



FLOW LABS

CLEANER, CLEARER, SAFER ROADS FOR EVERYONE

EFFORTLESS TRAFFIC MANAGEMENT WITH HARDWARE-FREE AI

ITS Georgia, September 2021

Our Team

Technologists, problem solvers, transportation experts



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Traffic signals are a **one million dollar a year** problem

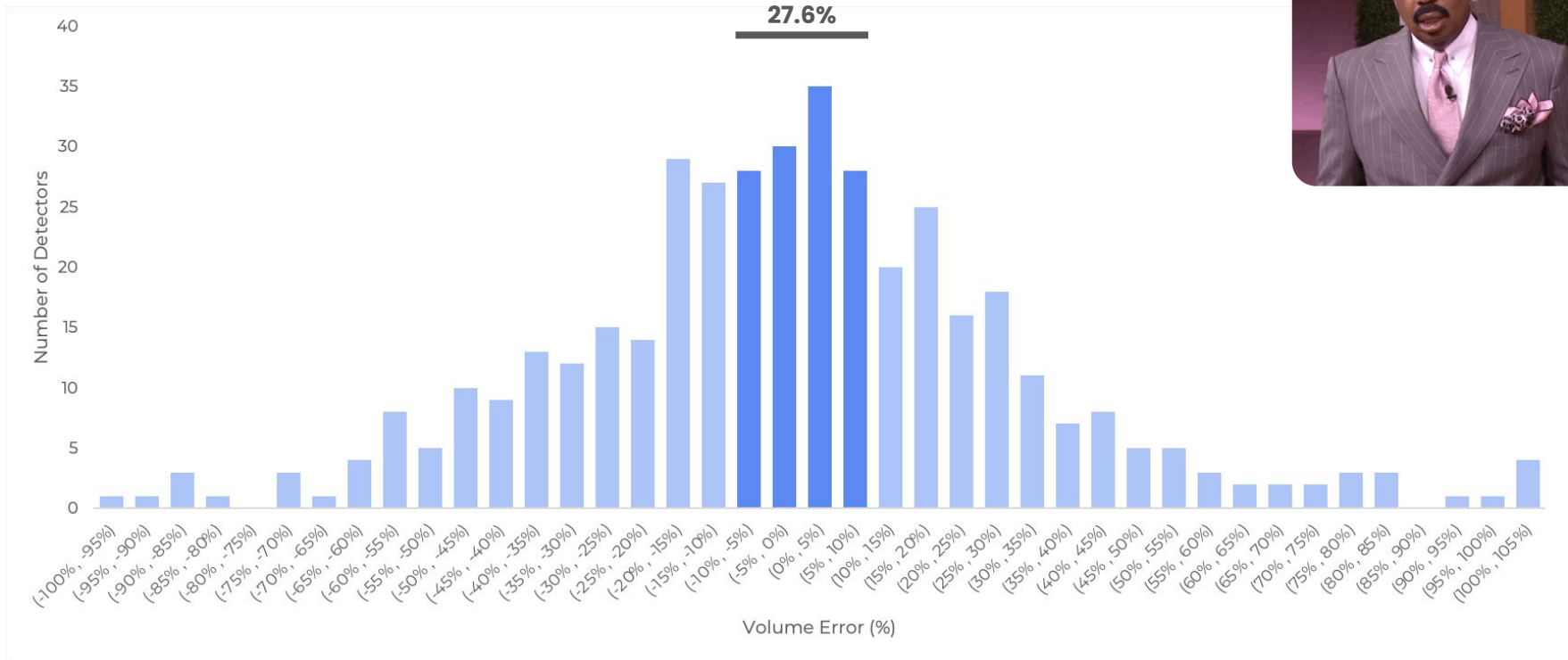





An aerial, top-down view of a city intersection. The scene is dominated by a large, white, bold text overlay that reads "Predicting the future?". The text is centered horizontally and vertically across the frame. The background shows a complex road network with yellow and white lane markings, including a large yellow 'X' in the center of the intersection. Several cars are visible on the roads, and buildings with various signs are visible around the perimeter. The overall lighting is somewhat dim, suggesting an overcast day or late afternoon. The text is the primary focus, set against the intricate patterns of the urban environment.

Predicting the future?

