TRAFFIC COMPLIANCE

Location: Dafnala Junction, Ahmedabad

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Strategic Design Management 18

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Why Traffic?

India accounts for more than 10 percent of world's road accident deaths, holding just 3 percent of the world's vehicle.

With such a high number it has become a major ==social concern.==

Traffic Compliance

In general, compliance means ==conforming to a rule==, such as a specification, policy, standard or law.

Road safety is not just about creating infrastructure. It is about designing ==behavioural solutions== that take ==human biases and irrational behaviour== into consideration.

The Context

Dafnala Junction

An important Crossroad where four major roads meet.

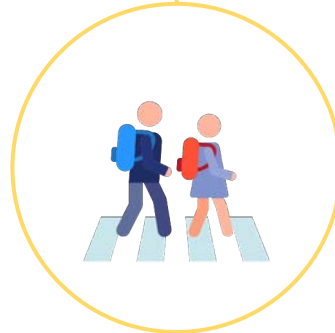Heavy police deployment to ensure traffic compliance, makes it easy to monitor.

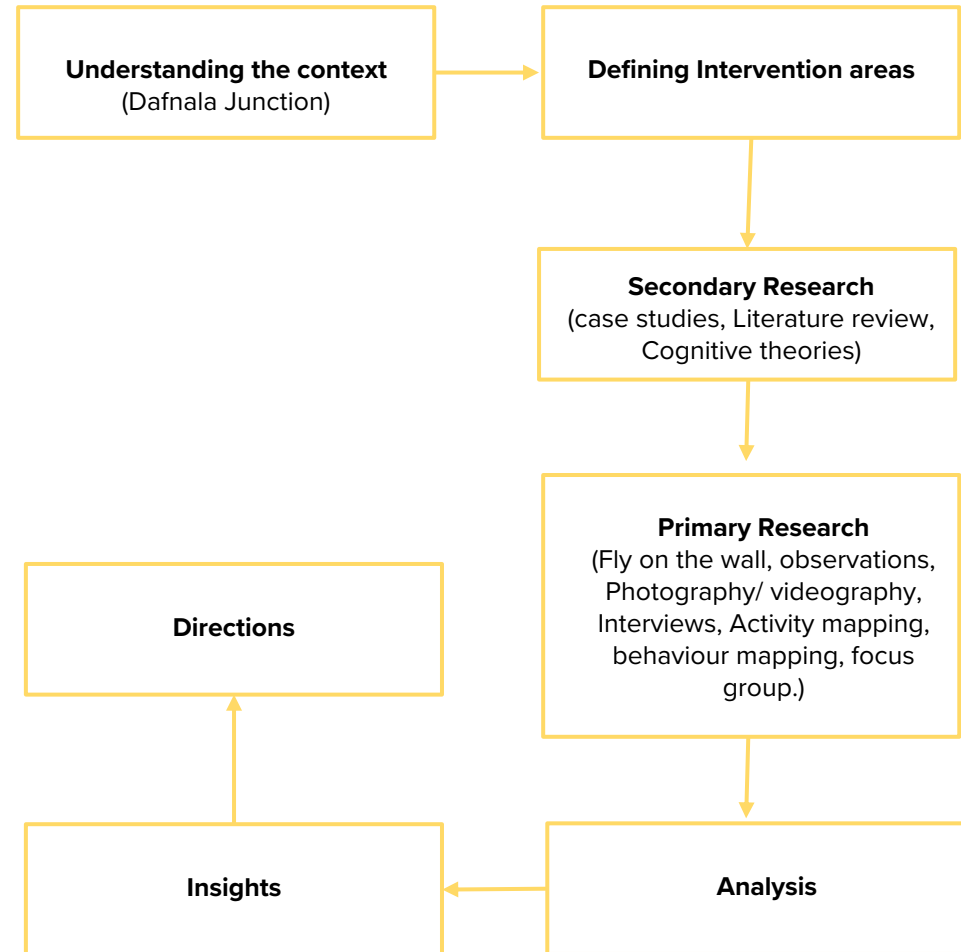Helmet Law

Areas of compliance Intervention

Stop Line Violation

Pedestrian Jaywalking

Stop line Violation

Key concern.

