Acyclica Technology

Advanced Traffic Intelligence

Smart phones, laptops, tablets and other devices each have a unique MAC address

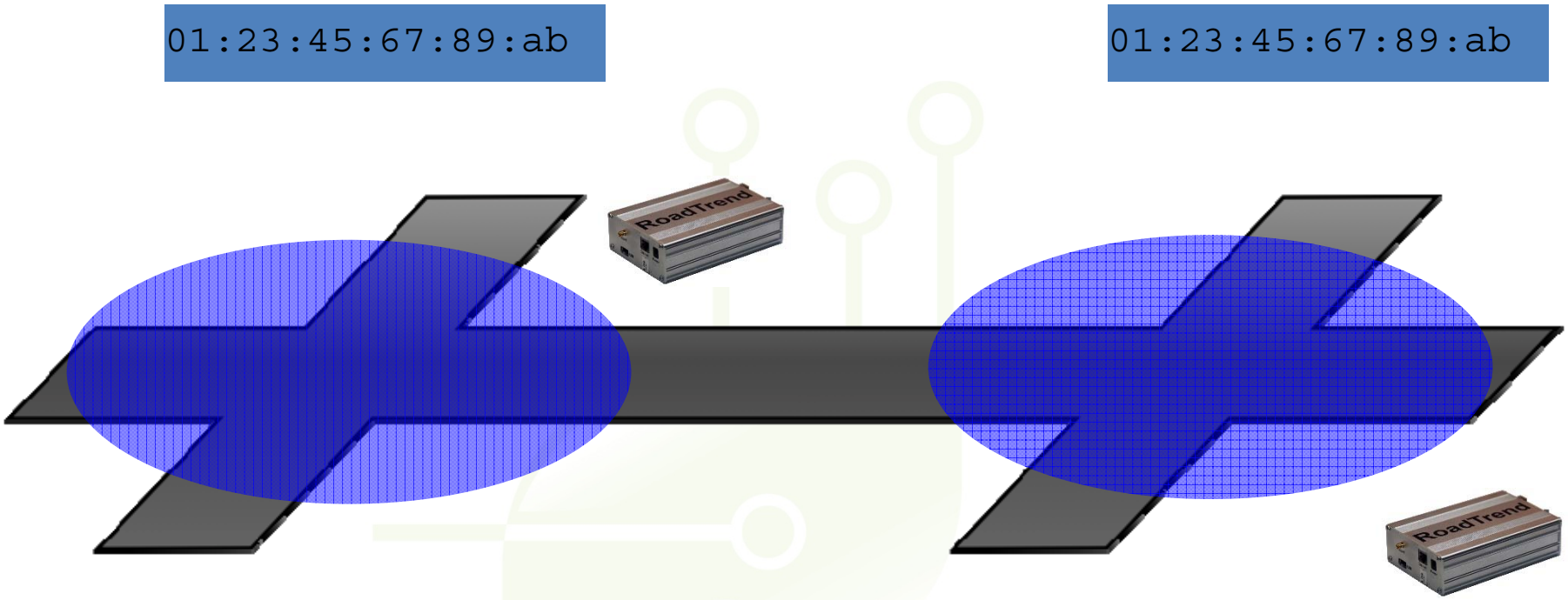
48:27:45:67:89:fb

01:23:11:56:76:ab

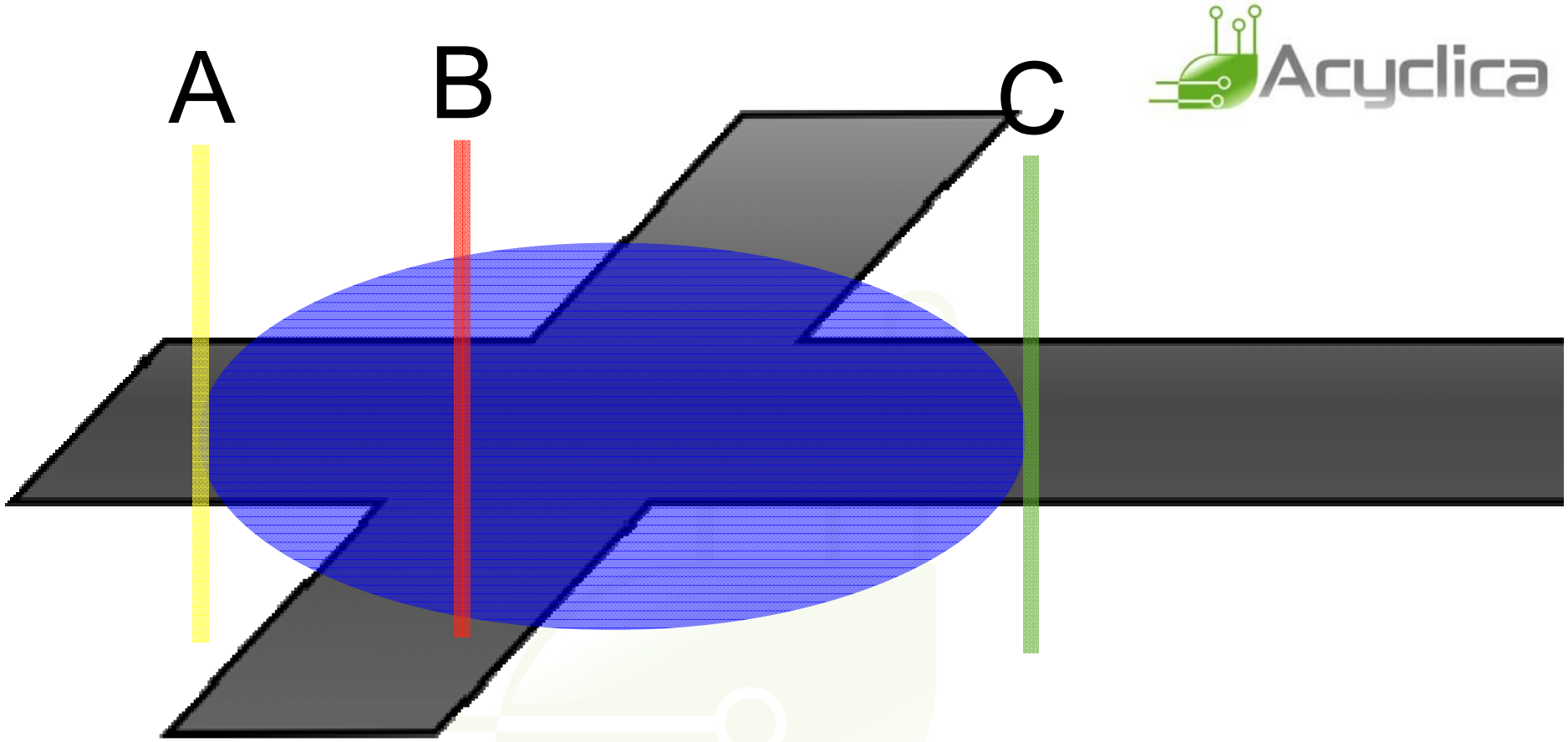
0:42:24:54:34:cf

