

# Verizon Smart Communities

Joel Fisher  
Business Development City Solutions  
Verizon Smart Communities



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# Major city initiatives



**Sustainability  
and efficiency**



**Public safety  
and security**



**Citizen  
experiences**



# Verizon offers a comprehensive set of solutions.



**Intelligent  
Lighting**



**Intelligent  
Video**



**Intelligent  
Traffic  
Management**



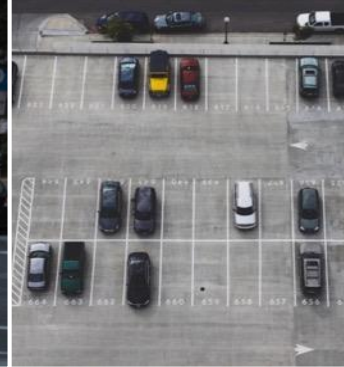
**Intersection  
Safety  
Analytics**



**Traffic  
Data Services**



**Parking  
Optimization**



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# Traffic challenges

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Delays and blockages

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Outdated systems providing  
inaccurate information

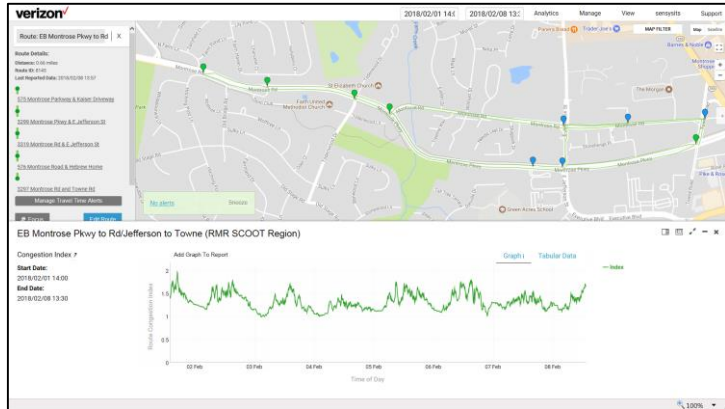
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Traffic-related injuries  
and fatalities



# Intelligent Traffic Management

- Signal optimization
- Near real-time data
- Improve traffic flow





# What can you gain from Intelligent Traffic Management?

Increased  
safety

Quantified  
performance

Improved  
quality of life

Streamlined  
operations



# Modular application platform

## Single platform for multi-modal transportation

- Managed service solution
- Traffic data, alerts and performance measures
- Traffic-signal optimization tools
- Red-light violations
- Travel time, origin/destination and congestion measurement
- Bicycle detection and counts
- Speed monitoring
- Real time / Historic Purdue Coordination Diagrams

