

# User Manual

## PUBLIC TRANSPORT PERFORMANCE EVALUATION: WEB-BASED TOOLKIT TO EVALUATE THE FLEET OPERATIONS DATA

*Funded by:*

**Shakti Sustainable Energy Foundation**



*Developed by:*

Transportation Research and Injury Prevention Programme  
Indian Institute of Technology Delhi



**FITT, IIT DELHI**

*In collaboration with*



**SGA**

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## 1 Brief Introduction on web-based toolkit

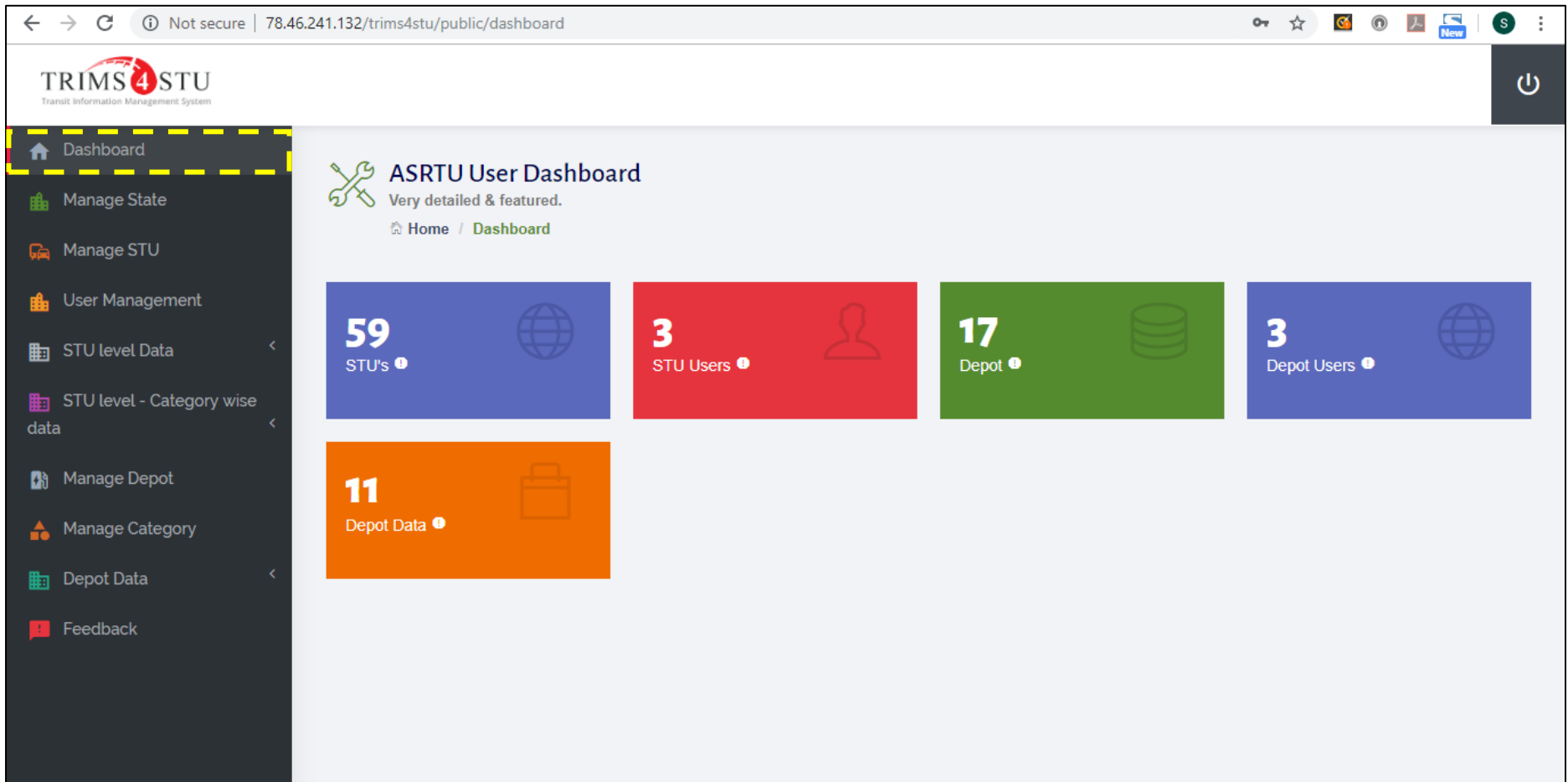
Brief Introduction about the tool: **Trims4STU** (Transit Information Management System for STU) is a web-based tool which is developed for reporting bus related Key Performance Indicators (KPI) periodically at depot level for ASRTU. This tool can help STUs to increase their fleet efficiency and generate more revenue by utilizing all available resources. It can help in evaluating the fleet data collected by different STUs and provide the solutions which can help STUs for better performance of their fleet. The designed tool is user friendly and easily accessible to all STUs.

- The tool is developed as a data input structure which is in dis-aggregated format so that comparison can be generated at three levels: at depot level, at STU level and category wise – Urban, Non-Urban and Hilly.
- There are total 59 STUs. Total of 212 Inputs/parameters are to be filled in 9 step web-form whereas total Indicators (*both existing and newly developed*) are 55 in numbers.
- With this data input, it is possible to generate indicators which is already there in the published annual CIRT report plus few additional indicators which has been identified (based on best practices). The data input in this web-based tool is to be done at depot level and STU level.
- Indicator calculation of all 55 Indicators have been completed, testing for the graphical representation of the same is required which can take place only after getting web-form data.
- Web-forms have been circulated to few STUs to fill in the required depot and STU level data
- The links for the web-based tool kit are as follows:
  - Home Page Link: <http://trims4stu.com/>
  - Indicator Link: <http://trims4stu.com/indicator-calculation>
  - Login Link: <http://trims4stu.com/login>

### 1.1 Web-Based Tool Visuals – ASRTU Level

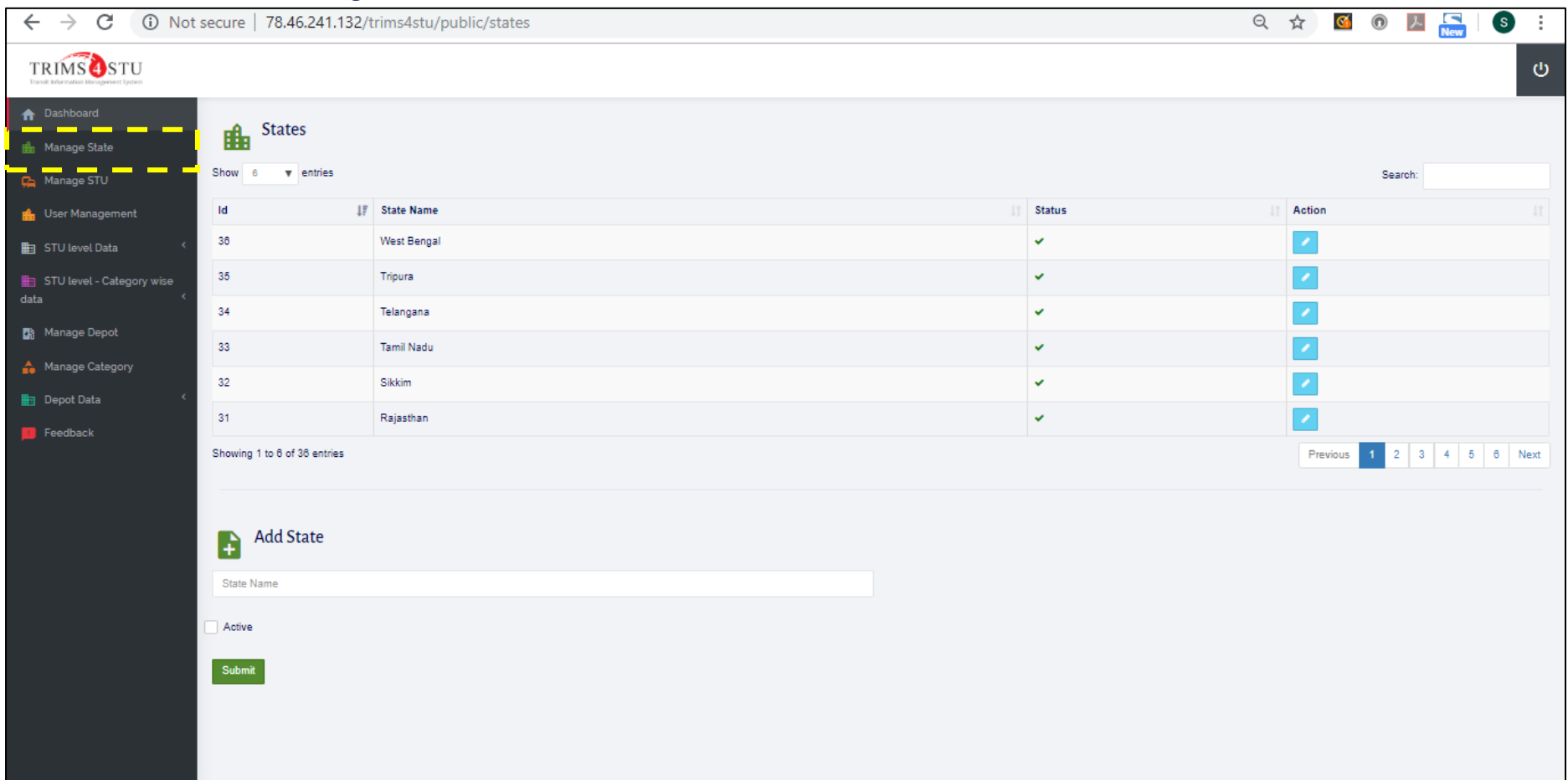
The web-based portal (i.e. visual basic application) of tool created at ASRTU level is presented with the help of stepwise visuals (with brief explanation of every step) from section 1.1.1 to 1.1.9.

#### 1.1.1 Web-Based Tool - Dashboard



This page presents the main dashboard after logging in with ASRTU login details. The dashboard represents the information of how many STUs are there under ASRTU at present and how many STU Users, Depots and Depot data have been created so far in this portal.

#### 1.1.2 Web-Based Tool – Manage State



In this, ASRTU admin can see and add all Indian states so that STUs can be created under each state. To add any state, user must click on add state and write the name and make it active and submit.

### 1.1.3 Web-Based Tool – Manage STU

TRIMS4STU  
Public Information Management System

Dashboard  
Manage State  
Manage STU  
User Management  
STU level Data  
STU level - Category wise data  
Manage Depot  
Manage Category  
Depot Data  
Feedback

STU

Show 6 entries

Id	State Name	STU Name	Status	Action
59	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	✓	<a href="#">Edit</a>
58	Telangana	Telangana State Road Transport Corporation (TGSRTC)	✓	<a href="#">Edit</a>
57	Karnataka	North Western Karnataka Road Transport Corporation (NWKnRTC)	✓	<a href="#">Edit</a>
56	Maharashtra	Navi Mumbai Municipal Transport Undertaking (NMMT)	✓	<a href="#">Edit</a>
55	Gujarat	Ahmedabad Janmarg Ltd. (AJL)	✓	<a href="#">Edit</a>
54	Tamil Nadu	Tamil Nadu State Transport Corporation Ltd. (Tirunelveli) - TNSCTC (TVL)	✓	<a href="#">Edit</a>

Showing 1 to 6 of 59 entries

Previous 1 2 3 4 5 ... 10 Next

**Add STU**

Select State

☐ Active

**Submit**

Under this, ASRTU admin can add STUs in each state. To add, we must click on add STU and select the state from drop down menu and then finally submit.