13:30:65:12:19:af

03:30:76:67:37:ab

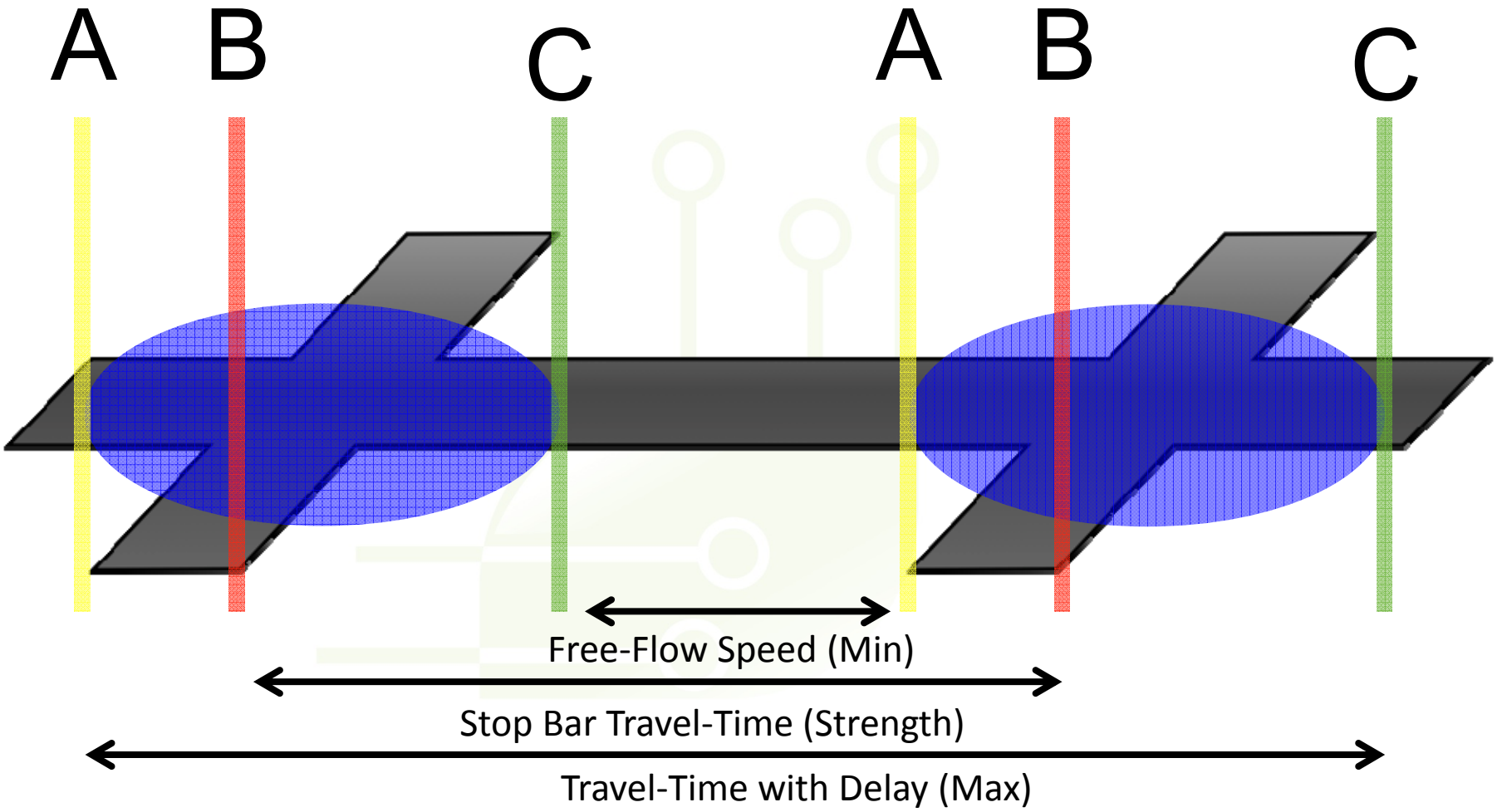


Acyclica technology anonymously collects information and distills actionable information



With Wifi detection, we fully characterize vehicle movement as it approaches, stops and leaves an intersection.

