BUSPATROL

BusPatrol Safety Program
North Bay Meeting

February 9th, 2021

2014 The idea of BusPatrol was born

2015 1ST live equipment tests
- *North Bay / Sudbury consortia*

2016 BP 1ST pilot program in Ontario
- *Peel, Waterloo, Brantford, Sudbury, North Bay*

2017 Began operations in Montgomery County, MD

2019 2ND generation cameras & AI processing

2020 Awarded 95% of all RFP bids
- 6K buses in Suffolk

2021 50K+ BusPatrol buses
- Including fleets in ON & QC

SCHOOL 1ST PROGRAM APPROACH

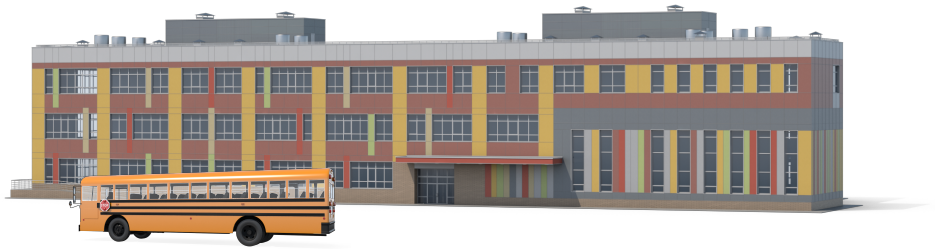
Built From Years of Understanding Stakeholder Needs

6 Years Building the most robust school bus safety program

8.6M Hours of live road testing

5x More effective stop-arm enforcement than competitors (AI Assisted)

Trusted by State & Provincial legislators in NY, PA, MI, MA, VA,MDON, QC to advise on regulation drafting



SCHOOL 1ST PROPOSITION

Because opt-ins are critical to program success

Our 360° Approach That Delivers All Stakeholder Needs

PROGRAM PARTNERS

- Schools
- Consortia

ENABLING STAKEHOLDERS

- Municipalities & Regions
- Law Enforcement
- Operators

PEOPLE FIGHTING FOR CHANGE.

Responsibility to provide communities with access to the best safety solutions.

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Safety-First Approach

Prioritizing Student Safety

Safety technology as a building block for enforcement, awareness and funding of future safety initiatives

$0

NO CAPITAL OUTLAY

Includes Full Fleet Deployment

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Full-Fleet Deployment

Prioritizing Student Safety

THE ONLY SOLUTION EFFECTIVELY REDUCING STOP-ARM VIOLATIONS AND MAKING COMMUNITIES SAFER.

