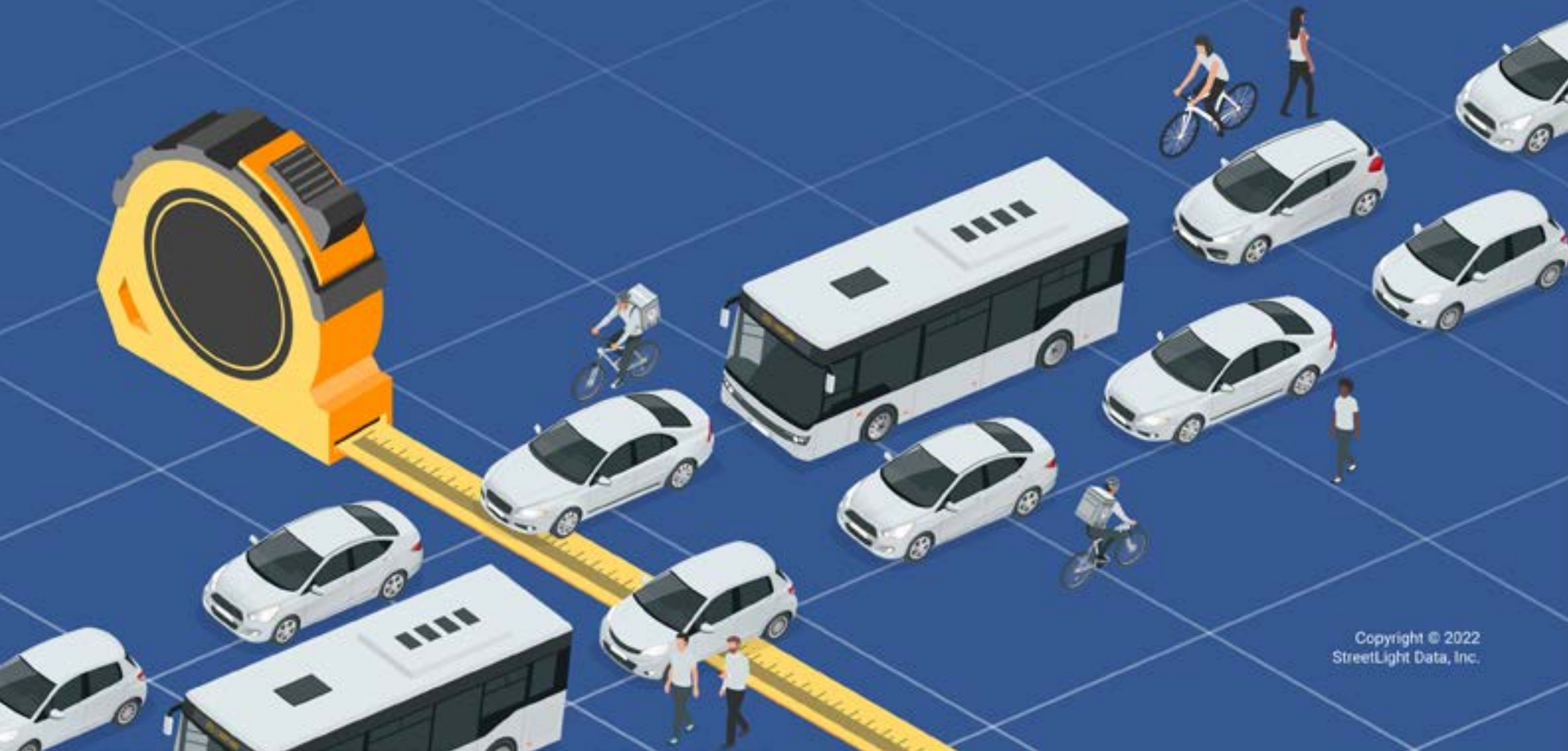


GRANT GUIDEBOOK



Your Big Data Blueprint For A Winning Grant



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Your Big Data Blueprint for a Winning Grant

Introduction

Why projects don't get funded

All too often, fantastic projects don't get funded because the data needed to show economic and societal benefits is unavailable. When agencies have just sixty days (and often less) to turn around a grant application, they scramble to collect outdated or incomplete statistics, old surveys, even educated guesses needed to estimate a baseline. As a result, their grant applications don't always create a compelling reason to receive funding and won't stand out in a sea of competition.

