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SAFE RAIL GROUP



Social Audit on Improved Railway Infrastructure, Passenger Safety and Amenities on the Mumbai Suburban Rail Network

Audit by
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30 selected stations on Central, Western & Harbour lines

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Social Audit Survey of Mumbai Suburban Rail Network

Carried out and Reported by
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We have identified scope for potential change, based on our experiences of the Australian railway system that is required for both the safety and the convenience of commuters.

PREAMBLE

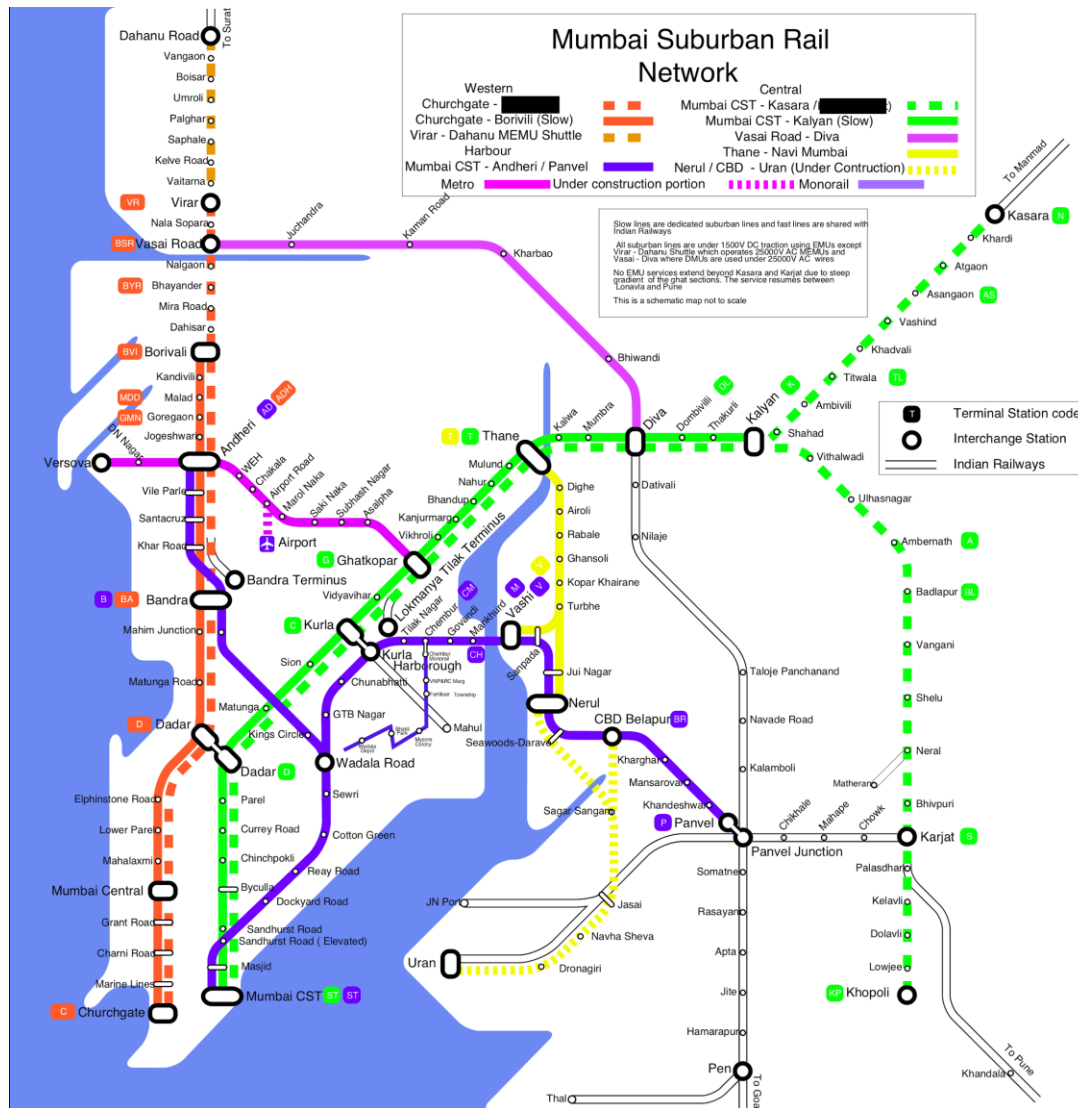
Mumbai's Suburban Railway System (MSRS) is Mumbai's most used public transport service and is operated by the Western Railway and Central Railway divisions. It is the lifeline of Mumbai, which is the financial capital of India. The Mumbai Suburban Railway System caters not only to citizens of Mumbai city but also people of Mumbai Metropolitan Region (MMR) and spreads over four districts of Maharashtra including the Mumbai City, Suburban Mumbai, Thane and Raigadh. Over 7.5 million¹ passengers use the system daily and it is bursting at the seams because of the large crowds and high usage.

The tremendous population growth in Mumbai Metropolitan Region (MMR) during the last 50 years has rendered the Suburban Rail Network inadequate to cope with the increased traffic. For example, during the past 50 years, the population of Mumbai has grown to 12.48 million in 2011 from 4.15 million in 1961, as per data from the Census of India. Though some efforts have been taken in the last 15 years to increase the capacity under the World Bank-funded Mumbai Urban Transport Project (MUTP), these efforts have fallen woefully short of targets and/ or requirements, and thus have not been able to substantially reduce the load on the Suburban Rail system.

Mumbai Suburban Rail System (MSRS) has a most pathetic record of about 3,600 annual fatalities for various reasons and almost the same number of serious recorded injuries. It has come down from a peak figure of little more than 4,000 annual fatality figure due to steps taken by the Railways following Bombay High Court Orders in response to the Public Interest Litigations (PILs) initiated by several citizens such as Mr Samir Zaveri, Dr Sarosh Mehta and other railway users associations.

It is an unpardonable systemic hazard that would have created a public outcry in other parts of the world resulting in a demand for immediate remedial measures.

1 MRVC data, represented in the Final Report of the Consultancy on Trespassing over Railway Tracks in Mumbai suburban area and remedial measures thereon by Sir JJ College of Architecture, July 2012.



(Image source: Wikipedia)

During peak hours, terming the suburban or local trains as being merely ‘overcrowded’ would be an understatement. Due to overcrowding, the MSRS is one of the most perilous public transport services in the world. Queries to the railways by various activists, under the Right to Information (RTI) Act, have revealed that 36,125 people died on the MSRS during the decade from 2001 to 2010. This means that on average nearly 10-12 people lose their lives on the killer tracks every day. An equally large number lose their limbs or are badly maimed in railway accidents and several more with

minor unreported injuries. The year 2015 has also begun inauspiciously with 291 deaths recorded in the month of January².

The current infrastructure falls hopelessly short of catering to the heavy density of passengers during peak hours. This has forced commuters to resort to dangerous, life-threatening alternatives. Thousands of commuters can be seen putting their life and limb in grave danger by riding with their feet precariously over the edge of the foot boards of the coaches.



Some of the major reasons for the enormous casualties on the Mumbai railway tracks have been attributed to the following:

1. A shockingly large gap that had opened up between the platforms and the train floorboard due to the introduction of new Siemens rakes under the World Bank funded MUTP (Mumbai Urban Transport Project). A number of commuters have lost their lives or limbs by falling into what became known as the “killer gap” leading to a huge public outcry;

2 Shodh.gov.in <http://shodh.gov.in/Summary.aspx>

2. Passengers crossing railway tracks due to inadequate and inconveniently located Foot over Bridges (FOB) being unmindful of the rapid train movement;
3. Many dwellers who live in shanties alongside the railway tracks crossing the tracks without paying heed to train movements;
4. Last minute changes in platforms of scheduled trains leading to a scramble by passengers to get to the right platform by crossing tracks in a hurry.

