

**HERZOG**



**RAILSENTRY™**

## Slide 1

---

**QS0** @EVERYONE

Please do not adjust or make edits to the slides themselves. This deck is slightly advanced and some edits may cause complications.

Please mention your edits/thoughts in the comments or notes section and I will make the edits.

Quinten Sharp, 2024-08-02T18:44:11.722

**QS1** Footage has been trimmed to exclude any fracturing.

Quinten Sharp, 2024-08-07T19:22:59.550

## Safety Matters. Seconds Count.



Annually, Herzog-operated systems record over 100 strikes and near misses—a negative trend that continues.

RailSentry brings Herzog's core principle of "**Safety Without Compromise**" to the technology segment.



## Case Study – Burlingame, CA

Located in Burlingame, CA, the intersection near California Drive and Broadway has been the site of multiple accidents.



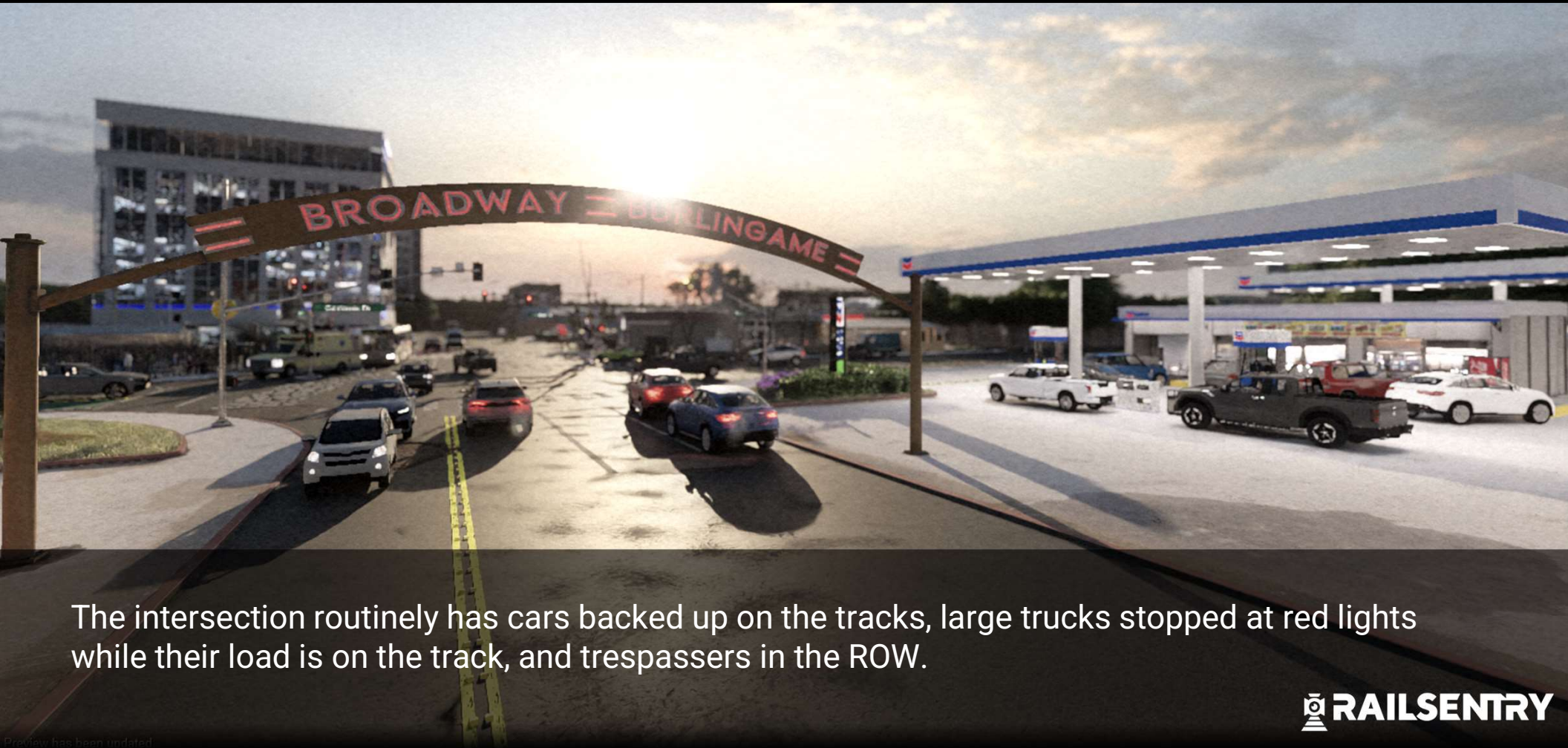


## Case Study – Burlingame, CA

Located in Burlingame, CA, the intersection near California Drive and Broadway has been the site of multiple accidents.



