NEXT GENERATION
SMARTER CITY TRAFFIC DATA

metrotech



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IntelliSection™

Empowering Municipalities with Real-Time Intelligence



MetroTech's *IntelliSection*™ empowers your city to unleash the full potential of your already deployed infrastructure. By leveraging *IntelliSection*™ data analytics tools, your city's existing infrastructure instantly becomes a Smarter City.

A new solution is needed. MetroTech was formed from the idea that by ingesting multiple data types, across multiple areas, and applying extensive analytics, a city can truly utilize and gain the benefit of real-time traffic data.

Our vision has become a reality. MetroTech has partnered with **Dymec** to offer the most affordable and accurate way to measure traffic. MetroTech has created a way to turn video cameras and other traffic sensors into actionable data. Extensive analytics are applied and published in real-time so government agencies can make better, smarter decisions.

MetroTech Leverages:

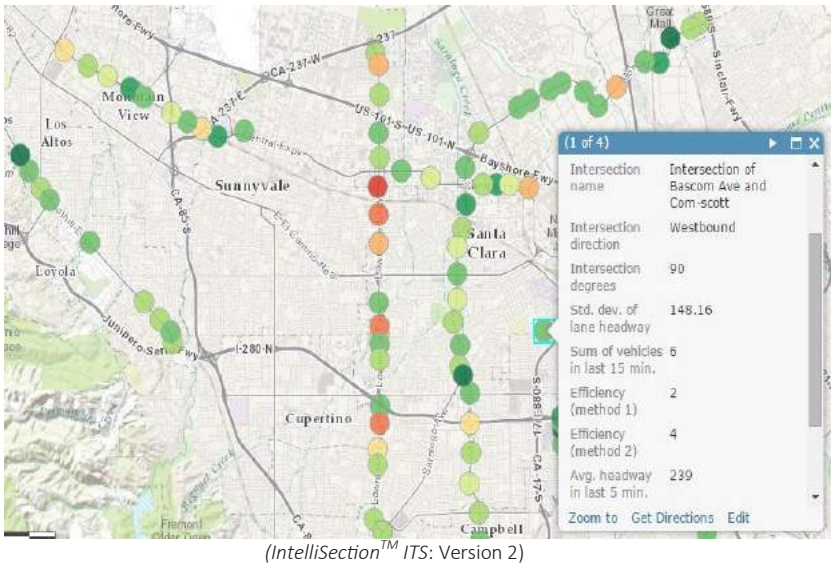


- VIDEO ANALYTICS
  Converts existing video cameras into multi-dimensional traffic sensors running in the cloud

- SENSOR ANALYTICS
  Ingests other traffic sensors including: Bluetooth, WiFI, Loops, Pucks, Radar, Lidar

- TRAFFIC ANALYTICS
  Aggregates & analyzes traffic data and broadcasts via open APIs
  PREDICTIVE ANALYTICS Searches the future— e.g., for emerging congestion, planning, zoning

- BIG DATA ANALYTICS
  High Definition, real-time, cloud-based information archiving, aggregation, & publishing



(IntelliSection™ ITS: Version 2)



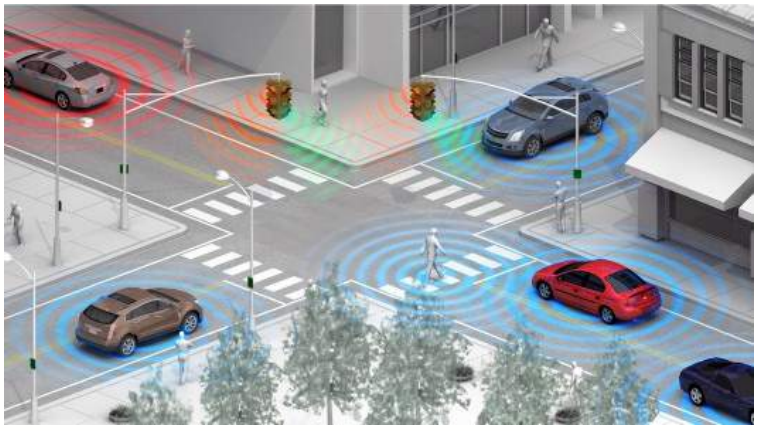
MetroTech's Intelligent Transportation System

- ***IntelliSection™ ITS*** is a traffic analytics solution designed to deliver unique and customized traffic management analytics for the government TMC environment.
  The core product set of *History Archive, Live Streaming Camera Data, Real-Time Traffic Reporting, Asset Management, and Video Analytics Appliance* is delivered via a dashboard and visual map.