Over the past few years, the Mumbai Railway Vikas Corporation (MRVC) and Indian Railways have launched a major drive under the Trespass Control Project that includes fencing on both sides of tracks, installation of railings between tracks, new foot over bridges (FOBs), inter-connection of FOBs, escalators and creation of green patches to prevent people from crossing the tracks. Accessibility for persons with disabilities by means of elevators and/ or lifts is also being contemplated. The provision of lifts and barricading of track areas have not been audited primarily because the former has hardly been provided anywhere though planned, while the latter has been done to a large extent and has been the main reason for the 10% or so in drop in fatality figures in the past five years.

As per the Railway Schedule of Dimensions, the platform height from the top of the track rail is to be between 760mm and 840mm. With the floorboard level of suburban railway coaches being close to 1,200mm, the vertical gap has been between 360mm and 420mm, sufficient for a commuter to slip into and be injured or even get killed. Following a public outcry, the PIL, a media campaign and a *suo moto* High Court intervention, the Railways were forced to expedite minimising this gap by raising the level of the platform. A level of 920mm has been considered to be the maximum safe level and accordingly, in response to the Court Order, both WR and CR have undertaken to raise all platforms of all stations on the MSRS. This is being done by placing the edge precast concrete slab of about 1200 x 600 x 100mm thick, having circular projections to prevent skidding as shown in the pictures below. It was assumed for the purpose of the audit that whichever platform edge has been provided with these slabs, those platforms have been raised to the required levels. This does not mean that platforms raised by other tiles prior to the Court Order did not meet the criteria of the requisite height but those platforms have not been included in the audit. Dadar WR platform number 4 is one such example. A point to note is that despite raising the platform height, the vertical gap is still as much as about 300mm.



New Concrete Slabs

To understand the efforts taken, it is necessary to know the Mumbai Suburban Railway System largely from railway user perspective supplemented with the Bombay High Court directives. If the number of fatalities has decreased in the past five years, it is essentially due to nearly full implementation of one of the directives of the Court to barricade the railway track areas. This decrease has been a small figure of about 400, merely 10% of the then around 4,000 annual fatalities, as per the data from the Government Railway Police (GRP).

Adequate and desirable provision of public transport services is a prerequisite for any urban agglomeration of the scale and size of Mumbai. There should be a zero tolerance to the fatalities occurrence on the MSRS.

Safety of women passengers, who constitute about 20% of overall passengers carried, has been one of the issues troubling the suburban railways for quite some time. Railways claim to have taken some action like posting of female police at the stations and in the compartments reserved for women.

1. OBJECTIVE

1.1 The objective of the Social Audit was to physically verify and capture the impact of these changes, through a carefully chosen sample of 30 stations regarding the platform heights, vis-à-vis the High Court orders to find out the extent of steps taken and the effectiveness of the same. Additionally, another objective of the audit was to physically check medical facilities such as first aid kits, ambulances, stretchers etc. as inadequate medical facilities at stations has led to the loss of many lives during the golden hour following an accident.

1.2 This report also covers some aspects that have not been covered in the Court Orders like passenger conveniences available at various stations, the lack of some of which are also responsible for deaths and injuries on the tracks. The report also contains status of some of the passenger conveniences like the toilets and general cleanliness and sanitation at the stations with respect to the “Swachch Bharat Abhiyan” movement (Clean India Mission) initiated by India’s Prime Minister. Other passenger conveniences are also analysed such as signage; foot over bridges (FOBs), escalators / underpasses for passengers, adequacy of ticket booking windows, facilities such as Automatic Ticket Vending Machine (ATVMs), safety measures for women and encroachments on platforms and FOBs.

1.3 This Social Audit presents both short-term and long-term recommendations, which, if accepted and implemented, will inevitably reduce the number of fatalities per year by greatly enhancing the safety and convenience of travelling for commuters on Mumbai Suburban Rail Network.

2. SELECTION CRITERIA

The audit covered 10 stations each on the Western Railway (WR), the Central Railway Main Line (CR) and the Central Railway Harbour Line making a total of 30 stations. CRHL stations selected also had those Trans Harbour i.e. in the MMR (CRTHL). The selection was based on the following criteria:

- a. The first and last station on each line was included to ensure that the auditors travelled the length of each line and back;
- b. Stations that are used by a large number of commuters on a daily basis;
- c. Stations reporting a high occurrence of accidental deaths and injuries;
- d. Stations that have a high volume of passengers coming into Mumbai from outside city limits; and
- e. Important terminals or points of crossovers between the three lines and Metro Rail for Mumbai commuters as well as outstation trains.

Stations audited were:

Western Railway – Churchgate, Lower Parel, Dadar, Andheri, Borivali, Dahisar, Nallasopara, Virar, Boisar, Dahanu Road.

Central Railway –Parel, Dadar, Kurla, Kanjurmarg, Ghatkopar, Mulund, Thane, Mumbra, Diva, Kalyan.

Harbour Line – Chhatrapati Shivaji Terminus (CST), Sandhurst Road, Wadala, Chembur, Mankhurd, Vashi, Kharghar, Nerul, Koparkhairane, Panvel

3. PROCESS FOLLOWED

3.1 The audit team consisted of Leanne and Ricky. We were accompanied by a senior activist (Mr Sampath Shetty, Mr Chandrakant Suvarna and Mr Dharmesh Vyas). We made our observations based on a prepared questionnaire (See ANNEXURE A); we also met and interviewed Railway officials at most of the stations in order to gain more comprehensive data and for inputs on future plans. Data about a few stations was crowd sourced from activists.

3.2 The findings of the Social Audit are being presented in an extensive manner. For each of the stations audited, data relevant to the safety of commuters and commuter convenience have been documented. As mentioned above, these two aspects are the crux of the social audit.

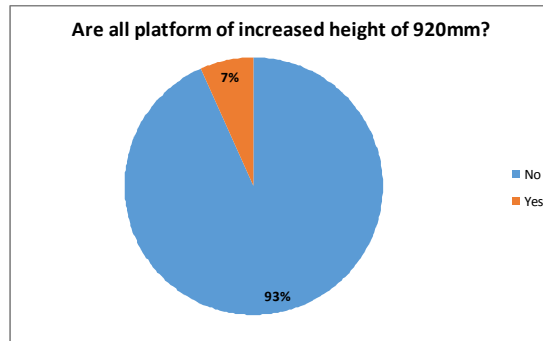
3.3 While we met officials at most railway stations and received inputs and cooperation from them, *Moneylife Foundation* did not get a response from top officials. Our innumerable attempts to have the General Manager of Central Railways, Mr Sunil Kumar Sood and the Chief Public Relations Officer (CPRO) Narendra Patil, grant us a meeting or answer queries that were repeatedly sent by email drew a blank. This was probably the only negative part of the report, because overall, it was a positive effort to help commuters on the Mumbai Suburban Rail Network. (See ANNEXURE B).