### 1.1.4 Web-Based Tool – User Management

TRIMS4STU  
Public Information Management System

Dashboard  
Manage State  
Manage STU  
User Management  
STU level Data  
STU level - Category wise data  
Manage Depot  
Manage Category  
Depot Data  
Feedback

User Management

Show 6 entries

Id	Name	Mobile	Email	Password	State	STU	Role	Status	Action
6	Kanica	9580014281	sga.kanica@gmail.com	9580014281	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	ASRTU	✓	<a href="#">Edit</a>
2	Manish Srivastava	9953333954	manish.srivastava@wemonde.com	123456	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	ASRTU	✓	<a href="#">Edit</a>
27	Manish Pandey	9953333954	manish.pandey@wemonde.com	123456	NCT of Delhi	Delhi Transport Corporation (DTC)	STUUSER	✓	<a href="#">Edit</a>
13	Kartikay	9580014281	sga.kartikay@gmail.com	123456	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	STUUSER	✓	<a href="#">Edit</a>
12	Satyajit	9580014281	sga.satyajit@gmail.com	123456	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	STUUSER	✓	<a href="#">Edit</a>
28	Molzuddin	9580014281	sga.molz@gmail.com	123456	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	DEPOTUSER	✓	<a href="#">Edit</a>

Showing 1 to 6 of 8 entries

Previous 1 2 Next

**Add User**

Name

Email

Password

Confirm Password

Mobile Number

Select State

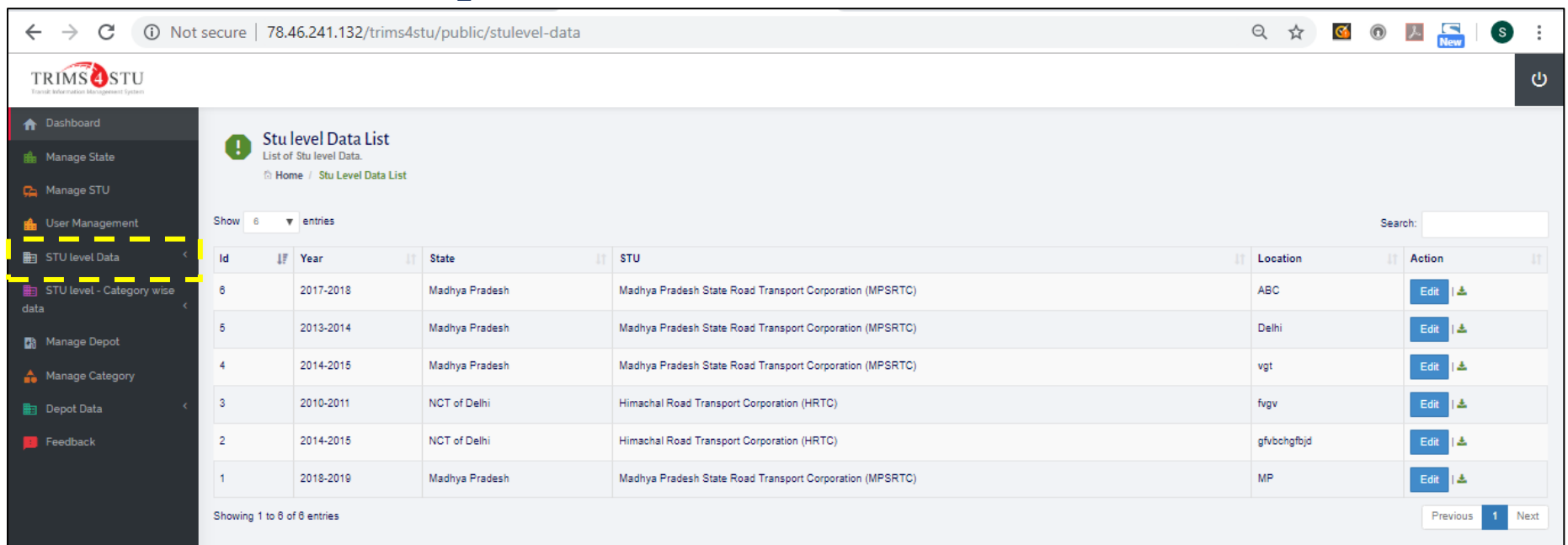
Select STU

☐ Active

**Submit**

In this tab, ASRTU admin have the access to see all User IDs created for STUs and Depots with their respective role. Also, new User IDs can be added by clicking onto Add User tab.

### 1.1.5 Web-Based Tool – STU Level data \_ STU level data list



**Stu level Data List**  
List of Stu level Data.

Home / Stu Level Data List

Show 6 entries

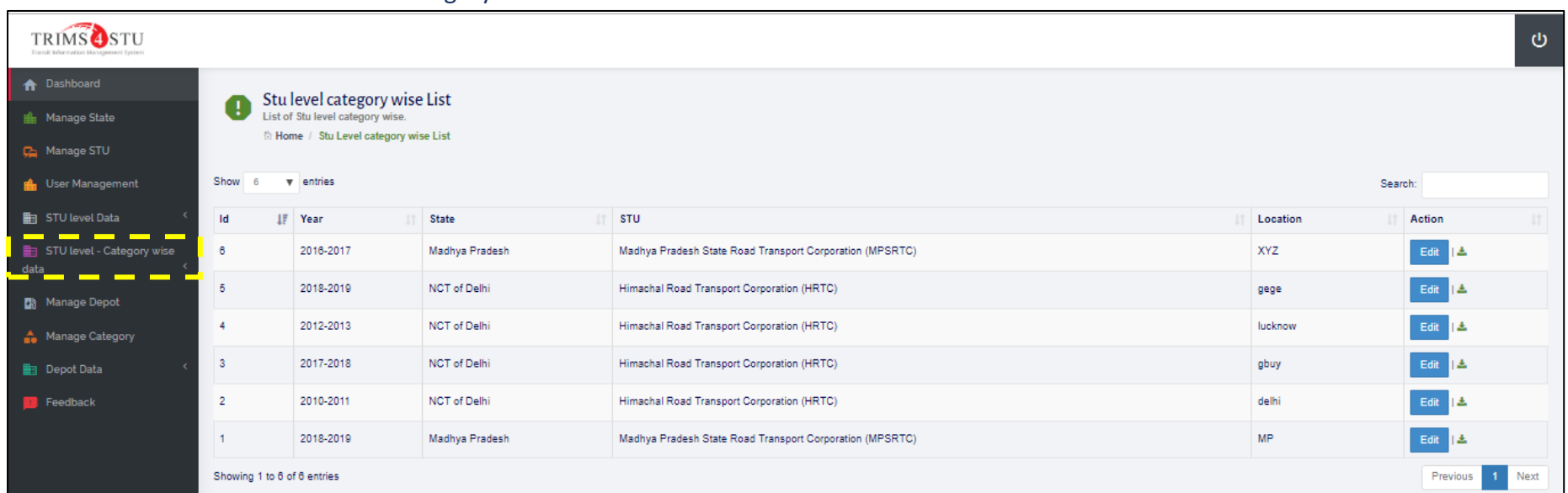
Id	Year	State	STU	Location	Action
6	2017-2018	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	ABC	<a href="#">Edit</a>
5	2013-2014	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	Delhi	<a href="#">Edit</a>
4	2014-2015	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	vgt	<a href="#">Edit</a>
3	2010-2011	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	fvgv	<a href="#">Edit</a>
2	2014-2015	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	gfvbhghbjd	<a href="#">Edit</a>
1	2018-2019	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	MP	<a href="#">Edit</a>

Showing 1 to 6 of 6 entries

Previous 1 Next

In this tab, ASRTU admin can see and download the data which have been added by STU Users.

### 1.1.6 Web-Based Tool – STU level category-wise data



**Stu level category wise List**  
List of Stu level category wise.

Home / Stu Level category wise List

Show 6 entries

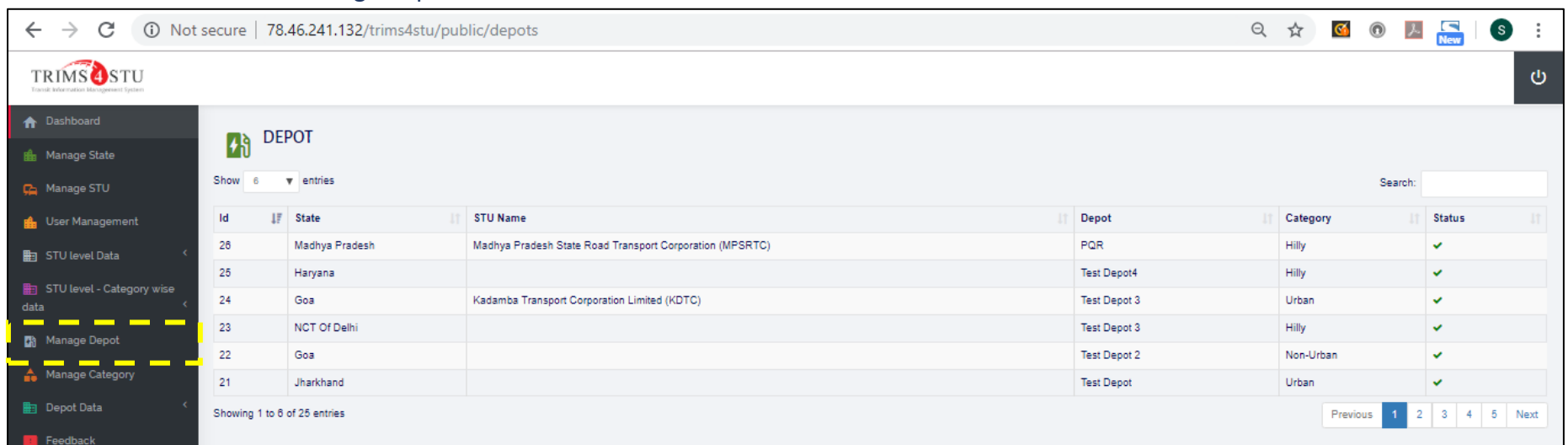
Id	Year	State	STU	Location	Action
6	2016-2017	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	XYZ	<a href="#">Edit</a>
5	2018-2019	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	gege	<a href="#">Edit</a>
4	2012-2013	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	lucknow	<a href="#">Edit</a>
3	2017-2018	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	gbuy	<a href="#">Edit</a>
2	2010-2011	NCT of Delhi	Himachal Road Transport Corporation (HRTC)	delhi	<a href="#">Edit</a>
1	2018-2019	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	MP	<a href="#">Edit</a>

Showing 1 to 6 of 6 entries

Previous 1 Next

In this tab, ASRTU admin can see and download the STU level category wise data which have been added by STU Users.

### 1.1.7 Web-Based Tool – Manage Depot



**DEPOT**

Show 6 entries

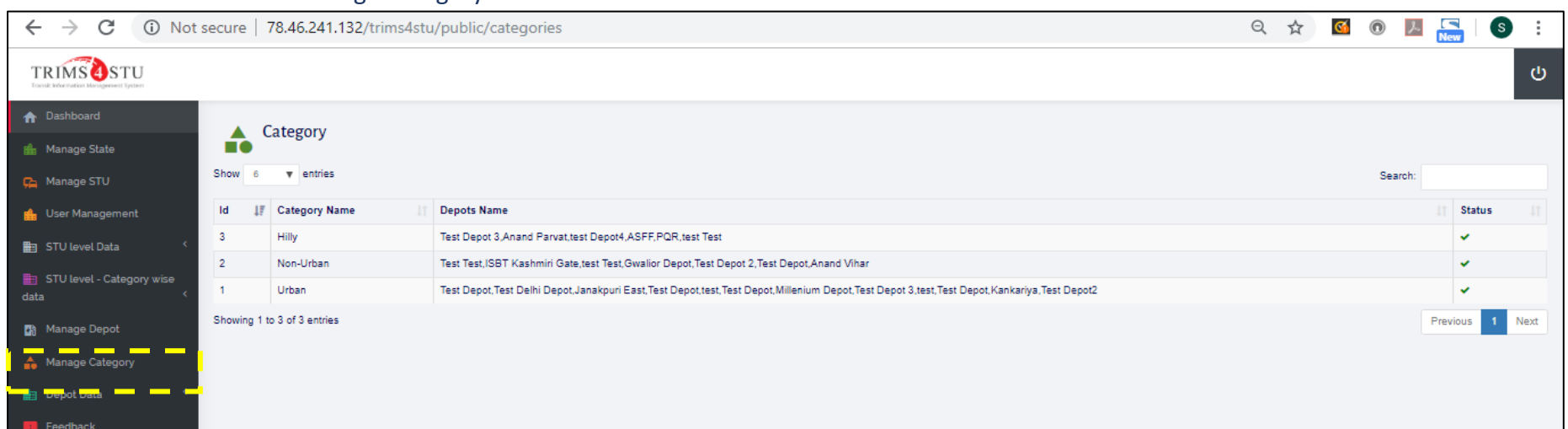
Id	State	STU Name	Depot	Category	Status
26	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	PQR	Hilly	✓
25	Haryana		Test Depot4	Hilly	✓
24	Goa	Kadamba Transport Corporation Limited (KDTC)	Test Depot 3	Urban	✓
23	NCT Of Delhi		Test Depot 3	Hilly	✓
22	Goa		Test Depot 2	Non-Urban	✓
21	Jharkhand		Test Depot	Urban	✓

