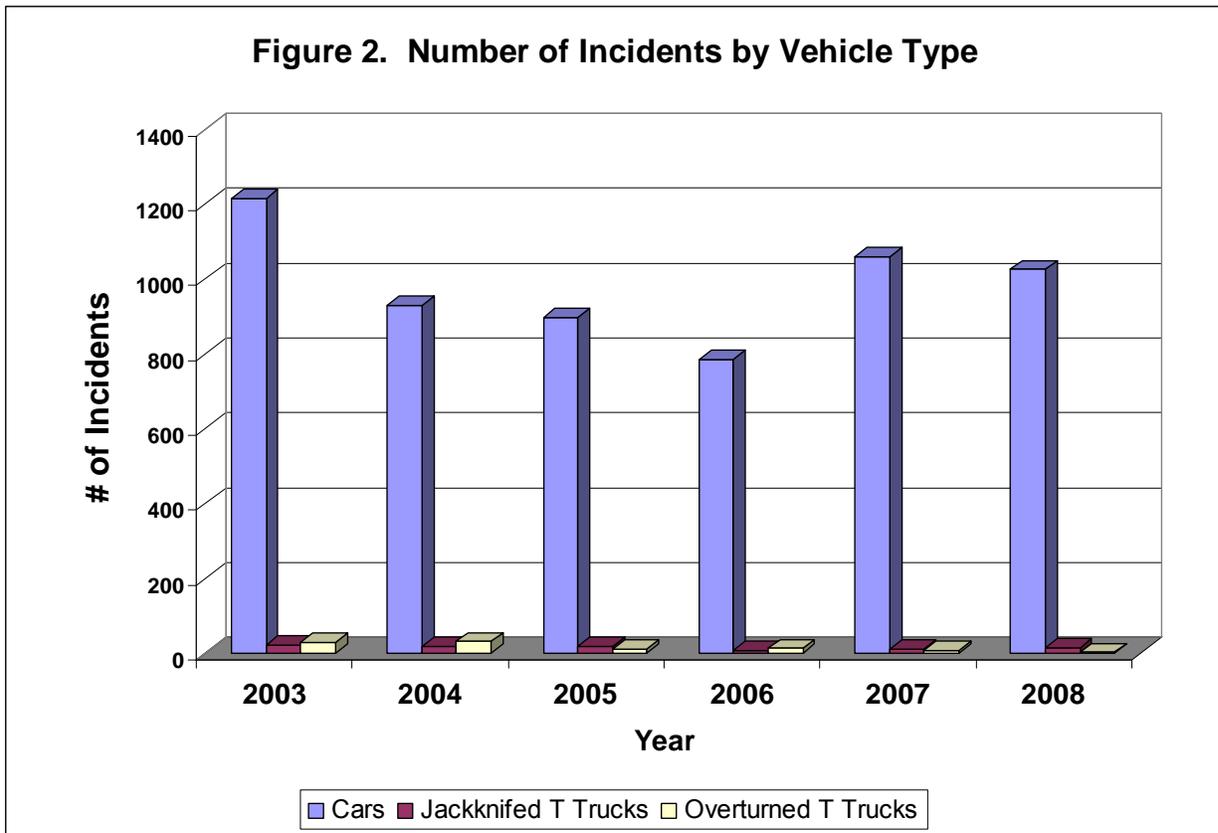
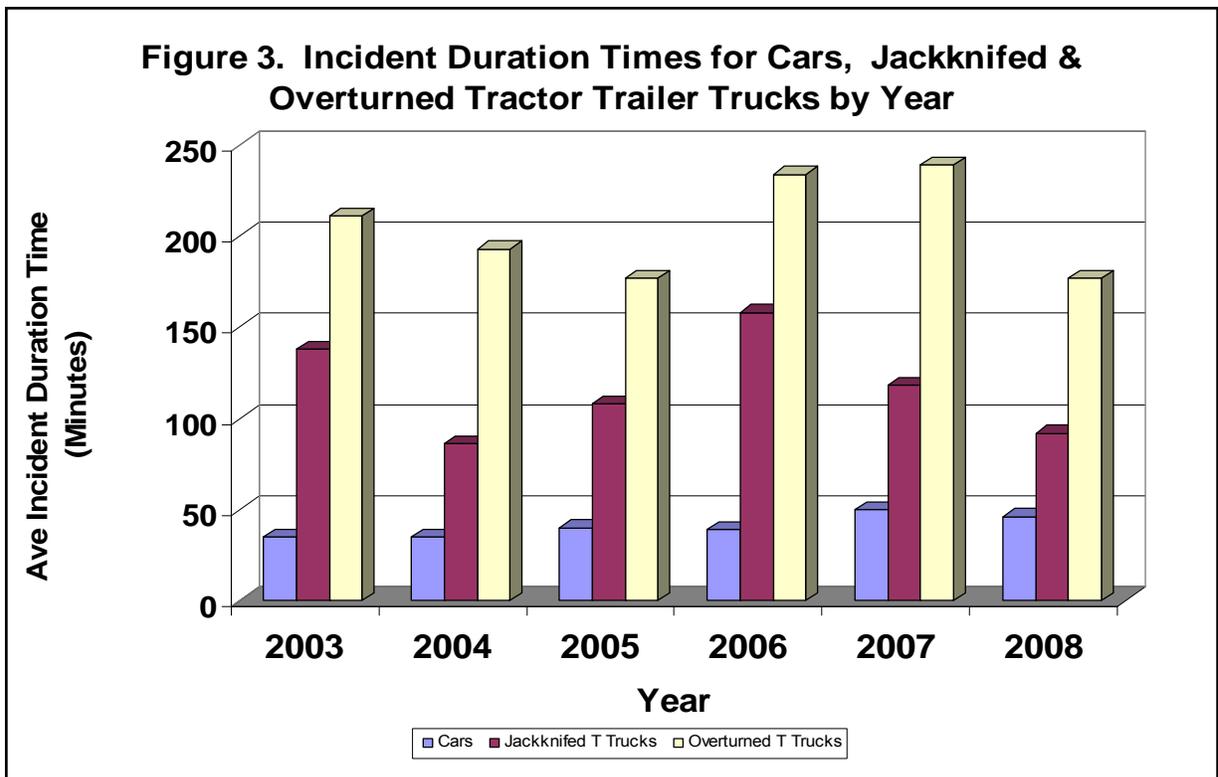