4. BROAD FINDINGS

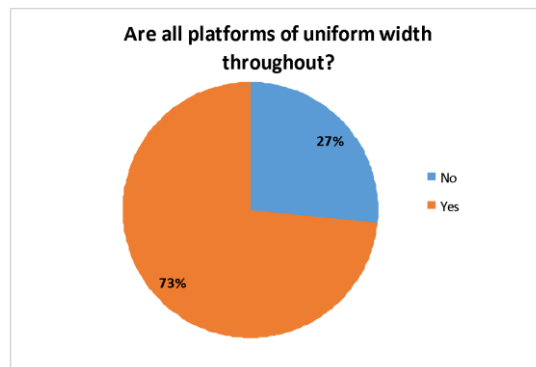
Key findings have been as follows (See Annexure C for detailed data on each station):

4.1 Though the Railways claim that they have increased the platform heights to 920mm, it is found that 93% of stations surveyed still do not have their platform heights increased i.e. at Dadar (Western), Dadar (Central), Parel, CST, Sandhurst Road, Wadala, Bandra, Andheri, Ghatkopar, Thane, Mumbra, Kalyan, Diva, Virar, Kurla, Chembur, Mankurd, Vashi, Nerul, Kharghar, Kanjurmarg, Panvel, Boisar, Nalasopara and Dahisar Stations, the platforms are yet to be raised.

4.2 At Churchgate, Dahanu Road and Borivali Station the work was in progress i.e. 10% of stations surveyed are currently working on increasing the platforms heights. This shows that although the Railways have initiated some efforts to raise the platform heights, the major part of the work is yet to be done as only 7% of stations surveyed are in line with the High Court Order.



4.3 73% of stations have platforms that are all of uniform width.



4.4 Railings between the tracks to prevent crossing were not present at Lower Parel, Central Dadar, Parel, Sandhurst Road, Bandra, Ghatkopar, Mumbra, Kalyan, Diva, Nerul, Kanjurmarg, Boisar & Virar stations i.e. 57% of stations that require the railings do not have them (13 out of 23). This means that only 43% of stations that require fencing have the railings to prevent commuters from crossing (10 out of 23). However, even where present, the railings are found inadequate as they did not extend the full length, such as at Thane, Kurla stations, or they had random gaps in the fencing, such as at Borivali station. This makes it easy for commuters to climb over the railing or walk around them. In any event, the height is inadequate, as discussed below in the recommendations.

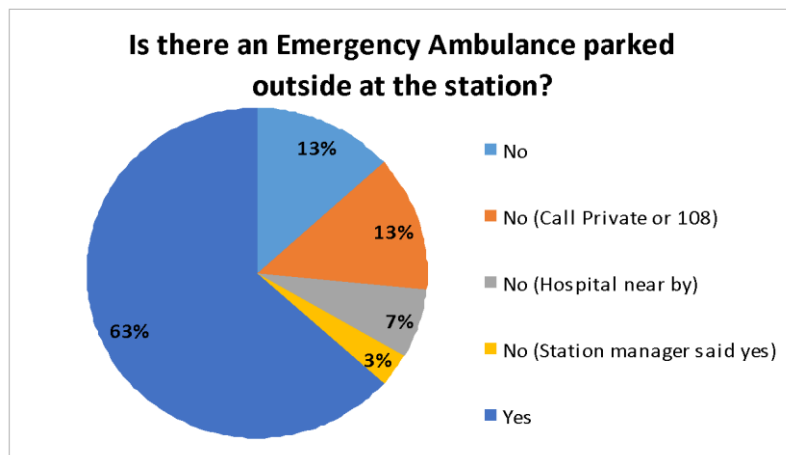


Lack of railings enables crossing of the tracks at Boisar Station



Opening in railing at Borivali Station

4.5 First aid boxes were available at most of the stations. However, at many stations medicines and other supplies in the box were inadequate and/or inconsistent between the stations in the sample. In addition, there was no awareness among officials on how to use these. Wheelchairs and stretchers were also found to be inadequate and unhygienic.



4.6 Emergency Ambulances were found parked outside at Churchgate, Lower Parel, Central Dadar, Parel, CST, Wadala, Bandra, Andheri, Ghatkopar, Thane, Mumbra, Kalyan, Kurla, Mankurd, Vashi, Nerul & Borivali Station i.e. 63% of stations had ambulances parked outside the premises.



Ambulance at Lower Parel Station

4.7 Police presence was not very evident. Where present, they looked bored and were not performing their functions e.g. keeping out beggars and hawkers etc. Mere presence was found to be insufficient.

4.8 Lady police were inconspicuous with their absence at most of the stations. Where present, they were not available near the ladies compartments.

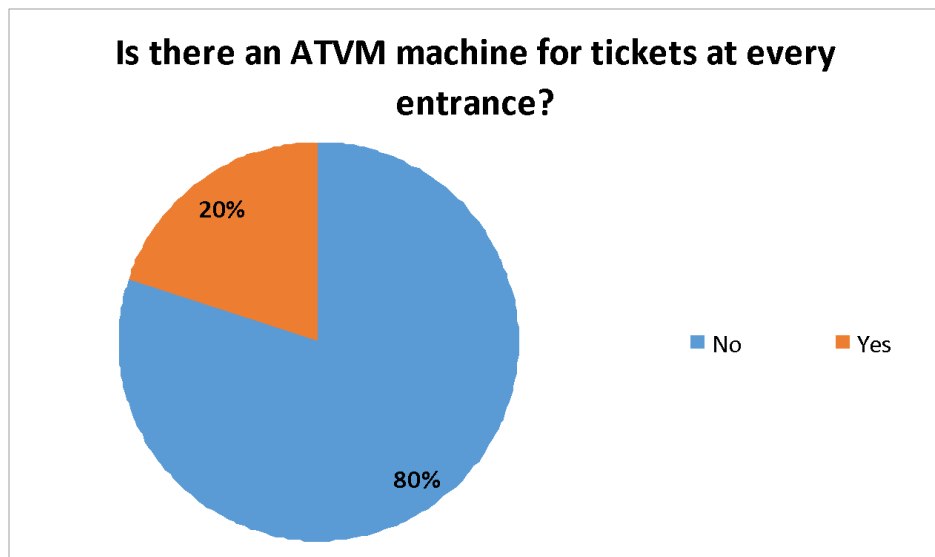
4.9 With the introduction of 12 coach trains, it is necessary that each station must have at least three Foot over Bridges (FOBs) / subways considering the number of passengers and increased length of platforms. Although the Railways have initiated action to provide additional FOBs at stations where it has been deemed necessary to help passengers travel without the need to get down on the tracks, 67% of stations do not have the adequate number of FOBs as they only have 1-2 FOBs/ subways available for commuters e.g. at Lower Parel, Parel, CST, Sandhurst Road, Wadala, Mumbra, Diva, Chembur, Mankhurd, Nerul, Kharghar, Kanjurmarg, Panvel, Dahanu, Boisar, Virar, Koparkhairane & Dahisar stations. At Parel, it was observed that out of 2 FOBs, only

South end FOB is being used, which was unable to cope up with the dispersal of passengers alighting.

4.10 Escalators were found only at 17% of stations i.e. Dadar (Western), Dadar (Central), Andheri, Thane & Kalyan stations. It was also observed that only one or two escalators were found at most of these stations, which gives a feeling that these are provided more as a novelty than necessity. There seemed to be no clarity on criteria used to determine the station and the particular platform and FOB and it looked like they were chosen randomly. In addition, there was no signage about where escalators are present.