20%

PARTIAL FLEET COVERAGE

PROBLEM: CAN'T QUANTIFY REDUCTIONS

100 %

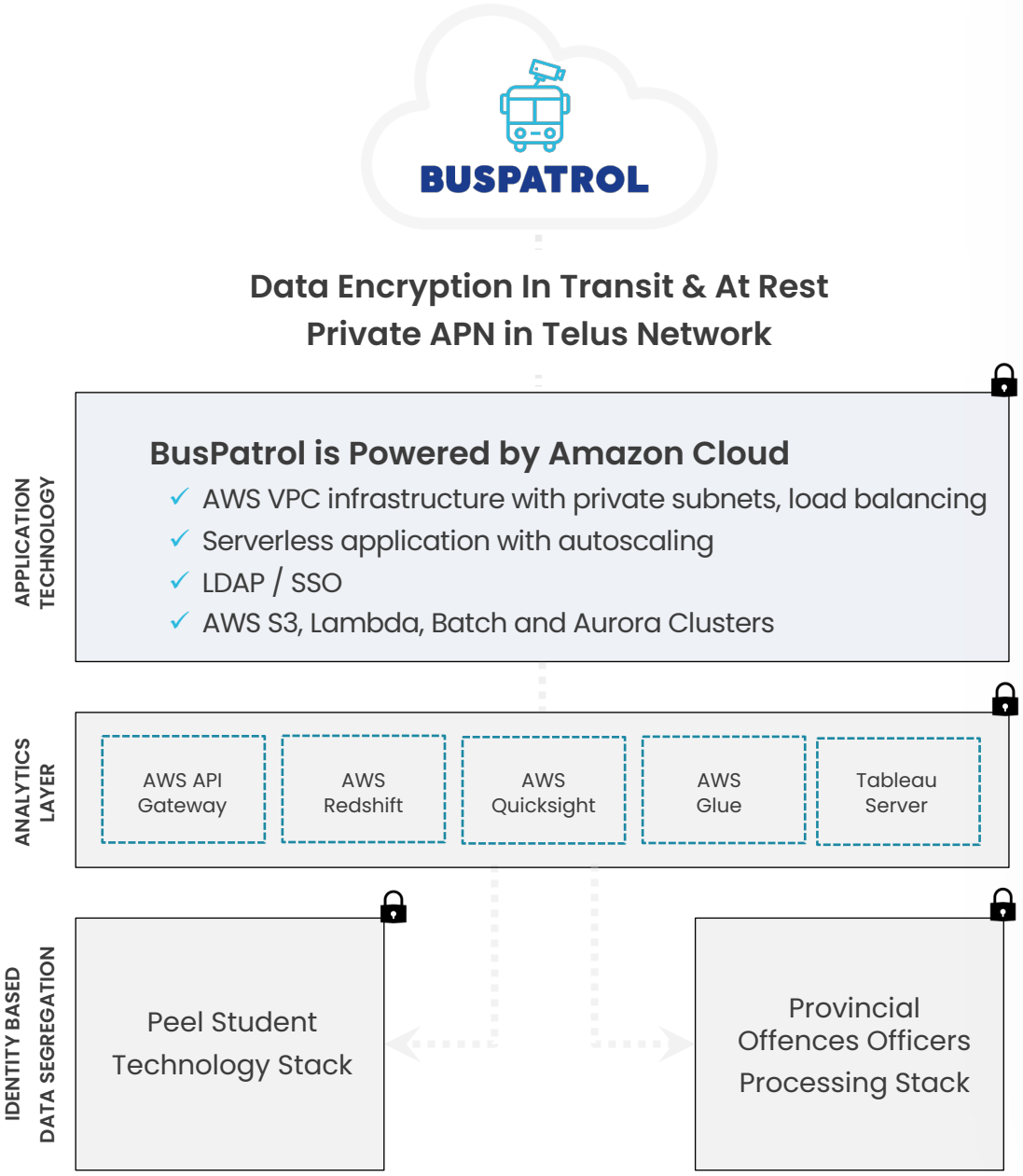
FULL-FLEET COVERAGE

SOLUTION: COMPREHENSIVE, STABLE DATA

Our Architecture

Cloud Based, Secure & Scalable

BUSPATROL



AI-assisted technology

End-to-end encryption in transit and at rest

AWS Canada infrastructure with redundancy and disaster recovery

Accenture-verified cybersecurity

PCI & SOC 2 compliance

IAM based, physical segregation of data & video

Tableau reporting interface and AWS API gateways

Only company certified for Emergency Responder private network

STOP-ARM TECHNOLOGY FEATURES

The stop-arm enforcement camera suite contains 3-5 high resolution cameras, optimized for performance in environments with variable weather and light conditions.

AI Assisted Technology

8 Lanes of Coverage

Variable Weather Conditions

Variable Light Conditions

4K & 180° Coverage

Anti Vibration Technology

HIGHEST STOP-ARM CAPTURING RATE

TRAFFIC GOVERNANCE MANAGEMENT

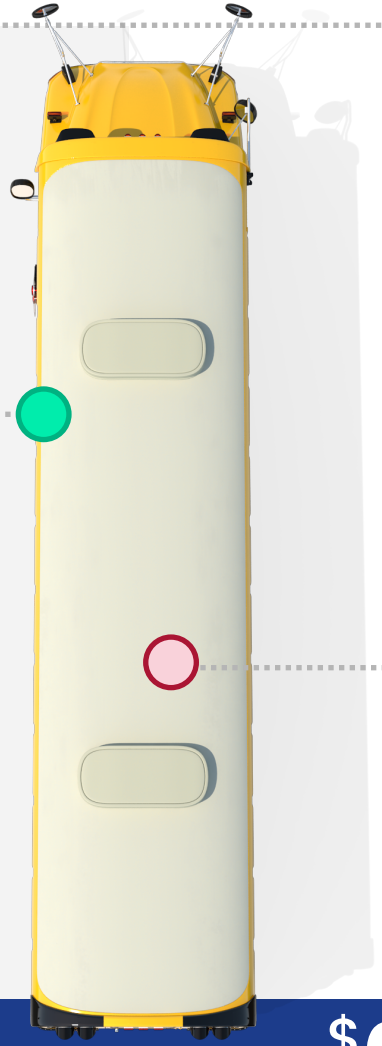
SECURED AWS CLOUD TECHNOLOGY WITH DATA SEGREGATION

*Page 13

SCHOOL GOVERNANCE MANAGEMENT

Citation Management Tools

Evidence Processing
Vehicle Page
Citation Issuing



Fleet Management & Routing

Parent Apps

BusPlanner
chipmunk School Bus Tracker
SAMSUNG
ZONAR

Provincial Offences Officers

Manage Data and Video at Processing Center

External Stop-Arm Cameras Only

School & Consortia

Access to Student Safety Data & Application

Internal Cameras Only

Cloud-Connected Safety Cameras

Full-service Fleet Management

$0 Capital Outlay

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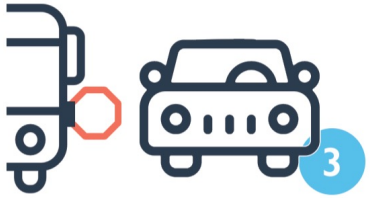
LEARN HOW OUR ENFORCEMENT PROGRAM WORKS

BUS ROUTE

Stop-arm camera is activated, while bus is in operation

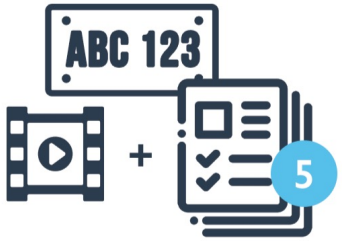
Overhead lights activated, bus stops & stop-arm deployed