# Intelligent Traffic Management—Advanced Plus solution

## Performance measures

### Basic features:

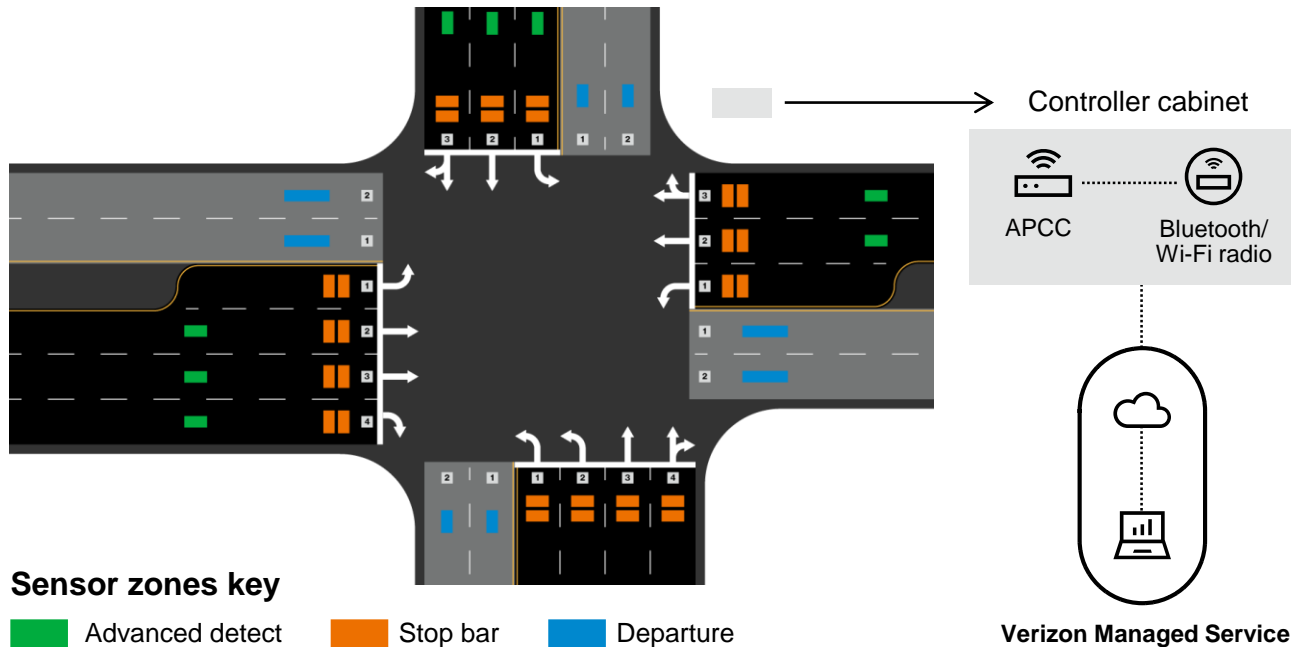
- Travel times
- Intersection delay
- Origin/destination data

### Advanced features:

- Volume/Occupancy/Speed data
- Congestion Emissions data
- Vehicle miles/hours traveled
- Timing plan analysis
- Temperature sensing and alerts

### Advanced Plus features:

- 24/7 Turn movement counts
- Export to Syncro
- Volume/capacity ratios w/LOS
- Wait Times
- Arrivals on green
- Red-light violations
- Coordination diagrams





- Live traffic using cellular location data
- Congestion mitigation
- Accurate location, travel direction and speed







# Knowledge is power.

**To help planners reduce congestion,  
we created Verizon Traffic Data Services.**

This solution taps into an incredible wealth of anonymous cellular location data with street-level accuracy to provide detailed and actionable insights into mobility patterns, as well as performance information about your transportation systems.



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# Monitor live traffic patterns.

**Traffic Data Services offers new data sources with innovative tools:**



Verizon collects anonymous cellular location data about once every minute.



We accurately and reliably detect congestion as it occurs, as well as phone location as owners travel, and we calculate speed, direction and flow.



We offer data on multi-modal journeys (train, subways, etc.).



Travel data is correlated with publicly available demographic data.



You can review both live and historical data.

**By collecting and analyzing billions of network data points, we help transportation engineers and planners develop better congestion plans at a more granular level.**

# Easily gather better information.

**Traffic Data Services is flexible enough to allow you to customize the scope of your study without added hardware costs. Our cost-effective solution includes:**