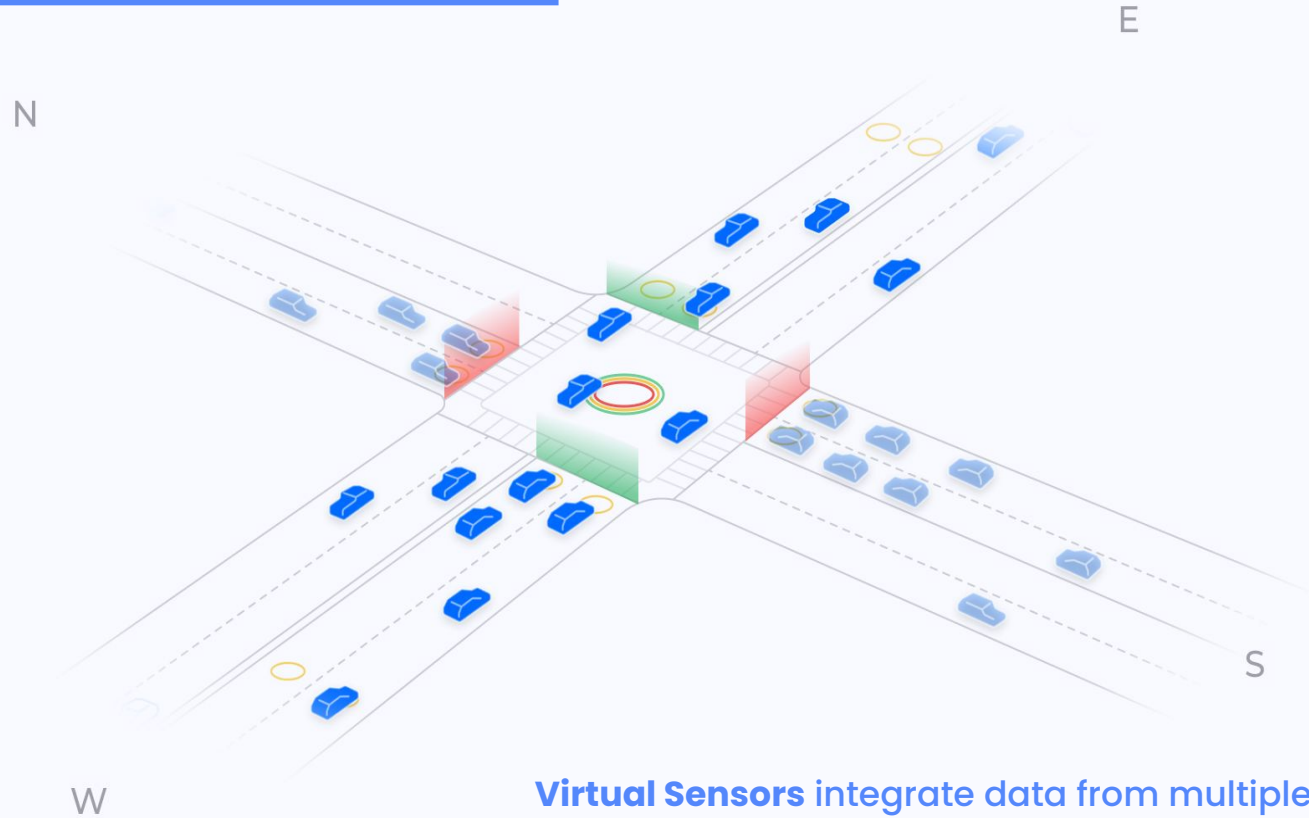
How accurate is your detection?



AI-powered virtual sensors

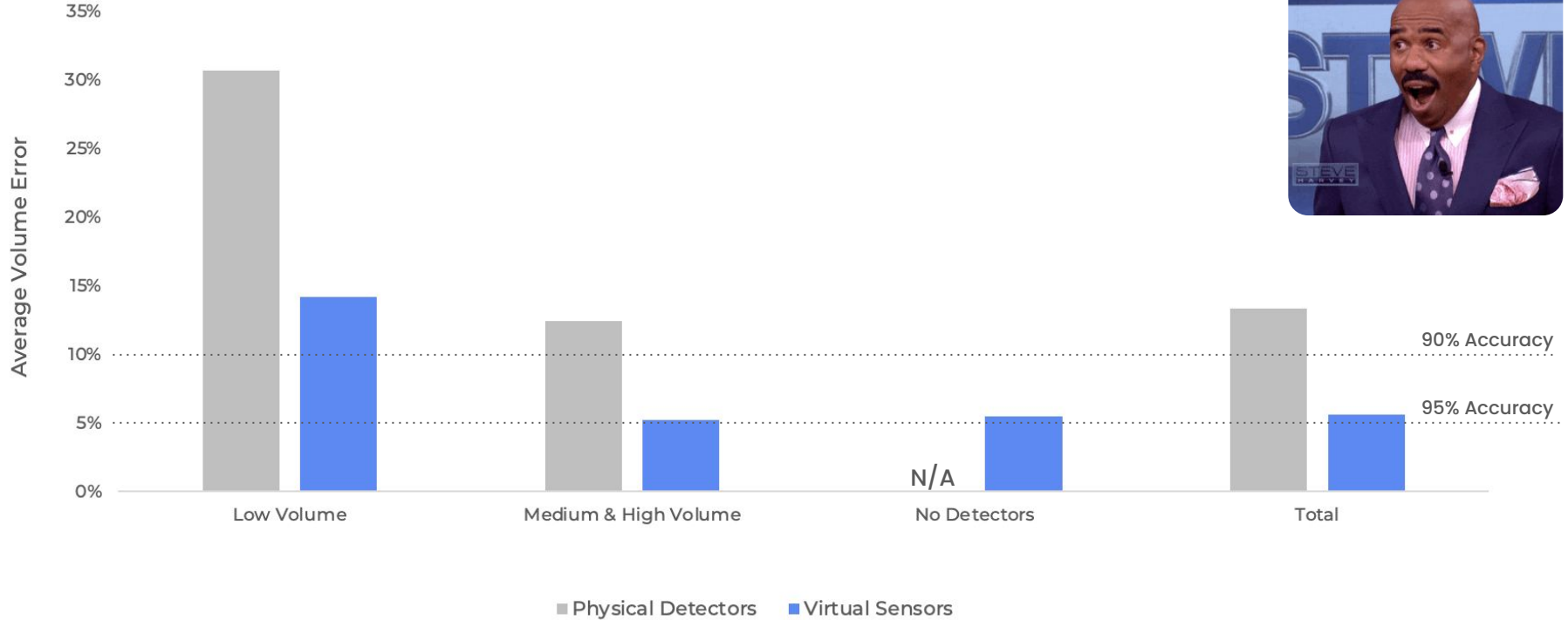
- **90% accurate data**
 - **Zero hardware**
 - **Complete data**
- 

AI-powered virtual sensors



Virtual Sensors integrate data from multiple sources to provide **accurate** and **comprehensive** data.