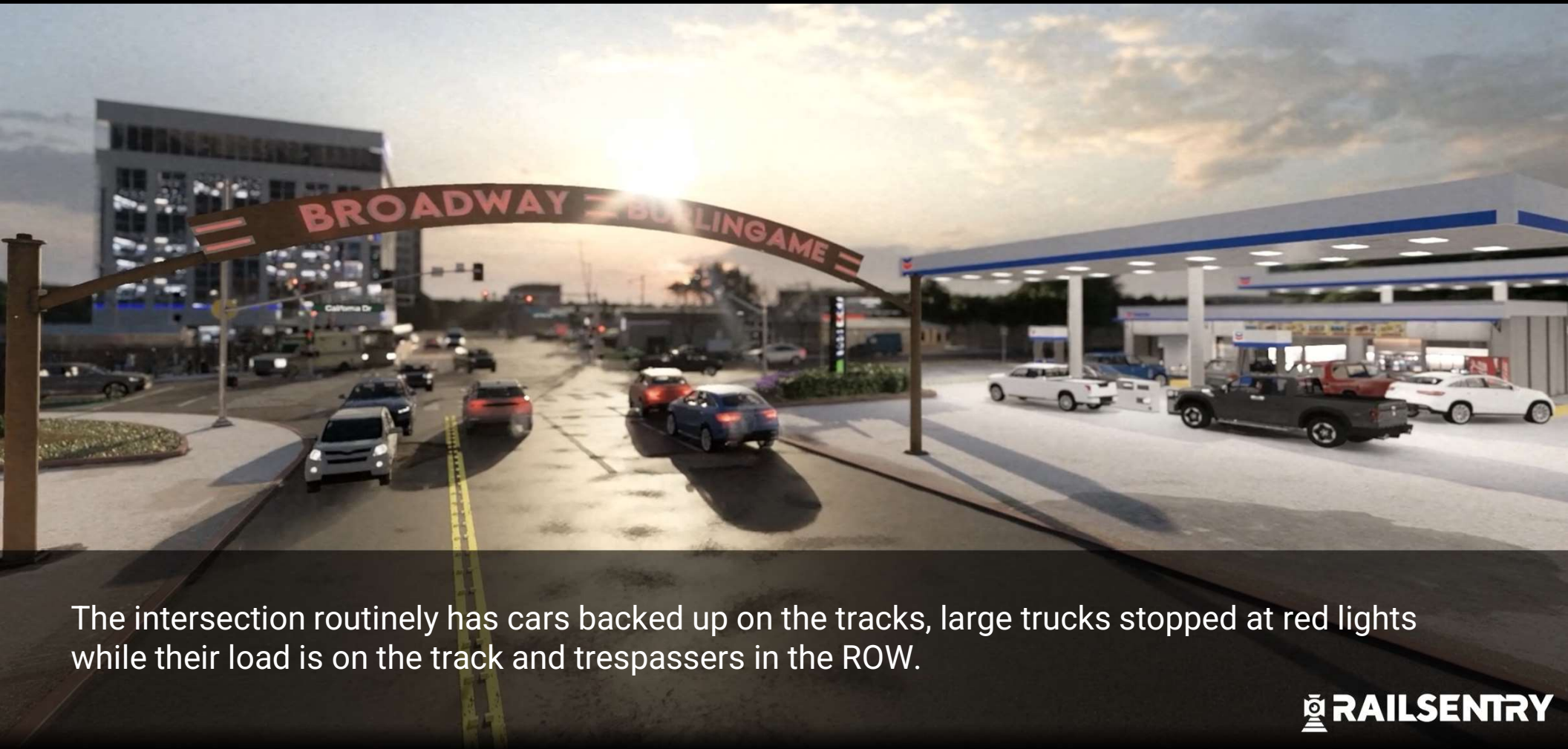
# The Challenges



The intersection routinely has cars backed up on the tracks, large trucks stopped at red lights while their load is on the track, and trespassers in the ROW.



# The Challenges



The intersection routinely has cars backed up on the tracks, large trucks stopped at red lights while their load is on the track and trespassers in the ROW.



# The Solution



# RAILSENTRY

RailSentry provides safety overlays with integrated software/hardware, 24/7/365 monitoring/alerting, site intelligence, PTC integration, state-of-the-art LiDAR technology and the ability to communicate with the right people at the right time.

 **RAILSENTRY**

Preview has been updated.

# The Solution



# RAILSENTRY

Observe, Analyze, Alert.

 **RAILSENTRY**

Preview has been updated.



## The Solution

A city street scene at sunset. In the foreground, a white van is driving towards the viewer. The van has "Developed by HERZOG" written on its side. In the background, there are cars, a crosswalk, and a modern building. The word "RAILSENTRY" is overlaid in large, bold, 3D black letters. To the left of the letters is a small icon of a camera with a signal tower base.

# RAILSENTRY

Observe, Analyze, Alert.

 RAILSENTRY



# The Hardware GD2

## BASE

- Mounts externally to the signal house
- Antenna and Camera Combo
- Power over Ethernet (PoE)

 **RAILSENTRY**

 **RAILSENTRY**

## Slide 10

---

**GD0**      [@Quinten Sharp] Have Base show on slide, can you have SMP show on click?

I would like time to talk about the base and what it does before the SMP call up fires.

I think it would make it less distracting

If you are good with the recommended suggestions, no need for separate slides as commented on in the notes section.

Glen Dargy, 2024-08-06T19:48:47.732

**GD1**      [@Quinten Sharp] I think you should spell out POE, I am not sure everyone would know it stands for Power Over Ethernet

Glen Dargy, 2024-08-06T19:50:02.269

**KK1 0**      change made

Kelley Kneib, 2024-08-06T20:31:31.385

**GD2**      [@Nicholas Freeman] I am not fond of "The Hardware" are you ok with it? If not, do you have a suggestion?

Glen Dargy, 2024-08-06T19:53:59.672

**GD2 0**      [@Kelley Kneib] Let's just go with "The Hardware" for this slide bucket

Glen Dargy, 2024-08-07T17:40:50.184



# The Hardware

## BASE

- Mounts externally to the signal house
- Antenna and Camera Combo
- Power over Ethernet (PoE)

## Site Management Processor (SMP)

- Uses isolated 120V AC power
- Communication to the back office
- Processes the objects and analyze logic

 RAILSENTRY

 RAILSENTRY



# The Hardware

## BASE

- Mounts externally to the signal house
- Antenna and Camera Combo
- Power over Ethernet (PoE)

## Site Management Processor (SMP)

- Uses isolated 120V AC power
- Communication to the back office
- Processes the objects and analyze logic

RAILSENTRY

RAILSENTRY

## Slide 12

---

**GDO**

[@Quinten Sharp] The transition from the still to the video is jumpy. Can you make the transition smoother?

Glen Dargy, 2024-08-07T16:44:42.242





Preview has been updated.

## The Hardware

### SCAN

- **Ease of deployment:**  
Installs atop masts and integrates with standard bells.
- **Minimal Wiring:**  
Utilizes existing spare power wires, eliminating the need for additional wiring.
- **Scalable:**  
Handles multiple SCAN units at a single site.
- **Efficient SCAN:**  
Features one LiDAR scanner and WiFi antenna.

## Slide 13

---

**QS0**      [@Glen Dargy] please supply text  
Quinten Sharp, 2024-08-02T18:17:42.421

**GD0 0**    **SCAN**  
-Installed on top of masts, can be integrated with a standard bell  
-Designed to work with spare power wires generally found in the masts  
RailSentry is scalable to handle many SCAN units for a single site  
-Typical SCAN has 1 ILiDAR scanner and WIFI antenna  
-Scalable  
Glen Dargy, 2024-08-06T20:03:47.779

**KK0 1**    [@Glen Dargy] i deleted the last "scalable" in your bullet list as you also mentioned "Scalable to handle many SCAN units for a single site"  
Kelley Kneib, 2024-08-06T22:26:02.617

**GD0 2**    Can we have someone fluff those words? I think Kyle said that was the technical term.  
Glen Dargy, 2024-08-07T16:46:37.773

**GD1**      [@Quinten Sharp] The transition between the video and still is jumpy and doesn't seem to line up. Is that fixable?  
Glen Dargy, 2024-08-06T19:52:36.297





## The Hardware

### SCAN

- **Ease of deployment:** Installs atop masts and integrates with standard bells.
- **Minimal Wiring:** Utilizes existing spare power wires, eliminating the need for additional wiring.
- **Scalable:** Handles multiple SCAN units at a single site.
- **Efficient SCAN:** Features one LiDAR scanner and WiFi antenna.