Showing 1 to 6 of 25 entries

Previous 1 2 3 4 5 Next

In this tab, ASRTU admin can see how many Depots (along with their category) have been created by depot manager

### 1.1.8 Web-Based Tool – Manage Category



**Category**

Show 6 entries

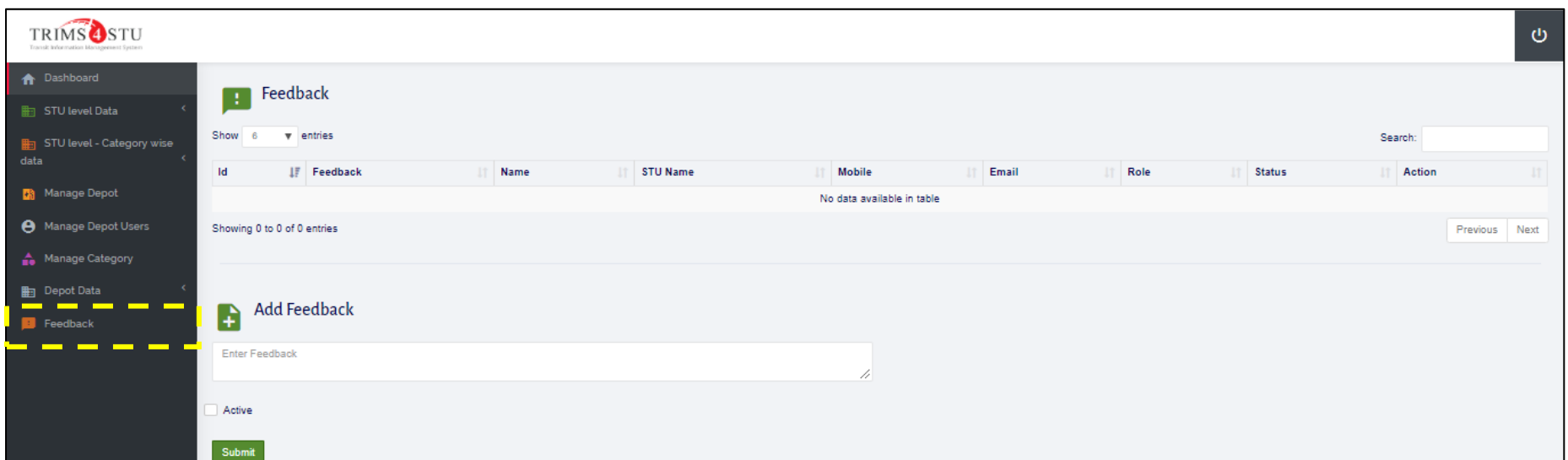
Id	Category Name	Depots Name	Status
3	Hilly	Test Depot 3, Anand Parvat, test Depot4, ASFF, PQR, test Test	✓
2	Non-Urban	Test Test, ISBT Kashmiri Gate, test Test, Gwalior Depot, Test Depot 2, Test Depot, Anand Vihar	✓
1	Urban	Test Depot, Test Delhi Depot, Janakpuri East, Test Depot, test Test Depot, Millenium Depot, Test Depot 3, test Test Depot, Kankariya, Test Depot2	✓

Showing 1 to 3 of 3 entries

Previous 1 Next

In this tab, all the categories namely Urban, Non-Urban and Hilly and the name of all the depots which have been created under respective categories can be seen.

#### 1.1.9 Web-Based Tool – Feedback

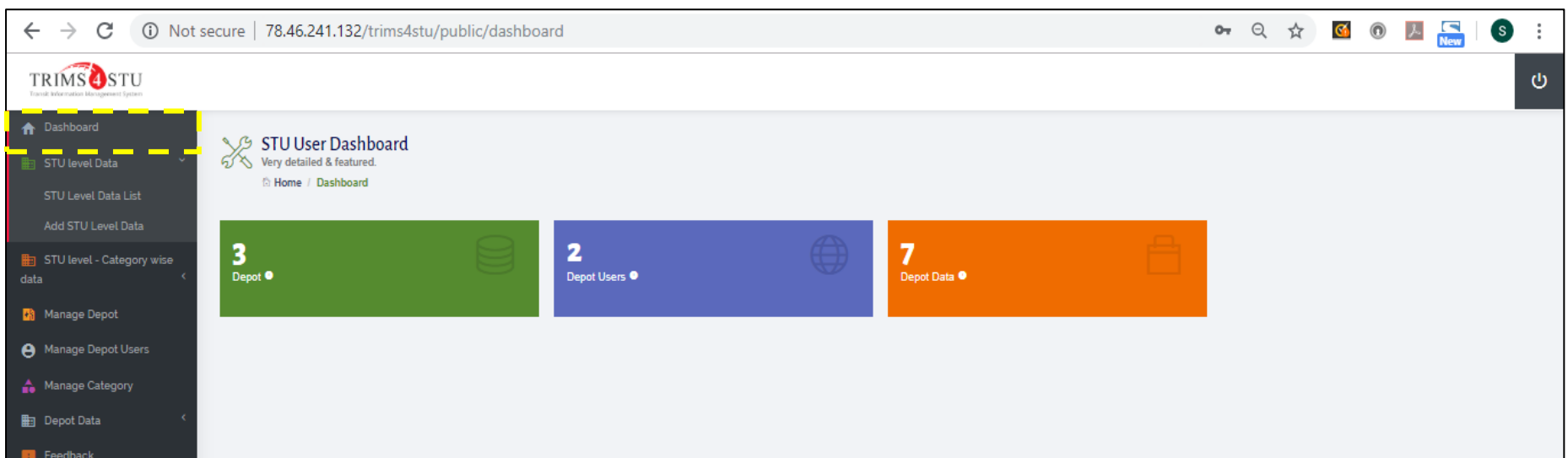


Under this tab, feedback can be given to any particular STU and depot. This feedback will be visible at all levels.

### 1.2 Web-Based Tool Visuals – STU Level

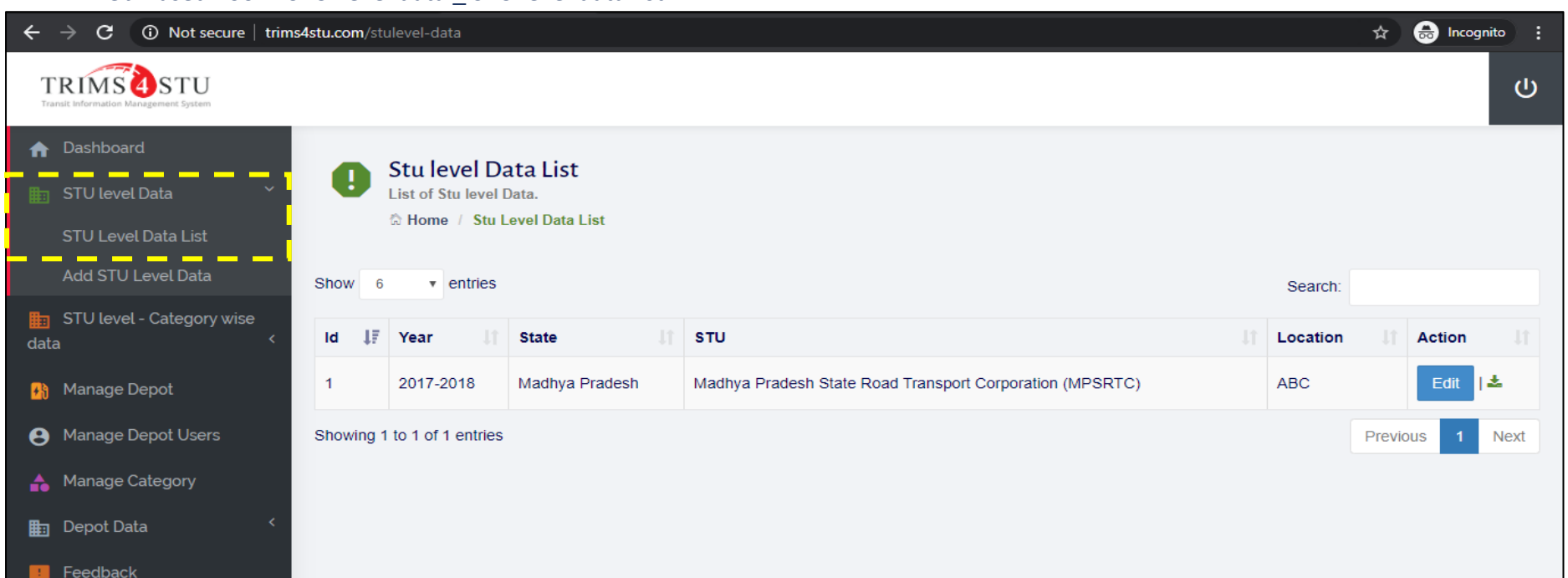
The visual basic application of tool at STU Level have been presented in section 1.2.1 and 1.2.2.

#### 1.2.1 Web-Based Tool – STU User Dashboard



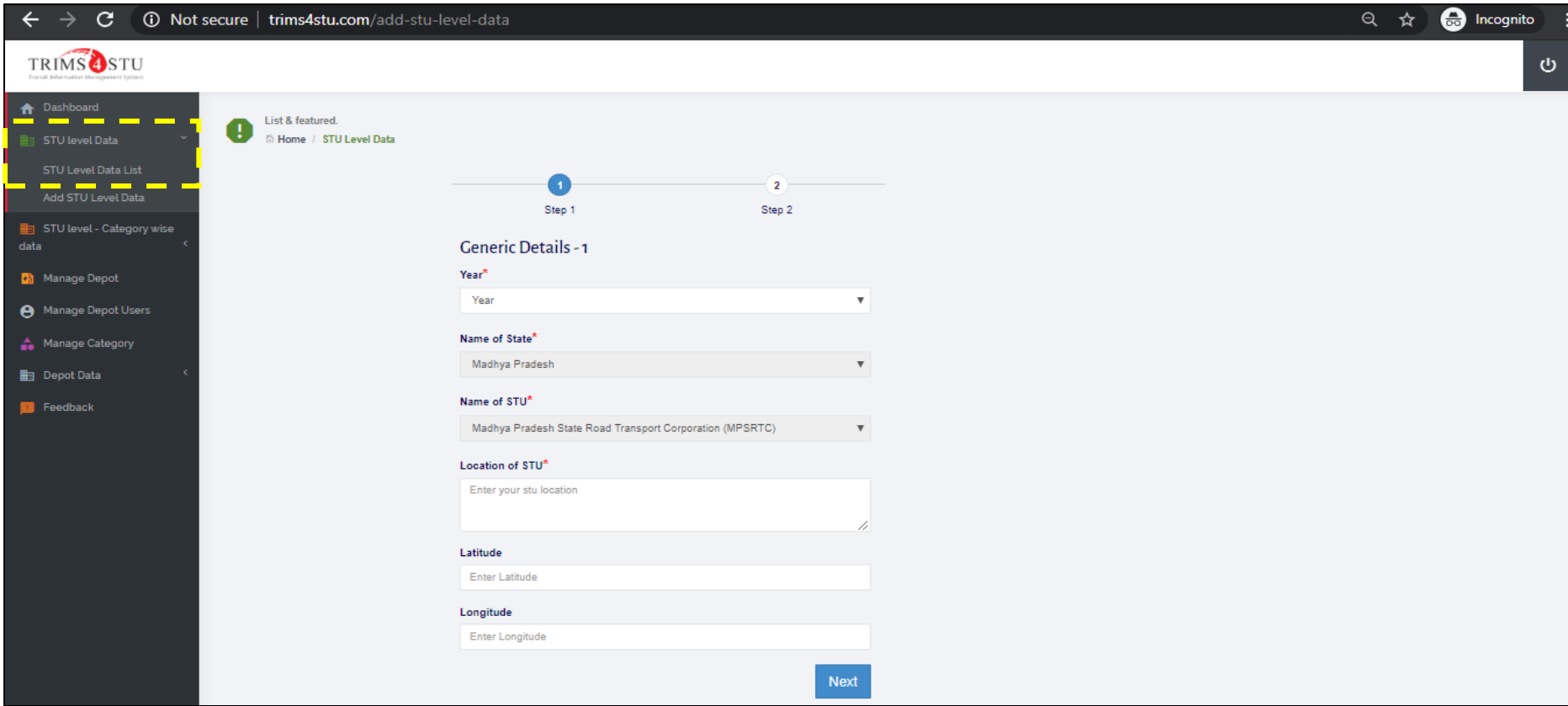
The hierarchy of the portal is same as of ASRTU admin. But in this STU User dashboard, access is only given to the STU users. In this, with their given ID password, STU user can add their own STU level data and similarly category wise data can also be created.