Most enforcement due to presence of police personnel.

For our primary research we used the following methods *Observations via fly on the wall, Informal interviews, behaviour mapping, etc.*

Key observations

- If the first 2-3 vehicles crosses the stop line, the rest tend to follow the same.
- More Violations at peak hour.
- Inability to decide whether people can make it within green signal timing.

- The Stop Line markings & Zebra crossings are missed out because of the placement and lack of visibility.
- Last lot violates the line more.

- If there are lesser number of vehicles, less noise, less visual clutter, it causes less panic and more patience is observed. Comparatively more discipline is seen.

Key observations

Behaviour Analysis

Loss Aversion
- Late comers rushing to front of line, to avoid standing in the line again. *False sense of urgency*.
- Covers slightest of gaps to go first.

Bandwagon Effect (following what others are doing)
- Vehicles following others if first 3 violates the line

Planning Fallacy
- Inability to decide whether people can make it within green signal timing

System Justification
- Blames the system.
- Feels that red light comes all of a sudden

Selective Perception
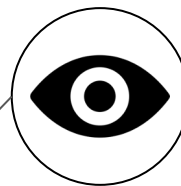- More discipline when it's less crowded

INSIGHTS
Stop Line
Violation

The initial 2-3 vehicles stopping at a red signal dictate the trend of whether the following vehicles will stop behind the stop line, or violate it, resulting from the **Bandwagon Effect**
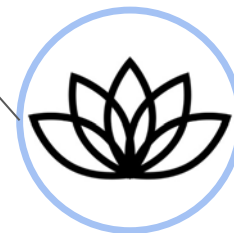
Perceived Sense of Hurry **(Time Saving Bias)** results in vehicle drivers to be impatient and violate the stop line

Stop Line Violation
Insights

Lack of visibility and lack of prominence of the stop line results in vehicle drivers majorly violating violating the stop line

Perceived visual end is the end of the divider, and generally vehicles tend to stop aligning to this rather than the stop line
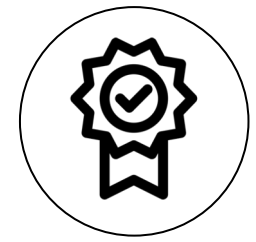
If there are lesser number of vehicles, less noise, less visual clutter, it causes less panic and more patience is observed and therefore, in a **cool state** there are fewer violations of the stop line
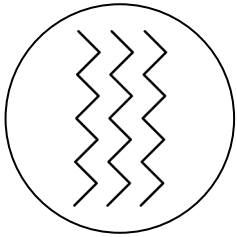
DESIGN OPPORTUNITIES
Stop Line Violation

Design Directions

Stop Line
Design Directions

Creating a Prominent Visual Identity for the stop line for instant identification and greater visibility

Visually breaking the speed and creating a run up to the stop line

Realigning the divider to the stop line to create a visual perception of the road ending

Creating an **instant feedback system** for violation of stop line through an instant beeping buzzer

Acknowledging compliant citizens by awarding them badges of 'STOP LINE LEADER' - those who influence others to stop behind the stop line,

Cool Down Period
A 5 second cool down period as a red signal for all sides to convert the hot state of traffic to a cool state

Design Directions

Visual Illusion of the speed bump

Markings On the Road, which can lead to speed reduction
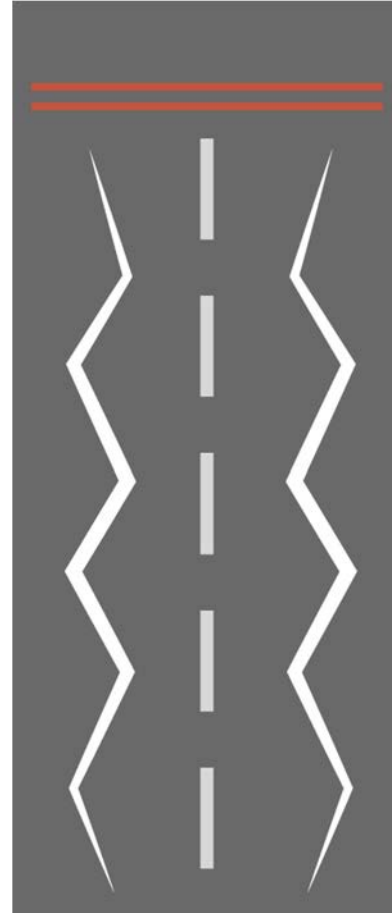
Pedestrian/ Jaywalking

The issue of jaywalking was seen as an opportunity to also address and impact the stop line rule.

