



## Business Impact

A research report by AAA estimates that the annual cost of congestion was \$97.7 billion and that traffic crashes cost US motorists almost \$300 billion per year.

*“Crashes vs. Congestion – What’s the Cost to Society?” AAA, November 3, 2011*

## Challenges

- **Data siloes.** Crash and congestion data can come from many different sources, often residing in different agencies and in various databases, formats and types of hardware.
- **Disparate data.** Because divisions are collecting data in different ways, it is inconsistent and requires manual and labor-intensive processes for data governance.
- **Staffing needs.** Without accurate data and forecasting, departments cannot optimize their resources and prioritize projects based on staffing requirements.
- **Fiscal constraints.** Besides the challenge to accurately forecast project funding, states must also report performance to demonstrate accountability and outcome analysis to prove responsible use of limited taxpayer funds.

## How can we ensure a safe and efficient transportation system with accountability, workforce efficiency and environmental sustainability?

### YOUR GOAL: Provide a safe and reliable transportation infrastructure

State DOTs are responsible for delivering a safe, reliable and accessible transportation system with minimal environmental impact. For a system challenged with increasing mobility demands, poor transportation infrastructure decisions can contribute to expensive impacts – economical, environmental and societal, including injury and death. In an effort to combat these high costs, state DOTs work closely with metropolitan planners, law enforcement, state highway safety and the US DOT to plan and implement policies that can help mitigate congestion and keep the roads safe, accessible and reliable.

Additionally, several transportation organizations and government agencies have recommended increased investment in data collection and evaluation. Fortunately, more and more data is available (for example, from DMV and highway safety, the census and other economic indicators) to analyze with the goals of improving system reliability and efficiency and protecting the environment and the public.

Transportation planners need the capability to analyze traffic patterns, crash data and workforce composition in flexible, dynamic ways – and use the insights gained to make confident, informed decisions that employ the right resources at the right time on the right projects. Moreover, they need an analytics solution that empowers them to analyze massive volumes of data from disparate sources quickly and efficiently.

### OUR APPROACH

SAS helps state DOTs integrate and analyze data quickly and effectively to provide safe and reliable transportation systems in a fiscally and environmentally responsible manner. We approach the problem by providing software and services to help you:

- **Accurately plan transportation.** As state transportation planners collaborate with many stakeholders to develop transportation plans, so too can data be shared to optimize resources, impacts, schedules and capital spending for increased accountability, fiscal responsibility and environmental sustainability.
- **Reduce the crash rate.** By applying analytics to data housed in the state crash database, you can identify trends and model the impacts of various transportation planning scenarios across multiple years to inform highway safety plans.
- **Improve road safety.** Identify and accurately predict future transportation system needs across all modes, including transit, toll, ferries, etc. By testing various scenarios through a holistic lens, traffic planners can decide which are more likely to meet the goal of optimizing each mode to reduce congestion and improve safety.
- **Optimize resources.** By matching resources such as human capital and construction materials with priorities, DOTs can reduce costs to ensure fiscal responsibility. With SAS, you can reduce the time and cost required to integrate, cleanse and analyze data, and deliver critical analysis to improve safety and efficiency.

Data integration and sophisticated analysis of crash data can arm decision makers with the right information to take a forward-looking view and create traffic safety programs that make the best use of the “Four E’s” of traffic safety.



## THE SAS® DIFFERENCE: Better data, more quickly and more cost-effectively

- **Holistic view of all data across a variety of data stores.** Only SAS offers an end-to-end solution of data integration, analytics and business intelligence to integrate traffic data to inform transportation managers where problems are in terms of congestion and crashes. By gaining a holistic view, planners can make decisions about the best way to address future safety and reliability issues.
- **Predictive analytics to model what-if scenarios.** With SAS, planners have the ability to test various scenarios on historical data to decide which options are more likely to meet the goal of optimizing each transportation mode and reducing congestion. Predictive analytics from SAS enables you to model the impacts of various transportation planning scenarios across multiple years and modes to identify and accurately predict future transportation system.
- **Outcome analysis for fact-based decisions.** Knowing in advance the impacts of decisions on state revenues and outcomes gives transportation agencies the capacity to accurately plan across the entire transportation network. Moreover, the ability to project these outcomes across multiple time periods (5, 10, 20 years) enables decision makers to identify and address future needs.

As state transportation agencies strive for a better, more reliable transportation system under constrained fiscal conditions, the continuous collection, consolidation and analysis of data can provide critical information to better anticipate and more proactively address the current and future transportation needs for a safer and more reliable system.

### CASE STUDY: North Carolina Department of Transportation (NCDOT)

#### ■ Situation

NCDOT needed to find a more efficient and cost-effective way to determine corridors for road and bridge-building projects that would avoid polluting natural water sources. The geographical survey approach of sending surveyors and water quality experts into the field to document all the streams and wetlands is costly because issues must be identified before the transportation department can narrow the corridor choices for a new roadway. On a large project – such as a bypass – the state might need to survey thousands of acres of land.

#### ■ Solution

SAS computer models using advanced data sources help narrow the choices of possible road corridors without resorting to costly land surveys. SAS Analytics provides the engine for this innovative project that is gaining national attention and earned an Environmental Excellence Award from the US Federal Highway Administration.

#### ■ Results

The process can save as much as \$500,000 per road project and reduce up to 20 percent the time it takes to select and plan for a road.

#### ■ What if you could ...

##### **Accurately plan transportation.**

What if you could make decisions by quickly identifying all activities, trends and costs – and their interdependencies with one another – within the transportation system?

##### **Reduce the crash rate.**

What if you could develop highway and safety plans and interventions that will have the best return on investment in terms of reducing the crash rate?

##### **Improve enforcement efforts.**

What if you could identify high-risk drivers and enhance your enforcement efforts?

##### **Improve road safety.**

What if you could design and/or redesign roadways to minimize the probability of accidents?

##### **Save lives.**

What if you could implement best practices with first responders to improve emergency practices and save lives?

##### **Effectively advertise.**

What if you could design a public education campaign targeted toward saving lives with the insight to know how it will use funding most effectively?

#### ■ You can. SAS gives you The Power to Know®

### SAS FACTS

- SAS is used by all 50 US state governments.
- More than 35 state departments of transportation are SAS customers.

Learn more about SAS software and services for government at [sas.com/government](http://sas.com/government)



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