MAHARASHTRA STATE ROAD DEVELOPMENT CORPORATION WELCOMES YOU TO YASHWANTRAO CHAVAN EXPRESSWAY
YASHWANTRAO CHAVAN EXPRESSWAY
YASHWANTRAO CHAVAN EXPRESSWAY
YASHWANTRAO CHAVAN EXPRESSWAY
BACKGROUND

- EXPRESSWAY COMPLETED AND OPENED TO TRAFFIC IN 2002.
- OPERATION AND MAINTENANCE GIVEN TO A SPANISH COMPANY.
- THEIR CONTRACT EXPIRED ON 14 APRIL 2005.
- OPERATION AND MAINTENANCE TAKEN OVER BY IRB AS PART OF BOT CONTRACT FROM 15 APRIL 2005.
- NECESSARY RESOURCES DEPLOYED BOTH FOR OPERATION AND MAINTENANCE.
SCOPE OF OPERATION AND MAINTENANCE

BROADLY

• SECURITY OF ASSETS.
• OPERATION OF TUNNELS.
• TRAFFIC MANAGEMENT.
• INCIDENT AND ACCIDENT MANAGEMENT.
• SECURITY.
• ROAD MAINTENANCE TASKS BOTH ROUTINE AND REPLACEMENT.
## TOLL PLAZAS

### LOCATION

<table>
<thead>
<tr>
<th>Distance (KM)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.072</td>
<td>SHEDUNG</td>
</tr>
<tr>
<td>32.650</td>
<td>SAVROLI (KHALAPUR)</td>
</tr>
<tr>
<td>54.546</td>
<td>LONAVALA</td>
</tr>
<tr>
<td>83.223</td>
<td>TALEGAON (URSE)</td>
</tr>
<tr>
<td>Name</td>
<td>Location (KM)</td>
</tr>
<tr>
<td>------------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Bhatan</td>
<td>14.172</td>
</tr>
<tr>
<td>Madap</td>
<td>25.414</td>
</tr>
<tr>
<td>Khandala</td>
<td>46.410</td>
</tr>
<tr>
<td>Kamshet- I</td>
<td>70.537</td>
</tr>
<tr>
<td>Kamshet-II</td>
<td>72.125</td>
</tr>
<tr>
<td>Adoshi</td>
<td>41.168</td>
</tr>
</tbody>
</table>

Tunnels : Location & Length
FACILITIES & AMENITIES

FOOD MALLS : AT 35 KM FROM EITHER END

TOILETS : AT KM 32.400 MC, 35/000 Both side, 83.100 MC & 83/700 PC

WITH CALL CENTRE AT KUSGAON

FILLING STATIONS: TWO IN EACH CORRIDOR
Road Safety:

- Metal & Concrete Crash Barriers
- Various sign boards
- Road Marking, Rumbling Strips & Blinkers
- Cat eyes
- ADVANCE WARNING BOARDS
- Reflective tapes on Kerbs
- Delineators
- Light cutters
### Plantation:

**Length of Median with plantation**

<table>
<thead>
<tr>
<th>Section</th>
<th>Total Length with Plantation (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1</td>
<td>26558</td>
</tr>
<tr>
<td>Section 2</td>
<td>9507</td>
</tr>
<tr>
<td>Section 3</td>
<td>24931</td>
</tr>
</tbody>
</table>
• 61 Kms under arboriculture.
• 28.50 km length under drip irrigation system
• Remaining part to eventually have drip irrigation. Currently watering with water tankers.

<table>
<thead>
<tr>
<th>Kilometers</th>
<th>Irrigation System</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.50 - 6.10 Km</td>
<td>Drip irrigation</td>
</tr>
<tr>
<td>15.60 - 18.60 Km</td>
<td>Drip irrigation</td>
</tr>
<tr>
<td>19.10 – 19.72 Km</td>
<td>Drip irrigation</td>
</tr>
<tr>
<td>28.00 - 32.40 Km</td>
<td>Drip irrigation</td>
</tr>
<tr>
<td>55.40 – 60.50 Km</td>
<td>Drip irrigation</td>
</tr>
<tr>
<td>83.50 – 88.13 Km</td>
<td>Drip irrigation</td>
</tr>
<tr>
<td>88.31 – 94.15</td>
<td>Drip irrigation</td>
</tr>
</tbody>
</table>
PECCULARITIES OF EXPRESSWAY

• ACCESS CONTROLLED
• WORKS OVER DISPERSED LOCATIONS.
• NON AVAILABILITY OF WATER AND POWER. COMPLETE RESOURCES NEED TO BE DEPLOYED REGARDLESS OF THE SIZE OF REPAIRS.
• NEED TO TRAVEL LONG DISTANCE FOR EVEN A SMALL PURCHASE.
• THE NEED TO CREATE AND DEPLOY AN EFFECTIVE EMERGENCY RESPONSE PROTOCOL.
• LABOUR DEPLOYMENT TIME CONSUMING.
• ONLY FOUR WHEELERS ALLOWED.
• NECESSITY TO DEPLOY EFFECTIVE TRAFFIC SAFETY ARRANGEMENTS.
OPERATION