## Slide 14

---

**GD0**      [@Kelley Kneib] This is not a signal mast. Still not liking our titles here but have no suggested improvement yet.  
Glen Dargy, 2024-08-07T16:48:18.321

**KK0 0**    [@Glen Dargy] what is the structure called? A crossing arm?

Here are some suggestions for language:

System Components  
System Hardware  
Core Components  
Technology Overview  
Equipment Overview

Kelley Kneib, 2024-08-07T17:19:05.668

**GD0 1**    Maybe it is a mast, I think it is more I don't like The Hardware. Doesn't flow with the other titles.  
Glen Dargy, 2024-08-07T17:25:31.824

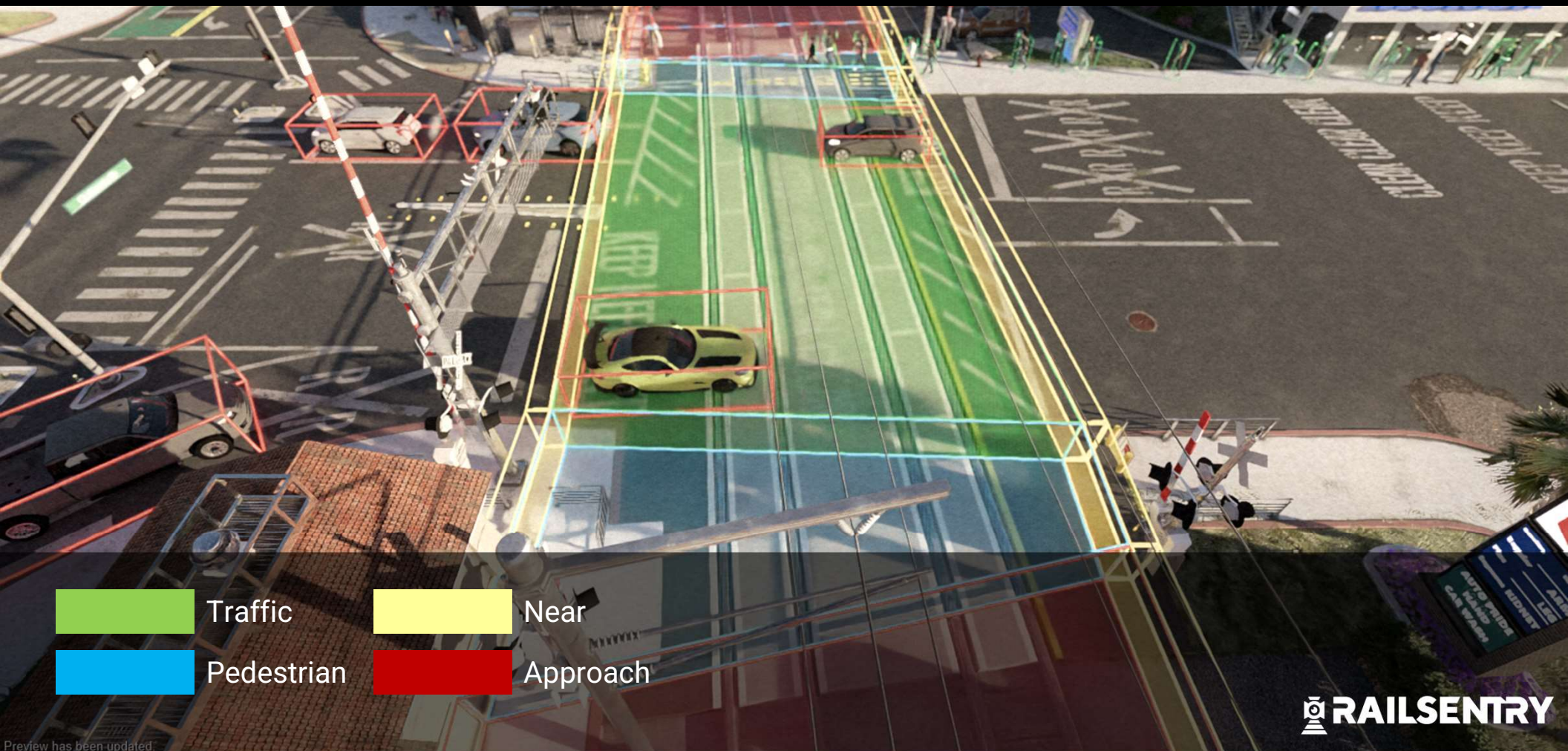
**KK0 2**    do you like any of these options?

System Components  
Core Components  
Technology Overview  
Equipment Overview

Kelley Kneib, 2024-08-07T17:29:11.019



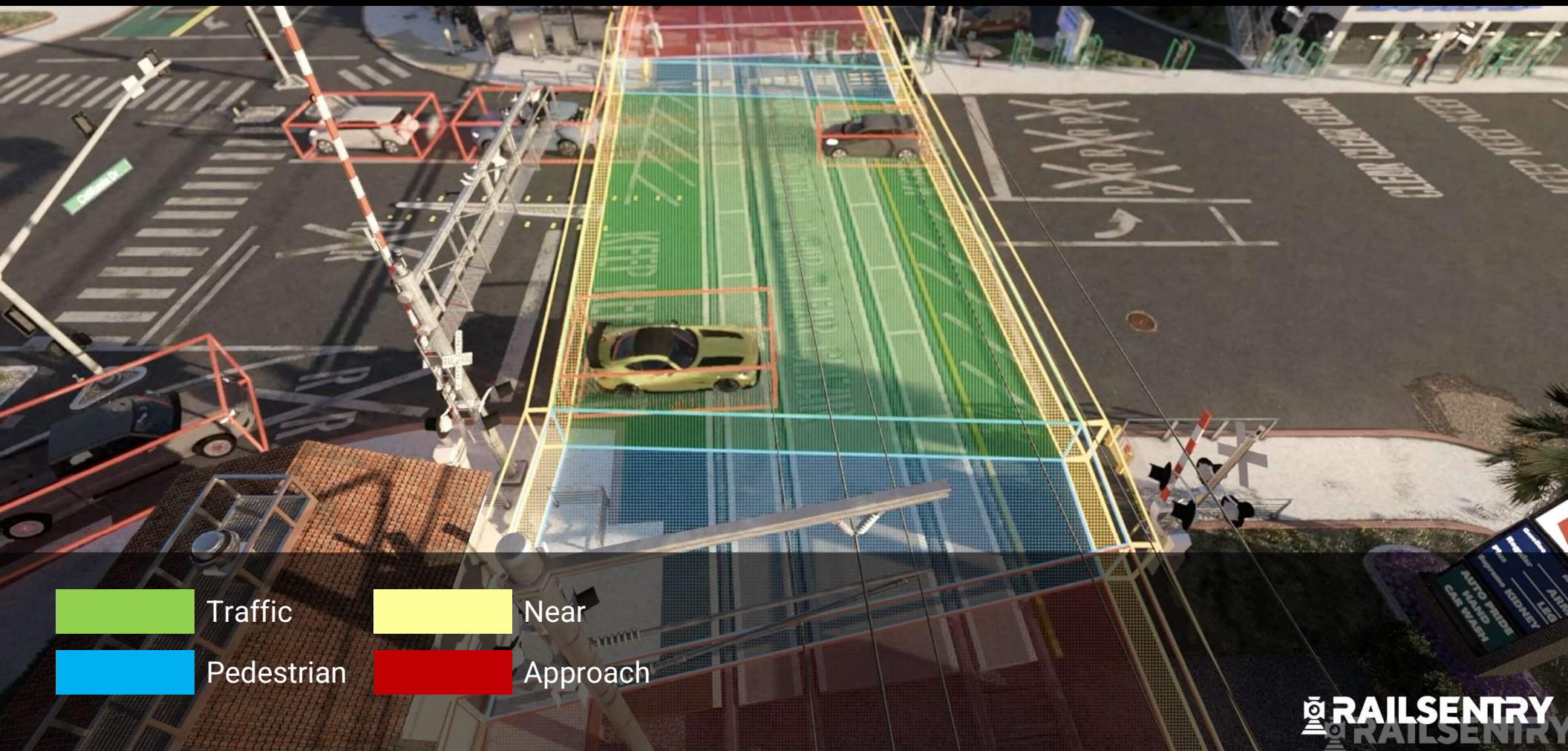
# Intelligent Zone Identification



Preview has been updated.