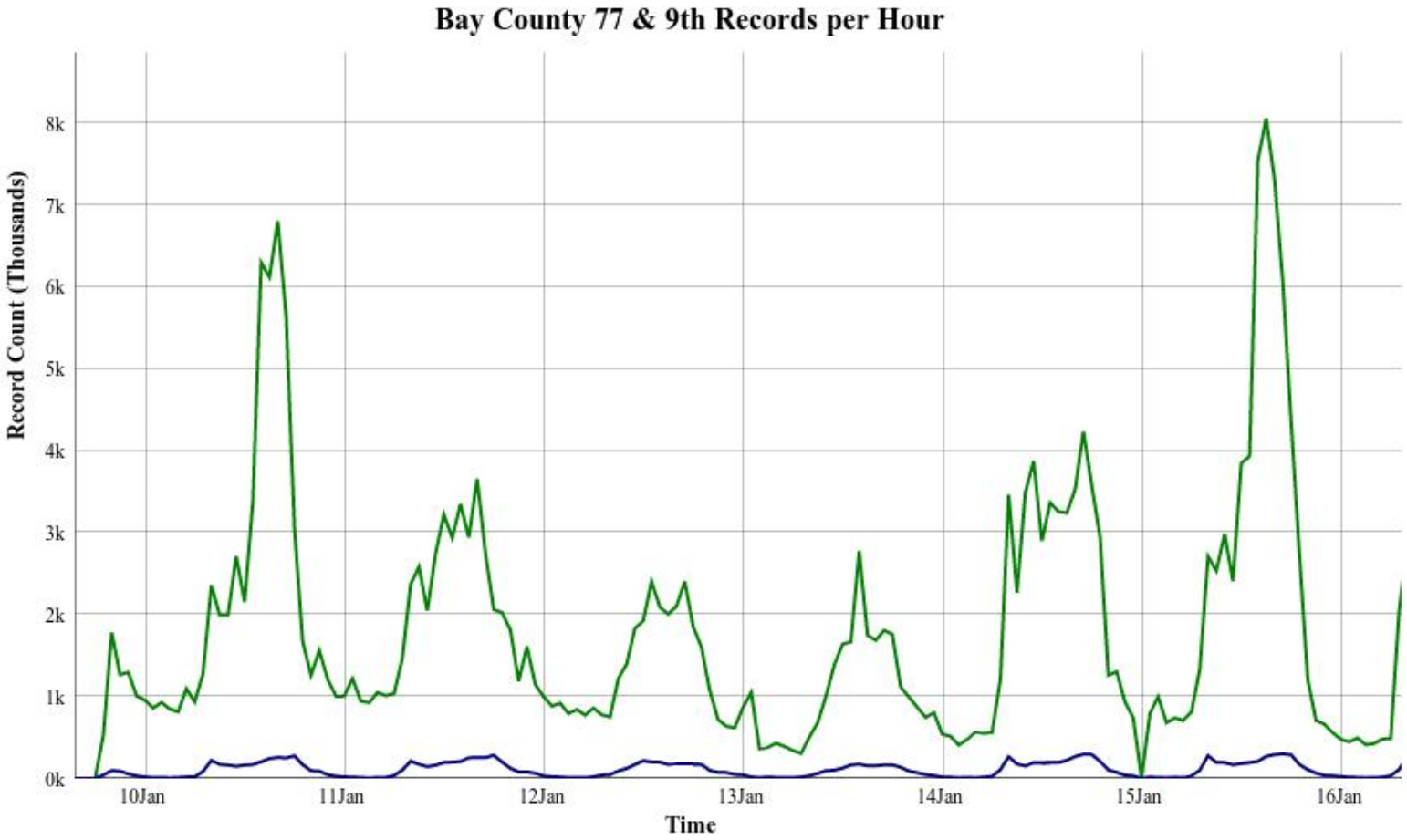
Understanding Travel-Time



Sample Rates

- WiFi **30% - 45%**
- Bluetooth **5% - 7%**

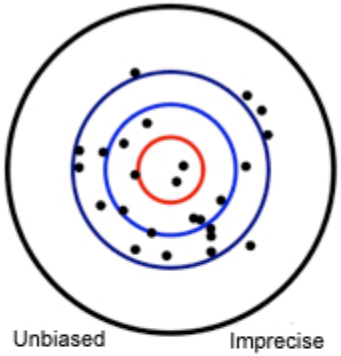
Bluetooth vs. Wifi



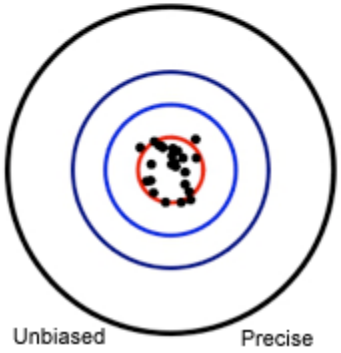
Why Does This Matter?

- **You need to trust the data!!**
- Freeways can get by on limited data
- Arterials can not!
- Conclusion:
  - BT is ok on high volume limited access roadways
  - Wifi works everywhere
    - preferred at all locations because of 100x data collection rate