  Dymec works closely with the local government agencies to product customized solutions and dashboards, all from the data produced by MetroTech.

- ***IntelliSection™ ITS*** enables municipalities and DOT's to create a customized solution to meet the unique and specific needs to maximize the TMC's operations.

  - Traffic data archived for solution enablement & analysis
  - Utilize real-time traffic data to make operating decisions
  - Enables capacity planning
  - Limits privacy & security implications
  - No camera upgrades required – simple server solution



Consumer Applications
- 511 App
- Wrong Way Driver Alerts

Additional Content
- Universal Input
- Weather
- Roads and Highways Integration

Custom Tool Sets
- Live Map Edits
- Data Visualization
- Custom Dashboards

Future Roadmap
- Purdue Analysis
- Real-Time Routing Engine
- SAP HANA

Reporting
- Real-Time Reporting
- Historic Reporting
- Map 21 Compliance
- Long Term Planning
- HOV/Hot Lane Audits

Real-Time Solutions
- Signal Phase Timing
- Safety Alerts
- Video/Event Archive

Why MetroTech?

An Accurate, Real-Time, Low Cost Solution

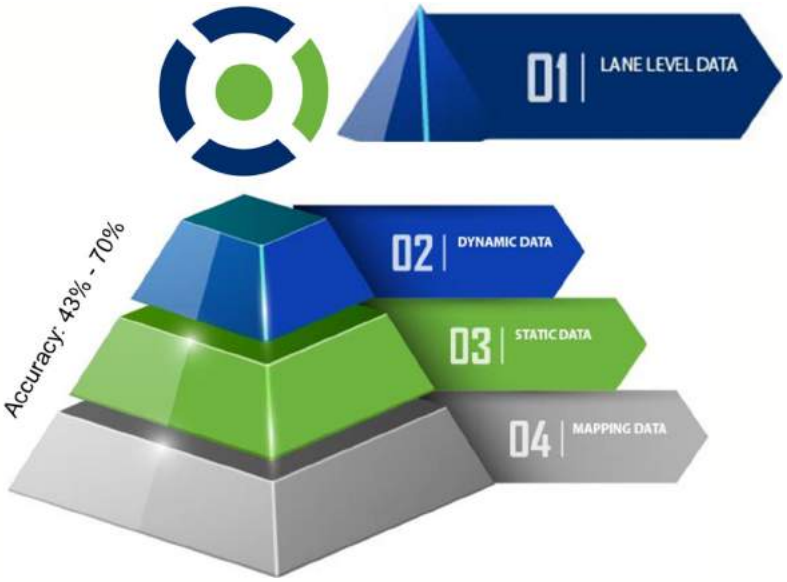






ACCURATE DATA

Despite advances in technology and social reporting of traffic, there is still often misinformation, a time lag and false reports. MetroTech offers greater than 90% accuracy at the lane-level. By mapping transportation information through directional detection and analyzing down to the lane-level, everyone benefits.



Accuracy: > 90%

Micro Lane-Level Data

- **Location:** The exact lane of travel
- **Speed:** The rate at which each car is moving and operating
- **Volume:** The amount or quantity of cars
- **Flow:** The continuous and/or broken stream of cars

REAL-TIME INFORMATION

By publishing better content at faster speeds, government agencies can get the most up-to-date traffic information at the touch of a finger.

