Road Safety Framework

Potholes
Manholes
Septic systems
Medians
Pedestrian Safety

Commuter Safety (this proposal)

Traffic Control Room

Being discussed with BBMP

Road Safety App(s)

Road Safety

Police Control Room

Road Safety Control Room

Risk Mitigation

Veritable Commuting

Keep Your City Clean

Passenger Vehicle Safety

Quality of Process

Quality of Structure

Quality of Outcome

Quality of Services

2015

2016

2020

Passenger Vehicle Safety

A. What are the hazardous factors for passenger vehicle safety?

There are many different factors such as

1. Sudden bends or curves with or without signs, where it is not possible to ensure clear visibility

2. Under repair roads with or without signs

3. Sudden Traffic signals with or without signs

4. Sudden Pedestrian crossings with or without signs

5. Sudden Speed breakers with or without signs

6. Unmanned Road Medians or missing Bordering Road Barricades with or without signs

7. Road deterioration and potholes

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8. Poorly maintained septic systems and manholes

9. Traffic violators and lack of driving norms

10. Hotspots (locations that need converged administration to address the need to mitigate climate change, rising pollution levels, rising CO2 levels, poor air quality, accident trends, traffic problems, incidences of crime, issues with road system arboriculture. At these locations parameters such as MTTD, MTTP, MTTN & MTTR and feedback loops all decide the balance)

11. Lack of self-assessments of driver fitness with drive guidance

    Note on drive guidance: It is an advisory for a road system that is developed on the basis of the nature of planning for the road system

12. Lack of feedback systems that alert or mitigate risks and hazards

13. Controlling crime in taxis, autos, mini vans, mini buses and buses via a Commuter Safety Framework (proposal being taken up with the Commissioner of Police)