A competitive grant application requires good (and that means reliable) data. StreetLight has been the go-to source for thousands of applications — vetted thoroughly by many AEC firms and transportation agencies along the way — and trusted as a source of empirical insights into how cars, trucks, bikes, and even pedestrians travel in your specific locality. Need a perspective on pandemic-impacted traffic? Need to see the most recent congestion trends on a road network? Origin-Destination data to discern between local vs. visitor traffic? AADT for rural roads?

It's all here, validated, made transparent with ample whitepaper documentation, and ready for your grant application. This eBook is designed to remind you of the world of possibilities, whether you have 90 days — or as few as 30 — to complete your application!

Why current “data” matters now, more than ever

There's a good chance that receiving another “in these unprecedented times” message will be the final straw. However, “these unprecedented times” have fundamentally changed how we work, live, and spend our time. Work-from-home (WFH) has drained traditionally busy downtowns of large cities and enlivened the suburbs midweek once again.

It has also changed the makeup of cities as housing shortages drive up costs and force lower-income residents to move. Walking patterns have changed, bringing pedestrians into areas built for vehicle traffic. The new transit line extension well justified before the pandemic may no longer be relevant, and the existing line may need a schedule revamp. Tollway peaks have shifted from traditional commute hours, transforming budgets and removing HOV lanes to accommodate new driving patterns, and truck traffic has been redefined by rapid growth of online shopping.

The implication is simple. “These unprecedented times” mean that infrastructure investments envisioned pre-pandemic may no longer reflect the transportation needs of your community – and big data provides a fresh (near-real-time) perspective on what your constituents need now.

While relying on familiar data collection methods is tempting, shifting to modern transportation analytics offers planners an on the-fly-perspective, regional, rural, urban – down to a single city block – drastically improving the reliability of funding applications and differentiating the applicant.

**But how can these local and state governments ensure the story comes to light?
With an entirely new way of thinking about their data and application process.**

Let's reiterate the stakes

The US Prepares for the Biggest Infrastructure Investment in Decades

The \$1.2 trillion bill comes in response to the growing need for infrastructure support. The American Society of Civil Engineers gave the nation's infrastructure a C- score in 2021, and funding would improve both travel and the transport of goods.

Funding for transportation includes:

- \$110 billion for bridge and road repair
- \$39 billion to improve public transportation and \$66 billion for passenger and freight rail
- \$17 billion earmarked for port infrastructure and airport repair.

¹Whitepapers and validation documents published by both StreetLight and third parties are available for download at streetlightdata.com/whitepapers/

Canada Continues Its Five-pronged Plan

Canada launched its own infrastructure investment program in 2016. The 12-year, \$180 billion program, “Investing in Canada,” includes five streams—public transit, green, social, trade and transportation, and rural and Northern communities.

The initiative also includes a COVID-19 Resilience stream for short-term, quick-start projects. It funds active transportation investments—parks, trails, foot and bike paths, for example—by diverting 10% of allocated funds from the other streams.

In 2021, Canada launched permanent federal public transit funding for the first time. The \$14 billion program executes over the coming eight years, culminating in \$3 billion per year in permanent funding starting in 2026/2027. The application-based component includes:

- Rural Transit Solutions Fund (\$250M)
- Zero Emissions Transit Fund (\$2.75B)
- Active Transportation Fund (\$400M)

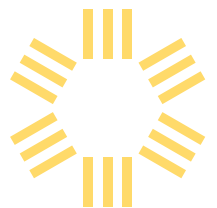
Big Data is the key to accessing these funds and more

Cities, provinces, and states won't automatically receive this money, but they can make the process of getting to “yes” easier with the right components. StreetLight's analytics can help agencies make a strong case for those grant dollars using the most comprehensive, validated transportation analytics available.