Arterial



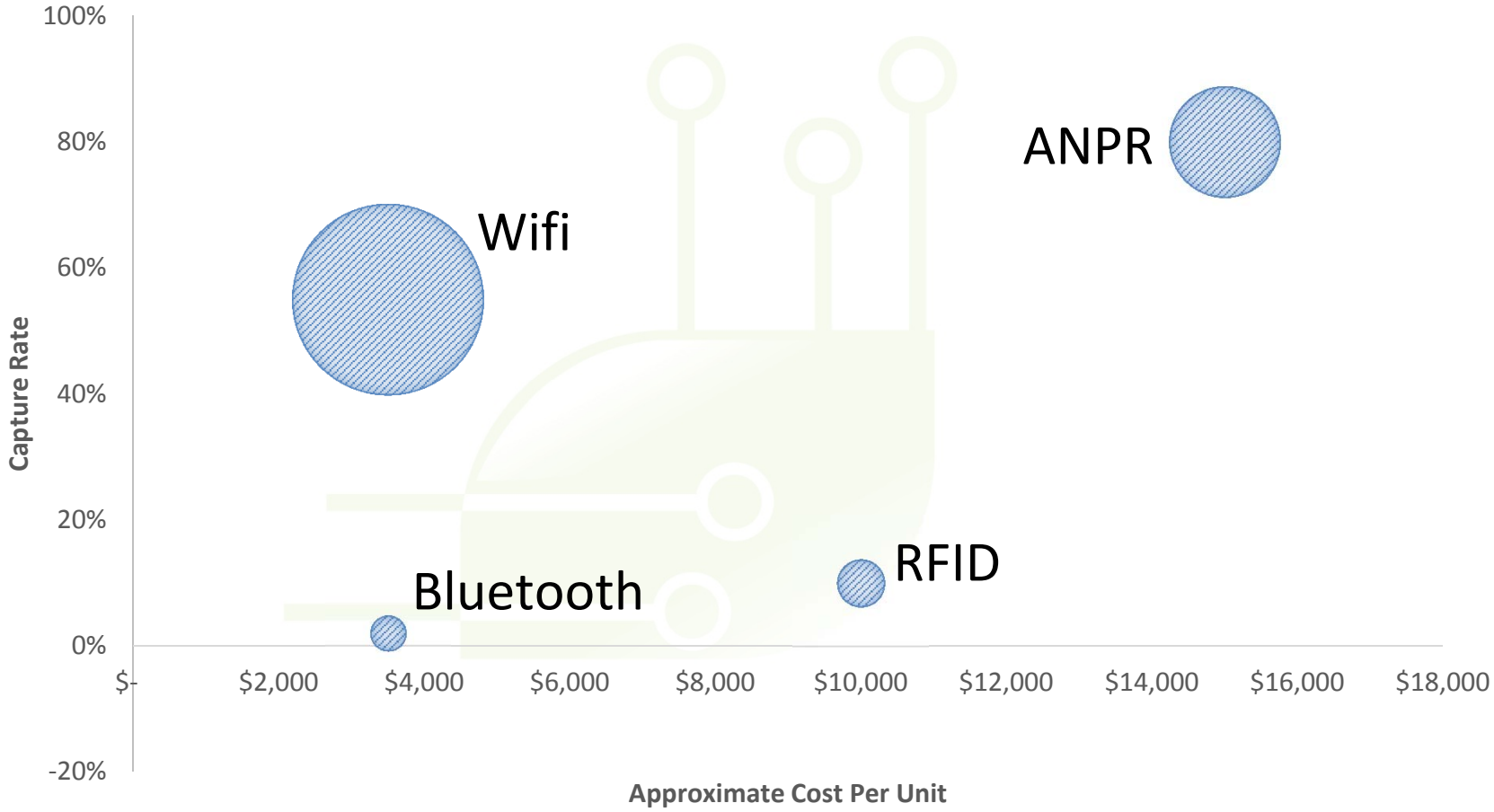
Freeway



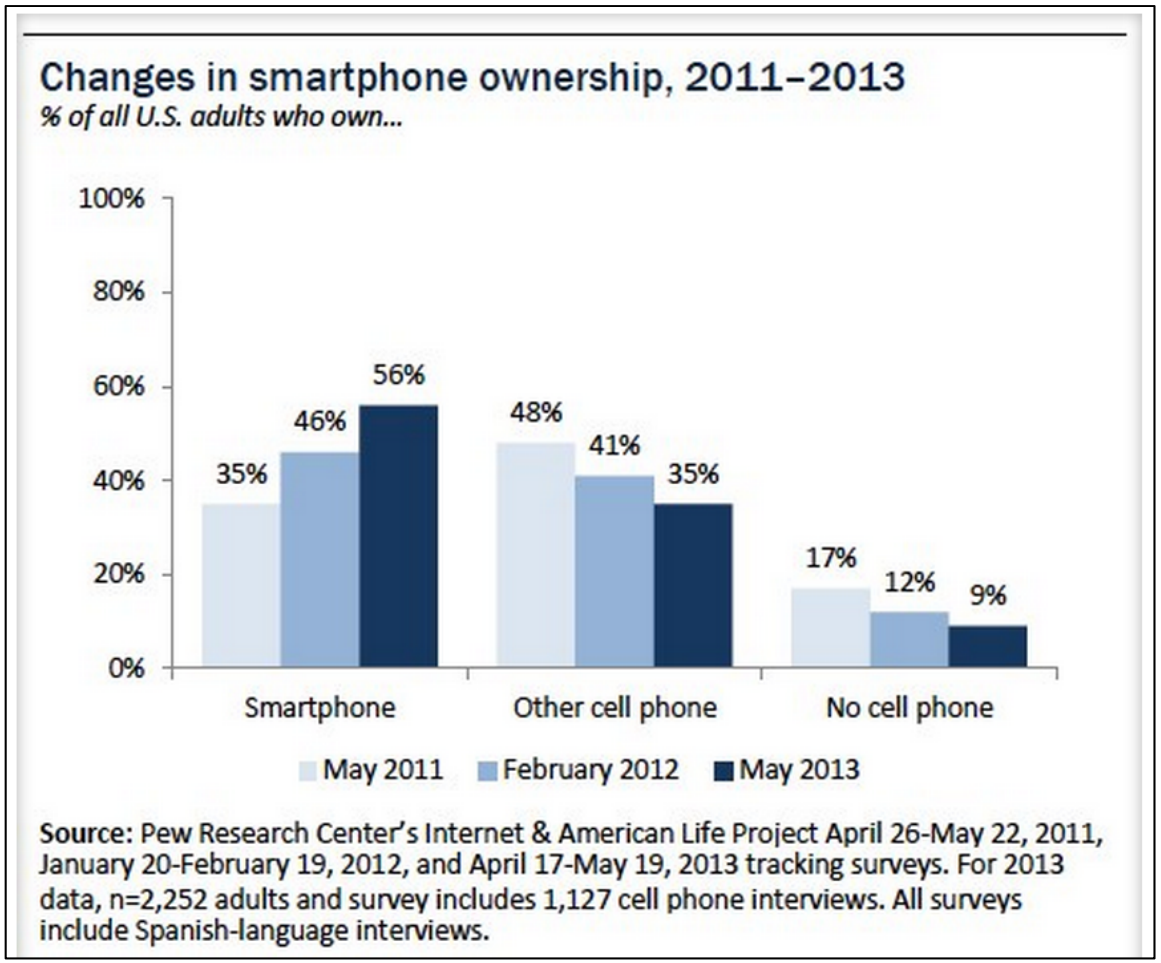
Recent Comments

- Based on what I have seen via the website, the Acyclica system seems to be returning reasonable data. The volume of samples that it is returning is also far greater than what we have typically seen from BT readers on roadways with similar characteristics
- We did two penetration rate tests, one at a low-volume 4-way stop intersection, and one on a high-volume urban arterial. We also saw higher volumes of samples than we've seen with Bluetooth, at approximately 30 to 45 samples for every 100 vehicles. We also tested signal range, and found we could get signals from up to ¼ mile away with line-of-sight