Virtual Sensors already achieve >94% accuracy



Complete and comprehensive metrics

Operations

- Arrivals on green
- Split failures
- Phase terminations
- Queue length

Mobility

- Control delay
- Route-by-route
Travel times
- Vehicle Stops

Safety NEW

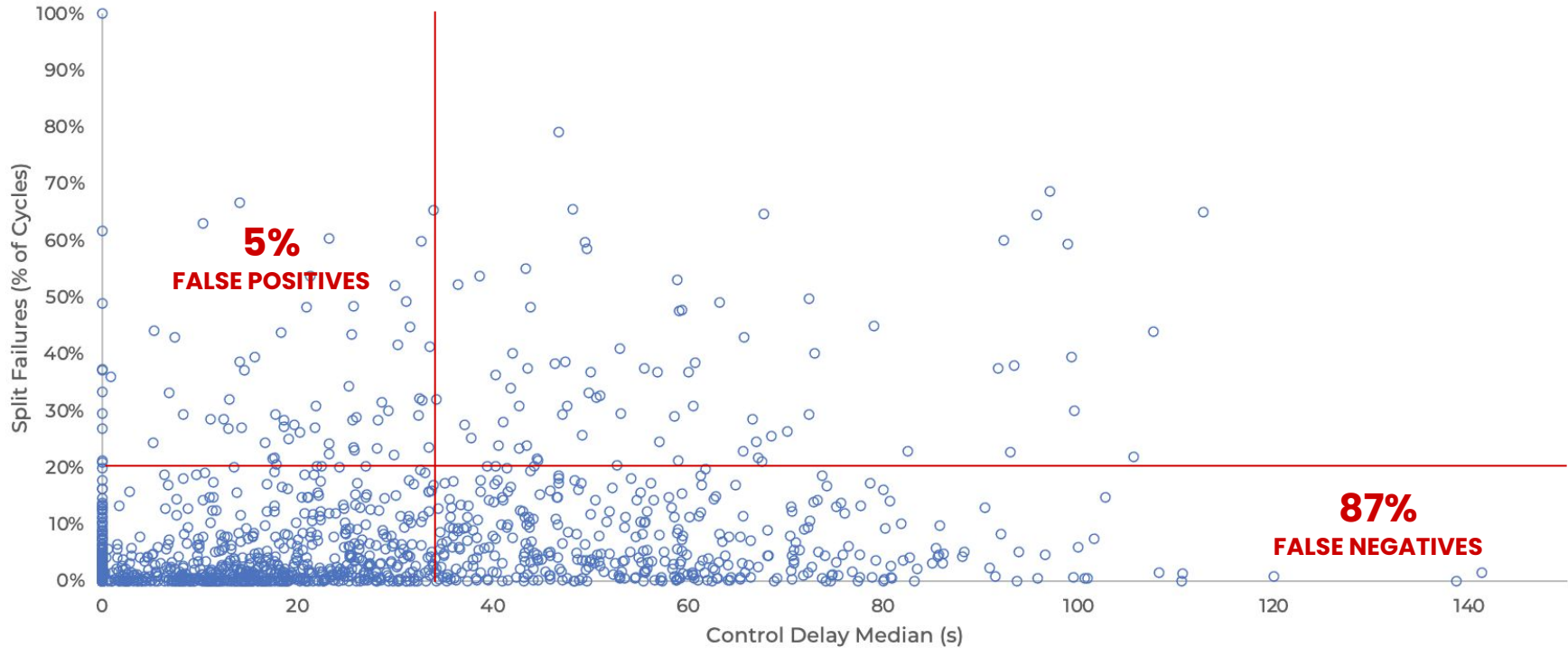
- Red light running
- Approach speeds
- Aggressive braking
- Turning speeds
- Dilemma zone entry