Stop-arm violations are identified and recorded

Video, GPS and data are captured by BusPatrol AI

PROCESSING & REVIEW



BusPatrol AVA AI compiles video and evidence package

PEEL REGIONAL PROCESSING CENTRE

Provincial offence officers process stop-arm incidents

Provincial offence officers issue stop-arm citations

*BusPatrol has already deployed a program with municipal officers overseeing processing / ticketing

BUSPATROL

LEARN HOW OUR ENFORCEMENT PROGRAM WORKS

ENFORCEMENT & EDUCATION

PEEL REGIONAL PROCESSING CENTRE

Ticket is mailed to offender with website containing link to access video evidence

Driver makes payment online or at designated municipal office

Citation revenue used to cover program expenses & invest in safety initiatives

Call Centre Available to Educate Drivers on Road Safety and Facilitate Citation Management and Collection

FULL-STOP ENFORCEMENT PROGRAM

MORE THAN TECHNOLOGY

SCHOOL DISTRICTS & CONSORTIA

100% Fleet Deployment Model

- ✓ Critical for consortia opt-in
- ✓ Equitable safety for all constituents

- Next-gen tech for schools that integrates to:
  - ✓ **Parent apps**
  - ✓ **Decision analytics**
  - ✓ **Route planning**
  - ✓ **Safety technology**
- Millions in new safety technology

SCHOOL BUS OPERATORS

- Industry-leading hardware
  - *100% free to private operators*
- Seamless and automated program
  - Management & processes
  - Deployment & maintenance

$0 **No Upfront Costs or Capital Outlay**

- Integrated with fleet planning software

BusPlannerPro

INTEGRATED FLEET TECH SOLUTIONS

Accessibility to Technology for Schools

- Route Planning Software Solution
- Transportation Information Portal
- Map & Boundary Administration Software
- GPS Tracking & Analysis Module
- Redistricting Analysis Module
- Route Costing Capabilities
- BusPlanner Turns+
- Chipmunk Parent App
- Implementation, User Training & SAAS

BusPlanner® Route Planning

BusPlannerTasks BusPlannerMaps

BusPlannerGPS BusPlannerFinance

BusPlannerServer BusPlannerWeb

chipmunk School Bus Tracker Parent App

BUSPATROL

Community Awareness Program

PSAs and Educational Campaigns for Drivers – 30 Day Warning Period

Data Drivren Behavioral Change

The Best Hardware Demands the Best Software and Bundled Services to Support it.

