

3M Science.
Applied to Life.™

3M's Traffic Safety Social Initiatives

3M Commercial Branding And
Transportation Safety Division
27th January 2025



Serving our customers through four Business Groups

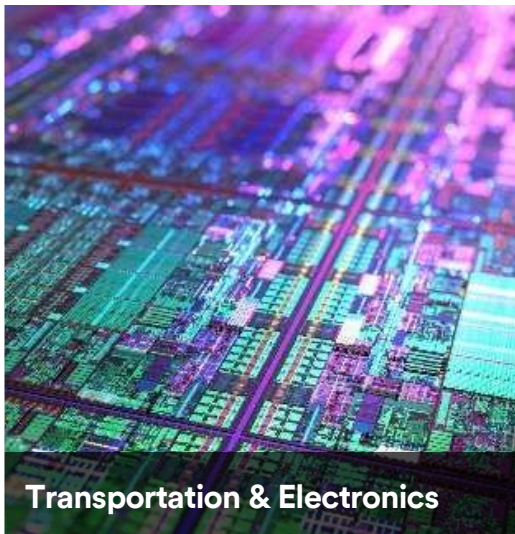


Safety & Industrial

Transforming how work gets done

\$12.0B

2021 sales



Transportation & Electronics

Solving tough customer challenges to advance a connected world

\$9.3B

2021 sales

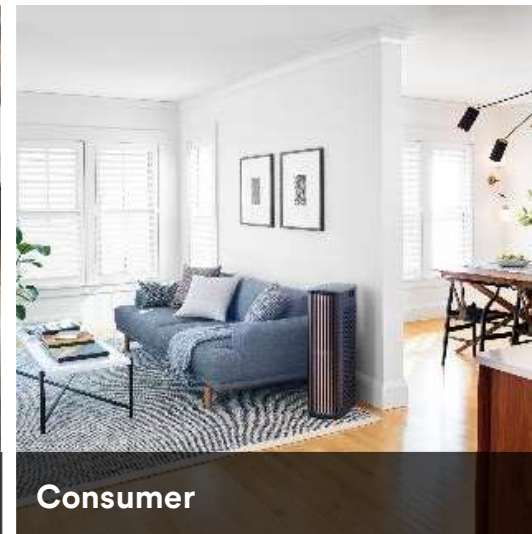


Health Care

Enabling better, smarter, safer healthcare

\$8.6B

2021 sales



Consumer

Bringing 3M to the hearts and minds of consumers

\$5.5B

2021 sales



Investing in our Communities in India

Meaningful partnerships, community engagement and causes aligned to SDGs



Education



Community



Environment



COVID



Helping our children and young people harness potential

From early child/ girl child education to supporting and mentoring young innovators



Empowering the sustainability of our communities

From empowering women to livelihood to public health and safety



Empowering communities with access to clean water and energy resources

From lake rejuvenation to rural solar electrification



Supporting frontlines and underserved communities

From Food security programs to Community Vaccination initiatives



A young girl in a school uniform is crossing a zebra crossing on a city street. The street is lined with buildings and has a few people walking. The scene is captured in a warm, golden light, suggesting late afternoon or early morning.

Why School Zones?

186,300

Children die from road traffic crashes around the world every year

8%

Road accidents in India happen near schools, college or other educational institutions

30%

of children witnessed a crash during their commute to school

1.4M+ Schools in India, but there is no specific Budget/Manuals/stakeholder responsible for Creating a Safe Route to School

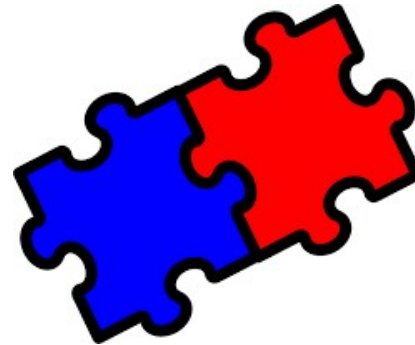
How 3M Road Safety Program for School zone conceived?

1.4M Schools in India

over 11,000 children below the age of 18 were killed in road crashes in 2019 in India*

1.68M Road Fatalities every year*

Are the school zones safe for children?



Could early road safety education save lives?

How can 3M make school zones safer?

3M Young Change Agents for Road Safety Program

How can 3M impart early road safety education?

School Zone Safety

Encountering this need for a new well designed system the school zone safety is characterized in the following:

Pedestrian Safety

Most children in India (57%) walk to and from school which requires them to cross roads, navigate through traffic etc.