Environmental NEW

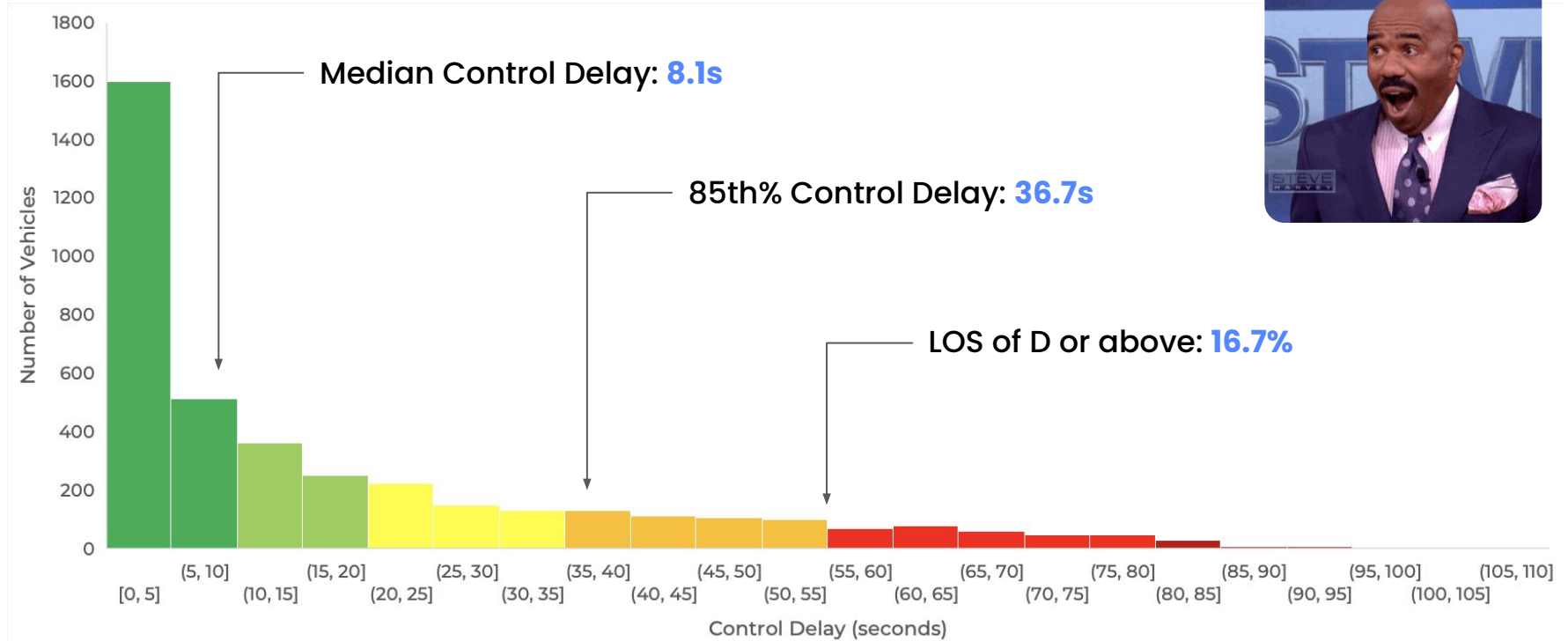
- Vehicle emissions
- Fuel consumption



Detection data is not enough



Virtual Sensors generate deeper insight



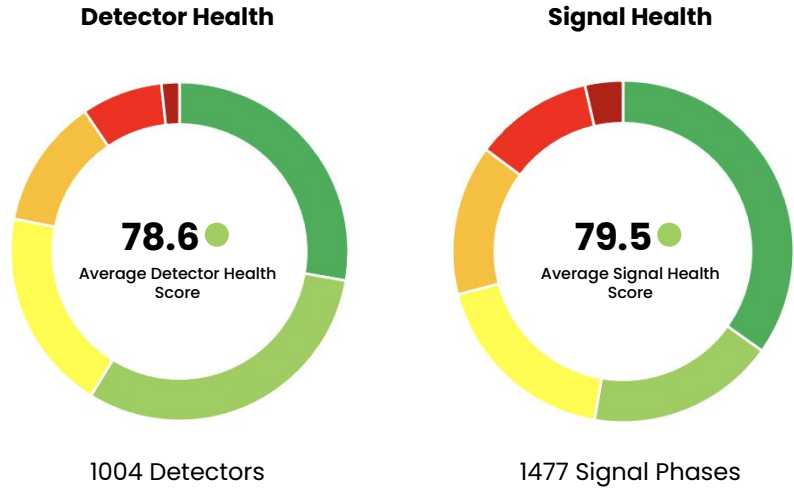
Virtual Sensors

- **Total visibility without fieldwork**
- **Reduces requirements for physical hardware**
- **Reduces requirements for hardware maintenance**
- **Provides a robust data foundation for further AI**