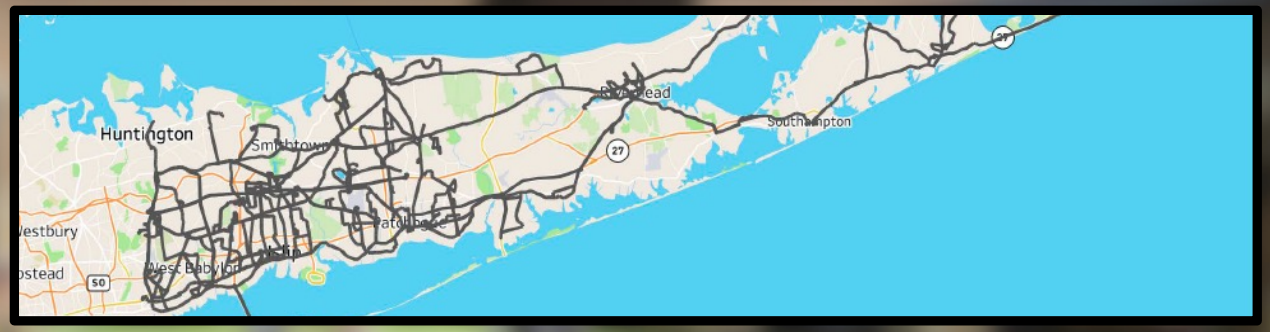
Partner Portal

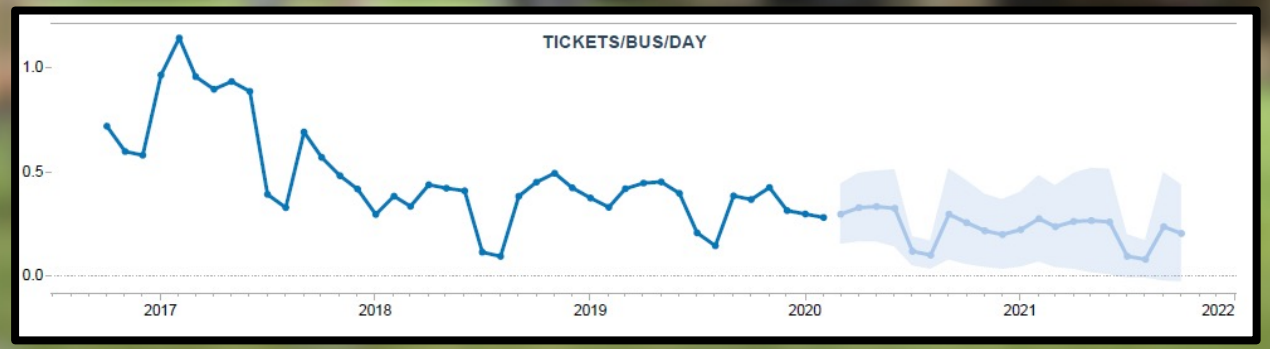
GPS & Reporting Tools

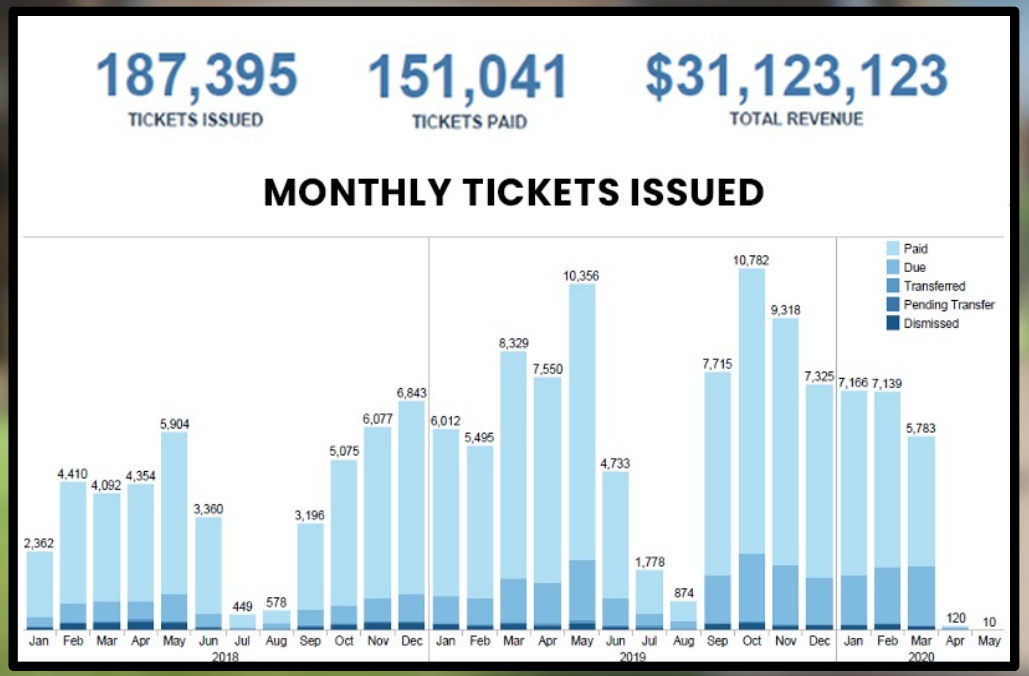
- Real-time GPS
- Historical GPS timestamps

BusPatrol AVL: Automatic vehicle locator GPS and accelerometer system provides real-time telemetry data.

Snail Trail: GPS telemetry data is saved so you can look up the historical location of the bus.