On Road Safety

Use of bicycle (6%) or being escorted by parents or use of other services like school bus and auto rickshaws etc.



Safe Driving Practices

Use of roads around school zones by other users and their driving practices.



Image source: Bangalore School zone prog 2019 conducted by 3M

Source :<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5070088/>

Global Strategic Partnerships and Collaborations



International road assessment organization that creates rating tools to improve road safety.

3M is a Star Rating for Schools Global Programme Partner by way of annual sponsorship.



Global research non-profit organization that focuses on improving road safety.

3M sponsors research and pilot projects with WRI to help improve road safety standards.



Vision Zero is a collaborative campaign helping communities eliminate traffic fatalities and injuries.

3M is a champion sponsor for Vision Zero and leverages our products as safety countermeasure solutions.

And other Road Safety Stakeholders in India like IRTE, IRF, IAHE, CRRI, IIT Madras, SPA Delhi & Road Safety NGOs



Study Partners-



Multinational company involved in design, construction, financing, operation and maintenance of transport infrastructure.

3M is the sole physical infrastructure company in Ferrovial's connected corridor consortium.



Technology company that manufactures impact detection and other road safety devices.

3M to sell \$1.4M of devices in 2021 under private label.



Technology company creating mapping and sensing software for autonomous driving.

3M to procure data to be used for SIMS platform and collaboratively develop new pavement marking condition index.

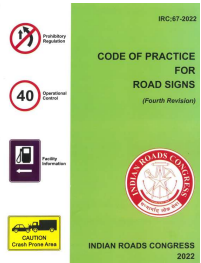


Uses computer vision to measure near-misses and drive proactive road safety investments.

3M products positioned as countermeasure solutions for unsafe areas identified with video analytics.



3M initiatives to create safer school Zones



Bringing Global best practices



Knowledge Sharing Sessions



Experience Centers at Customer Places

INDIAN HIGHWAYS | DECEMBER 2022 31

TECHNICAL PAPER

USER PERCEPTION STUDY ON COST EFFECTIVE ROAD SAFETY DEVICES AND TRAFFIC SIGNS

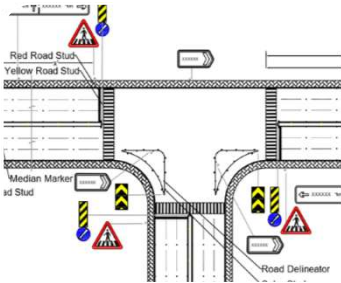


DR. AMMU GOPALAKRISHNAN¹ S ANAND VIJAY KARTHIK² MOHSINKHAN A. U¹

Technical Paper Publishing



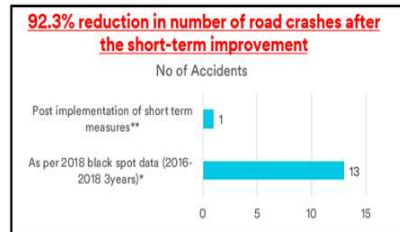
Road Safety Collaboration with Ministry



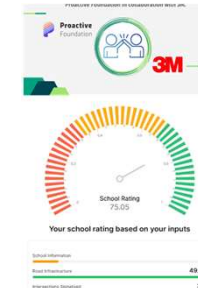
Road Safety Plan & Proposal Preparation



Model Installation of Road Safety Solutions



Pre & Post Assessment



School Zone Safety Tool 3M along with IRF



School Zone Safety Education and Improvement

3M School Zone Safety Campaign



Launched in 2019 - Action commitment of improving **100** school zones around the world



By implementing 3M solutions on the ground is aiming to reduce fatalities



Make access to education more equitable for all



Conduct risk assessments and implement tools for identifying safety improvements in School zones

Three E's of Road Safety very Critical in School Zone

Education



Engineering



Enforcement



Education - YCARs Workshop

Road Safety awareness workshops and survey conducted by CoRPs among students in schools across Bangalore, Gujarat and Tumkur Karnataka

Building Young Change Agents for Road Safety

Make children the center of road safety education in a meaningful way.

Bring about change with our science for road safety.