ARID Value Comparison

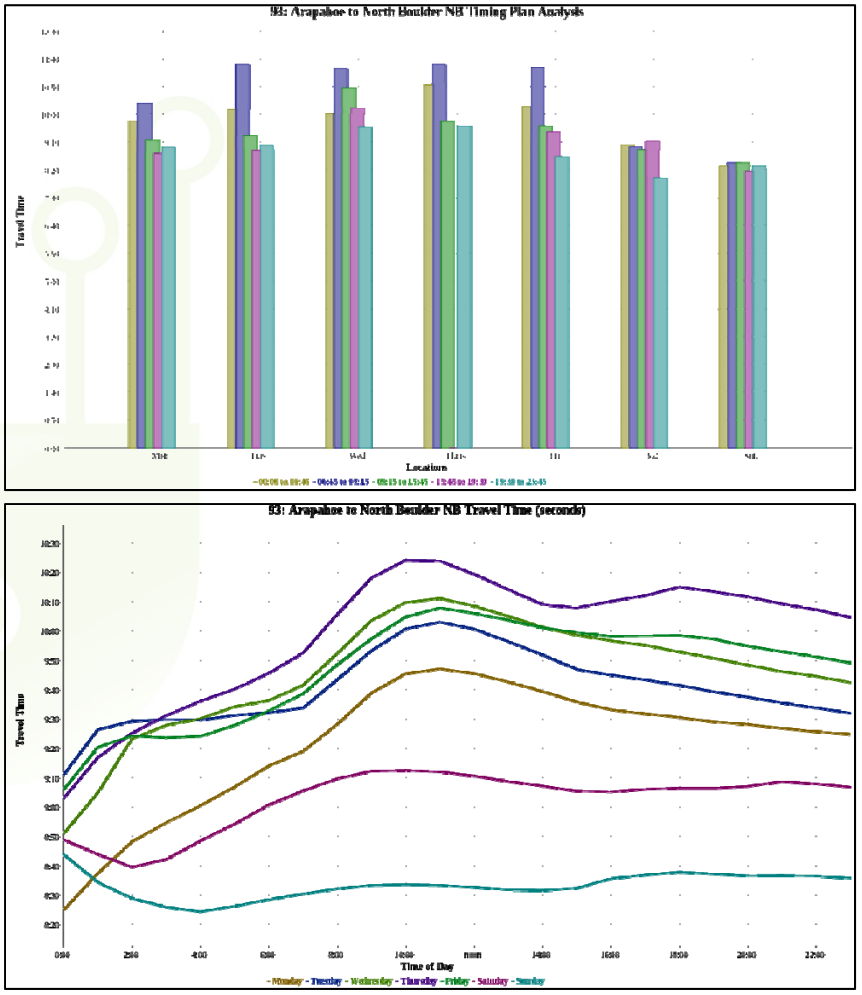


Smartphone Ownership



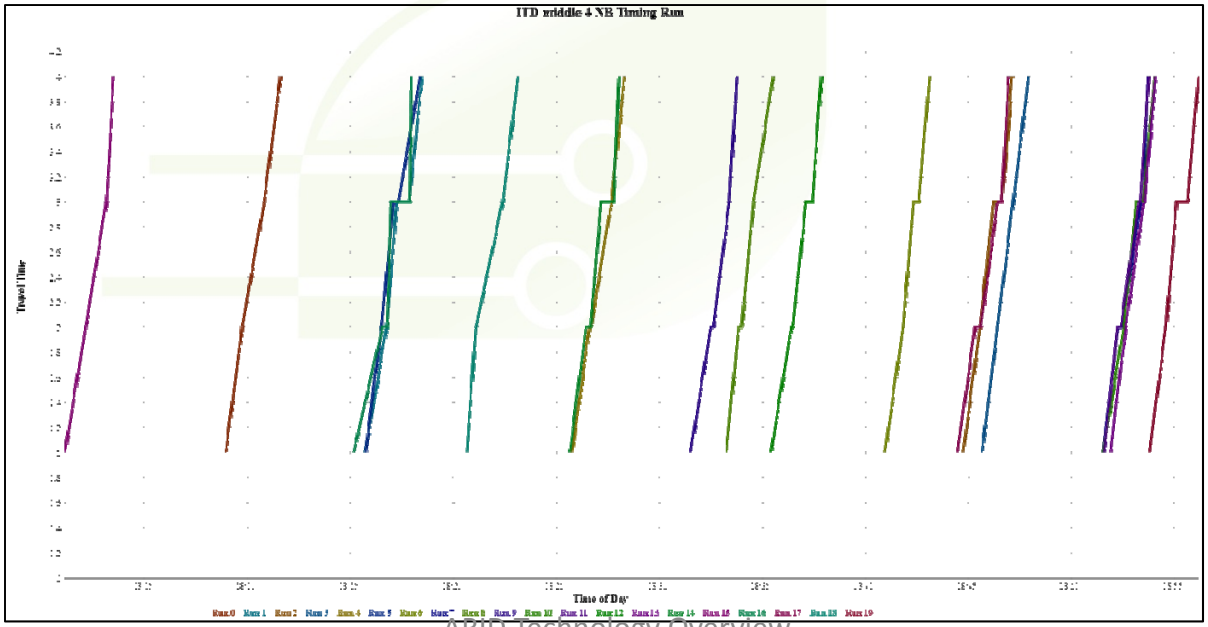
Corridor Analysis

- Advanced traffic engineering tools to optimize signal timing
- Analyze route travel-times by time of day and day of week
- Quickly analyze traffic patterns week-over-week or day by day
- Provide direct feedback for adaptive traffic systems
- Satisfy requirements for MAP 21 performance metrics



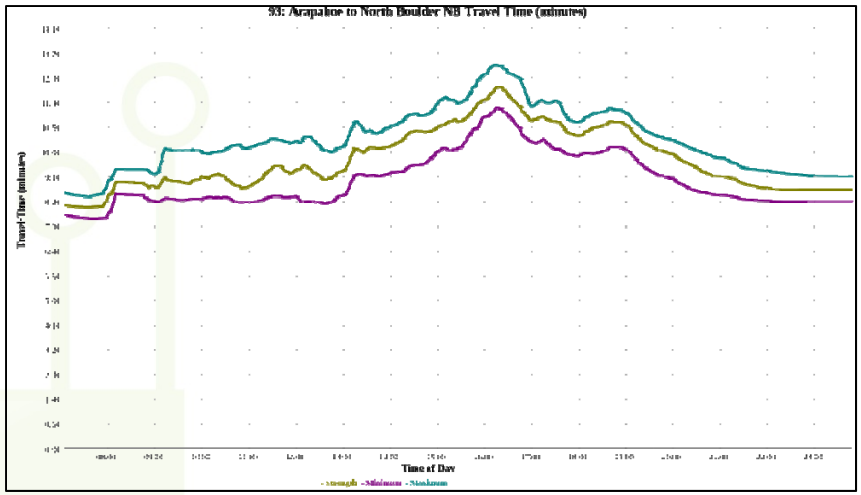
Timing Run Analysis

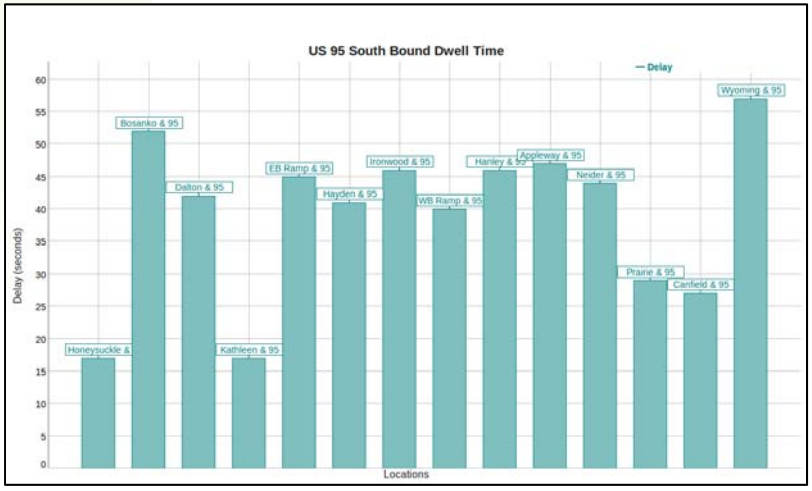
- Follow vehicles along entire corridors to replace manual timing runs
- Provide quantitative feedback on signal timing coordination



Intersection Delay Analytics

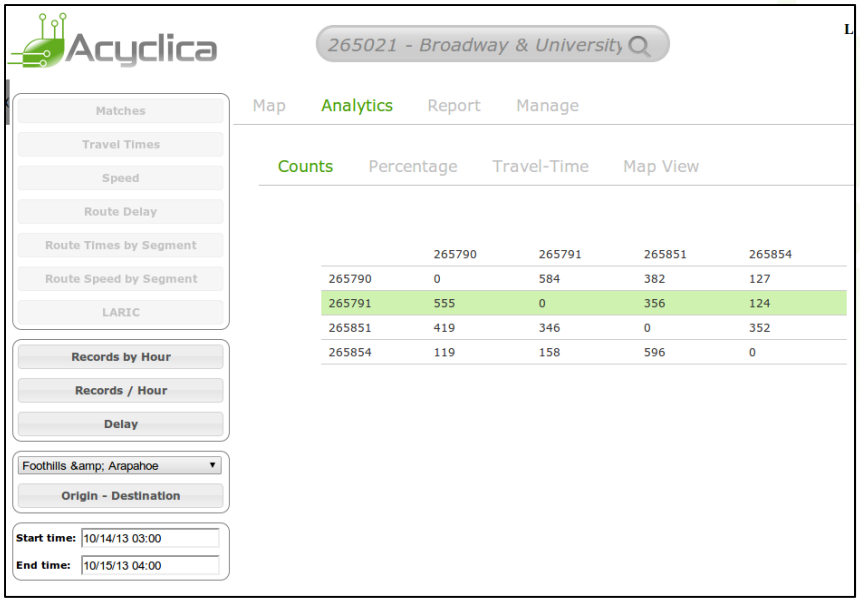
- Sensor provide reliable free-flow travel time and average delay
- Travel-times reported from stop-bar
- Provide 95% confidence interval for any route
- Delay analysis shows left, right, thru delay for every approach