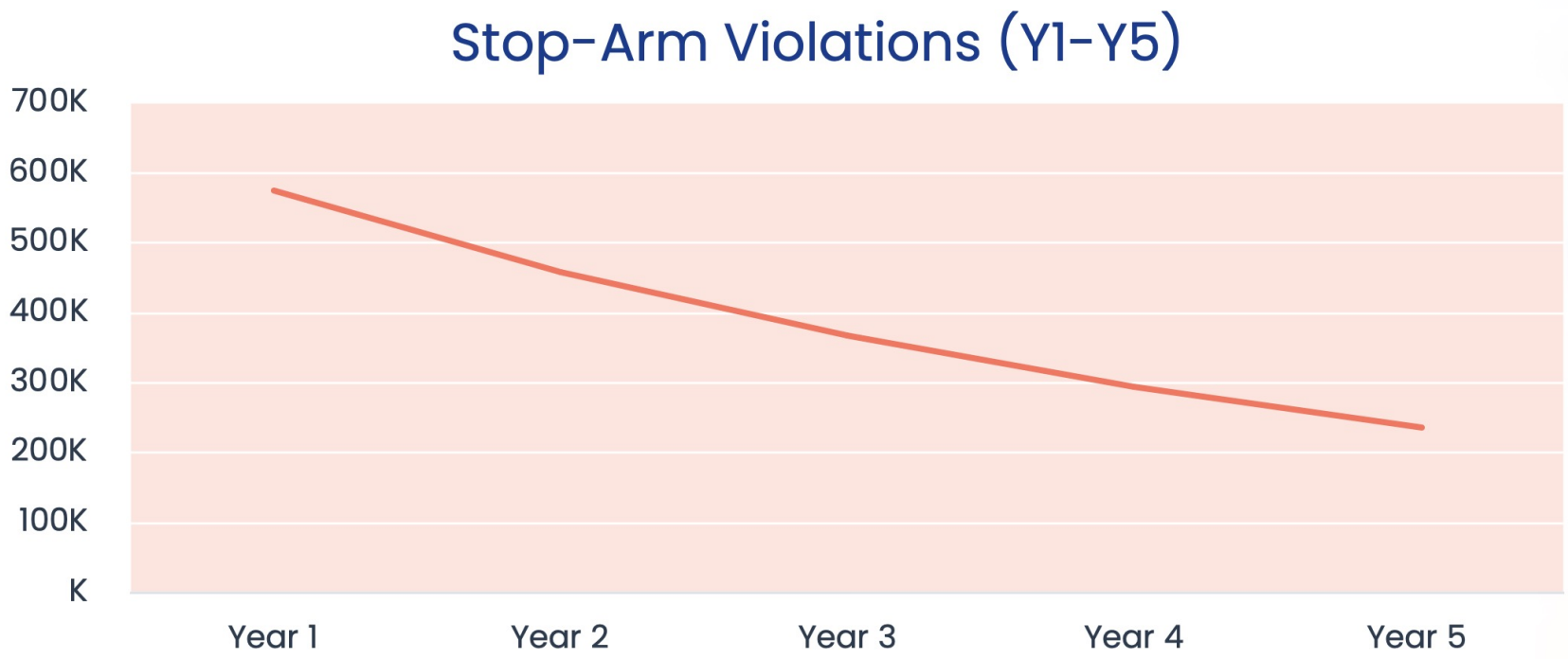


Ex. Suffolk Stop-Arm Violation Reduction Estimate

Correcting Motorist Behavior Through Stop-Arm Enforcement Over Time					
Suffolk County, NY	Year 1	Year 2	Year 3	Year 4	Year 5
Total Violations	573,937	459,150	367,320	293,856	235,085

Changing Driver Behavior Around School Buses

Estimated 60% Reduction in Violations



STUDENT SAFETY BENEFITS

BEYOND ENFORCEMENT

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Full-Fleet Safety Benefits

Safer Buses. Safer Kids.

FULL-FLEET MODEL IS INCLUSIVE AND PROVIDES SAFETY BENEFITS TO ALL STUDENTS

100%

MONTGOMERY COUNTY, MD

FULL-FLEET COVERAGE = 1382 BUSES

350 School Buses Have Not Issued Tickets

2 ROUTES A DAY | AVG. 50 STUDENTS PER BUS

35,000 RIDERS BENEFIT FROM

ROUTING SYSTEM

INTERNAL SAFETY CAMERAS

REMOTE VIDEO ACCESS

REAL-TIME STREAMING

OPTIONAL SAFETY CAMERA VIEWS

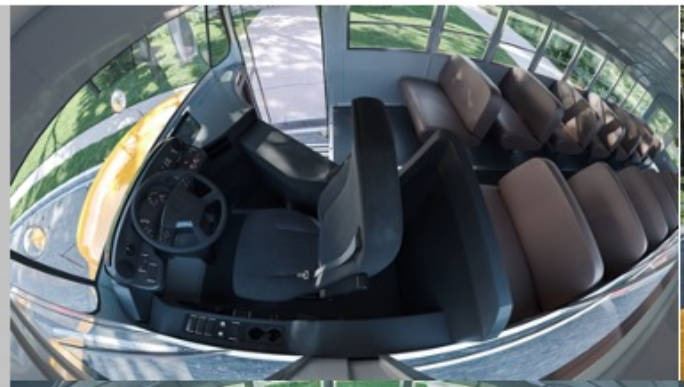
Optional safety cameras available at no cost to school districts and municipalities.

*Our solution is fully-customizable to meet our partners' needs and their school bus make and models.

Cloud Connectivity

*Locations Customizable

4



ADDITIONAL TECHNOLOGY FEATURES

The same technology that powers our stop-arm enforcement program enables school districts and municipalities to upgrade their fleet with supplementary safety technology:

- Windshield Camera
- Rearview Camera
- Sideload Camera
- Interior Cloud Connected Cameras (4)
- Health Check
- Real-Time GPS & Reporting Tools
- On Demand Video
- Live View Streaming
- Silent Alarm Emergency Alert System