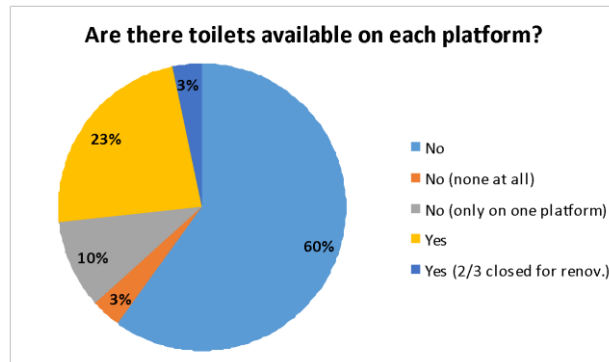
4.11 Most train stations have both official and unofficial entries. All unofficial entries must either be made official or be closed off to commuters due to the dangers involved in maintaining those entries.

4.12 Although railways have introduced ATVMs with the purpose of reducing the queues at the Booking Offices at various stations, ATVMs provided were mostly clustered near the booking office and were not provided at every entrance. There was hardly any usage of these ATVMs even where large queues of 30-50 persons were observed at many stations. As such, the majority of the ATVMs were either lying idle or were dysfunctional. We understand that Railways earlier had Coupon Validating Machines (CVMs) at all stations, which were extensively used. However, Railways discontinued them recently due to their own problems. This has resulted in an increased load at the Ticket Booking windows resulting in long queues.

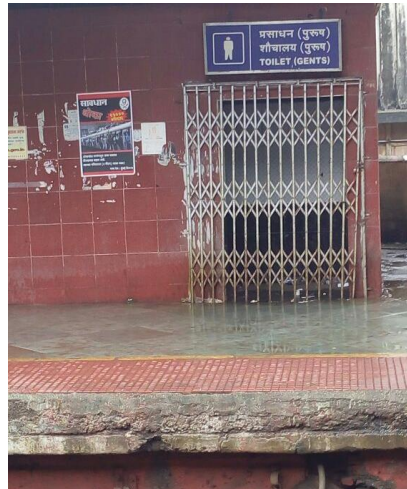


4.13 There were no indicator/ boards with the name of the station at most stations. Indicators mentioning destinations, departures and the status of fast or slow trains (at least of the next two trains arriving at given platform) were also not provided at the entrance of each station. There were also no information panels or screens at points where external pedestrian skywalks are connected to FOBs. The electronic indicators were mostly near the booking counters.

4.14 Most of the platforms did not have toilets. The few platforms that did have toilets had them located at the desolate far end of the long platform and very poorly illuminated making it unsafe to access especially at night and more so for women.



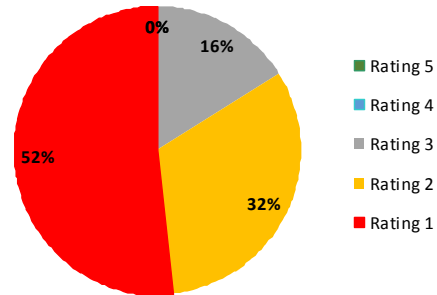
4.15 The quality of sanitation of the toilets was found to be extremely poor at all stations and were stinking. The toilets were found locked on some stations.



Locked toilet block at Mulund Station on Platform 4

4.16 The quality of general cleanliness and sanitation of the stations was also found to be generally poor. Only 17% of stations had an acceptable cleanliness and sanitation level i.e. at Lower Parel, Sandhurst Road, Vashi, Nerul & Kharghar.

What is the cleanliness level of the station on 1 (lowest) to 5 (highest) ?

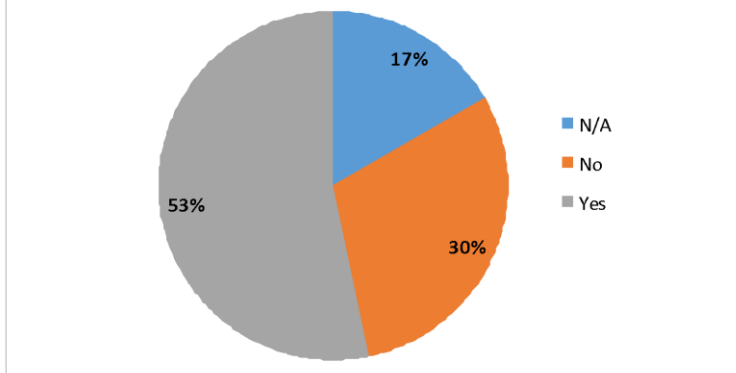


4.17 The signage at all stations was found to be woefully inadequate. There were no signs for showing location of Exits, Toilets, Station Master Office, Ticket Booking office etc. However, at several stations advertisements, legal and illegal, cluttered the existence of those few useful signs.

4.18 Physically handicapped and senior citizen facilities are basically non-existent. This has been managed quite poorly.

4.19 Hawkers and beggars were found on FOBs at 53% of stations i.e. at Parel, Wadala, Bandra, Andheri, Ghatkopar, Thane, Mumbra, Kalyan, Diva, Kurla, Chembur, Mankhurd, Nerul, Nalasopara, Virar & Borivali stations. They were causing a hindrance for the smooth movement of passengers.

Are there Hawkers or beggars on the FOBs?



5. RECOMMENDATIONS

As students of the University of Western Sydney, we acknowledge that our recommendations are based primarily on the standards we have observed on Australian railway networks. Since the most important priority of any public transport system is the basic safety of commuters, our initial recommendations are on safety issues followed by recommendations based on passenger conveniences. In comparison to the safety standards required of Australian railways, the MSRS is found to be severely inadequate.

5.1 It is observed that for many of the stations the platform height is still not raised to 920mm. Hon'ble Bombay High Court orders have stated that all platforms must have an increased height of 920mm by December 2015. If this is not done in time, the Court must impose severe penalties on Railways and make it clear that this is completely unacceptable. Railways must go all out to ensure that the set deadline is adhered to.

5.2 All entrances to station property must be official. Any unofficial entrances should either be closed or should be made official. E.g. at Kalyan, there are 6 official entrances and 4 unofficial entrances. At Diva, the only entrance is an unofficial one. There is a cement level crossing, which the public and commuters must use to enter or exit the station. This means that the Municipal Corporation has basically demanded risky behaviour from commuters, which is completely unacceptable. Two official FOB entries must be built for the public and commuters. The end of platforms should be blocked off so people cannot cross the tracks in the current manner.



Cement crossing found at Diva

Furthermore, we also saw cars crossing the tracks at the level crossing. A Railway official mentioned that this crossing must be shut down since as there a bridge just 3-4 km away.

5.3 However, if the cement level crossing is to be retained, more safety precautions are necessary. For example, trains entering the station must slow down to 15km/hr; just sounding the horn is insufficient and shows a disregard for human life. Furthermore, the railways should be more proactive in stopping people from crossing the track when trains are approaching.

5.4 There should be proper co-ordination between the Railways and local authorities to ensure proper entry/exit of passengers. At larger stations, proper Station Area Traffic Improvement Schemes (SATIS) should be implemented for proper traffic management around the station.

5.5 FOBs at stations play a crucial role in avoiding casualties on tracks due to trespassing and as such, there must be adequate FOBs available along the length of the platform regardless of the number of commuters that use any particular station everyday. We suggest FOBs should be available at roughly every 65m i.e. 4 FOBs for each 12 coach train. FOBs also need to be sufficiently wide to cater to the rush of passengers. E.g. Dadar station needs more FOBs and wider ones given the large number of daily commuters that it caters to across two railway lines. The number of FOBs to be constructed should be determined by keeping in mind the convenience and safety of commuters.