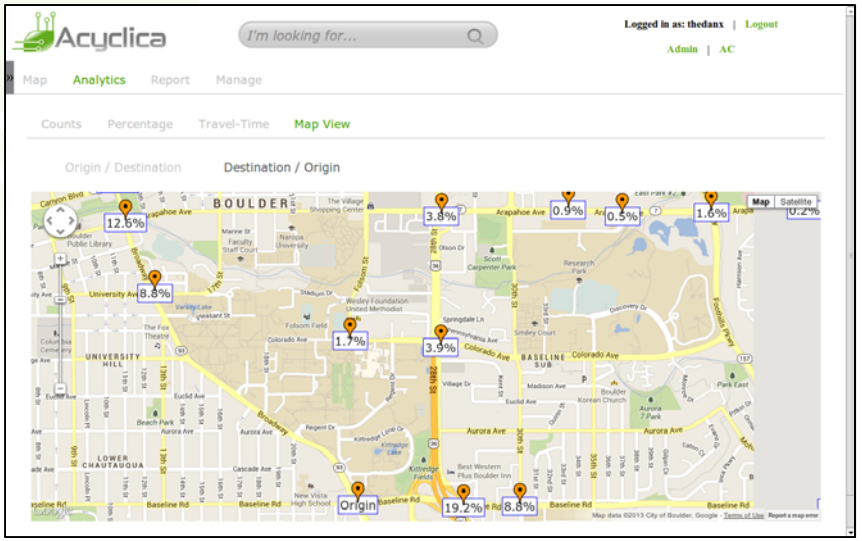




Origin / Destination

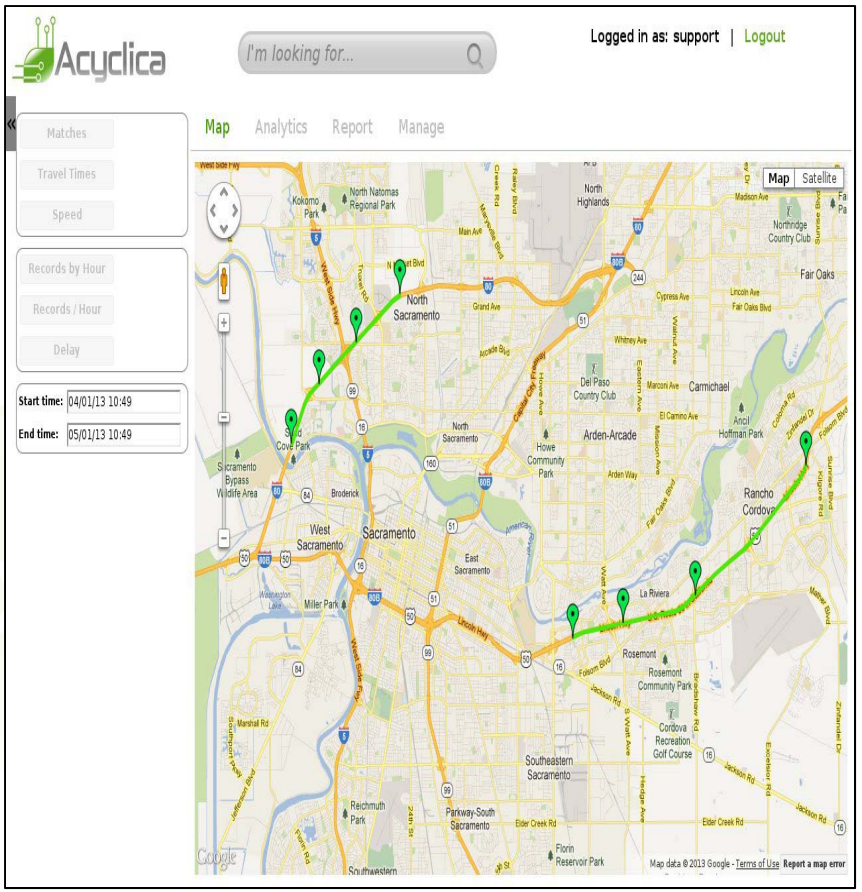
- Standard matrix to view
  - Match count
  - Travel-Time
  - Percentage match
- Point and Click interface
- Easily visualize traffic flows
- View source or destination based results





Applications

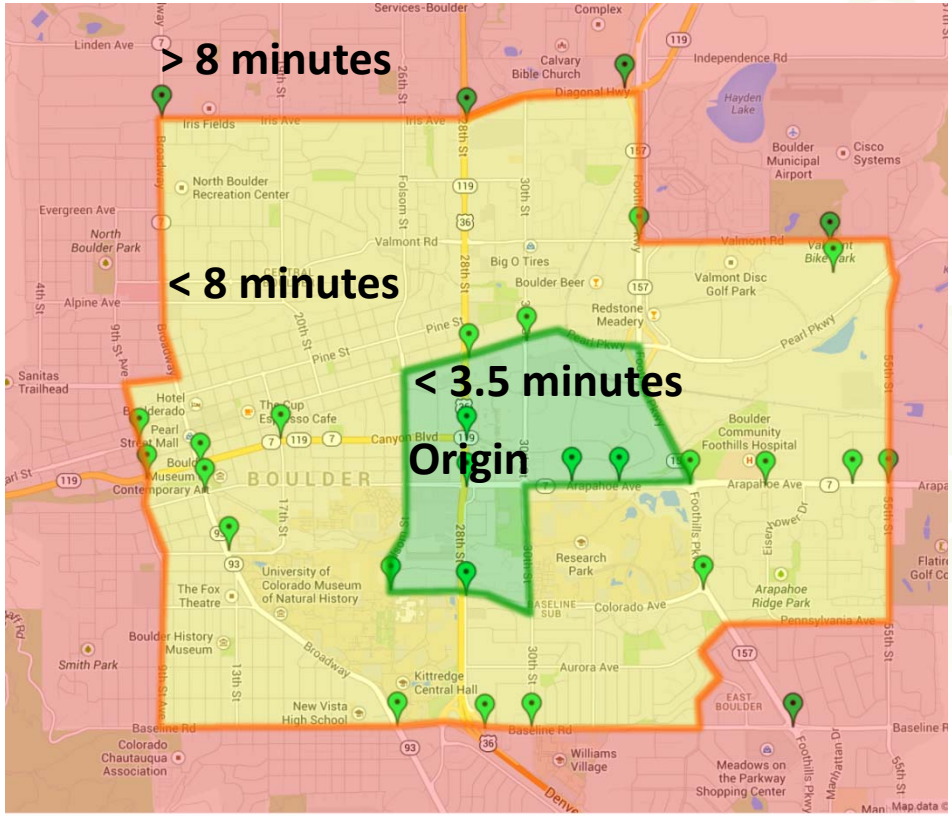
- Congestion mapping
- 511 systems
- Route planning
- Intersection high speed aproach
- HOV / congestion based tolling
- Travel times
- Intersection delay analysis
- Level of service indications
- 24x7 turning movement analysis



Applications

- Public transit utilization
- Public transit origin - destination
- Round-a-bout entry-departure analysis
- Time-based route planning
- Emergency responder routing