Figure 3. Incident Duration Times for Cars, Jackknifed & Overturned Tractor Trailer Trucks by Year





# Performance Measures



Objective:

**Quality of Life**

Program:

**Congestion Management**

Measure:

## Average Highway Incident Response Time

**Reporting Period:** From: 1/1/2009 To: 3/31/2009

**Reporting Frequency:** Quarterly

**Target Value:** 5 minutes (or less)

**Current Value:** 3 minutes

**Owner:** Bureau of Highway Operations

**Contact:** Charles Drda



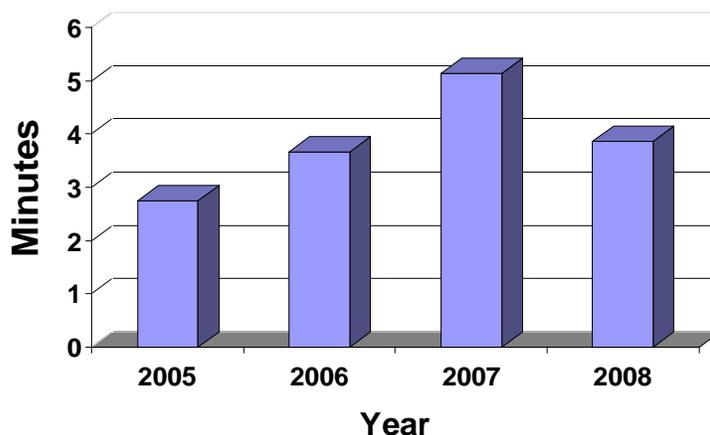
### Purpose/Description of measure:

This measure tracks the incident response time on Connecticut's major highways. Traffic Incident Management (TIM) is a planned and coordinated process to detect, respond to, and remove traffic incidents and restore traffic capacity as safely and quickly as possible. This coordinated process involves a number of public and private sector partners, including law enforcement, emergency medical services, public safety communications, transportation and others. TIM is an important tool in lessening the impact of non-recurring congestion, as well as providing for a safer environment for drivers. The sooner an incident is removed, the sooner the highway system returns to normal capacity. Average time to respond to an accident is defined as response time from the time notified to the arrival on scene of a highway incident by State Police.