5.6 FOBs need to start and end outside the perimeter of the station so that the general public can also access the station. It is insufficient for the FOBs to exist only for commuters already inside the station to change trains. Where municipal FOBs are not available, people tend to cross tracks to avoid being caught by a ticker checker (TC).

5.7 FOB staircase entrances should not be too close to the trains and should be placed more strategically to avoid crowding on platforms and forcing passengers very close to passing trains. E.g. at Parel and Kanjurmarg stations, on Platforms 1 & 2, the exit is far too close to incoming trains and poses a significant danger to passengers when there is a big crush of people near the stairs leading to the FOB.

5.8 Escalators must be provided on all platforms for each FOB for the convenience of commuters, specifically for the disabled and elderly. Similarly, for stations where access

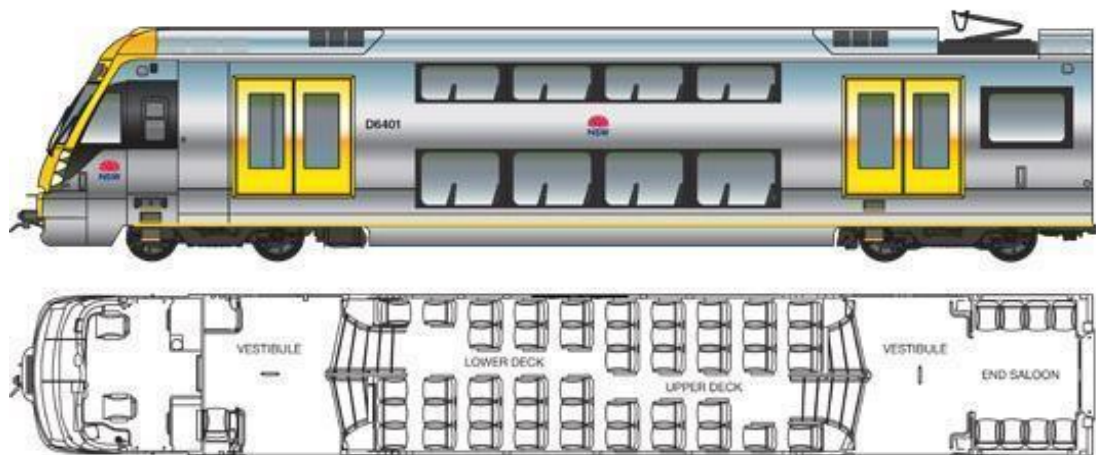
from outside is via FOBs, escalators should also be available. Alternatively, if there is not enough space for escalators to be built, lifts should be installed, at least to cater to the disabled and elderly.

5.9 Hawkers and beggars should not be permitted on FOBs.

5.10 Railings between tracks are often non-existent. The railways need to ensure that railings are put in place between all tracks.

5.11 Closed doors should be made mandatory as the safety of commuters should be considered of utmost importance. Even if commuters complain that they cannot reach work on time, safety and the lives of the commuters dictate that the doors should be closed.

5.12 Double-Decker trains could be a good idea considering the large volume of people that the MSRS transports daily. Despite having a much lower number of people, all



Australian trains are of this configuration.

Layout and design of Sydney double-decker train



Inside a Sydney double-decker train

5.13 Police need to have a much more active presence on the platforms not only for ensuring safety of passengers but also to give them assurance that they are in safe place. Also they must ensure that there are no anti-social elements e.g. hawkers and beggars at stations and in trains.

5.14 Police roles should be clearly defined. Passengers are confused about the exclusive roles of the Railway Protection Force (RPF) and the Government Railway Police (GRP) and their specific role and responsibilities, or who need to be contacted for which issue. This needs to be clarified to the public.

5.15 Police presence should be more actively felt, as they currently seem to serve only a decorative function. For example, the usage of metal detectors and bag checking machines is redundant if there are no officers to act on negative signals. Currently, metal detectors are being misused and are a waste of public funds as it only serves as a headcount of the people entering station premises. Dangerous activity like crossing the tracks must have clearly defined penalties that should be enforced.

5.16 We recommend that there should only be one police authority as there is currently an overlap in duties. Railway Protection Force (RPF) is responsible for the protection of railway property while Government Railway Police (GRP) is there for law and order enforcement. We believe this only leads to an overlap of duties does not have any crucial benefit. A single authority would be much more convenient for the passengers.

5.17 Provision of Emergency Medical Rooms (EMRs) should be implemented at selected stations as early as possible in line with the Hon'ble HC order. Requirements of medical supplies should be clearly defined and must be enforced. It is crucial that all stations have appropriate medical supplies.

5.18 Stetchers must be maintained properly and must meet requisite hygiene standards. E.g. at Nallasopara Station, the metal stretchers had dried blood on it. This can be potentially deadly for those injured with open wounds.



Stretchers at Mumbra Station

5.19 Stretchers must be of uniform material at all stations; instead some stations have metal stretchers while others have fabric stretchers. Stretchers made of lighter, strong and rigid materials such as FRP or aluminium are desirable. Use of flexible stretchers to carry accident victims can cause further harm to them during transportation.

5.20 The number of stretchers should be mandated on the basis of the average number of accidents or the number of passengers using each station. They are currently inadequate.

5.21 All stations must have portable first aid kits in proper condition and readily available in the event of an accident. There must be a regular audit (e.g. weekly) to ensure that all the items in the kit are available and medicines are within the expiry date. While there is a mandatory standard about the content of first aid kits we found wide disparities.

5.22 Some mobile medical supplies are under lock and key (e.g. at the CST, it took over 5 minutes to locate the key and retrieve the supplies). This increases the response time when accidents occur, as the Station Master needs to find the right key and open the lock. Portable medical supplies should be in an easily accessible place.

To improve utilization of ATVMs, the following steps can be considered.

5.23 At least two ATVMs must be present at each entrance so that traffic can be disbursed as there is no need for all the passengers holding ATVM cards to go to the Booking office on the concourse. Also consider the usefulness of ATVMs on platforms.

5.24 A discount of about 20-30% for tickets purchased via the ATVMs may lead to greater usage. At present only a 5% discount is provided which is not attractive enough.

5.25 Instruction sheets should be placed on the side of ATVM machines for those who have no knowledge of usage of ATVMs as our general understanding is that ATVMs are quite a new phenomenon for commuters.



AVTMs at Mumbra Station

5.26 For tickets that can be purchased via ATVMs, phasing out the availability of those tickets from the Ticket Booking Offices could be a way to encourage usage of the ATVMs for suburban travel. A system of having facilitators to purchase tickets through ATVMs can be re-introduced. This will increase usage of ATVMs and reduce need of Booking windows and clerks.

5.27 In Sydney Australia, we use OPAL cards, which can be topped up at certain retailers or even topped up online. At each Sydney station, there is an OPAL card reader where individuals “tap on” when they enter the station, and “tap off” when they reach their destination. The fare is calculated based on the distance travelled and this has greatly increased the efficiency of railway operations by reducing the need to have people in the ticket offices as well as having the effect of reducing the time needed for commuters to line up and purchase tickets. Consider the potential this system of purchasing tickets can have on the efficiency of the MSRS.