- Normal patterns can be drastically altered by a single stall or mistimed signal pattern
- Public Safety values real-time traffic data for instant routing and incident notifications
- Historical averages and delayed reporting from probe sources aren't a main source of data
- "Real-time" driving data is actually delivered in real-time
- Emergency Responders can react en route to changing circumstances
- When traffic is altered on one road, it often affects all the surrounding roads

Empowering Cities With Real-Time Intelligence



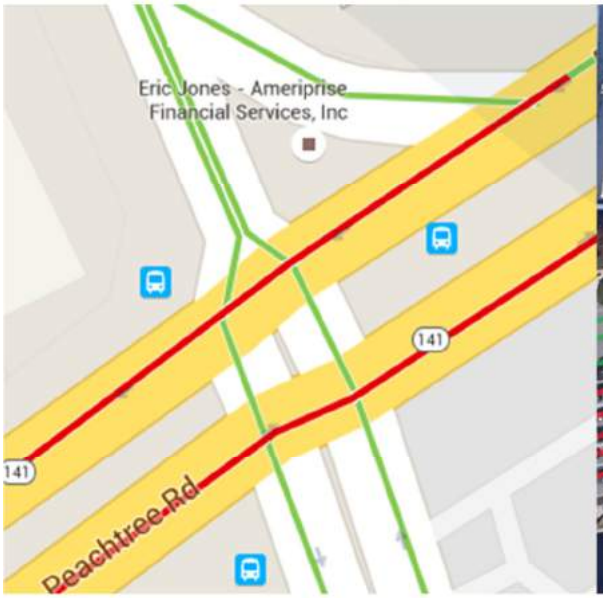
A LOW COST NETWORK OF SENSORS

In almost every metro area, an infrastructure of cameras is already in place. MetroTech can turn them into sensors and use the information to track traffic.

- A real-time, low cost view of the roads
- An infrastructure already established eliminates disrupting traffic
- Easily maintained and accurately analyzed view of every lane
- Remote deployment to where needed
- Rapid scalability to a wider area

Current Way

Current data based on probes (smartphones)



- 5 Lanes of Travel = 5 Data Points
- Tracking: Approximate Speed

MetroTech Way

Data directly from the infrastructure (cameras)



- 20 Lanes of Travel = 100 Data Points
- Tracking: Actual Speed, Volume, Headway, Flow & Capacity

SAFETY ALERTS—Beginning with WRONG WAY DRIVER

- Automatic, instant notifications are provided to traffic management centers.
- Alerts include directional information and visual verification



Case Study - Santa Clara County, CA

MetroTech's traffic analysis software leverages video feeds from existing roadside cameras to deliver accurate, real-time traffic flow data to transportation management systems, first responders, and other government agencies.

Santa Clara County ArcGIS Desktop View



With public budgets at record lows, MetroTech enables governments to maximize previous investments in transportation infrastructure by providing a low cost alternative to additional road building.

Value Proposition

Mitigates congestion by utilizing actionable traffic data for signal synchronization across intersections, arterials, ramps and freeways
Produces accurate, real-time, lane-level, vehicle counts, speeds and headway to Traffic Control Centers (TCC)
Incorporates existing video infrastructure, dramatically increasing Benefit-to-Cost ratio
Reduces secondary accidents via improved emergency response
Feeds dynamic message signs, mobile apps and connected vehicles
Generates automated "Push-To-Screen" incident detection for TCCs, reducing eyes-on-screen requirement while increasing awareness to new events
Lowers environmental impact of greenhouse gasses by reducing congestion
Increases commuter productivity by reducing travel times

Return On Investment (ROI)

Digitizing intersections through "video as a sensor" technology is dramatically less expensive and less intrusive than adding traditional embedded traffic sensors. IntelliSections™ do not require road re-surfacing, additional power or cabling. In most cases, communities experience improved vehicular throughput on their existing roadways in less than 90 days. The price of a typical IntelliSection™ serving four lanes in each direction is approximately $20K. Santa Clara County's return-on-investment

Commuter Benefits

- Reduced travel time estimates along the entire corridor
- Real-time images of traffic congestion
- Live incident detection
- Lane-level detection
- Congestion bypass routes
- Improved daily route planning
- Viewable from computer, tablet, smartphone and connected vehicles

In 2012 Santa Clara County, California deployed MetroTech's IntelliSections™ technology on 107 intersections including five of its busiest expressways. A post deployment study on the seventeen intersections encompassing the Lawrence Expressway (~600K daily commuters) resulted in a 3% decrease in stops. That's 18,000 fewer vehicle stops each day.