### Discussion of trend:

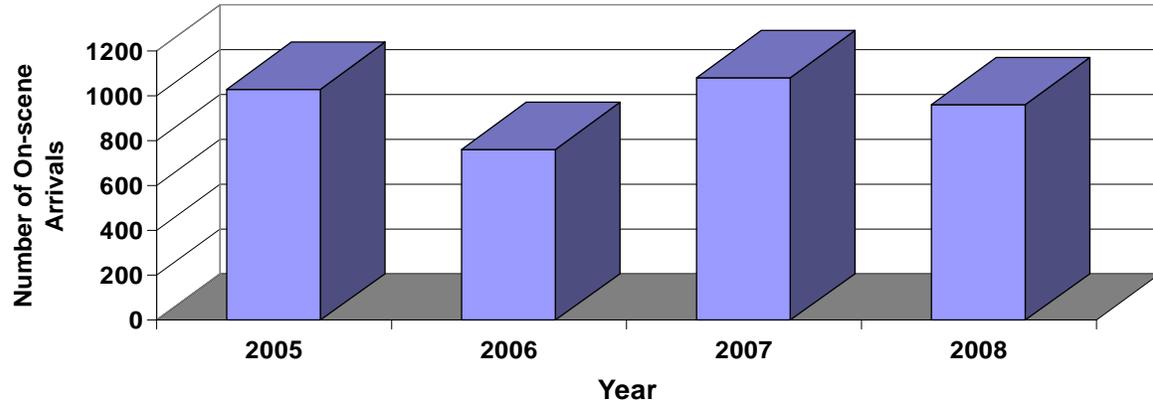
The average response time of 3 minutes for the quarter is well below the target of 5 minutes. It is also lower than the average for 2008, as shown in Figure 1. The number of incidents that were responded to each year from 2005 through 2008 is illustrated in Figure 2.

**Figure 1. Average Incident Response Time, by Year**



Revised 08/12/2009

**Figure 2. Number of Incident Responses by Year**





# Performance Measures



Objective:

**Accountability & Transparency**

Program:

**Administration**

Measure:

## Percent of Agreements Executed in Under 60 Days



**Reporting Period:** From: 7/1/2008 To: 3/31/09  
**Reporting Frequency:** Annually – State fiscal year (SFY)  
**Target Value:** Increase the percentage of agreements executed in under 60 days  
**Current Value:** 28%  
**Owner:** Bureau of Finance & Administration  
**Contact:** Valerie Joyner

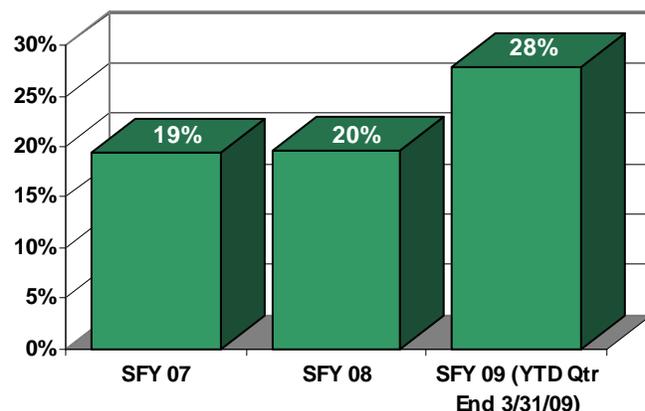
### Purpose/Description of measure:

This measure tracks the improvement in the processing and execution of various types of agreements that the Department enters into. CTDOT executes a large number of agreements annually including: consultant agreements for architectural, engineering, planning, surveying; force account; local bridge; municipal design and construction; maintenance encroachment; traffic signals and railroad grade crossings; rights of way; utilities; rail leases; public transportation operating; grants; ground transportation; air carriers; concession license, etc. The time it takes to execute an agreement is critical to project schedules, funding, project costs and convenience to the traveling public.

### Discussion of trend:

The percentage of agreements executed in sixty (60) days or less has increased to 28% in SFY 2009 as of 3/31/09. This is an 8% increase over SFY's 2007 and 2008. CTDOT has implemented significant steps in the fourth quarter of SFY 2009 to ensure that the percentage of agreements executed within sixty (60) days continues to improve. One of the efforts includes development of boiler plate templates for certain agreements, which can be executed within a two week timeframe.