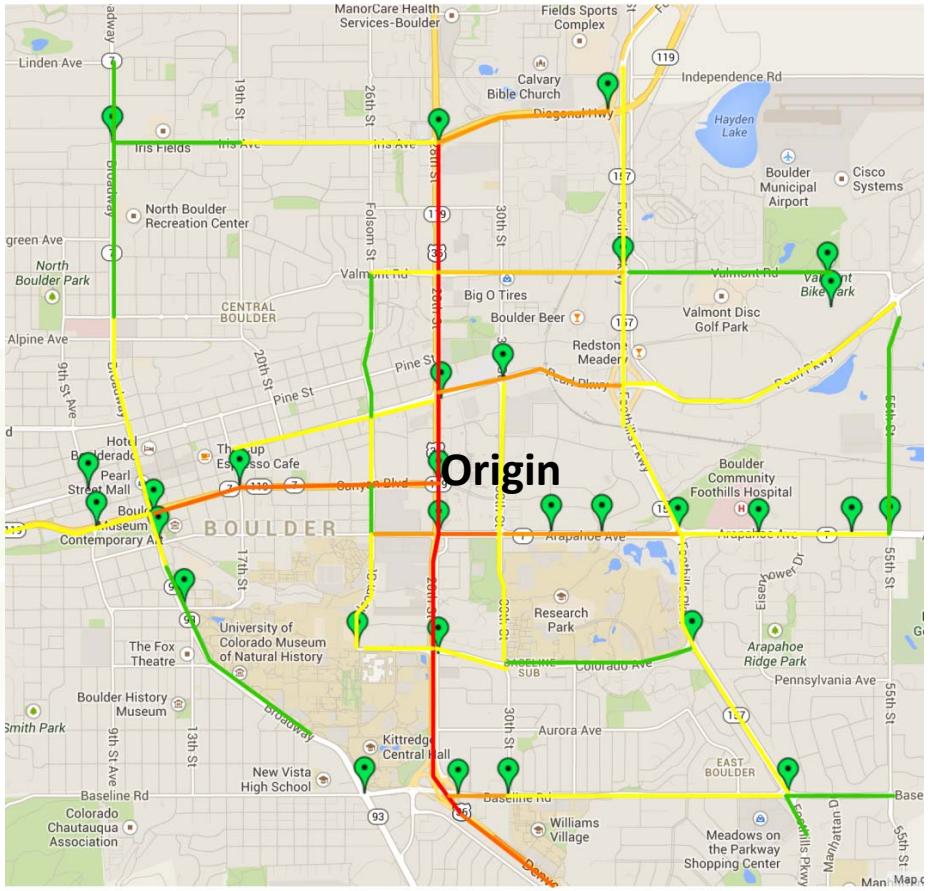
Time Mappings



- Given any origin location, Acyclica can provide travel times across city
- Valuable analytics for Economic Development Council
- Understand commute times across region
- Optimize public transit based on travel-time

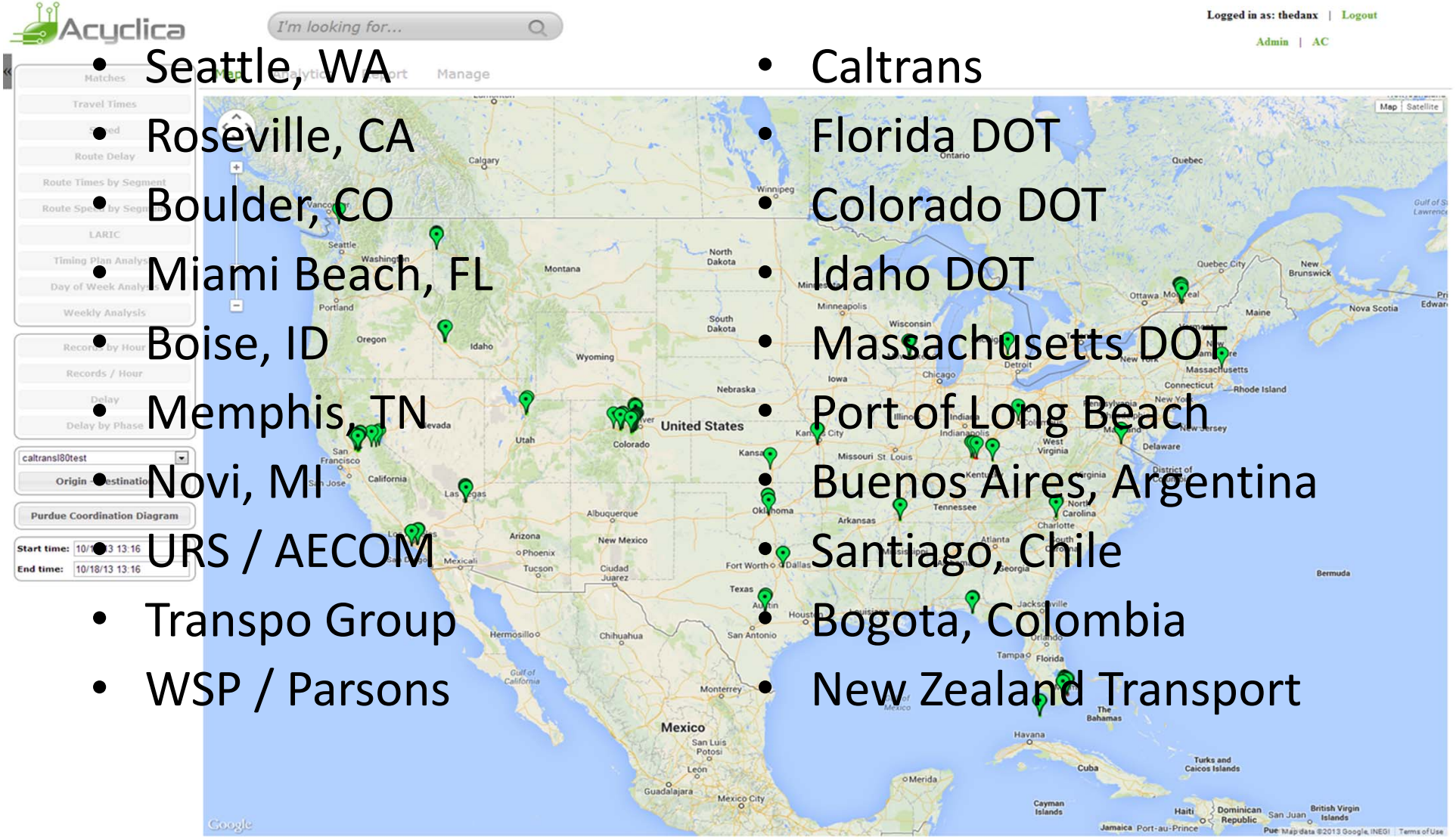
Route Utilization

- Pattern analysis tools visualize egress routes
- Allows city planning / MPO to understand routing choices
- Stimulate economic development by understanding traffic patterns
- Visualize commuter traffic patterns
- Use in conjunction with bike paths to monitor travel behavior