#### 1.2.2 Web-Based Tool – STU Level data \_ STU level data list



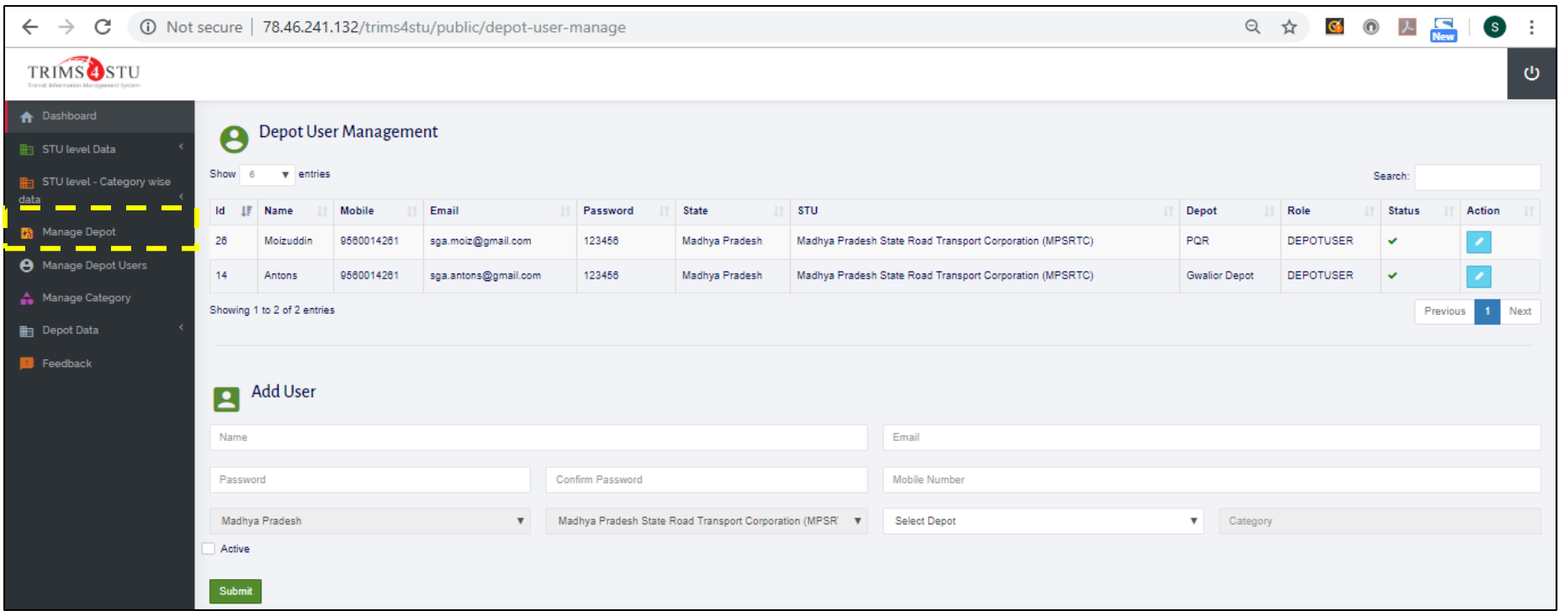
In this tab, STU admin can see and download the data which have been added by STU Users.

1.2.3 Web-Based Tool – STU Level data \_Overall & STU level category-wise data



This tab consists of two step which require user to input generic data of overall STU. Similarly, in next step, instead of overall data, STU level – category wise data is required to be added by the STU user in two steps. The details of both the overall STU and category wise form is presented in section 2.1 and 2.2.

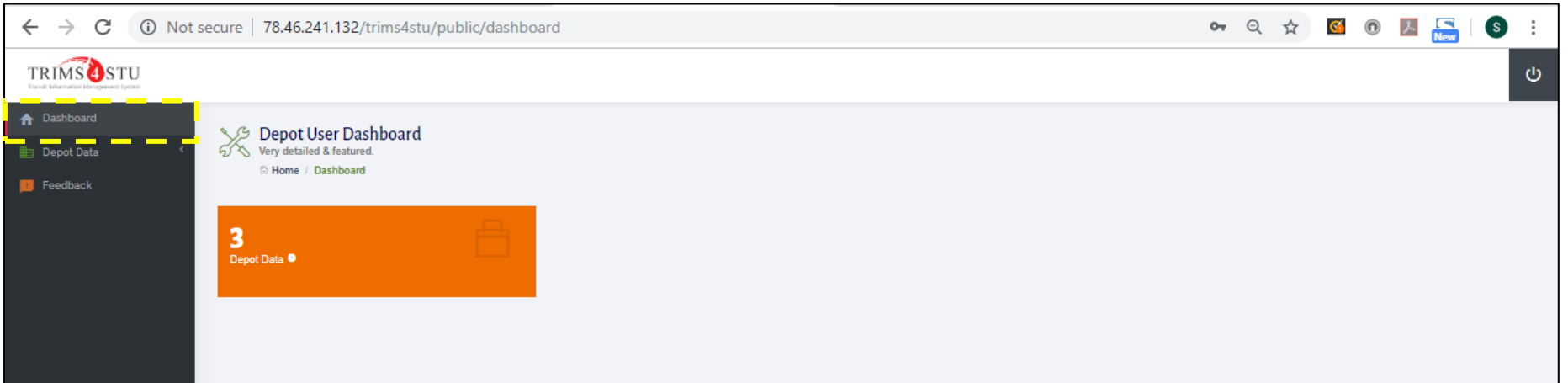
1.2.4 Web-Based Tool – Manage Depot Users



Under this tab, STU admin can add depot user with their unique ID and Password and make them active, which can then be shared with the depot manager to fill in the depot level data.

1.3 Web-Based Tool Visuals – Depot Level

The visual basic application of tool at STU Level have been presented in section 1.3.1 and 1.3.2.



This is admin dashboard for depot level login. Under this, depot manager can see how many data points of that particular depot have been added.



### 1.3.1 Web-Based Tool – Depot Data: Depot Data List

Id	Year	State	STU	Category	Depot	Location	Completed	Action
3	2016-2017	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	Non-Urban	Gwalior Depot	nirvana	Y	
2	2017-2018	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	Urban	Gwalior Depot	Test location of Urban	Y	
1	2018-2019	Madhya Pradesh	Madhya Pradesh State Road Transport Corporation (MPSRTC)	Urban	Gwalior Depot	Test location of Urban	Y	

In this tab, list and annual depot data of all the years of all the depots of the particular STU is visible. Also, data of other depots is available to download under other depot data tab.

### 1.3.2 Web-Based Tool –Depot Data: Add Depot Data

Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7 Step 8 Step 9

**Generic Details**

Year  
Year

Name of State  
Madhya Pradesh

Name of STU  
Madhya Pradesh State Road Transport Corporation (MPSRTC)

Name of Depot  
Gwalior Depot

Category  
Urban

Location of Depot  
Enter your depot location

Latitude  
Enter Latitude

Longitude  
Enter Longitude

Next

In this add depot data tab, nine steps web-based form is available. This contains all the 212 parameters which is required to calculate the indicators that have been finalized to measure the performance of STUs. The detailed description of all parameters which have been used to develop web-based depot data form have been presented in section 2 of this manual.

## 1.4 Web-Based Tool Visuals - Indicator Calculation Portal

The visual basic application of Indicator calculations have been presented as follows:

### 1.4.1 Web-Based Tool – Home Page

**TRIMS4STU** is a web-based tool which is developed for reporting bus related Key Performance Indicators (KPI) periodically at depot level for ASRTU. This tool helps in evaluating the fleet data collected by different STUs and provide the solutions which help in improving the performance of their fleet. The designed tool is user friendly and easily accessible to all STUs. TRIPPI, IIT Delhi has developed this web-based tool in collaboration with SGArchitects funded by Shakti Sustainable Energy Foundation.

It is envisaged that the data collected, sorted and presented by this web-based tool will provide insights for improvement and decision making for planning action by individual STUs. Additionally, it will also help ASRTU develop benchmarking for different indicators, allowing comparative evaluation, and setting practical targets for improvement. This web tool will also ensure data availability to a larger audience including students, academicians and researchers, encourage research which will have potential to benefit STUs, which shall in turn help make bus based public transport more attractive to commuters, attracting higher patronage.

**TRIPPI**  
The Transportation Research and Injury Prevention Programme (TRIPPI) at the Indian Institute of Technology (Delhi) is an interdisciplinary programme focussing on the reduction of adverse health effects of road transport. TRIPPI attempts to integrate all issues concerned with transportation in order to promote safety, cleaner air, and energy conservation.  
<http://tripp.iitd.ernet.in>

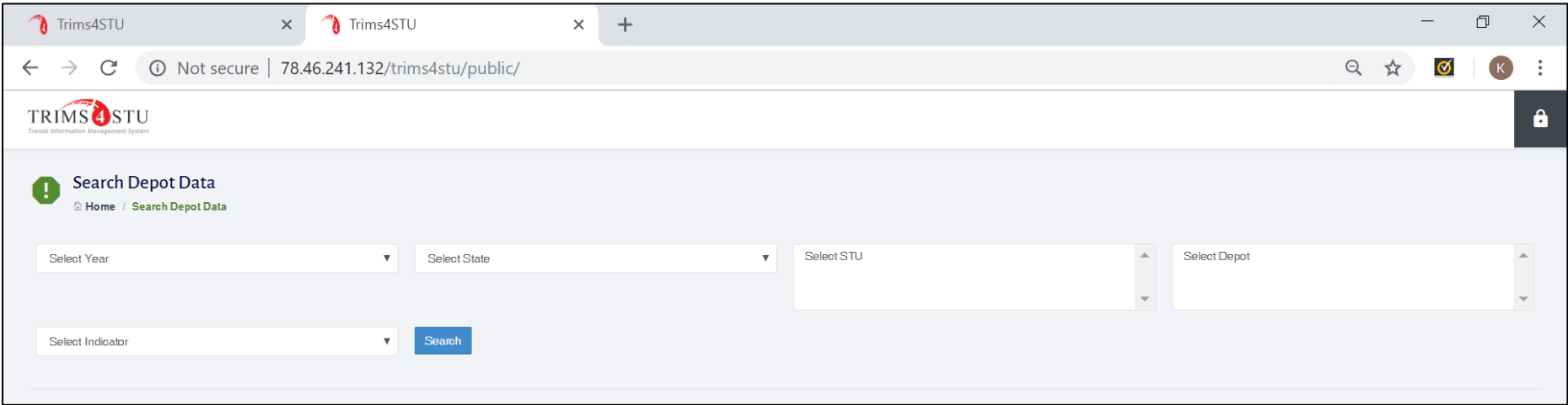
**SHAKTI SUSTAINABLE ENERGY FOUNDATION**  
Shakti Sustainable Energy Foundation works to strengthen the energy security of the country by aiding the design and implementation of policies that encourage energy efficiency, renewable energy and sustainable mobility.  
[www.shaktifoundation.in](http://www.shaktifoundation.in)

**SGArchitects**  
S G Architects (SGA) provides planning and design solutions for Sustainable Urban Transport, including Non-Motorized and Public transport. SGA and its team has more than ten years' experience in Cycling and pedestrian (NMT) as well BRTS infrastructure design, which includes contribution to eight NMT and BRTS corridor development projects in Six Indian Cities.  
[www.sgarchitect.in](http://www.sgarchitect.in)