Experiential Learning

Through an empathetic understanding of roads, road users and behaviours

Participatory Approach

Children observe zone around their school and identify what's missing and unsafe road user behaviours

Vision of a Safe School Zone

Children share a vision of what the safe zone around their school should look like

Bringing the Vision to Life with 3M Science

3M brings this vision to life through road safety improvements - road signage and road markings in the school zone

Introduce a differentiated, visually attractive Signage System for School Safe Zones in India

3 pronged approach – CSR at the community, 3M solutions for School Safe Zones and working with bodies to influence regulation



Education - Principal's Seminar, in association with TOI

200+ Principals from schools across the city gathered to discuss & determine ways to build safer roads around schools

Panelists included Rajvardhan Sinha, Joint commissioner of Police (Traffic), SVR Srinivas, IAS, Metropolitan Commissioner, MMRDA, Manish Hariprasad along with Harish Banwari, Director-Asia, Transportation Safety Division



Engineering - School Zone Safety Programs implemented around the world

Guatemala



Focus on road signage to reduce risk to children in school zones.

US



Traffic garden was used during physical education class to teach kids rules of the road.

China



educational programs and 4-city campaign featuring “**Safe Walking and Trip**” on National Traffic Safety Day

Korea

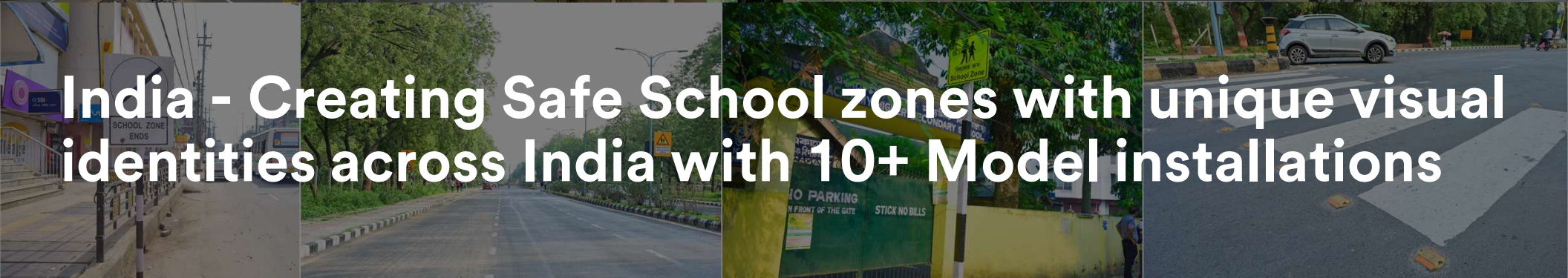


Large **yellow carpet** installations to help drivers easily identify crossing paths and locate children

Belgium



“Safe to school” package with education, infrastructure. Crayon Gate Effect using 3M Fluorescent Yellow Green Sheeting



India - Creating Safe School zones with unique visual identities across India with 10+ Model installations

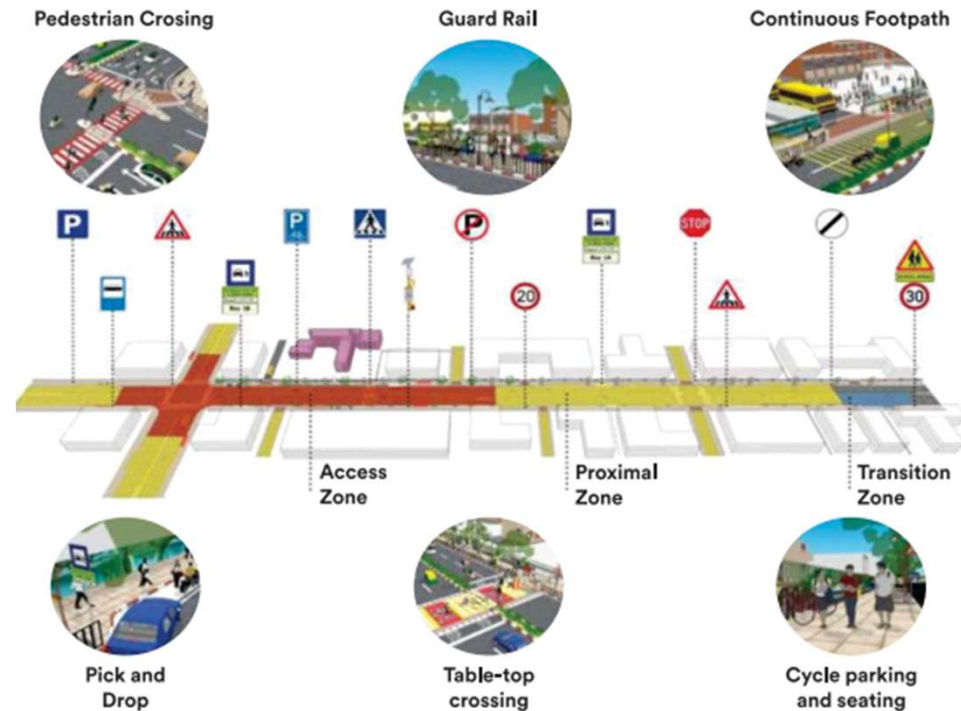


Engineering

IRC:SP:32-2023 "Guidelines for safer commute to School" states that :

