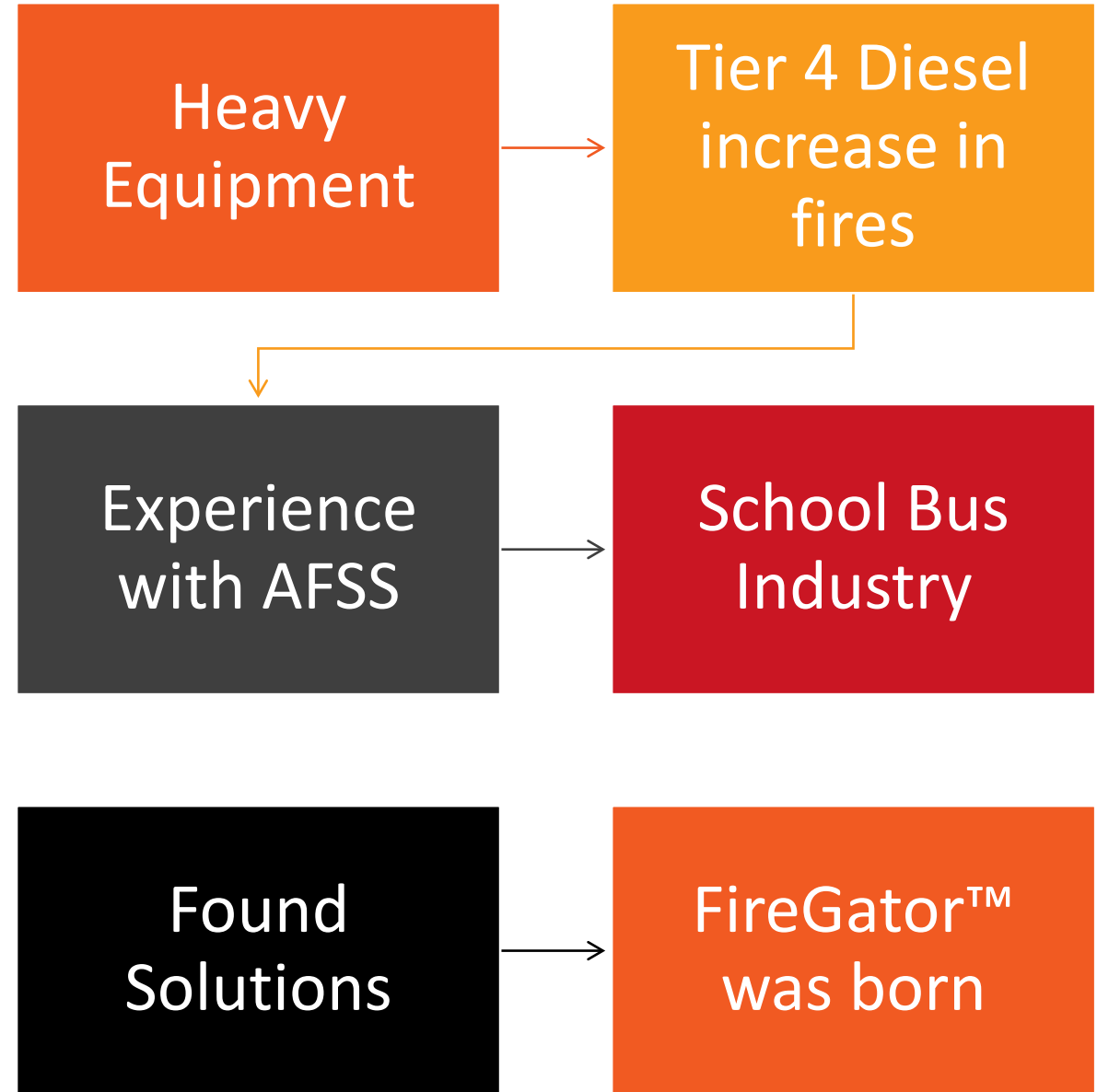




# Automatic Fire Suppression Systems

FireGator™ for School Buses

# Background Information



# Main Topics



NTSB recommendations- Why and to Who?



Outdated Data from 2016



AFSS is still nonregulated in the school bus industry



NFPA guidelines for DOT



Lack of reporting



Issues with seatbelts

# Reported Bus Fires in the US

\*\*Many incidents go unreported

\*\*\*In other industries tier 4 emissions have increased the likelihood of fire

In 2016, 1-2 School Bus fires reported per day.

Houston ISD had 187 fire and smoke events in 2 years.