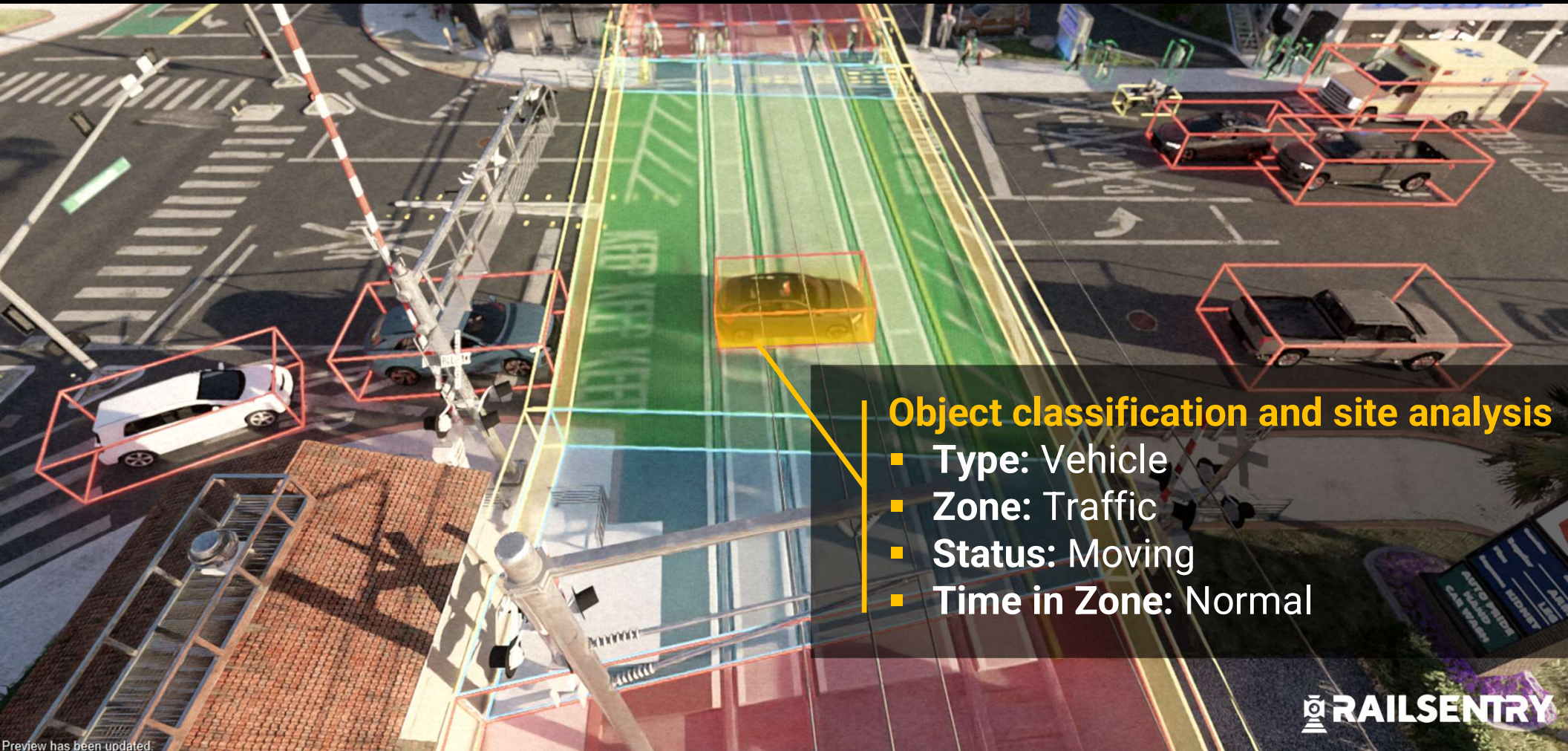
# Intelligent Zone Identification





# Analyzing Designated Objects

GD0



## Object classification and site analysis

- Type: Vehicle
- Zone: Traffic
- Status: Moving
- Time in Zone: Normal

 RAILSENTRY

## Slide 17

---

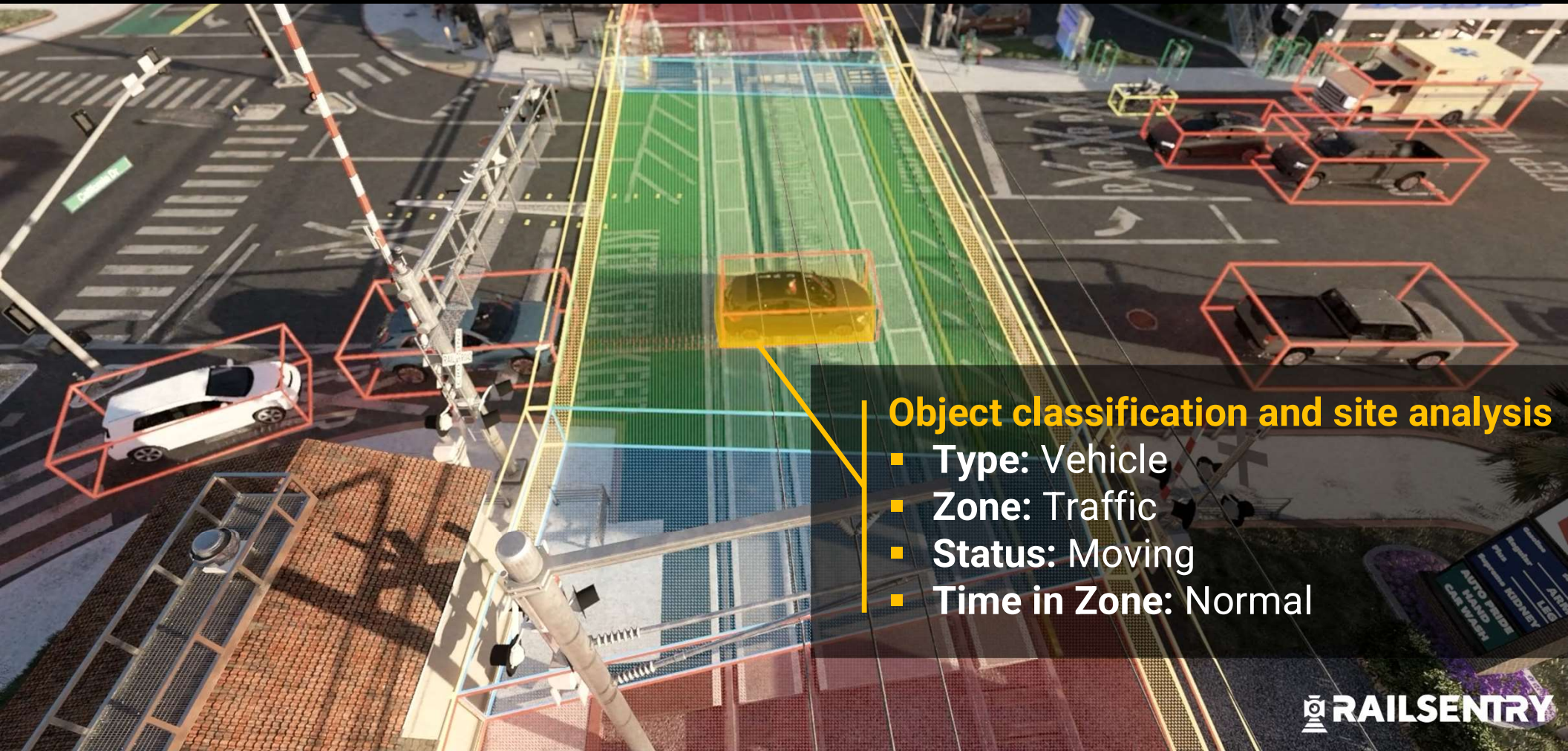
**GD0**

Please make the titles consistent relating to capitalization

Glen Dargy, 2024-08-07T17:02:01.599



# Analyzing Designated Objects

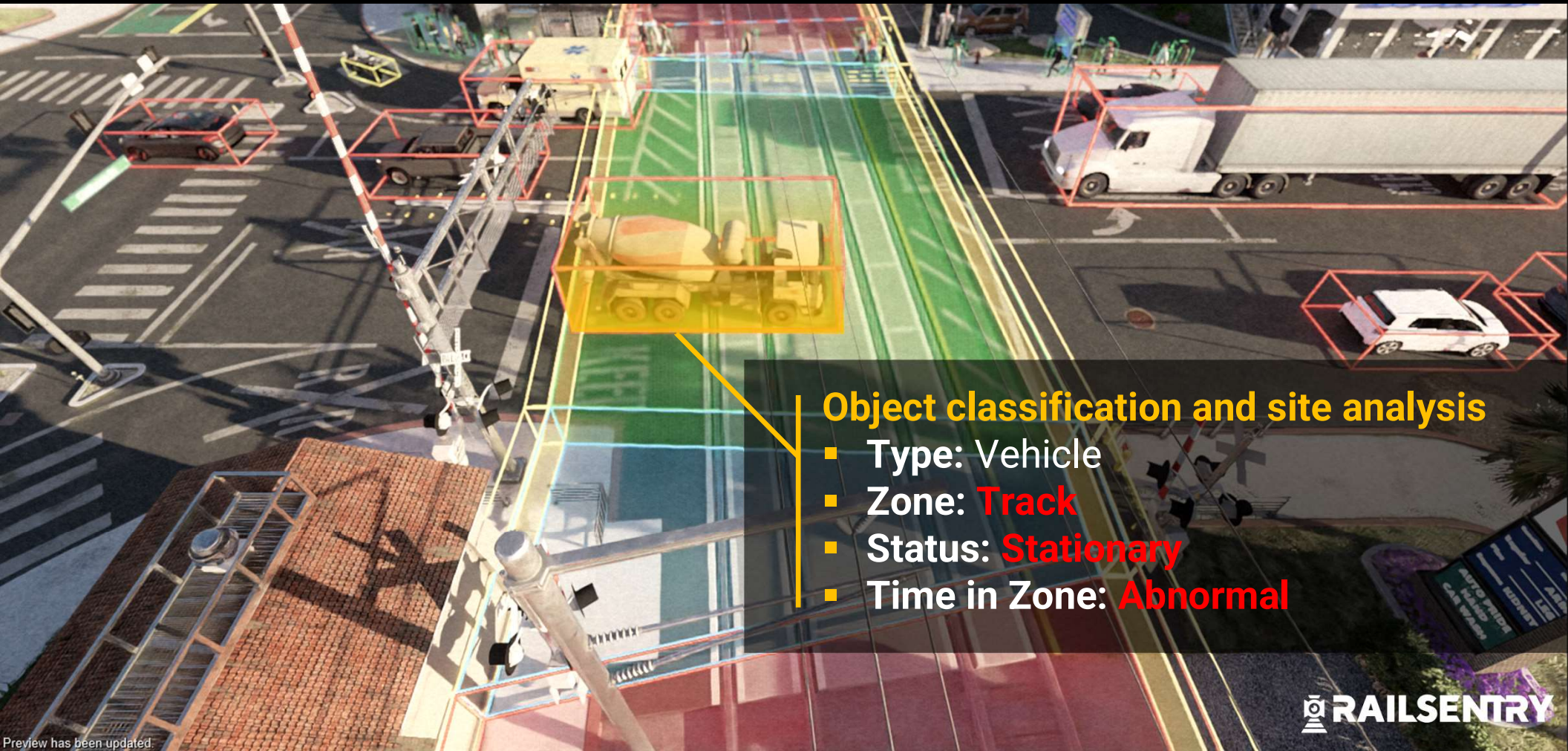


## Object classification and site analysis

- Type: Vehicle
- Zone: Traffic
- Status: Moving
- Time in Zone: Normal