This is the home page of **TRIMS4STU** website. To go further, user can click on getting started and select from the two given options:

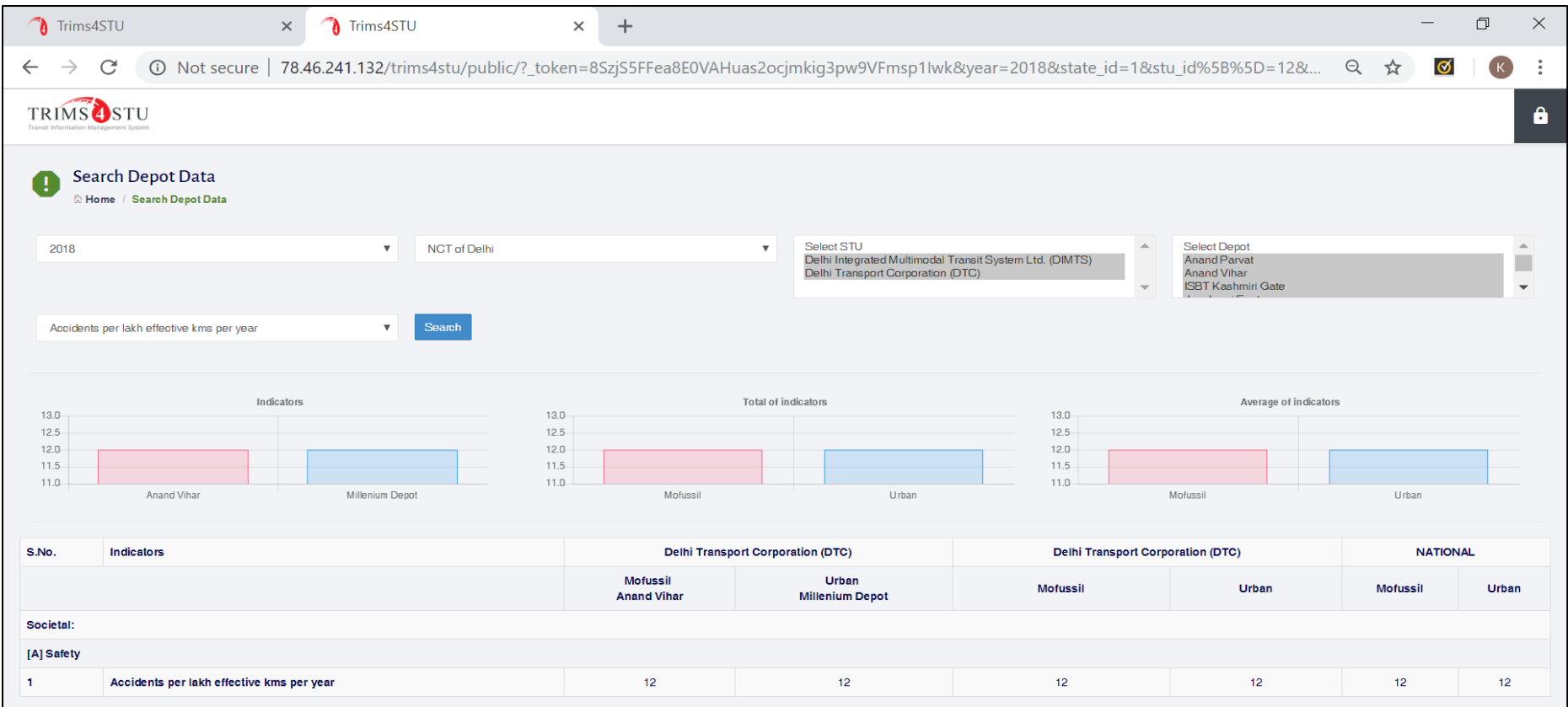
- 1) **I am STU official** - if the user has obtained user ID and Password at any level – ASRTU admin or STU admin or Depot admin.
- 2) **I am visitor** - this is open for all. This will open up a page where all the indicators can be seen which can be generated at three levels: at depot level, at STU level and category wise – Urban, Non-Urban and Hilly against time frame.

1.4.2 Web-Based Tool – Indicator Calculation (when I am visitor is selected)



Here, the visitor can select the options from drop down menu regarding the year for which data to be obtained followed by selecting state, STU, depot and Indicator. The details of all Key Performance Indicators (KPIs) which will be generated with the input of nine-step web-based depot data (mentioned earlier in section 1.3.2) have been presented in section 3.

1.4.3 Web-Based Tool – Indicator Visual Representation



Based on the applied filters, user can see the graphical representation or table (whichever is applicable for those data sets) of the selected indicator.

2 Web Based Form

2.1 Overall STU level Data Input form

Overall STU Level Data Input Form					
Generic Details - 1					
Name of State			Year	Note: It should be Financial Year	
Name of STU			Location of STU (address and Latitude and Longitude)		
Overall STU Demographics -2					
S.N o.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	STU Area	0-1000000	sq.km	Please fill the total area under STU (overall STU wise data to be filled)	100%
2	STU Population	0-10000	in lakhs	Please fill the total population under STU (overall STU wise data to be filled)	100%
3	Buses per lakh population (number)	0-1000	number	It can be calculated by dividing the total number of buses on road to the per lakh population of the STU (overall STU wise data to be filled)	100%
4	Density of Bus Route	0-100	km per sq km	It can be calculated by dividing total route length of STU to the total STU area (overall STU wise data to be filled)	100%
5	STU Road Network	0-1000000	km	Please fill the total road network of the STU (overall STU wise data to be filled)	100%
6	STU Road Network (Urban)	0-500000	km	Please fill the total road network of the STU which falls under urban area (overall STU wise data to be filled)	100%
7	STU Road Network (Non-Urban)	0-500000	km	Please fill the total road network of the STU which falls under non-urban area (overall STU wise data to be filled)	100%
8	STU Road Network SH	0-50000	km	Please fill the total state highway road network under STU (overall STU wise data to be filled)	100%
9	STU Road Network NH	0-50000	km	Please fill the total national highway road network under STU (overall STU wise data to be filled)	100%
10	STU Road Network ODR & MDR	0-50000	km	Please fill the total ODR & MDR road network (if any) under STU (overall STU wise data to be filled)	100%

2.2 Category-wise STU level Data Input form

STU Level - Category wise Data Input Form					
Generic Details - 1					
Name of State			Year	Note: It should be Financial Year	
Name of STU			Category	Urban / Non-Urban / Hilly (choose one only)	
Location of STU (address and Latitude and Longitude)					
STU wise and Category wise Information - 2					
S.N o.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	No. of depots	0-5000	number	Please fill the total number of bus depots (STU wise + Category wise)	83%
2	No. of Bus Stations / terminals	0-5000	number	Please fill the total number of bus terminals (STU wise + Category wise)	83%
3	Terminal Site Area	0-5000000	sq.m	Please fill the total terminal land bank/area of STU (STU wise + Category wise)	83%
4	Informative Terminals	0-5000	number	Please fill data of number of bus terminals having passenger information system (STU wise + category wise)	83%
5	Annual ridership per bus station (terminals)	0-15	Lakhs passenger per bus station	It is calculated by dividing total number of passengers carried in a year to the total number of bus stations (terminals) (STU wise + category wise data to be filled)	83%
6	Passenger Access / Egress Time	0-60	minutes	Please fill the average passenger access or egress time to the bus (STU wise + category wise data to be filled)	
17	Passenger Access / Egress Distance	0-2	km	Please fill the average passenger access or egress distance to the bus (STU wise + category wise data to be filled)	
18	Average Passenger Waiting Time (min)	0-60	minutes	Please fill the average passenger waiting time for the bus (STU wise + category wise data to be filled)	
19	Average Passenger Transit Time (min)	0-1000	minutes	Please fill the average passenger journey time within a bus (STU wise + category wise data to be filled)	
20	No. of transfers	0-10	count	Please fill number of bus transfers from one bus to another (STU wise + category wise data to be filled)	

## 2.3 Depot level Data Input Form

Depot Level Data Input Form					
Generic Details - 1					
Name of State		Year	Note: It should be Financial Year		
Name of STU		Category	Urban / Non-Urban / Hilly (choose one only)		
Name of Depot		Location of Depot (address and Latitude and Longitude)			
Cost and Revenue - 2					
S. No	Parameter	Range	Units	Information for chosen category	Priority indicators
1	Total operating cost	0-10000	Rs in lakhs	Please fill the annual operating cost without taxes and interests per depot per year (i.e., Total cost - Taxes - Interests)	
2	Drivers	0-600	Rs in lakhs	Please fill total annual salary of all drivers in a depot	
3	Conductors	0-600	Rs in lakhs	Please fill total annual salary of all conductors in a depot	
4	Traffic Supervisory	0-300	Rs in lakhs	Please fill total annual salary of traffic supervisory in a depot	
5	Total Traffic Staff	0-1500	Rs in lakhs	It is the total annual salary of traffic staff which includes annual salary of drivers, conductors and traffic supervisory (i.e., addition of drivers + conductors + traffic supervisory) in a depot	97%
6	Workshop/Maintenance	0-600	Rs in lakhs	It is the cost of workshop and maintenance expenses in a depot	97%
7	Admin & Others	0-500	Rs in lakhs	It is the cost of other administrative expenses in a depot	97%
8	P.F. Welfare etc.	0-400	Rs in lakhs	It is the total cost of all the benefits given to the staff in a depot	
9	Personnel Cost	0-3000	Rs in lakhs	This should be filled per depot per year. It is the total annual cost of Drivers, conductors, traffic supervisory, workshop/maintenance, admin and others and P.F.	100%

				Welfare (i.e. drivers + conductors + traffic supervisory + workshop and maintenance + admin & others + P.F. welfare)	
10	Fuel	0-2000	Rs in lakhs	Please fill the annual expenditure on fuel in a depot	
11	Lubricants	0-100	Rs in lakhs	Please fill the annual expenditure on lubricants in a depot	
12	Springs	0-100	Rs in lakhs	Please fill the annual expenditure on springs in a depot	
13	Auto Spare Parts	0-250	Rs in lakhs	Please fill the annual expenditure on auto spare parts in a depot	
14	Tyres & Tubes	0-250	Rs in lakhs	Please fill the annual expenditure on Tyres & tubes in a depot	
15	Batteries	0-100	Rs in lakhs	Please fill the annual expenditure on batteries in a depot	
16	General Items	0-100	Rs in lakhs	Please fill the annual expenditure on general items in a depot	
17	Reconditioned Items	0-100	Rs in lakhs	Please fill the annual expenditure on lubricants in a depot	
18	Material Cost	0-3000	Rs in lakhs	This should be filled per depot per year. (It is the addition of the cost of fuel + lubricants + springs + auto spare parts + tyre & tubes + batteries + general items + reconditioned items)	100%
19	M.V. Tax	0-500	Rs in lakhs	Please fill annual cost of motor vehicle tax in a depot	
20	Passenger Tax	0-300	Rs in lakhs	Please fill annual cost of passenger tax in a depot	
21	Special Road Tax	0-300	Rs in lakhs	Please fill annual cost of special road tax in a depot	
22	Misc. & Other Tax	0-400	Rs in lakhs	Please fill annual cost of misc. & other tax in a depot in a depot	
23	Taxes	0-1500	Rs in lakhs	Please fill annual cost of all taxes in a depot (i.e., M.V Tax + Passenger tax + special road tax + misc.& other tax)	97%
24	To Central Government	0-500	Rs in lakhs	Please fill the annual interest to central government in a depot	
25	To State Government	0-5000	Rs in lakhs	Please fill the annual interest to state government in a depot	
26	On Borrowings	0-1000	Rs in lakhs	Please fill the annual interest on borrowings in a depot	
27	Interest	0-6500	Rs in lakhs	It is the total annual interest from State & Central government and on borrowings in a depot	83%
28	Misc & Others	0-1000	Rs in lakhs	Please fill any other annual miscellaneous cost (if any) in a depot	97%