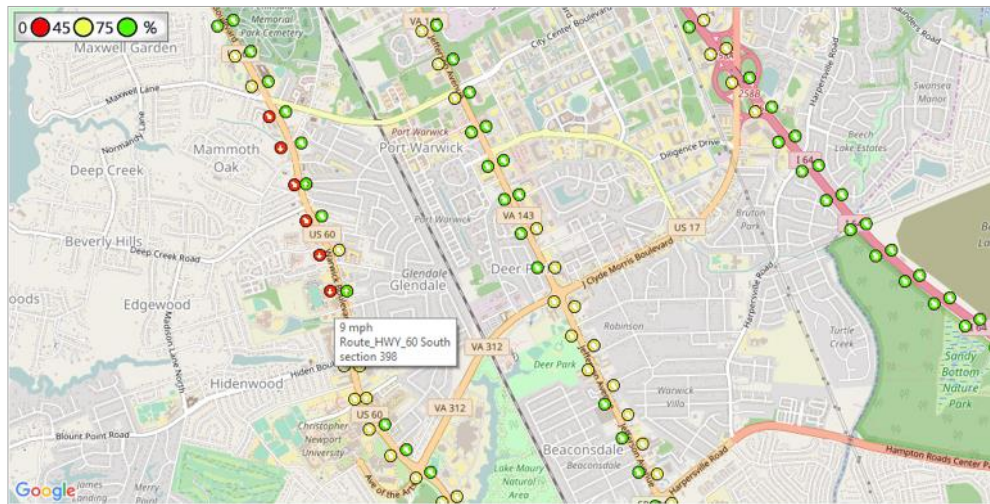
- Live traffic management
- Congestion mitigation
- Travel surveys for trip times
- Origin-destination studies
- Traffic impact studies
- Traffic signal tuning
- Congestion root cause analysis
- Mass-transit planning





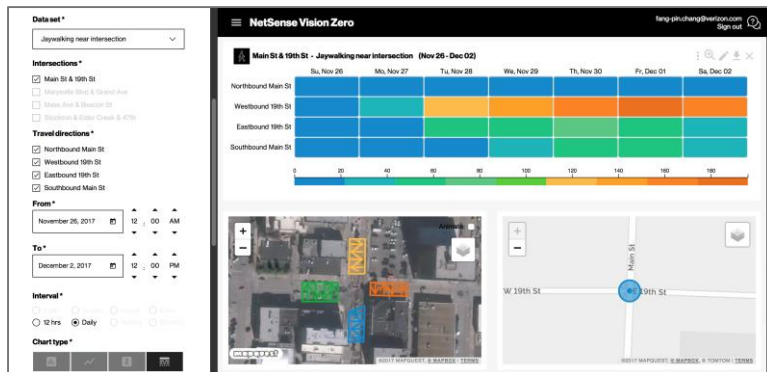
# Use our sophisticated live-data dashboard.

- Access live data showing at-a-glance traffic metrics.
- Get situational analysis through playback of historical data.
- Analyze where tourists go, where they stay and which attractions they prefer.
- See the big picture through city and neighborhood views with street- and junction-level accuracy.



# Intersection Safety Analytics

- Analyze and measure traffic patterns among motorists, pedestrians and cyclists
- Historical data/trends
- End to end solution from pre-design to installation and maintenance



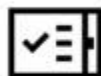


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## We need more—and better—data.



An integrated, managed solution for measuring bicycle and pedestrian safety.



A dashboard to analyze patterns of dangerous behaviors.



Application programming interfaces (APIs) to feed measurement results to external platforms/data storage.



Comparison with historical data to demonstrate safety achievement.



End-to-end support, from planning to deployment to maintenance.