# Preventing Accidents

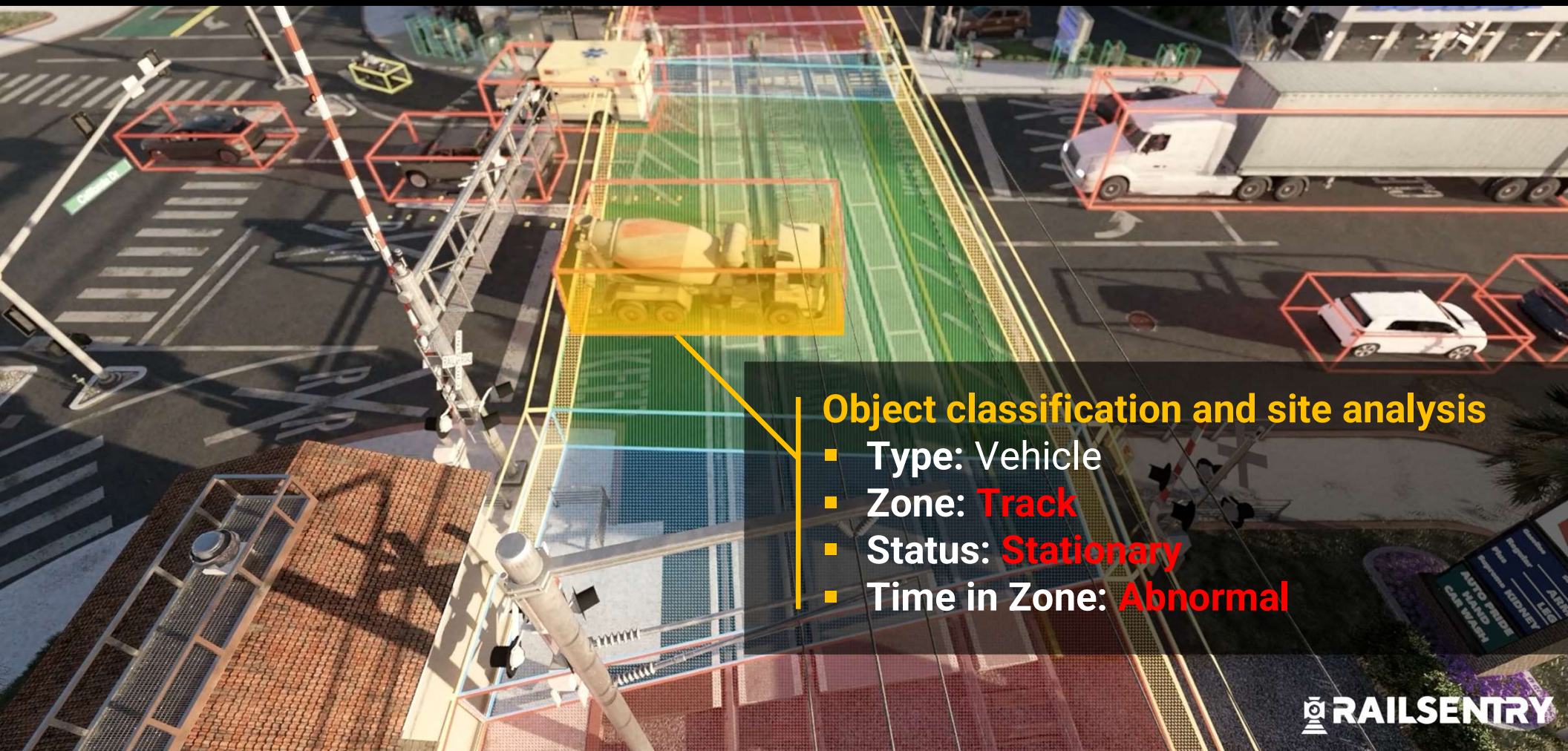


## Object classification and site analysis

- Type: Vehicle
- Zone: **Track**
- Status: **Stationary**
- Time in Zone: **Abnormal**



# Preventing Accidents



## Object classification and site analysis

- Type: Vehicle
- Zone: **Track**
- Status: **Stationary**
- Time in Zone: **Abnormal**



## Slide 20

---

**GDO**    [@Quinten Sharp] Can you have the call out pop up after the smoke and pause there?

This would be more inline with how the system would work. Object information. An Event. Then the alert.

Glen Dargy, 2024-08-06T20:10:13.379

# Example Alert

## Zone 2 – Vehicle Grounded

- **Object:** Vehicle