The methodologies to understand this specific topic was Fly on the wall, Unstructured Interview, Videography, Photography, Pattern Analysis, Body storming, Shadowing, etc.

Key Observations

- Most pedestrians take diagonal path to cross road at the junction.

- They are seen to be running while crossing the road.

- They often feel ignored and vulnerable.

- Vehicles tend to stop on zebra crossing, hence pedestrian are forced to jaywalk.

- On asking they generally apologized and accepted that they are wrong

Key Observations
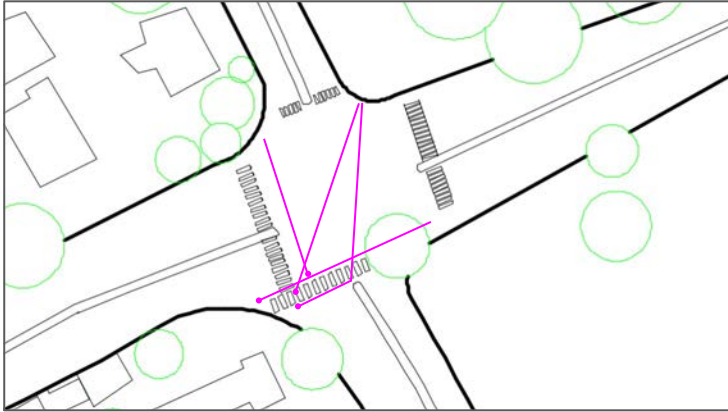
- When traffic opens/ merges they get confused and run/ haste/ panic.

- Zebra crossing has a low visibility.

- Zebra crossing is behind road divider.

- Vehicle drivers are in rush and do not want to wait for pedestrians.

- Some said that it has become a habit now, zebra crossing is not necessary.

Pedestrian Mapping
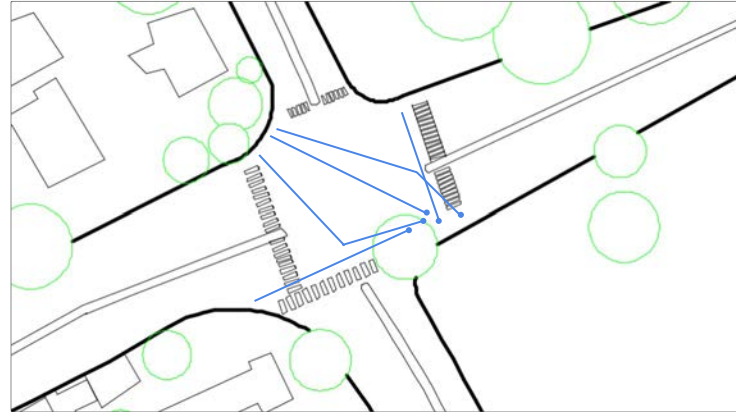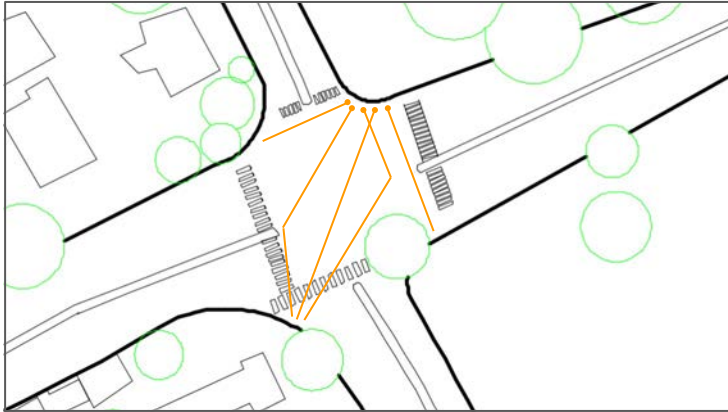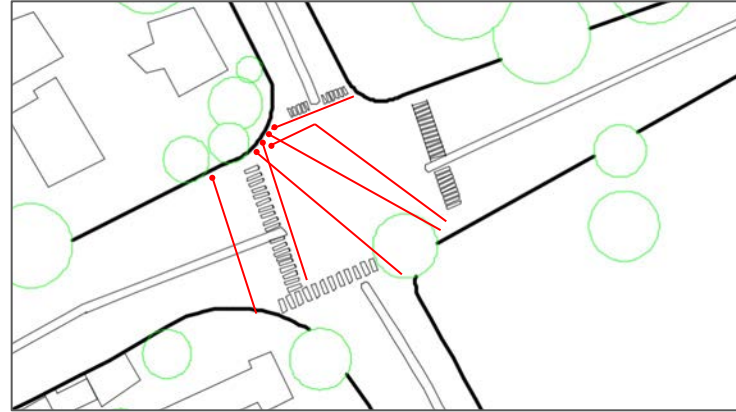
Diagonal crossing has been seen as a very prominent pattern.