29	Payment to Hired Buses	0-500	Rs in lakhs	Please fill the total annual cost of hired buses in a depot	
30	Depreciation on Buses	0-600	Rs in lakhs	Please fill annual depreciation value on buses in a depot	
31	Depreciation on other Assets	0-400	Rs in lakhs	Please fill annual depreciation value on other assets in a depot	
32	Total Depreciation	0-1000	Rs in lakhs	This is the total annual cost of depreciation on buses and any other asset in a depot	
33	Total Cost	0-18000	Rs in lakhs	Please fill the addition of all annual cost which includes total Personnel cost, Material cost, Taxes, Interests, Miscellaneous, payment to Hired buses and Depreciation (i.e., addition of personnel cost + material cost + taxes + interest + misc. & others + payment to hired buses + depreciation) in a depot	
34	Traffic Revenue	0-5000	Rs in lakhs	Please fill annual traffic revenue generated in a depot	100%
35	Reimbursement of Fare Concession	0-1000	Rs in lakhs	Please fill annual reimbursement of fare concession given to the depot	
36	Subsidy	0-1000	Rs in lakhs	Please fill annual subsidy provided to the depot	
37	Non-traffic Revenue	0-500	Rs in lakhs	Please fill annual non-traffic revenue generated in a depot	97%
38	Total Revenue	0-7500	Rs in lakhs	It is the sum total of revenue generated in a depot. It includes annual traffic revenue + reimbursement of fare concession + subsidy + Non-traffic revenue	
39	Surplus before tax	-10000 to 10000	Rs in lakhs	Please fill the amount of annual surplus before tax in a depot	100%
40	Profit / loss	-10000 to 10000	Rs in lakhs	Please fill the annual amount of profit/loss in a depot	100%
41	Profit / Loss per depot	-20000 to 20000	Rs in lakhs	It is the sum total of annual surplus before tax + profit/loss of a depot	
42	Financial Ratios				

42.1	Total earnings per bus (on road) per day	0-5000	Rs in lakhs	Please write the total annual earnings per bus (on road buses = fleet held - back up buses) and then divide it by 365 in a depot	100%
42.2	Total cost per bus (on road) per day	0-10000	Rs in lakhs	Please write the total annual cost per bus (on road buses = fleet held - back up buses) and then divide it by 365 in a depot	100%
42.3	% operating ratio	0-1000	Ratio	Please calculate it by dividing (total annual operating cost by traffic revenue) x 100 in a depot	100%
42.4	% return on capital employed	-500 to 500	%	It is calculated by dividing (net profit + interest paid on capital + interest paid on short- and long-term loans - interest earned on investment) to the capital employed in a depot	
42.5	% return on capital invested	-500 to 500	%	It is calculated by dividing (net profit + interest paid on capital + long term loans) to the capital invested in a depot	
42.6	Operating cost per passenger	0-200	Rs	It can be calculated as total annual operating cost divided by Passengers carried in a depot	
42.7	Operating cost per passenger-km	0-200	Rs per passenger-km	It can be calculated as total annual operating cost divided by Passenger km in a depot	
42.8	Operating cost per boarding	0-200	Rs per boarding	It can be calculated as total annual operating cost divided by Passengers carried in a depot	
42.9	Farebox Ratio	0-1	Ratio	It can be calculated as annual traffic revenue divided by total annual cost in a depot	
42,10	Revenue per passenger	0-10	Rs per passenger	It can be calculated by dividing traffic revenue to the passengers carried in a depot	
42.11	Total road accident compensation	0-500	Rs in lakhs	Please fill the annual amount given as compensation for road accidents in a depot	
42,12	Fatal accident compensation	0-200	Rs in lakhs	Please fill the annual amount given as compensation for fatal accidents in a depot	
42.13	Major or serious accident compensation	0-250	Rs in lakhs	Please fill the annual amount given as compensation for major and serious accidents in a depot	



42.14	Minor accident compensation	0-250	Rs in lakhs	Please fill the annual amount given as compensation for minor accidents in a depot	
42.15	Compensation per accident	0-200	lakhs Rs per accident	It can be calculated by dividing total road accident compensation to the total road accidents in a depot	

*Administrative Details - 3*

S.No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	Staff ratio per bus	0-10	number	It is the ratio of the total staff employed per bus to the number of buses on road in a depot	100%
2	Drivers	0-1000	number	Please fill the total number of drivers employed in a depot	
3	Conductors	0-1000	number	Please fill the total number of conductors employed in a depot	
4	Checkers & Traffic Supervisory Staff	0-750	number	Please fill the total number of checkers & traffic supervisory employed in a depot	
5	Workshop & Maintenance Staff	0-750	number	Please fill the total number of workshop & maintenance staff employed in a depot	
6	Administration	0-750	number	Please fill the total number of administrative staff employed in a depot	
7	Others	0-750	number	Please fill the total number of other staff members employed in a depot	
8	Traffic Staff	0-5000	number	Total number of traffic staff (it is the addition of total number of drivers, conductors, checkers & traffic supervisory & workshop and maintenance staff, administration and others) in a depot	
9	Manpower Productivity	0-200	kms per man day	Please fill total number of traffic staff per daily operational km. In order to obtain daily operational kms, divide the total operational kms by 365 in a depot	92%
10	Avg. salary / employee / day	0-1000	rupees	Please calculate the average salary of all the employees and then convert it into daily average salary by dividing it by 365 in a depot	94%



11	Eff. Kms / crew member / day	0-200	km / member / day	Please calculate daily effective kms per crew member by dividing annual eff. kms with 365 (where total effective kms = gross km minus dead kms) and crew members includes drivers & conductors in a depot	89%
<i>Operational Characteristic - 4</i>					
S.No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	Buses held (Count)	0-500	Count	Please fill the total number of buses in a depot including Diesel, CNG and Electric	100%
1.1	<i>Diesel</i>				
1.1.1	<i>Fleet age &lt; 8 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age less than 8 years</i>	
1.1.2	<i>Fleet age 8-10 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age between 8-10 years</i>	
1.1.3	<i>Fleet age &gt;10-12 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age between 10-12 years</i>	
1.2	<i>CNG</i>				
1.2.1	<i>Fleet age &lt; 8 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age less than 8 years</i>	
1.2.2	<i>Fleet age 8-10 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age between 8-10 years</i>	
1.2.3	<i>Fleet age &gt;10-12 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age between 10-12 years</i>	
1.3	<i>Electric</i>				
1.3.1	<i>Fleet age &lt; 8 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age less than 8 years</i>	
1.3.2	<i>Fleet age 8-10 years</i>	0-500	Count	<i>Please fill number of buses in a depot having fleet age between 8-10 years</i>	

1.3.3	Fleet age >10-12 years	0-500	Count	Please fill number of buses in a depot having fleet age between 10-12 years	
2	% of vehicles complying to BSIV or above & BS VI or above				
2.1	Vehicles complying less than BS-IV	0-500	Count	Please fill number of buses in a depot having engine less than BS-IV	
2.2	Vehicles complying BS-IV	0-500	Count	Please fill number of buses in a depot having BS-IV engine	
2.3	Vehicles complying BS-VI and above	0-500	Count	Please fill number of buses in a depot having engine BS-VI or more	
3	Buses off road	0-200	Count	Annual Buses which are under maintenance and not plying on the road in a depot. It can be calculated as Buses held - buses on road - spare buses	100%
4	Number of spare buses	0-200	Count	Please fill number of extra buses in a depot for stand by	
5	Buses on road	0-500	Count	Please fill average number of buses which performs effective km in a depot	100%
6	Fleet Utilization	0-100%	%	Please calculate by dividing number of buses on road to the number of buses held x 100	100%
7	Scheduled services	0-500	Count	Total services planned for operation as per the published timetable (if no published timetable then please calculate an estimated average of planned frequency over a day)	
8	Scheduled km	0-150000	in lakhs	Please fill the total effective kms required to be operated by a depot annually	
9	Effective Km	0-150000	in lakhs	Please fill the difference of gross km and dead kms in a year per depot	100%
10	Dead Km	0-10000	in lakhs	These are the kms used for taking bus from terminating point of the route to the depot/ terminal or for maintenance/ repair or for taking bus from depot to terminal per depot	100%
11	Gross Km	0-160000	in lakhs	It is the sum of total effective kms and dead kms in a depot	100%
12	Cancelled kms	0-150000	in lakhs	Please fill the kms which were cancelled in a depot	

13	Average Bus utilization	0-500	Km/day	It is calculated by dividing total effective km done on a day to the total number of buses on road on that day in a depot	100%
14	Quality of Service				
14.1	No. of breakdowns	0-5000	number	Please fill the annual data of number of bus breakdowns in a depot	
14.2	Breakdown per 10,000 eff. kms.	0-10	number	It can be calculated by dividing annual effective kms to the total number of breakdowns in a depot	
15	Capacity Utilization				
15.1	Seating capacity	0-100	number	Please fill the average number of seats available in a bus to the passengers excluding the seats allotted to driver and conductor in a depot	92%
15.2	No. of Standees	0-100	number	Please fill the number of people standing in a bus in a depot	
15.3	Seat Kms	0-20000	in lakhs	It can be calculated by multiplying the average seating capacity and effective kilometers in a depot	83%
15.4	Carrying capacity Km	0-20000	in lakhs	It can be calculated by multiplying the average carrying capacity (i.e., [total seating capacity of all buses + total standees permitted in all buses] / total number of buses) and effective kilometers in a depot	100%
15.5	Passenger Km	0-20000	in lakhs	Please fill the annual average of kms travelled by passengers in a depot	100%
15.6	Occupancy Ratio	0-200	Ratio	It is calculated by total passenger km to the ratio of total seat km in a depot	83%
15.7	Load factor	0-100	%	It is calculated by dividing passenger kms to the total carrying capacity in a depot	100%
15.8	Passenger lead	0-500	in kms	It is calculated by dividing total passenger kms to the total number of passengers carried in a depot	100%
15.9	Passengers carried	0-5000	in lakhs	Please fill the total number of passenger tickets sold in a year in a depot	100%
15.10	Passengers per bus (on road) per day	0-1500	numbers	Calculate by dividing total number of passengers to the total number of buses (on road) and then divide it by 365 in a depot	100%
15.11	Annual ridership per bus	0-15	Lakhs passenger per bus	It is calculated by dividing total number of passengers carried in a year to the total number of buses (average on road) per depot	

15.12	Passenger trips per effective vehicle km	0-15	Trips/eff. Veh km	It is calculated by dividing total number of passengers carried in a year to the annual effective kms per depot	
15.13	Avg. passenger-km per vehicle-km	0-100	count	It is calculated by dividing total passenger kms in a year to the annual effective kms per depot	
15.14	Passenger per effective vehicle km	0-15	count	It is calculated by dividing total number of passengers carried in a year to the annual effective kms per depot	

*Service Performance - 5*

S. No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	Trips to be operated (scheduled trips)	0-15	lakhs	It is the total number of trips planned for operation as per the published timetable (it includes bazar, fair and festival trips) in a depot	
2	Actual trips operated	0-15	lakhs	It is the total number of actual trips operated out of total scheduled trips in a depot	
3	Regularity	0-100%	%	Please fill the percentage of how regular bus services in a depot are	
4	Punctuality				
4.1	Departure	0-100%	%	Please fill the percentage of reliability of departure services in a depot	
4.2	Arrival	0-100%	%	Please fill the percentage of reliability of arrival services in a depot	
5	Fatal accidents	0-500	number	Please fill the number of fatal accidents occurred annually in a depot	83%
6	Major & serious accidents	0-1000	number	Please fill the number of major & serious accidents occurred annually in a depot	83%
7	Minor accidents	0-1000	number	Please fill the number of minor accidents occurred annually in a depot	83%

8	Total Accidents	0-2500	number	Please fill the number of total accidents occurred annually in a depot	
9	Accidents per lakh eff. kms.	0-50	number	It can be calculated by dividing total accidents to the per lakh effective km (per lakh effective km can be calculated by dividing effective km by 100000) per depot	89%
10	No. of person injured	0-2000	number	Please fill the number of persons injured in a year as a result of any incident that requires immediate medical attention away from the scene in a depot	
11	No. of fatalities	0-2000	number	Please fill the number of fatalities in a year due to any accident which involves buses per depot	
12	No. of public complaints	0-5000	number	Please fill total number of public complaints made in a year per depot	
13	Fatal Accidents per lakh vehicle km per year	0-100	fatal accidents / lakh vehicle km	It can be calculated by dividing total fatal accidents by gross kms (annually) per depot	
14	Fatalities per lakh passenger per year	0-100	fatalities / lakh passengers	It can be calculated by dividing the total number of fatalities to the total number of passengers carried in a year in a depot	
15	Injuries per lakh passengers	0-100	injuries / lakh passenger	It can be calculated by dividing the number of persons injured to the per lakh passengers carried (per lakh passengers = passengers carried in a year/100000) annually per depot	
16	Average fare per passenger-km	0-20	Rs per passenger km	It can be calculated by dividing the total annual traffic revenue to the passenger km per year in a depot	
17	Avg. fare per boarding	0-20	Rs per boarding	It can be calculated by dividing the total annual traffic revenue to the passengers carried per year in a depot	
18	Average Achieved Headway	0-500	minutes	Please fill the average frequency (time) between two buses (STU wise). It can be calculated as (Total Route Length x Average Bus Operational Hours x Total Operational Buses) / (Total Number of Daily Actual Trips x Total Km Operated in a day) x 60	
<i>Scheduling and Route details - 6</i>					

S.No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	Total No. of Schedules	0-1500	number	Please fill the average number of planned trips per day per depot	
2	Classification of schedules				
2.1	<i>Earning more than total cost</i>	0-500	number	Please fill the number of routes which are earning more than total cost (refer parameter1) in a depot	
2.2	<i>Earning between total &amp; variable cost</i>	0-500	number	Please fill the number of routes which are earning between total and variable cost - to be filled depot wise [ <i>Variable cost are those costs which vary with the changes in the volume of effective kms viz. Diesel, engine oil, other lub. oils, tyres, tubes, flaps, batteries, auto spares and other consumable stores, depreciation on bus charged, on km basis, reconditioning and complete overhauling cost on assemblies and buses, tickets and traffic stationary, daily wages crew employed for extra and seasonal traffic and overtime paid for extra traffic</i> ]	
2.3	<i>Earning less than variable cost</i>	0-500	number	Please fill the number of routes which are earning less than variable cost (to be filled depot wise)	
3	Total no. of routes	0-1000	number	Please fill the total number of depot routes	
4	Average route length	0-1500	in kms	Please fill the average length of all routes covered in a depot	
5	Total Route Length or route km	0-15000	in kms	Please fill the sum total of all routes covered in a depot	
6	% of total kms in depot	0-100%	%	Please fill the percentage of depot route length to the total STU route length in a depot	
7	No. of Bus Shelters (Stops)	0-5000	number	Please fill the total number of bus shelters (or stops) in a depot	
STU Demographics - 7					

S.No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	STU Area	0-1000000	sq.km	Please fill the total area under STU (overall STU wise data to be filled - aggregate of all categories i.e., Urban+Non-Urban+Hilly)	
2	STU Population	0-10000	in lakhs	Please fill the total population under STU (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
3	Buses per lakh population (number)	0-50	number	It can be calculated by dividing the total number of buses on road to the per lakh population of the STU (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
4	Density of Bus Route	0-50	km per sq. km	It can be calculated by dividing total route length to the total STU area (Overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
5	STU Road Network	0-1000000	km	Please fill the total road network of the STU (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
6	STU Road Network (Urban)	0-500000	km	Please fill the total road network of the STU which falls under urban area (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
7	STU Road Network (Non-Urban)	0-500000	km	Please fill the total road network of the STU which falls under non-urban area (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
8	STU Road Network SH	0-10000	km	Please fill the total state highway road network under STU (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
9	STU Road Network NH	0-10000	km	Please fill the total national highway road network under STU (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
10	STU Road Network ODR & MDR	0-10000	km	Please fill the total ODR & MDR road network (if any) under STU (overall STU wise data to be filled - aggregate of all categories i.e, Urban+Non-Urban+Hilly)	
11	No. of depots	0-5000	number	Please fill the total number of bus depots (STU wise + Category wise)	83%
12	No. of Bus Stations / terminals	0-5000	number	Please fill the total number of bus terminals (STU wise + Category wise)	
13	Terminal Site Area	0-5000000	sq. m	Please fill the total terminal land bank/area of STU (STU wise + Category wise)	

14	Informative Terminals	0-5000	number	Please fill data of number of bus terminals having passenger information system (STU wise + category wise)	
15	Annual ridership per bus station (terminals)	0-15	Lakhs passenger per bus station	It is calculated by dividing total number of passengers carried in a year to the total number of bus stations (terminals) (STU wise + category wise data to be filled)	
16	Passenger Access / Egress Time	0-60	minutes	Please fill the average passenger access or egress time to the bus (STU wise + category wise data to be filled)	
17	Passenger Access / Egress Distance	0-2	km	Please fill the average passenger access or egress distance to the bus (STU wise + category wise data to be filled)	
18	Average Passenger Waiting Time (min)	0-60	minutes	Please fill the average passenger waiting time for the bus (STU wise + category wise data to be filled)	
19	Average Passenger Transit Time (min)	0-500	minutes	Please fill the average passenger journey time within a bus (STU wise + category wise data to be filled)	
20	No. of transfers	0-5	count	Please fill average number of bus transfers from one bus to another for the given depot (STU wise + category wise data to be filled)	
Infrastructural Information - 8					
S.No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	Depot Site Area	0-50000	sq. m	Please fill the total depot land bank/area of a depot	



2	Average bus operational hours	0-24	hours	Please fill the average hours buses are operating on road in a depot	
3	Informative bus stops	0-5000	number	Please fill data of number of bus stops having passenger information system in a depot	
4	Low floor buses	0-500	number	Please fill number of low floor buses in a depot	
<i>Service and Maintenance Information - 9</i>					
S.No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	Total HSD consumed (kiloliters)	0-250000	Kl	It is the sum total of Diesel consumed by buses (depot wise)	100%
2	Total CNG consumed (Kg)	0-250000	Kg	It is the sum total of CNG consumed by buses (depot wise)	
3	Total Electricity consumed (KWh)	0-250000	KWh	It is the sum total of Electricity consumed by buses (depot wise)	
4	KMPL Kiloliters	0-20	KMPL Kl	It can be calculated by dividing gross kms to the diesel consumed by all buses (depot wise)	
5	CNG km per kg	0-20	km per kg	It can be calculated by dividing gross kms to the CNG consumed by all buses (depot wise)	
6	Electricity (kWh/km)	0-20	km per kWh	It can be calculated by dividing gross kms to the electricity consumed by all buses (depot wise)	
7	Engine oil top-up	0-2000	kiloliters	Please fill the quantity in engine oil top up required in depot in a year	
8	Engine oil KMPL	0-2000	kmpl	Please fill average mileage of bus (for engine oil) kmpl in a depot in a year	

9	Battery life	0-5Lkm	lakh kms	It is the total kms given by a battery from the date of its fitment to its removal for scrapping gives its life in kms. Please fill the average life of a battery (depot wise)	
10	Gearbox oil				
10.1	Top up	0-30	kilolitres	Please fill the quantity of gearbox oil top up required in a year (depot wise)	
10.2	Oil Change	0-30	kilolitres	Please fill the quantity of gearbox oil change required in a year (depot wise)	
11	Engine Life				
11.1	New	0-20	in lakh km	Please fill the average life of a new engine in a year (depot wise)	
11.2	Reconditioned (R/C)	0-20	in lakh km	Please fill the average life of a reconditioned engine in a year (depot wise)	
12	Fuel injection pump life				
12.1	New	0-20	in lakh km	Please fill the average life of a new engine in a year (depot wise)	
12.2	R/C	0-20	in lakh km	Please fill the average life of a reconditioned engine in a year (depot wise)	
13	Piston assembly life	0-20	in lakh km	Please fill the average piston assembly life in a year (depot wise)	
14	Engine oil used /oil change	0-3000	in lakh km	Please fill the quantity of engine oil used or engine oil change required in a year (depot wise)	
15	New tyres consumed/ lakh KM (rate)	0-20	number	Please fill the rate of new tyres consumed per lakh kms (depot wise)	
16	Spring/lakh km	0-500	in kg	Please fill the quantity of springs consumed per lakh kms in kg (depot wise)	
17	Retreaded tyres consumed/lakh KM (rate)	0-50	number	Please fill the rate of retreaded tyres consumed per lakh kms (depot wise)	
18	Differential oil				
18.1	Top up	0-10000	in litres	Please fill the quantity of differential oil top up required in a year (depot wise)	
18.2	Oil Change	0-10000	in litres	Please fill the quantity of differential oil change required in a year (depot wise)	
19	Crown wheel & pinion life	0-15	in lakh km	Please fill the average crown wheel and pinion life in a year (depot wise)	

20	Gearbox life				
20.1	New	0-15	in lakh km	Please fill the average new gearbox life in a year (depot wise)	
20.2	R/C	0-15	in lakh km	Please fill the average life of a reconditioned engine in a year (depot wise)	
21	Clutch plate life	0-15	in lakh km	Please fill the average clutch plate life in a year (depot wise)	
<i>Environmental Factors - 10</i>					
S. No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
1	Noise	0-100	decibels	Please fill the noise level generated by bus	
2	Emissions				
2.1	CO	0-50000	gm/km	Please fill the annual emission of CO grams per km	
2.2	CO <sub>2</sub>	0-50000	gm/km	Please fill the annual emission of CO <sub>2</sub> grams per km	
2.3	NO <sub>x</sub>	0-50000	gm/km	Please fill the annual emission of NO <sub>x</sub> grams per km	
2.4	HC	0-50000	gm/km	Please fill the annual emission of HC grams per km	
S. No.	Parameter	Range	Units	Comments/ Explanation	Priority indicators
2.5	PM	0-50000	gm/km	Please fill the annual emission of PM grams per km	
2.6	SO <sub>x</sub>	0-50000	gm/km	Please fill the annual emission of SO <sub>x</sub> grams per km	
2.7	VOCs	0-50000	gm/km	Please fill the annual emission of VOCs grams per km	
<b>Note:</b>					
<i>1. All values to be filled annually until and unless mentioned in description.</i>					
<i>2. Depot wise data to be filled until and unless mentioned in description.</i>					

### 3 Definition of Key Performance Indicators (KPIs)

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
1	Societal	Safety	Accidents per lakh effective kms per year	This indicator is the measure of safety. It measures number of accidents per lakh effective km driven per year.	Total number of accidents	Already being collected	Per lakh effective Kms	Already being collected
2	Societal	Safety	Accidents per lakh vehicle kms per year	This indicator is the measure of safety. It measures number of accidents per lakh vehicle km driven including dead km per year.	Total number of accidents	Already being collected	Gross Kms	Already being collected
3	Societal	Safety	Fatal Accidents per lakh effective kms per year	This indicator is the measure of safety. It measures number of fatal accidents per lakh effective km driven per year.	Total number of fatal accidents	Already being collected	Per lakh effective Kms	Already being collected
4	Societal	Safety	Fatal Accidents per lakh vehicle kms per year	This indicator is the measure of safety. It measures number of fatal accidents per lakh vehicle km driven including dead km per year.	Total number of fatal accidents	Already being collected	Per lakh vehicle Kms including dead km	Already being collected
5	Societal	Safety	No. of fatalities per year	This indicator is the measure of safety. It is the ratio of passengers killed to the number of passengers carried per year.	Total passengers killed	Already being collected	Total passengers carried per year	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
6	Societal	Emissions	Fuel efficiency in terms of fleet specifications	It is measured by the percentage of fleet to the total fleet with respect to age	Percentage of fleet, which is older than 8, 10 & 12 years	Available with STUs but not published	Total fleet	Already being collected
7	Societal	Emissions	% of vehicles complying to BSIV or above & BS VI or above	This indicator is another measure of emissions. It is the ratio of vehicles complying to BS IV and above & VI and above norms to the total no. of vehicles per year.	Total vehicles which are newer than BS IV or above and BS VI or above	Available with STUs but not published	Total fleet size	Already being collected
8	Societal	Service Coverage	Buses per lakh population	It is the ratio of total number of buses to the per lakh population in a particular year. It measures the coverage of service in a particular area and time.	Total number of buses on road	Already being collected	Per lakh population	Can be extracted from census data
9	Societal	Service Coverage	Route length served per sq. km	This indicator measures the service coverage based on the ratio of total route length to the total state/STU area.	Total route length	Already being collected	total state/STU area	Can be extracted from census data
10	Societal	Service Coverage	Total Route Length / Km of road network [Road Network – SH/NH/MDR (Separate for Urban & Rural)]	This indicator is the ratio of total route length to the total state/STU road network.	Total route length	Already being collected	Total state/STU road network	Can be extracted from census data