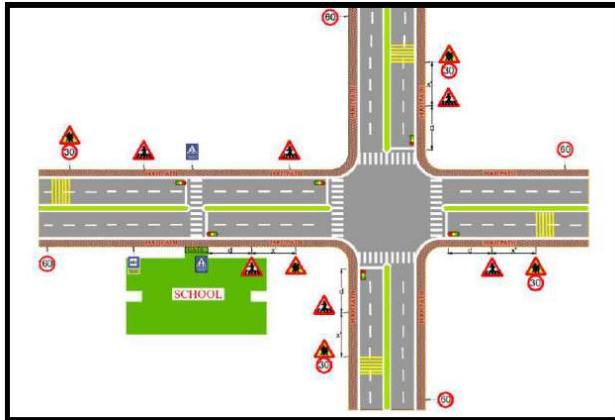
- Defines School Zone area within a radius of 150m to 670m.
- Divided into 3 Zones and given the guideline on how to treat each Zone.
- Cautionary signs to be provided at the start of a school zone.
- School zone ahead sign with fluorescent yellow green color background.

As per IRC, the zones around a school are categorized as follows:

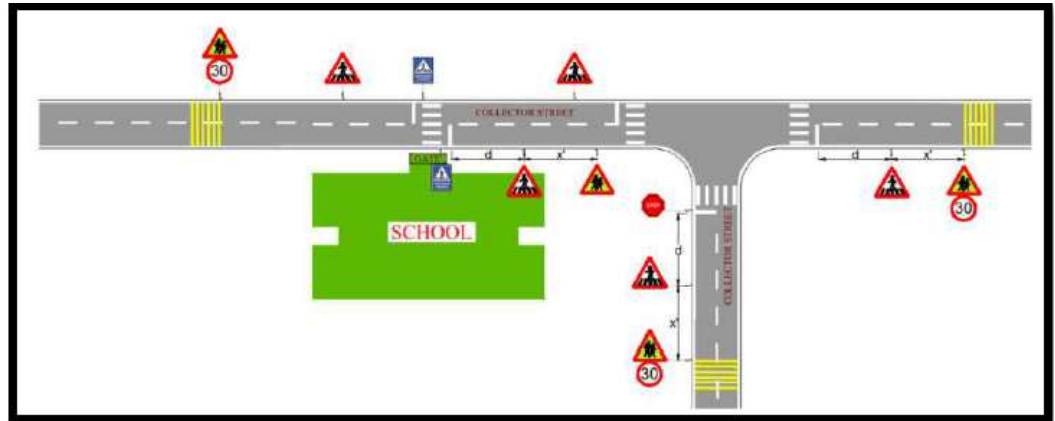


3M India worked closely with IRC for the new School Zone regulations released in July 2023

IRC SP 32- Design Solutions



School Gate located on Midblock Section of a four lane divided road



Typical Illustration of Various measures required for the School Gate located on the Midblock Location of Two-Lane Bidirectional Road