Behaviour Analysis

1. **Perceived workload**
   a. Takes shorter distance
   b. False sense of urgency
2. **Loss Aversion**
   a. Loss of time
   b. Loss of energy
3. **Cognitive Dissonance**
   a. They know following of zebra crossing is a rule but still don't follow it
   b. They are aware it is for their safety still don't follow it.
   c. They believe since they are overly attentive therefore they can jaywalk
4. **Bandwagon effect**
   a. People tend to follow others while crossing road
5. **Normalcy bias**
   a. They don't perceive not walking zebra crossing can be dangerous for their life
6. **Risk compensation / Peltzman effect**
   a. Since perceived safety is more, they tend to take greater risks too like running
7. **Reactance**
   a. They do opposite as they feel laws restricts them

INSIGHTS

Pedestrian Jaywalking

Pedestrians <mark>feel excluded</mark> from traffic system. Even zebra crossing is not safe.

Zebra crossing not safe because of stop line violation
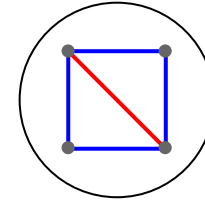
Zebra crossing is not visible because vehicles are on stop line.

Pedestrian
Insights

Since perceived safety is more, they tend to take greater risks too like running. They <mark>don't feel unsafe</mark> while jaywalking
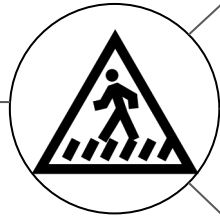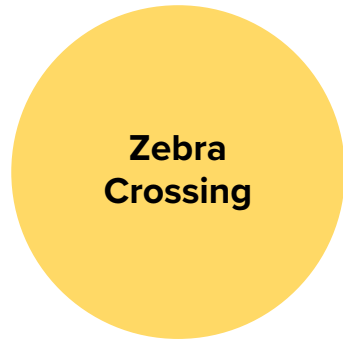

Due to perceived workload and urgency pedestrians tend to take <mark>shorter distance</mark> to cross road.

It is human nature to take shortcuts.

DESIGN OPPORTUNITIES
Pedestrian Jaywalking

Zebra Crossing

Pedestrian Safe Zone

Footprints painted on the zebra crossing to nudge and guide pedestrians to use the zebra crossing more

Highlighted Zebra Crossing in bright and vibrant colours to attract pedestrians and encourage greater usage of the zebra crossing

Identifying these "Pedestrian Safe Zones" on google maps and highlighting them for greater awareness

Before

Total Pedestrian Crossing periphery
147 m

After

Total Pedestrian Crossing periphery **94 m**

Prom

After

Culturally Contextual Design to make the crossing more engaging

Total Pedestrian Crossing periphery **147 m**

After

Central Highlighted Zone to discourage walking in the centre

Total Pedestrian Crossing periphery 147 m

After

Culturally Contextual Design to make the crossing more engaging

Total Pedestrian Crossing periphery **147 m**

Possible Outcomes

Helmet

After our secondary research we found out that one of the major factors behind the death of two wheeler riders was lack of helmet usage or using lower quality helmet.

We observed that there was a lack in compliance of the helmet use which is a very important and key safety gear.