OPAL Card System in Sydney Australia

5.28 Railways should ensure reduction in downtime of an ATVM to a maximum of 24 hours.

5.29 The number of windows open at any time must be sufficient to reduce queuing time to a maximum of 3 minutes. E.g. at Mumbra station, the number of windows open was insufficient due to the large volume of people queuing to purchase the tickets. Interestingly enough, many of the people opted to wait in line for over 15 minutes rather than use an ATVM. This could be due to a lack of knowledge of ATVMs and how to use them. By adopting the above strategies, ATVMs could become a more important aspect of travelling via railways.

5.30 Where possible, toilets of adequate capacity should be provided in centralised locations i.e. the west and/or east side of the station. Otherwise, toilets must be provided on all platforms.

5.31 At Nallasopara Station, there is only one toilet, which is insufficient for such a crowded station. The only toilet is actually outside the station, off Platform No 1.

5.32 Toilets should not be placed near the end of the platform to ensure safety. E.g. at Parel Station, the toilet entrances were very close to the edge of platform so incoming trains pose a great danger to those going in and out of the toilets.

5.33 The entrance and exit must be separate e.g. at CST people going into the toilets often clash with those leaving the same. This can be very inefficient when there is a high volume of commuters using that particular facility.

5.34 Number of urinals and women's toilet facilities should be based on a proper survey of the number of commuters using them. They should be handed over to NGOs/private parties for proper maintenance, who can charge a small fee to recover the expenses.

5.35 Greater importance should be placed on the station signage for effective communication to commuters. This will reduce any confusion and thus commuters will be much quicker in finding what they are looking for.

5.36 Most stations did not have adequate signage e.g. Churchgate Station. However, there are many large and colourful advertisements/ hoardings. The advertisements would often be much larger and more colourful than the station signs. This should not be so. There should be a limit on advertising in railway stations and any advertisements should not block or take focus away from station signs.

5.37 If advertisements are put up illegally, then the police on duty should be responsible for actively removing such items from railway property. Vandalism of public property should not be tolerated – a strong approach needs to be taken against illegal advertising. Fines must be levied under the Defacement of Property Act to deter companies from illegally putting up signs.

5.38 All entrances should have a sign that displays the station name clearly. All entrances should have signage to impart information regarding the location of various facilities such as Ticket Booking Office, Toilets, Station Master's Office, Escalators etc. All entrances should also have signage for quick access to information. For example, in Sydney Australia all entrances have boards that show which trains are going to which platform (please see below). This decreases inefficiency and allows commuters to know exactly which platform to go to and which train they will need to catch.

5.39 The above signs must also be placed in all FOBs so that any commuters changing lines are aware of where they need to be going. This will decrease travel time, as currently commuters must go to the entrances to look for signs regarding which platform they should be on.



Indicators at the entrance at Sydney's Central Station

5.40 Platform numbers must be displayed along all FOBs and subways so commuters do not need to guess the platform they are entering e.g. at Virar Station. Platform numbers also must be displayed regularly along the platform in large visible signs.

5.41 Signboards should also be present on all platforms. Current signboards have Hindi on one side and English on the other. This is extremely inconvenient for commuters, as they need to walk around to the other side. Instead, Hindi and English signboards can be made to alternate. In Australia, there are roughly 3-4 signs boards, like the ones below, that are spread out along the platform. We suggest these signs along all platforms. Please refer to this video: <https://www.youtube.com/watch?v=z8BwYYGM6M>



Platform indicators on all Sydney train platforms

5.42 Signage along platforms should include directions to the Station Master's office, toilets location etc. and not at the location of these offices or facilities. E.g. at Khargar station, there were no signs at all as to where the Station Master's office was. After asking around, we were directed to a room *behind* the Booking Office.

5.43 In the event of construction, loose tiles, water puddles, depressions or raises in the platform height or any other such hazards, signs should be put out to warn the public. However, if signs are insufficient e.g. a large area of loose tiles or depressions in the ground on the platform, that area should be cordoned to avoid tripping or slipping.



Hazardous Construction at Borivali Station

5.44 Signboards stating the name of the station need to be larger or made more prominent. It is often hard to distinguish against the backdrop of advertising. Also at Khargar station, there are no signboards in English – this must be updated.

5.45 More facilities such as ramp and handrails are required for the disabled and the elderly.

5.46 Cleaners should be hired on a regular basis (e.g. daily or as required) to clean the station, the platforms and the toilets especially to maintain a required minimum standard. Considering the number of people that the MSRS caters for, hiring of full time cleaners should be considered. Proper supervision and implementation needs to be carried out.

5.47 The Station Master should take great pride in the overall cleanliness of the station and should be made responsible for this. To enforce this, the railways could collect feedback from commuters and reward or honour the best maintained stations every

year. The Station Master of the winning station could potentially get a reward or a promotion for such an honour.



Hazardous & Unhygienic Subway at Dahisar

5.48 There should be trash cans placed at regular intervals on the FOBs and the platforms. During our audit, we found very few bins so we had to carry our trash quite a distance. The few bins we found were poorly maintained and so full of garbage that it had evidently not been emptied for a few days. Cleaners should be required to empty the trash cans regularly.



Cleaning the tracks at Kalyan Station

5.49 Commuters and staff should be penalised for littering with a hefty monetary amount. This will deter individuals from littering.

5.50 Spitting should also be frowned upon. A monetary penalty for spitting should also be enforced.

5.51 All stations under the MSRS should be under one management to facilitate cohesiveness. It is not logical for each different line to be under different management especially when each of the management systems differs so greatly, as this prevents standardisation and uniformity and creates co-ordination problems.

CONCLUSION

It is evident that the MSRS requires many improvements and/or changes in order for commuters to enjoy the fundamental right of safe and comfortable travel they deserve while using public transport.

By implementing the changes we have recommended here in the report, we believe that the MSRS will be able to reduce substantially, if not eliminate fully, the number of casualties on the tracks and make the daily commute much more comfortable, which will be much appreciated by all commuters and also bring it in line with international standards.

ANNEXURE A

Social Audit Survey Sample Questionnaire

Name of the Station:

Number	NUMBER
Are all platform of increased height of 920mm (If no, specify platform number/s)	Yes/ No
Are all platforms of uniform width throughout? (If no, specify platform number/s)	Yes/ No
How many foot over-bridges (FOBs) are present?	NUMBER
Are there hawkers, beggars on the FOBs? (If Yes, specify)	Yes/ No
How many escalators are there for FOBs?	NUMBER
Were the functional (If no, specify platform number/s)	Yes /No
How many entrances are there for the station?	NUMBER
Is there an Automatic Ticket Vending Machines (ATVM) at the every entrance?	Yes /No
Is there indicator at every entrance?	Yes /No
How many ticket-booking windows are there?	NUMBER
How many are open at any given time?	NUMBER
How many people were in queue on an average?	NUMBER
How may ATVMs are there on the station?	NUMBER
How much usage you observed at the ATVMs?	COMMENT
How many were non-functional?	NUMBER
Are there toilets available on each platforms?	Yes / No

Number	NUMBER
If Yes, where is the location?	End of the platform/ Middle of the Platform/ In the concourse/ Not Sure
Do you find the signage and directions adequate for 1. Ticket Booking office: 2. Station Master's office: 3. Toilets: 4. Area directions at exits: 5. GRP/RPF Offices: 6. Escalators:	Yes /No Yes /No Yes /No Yes /No Yes /No Yes /No
If not adequate, what are your suggestions	COMMENT
Are there railings between tracks to prevent crossing by commuters?	Yes /No
Did you find presence of Police on the station?	Yes /No
Where there medical facilities available? (First aid box, stretcher etc.)	Yes /No
Is there an Emergency Ambulance parked outside at the station?	Yes /No
Is there woman police staff available on platform near women coach?	Yes /No
What is the cleanliness level of toilets on 1 (low) to 5 (highest) scale?	NUMBER
What is the cleanliness level of the station on 1 (low) to 5 (highest) scale?	NUMBER

ANNEXURE B

Questions sent to the GMs of Central and Western Railway, which remained unanswered...