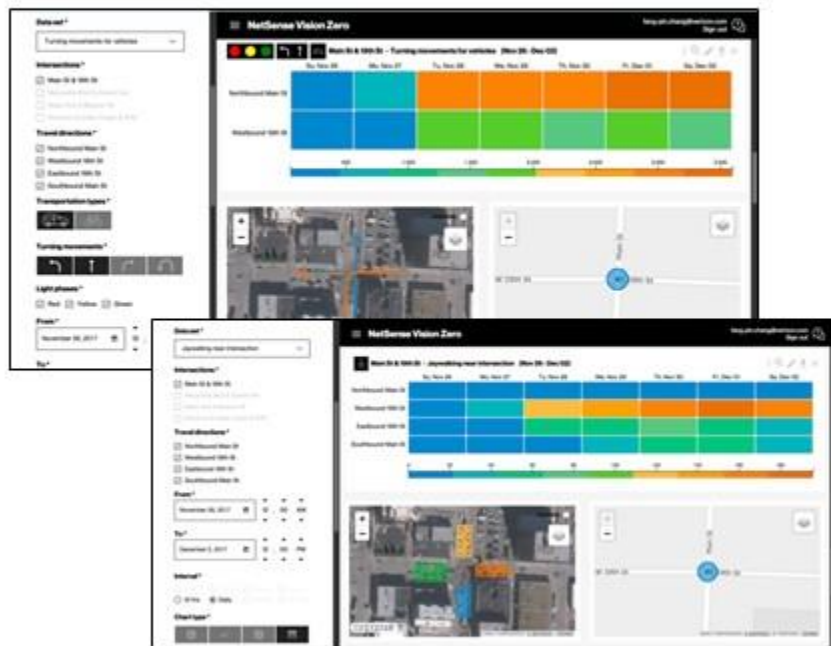


Preliminary design and assessment to assist in creating funding applications.

# Intersection Safety Analytics

## The online management portal offers:

- A customizable interface.
- The ability to pull reports for each intersection by time and date, as well as global reports.
- Policy creation tools.
- Granular reports down to each turn movement of traffic and by traffic phase.
- In-house support for analytics.
- 24/7/365 access to historical data.
- Near real-time data.





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# Revolutionize traffic safety analytics.

Cloud-based Verizon Intersection Safety Analytics can deliver innovative benefits, including:



Video analytics using sturdy pole-mounted video sensors



Online dashboard to analyze patterns of dangerous traffic conditions



End-to-end solution from pre-design to installation to system maintenance



A wide variety of flexible analytics tools that allow customers to analyze trends



APIs to import data into other systems



Historical data to demonstrate safety achievements

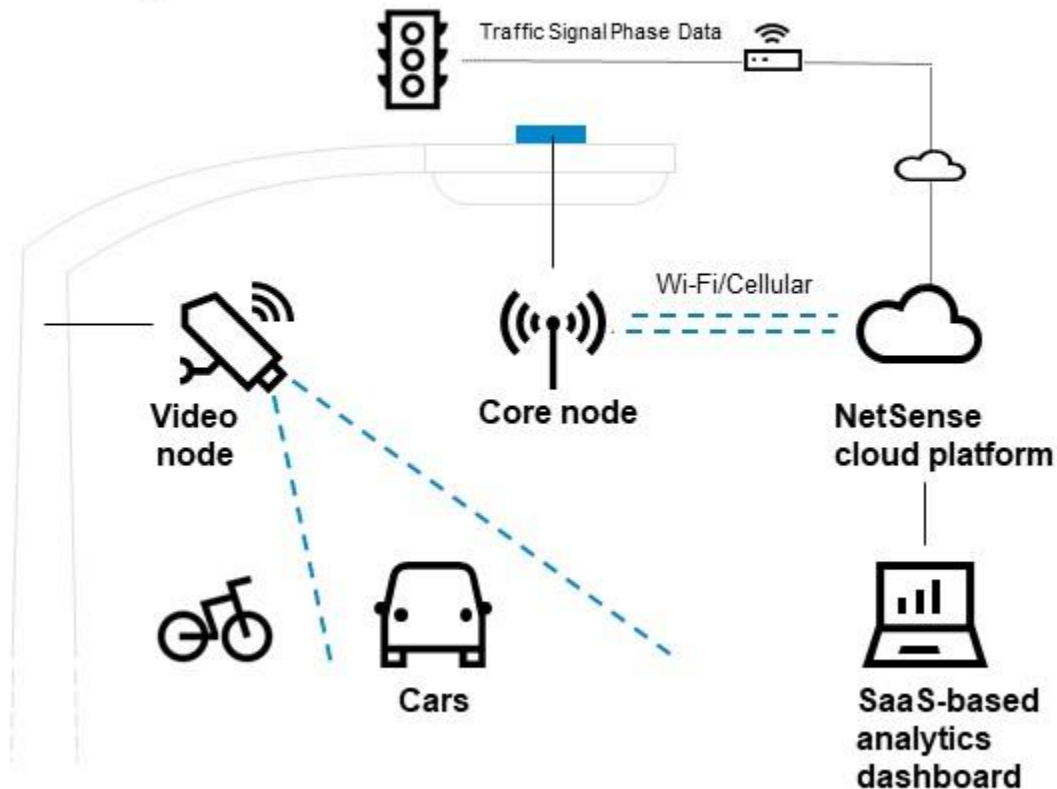
# How Intersection Safety Analytics works