Under Primary we did *Observations via fly on the wall, Informal and formal interviews, laddering, behaviour mapping, focus group, etc.*
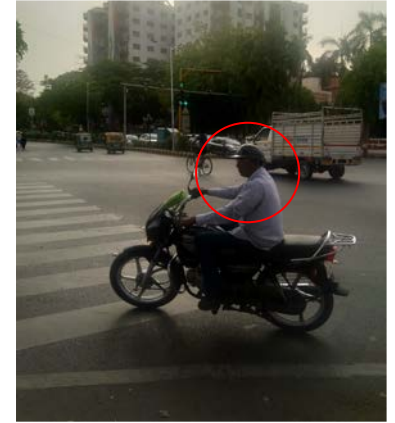
Key observations

- There were <mark>more defaulters at night</mark> than day.

- People were <mark>following</mark> other people.

- Don't hesitate to pay 100/-

- Most citizens blame the system and policemen.

- The defaulters they were aware of the importance of wearing a helmet.
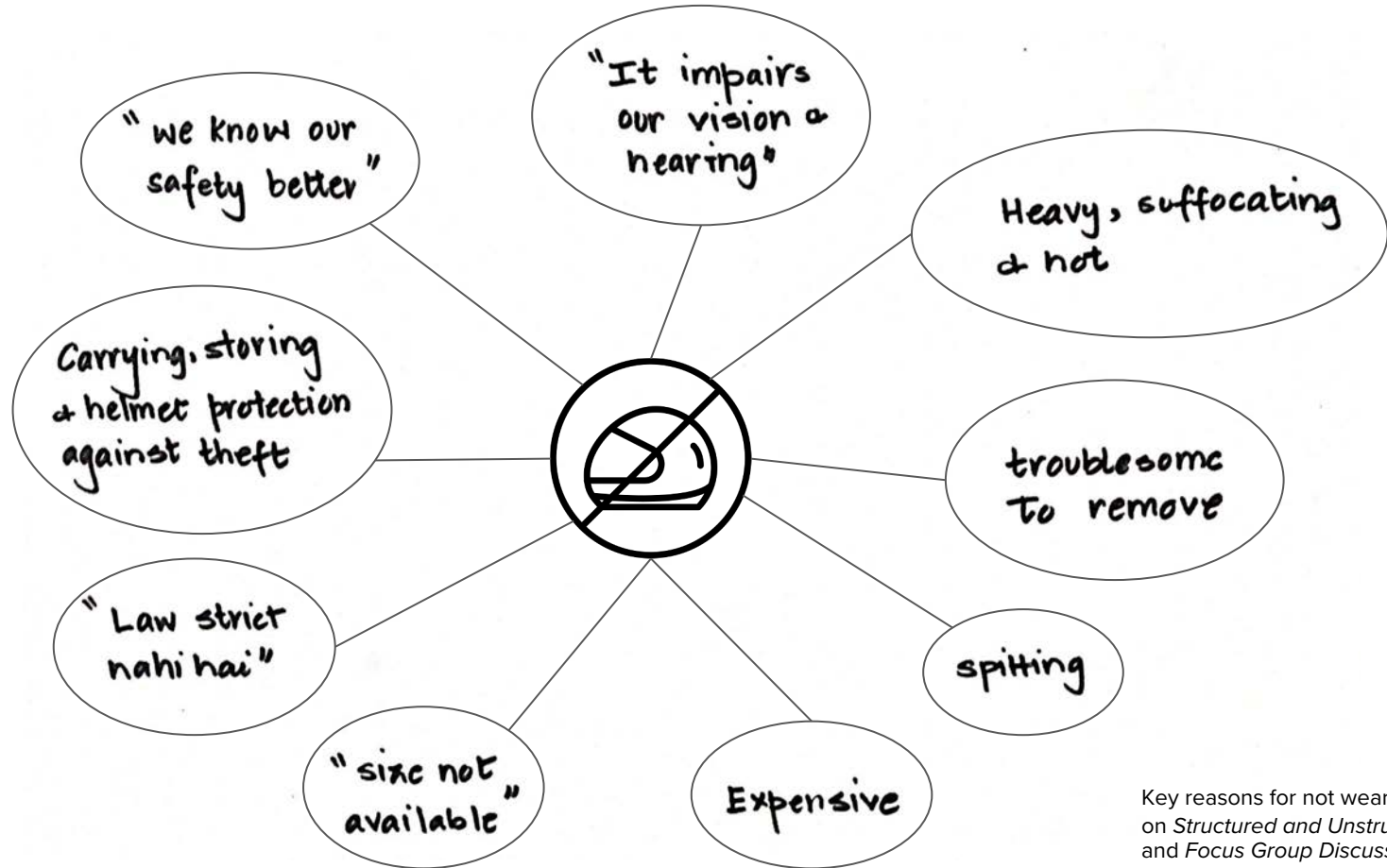
Key observations