Road Marking

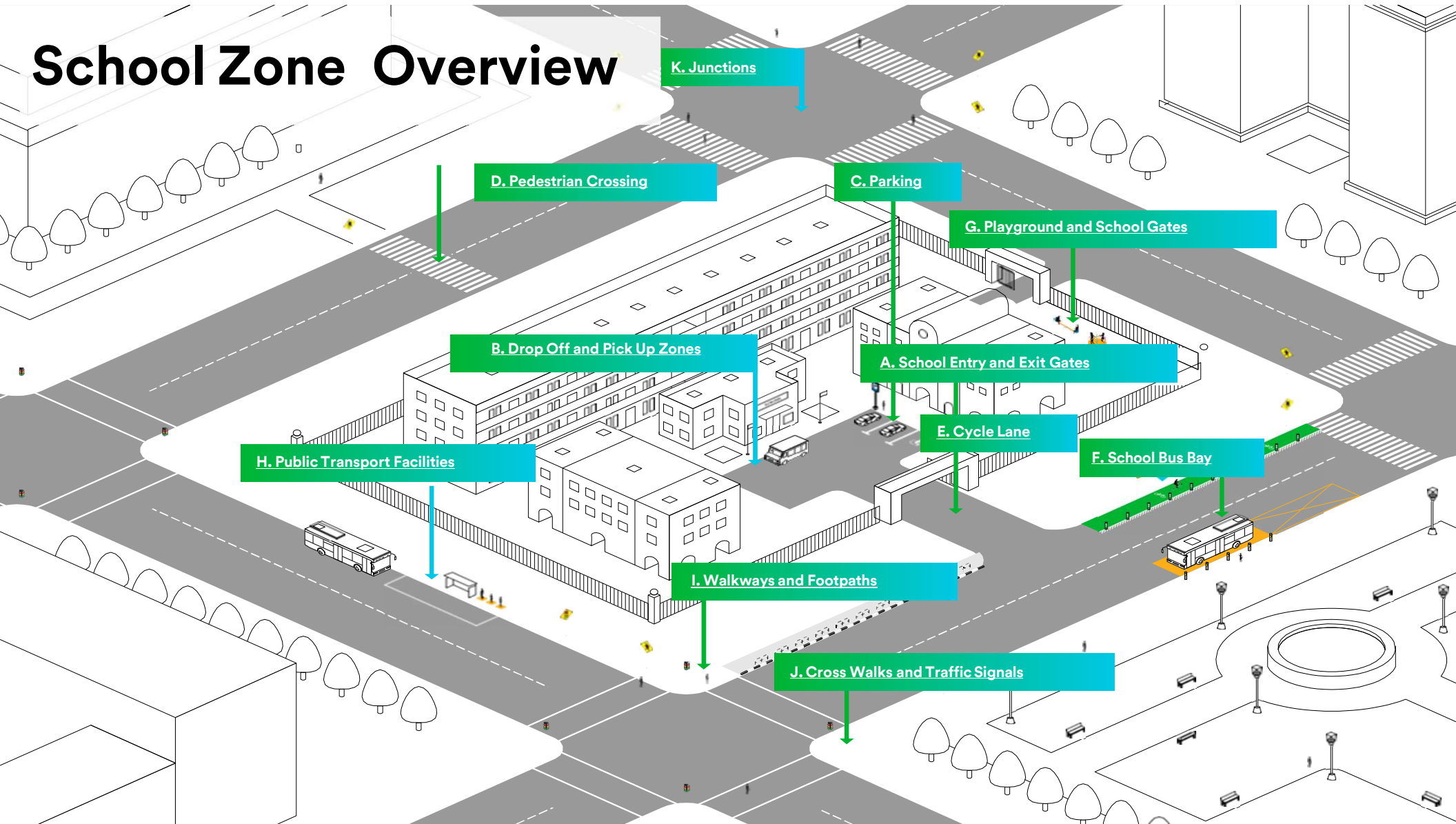


Refuge Island



Yellow Carpet

School Zone Overview



School Zone Signages

Understanding Traffic Signs				
Regulatory Signs				
	Speed Limit	Overtaking Prohibited	Honking Prohibited	Restriction Ends
Cautionary Signs				
	School Zone	Pedestrian Crossing	Speed Breaker	Hearing Impaired Person
Informatory Signs				
	Pedestrian Crossing Informatory	Speed Breaker Informatory	Pick up and Drop off Facility	



धीरे चलो
GO SLOW



स्कूल क्षेत्र समाप्त
SCHOOL ZONE
ENDS



IRC SP 32-Guidelines for Road Elements within School Zone



School Entry Gate



Pick & Drop Zone



Walking Infrastructure-Footpath, Guard Rail, Pedestrian Crossing, Refuge Islands



Cycle Track & Cycle Lane



Public Transport within the zone



Road Marking



Road Signages



Traffic Signals

A Zone with a Visual Identity



Model SZs Implemented in India- Delhi

- Schools/ Institutions: NB Boys School
- Area treated: Total length – 700m
- New products: Stamark, Fluorescent Yellow DG Sheeting, Neocaps
- NGO partner: WRI