AI-powered proactive health monitoring

- **Total system monitoring**
- **Detector health monitoring**

Complete visibility across your entire signal system



Proactively maintain detectors and reduce costs

Volume Error

-67.6%

Vehicle Capture Test

35.7 /100

Correlation Test

81.8 /100

Consistency Test

85 /100

Latency Test

1.25s

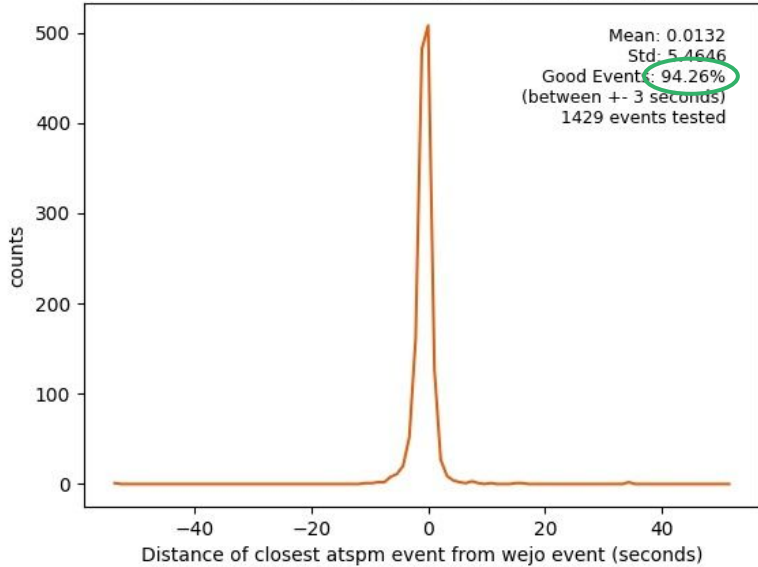
Detector Health Score

59 ●

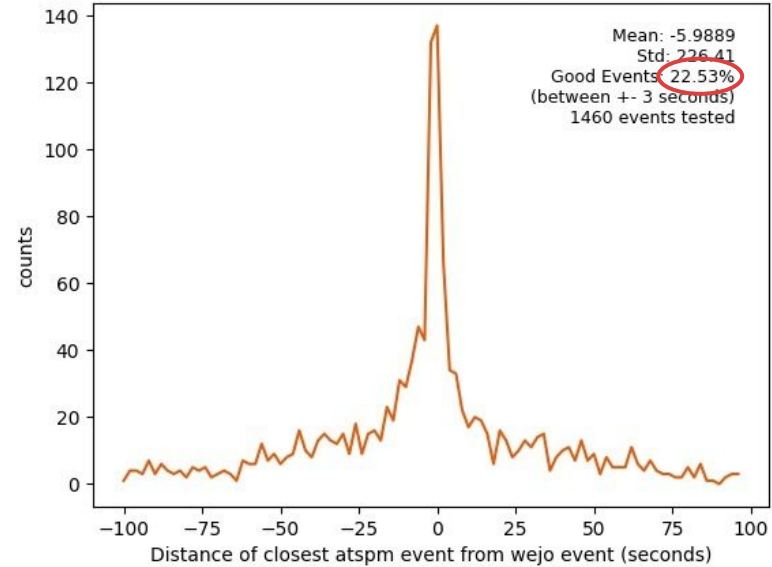
Detector ID	Intersection Phase	Movement	Detector Type	Detector Health Score	Volume Error	Volume Error Index	Vehicle Capture Index	Correlation Index
815052	8150 • 4	EB • Left	Lane-by-lane Count	57 ●	+78.5%	56	58.9	
781918	7819 • 5	NB • Left	Stop Bar Presence	58 ●			58.3	
781853	7818 • 8	WB • Thru-Right	Lane-by-lane Count	59 ●	+240.8%	29.3	51.2	95.8
781832	7818 • 4	EB • Thru-Right	Stop Bar Presence	59 ●			59	
781545	7815 • 8	WB • Right	Lane-by-lane Count	59 ●	+67.6%	59.7	35.7	81.8
815857	8158 • 8	SB • Right	Lane-by-lane Count	59 ●	+130.8%	43.3	43.3	90.8
781434	7814 • 1	SB • Left	Lane-by-lane Count	60 ●	-31.6%	68.4	13.8	97.1
618519	6185 • 2	WB • Thru	Stop Bar Presence	60 ●			59.9	
618520	6185 • 2	WB • Thru	Stop Bar Presence	60 ●			59.9	
780402	7804 • 2	NB • None	Advanced Count	60 ●	-68.2%	31.8	54.2	94.2
815025	8150 • 5	NB • Left	Lane-by-lane Count	60 ●	+54.8%	64.6	56	
915634	9156 • 8	SB • Thru-Right	Lane-by-lane Count	60 ●	+383.5%	56.1	51.6	97.8

Automating detector health monitoring with AI

Difference in time between wejo events and closest atspm event
signal_id: 6007 | edge_id: 6145:6007 | detector_distance_from_node: 20.0
wejo_distance_from_node: 20.0 | outgoing_edge_id: 6007:gne|79 | detector_channels: [39, 38]
detection_types: ['Lane-by-lane Count'] | movement_types: ['Left']



Difference in time between wejo events and closest atspm event
signal_id: 6007 | edge_id: 6145:6007 | detector_distance_from_node: 20.0
wejo_distance_from_node: 20.0 | outgoing_edge_id: 6007:gne|60 | detector_channels: [40, 41]
detection_types: ['Lane-by-lane Count'] | movement_types: ['Thru']