Table of Contents

I. PROVE THE NEED FOR YOUR PROJECT USING CURRENT DATA	6
II. VISUALIZE THE STORY TO MAKE AN AIRTIGHT CASE FOR FUNDING	8
III. CREATE A PROPOSAL THAT DEMANDS A YES	9



STEP I:

PROVE THE NEED FOR YOUR PROJECT USING CURRENT DATA



Old assumptions don't apply. Even pre-Covid, new mobility trends were upending our view of how constituents move. Since 2020, how we live and how we move has changed, and a relevant application requires fresh data that provides a believable picture of a project's impact.

We surveyed our clients as to which of StreetLight's metrics matter most for a winning application, pinpointing seven "building blocks" to a winning grant:

- **Traffic counts:** Builds an understanding of vehicular traffic volume; historically used for numerous types of applications, from estimating Greenhouse Gas emissions using "vehicle miles/kilometres traveled" metrics or forecasting pavement quality using AADT as part of an Asset Management Plan.
- **Speed / speed trends:** Establish a baseline for congestion trends through the pandemic; a fundamental metric with various applications, including the means to quantify a project's economic benefit.
- **Public transit planning:** Offers insight into movement patterns to plan new transit initiatives and revitalize existing routes.
- **Commercial truck travel:** Allows for economic impact assessments, quality of life, and local pollution assessments; includes ports and airport freight.

- **Bike and pedestrian patterns:** Identifies hotspots where cities might want to invest in new, safer dedicated facilities or implement traffic calming measures.
- **Top routes:** Uncovers routing patterns for people and freight that help reviewers assign higher priority to certain projects.
- **Before and after studies:** Enables you to quantify the impact of new infrastructure, policies, or programs using empirical data; examine outcomes of similar past projects to support a rock-solid benefit-cost analysis.
- **Demographic and user information:** Offers context for understanding economic benefits (tourism), access to jobs and services, or equity in transportation.

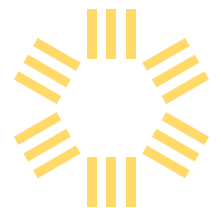
Imagine handling any of these application inputs from your desktop and getting answers back in a matter of minutes, and at most, hours – and the implications for building a bulletproof case in that 30 to 60 day grant application window!

StreetLight InSight(R) was purpose-built to help the smallest of planning or public works teams do just that.

EXAMPLE | ANALYTICS IN ACTION: COLUMBUS, OHIO

Columbus, Ohio's multiphase restructuring of the I70/71 corridor had the potential to transform not just the immediate area but also state and national freight travel—if they could only quantify the geographic scope of freight movement.

Using ODOT's subscription to StreetLight InSight, the city ran Origin-Destination (O-D) analyses for truck traffic to uncover just how critical Phase 4 and its funding would be to ease freight bottlenecks. The data came in, and it was clear that the I70/I71 corridor was a significant nexus for the national supply chain.



STEP 2:

VISUALIZE THE STORY TO MAKE AN AIRTIGHT CASE FOR FUNDING



Gathering the right data is only the first step—agencies must somehow weave all the right elements to tell the story of data, not simply state what data means. Visualizations bring the story to life by providing the context behind the data.

Consider how many funding proposals the government will see now that over a trillion dollars is on the table. Agencies need to weave the most critical elements of their research into a narrative that is both memorable and also a clear message that their project holds the highest priority.

Data Visualization:

- Allows grant applicants to highlight and control for variables. It can make multiple factors clearer or help drill down into a single variable's effect
- Helps curate key conclusions to ensure that the culmination of the story remains in focus
- Builds a case for current and future benefits

EXAMPLE | ANALYTICS IN FOCUS: OHIO'S VISUALIZATION STRATEGY

The data showed just how important travel time and congestion were to the supply chain far beyond Ohio's borders. To bring that story home, visualizations made it easy to see freight traffic spread evenly between local, state, and national trips.