- **Duration:** Greater than 3 sec
- **Office Alert Message:**  
ALERT!!  
VEHICLE GROUNDED  
on track at MP 15.03  
Broadway Ave.
- **Onboard Alert Message:**  
ALERT!!  
VEHICLE FOULING track at  
MP 15.03 Broadway Ave.





## Slide 21

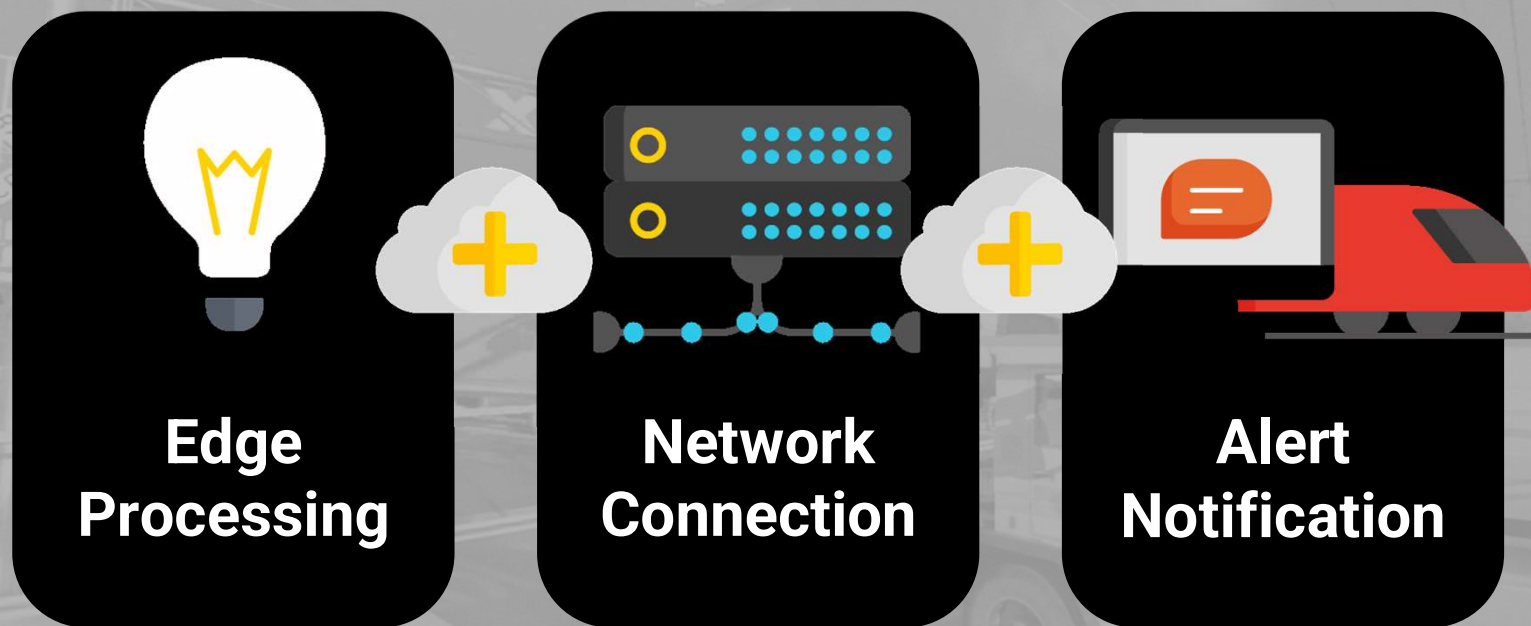
---

**GDO**

Text should be "Example Alert"

Glen Dargy, 2024-08-07T17:29:56.085

# Alert Defined Workflows





## Slide 22

---

**GD0**    [@Nicholas Freeman] IMO I think the text for PTC Notification should be changed to alert. All alerts and notifications would go through this step. We cover PTC on the next slide.