IMPLIES
ENSURING SMOOTH FLOW OF TRAFFIC

INVOLVES

- TUNNELS AND THE CONTROL ROOMS
- PATROLLING
- >PURPOSE:-
  MAINTAIN CONTINUOUS VIGIL.
- LOCATE BREACHES IN FENCING
- LOCATE, ASSESS AND REPORT DAMAGES
- ACCIDENT AND INCIDENT MANAGEMENT
- SIGNPOST AND REGULATE TRAFFIC
- ASSIST COMMUTERS

- >METHODOLOGY
- >RESOURCES
METHODOLOGY

• DIVIDED INTO THREE SECTORS.
• EACH SECTOR MANNED BY A UNIT.
• THREE SHIFTS OF EIGHT HOURS.
• FULLY MOBILE.
• SUITABLE COMMUNICATIONS.
• ACTIVITY CLOSELY MONITORED BY SAFETY OFFICER.
• REGULAR SURPRISE CHECKS.
• PROPER REPORTING AND RECORDING.
RESOURCES

• PATROLLING INPECTORS.
• PATROLLING GUARDS.
• MOBILE TELEPHONES.
• FIRST AID BOX.
• SPARE TOOLS.
• TOW BARS.
• SAFETY STORES LIKE CONES AND BOARDS.
• REPORT FORMS.
• PATROLLING VEHICLES.
• QUICK RESPONSE VEHICLES AND CREW
CALL CENTRE

• NERVE CENTRE OF ALL OPERATIONS

• SET UP BY CMS

• MANNED ROUND THE CLOCK

• 9822498224, TOLL FREE NUMBER PROVIDED BY IDEA.

• RECEIVES INFORMATION AND COORDINATES RESCUE /INCIDENT/ACCIDENT MANAGEMENT.

• HAS DIRECT ACCESS TO DEPENDENT POLICE STATIONS.
Mumbai Pune Expressway Call Centre
EMERGENCY RESPONSE PROTOCOL

• Concept
  Minimum Response Time.
  First Aid.
  Evacuation.
  The Golden Hour.

• Design
  • Self Contained
  • Fully Mobile
  • Integrated System
  • Efficient and Reliable Communications.
  • Storing Information in data bank.
Process Flow Diagram

CALL CENTRE

COMMUTER

CALL CENTRE

PATROLLING UNIT

RECOVERY VEH.

MEDICAL TEAM

POLICE STN.

QUICK RESPONSE VEHICLES

POLICE OUTPOST
ZERO FATALITY CORRIDOR
ON YCEW

AIM : ACHIEVE- ZERO FATALITY CORRIDOR ON YCEW (MUMBAI – PUNE EXPRESSWAY)
ZERO FATALITY CORRIDOR ON YCEW SAFETY

- EFFORTS SINCE 2015

- ACCIDENT PREVENTION - FACTORS

HUMAN / VEHICLE / INFRASTRUCTURE OR COMBINATION
ZERO FATALITY CORRIDOR ON YCEW

AREAS OF INTERVENTION

- ENGINEERING
- EMERGENCY CARE
- EDUCATION
- ENFORCEMENT
- EQUIPMENT
<table>
<thead>
<tr>
<th>Ser. No</th>
<th>Engineering Interventions</th>
<th>Unit</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Road Side /Median Concrete Structure</td>
<td>Locations</td>
<td>194</td>
</tr>
<tr>
<td>2</td>
<td>Poor/ Ineffective Road Signage</td>
<td>Locations</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Sharp Road Curvature</td>
<td>Locations</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>Gap In Median</td>
<td>Locations</td>
<td>52</td>
</tr>
<tr>
<td>Ser. No</td>
<td>Engineering Interventions</td>
<td>Unit</td>
<td>Achievement</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------</td>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>5</td>
<td>Unguarded Overhead Bridge Pillar</td>
<td>Locations</td>
<td>109</td>
</tr>
<tr>
<td>6</td>
<td>Unguarded Bridge/ Jersey Wall</td>
<td>Locations</td>
<td>70</td>
</tr>
<tr>
<td>7</td>
<td>Unguarded Underpass</td>
<td>Locations</td>
<td>92</td>
</tr>
<tr>
<td>8</td>
<td>Entry/ Exit Road</td>
<td>Locations</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>Driver Vision Obstruction</td>
<td>Locations</td>
<td>8</td>
</tr>
<tr>
<td>Ser. No</td>
<td>Engineering Interventions</td>
<td>Unit</td>
<td>Achievement</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>10</td>
<td>Guard Rail End Taper</td>
<td>Locations</td>
<td>30</td>
</tr>
<tr>
<td>11</td>
<td>Flower Pots In Median</td>
<td>Locations</td>
<td>78</td>
</tr>
</tbody>
</table>
Providing 4 nos QRV and OnM on YCEW – WO dated 10 Aug 15