Figure 1 - Percent of Agreements Executed in Less Than 60 Days



Revised: 08/12/2009



# Performance Measures



Objective:

**Accountability & Transparency**

Program:

**Project Delivery**

Measure:

## Percent of Construction Contracts Awarded within 60 Days of Bid Opening



**Reporting Period:** From: 7/1/2008 To: 3/31/2009

**Reporting Frequency:** Annually – State fiscal year (SFY)

**Target Value:** 100% of construction contracts awarded within 60 days of bid opening

**Current Value:** 30%

**Owner:** Bureau of Finance & Administration

**Contact:** Valerie Joyner

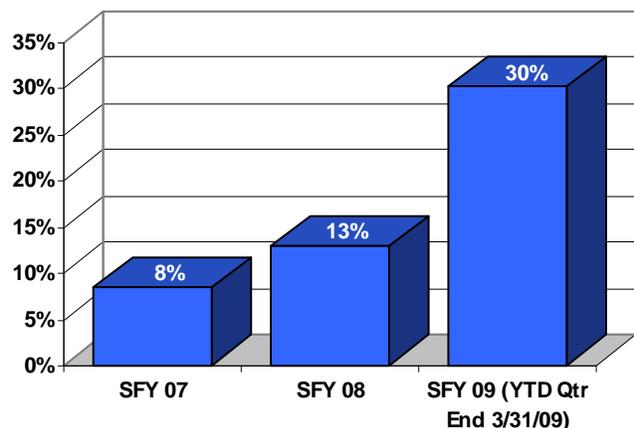
### Purpose/Description of measure:

This measure tracks the process of awarding construction contracts once the bids have been received. The Department of Transportation executes a significant number of construction contracts annually with an approximate average value of \$385 million through the public competitive bidding system, involving the construction of roads, bridges, buildings, transportation-related public works projects, demolition, or other transportation-related matters. The timely execution of contracts is critical to ensure a safe and efficient infrastructure for the traveling public.

### Discussion of trend:

The trend for Contracts Awarded within sixty (60) days of the bid opening has seen significant improvement in state fiscal year (SFY) 2009. Year to date averages increased from 8% of contracts awarded in 60 days or less in SFY 07 to an average of 30% as of 3/31/09 for an overall increase of 22% (Figure 1). It is highly anticipated that this trend will continue to increase as improvements are completed, and that the target goal of 100% within the next performance period is reasonably achievable.

**Figure 1 - Percent of Construction Contracts awarded within 60 days of bid opening**



Revised: 08/12/2009

Objective:  
**Accountability & Transparency**

Program:  
**Federal Aid Projects**

Measure:

## Number of Project Closeouts



**Reporting Period:** From: 7/1/2008 To: 3/31/2009

**Reporting Frequency:** Annually – State fiscal year (SFY)

**Target Value:** 250 projects closed per year  
(goal for SFY 09 is 150)

**Current Value:** 91 projects closed through March 31, 2009

**Owner:** Bureau of Finance & Administration

**Contact:** Robert Card

### Purpose/Description of measure:

This measure tracks the progress made on the project closeout of Federal Highway Administration (FHWA) funded projects. With the transition to the State's new financial management system (Core-CT) and the implementation of a new federal billing system, the Department was unable to closeout FHWA funded projects efficiently. A project closeout team was formed in the beginning of October 2008 with representatives from the Department's operational areas and FHWA. The Department seeks to closeout projects and release unused State and federal funding for obligation on new projects. When projects are requested for closeout by project managers, they are put on assignment for project closeout and final voucher. The goal is with experience and an appropriate amount of resources, the Department will begin to closeout more projects than are initiated in a year.

### Discussion of trend:

When the project closeout initiative began a review was performed, which identified 1,212 projects (universe) that are candidates for project closeout. The Department initiates approximately 200 new projects per year, and as these projects are requested to be closed (identified as inactive projects by FHWA or final voucher by the Department) the number of projects in the universe (currently 1,151) will change. The Department is moving forward and making progress with the Project Closeout and Final Voucher initiative. As of March 31, 2009, 91 projects have been closed. With the momentum and cooperation gained by the start up of this initiative, it is expected that the goal of closing 150 projects by June 30, 2009 will be significantly exceeded.