Glen Dargy, 2024-08-06T20:13:54.002

**KK0 0**    [@Glen Dargy] [@Nicholas Freeman] edit above made and labels tweaked on the following slide

Kelley Kneib, 2024-08-07T13:48:54.031

# Alert Outputs



## JPBX Broadway

Start Time: 2024-07-12 03:41:55

Elapsed: 00:13

Investigate

Acknowledge

**Herzog Support Operations Center Alert**



# Alert Outputs



Onboard PTC Alert

## Slide 24

---

**QS0**

[@Glen Dargy]

More in depth text

explain the difference of views

Quinten Sharp, 2024-08-02T18:18:20.238

**KK0 0**

[@Quinten Sharp] [@Glen Dargy] Idk that alot of information is necessary perhaps just a label for each to say - this is the alert onboard the train through PTC messaging and this is the alert for individual workstations at the Herzog Support Operations Center

Kelley Kneib, 2024-08-06T21:15:17.200

**GD0 1**

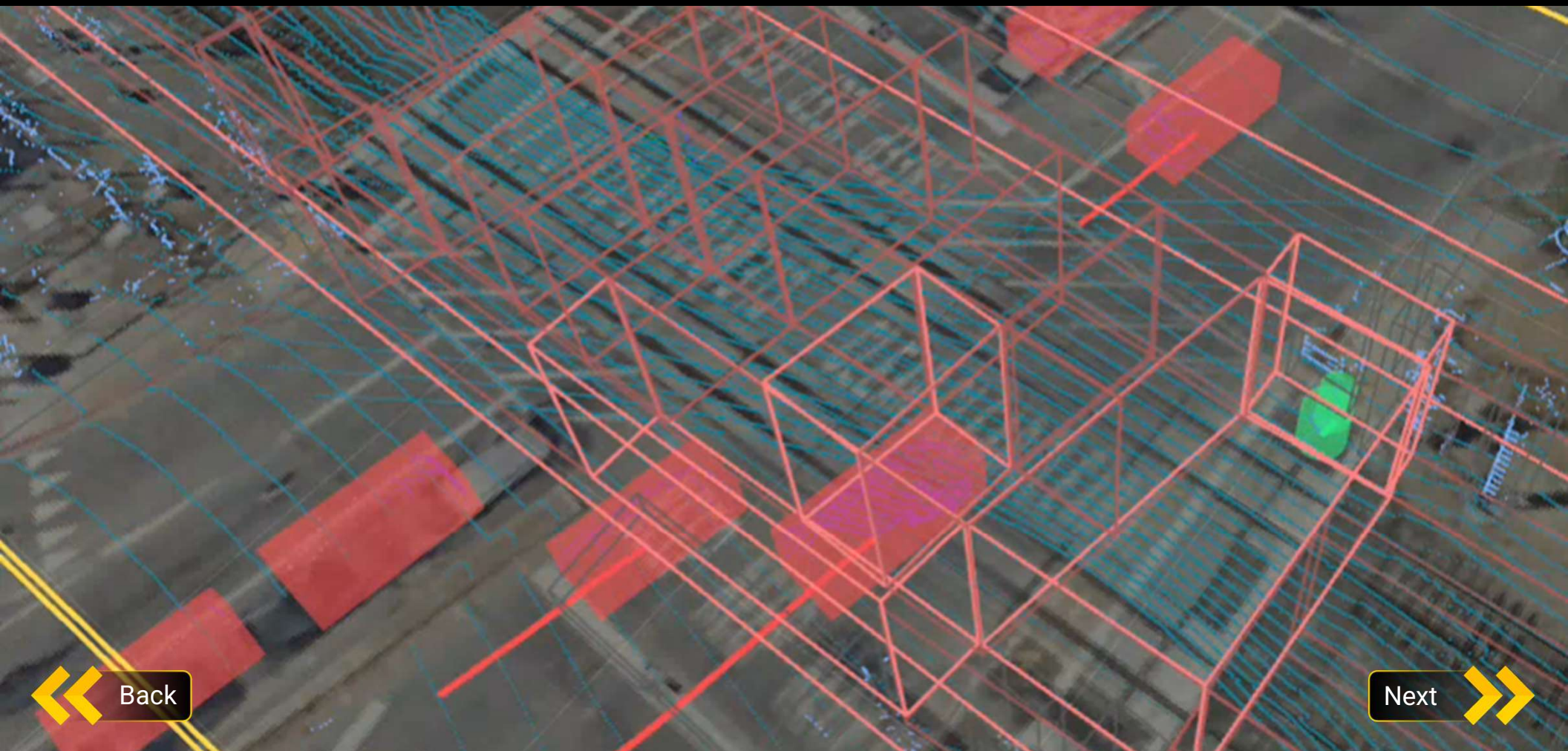
Can we center the text under each image?

Can we zoom in to the first image. Click and jump to a zoom in to the second image?

Glen Dargy, 2024-08-07T17:34:20.668



## Actual Footage from Broadway Crossing – Burlingame, CA



Back

Next



## Slide 25

---

**QS0** Updated text needed [@Glen Dargy]  
Quinten Sharp, 2024-08-02T18:19:10.294

**GD0 0** [@Quinten Sharp] I recommend dropping all the take in the lower quarter. This will give us an opportunity to show what is going on at the site as well as a spot to cleanup anything we have missed.  
Glen Dargy, 2024-08-06T20:17:02.118