To attend to all vehicular accidents and Fire accidents occurring on YCEW and rescue victims, save lives and property

Started operations on 15th Aug 2015 with one QRV

Supply of 4 QRVs and starting of OnM - 09th Nov 2015

Strategic locations – 12 Km (Panvel), Khopoli toll, 58 km Lonavala, Talegaon Toll
Vehicular accidents and Rescue
Car accident – 02\textsuperscript{nd} Nov 2015 near 80 km (Talegaon)
Veh accident - 7th Nov 2015 near 82 Km (Talegaon)
Truck accident – 14th Jan 16 near 41 Km
Fire Related cases
Vehicle Fire – 23rd Jan 16 near 18 km
Vehicle Fire – 27th Jan 16 near 69 km (Talegaon)
Care
Care..
Training
Induction Training
EQUIPMENT FOR ERP

- AMBULANCES WITH DOCTORS        FOUR
- HEAVY DUTY CRANES OF 14 TON CAPACITY  FIVE
- LIGHT TOWING VEHICLES           TWO
- PULLER                           ONE
- NIGHT TIME RESOURCES
  - 1. JCB                          ONE
  - 2. DUMPER                       ONE
  - 3. WATER TANKER                 ONE
  - 4. LABOUR                       TEN
- QUICK RESPONSE VEHICLES         FOUR
MAINTENANCE

IMPLIES:

MAINTENANCE OF EXPRESSWAY AND OTHER ASSETS

INVOLVES ROUTINE

- CLEANING OF ROAD SURFACE, DRAINS, CRASH BARRIER, ROAD SIGNS ETC, ETC……
- CARE AND MAINTENANCE OF PLANTATION
- CLEANING AND REPLACEMENT OF TUNNEL LIGHTS
- MINOR REPAIRS OF ROUTINE NATURE
REPLACEMENT MAINTENANCE

• CRASH BARRIER
• CHAINLINK FENCING
• THERMO PLASTIC PAINTING CYCLICLY
• REPAIR OF CRACKS, POTHOLES AND JOINTS IN PQC.
• REPAIR AND RESURFACING OF PAVED SHOULDERS.
• REPAIR/REPLACEMENT OF SIGN BOARDS.
• REPLACEMENT OF CATEYES.
• REPAIR OF CDs, LONGITUDINAL GUTTERS AND MEDIAN DRAINS.
• REPAIR/REPLACEMENT OF TUNNEL LIGHTS AND CONTROL ROOM OPERATING SYSTEMS.
• REPLACEMENT OF KERB STONES, KM STONES, LIGHT CUTTERS, DELINEATORS ETC.
• REPLACING DAMAGED PLANTATION IN MEDIAN AND ROW.
METHODOLOGY AND RESOURCES

• COMBINATION OF DEPARTMENTAL AND OUT SOURCING.
• ROUTINE, GENERALLY DEPARTMENTALLY.
• SUITABLE AGENCIES FOR REPLACEMENT IDENTIFIED
• MAINTAIN INVENTORY OF CERTAIN FAST MOVING SPARES.

• RESOURCES
  
  HYDRAULIC ROLLER       ONE
  PAVER                  ONE
  DUMPERS                SEVEN
  MAINT VEHICLES         SIX
  SWEEPING MACHINE       ONE
  JCB                    TWO
  SKY CRANE              ONE
  DG SETS AT TUNNELS

NOTE: ONE SMALL FIRE TENDER FOR BUSH FIRES
Accidents

• Do Occur.....
• And why..
  > Human Error
  > Machine Error
  > Unforeseen
• Human and machine error contribute 95 to 96% .
• Only 4 to 5 % actually fall in the cat of accidents. Rest are avoidable.
• Total disregard to warning signs and boards, overspeeding, loss of control, falling asleep, fatigue, drunk and driving etc,etc. constitute human error. Simply put, indisciplined driving.
Mumbai Pune Expressway
Crane Service
ROAD SAFETY

- BRIFEN WIRE ROPE SAFETY BARRIER
  - 12 KM BRIFEN WIRE ROPE SAFETY BARRIER PROVIDED ON YCEW
Location: Km 1.770 MC

Location: Km 72.534 PC
ROAD SAFETY

➢ ROCKFALL MITIGATION

• EXPRESSWAY / NH-4 PASSES THROUGH SAHYADRI RANGES, WHICH ARE COMPOSED OF COMPACTED BASALT ROCK

• COMPACTED BASALT IS JOINTED

• RAIN WATER ENTERS THE JOINT AND MAY CAUSE SLIPPING

• NETTING AND BOLTING UNDERTAKEN TO PREVENT ROCKFALL DUE TO SLIPPAGE
THANK YOU