- Most of the people were wearing low quality alternatives.

- Believe that helmet is not required at slow speed or in the city.

- The officials did wear the helmet and followed rules as they felt a sense of responsibility and would feel guilty otherwise.

Analysis

"It impairs our vision & hearing"

"we know our safety better"

Heavy, suffocating & hot

Carrying, storing a helmet protection against theft

troublesome to remove

"Law strict nahi hai"

spitting

"size not available"

Expensive

Key reasons for not wearing a helmet based on *Structured and Unstructured Interviews* and *Focus Group Discussion*.

Behaviour Analysis

1. ***Loss aversion***
   a. False sense of urgency (Time -saving Bias) saving time is perceived as a bigger incentive

2. *Look at **short term benefits** and not long term loss.*

3. *Trust Issues (**Ambiguity Bias**)*
   a. In police department (Reactance/ Reverse Psychology)
   b. In safety from Helmet

4. ***Bandwagon** effect / Social Norms* : Tend to follow others.

5. **Cognitive Dissonance**- When there is a difference between what they know and what they do.

6. **Cognitive embodiment**- People feel guilty on breaking rules when are embodied with responsibility. Likely to act compliant when made to feel responsible.

INSIGHTS

Helmet

Helmet
Insights

There is existence of the ==bandwagon== effect along with social conformity. People tend to ==follow.==

This could probably be tackled by recognising and ==acknowledging the compliant citizens.==

There is an ==illusion of control==.

They feel that they have control on the circumstances and are less likely to have negative experience and they know their safety better.

V/S

100/- challan is not seen as a big amount against the ==time and inconvenience== .

Thus, the thing that value more i.e; time or convenient need to be also put on stake.

People follow when the rules in the presence of ==vigilance/ policemen==.

This probably implies that there is a lack of understanding and awareness of self concern/ safety. This requires awareness/ ==educational interventions.==

Helmet
Insights

There exists a ==distorted perception== about the policeman amongst the youth.
They feel ==thrill and excitement in rebelling==.
There is also a ==sense of masculinity== that the men/ young boys feel. Young riders also find it unflattering, uncomfortable and inconvenient to wear or carry around a helmet.
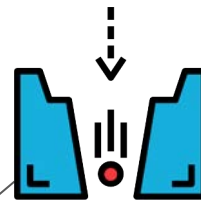
There is a gap or an ==inconsistency== between what they know and what they do i.e: between their beliefs and actions. This is probably triggered due to new information. For so many years the traffic rules have been fairly loose in India. It is only in the recent decade that the rule implications have been seriously imposed and monitored.
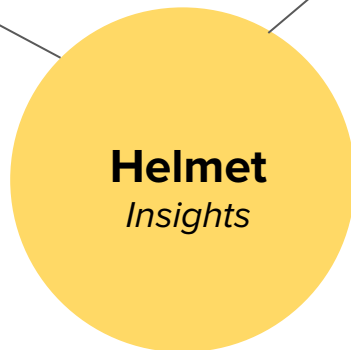
Invoking a ==sense of responsibility== in individual towards themselves and a group of people might make them act more cautious and responsibility.
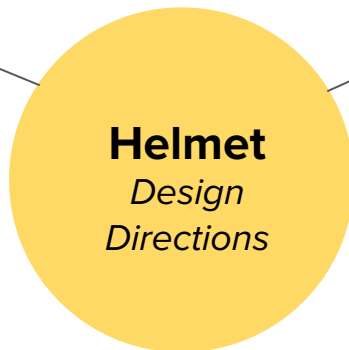
DESIGN OPPORTUNITIES
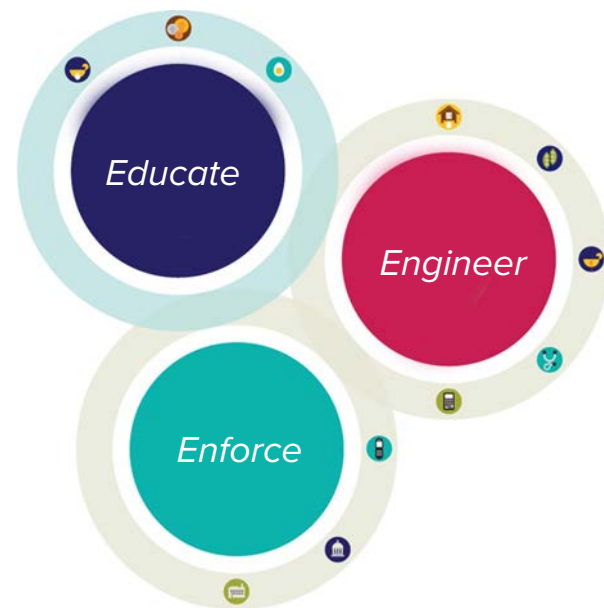
Helmet