(1) Sudden bends or curves – A hazard

(2) Sudden Road under repair conditions– A Hazard

(3) Sudden Traffic signals – A Hazard

(4) Sudden Pedestrian crossings – A Hazard

(5) Sudden Speed breakers – A Hazard

(6.a) Unmanned road medians – A Hazard

(6.b) Un-barricaded roads – A Hazard

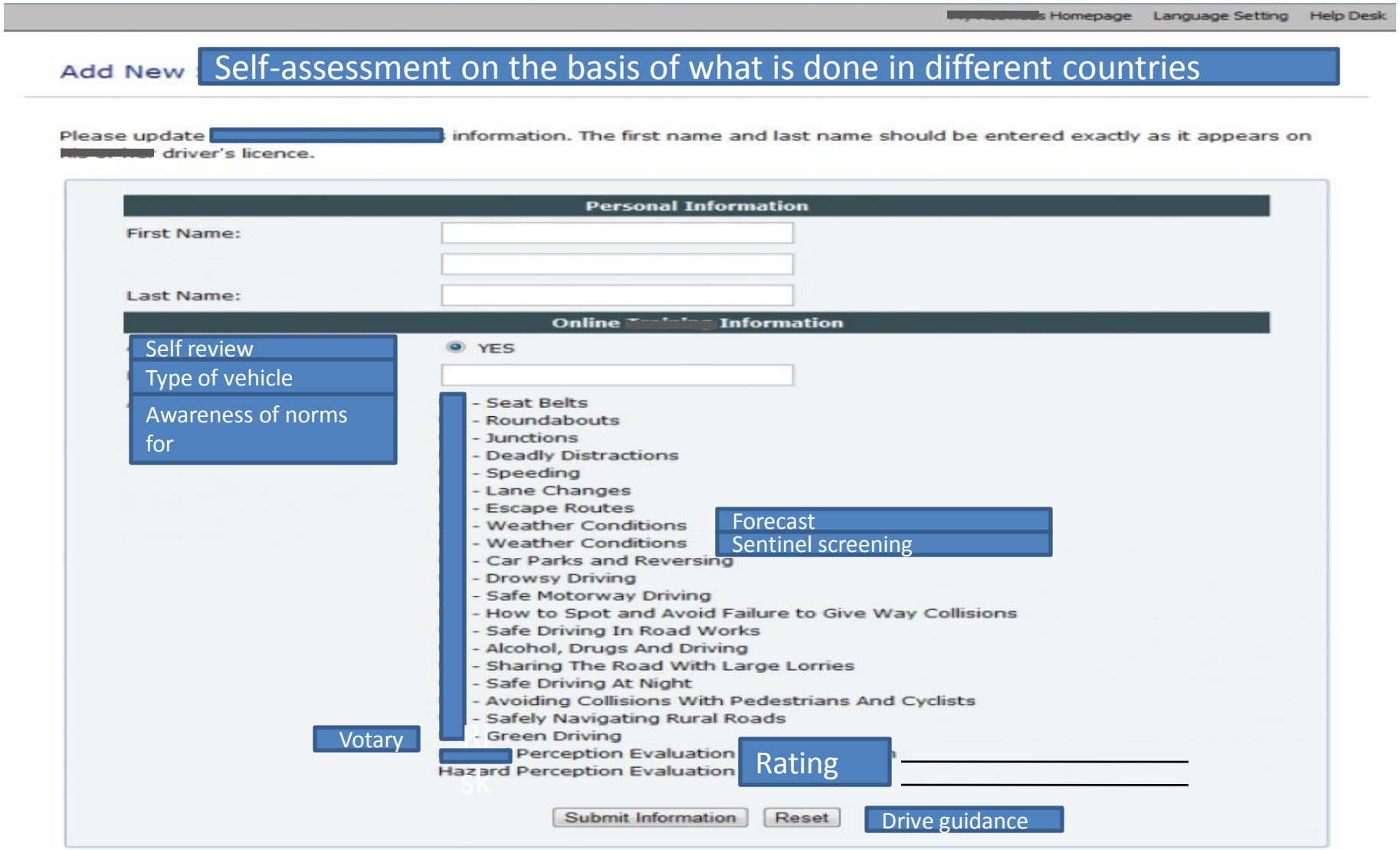
(7) Potholes – A hazard

(8) Septic System & Manholes – A Hazard

(9.a) Lack of Occupation based Driver assessment – A Hazard

- Lack of self-assessment of fitness of drivers of passenger vehicles
- Lack of self-assessment of fitness of drivers in occupations that influence or affect overall traffic safety
- Lack of self-assessment of a driver's continual awareness of needful norms for passenger and pedestrian safety
- Lack of self-assessment of a driver's continual sensitivity towards passenger and pedestrian safety

(9.a) Lack of Occupation based Driver assessment – A Hazard (UK edition)



(9.b) Lack of Occupational Therapy based driver assessment – A Hazard

- Lack of focus on the impact of a person's hazardous habits, medical condition or even afflicted ability on commencing or returning to driving

- Lack of any regular assessments to be conducted by an Occupational Therapist unit in a supportive environment that aims to ensure whether afflicted people are safe and able to drive, where possible

(10) Traffic violators or lack of common driving norms– A Hazard

(11) Lack of feedback systems – A critical requirement

- Traffic signals and vigilant traffic control mechanisms are the only systems that currently guide traffic movement on roads. There is a critical requirement for feedback systems that can guide drivers, commuter behavior and traffic movement. Some examples of feedback entities* being (1) Road Safety and Commuter Safety App(s), (2) Road Safety LiveUpdates and Commuter Safety LiveUpdates, (3) (Futuristic) Sensor enabled alarm systems, (4) (Futuristic) Sentinel screening and updates and (5) Self-assessment of fitness and drive guidance
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(12) Controlling crime in taxis and in private ride operators

- Developing a Customer Safety Account and Control Room framework that mandates pre-ride & post-ride assessments with on-board surveillance & alarm systems that help commuters report feedback, concerns, complaints and also mitigate possible risk or incidence of crime

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Form Serial No: **Date:**

Name of road system : **Road ID:**

Vehicle Registration No:

Feedback entity* reporting problem:

Name of road maintenance company (if known):

Annual Maintenance Contract No (if relevant):

Nature of inspection or assessment:

[ ] **Photograph taken and sent** (for accountability or to improve road safety)

[ ] **Hazardous factors such as the 1 to 12 issues highlighted**

[ ] **Location analysis** (condition of road, whether there is sufficient prior intimation for "traffic signals, pedestrian crossings, speed breakers or road humps, accident zones, road repair scenarios, zones with displaced traffic", manned road medians, clear visibility and safe navigability with sufficient lighting)

[ ] **Signage for emergency services** (whom to contact for this road system and notification as to what should be done if there are incidents of accidents or other health hazards)

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Evaluation of reason for hazard:

[ ] Poor quality road construction

[ ] Poor quality repair work

[ ] Poor quality "preventive maintenance of road"

[ ] Road affected by water bodies or drainage structures

[ ] Damage due to natural or man-made disaster occurrence

[ ] Sudden bends or curves with or without signs, where it is not possible to ensure clear visibility

[ ] Under repair roads with or without signs

[ ] Sudden Traffic signals with or without signs

[ ] Sudden Pedestrian crossings with or without signs

[ ] Sudden Speed breakers with or without signs

[ ] Unmanned Road Medians or missing Bordering Road Barricades with or without signs

[ ] Road deterioration and potholes

[ ] Poorly maintained septic systems and manholes

[ ] Traffic violators

[ ] Hotspots

[ ] Lack of feedback systems that alert or mitigate risks and hazards

[ ] No self-assessment of driver fitness

[ ] No drive guidance

Passenger Vehicle Safety

Classification of median or bordering road barricade (according to the road system):

[ ] Unmanned median or bordering road barricade
[ ] Low clearance median or bordering road barricade
[ ] Raised median or bordering road barricade
[ ] Damaged or under repair median or bordering road barricade
[ ] Other median or bordering road barricade issues
[ ] Manned via sensors medians or bordering road barricades

Evaluation of action needed:

[ ] **Immediately notify owner or driver of vehicle (issue new drive under instruction notices)**
[ ] **Immediately ensure safety, prevent accidents and health hazards**
[ ] **Issue or put up sufficient prior signage and public notifications for hazards**
[ ] **Check for road utilization problems** (traffic violation and displaced traffic)
[ ] **Check for seepage** (due to nearby water bodies or drainage structures)
[ ] **Categorize nature of passenger vehicle or pedestrian safety (**like signage intimating that "crossing is hazardous, accident zone, unrestricted speed limit", signage indicating unmanned medians, need for the incorporation of SMART Meters, manned medians & bordering road barricades and alarm systems)
[ ] Incorporate MIR Sentinels (or SMART Meter systems) with auxiliary systems

Manned medians or bordering road barricades via sensors & alarm systems



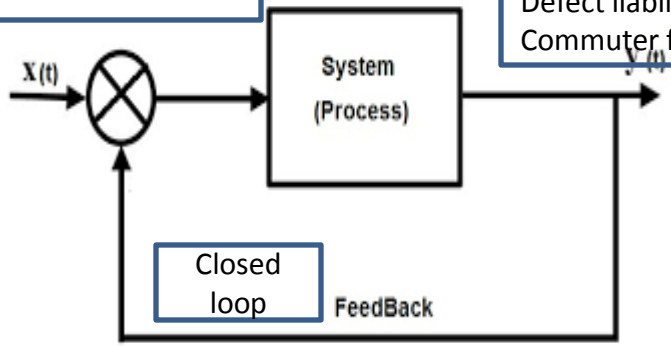

A **proximity sensor** is a sensor able to detect the presence of nearby objects without any physical contact via electromagnetic fields, light, sound.

A **motion sensor** is a sensor used to detect motion.

Installation of the above sensors along the median will need to be done as per a **Road system safety programme.** The associated alarm system in turn sounds an alarm warning the approaching traffic about sudden crossing along the median.

Feedback systems via CCTV, QI feedback, sensors & alarm systems

CCTV installation
QI feedback
Sensor(s) & alarms



Defect liability /
Commuter feedback

Live
Updates

Alarms

A **CCTV installation** that can view, record and send footage of vehicles or traffic on a road system. **Road Safety based feedback** for a road system can identify the defects and improve the quality.

A **defect liability sensor that** can detect a liability of risk or hazard to safety or possible collision. Installation of sensors in MIR Meters along a road system will need to be done as per a **Road System safety programme.** The associated sensors detect defect-liability and an alarm system in turn sounds an alarm warning the approaching traffic about sudden crossing along the median or possible collision.

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What is a MIR Sentinel and defect liability sensor?

We need sensor-based systems that use a **MIR defect liability** report of any road system to install new sentinel screening and alarm systems to address the possibility of defective planning, implementation or liability mitigation (be it a risk, a hazard or a chance of collision).

The **MIR Sentinel** is a baseline version of a universal screening system. It achieves the bridging of gaps and limitations in the safety of a road system with CCTV based surveillance, LiveUpdates, feedback, sensor based notification and alarm systems.

Picture of a **healthcare screening system** & a possible relative interest for **Road Safety** keeping in mind the unsafe & harsh conditions in our environments

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Why are ideas for improving road safety emerging today?

The need for feedback systems is a known and critical requirement, but the exercise to install multi-purpose sensors and alarm systems is a challenging and sustainable “Road infrastructure” mission.

To get started, the Road Safety proposal states that the baseline version of feedback systems can first include:

- ❑ (App based) Quality analysis of Manned Road medians and bordering Road barricades
- ❑ (App based) Quality analysis of manholes and septic systems
- ❑ (App based) Quality analysis of potholes and speed breakers
- ❑ (App based) Quality analysis for pedestrian safety
- ❑ (CCTV & App based) Analysis of traffic signal performance for safety
- ❑ **(App based) Self-assessment of driver fitness****
- ❑ **(App based) Tracking to control and respond to crime in taxis, private & public transport vehicles****

**** This proposal to the Commissioner of Police**

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Reason for road inspection or assessment (Tick as applicable):

[ ] Accidents or Health hazards
[ ] Emergency call or disaster
[ ] Preventive maintenance
[ ] Feedback system trends
[ ] Complaints about safety
[ ] Aging of road infrastructure
[ ] Routine assessment

Complaint No:

Priority Complaint No:

Time taken:

Record of inspection:

Date	Nature of inspection	Details of inspection	Next scheduled date	Done by

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Record of condition:

Date	Condition	Details of condition	Analysis of condition	Plan of action	Done by

Record of repairs:

Date	Nature of repairs or cleaning	Details of repairs or cleaning	Cost of repairs or cleaning	Reordering Of material	Done by

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- **Record of road's performance (Tick as applicable):**
- [ ] No complaints
- [ ] Occasional complaints
- [ ] Recent complaints
- [ ] Complaints since a long time
- [ ] Rising number of complaints
- [ ] Pedestrian safety proper and adept
- [ ] Road safety proper and adept
- [ ] Feedback system proper and adept

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- **Current problem or complaint or observation?**

- **Whether subsequent actions were taken?**

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Whether Corrective Action was outlined? (Yes/No)

- **Details:**

- **Whether Preventive Action is planned? (Yes/No)**
- **Details:**

- **Whether Grievance Redressal was necessary? (Yes/No)**
- **Details:**

- **What will be done to prevent re-occurrence of problem or issue?**