How Connected Vehicle Data Can Transform Public Sector Decision-Making

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Public sector organizations, to a greater extent than their private sector counterparts, are often tasked with doing more with less. In today's climate of rising inflation, stretched public workforces, and increased demand from communities for sustainable solutions, public organizations are seeking new ways of working that enable efficient problem solving.

Key to solving problems quickly and effectively is making informed decisions that stakeholders can appreciate and trust — especially in the public sector where the stakeholder landscape is complex. Arriving at these kinds of decisions requires the right data. Public organizations need cost-effective data sources that enable an accurate understanding of what is happening in the community, and the potential impact different actions could have.

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This eBook explores:

1 The data paradox facing the public sector today

2 Connected Vehicle Data (CVD) - what it is and why it has potential

3 How this data can assist in public sector decision making

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The Public Sector's Data Paradox

In today's data-driven world, getting to the right data that can help solve problems is a monumental task for private and public organizations alike, made even more complex as organizations face a landscape altered by the Covid-19 pandemic. There is not a lack of data itself, but rather a barrier to cost-effectively getting accurate data and quickly visualizing it to solve problems.

Public organizations uniquely sit on mountains of available data, but their ability to quickly access, understand, and leverage it in everyday decisions is limited. The reason for this is complex. First, sifting through data and analyzing it has historically been a resource intensive task, requiring both public dollars and manual labor to get it right. Second, rules and regulations around data privacy and access can make getting to the necessary information a slow process, riddled with controls and red tape. And lastly, when data is finally in hand, often it is not usable because its relevance has expired.

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Connected Vehicle Data (CVD)
A transformational new data source

Enter connected vehicle data, an easy to access and incredibly powerful data source that breaks down traditional barriers to understanding the mobility ecosystem for public organizations.

Connected vehicle data (CVD) is information generated and transmitted from connected vehicles, which studies show will make up 95% of cars on the road by 2030 (source: Ptolemus). It enables public organizations to understand what millions of vehicles are doing out on the roads at any given moment, through the lens of a unique and one-of-a-kind source — the cars themselves.

Connected cars generate a huge amount of data through built-in sensors that track everything from the vehicle's speed, to when and where drivers are needing to quickly hit the brakes. Together, these data points across millions of active vehicles create an incredibly accurate picture of consumer behavior, enabling organizations to visualize everything from how people are commuting, to where hard braking and accidents are most prone to occur.

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The Connected Vehicle Data Difference

Precision

CVD provides up to six decimal places of latitude and longitude around a given vehicle and accesses hundreds of thousands of those data points from active connected vehicles every second

Accuracy

CVD has an accuracy of between 0-3 meters, providing a detailed view into vehicle locations down to their exact spot on the lane of a highway

Latency

CVD provides low-latency data, instantaneously processing it from the vehicle and making it available to users in 60 seconds or less

Frequency

CVD collects millions of data points across the US in real-time and lets users customize how often, and from which areas, they want to pull information

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Benefits for Public Organizations

Connected vehicle data provides public organizations with a unique data source that overcomes the pain points associated with traditional methods of information gathering, offering a cost-effective way to visualize what's happening, or has historically happened, at any given moment in an area's road network.

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Ease of Implementation

It is critical for any new data source to fit within prior investments made by public entities, maximizing the return on investment of public dollars. CVD can be easily integrated into existing business intelligence and geographical information systems to enhance the data picture, not replace it. CVD also does not require specialized training or in-house data analysts to implement. It is available in easy-to-visualize formats and anyone with basic Excel skills can interpret and interrogate the data — making it a good fit for public organizations who want to expand who on their teams can leverage data in their day-to-day decision making.

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Data Quality & Availability

Accessing information on things like directional traffic volumes, traffic flows, congestion, and average speeds historically has required public organizations to analyze huge amounts of data. Covering 95% of the road networks in the US, connected vehicle data removes the need to process large amounts of data and instead allows organizations to easily filter to specific areas and times of day they are most interested in. Information from connected cars is reported every 15 minutes, including vehicle counts, and average speed, meaning CVD outputs are not only more quickly available but also more accurate.

