Traffic Data Collection in the San Francisco Bay Area

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History of 511 Traffic Data Collection

2002	511 System Deployed in Bay Area
2002	Caltrans Traffic Data Only
2004	511 Electronic Toll Collection (ETC) Data Launched
2004-06	ETC Data Expansion
2006	Doppler Radar Data Procured From Vendor
2006-12	Radar Data Expansion
2011	Evaluation of MTC/Caltrans Traffic Data Collection
2012	Procurement of GPS Probe-based Traffic Data
2013	Evaluating use of INRIX data for Caltrans Operations & Planning





INRIX

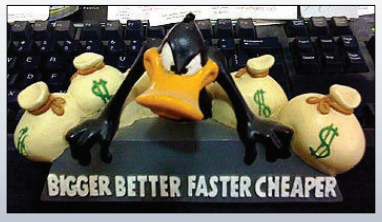
Disadvantages of Legacy 511 Traffic Data Sources

- Spot-speed data does not provide accurate estimation of point-to-point travel times during non-steady state conditions
- Using calculated average speed from a long ETC segment, travel times obscures speed granularity, especially during changing traffic conditions
- The use of long ETC segments has lag between measurement of the travel time and 511's report to user
- Caltrans detectors' reliability is low
- Maintenance of ETC equipment is difficult
- Overall, legacy data sources are expensive

Future 511 Traffic Data Collection

Goals:

- Expand Coverage
- Improve Accuracy
- Reduce O & M Costs



Procurement for New Data

- SAIC conducted an industry review of all services & technologies
- Determined GPS vehicle probe based data would best meet goals
- SAIC held RFP on behalf of MTC
- Received two proposals
- One proposal didn't meet Minimum Requirements and was non-responsive

Evaluation of INRIX Data

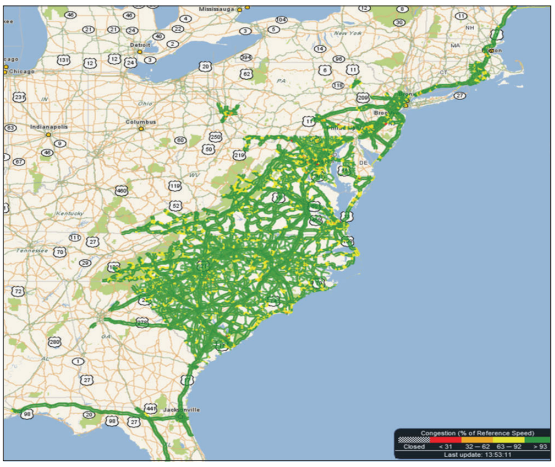
(performed by 511 subcontractor)

- **Texas Transportation Institute's methodology**
- **455 hours of select corridor data was evaluated**
- **Average absolute error of INRIX data compared to ETC benchmark data = 4%**
- **ETC benchmark data not as clean as typical bluetooth reader benchmark data**

I-95 Corridor Coalition

INRIX collaboration with regional government transportation agencies

INRIX partners with 16 states along America's eastern seaboard for what the *Wall Street Journal* called, "one of the biggest rollouts yet for technology designed to help motorists avoid traffic jams"



- INRIX provides travel times and traffic speeds in support of 511 call services, traveler information websites, traffic message signs; daily traffic operations and performance measures.
- Project spans the entire eastern seaboard from Maine to Florida covering approximately 8000 miles of freeways and over 30,000 miles of major secondary roadways.
- INRIX data accuracy is independently validated every month; **Service went live in 2008**. In 4+ years, INRIX has not missed its accuracy requirements once.

Delivering High Quality Traffic Data

Largest Quality Validation of Traffic Data Accuracy in the World

- INRIX data is continuously validated by third parties and INRIX
- The I-95 Corridor Coalition conducts the largest independent testing of GPS probe data in the world
- 2012 quality validations of INRIX quality by I-95 is illustrated in the table showing cumulative results for 5 tests in 2012 across 5 states

Speed Range (Contract Requirement)	Absolute Speed Error (<10mph)	Speed Error Bias (<5mph)	Hours of Data Collection
0-30 MPH	2.7	2.0	351
30-45 MPH	3.6	2.6	277
45-60 MPH	1.8	1.0	1,432
> 60 MPH	1.2	-0.6	4,904
All Speeds	1.7	0.0	6,964

- Absolute speed error was under 2 MPH overall, and under 3 MPH in congested conditions.
- 40 tests overall have been completed by I-95 across 10 states.