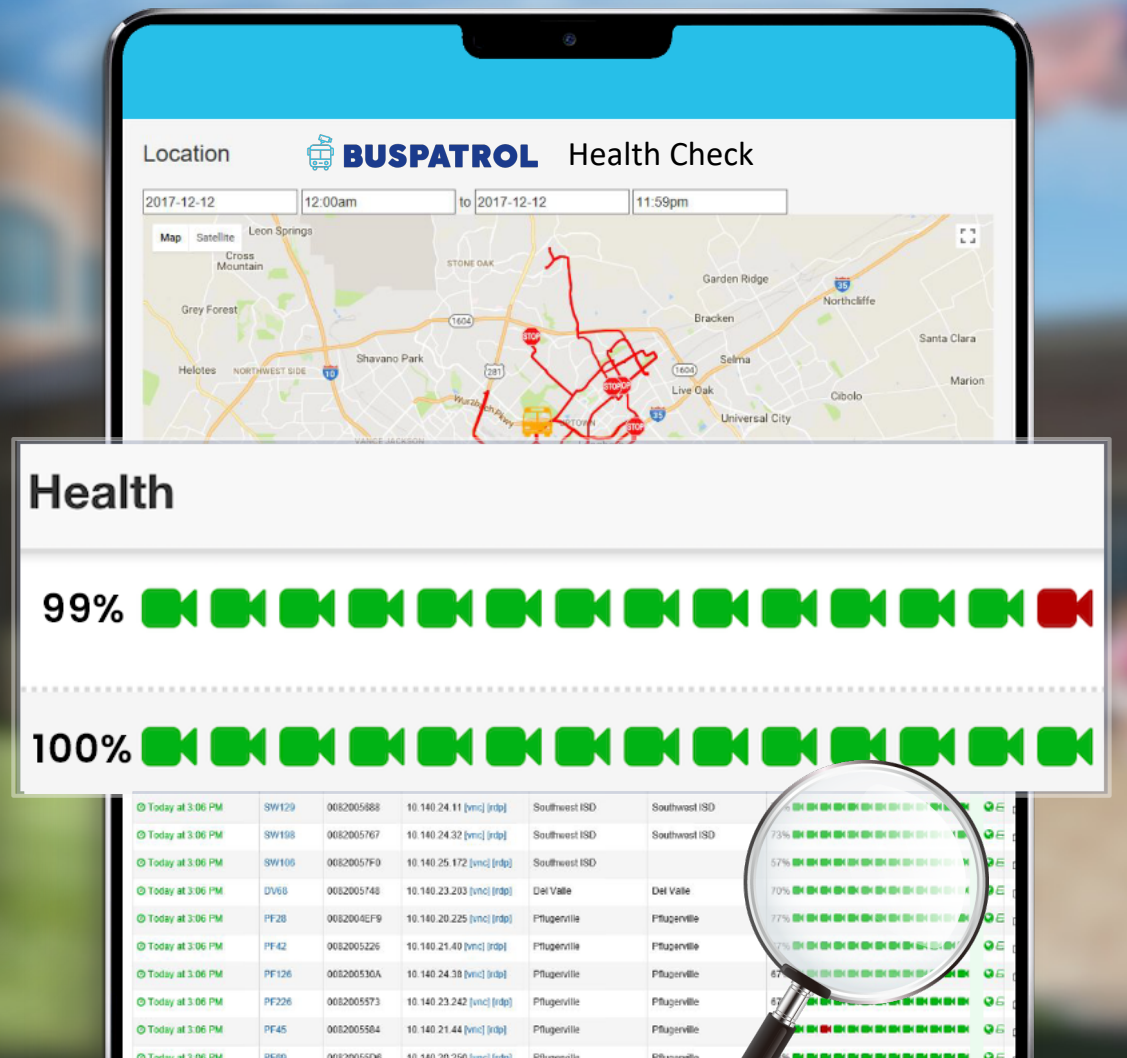
Additional Safety Features

The Best Hardware Demands the Best Software and Bundled Services to Support it.

Partner Portal

Health Check

- Real-time overview of BusPatrol's pupil transportation technology and tools.
- Quickly review the status and functionality of cameras across your entire fleet to ensure optimal citation management.