The visuals demonstrated that the Columbus project not only benefited the citizens of Ohio formerly impacted by redlining and the subsequent interstate construction, but also benefited the national supply chain to ease congestion by completing Phase 4 as soon as possible.

STEP 3:

CREATE A PROPOSAL THAT DEMANDS A “YES”



Funding agencies like the USDOT and Infrastructure Canada evaluate grants based on the validity of the data and the assumptions drawn from that data. Two critical components of a grant application are:

- The establishment of baseline data to evaluate need
- Future estimates based on that baseline.

You will need data to demonstrate that your proposed project will have greater benefits than costs and that the project will have a BCA ratio above 1.

KEY COMPONENTS OF BCA

During the review process, economists working with the funding agency will examine key assumptions about the current state of the area and flag any technical errors. In addition, they'll perform sensitivity analysis on key inputs and consider any unquantified benefits. This process begins with—and hinges on—baseline data provided in the application.

BCA must provide the reviewer with enough information to follow the logic and then reproduce the results. This could include:

- Spreadsheets or database files showing the calculations
- Technical memos describing the analysis
- Documentation of all assumptions and inputs (i.e., sources of information:
- Present annual benefit and cost streams—and this is important—by type, not just a summary

WHY DOES BASELINE DATA MATTER?

In the past, agencies might have established baseline data using comparative methods—literally borrowing the data from comparable areas rather than data specifically gathered from their own location. Or, the “most recent” data is 5 years old or greater. This task proved especially challenging for rural and underserved areas, meaning funding dollars disproportionately served large cities with extensive staff working to secure grants.

Now, agencies can use StreetLight data to demonstrate impacts of transportation projects using before and after analysis gathered from data directly in their location — *on demand, no matter their location.*

HOW STREETLIGHT DATA DELIVERS ROCK-SOLID BCAS

Standard categories for federal grants include the quantified benefits of the proposed project. The StreetLight InSight dashboard provides agencies with customizable metrics to fulfill each requirement of a federal grant—in less time and with less overall cost.

Travel Time Savings

Origin-Destination routes help cities determine how and why traffic moves through specific locations. StreetLight’s O-D revolutionizes data collection by offering it endlessly customizable and on-demand. Even better? It’s available within the hour instead of months. In addition to the volume of vehicles traveling through a particular area, StreetLight provides actual travel time metrics for road segments, in addition to travel times between O-D pairs. This data, available at your fingertips, reduces the scramble in information gathering for time-sensitive grants.

In addition, Vehicle Miles Traveled (VMT) provides metrics for demand forecasts, congestion planning, and regional and corridor studies. Together, these tools offer a complete picture of nearly every street, corridor, and region within North America at a fraction of the time and cost.

Operating Cost Savings

StreetLight’s InSight Dashboard also allows on-demand access to the most critical metrics for determining cost savings. Things like VMT, Turning Movement Counts, or even Average Annual Daily Counts provide data to help grant reviewers understand the cost savings housed within the planned infrastructure or transportation project.

Safety Benefits

Turning Movement Counts from StreetLight helps planners and traffic engineers analyze nearly every intersection in the US or Canada—signalized or not. This on-demand data offers impact and capacity analysis on demand and makes even rural analytics available for safety metrics. It also avoids sample size challenges of traditional 48-hour counts. In addition, tools like VMT round out analysis of how people actually travel in that exact location for traffic mitigation measures.

Emissions Reduction Benefits

StreetLight's Average Annual Daily Count (AADT) metric offers data for more than 4.5 million miles of roadway based on over one trillion 2020 location records in the US and Canada. AADT leaves no stone unturned and allows on-demand data without the cost and risk of deploying staff counters. AADT provides baseline data for planning efficient and safe traffic routes that reduce congestion—helping cut down on emissions from idle vehicles.

In addition, Vehicle Hours Traveled includes analysis of time spent moving through specific regions, roadways, or corridors. This on-demand data supports planning for reducing congestion, rerouting, and other environmentally-minded measures.