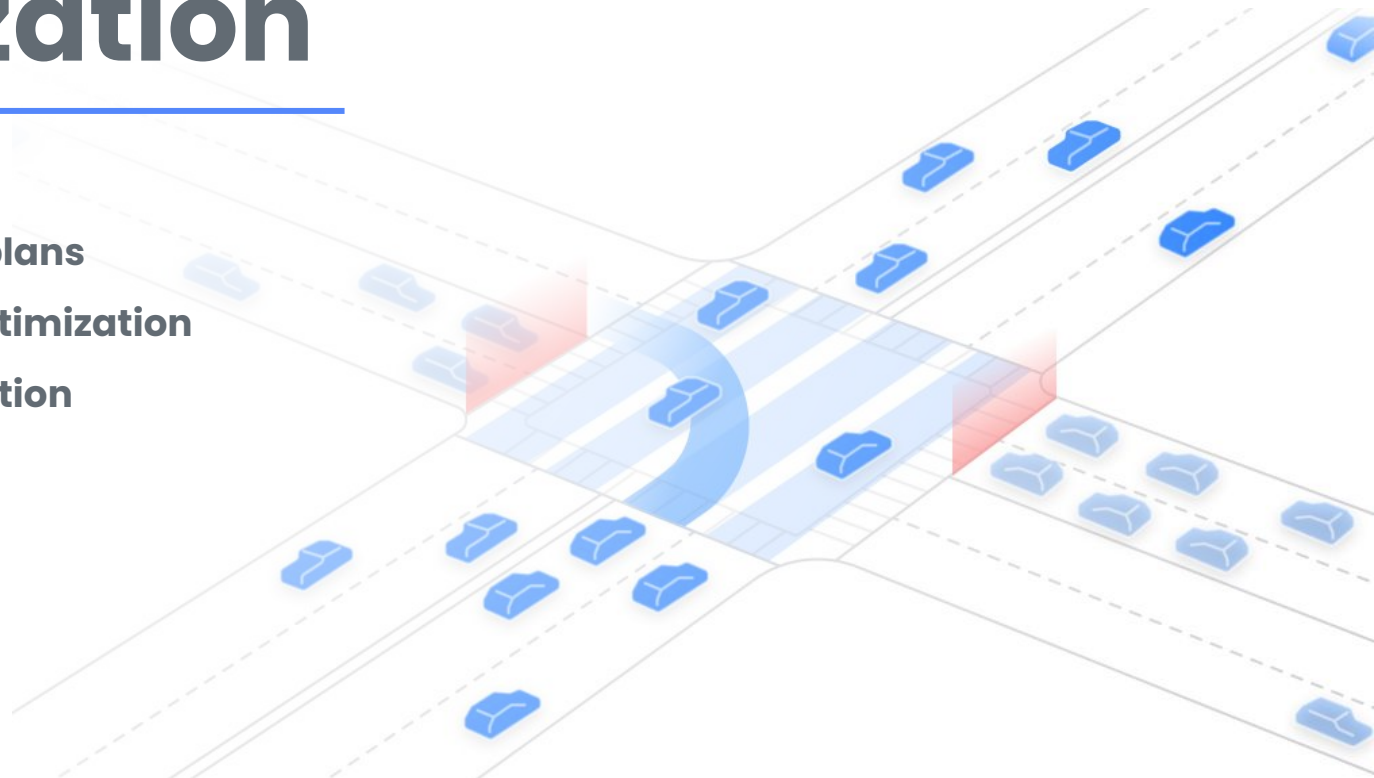


Proactive Monitoring

- **Total system monitoring**
- **Prevent complaints**
- **Effortless system maintenance**

AI-powered signal optimization

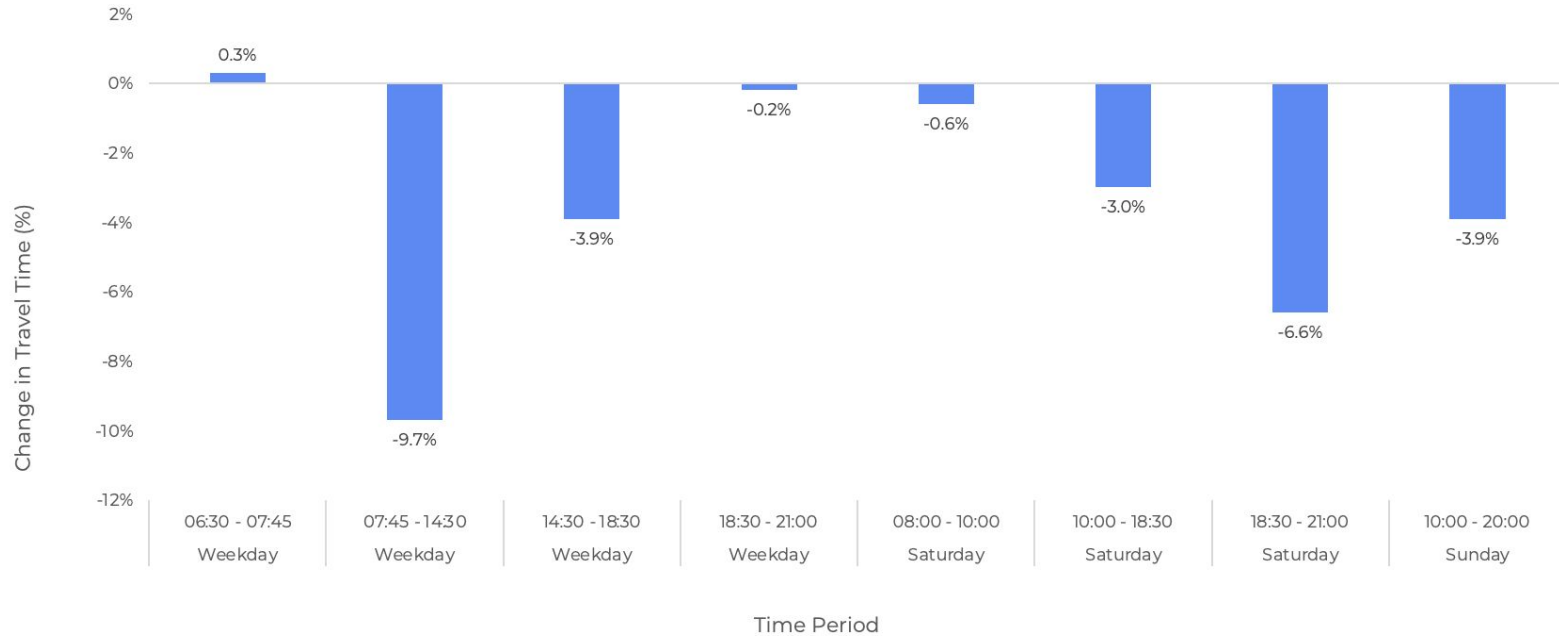
- Zero hardware
- Instant timing plans
- Multi-modal optimization
- Safety optimization