## Solution components:

- Video sensors observe intersection.
- Data is integrated with traffic signal phase data.
- System performs edge-distributed video analytics.

## Data flow:

- Video sensors detect conditions at an intersection and record metadata in cloud platform.
- Data analytics services process the data and transform it into meaningful traffic safety metrics.





# Parking challenges



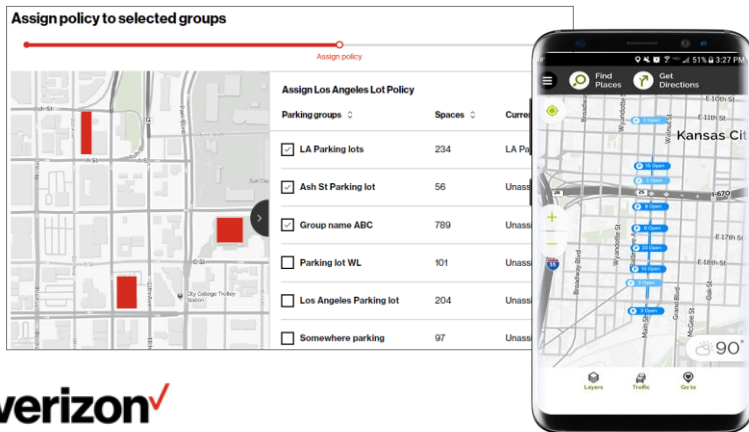
**Difficult to assess  
parking availability**

**Increased traffic congestion  
due to parking searches**

**Complex curbside management  
for multi-use zones**

# Parking Optimization

- Improve visibility into your parking operations with configurable dashboards and reports
- Maximize revenues using analytic tools that help you optimize spaces for events or by location
- Enables drivers to find parking faster and easier contributing to less traffic and carbon emissions



verizon<sup>✓</sup>





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# Smart Communities

## Case studies

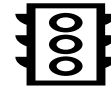
**Kansas City, Washington, DC,  
Boston, Sacramento**



# Kansas City, MO

## 195

sensor nodes along 2.2 miles



## 90%

coverage of the city's  
streetcar tracks



# Washington, DC

## 80

lighting control nodes  
and 20 video nodes

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integrated insights for traffic and  
emergency response





# Boston, MA



Partners with “America’s walking city”  
to support Vision Zero goals

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Helps improve walkability and bikeability  
in key traffic corridors



# Sacramento, CA

# \$100M

investment on innovation<sup>1</sup>

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Community Wi-Fi

Digital Kiosk

Intelligent Traffic Management

Vision Zero

5G



1. Verizon Wireless Press Release. "Verizon announces partnership with City of Sacramento for a smarter, safer, more connected city." June 2017.



# Why Verizon

- Improve the quality of life for people living in cities around the world.
- Increase efficiency in how cities operate.
- Deliver more than just smart technology.
- Focus on people's basic wants and needs.
- Partner with cities to design better infrastructure, systems and processes.





**We're more than  
a solution provider.**

**We're a trusted partner.**

**One of the largest global  
IP networks**

**Most reliable 4G LTE  
network with 98% U.S.  
coverage**

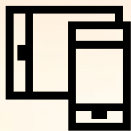
**98% of Fortune 500  
companies served**





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# We've got everything you need to succeed.



**Hardware and  
software solutions**



**Financing and  
managed services**



**Analytics  
and  
expertise**

# Thank you.



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