- 1 Are you considering double decker trains? If yes, when do you think it will be a possibility? In Australia, all trains have two levels.
- 2 Is there any plan for additional lines/tracks to be added alongside the new ones? Or potentially new stations altogether?
- 3 From my understanding, the Railways have clear boundaries and no work can be done on their property by anyone else without its permission. We believe that the Railways should be responsible for all rubbish that falls into their property and should dispose of it accordingly. What do you think of this?
- 4 Do you think air rail or elevated rail would be a possibility? If yes, what are your thoughts on it, and when do you think it can become a reality?
- 5 From what we have seen, signage is severely inadequate. Are there limitations placed on advertising e.g. the amount of advertising allowed, the size of advertisements or any ratio limits to be placed on advertising vs. station signage? Do you think that this issue of advertising vs signage should be identified and fixed?
- 6 As tourists here, we have also had issues with indicators at the entrances. I am not too sure of the number of tourists you have here in Mumbai, but I believe indicators at entrances are very important for ease of access to the stations. Furthermore, some of the entrances are quite hard to identify. We were only able to figure it out as we had a local with us.
 - a. What do you think of mandatory indicators at all official entrances?
 - b. We have also been aware of a large number of unofficial entrances, which we believe significantly contribute to making the stations much more hazardous for commuters by almost encouraging dangerous and risky behaviour. We understand that these are mostly for convenience. However, we believe that a line should be drawn somewhere. What do you think of getting rid of all unofficial entrances or alternatively, making those entries official?

- 7 We observed that ATVMs utilization by passengers has been extremely low and negligible. We feel that ATVMs should exist at every entrance to the station including skywalks, which can help in increasing their utilization. What is your say on this? We would also like to know whether any survey was being done to assess the number of ATVMs required at each station? Also are you able to reduce your ticket counters after introduction of these ATVMs?
- 8 From our understanding, different bodies manage the different lines (e.g. Western Line, Central Line & Harbour Line). What do you think of only one body to manage the lines that run within the Mumbai region?
- a. If this is not a possibility, we would suggest that a minimum standard be maintained between all the lines. Methodologies should be very similar so commuters do not have to bear such changes and differences between the lines. For example, the way that the coaches are positioned should be uniform between all trains on the Western and Central Lines. What do you think of this?
- 9 How many stations have you completed fencing for? Is it possible to increase the height of the fencing so that people are unable to cross it?
- 10 The absence of FOBs concerns us especially in situations like that at Diva station.
- a. What do you think of the building of a bridge for safe access? We believe the bridge should start from outside the perimeters of the station to give the common person access to the station as well, not only the commuters that are already in the station.
- b. Furthermore, the entrances are unofficial ones and are the ONLY entrances. What do you think of this and how can this be changed?
- 11 Toilets and platform cleanliness has an average rating of 1 (one), the lowest in our ranks, compared to Australian standards. Is the Station In-Charge required to ensure proper maintenance of the public toilets? If not, we believe they should be, and cleaners should be required to visit the public toilets frequently to maintain a better standard. What do you think of the practicability of this?
- 12 How many times have you visited far away stations like Dombivali, Mankhurd, Virar over the past 12 months?
- 13 One of our suggestions is to have a first aid kit be fixed on every platform. What do you think of this?
- 14 We believe that closing doors should be mandated regardless of whether commuters wish that to be done. This is a safety measure and even if commuters complain that they will be late to work, we believe that their safety and the value of their lives should be a greater consideration. What do you think of this?

ANNEXURE C

Station Name	Churchgate	Lower Parel	Dadar West	Andheri	Borivali	Dahisar
No. of platforms	4	2	5	9	9	4
Are all platform of increased height of 920mm? If not, specify platform no.	No. 1 & 4	Yes	No. All.	No. All.	No. 2 & 3 in progress	No. All.
Are all platforms of uniform width throughout? If not, specify platform no.	No. 4.	No. All.	No. All.	Yes	Yes	Yes
No. of FOBs	1 underpass	2	4	3	3	1
Are there hawkers/ beggars on the FOBs?	N/A	N/A	No	Yes	Yes	No
No. of escalators for FOBs	0	0	1	7	0	0
Were all the escalators functional?	N/A	N/A	No	Yes	N/A	N/A
No. of entrances for station	5	2 (Official) 1 (Unofficial)	6	5	3 Official 3 unofficial	6
Is there an ATVM at every entrance?	No	No	No	No (Only 3)	No	No
Is there an indicator at every entrance?	No	No	No	No	No	No
No. of ticket booking windows	16	8	21	41	29	7
No. of ticket booking windows open at any given time	7	3	11	20	15	7
Average no. of people per window	13	40	40	30	10	6
Total no. of ATVMs	14	6	27	27	39	8
ATVM usage	0	1 of 6	16 of 27	15 of 27	6 of 39	0
No. of non-functional ATVMs	0	3	0	0	2	0
Toilet availability on each platform	Yes	No (only on platform 1)	No	No	No	No
Presence of railings between tracks	N/A	No	Yes	Yes	Yes	Yes
Were police present?	Yes	Yes	No	Yes	Yes	No (SM said yes)
Are there medical facilities available (first aid box, stretcher etc.)?	Yes	Yes	Yes (SM office was closed)	Yes	Yes	Yes
Was there an Emergency Ambulance?	Yes	Yes	No	Yes (2)	Yes (2)	Yes
Was women police staff available on every platform near women coach?	No (Near concourse)	Yes	Yes	No	No	No
Cleanliness level of toilets on 1 (low) to 5 (highest) scale?	1	1	1	1	1	1
Cleanliness level of the station on 1 (low) to 5 (highest) scale?	1	3	2	2	1	1

Station Name	Nallasopara	Virar	Boisar	Dahanu	CST	Parel
No. of platforms	4	8	3	5	7	4
Are all platform of increased height of 920mm? If not, specify platform no.	No	No	No. All.	No. 4 & 5.	No. All.	No. All.
Are all platforms of uniform width throughout? If not, specify platform no.	Yes	No. All.	Yes	Yes	Yes	No. All.
No. of FOBs	3	2	2	2	1	2
Are there hawkers/ beggars on the FOBs?	Yes	Yes	No	No	N/A	Yes
No. of escalators for FOBs	0	0	0	0	0	0
Were all the escalators functional?	N/A	N/A	N/A	N/A	N/A	N/A
No. of entrances for station	6	4	2 (Official) 1 (Unofficial)	2 (Official) 1 (Unofficial)	2	2
Is there an ATVM at every entrance?	No	Yes	No	No (East side has none)	No	No
Is there an indicator at every entrance?	No	No	No	No	No	No
No. of ticket booking windows	10	16	4	5	23	6
No. of ticket booking windows open at any given time	4	10	2	3	8	2
Average no. of people per window	20	8	1	6	10	2
Total no. of ATVMs	23	19	3	3	17	3
ATVM usage	1 of 23	5 of 19	0	0	4 of 17	0
No. of non-functional ATVMs	0	1	0	0	5	0
Toilet availability on each platform	No	No	Yes	Yes (2/3 closed for dismantle)	No	No
Presence of railings between tracks	Yes	No	No	N/A (Not Needed)	N/A	No
Were police present?	No (SM said yes)	No	Yes	No	Yes	No
Are there medical facilities available (first aid box, stretcher etc.)?	Yes	Yes	Yes	Yes	Yes	Yes
Was there an Emergency Ambulance?	No (SM said yes)	Yes	No (Call Private or 108)	No (Call Private or 108)	Yes	Yes
Was women police staff available on every platform near women coach?	No (SM said yes)	No	No	No	No	No
Cleanliness level of toilets on 1 (low) to 5 (highest) scale?	1	1	1	1	2	1
Cleanliness level of the station on 1 (low) to 5 (highest) scale?	1	1	2	2	1	1