Helmet
Design Directions

Educate

Engineer

Enforce

India being a diverse country. There is no one solution for all. It has to be different for different age/gender/socio-economic groups.

Helmet being a complicated situation. Nudge alone will not be enough at this stage

It has to be countered from all the sides simultaneously, to have an impactful result. It has to be a combination of educate, engineer and enforce.

Redesign Helmets- There should be interventions in the design of the helmet in order to reduce the discomfort and inconvenience it causes to the user.

"I WON'T WEAR A HELMET IT MAKES ME LOOK STUPID"

"I NEVER WEAR A HELMET. THEY DON'T LOOK COOL"

Early Exposure- Awareness, safety and complying to rules should be instill as moral values from primary educational level.
From the level of bicycle riding.
It was observed that people tend to comply to rules when their kids asks them to do.
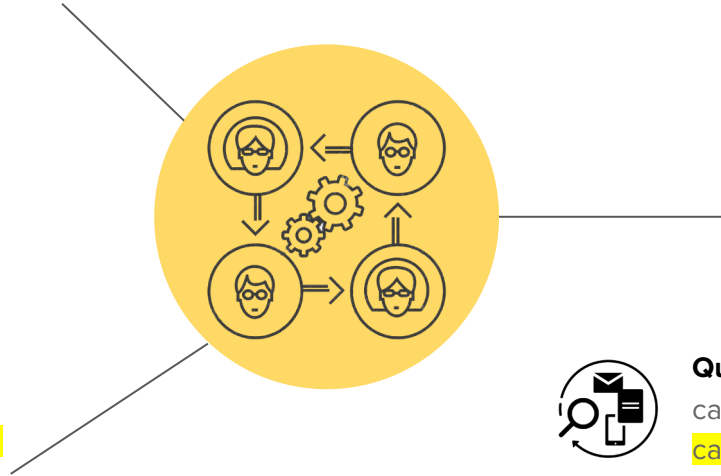
Quality Campaigns- Other than government campaign, there should be quality campaigns sponsored by private firms as CSR Activity. There can be variety of campaigns addressing the diversity India has. They could also counter the reasons people give for not wearing a helmet

These design solutions would require an inter design departmental collaboration for a successful execution.

Helmet
Design Directions
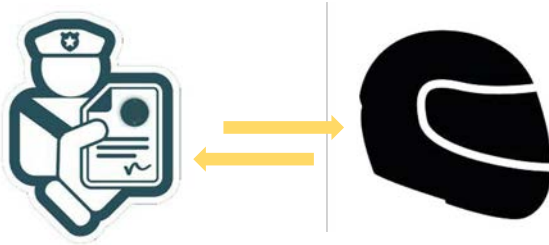
Helmet for fine-
First challan: Warning.
Second: Helmet for fine.

This will add a sense of loss, liability and fear of collecting multiple helmets.

No helmet, No fuel- The fuel stations around Dafnala could also be made a part of this shift.