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Cost Effectiveness

Investments in data for the public sector must be not just cost sensitive but cost effective. CVD is accessed in a subscription model and requires no additional employees or hardware to implement. And because it enables organizations to choose the areas and specific days and times of most interest to them, they only pay for the data they need – something many data sources do not offer. Unique to CVD, however, is that because it pulls information from millions of vehicles, snapshots of data can often be used to extrapolate broader trends. This makes the data not only affordable, but effective in telling a full, accurate story without the need to pull, and pay for, mountains of information.

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How CVD can transform decision making for the public sector

Understand traffic congestion patterns

Whether the goal is congestion mitigation, speed reduction, emergency response, or analyzing a potential site for a new public service, accurately understanding the flow of traffic and where backups are occurring is hugely valuable. CVD can provide speeds of vehicles in an easy-to-visualize way, enabling both real-time and historical analysis of congestion patterns to help organizations determine easing methods that increase safety and reduce frustration for drivers and passengers. It can also help organizations measure signal performance, offering insight that can inform optimization plans which in turn can mitigate intersection congestion.

Analyse impacts of road closures and work zones

Planning construction, detours and road closures can be done more effectively if public organizations understand their potential impact ahead of planning when and how they will be done. CVD can offer granular insights into how a work zone will impact both the roadway it occurs on as well as the surrounding road network, which can help organizations choose the optimal time for work to happen so community impact is limited.

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How CVD can transform decision making for the public sector


Evaluate the travel impact of weather and other events

With insight into how a snowstorm or large sporting event impacts the flow of traffic, organizations can use CVD to optimize the impact of diversions on the surrounding road network. Because it offers both real-time and historic data, CVD can also assist in planning for large events or potential weather to increase safety and avoid negative outcomes.
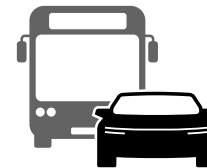
Determine new trends in commuting

CVD can provide public organizations with a better understanding of how people are commuting within their region – from what times of day, to what roads and methods of travel they are choosing. It also can uncover speeds of travel and where congestion is happening throughout the busy times. This information can help public organizations put in place traffic easing measures and more effectively plan detours and construction to make travel easier, and safer, for the wider community.

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Texas A&M Transportation Institute

The Texas A&M Transportation Institute (TTI) is an agency of the State of Texas and member of The Texas A&M University System. TTI is using an array of innovative technologies, including Wejo's Connected Vehicle Data in research projects aimed at assisting TxDOT in its efforts to improve roadway safety and access. One of these projects is focused on improving safety and accessibility to the Permian Basin region in West Texas.

Using Connected Vehicle Data, TTI could provide data-driven recommendations to TxDOT, including where to install new driveways or retrofit existing ones along the corridors in the Permian Basin region to improve accessibility, mobility, and public safety. Initial analysis indicated crashes in the area could be prevented by better turn lanes. The team also determined a better system to limit hard braking, and ultimately mitigate crashes, by alerting drivers of what's ahead.

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If you think of a painting analogy, Connected Vehicle Data is the fine detail. Traditional data sets are the broad-brush strokes — the shapefile, roadway design, traffic volume and crash reports — Connected Vehicle Data is unmatched in its ability to add color to things like speed, hard braking and turning movements that we otherwise would not have.

Michael Martin, Assistant Research Scientist
Texas A&M Transportation Institute (TTI)

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Why Wejo?

Wejo is a global leader in connected vehicle data, revolutionizing the way we live, work and travel by transforming and interpreting historic and real-time vehicle data. The company enables smarter mobility by organizing trillions of data points from approximately 12 million vehicles and more than 60 billion journeys globally, across multiple brands, makes and models, and then standardizing and enhancing those streams of data on a vast scale.

Wejo partners with ethical, like-minded companies and organizations to turn that data into insights that unlock value for consumers. With the most comprehensive and trusted data, information and intelligence, Wejo is creating a smarter, safer, more sustainable world for all.

Founded in 2014, Wejo employs more than 250 people and has offices in Manchester in the UK and in regions where Wejo does business around the world.

For more information on how CVD can help your organization make informed decisions, contact us at **info@wejo.com** or visit **www.wejo.com**

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