Performance: Reduced Travel Times



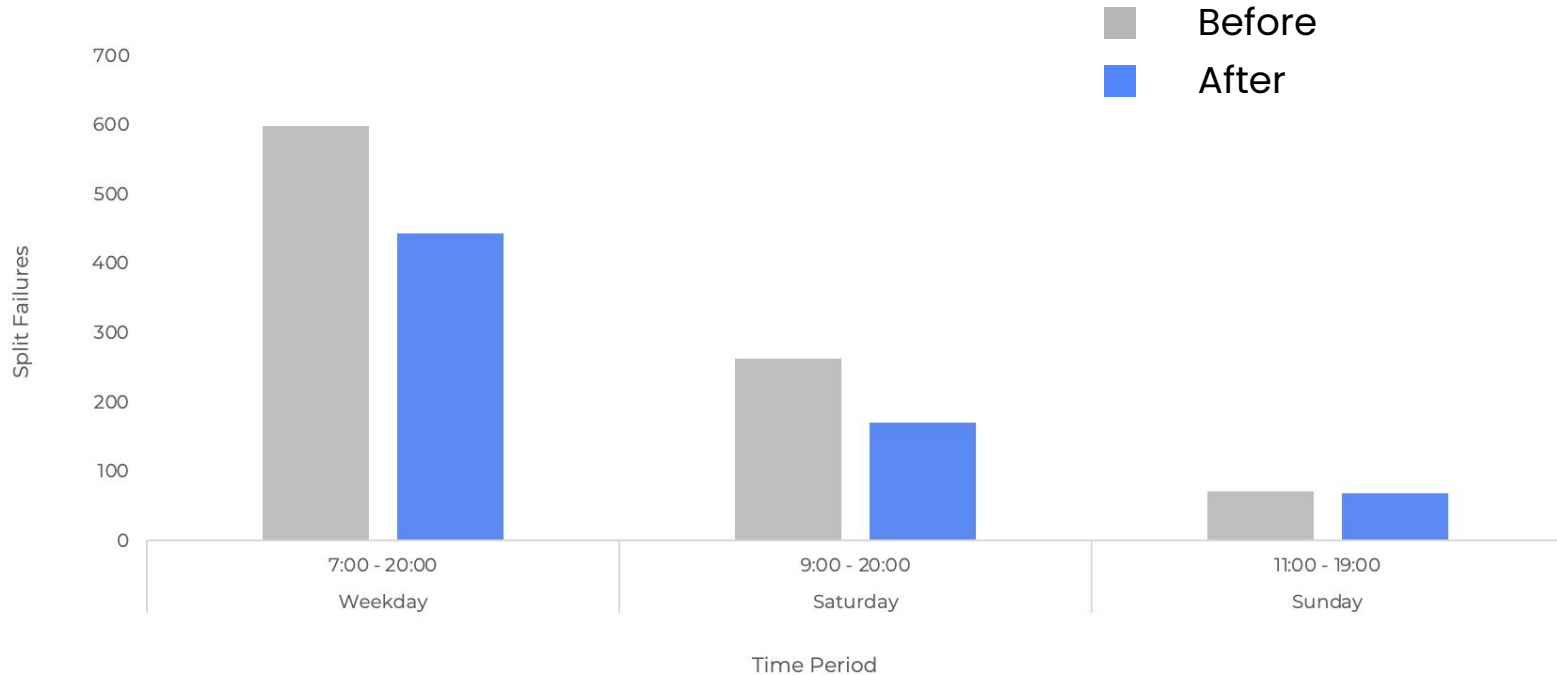
Riverdale Road



Performance: Reduced Queueing and Delays



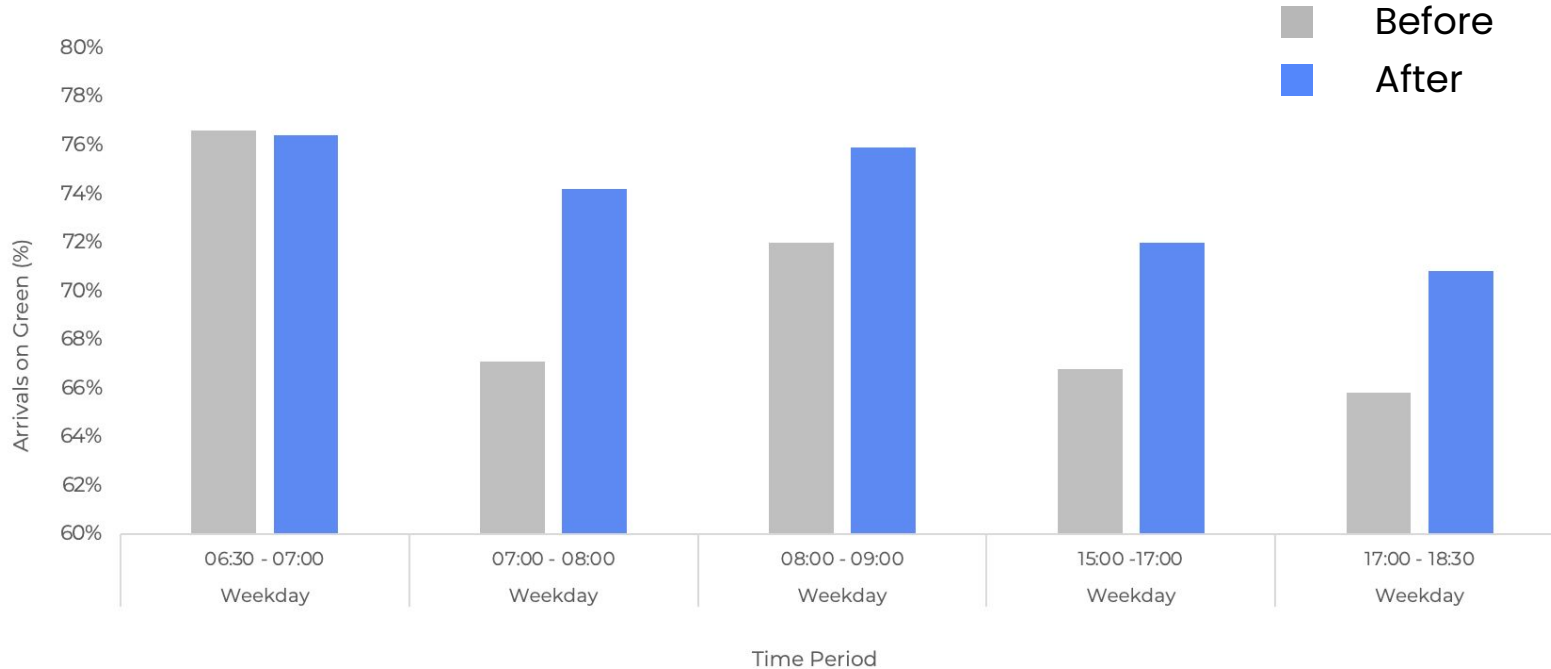
Hurricane



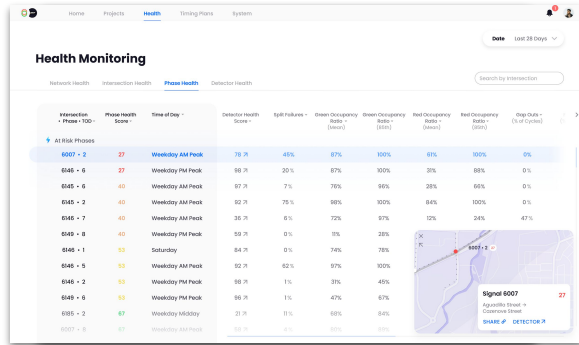
Performance: Improved Corridor Progression



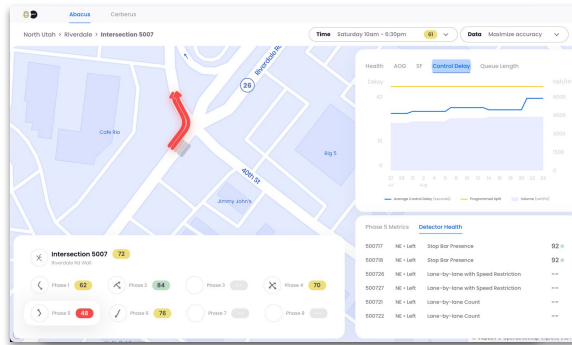
Eagle Mountain



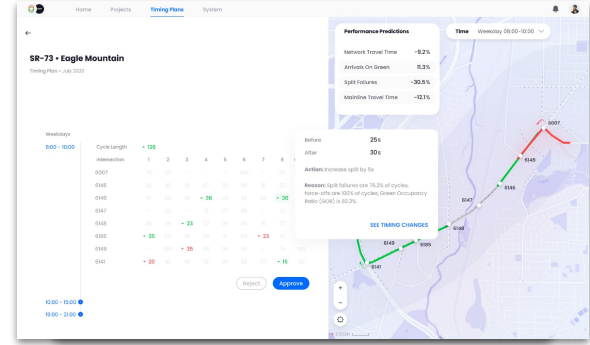
Hardware-free AI makes signal management effortless



Discovery



Diagnosis



Solution