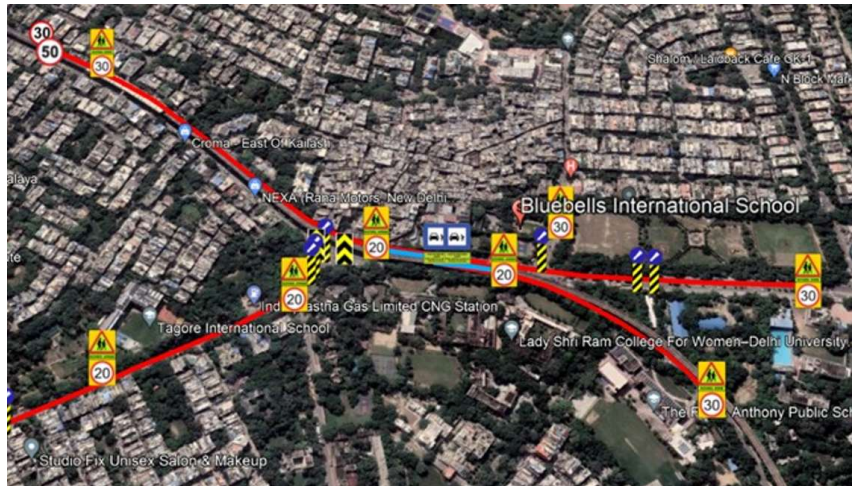


3M-IRF School Zone program

1. Blue Bell International School- East of Kailash, New Delhi
2. Loreto Convent School- Delhi Cantt
3. Mahavir Public School- Ashok Vihar
4. Delhi Public School R K Puram Delhi.
5. School from Ghaziabad- yet to finalize

Bluebells School International, Delhi
 Design Speed - 65 to 80 km/h
 Location : Delhi
 Stretch : Lala Lajpat Rai Road
 *Note: Images of signs are for reference only.

Sl. No	Traffic Signs	Reference: IRC 67-2022	Dimension (mm)	Sign Design Representation	Nos.	Remarks
NEW SIGNS						
1	School Zone + Speed Limit	15.34 + 14.39	900mm Triangle + 750mm Circle		4	To be placed at the start of school zone on all approach arm
2	School Ahead + Speed Limit	15.34 + 14.39	900mm Triangle + 750mm Circle		5	To be placed at 100m from the school main gate on the approach arm
3	Maximum Speed Limit	14.39	750mm Circle		1	On the exit arm, at the end of school zone.
4	Maximum Speed Limit	14.39	750mm Circle		1	On the entry arm, before the start of the transition zone.
	Pedestrian Crossing	15.33	900mm Triangle		1	Before the Pedestrian Crossing
5	Right Object Hazard Marker + Compulsory Keep Left	15.79 + 14.50	(300x900)mm + 750mm Circle		10	On Median Opening, where the medians are not highlighted with any



3M

Bluebells International School

Main Gate of School



Model SZs Implemented in India-Bangalore

- Area treated: Total length 1.5 km
- Schools/ Institutions: **Siddaganga High School and Tumkur University**
- New products: Stamark, Fluorescent Yellow DG Sheeting
- PR/CSR activities: YCARs workshop conducted 16th -17th December
- NGO partner: CoRPS



Model SZs Implemented in India-Gujarat

- Area treated: Total length 2.2 km
- Schools/ Institutions: **Mount Carmel School Gandhinagar**
- New products: Stamark, Fluorescent Yellow DG Sheeting, Solar RPM
- PR/CSR activities: YCARs workshop conducted 21st & 22nd December
- NGO partner: CoRPS