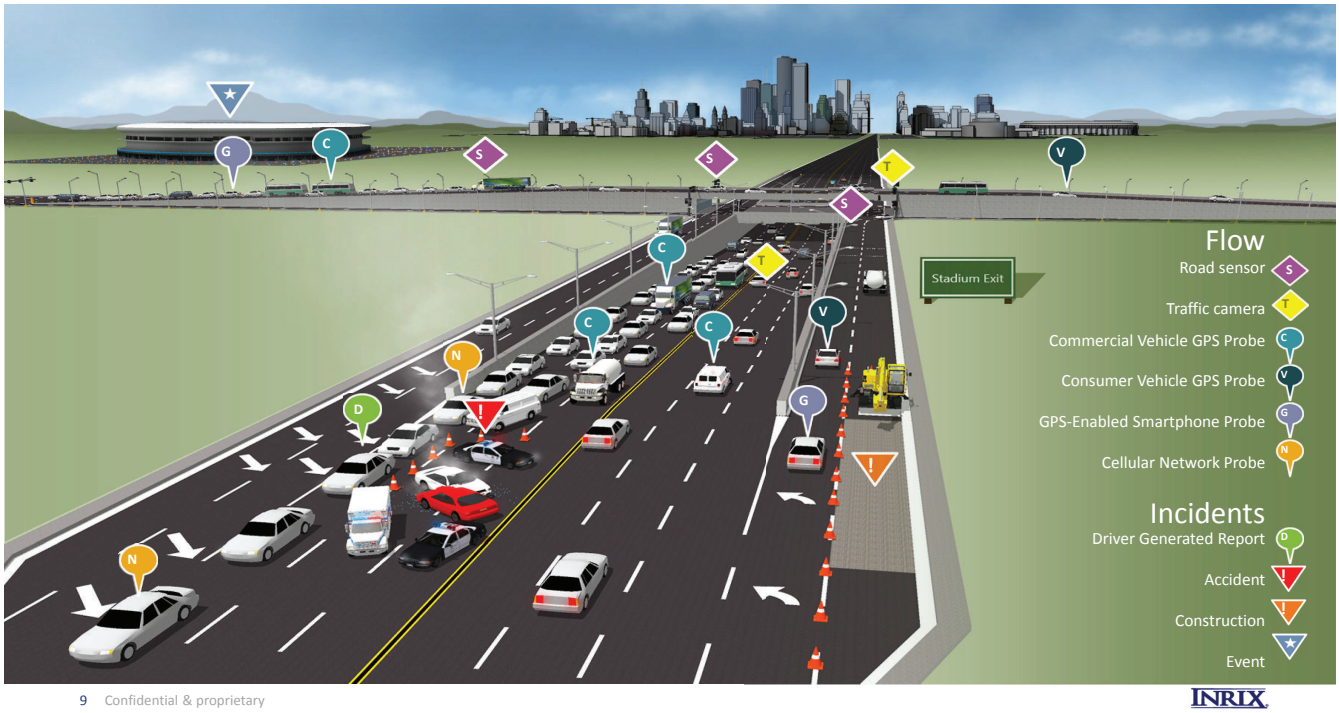
INRIX

Highlights of INRIX Proposal/Contract with SAIC

- **Full network coverage of Bay Area including arterials, >8000 miles**
- **Guaranteed uptime of +99.5%**
- **Inrix will provide ongoing 3rd party data quality monitoring (U of MD using bluetooth readers)**

- **Inrix data license also extended to public agency partners in the State, no cost**
- **Translation table to convert from TMC Location Code segments to 511 links**
- **Data feed does not contain PII**
- **Data can be included in 511 public data feed as long as data is aggregated in rolling 5 min bins**
- **$425K/yr for entire Bay Area (3 year commitment)**

The INRIX Crowd-Sourced Traffic Community



INRIX

Sharing INRIX Data with Public Agency Partners

- Agencies are allowed access to real-time and archived INRIX data, at no cost.
- 1 minute raw data can be used for internal operations, planning, etc.
- If published, the raw 1 minute data can't be discernible; i.e., color-coded congestion levels or aggregated 5 minute buckets.

- To date, we are working with the following agencies: Caltrans - Headquarters & District 4, SFCTA, NCTPA, C/CAG, ACTC, TAM, Santa Clara County, City of San Jose

Regional Traffic Detection Strategic Plan

- **Sub-Committee of the Transportation Management System Technical Working Group**
- **Strategic Plan scope includes:**
  - National scan of 'State of the Practice'
  - Caltrans Traffic Data Requirements
  - Regional traffic detection inventory
  - Assessment of existing system using PeMS
  - Feasible Technologies
  - Recommendation including Performance Metrics, Maintenance Strategy and Roll-out Strategy

- **One of the goals of the strategic plan is to determine which of Caltrans' data needs can be met with INRIX data.**

Thank you for your time!

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