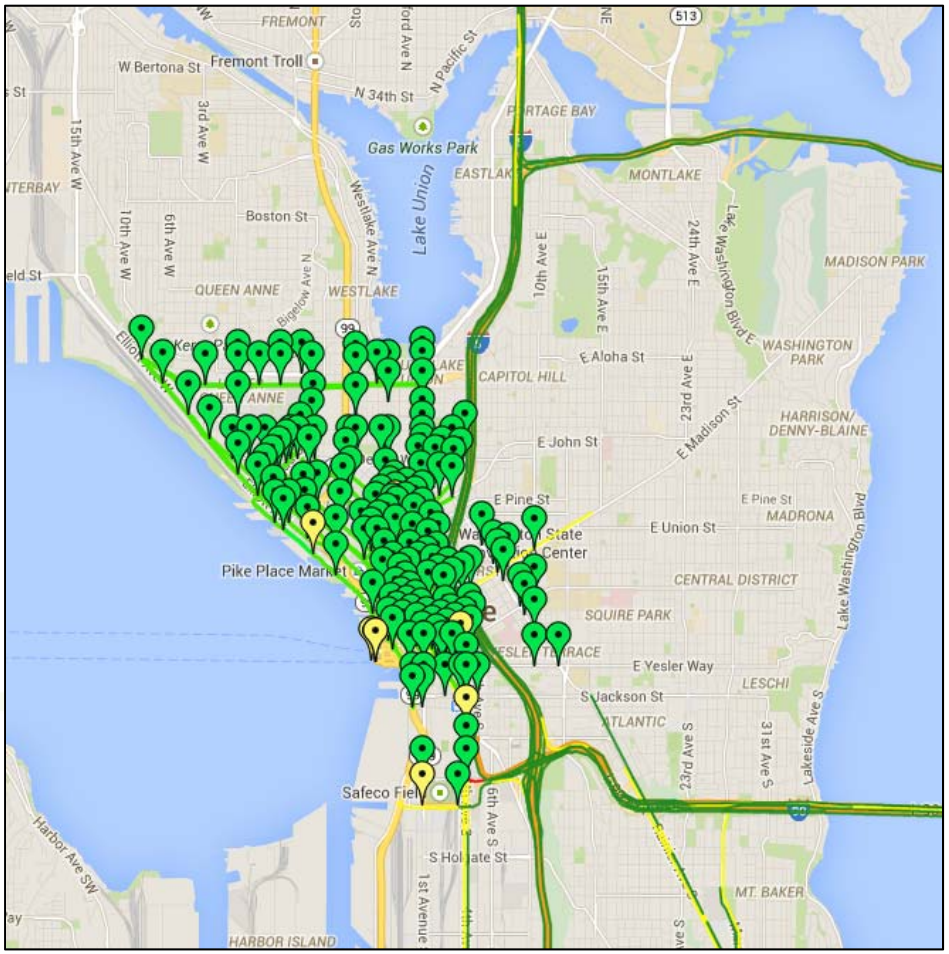


Acyclica Installations

- Seattle, WA
- Roseville, CA
- Boulder, CO
- Miami Beach, FL
- Boise, ID
- Memphis, TN
- Novi, MI
- URS / AECOM
- Transpo Group
- WSP / Parsons
- Caltrans
- Florida DOT
- Colorado DOT
- Idaho DOT
- Massachusetts DOT
- Port of Long Beach
- Buenos Aires, Argentina
- Santiago, Chile
- Bogota, Colombia
- New Zealand Transport



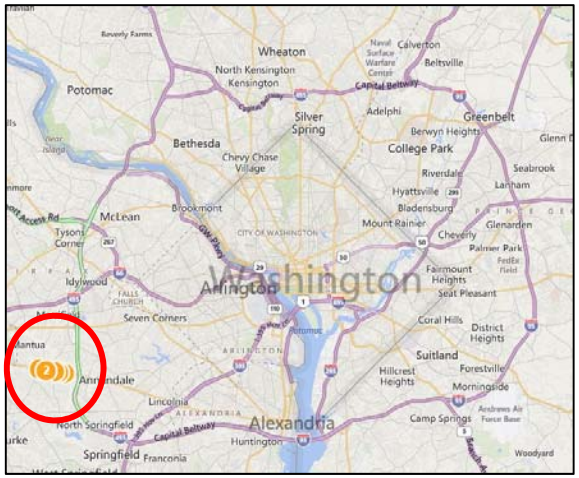
INRIX Integration



Components

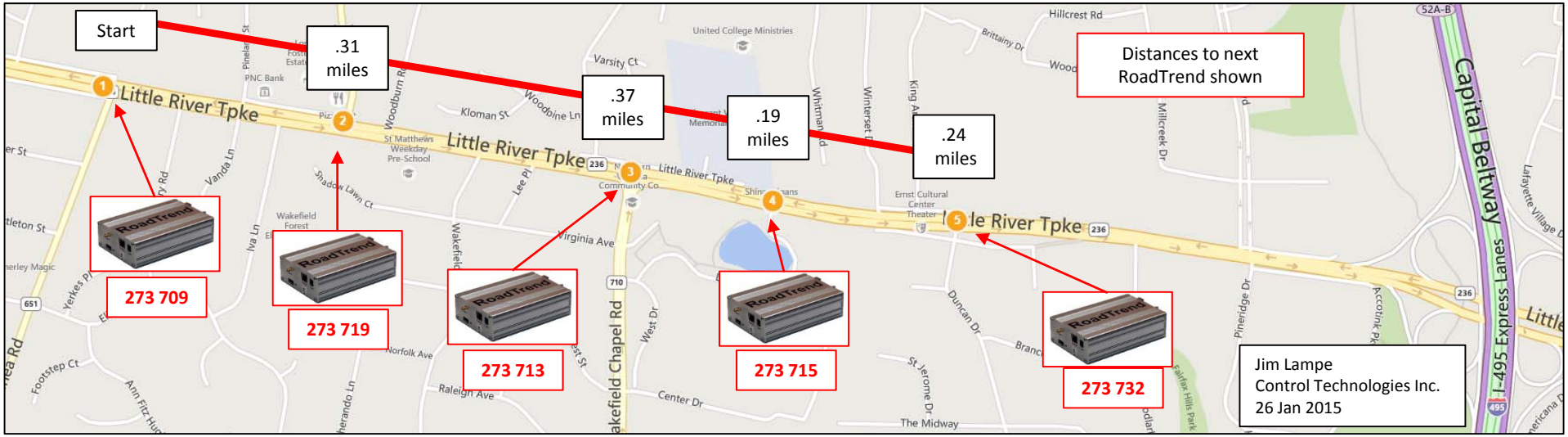
VDOT- NoVA RoadTrend Demo

Little River Turnpike between Guinea Rd and I-495



RoadTrend Equipment

Antenna Bracket



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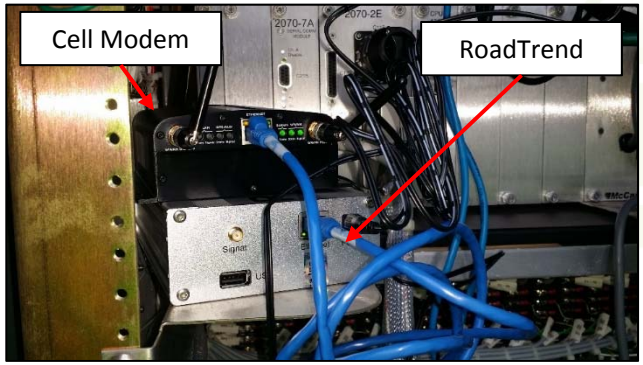

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Control Technologies Inc.
26 Jan 2015

Acyclica Technology

Demo Next!