Model SZs Implemented in India-Punjab

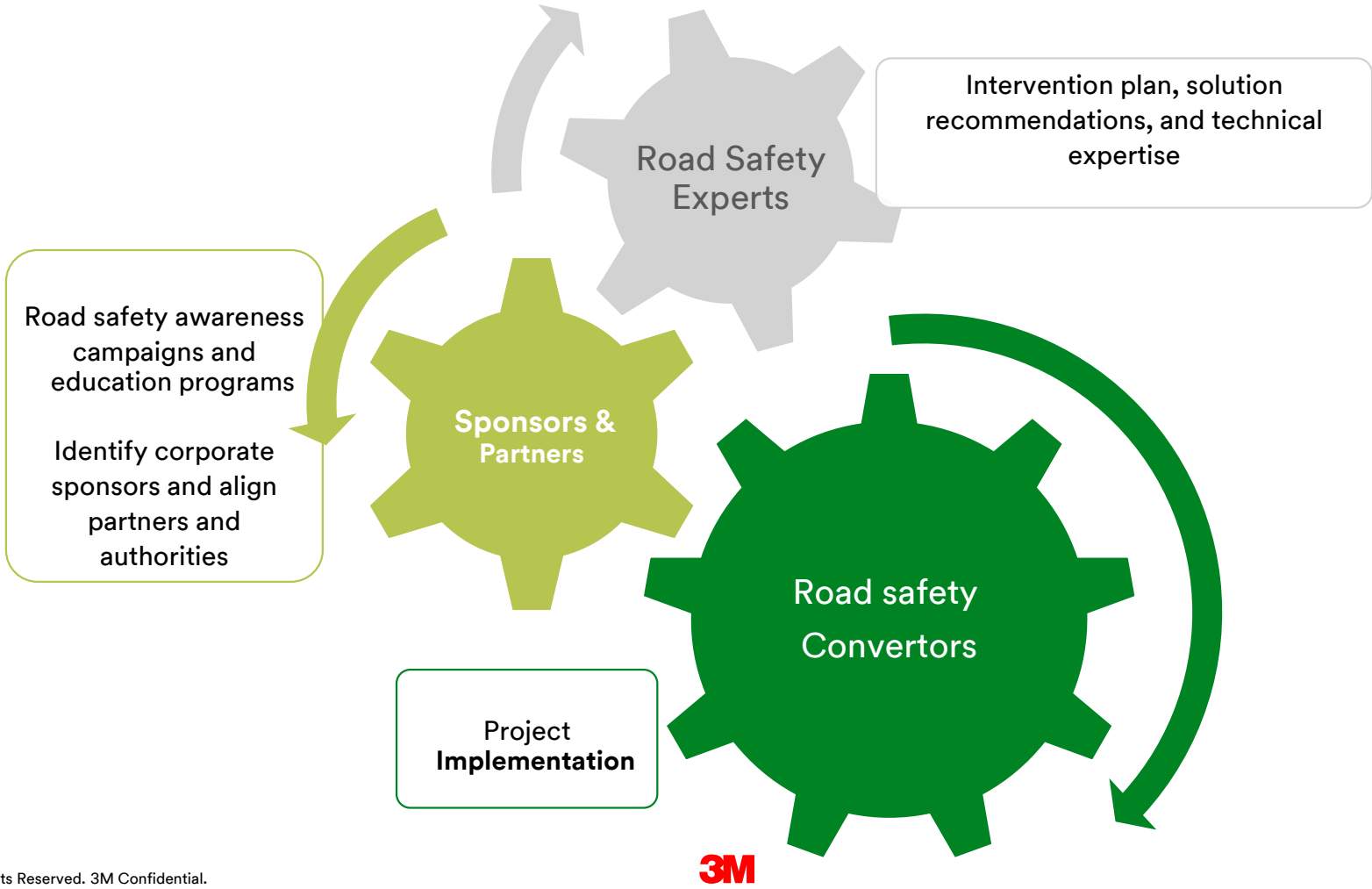
- Area treated: Total length
- Schools/ Institutions: **Government Senior Secondary School Sahora, Punjab**
- New products: Stamark, Fluorescent Yellow DG Sheeting, Solar RPM
- NGO partner: Avoid Accident