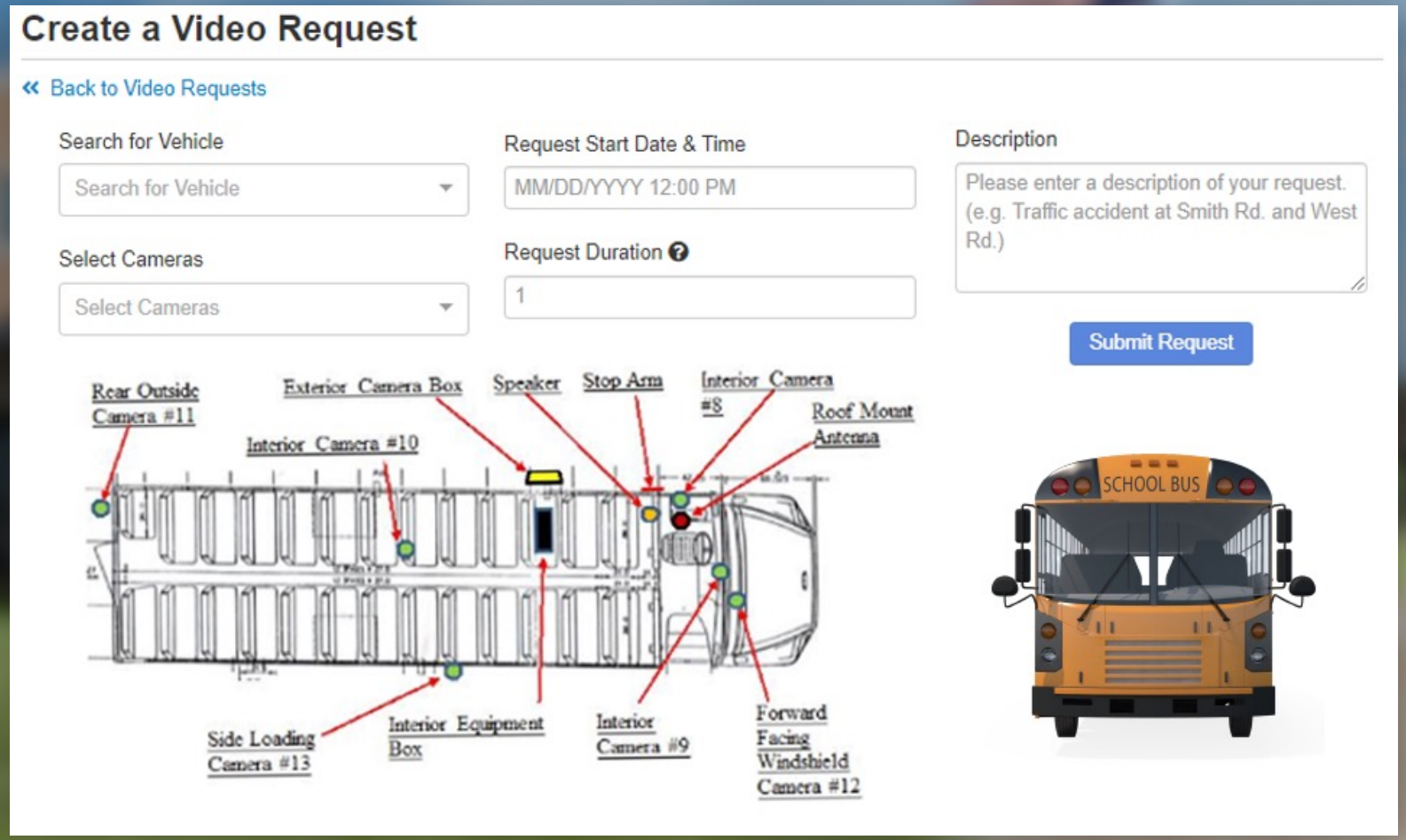
Additional Safety Features

The Best Hardware Demands the Best Software and Bundled Services to Support it.

Partner Portal

On-Demand Retrieval

- Streamline video retrieval process by requesting video via BusPatrol Secure SmartCloud Ecosystem
- Cost saving allowance possible by decreasing man hours spent pulling video
- Security in knowing who has access to your internal video



Additional Safety Features

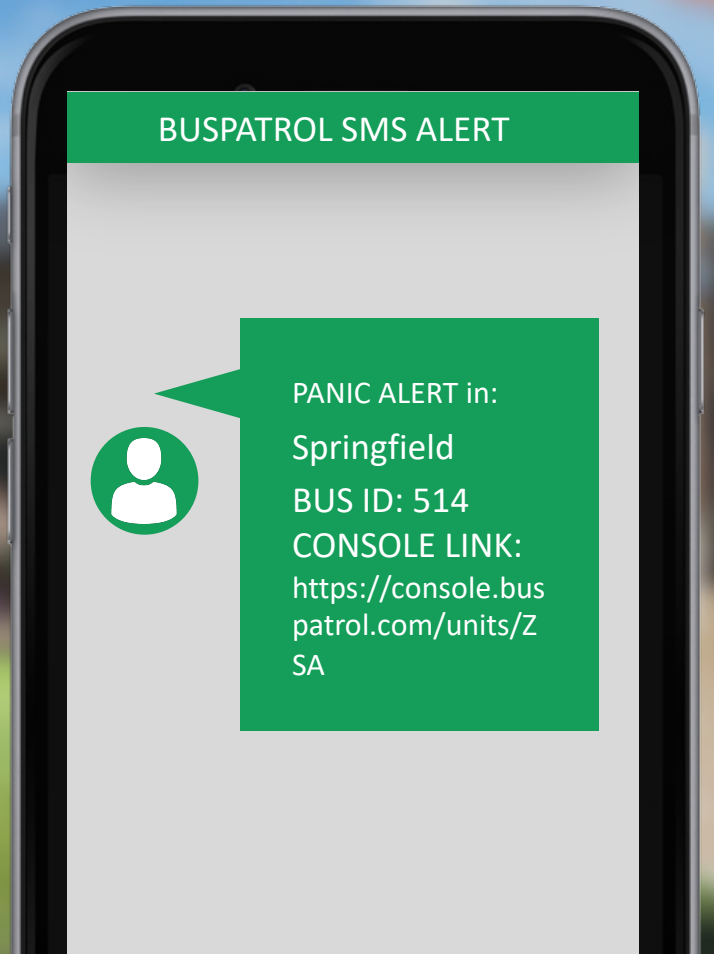
The Best Hardware Demands the Best Software and Bundled Services to Support it.

Real-Time

Emergency Alerts

BusPatrol Silent Alarm triggers a notification link that provides important information including still images, GPS info, and live view.