Benefits to Existing and Additional Users

StreetLight also provides on-demand demographics data. These inferred demographics respect the privacy of existing and additional users while offering additional dimensionality for equitable funding. Highlighting impact for underserved communities provides the social context required for current grant initiatives.

Travel Route Diversion

StreetLight's Top Routes analyzes vehicle volume on all routes between the chosen O-D pair. Visualizations help identify route alternatives, optimal detours, and potential risks to neighborhoods experiencing cut-through traffic. In addition, Inferred Trip Purpose metrics explore why people travel to further smart infrastructure planning.

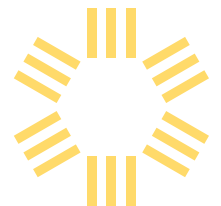
Other Quantifiable Benefits

StreetLight offers a host of other potential metrics from an easy-to-use dashboard on-demand. Bicycle and pedestrian metrics help quantify anticipated health benefits of active transportation projects. Metrics like vehicle speed, average time or length, and trip circuitry show additional context required to tell the story of infrastructure and get to a faster grant "yes."

Environmental Approvals

The US's National Environmental Policy Act requires federal bodies to determine the environmental impact of projects before making a decision. Metrics in the StreetLight InSight dashboard help determine the environmental benefit of undertaking projects and the consequences of taking no action.

Metrics like Vehicle Miles Traveled or Average Annual Daily Count help planners design infrastructure that reduces emissions and can ensure projects fulfill the new requirements of SB 743.



EXAMPLE | ANALYTICS IN ACTION: OHIO'S FINAL OUTCOME

Columbus, Ohio's multiphase restructuring of the I70/71 corridor had the potential to transform not just the immediate area but also state and national freight travel—if they could only quantify the geographic scope of freight movement.

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PRIVACY BY DESIGN. Reliable analytics for a privacy-minded grant.

We have been committed to privacy since StreetLight's founding in 2011, with privacy-by-design being a core principle at StreetLight Data.

As agencies collect and analyze information in preparation for funding, they need to understand how current privacy regulations keep the city and its citizens safe.

StreetLight data gives cities access to the world of big data—ingesting, indexing, and processing over 40 billion location records from connected devices like smartphones and navigation. Cities can analyze and visualize travel patterns on demand. No more waiting for surveys, traditional sensor installation, and other bottlenecks.

What makes this possible is anonymized data. Cities gain access to a self-serve platform with continuously validated living data created for responsible use. While proposal reviewers may not ask questions about data privacy during their review, cities can still get answers to their data questions without violating privacy.

Securing funding with compelling data

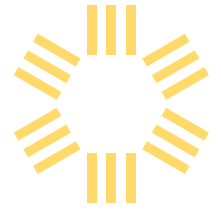
Thanks to StreetLight, agencies no longer require outdated analysis hampered by data costs, time, geography, and lack of expertise.

With an easy-to-use platform that requires little training, cities like Columbus, Ohio, are getting a start on acquiring funds from the infrastructure bill and stand ready for future funding goals.

Agencies can overcome the most significant hurdles to leveraging big data by obtaining a clear before-and-after understanding for classic problems such as congestion and more significant challenges such as vehicle emissions. StreetLight measures change over time but provides answers within minutes thanks to a self-serve platform.

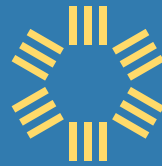


About StreetLight Data



StreetLight Data pioneered the use of Big Data analytics to help transportation professionals solve their biggest problems. Applying proprietary machine-learning algorithms to over four trillion spatial data points over time, StreetLight measures diverse travel patterns and makes them available on-demand via the world's first SaaS platform for mobility, StreetLight InSight®. From identifying sources of congestion to optimizing new infrastructure to planning for autonomous vehicles, StreetLight powers more than 10,000 global projects every month.

For more information, please visit: streetlightdata.com



STREETLIGHT

Big Data for Mobility

streetlightdata.com

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