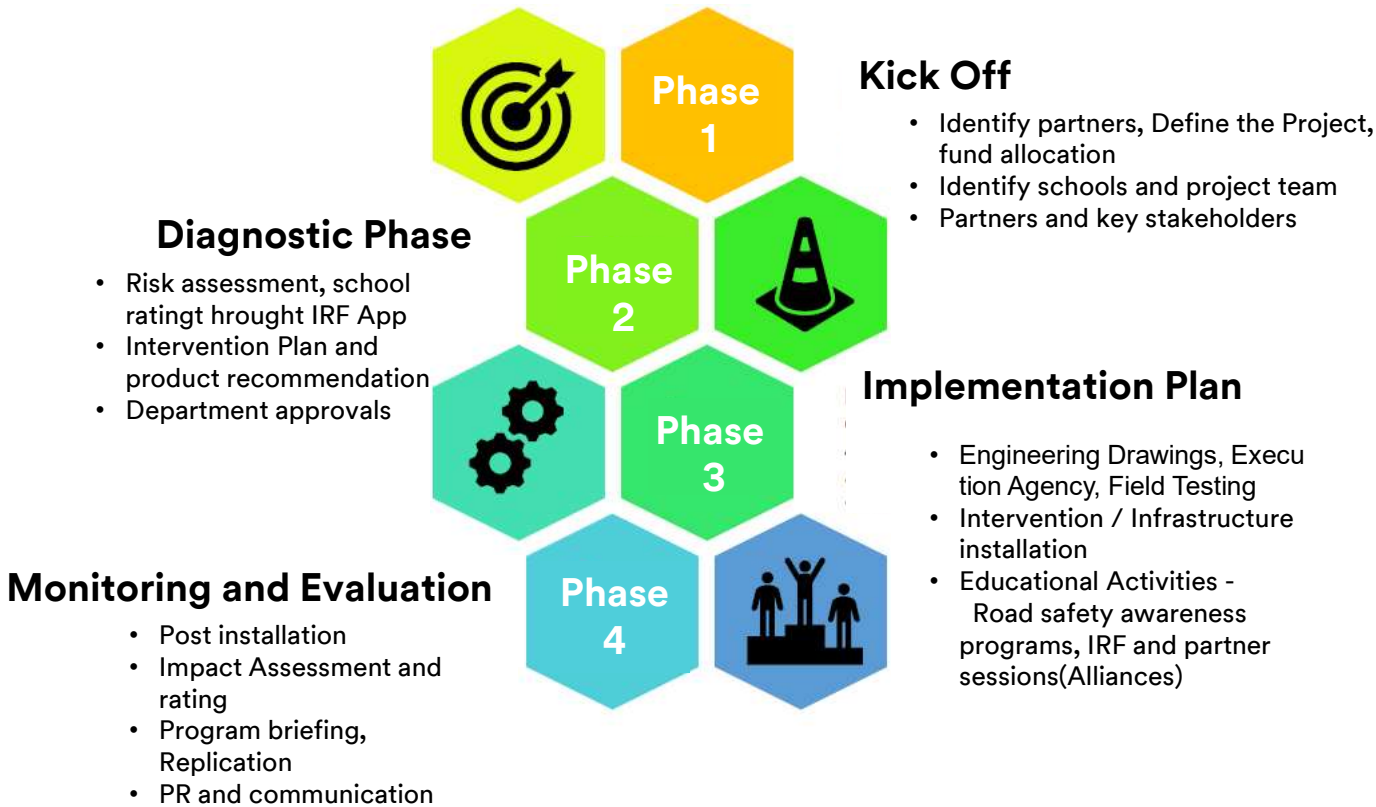


How can we Improve Road Safety in School Zones? Enforcement Plan

What is needed to run the program?



Program Flow



Key focus areas:

- Identify schools/ locations for intervention
- Onboard partners and sponsors
- Conduct awareness programs and road safety education workshops
- Secure stakeholder and authority approvals

How can 3M help?

Adds value with our knowledge, Technical expertise and innovative products

Work with stakeholders, schools and community to design and create safer school zones.

Products from our commercial branding and transportation safety division can be used to create a unique identity for individual Schools

Recommend well trained partners and convertors who can support with project execution and product installation



3M Solutions for School Zone



3M™ Fluorescent Diamond Grade™ Retro reflective sheeting

Brighter signs

gives drivers more time to react and increase safety in School Zones with superior visibility

3M™ Flexible Median Marker



2X
times more reboundable than minimum IRC 79-2019 minimum requirement

3M™ Standard Delineator



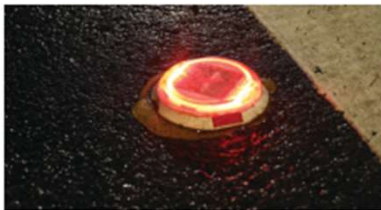
10-25%
reduction in casualties with delineation solutions

3M™ Aluminum-backed Flexible Prismatic Sheetting (AFP)



Highly
Conformable and Reflective.

3M™ Solar Raised Pavement Marker



360°
illumination and unbeatable durability

3M™ Raised Pavement Markers Series 290



24%
crash reduction with improved visibility

3M™ Stamark™ Pavement Marking



All weather
retro-reflective properties even in visually complex roadway environments.



Be the Changemakers

- Drive real change and help make roads to school safer for India's future generations by leveraging 3M's technical expertise
- Create young change agents and raise road safety awareness among students and young road users with focused workshops and learning experiences
- Ensure national visibility for IRF – “School Zone Safety Project”

The background features a complex network of thin, glowing lines in shades of purple and blue against a solid black field. These lines form a series of interconnected, irregular polygons and triangles, creating a sense of depth and geometric structure. The lines vary in brightness and color, with some appearing more vibrant and others more muted.

Thank you!