Lawrence Expressway Savings

	First Year		Five Years	(Projected)
Travel Time	82,470 Hours	$1,474,560	191,780 Hours	$3,560,030
Fuel Consumption	86,280 Gallons	$257,990	200,640 Gallons	$622,860
Nox Emission Reduction	1.28 Tons	$22,120	2.97 Tons	$53,410
Co Emission Reduction	6.54 Tons	$480	15.20 Tons	$1,170
VOC Emission Reduction	1.51 Tons	$1,830	3.52 Tons	$4,430

Benefits

Santa Clara County projected data collected from the seventeen intersections along the Lawrence Expressway across the county's 107 IntelliSections™ currently deployed with the following results.

Santa Clara - 107 IntelliSections™

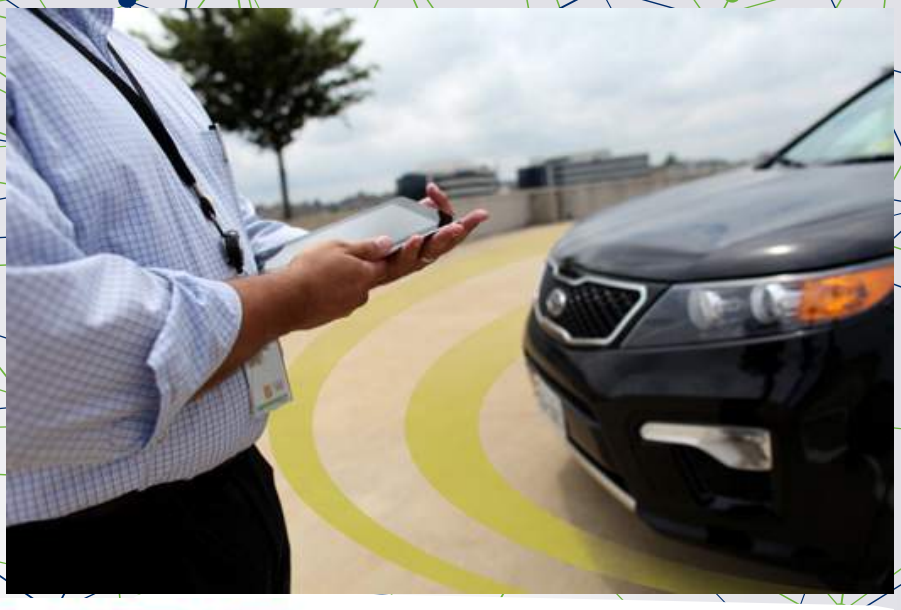
	First Year		Five Years	
Travel Time Savings	805,450 Hours	$14,032,710	1,873,035 Hours	$33,879,190
Fuel Consumption Savings	984,330 Gallons	$3,014,970	2,289,012 Gallons	$7,279,040
Nox Emission Reduction	14.71 Tons	$254,370	34.19 Tons	$614,100
Co Emission Reduction	75.52 Tons	$5,590	175.60 Tons	$13,500
VOC Emission Reduction	17.5 Tons	$21,160	40.70 Tons	$51,140
Total Benefits (2010 dollars)		**$17,328,800**		**$41,836,970**

Conclusion

Communities with existing traffic video infrastructure have the distinct opportunity to further leverage their investment. MetroTech's IntelliSections™ yield accurate traffic count, speed and flow data providing real insight into the health and performance of intersections and corridors.

As commuter travel times decrease, productivity and profitability for both individuals and their respective companies increases, improving quality of life and long term economic development.

Commuters, businesses, governments and the environment all benefit from reduced congestion. The health of our community as a whole improves as travel times are reduced along with stress, accidents and greenhouse gasses.



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Dymec is an American engineering company that specializes in the development of industrial hardened communications equipment, designed for rugged installations. **Dymec** provides advanced, reliable solutions for industrial SCADA, and ITS (Intelligent Transportation Systems) information network's by designing ultra-reliable temperature hardened equipment utilizing advanced Asic and Pga designs. We are proud to partner with MetroTech and serve our customers with "American Industrial" solutions. **Please contact Dymec or your local Dymec Traffic Partner to see the best analytic software solutions today.**