Station Name	Central Dadar	Kurla	Kanjur Marg	Ghatkopar	Mulund	Thane
No. of platforms	6	8	2	4	8	11
Are all platform of increased height of 920mm? If not, specify platform no.	No. All.	No. All.	No. All.	No. All.	No. 5.	No. All.
Are all platforms of uniform width throughout? If not, specify platform no.	Yes	No. All.	Yes	Yes	No. 5.	Yes
No. of FOBs	4	4	2	3	3	3
Are there hawkers/ beggars on the FOBs?	No	Yes	No	Yes	Yes	Yes
No. of escalators for FOBs	2	0	0	0	2	2
Were all the escalators functional?	Yes	N/A	N/A	N/A	Yes	Yes
No. of entrances for station	3	4 (Official) 1 (Unofficial)	2	5	4	4
Is there an ATVM at every entrance?	No	Yes	Yes	No	Yes	No
Is there an indicator at every entrance?	No	No	No	No	Yes	No
No. of ticket booking windows	40	11	9	18	More than 10	17
No. of ticket booking windows open at any given time	19	5	5	5	7	8
Average no. of people per window	5	12	15	10	15	50
Total no. of ATVMs	16	20	8	8	3	25
ATVM usage	4 of 16	4 of 20	0	5 of 8	3	17 of 25
No. of non-functional ATVMs	2	4	2	1	None	2
Toilet availability on each platform	No	Yes	No (none at all)	Yes	No	No
Presence of railings between tracks	No	Yes (Not full length)	No	No	No	Yes (Not full length)
Were police present?	Yes	Yes	Yes (Only 1)	No	No	Yes
Are there medical facilities available (first aid box, stretcher etc.)?	Yes	Yes	SM Couldnt Find	Yes	No	Yes (Inadequate)
Was there an Emergency Ambulance?	Yes	Yes	No	Yes	No	Yes
Was women police staff available on every platform near women coach?	No	No	No	No	No	No
Cleanliness level of toilets on 1 (low) to 5 (highest) scale?	2	1	1	1	1	1
Cleanliness level of the station on 1 (low) to 5 (highest) scale?	2	1	1	1	1	1

Station Name	Mumbra	Diva	Kalyan	Sandhurst	Wadala	Chembur
No. of platforms	2	2	8	2	4	2
Are all platform of increased height of 920mm? If not, specify platform no.	No. All.	No. All.	No. All.	No. All.	No. All.	No. All.
Are all platforms of uniform width throughout? If not, specify platform no.	Yes	Yes	Yes	Yes	Yes	Yes
No. of FOBs	2	2	3	1	2	2
Are there hawkers/ beggars on the FOBs?	Yes	Yes	Yes	No	Yes	Yes
No. of escalators for FOBs	0	0	2	0	0	0
Were all the escalators functional?	N/A	N/A	Yes	N/A	N/A	N/A
No. of entrances for station	2 (FOB Based)	2	6 (official) 12 (Unofficial)	2	1	7
Is there an ATVM at every entrance?	No	No	No	No	Yes	No
Is there an indicator at every entrance?	No	No	No	No	No	No
No. of ticket booking windows	8	3	21	5	4	11
No. of ticket booking windows open at any given time	2	2	7	3	3	7
Average no. of people per window	50	4	8	5	50	25
Total no. of ATVMs	9	6	23	5	6	6
ATVM usage	5 of 9	1 of 3	6 of 23	2 of 5	2 of 6	4 of 6
No. of non-functional ATVMs	3	0	0	1	4	2
Toilet availability on each platform	No	No (only one platform)	Yes	No	No	Yes
Presence of railings between tracks	No	No	No	No	Yes	N/A
Were police present?	Yes	Yes	Yes	No	Yes	Yes
Are there medical facilities available (first aid box, stretcher etc.)?	Yes	Yes (Bag)	Yes (Insufficient)	Yes	Yes (Inadequate & Unhygienic)	Yes
Was there an Emergency Ambulance?	Yes	No (Hospital near by)	Yes	No	Yes	No
Was women police staff available on every platform near women coach?	No	No	No	No	No	No
Cleanliness level of toilets on 1 (low) to 5 (highest) scale?	1	1	1	1	1	1
Cleanliness level of the station on 1 (low) to 5 (highest) scale?	1	1	1	3	2	2

Station Name	Mankurd	Vashi	Kharghar	Nerul	Koparkhairane	Panvel
No. of platforms	2	8	4	5	4	4
Are all platform of increased height of 920mm? If not, specify platform no.	No. All.	No. All.	No. All.	No. All.	Yes	No. All.
Are all platforms of uniform width throughout? If not, specify platform no.	No. All.	Yes	Yes	Yes	Yes	Yes
No. of FOBs	2	3 Subways	2 Subways	2	2 Subways	0
Are there hawkers/ beggars on the FOBs?	Yes	No	No	Yes	N/A	N/A
No. of escalators for FOBs	0	0	0	0	0	0
Were all the escalators functional?	N/A	N/A	N/A	N/A	N/A	N/A
No. of entrances for station	3 (official) 3 (Unofficial)	3	2	4	4 Official 2 unofficial	4
Is there an ATVM at every entrance?	Yes	No	No	Yes	No (Only 2)	No
Is there an indicator at every entrance?	No	No	No	Yes	No	No
No. of ticket booking windows	8	4	8	16	2	9
No. of ticket booking windows open at any given time	5	3	1	4	2	7
Average no. of people per window	12	15	8	10	8	20
Total no. of ATVMs	8	15	6	12	4	12
ATVM usage	3 of 8	5 of 15	1 of 3	2 of 12	2 of 4	1 of 4
No. of non-functional ATVMs	1	1	3	1	0	2
Toilet availability on each platform	Yes	No	No	No	No	No
Presence of railings between tracks	Yes	N/A	N/A (Not Needed)	No	N/A	N/A (Not Needed)
Were police present?	Yes	Yes	No (Need to call)	Yes	Yes	No
Are there medical facilities available (first aid box, stretcher etc.)?	Yes	Yes	Yes (Inadequate)	Yes (Has Blue Bag)	Yes (Blue Bag)	Yes (Inadequate)
Was there an Emergency Ambulance?	Yes	Yes	No (Hospital near by)	Yes	No (Call Private or 108)	No (Call Private or 108)
Was women police staff available on every platform near women coach?	No	No	No	No	No	No
Cleanliness level of toilets on 1 (low) to 5 (highest) scale?	1	1	1	2	2	2
Cleanliness level of the station on 1 (low) to 5 (highest) scale?	2	3	3	3	2	2