QS0



Back

Next



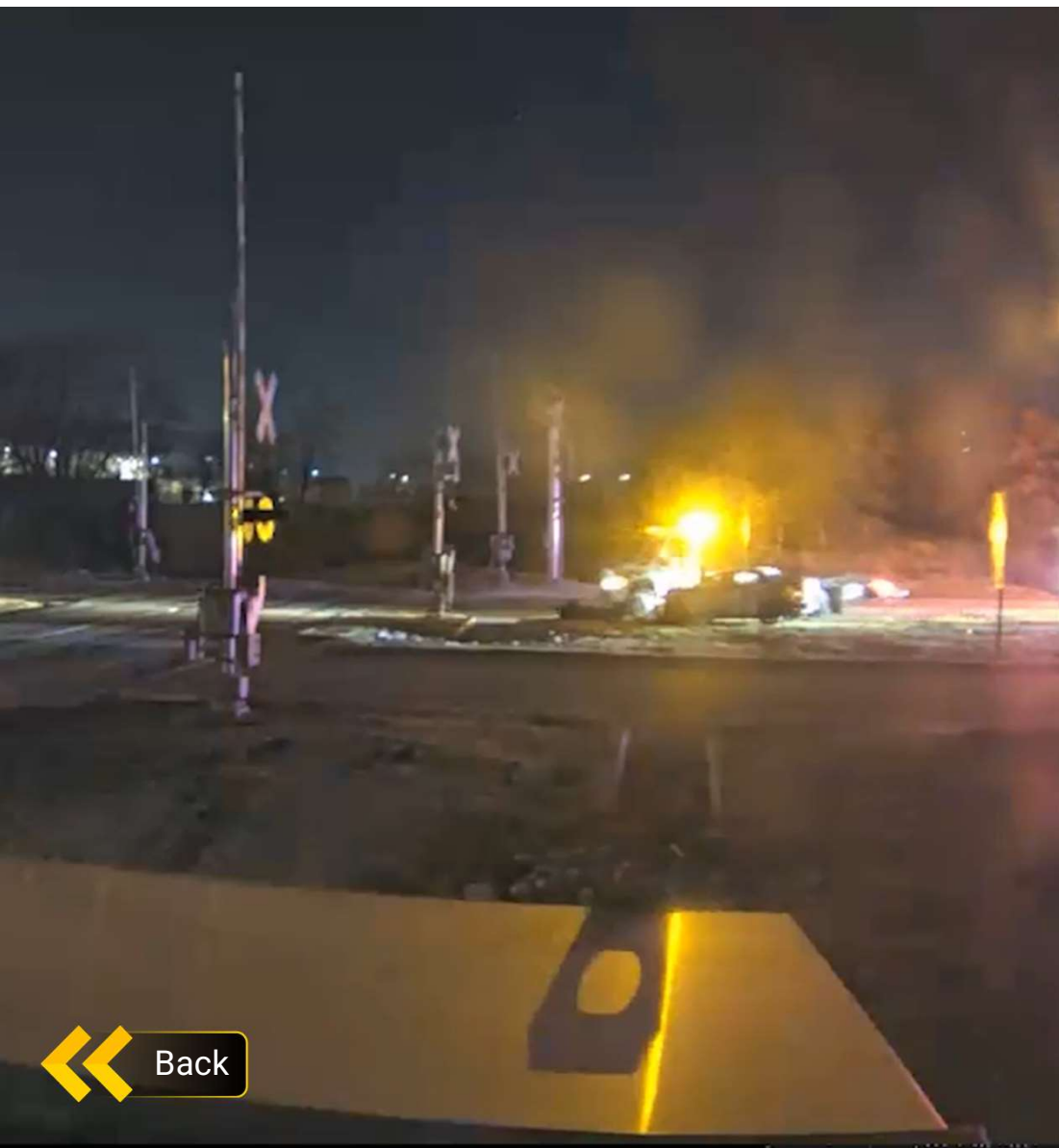
**Installation at Broadway Crossing – Burlingame, CA**

## Slide 26

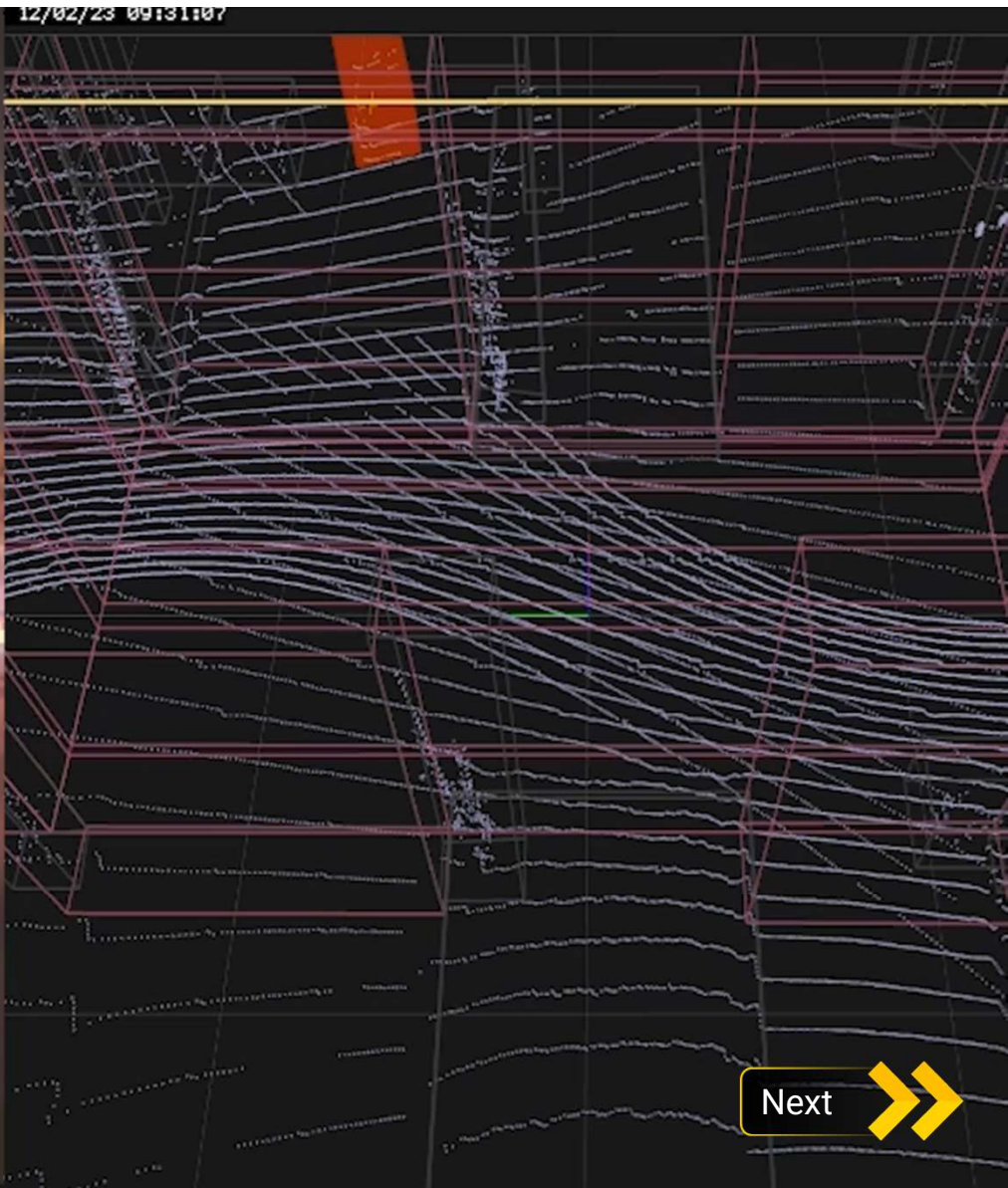
---

- QS0**      [@Glen Dargy] to supply info  
              [@Adam Le] - We need to get together to discuss install footage  
              Quinten Sharp, 2024-08-02T18:27:04.775
- KK0 0**     Adam is editing the footage by the end of the day  
              Kelley Kneib, 2024-08-05T18:10:00.973
- KK0 1**     completed  
              Kelley Kneib, 2024-08-06T20:38:03.194





Back



Next





Questions?



**HERZOG**



**RAILSENTRY**™

**Thank you.**