Hardware-free AI is changing traffic management

Scalability



Lower Costs

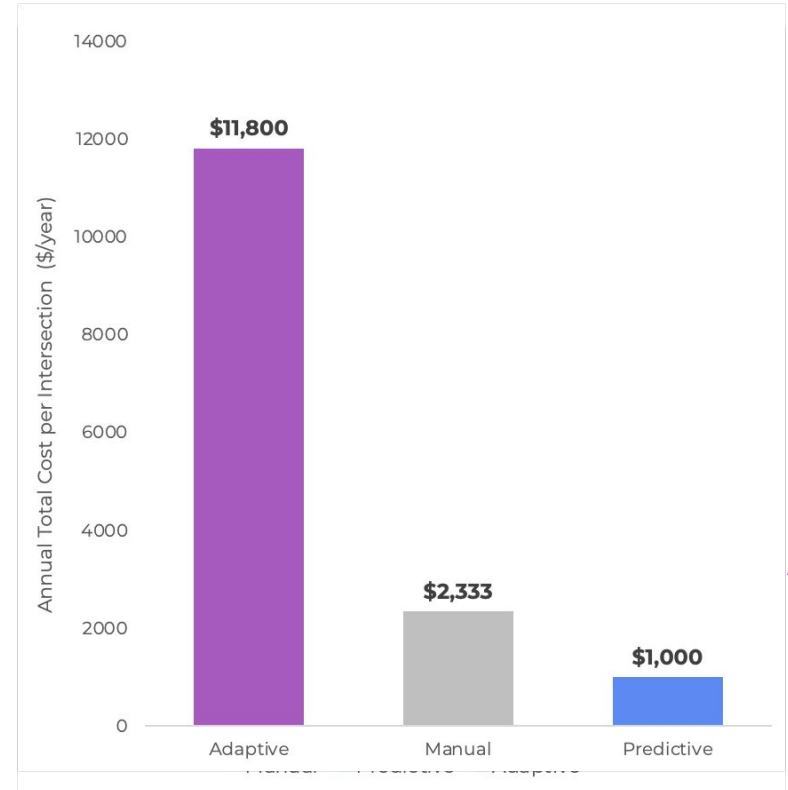
-56%

Productivity

50x

Impact

\$390,000



Artificial Intelligence:

- **Accurate and complete data**
- **No incremental hardware**
- **Substantial benefits today**
- **Enables further solutions**

— Thank you!

www.flowlabs.ai

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Get a Demo

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