People without helmets would be denied fuel.

Retaining Compliant Citizens

Powerful tool in retaining the compliant citizens as we develop an ==appetite for it from an early age.==

It would be more ==impactful== in the known circle. Therefore should be something that can be shared.

Compliance
Design Directions

Compliance
Design Directions
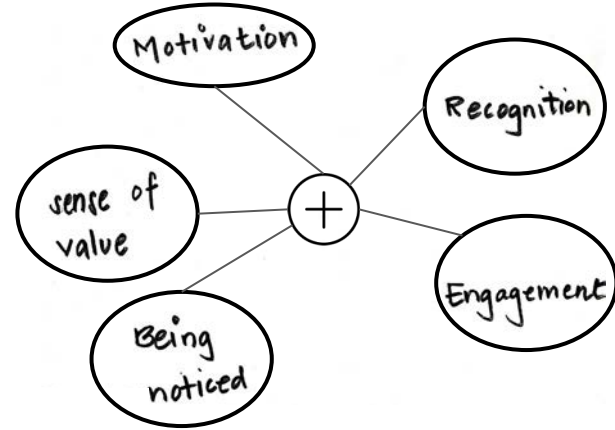
Appraisal on twitter, facebook or social platforms where the citizen could share/ be tagged.

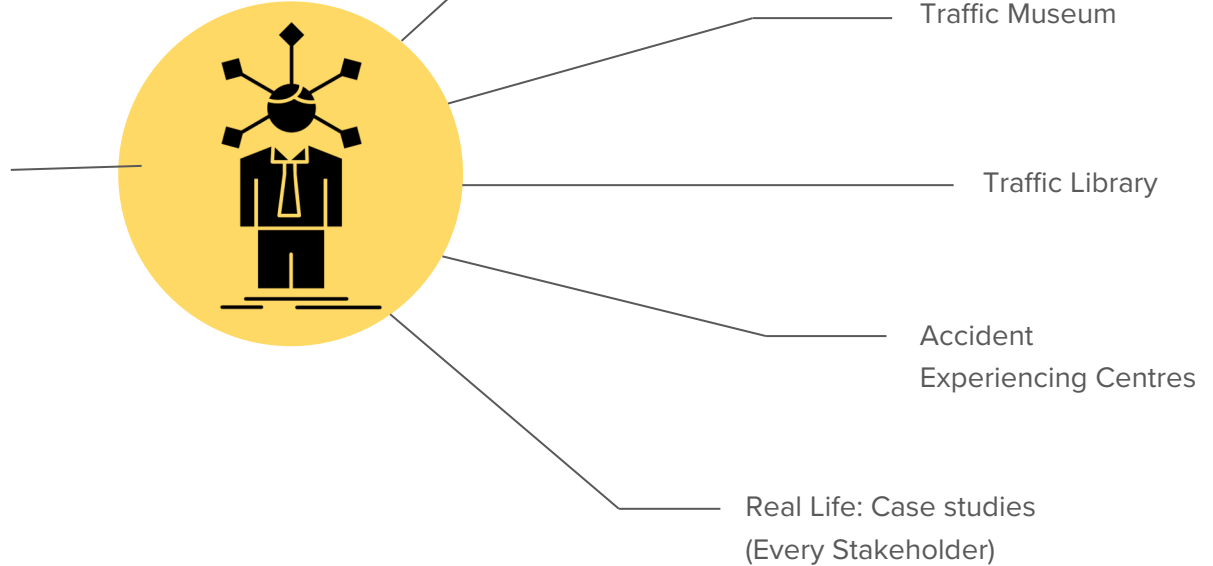Special section or monthly edit on the Ahmedabad Police app.

Special mentions in the newspaper during the traffic week/ other special drives/ campaigns.

Accident Experiencing Centres-
Defaulter's licenses can be confiscated and they can be sent to such centres where they can experience various types of accidents, some 'near death experiences' which could work as <mark>one time learning</mark> to make them compliant.

Traffic School

Traffic Museum

Traffic Library

Accident Experiencing Centres

Real Life: Case studies (Every Stakeholder)

"This seemed like a viable solution because it was observed that people who have seen or been in an accident were more compliant and cautious."

Thank You!