SILENT ALARM
SAFETY FEATURE



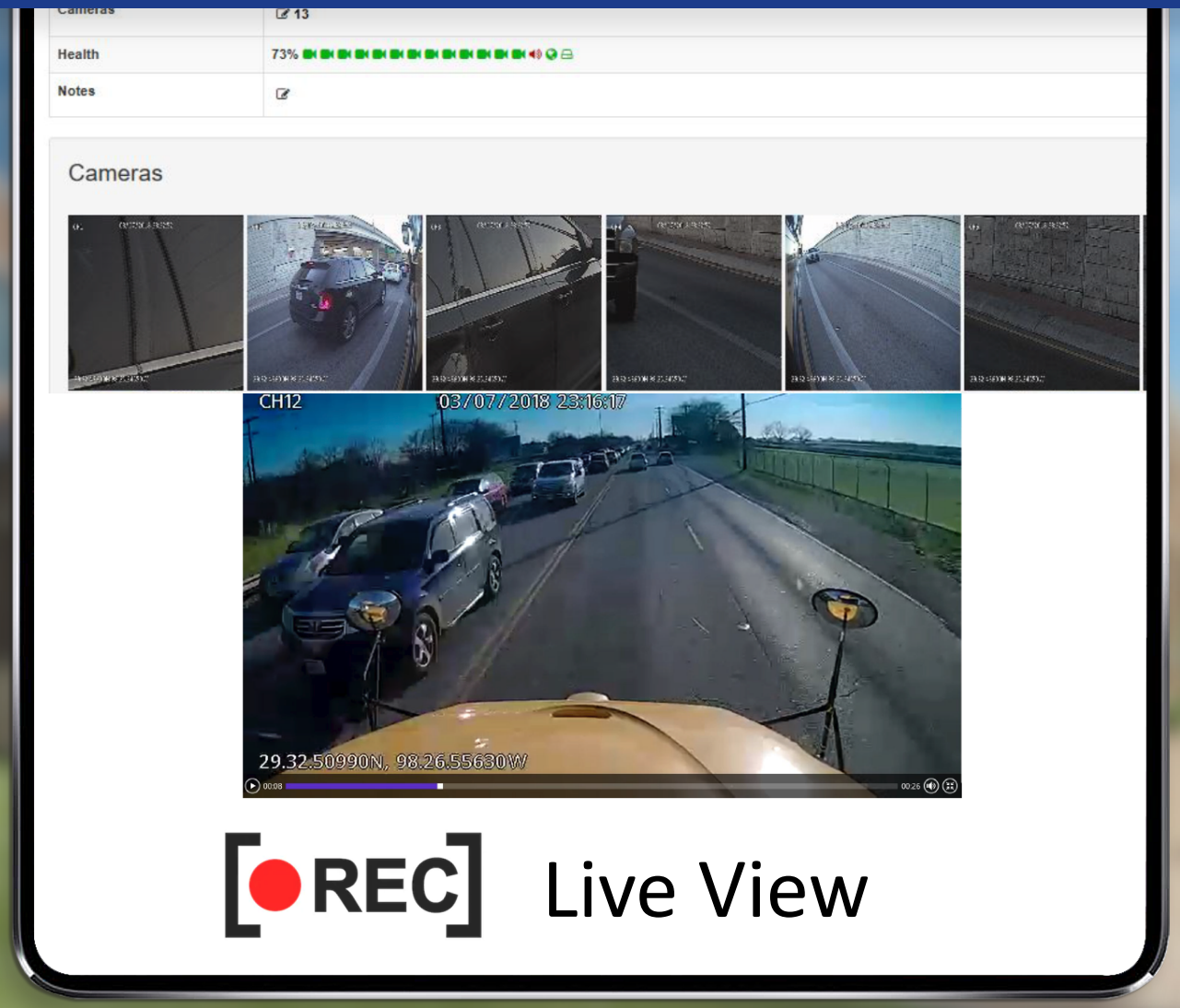
The Best Hardware Demands the Best Software and Bundled Services to Support it.

Partner Portal

Live View Streaming

Our exclusive capability allows school officials to remotely access live audio & video feeds from the school bus when incidents occur.

SAFETY FEATURE



SCHOOL BUS
STOP
STOP
SAFEGUARD YOUR
ENTIRE FLEET AT NO COST
$0
INTEGRATED SAFETY TECHNOLOGY SOLUTIONS

Giving Municipalities the Freedom to Develop their own Programs

- BusPatrol's complies with all provincial regulations
  - Developing processing centres to comply with regs and guidelines
- **North Bay can choose from three models to process stop-arm violations**
  - Including joining BusPatrol's existing Peel processing centre

Permits ALL stakeholders to benefit from BusPatrol's safety program

Peel Processing Centre

STOPR
STUDENT TRANSPORTATION OF PEEL REGION

- Deployed using:
  - City infrastructure
  - City employees
  - Regional authorities
  - Centralized provincial offences officers
- **Who can join and what are the payment obligations?**
  - Any municipality can join Peel's processing centre for seamless deployment of a BusPatrol safety program
  - Payment obligations are limited to and paid exclusively from stop-arm enforcement revenues including the required provincial offences officers.

BENEFICIAL TO MUNICIPALITIES WITH LIMITED FLEET SIZE (COSTS VS. TICKET REVENUE)

1. JOIN PEEL PROCESSING CENTRE

STOPR
STUDENT TRANSPORTATION OF PEEL REGION

Streamlined and Seamless Enforcement

- ✓ Centralized management and implementation of processing centre including required provincial offences officers
- – MOU and negotiations required with Peel on fine revenue distribution

2. DEVELOP REGIONAL PROCESSING CENTRE

- ✓ Existing policies already in place for fine revenue sharing and distribution
- – Time required to coordinate with municipalities, region and BusPatrol to implement the regional processing centre

3. DEVELOP NORTH BAY PROCESSING CENTRE

TOWN OF MATTAWA

- ✓ Increased independence from region and other processing centres
- – Limited revenues vs. costs for provincial offenses officers
- – Time and resources required to coordinate BusPatrol to implement
- – Coordination required with MTO to implement local processing centre

98% OF THE VIOLATORS WHO GET A TICKET VIA THE STOP-ARM CAMERA PROGRAM DON'T ILLEGALLY PASS A SCHOOL BUS A SECOND TIME.

ONCE THEY KNOW THE LAW IS BEING ENFORCED, THEY STOP.

BUSPATROL

Thank You!

Contact us:

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FOLLOW OUR MISSION: