HOW TO USE DATA AND ANALYTICS TO ACHIEVE YOUR TRAFFIC MANAGEMENT GOALS
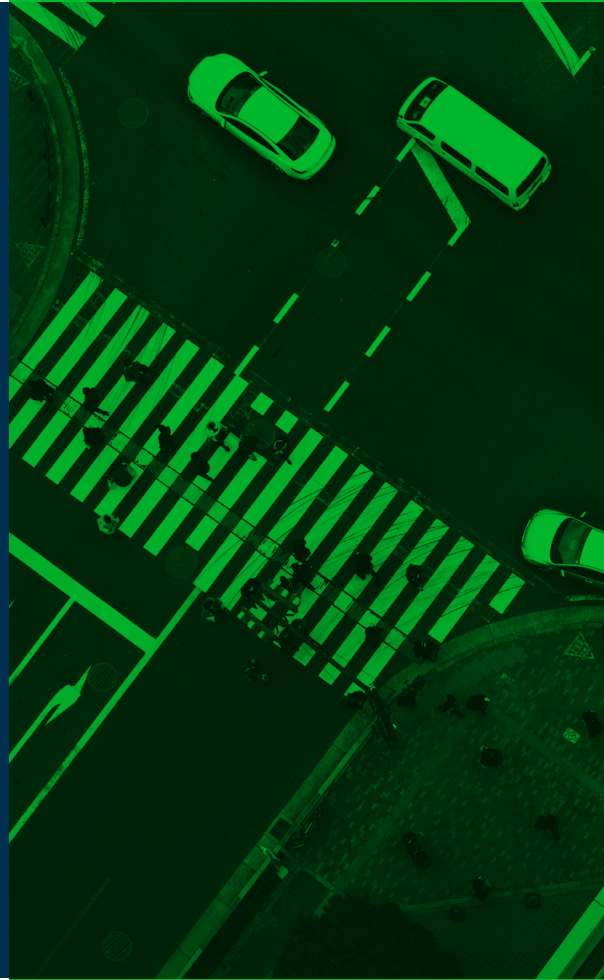
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Introduction

As towns and cities everywhere become more populated and industry continues to grow, our roads have become more congested. Each year, both the number of vehicles on the road and the number of miles they travel continue to increase as people travel for work, to shop or to visit with friends and family. The number of trucks and delivery vehicles increase as well as industry moves goods across our cities, states and nation.

For municipalities and public agencies, increased traffic has traditionally meant more personnel assigned to carry out the important, never-ending tasks associated with managing volume, speed and safety. But cuts and hiring freezes have made it necessary to become more resourceful in order to achieve goals and manage safety risks.

One answer to this dilemma lies in approaching the problem from a new perspective—one that leverages the technology at an agency's fingertips with cutting-edge automation that amplifies its impact. This paper provides eight ways you can leverage data and analytics to realize your traffic management objectives. By employing a data-driven strategy to your traffic management program, you can realize measurable results now and for the future, making roads safer for everyone.

#1 Obtain Grants and Funding

When you apply for a grant or other kind of funding to support traffic calming, management and safety initiatives, the competition can be significant. Your application is considered among hundreds of others from municipalities and agencies with similar needs as yours, so how can you ensure that your grant application stands out as a good candidate to those on the reviewing committee?

The fact is that you are more likely to obtain funding for the purchase of traffic devices and new program initiatives if you demonstrate that you have both sufficient need and the ability to accurately measure results and prove program success. Fast, centralized access to comprehensive traffic data and analytics provides both, by allowing personnel to generate and distribute reports on demand or at prescheduled intervals for rapid response and measurement.

To qualify for certain grants, providing reliable traffic data and analytics helps you to illustrate your problem statement related to speeding issues. With others, such as state Traffic Safety Information System initiatives, the ability to generate reports is a must in order to be eligible.

Reports that are helpful in demonstrating your funding needs for traffic calming initiatives include site-specific speed summaries, 85th percentile volumes by day and time, and speed limit to average speed comparisons. Reports that demonstrate need for additional turning lanes, truck traffic diversion or other road improvements include vehicle volume and classification reports. Reports that measure success over time include traffic sign effectiveness reports, which chart the percentage of vehicles slowed down by a specific radar speed display, and volume by compliance reports that display the number of vehicles that are speed-limit compliant, those inside the speed threshold, and those violating the speed limit by a predetermined percentage. By running the same report for two different time periods, you can compare the "before" and "after" data to track net changes.

If you are required to comply with a Traffic Safety Information System initiative to facilitate access and integration of traffic data with other agencies, you are required to provide comprehensive information from all your traffic devices, which you have at your fingertips with an online reporting system. With a single centralized database stored in the Cloud, other agencies can easily access your traffic data through a secure Internet connection using a login and password you provide.

#2 Justify a Budget Request

Similar to when your agency submits a grant application, data analytics can be enormously helpful at budgeting time. When requesting expenditures for a traffic safety program or devices such as radar speed displays or count and classifiers, the extent to which you can show legitimate need now and results later can mean the difference between a thumbs up or thumbs down from the budgeting decision makers.

Another factor in your ability to successfully secure budgeting approval is whether you can demonstrate how the community will save money by making staff and traffic engineers more efficient and effective. One way to accomplish this is by being able to quickly, easily and accurately identify where traffic studies are most needed. For example, All Traffic Solutions TraffiCloud™ Extended Speed Summary provides immediate insight into peak vehicle volumes and speeds, arranged by time of day and day of the week for a specific location, to determine if a comprehensive traffic study is warranted.

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A sign of the future.™

Extended Speed Summary Report

Generated by Marketing Demo from All Traffic Solutions Traffic Study Account
on May 17, 2017 at 5:20:29 PM
Site: Beside Mt Nittany United Methodist Church, NB

Time of Day: 0:00 to 11:59
Dates: 1/13/2017 to 1/19/2017

Hours	Sign Mode	Speed Limit	Total # Vehicles	Total # Violations	% Violations	Avg # Vehicles	Avg # Violations	Minimum Speed Recorded	Maximum Speed Recorded	Avg Spd	50% Spd	85% Spd	Sign Effectiveness
0:00	Speed	25	103.0	20.0	19.4 %	20.6	4.0	8.0	47.0	31.0	30.3	35.3	66.0 %
1:00	Speed	25	39.0	8.0	20.5 %	7.8	1.6	25.0	52.0	33.5	31.5	37.1	65.4 %
2:00	Speed	25	39.0	9.0	23.1 %	7.8	1.8	8.0	45.0	31.6	31.8	36.4	75.8 %
3:00	Speed	25	43.0	14.0	32.6 %	8.6	2.8	12.0	50.0	32.8	31.5	39.5	72.5 %
4:00	Speed	25	55.0	14.0	25.5 %	11.0	2.8	21.0	49.0	32.6	29.6	37.6	75.6 %
5:00	Speed	25	168.0	45.0	26.8 %	33.6	9.0	20.0	51.0	32.2	30.8	37.8	64.8 %
6:00	Speed	25	344.0	56.0	16.3 %	68.8	11.2	9.0	57.0	30.6	29.8	33.7	65.5 %
7:00	Speed	25	776.0	110.0	14.2 %	155.2	22.0	6.0	55.0	30.6	30.2	35.4	65.6 %
8:00	Speed	25	1032.0	152.0	14.7 %	206.4	30.4	7.0	55.0	29.4	29.4	35.0	66.8 %

Having access to pre-designed, flexible reports on all your traffic devices in one place and available from an Internet connection saves personnel considerable time because they no longer have to deal with manually collecting and entering data into spreadsheets or data file management. Less time spent on paperwork means greater accountability and more time staff can focus on analyzing the data rather than compiling it.

#3 Simplify Traffic Studies

City officials and traffic engineers understand the importance of having access to timely, accurate traffic data to support traffic studies. Data derived from traffic studies provides the information needed to make smart decisions about safety, efficiency and effectiveness of traffic management efforts, but data collection has always been a very manual, time-intensive process.

In many municipalities, traffic engineers or agency staff are dispatched to stand at the side of the road and manually count vehicles as they pass. This is obviously a very time-consuming and error-prone task, not to mention expensive when you consider how much you are paying your staff, engineers or that independent traffic engineering firm.

Other agencies use counting equipment installed on the road by a team of workers who must first stop traffic while they nail down vehicle counters or lay tubes across the lanes. Then they repeat the entire process again each time equipment is moved, removed or tampered with—causing traffic congestion and placing workers and drivers at risk of injury or worse. In addition, this kind of counting equipment can be unreliable and easily damaged.

Now, thanks to web-enabled counter classifiers installed at the side of the road, agencies can collect highly accurate, relevant real-time data for comprehensive traffic studies and proactive planning without using up resources or putting them in harm's way. These devices, such as All Traffic Solutions StatTrak gather multi-lane, bi-directional traffic data and produce reports that can be accessed and downloaded from any Internet-ready device.

#4 Request Speed Limit Change

Let's suppose that despite all your efforts to slow speeders on a road, your reports show no discernible decrease in average speed or in the number of speeders, pointing to the need to ask the DoT to perform a traffic study. Does filing this request mean volumes of manual paperwork for you?

Probably not, if you submit data reports that support your request and demonstrate that remedial action is indeed required. If additional speed data is required, you'll be able to furnish it quickly and with greater accuracy than if you had to manually collect the data and perform ongoing file management to produce reports; your centralized data repository will provide the reports you need with just a few clicks.
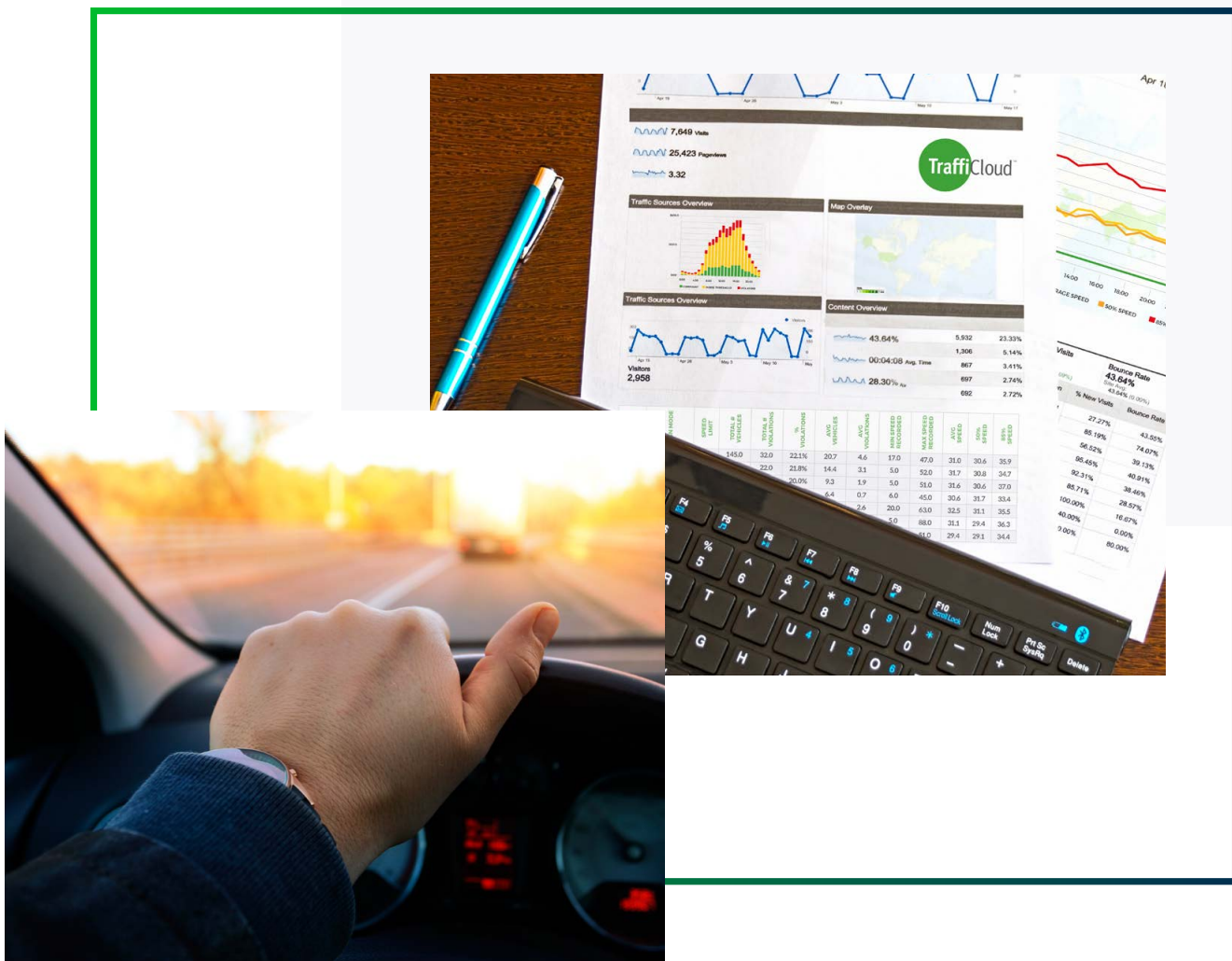
#5 Resource Prioritization