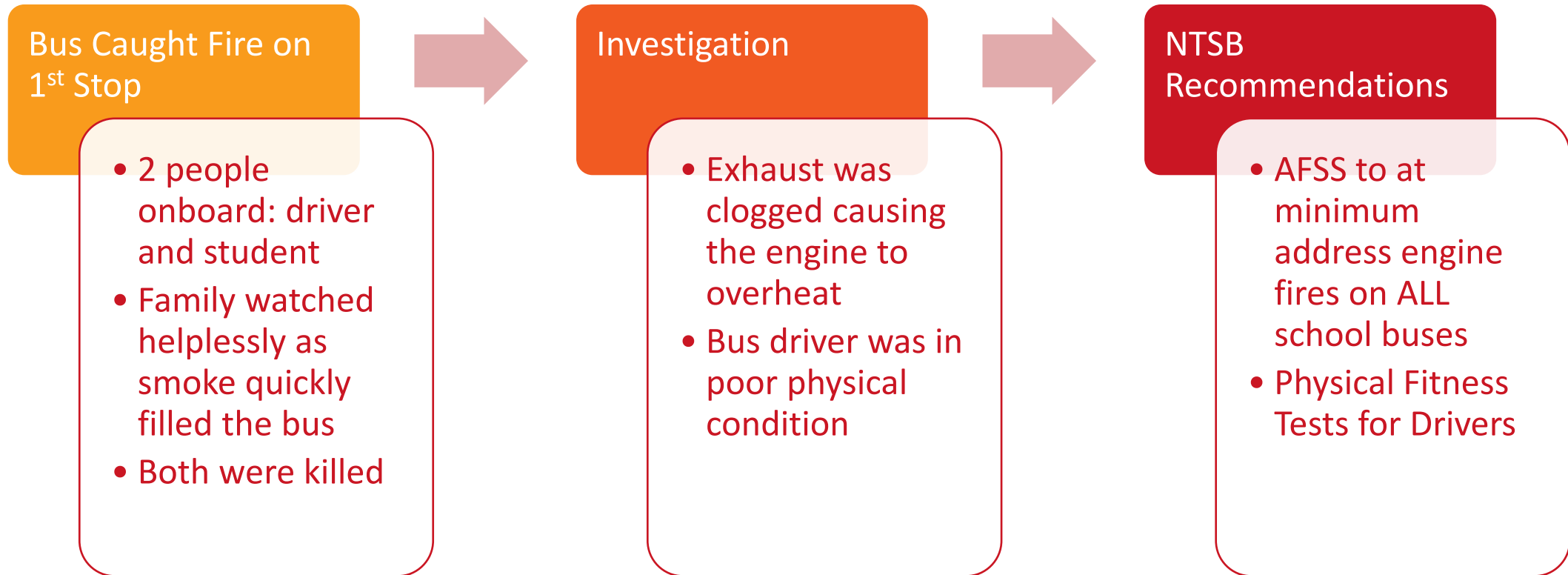
Tier 4 emissions have become final on school buses since 2016.

# School Bus Fires in April

- Here are just a few school bus fires reported in April. The investigations are still ongoing, but these fires appear to have begun in the engine compartment. This is where a majority of school bus fires begin.



# 2017 Iowa Bus Fire



## **Recommendations**

### **New Recommendations**

#### **To the US Department of Transportation:**

1. Require in-service school buses to be equipped with fire suppression systems that at a minimum address engine fires.

#### **To the National Highway Traffic Safety Administration:**

2. Require all new school buses to be equipped with fire suppression systems that at a minimum address engine fires.

3. Develop standards for newly manufactured school buses, especially those with engines that extend beyond the firewall, to ensure that no hazardous quantity of gas or flame can pass through the firewall from the engine compartment to the passenger compartment.

# NTSB Recommendations

These Recommendations were sent to:

- The DOT
- NHTSA
- Bus Manufacturers
- Most State Governors

**\*\*\*73% of NTSB Recommendations become enforced by the DoT and NHTSA**

# Be Proactive- The NFPA has Guidelines for AFSS

## **Notify**

The system is  
armed

## **Detect**

An event

## **Automatically**

Discharge

## **Notify**

When the system  
has discharged

## **Have a Means**

Of manual  
activation

## **Biannual Inspections**

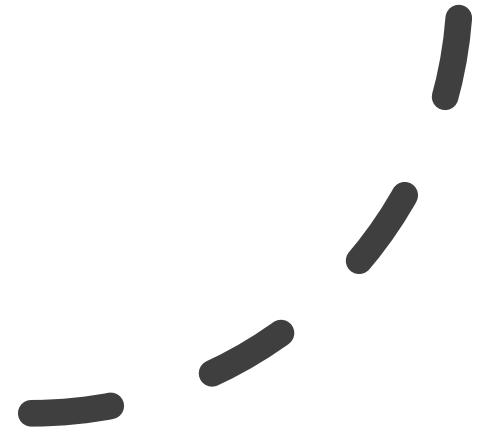


# School Bus Safety Act- 2021

- **The School Bus Safety Act would require the Department of Transportation to issue rules requiring all school buses to include:**
- A three-point safety belt
- A Fire Suppression System, which addresses engine fires;
- A Firewall that prohibits hazardous quantities of gas or flame to pass through the firewall from the engine compartment to the passenger compartment;
- An Automatic Emergency Braking System, which helps prevent accidents and crashes by detecting objects or vehicles ahead of the bus and braking automatically;
- An Event Data Recorder (EDR) that can record before and during a crash, driver inputs, and restraint usage when a collision occurred; and
- An Electronic Stability Control (ESC) System, which uses automatic computer-controlled braking of individual wheels to assist the driver to remain in control of the vehicle.

# Special Needs School Bus Evacuation

- [How to Safely Evacuate a Special Needs Bus – YouTube](#)
- There are roughly 65,000 special needs school buses
- Majority of those already have seatbelts
- Transporting 3.5 million special needs children 2x per day.



# Why require AFSS?

- Based on data from 2016 the NTSB made recommendations for AFSS
- Much has changed since then, increasing the chances of fire
- If seatbelts are installed, evacuation time will increase.