Between budget cuts and hiring freezes, careful utilization of your resources is extremely important. If you have traffic statistics, such as peak speed violation times and locations ranked in order of quantity and severity of violation, you can effectively support your request to allocate police officers to areas where speed enforcement is critical. In less critical areas, you can utilize radar speed displays to make drivers aware of their speeds. You can also schedule road work for days and times where traffic is lightest so that crews can work safely and get more done. As mentioned in #2 earlier in this paper, some traffic management reporting systems can compile this data for you using parameters you provide, such as time of day, day of the week or by a specific list of locations.

When you can quickly retrieve timely reports, it takes the guesswork out of allocating personnel where they will be most effective, which maximizes your resources as well as your budget.

#6 Proof of Success

There are many instances where municipalities are called upon to prove the success of their traffic calming and traffic safety measures. Some financially-related reasons, such as receiving state grants, have already been covered in this paper. Other times the reasons are more focused on community relations.

Some agencies are called upon frequently to provide reports to government officials or speak at community "town hall"or HOA meetings on issues related to traffic calming or local traffic safety programs. Other times you may need to address resident complaints of speeding on a particular street or neighborhood. When you have access to traffic analytics you can run reports and pull statistics before your meeting to share program results. Many All Traffic Solutions customers tell us they share TraffiCloud reports regularly on their websites or email reports directly from TraffiCloud to HOAs. The HOAs post the information on their websites or publish it in monthly community newsletters.

There's no better way to provide positive, immediate proof of the improvements you have made than with timely, well-organized reports that use data displayed in colorful graphs and charts to demonstrate success of the program.

#7 Long-term Planning

Traffic data can help identify what your agency will require in the future in terms of traffic safety and improvements. Analyzing traffic data allows municipalities to identify the locations and severity of traffic congestion and safety issues in the community to see which are trending upward and will require more long-term solutions, such as adding more traffic lanes or signals. If your agency shares traffic data with your law enforcement, they will find the data enormously helpful in planning and budgeting for new traffic equipment and for resource allocation.

#8 Holistic View of the Future

More and more municipalities are sharing data between agencies so that everyone can benefit from a larger, integrated database that paints a more holistic picture of the future.

For example, when you share traffic volume data with law enforcement, they can use that information to assign officers to a particular road during peak congestion hours. The count and classification data you collect for your traffic studies is helpful to them as well, for example, in identifying where trucks or motorcycles are most likely to speed through neighborhoods.

The city's traffic engineers will find vehicle count and classification data useful in determining how long to make turning lanes or identifying stretches of road where they may need to reroute trucks away from heavy local traffic. Urban planners can use traffic data intelligence to plan new business and shopping districts, parking facilities and residential developments.

Intelligent transportation and smart cities initiatives can use the data to build conditional messaging or dynamic traffic routing in real time, using a flexible open platform that integrates with existing equipment and systems.

When public agencies share their data, everyone benefits from the combined pool of intelligence it creates.

Conclusion

As municipalities find themselves continually challenged by the growth in population, commerce and sheer volume of traffic, adopting a data-driven strategy to traffic management is more critical than ever. By applying a "data analytics mindset" you can capitalize on the trends you see taking place for more informed decision making that leads to better traffic management and resource utilization, reduced congestion and work zone accidents, improved community relations and safer roads for everyone. If you would like to simplify and streamline the collection, management and distribution of traffic data in your municipality, we're here to help.

Ask us for a personal demo of TraffiCloud™, the traffic management solution that lets you control your data and traffic devices—regardless of manufacturer—from any Internet-ready device 24/7, providing a new level of awareness while reducing the amount of time needed to manage your traffic devices and information.

Call 866.366.6602 or email us at sales@alltrafficsolutions.com

TraffiCloud leverages our patented technology (US Patents 8,417,442; 8,755,990; 9,070,287; 9,411,893) to deliver unique cloud-based management, features and functionality.

All Traffic Solutions delivers cloud-based traffic management solutions, including radar speed and variable message displays, imaging products and intelligent transportation systems for law enforcement, transportation and communities. Our innovative TraffiCloud™ traffic management platform is changing the way communities solve their most complex traffic, transportation and parking challenges by allowing them to manage all their traffic equipment remotely, as well as leverage data to increase traffic safety, streamline their operations and achieve lasting results.

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