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
11	Passenger	Journey Cost	Average fare per passenger-km	This indicator suggests how cost effective; the journey cost is from passenger's perspective. It is calculated by dividing the total traffic revenue to the total passenger km. It measures how much a commuter pays for one km he/she travels in the PT system.	Total traffic revenue	Already being collected	Total passenger Kms	Already being collected
12	Passenger	Journey Time	Average Achieved Headway	This indicator measures the frequency of a bus. It helps in calculating the waiting time of passenger. It can be calculated route-wise (for scheduled and achieved). It is calculated as (Average Route Length x Average Bus Operational Hours x Total Operational Buses) / (Total Number of Daily Scheduled Bus Trips x Total Km Operated in a day) x 60	Average Route Length x Average Bus Operational Hours x Total Operational Buses	Already being collected	(Total Number of Daily Scheduled Bus Trips x Total Km Operated in a day) *60	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
13	Passenger	Journey Comfort	Occupancy Ratio	This indicator measures the journey comfort as well as management efficiency. It is a measure of capacity utilization or passengers per seat. It is calculated by total passenger kms to the ratio of total seat kms. As a measure of comfort, it is more suitable for intercity services because the journey is fairly longer than that in intra-city services.	Total Passenger Kms	Already being collected	Total Kms      Seat	Already being collected
14	Passenger	Journey Comfort	Area per bus in a depot	It is the ratio of total depot area to the buses held. This indicator suggests the area to be provided per depot as per its functionality. This helps in calculating infrastructure required per depot.	Depot area	New type of data to be collected	Buses held	Already being collected
15	Passenger	Journey Comfort	Total number of Bus Terminals / Route Km	It is the ratio of total number of terminals to the total route length. This indicator suggests state wise presence of bus terminal infrastructure.	No. of bus or stations terminals	Already being collected	Total route length	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
16	Passenger	Journey Comfort	Informative terminals	This indicator suggests the ratio of ITS enabled bus terminals to the total no. of bus terminals. It helps in tapping the Passenger information.	ITS enabled terminals	New type of data to be collected	Total no. of bus terminals	Already being collected
17	Passenger	Journey Comfort	Informative bus stops	This indicator suggests the ratio of ITS enabled bus stops to the total no. of bus stops. It helps in live tracking of Passenger information.	ITS enabled stops	New type of data to be collected	Total no. of bus stops	Already being collected
18	Passenger	Journey Comfort	Total no. of low floor buses available	It is the ratio of low floor buses to the total fleet. This indicator measures the passenger comfort and safety.	No. of low floor buses	Available with STUs	Buses held	Already being collected
19	Operator	Service Efficiency	Operational efficiency	This indicator measures the actual trips operated to the scheduled trips or % of cancelled kms. to scheduled kms. Higher the value, higher is the system efficiency and vice versa.	Actual trips	Already being collected	Trips tp be operated	Already being collected
20	Operator	Service Efficiency	Average Bus Utilization	Bus utilization is defined as kilometres done per bus on road per day	Total effective kms done on a day	Already being collected	Total buses on road on that day	Already being collected



S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
21	Operator	Service Efficiency	Annual ridership per bus station	This indicator normalizes the ridership by the number of bus stations. A higher value suggests a better utilization of the system.	Total passengers carried	Already being collected	No. of bus stations or terminals	Already being collected
22	Operator	Service Efficiency	Annual ridership per bus	It is the ratio of total passengers carried to the total number of buses on road. This indicator normalizes bus ridership by bus fleet size and reflects the asset utilization. A higher value means that on average, a bus carries more passengers and suggests better asset utilization.	Total passengers carried	Already being collected	Total number of buses on road	Already being collected
23	Operator	Service Efficiency	Passengers per effective km	This indicator measures passengers moved per effective km. Higher value suggests higher system efficiency or better revenue generation.	Total passengers carried	Already being collected	Total effective Kms	Already being collected
24	Operator	Service Efficiency	Fleet utilization (%)	It is the percentage of number of buses on road to the number of buses held by the unit x 100	Number of Buses on road	Already being collected	Number of Buses held X 100	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
25	Operator	Service Efficiency	Load Factor	This indicator measures serviceability or capacity utilization. It is based on total carrying capacity (seats + standing spaces) in the bus.	Total Passenger kms	Already being collected	total carrying capacity (seats + standing spaces)	Already being collected
26	Operator	Service Efficiency	Operating cost per passenger-km	This indicator measures the cost required to deliver every kilometre a passenger travel. As operating cost is largely fixed (e.g. manpower cost, fuel cost) once the route and schedule are determined, a higher ridership and longer trip distance would lead to higher operational efficiency.	Total Operating cost	Already being collected	Total passenger Kms	Already being collected
27	Operator	Service Efficiency	Average passenger km per vehicle km	This indicator measures the average system loading, in other words, how well the operating capacity has been utilized. A higher value suggests better utilization.	Total Passenger kms	Already being collected	Total effective Kms	Already being collected
28	Operator	Service Efficiency	Highest KMPL	It is the ratio of KMPL on gross Kms	Gross Km	Already being collected	Litres consumed	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
29	Operator	Service Efficiency	Maximum Improvement in KMPL	The improvement in KMPL is worked out as difference in the current year to the previous year.	KMPL in current year	Already being collected	KMPL in base year	Already being collected
30	Operator	Service Efficiency	Breakdown per 10000 eff kms	This indicator is a measure of quality of service. It gives an indication of the standard of maintenance as well as of general fleet condition. The older and less well maintained a fleet, the lower the number of kilometres per breakdown is likely to be. It is calculated as total number of kilometres operated over a period (scheduled and unscheduled), divided by the number of breakdowns incurred in that period.	Total effective kms	Already being collected	Total no. of breakdowns in a year	Already being collected
31	Operator	Service Efficiency	Punctuality	It is the percentage of reliability of arrival and departure services in a depot	Already reported by STUs at present			
32	Operator	Service Efficiency	Highest vehicle productivity	It is the ratio of effective kms operated to buses held per day. It shall be calculated against each	Total effective kms	Already being collected	Buses held per day	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
				category i.e., Urban, Non-Urban and hilly.				
33	Operator	Service Efficiency	Maximum improvement in vehicle productivity	It is the comparison in the vehicle productivity of the STUs with that of base year. It is calculated by applying weightage for incremental productivity using formula $y=2x+5$ where x is the value corresponding to the increment in vehicle productivity.	Current year vehicle productivity	To be derived from 2 indicators which are already being collected	Base year vehicle productivity	To be derived from 2 indicators which are already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
34	Operator	Service Efficiency	Highest Tyre Performance	It is calculated as the number of new standard tyres consumed per lakh effective kms and then three years moving average of tyre consumption is calculated from the base year to find out improvement in tyre performance. Since STUs use various types of tyres, hence, they are converted into standard tyre using formula - $9 \times 20, 14$ PR nylon tyre. The average price of each tyre furnished by the reporting STUs is used for computing conversion factor. Then the three years moving average of standard tyres consumed per lakh effective kms is calculated from the base year. The highest tyre performance is evaluated on the lowest tyre consumption per lakh effective km. This shall be calculated for each category	Take moving average of New tyres consumed per lakh km for 3 consecutive years including current year			Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
				i.e., Urban, Non-Urban and Hilly.				

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
35	Operator	Service Efficiency	Maximum Improvement in tyre performance	It is the improvement in consumption of new tyres per lakh effective kms. A weightage of mark y is assigned for the incremental tyre performance using the formula $Y = 2x + 5$ , where x is the value corresponding to the increment in tyre performance	Average of Tyre performance in current year	To be derived from 2 indicators which are already being collected	Average of Tyre performance in previous year	To be derived from 2 indicators which are already being collected
36	Operator	Economic Efficiency	Minimum operational cost	This is calculated by arranging the data on lowest operational cost per effective km without the element of tax in ascending order. It shall be calculated according to the fleet strength of each category of STUs i.e., Urban, Non-Urban and Hilly.	Cost without tax (lakhs) or total operating cost	Already being collected	Effective kms (lakhs)	Already being collected
37	Operator	Economic Efficiency	Total earning per bus per day	It is the ratio of total earnings to the total number of buses on the road.	Already being collected			
38	Operator	Economic Efficiency	Total cost per bus per day	It is the ratio of total operating cost to the total number of buses on the road.	Already being collected			

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
39	Operator	Economic Efficiency	Operating ratio / Cost recovery ratio	Percentage operating ratio is defined as the percentage of the operating costs to the total traffic revenue. It may most conveniently be expressed as a percentage. If it equals 100%, the operation as a whole is breaking even; if it exceeds 100% it is earning a surplus, while if it is below 100% the operation is losing money.	Total cost - (Interest + Taxes)) or total operating cost	Already being collected	Traffic revenue	Already being collected
40	Operator	Economic Efficiency	Total road accident- Compensation per accident	This indicator measures average compensation paid for an accident occurred. As an aspect of safety, it can be reduced thereby reducing net losses.	Total road accident compensation	Already being collected	Total no. of accidents	Already being collected
41	Operator	Economic Efficiency	Major & serious accident - Compensation per accident	This indicator measures average compensation paid for major and serious accident occurred. As an aspect of safety, it can be reduced thereby reducing net losses.	Total road major and serious accident compensation	Already being collected	Total no. of major or serious accidents	Already being collected
42	Operator	Economic Efficiency	Minor road accident - Compensation per accident	This indicator measures average compensation paid for minor road accident occurred. As an aspect of	Total minor road accident compensation	Already being collected	Total no. of minor accidents	Already being collected



S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
				safety, it can be reduced thereby reducing net losses.				
43	Operator	Economic Efficiency	Avg. fare per boarding	This indicator measures average fare per trip directly. The comparison of this indicator is still meaningful as commuters usually would not compute how long they have travelled; instead, they care more for how much they have been charged for a trip. This indicator can also be interpreted as average fare per passenger trip because of its unlinked nature in STUs.	Total traffic revenue	Already being collected	Total passengers carried	Already being collected
44	Operator	Economic Efficiency	Revenue per passenger	This indicator measures average money paid by each passenger for using the service. It will help consider whether or not to revise fare structure. Higher value suggests better amount drawn from passenger.	Total traffic revenue	Already being collected	Total passengers carried	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
45	Operator	Economic Efficiency	Farebox ratio	This indicator measures the financial viability of an operator without subsidy. A ratio above 1 suggests that the operator is able to recover its total cost from fare (traffic) revenue.	Total traffic revenue	Already being collected	Total cost	Already being collected
46	Operator	Economic Efficiency	Operating cost per trip	This indicator measures average cost to run a scheduled trip from origin to destination. Lower value suggests better cost efficiency.	Total Operating cost	Already being collected	Total actual trips operated	Already being collected
47	Operator	Economic Efficiency	Operating cost per passenger km	This indicator measures the cost required to deliver every kilometre a passenger travel. As operating cost is largely fixed (e.g. manpower cost, fuel cost) once the route and schedule are determined, a higher ridership and longer trip distance would lead to higher operational efficiency.	Total Operating cost	Already being collected	Total passenger kms	Already being collected
48	Operator	Economic Efficiency	Operating cost per boarding or passengers	This indicator measures the operating cost for every passenger boarding. A	Total Operating cost	Already being collected	Total passengers carried	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
				higher value refers to lower efficiency.				
49	Operator	Management Efficiency	Area per bus in bus terminals	It is the ratio of total bus terminal area to the total number of buses held. This indicator suggests the area to be provided per terminal as per its functionality. This helps in calculating infrastructure required per terminal.	Bus terminal area	New type of data to be collected as	Buses held	Already being collected
50	Operator	Management Efficiency	Staff ratio	It is the ratio of total number of staffs employed to the number of buses on road. It includes drivers, conductors, checkers & traffic supervisory staff, workshop & maintenance, administration and others.	Total number of staffs	Already being collected	Number of buses on road	Already being collected
51	Operator	Management Efficiency	Average salary per employee per day	It is the ratio of total salary to the total number of employees	Already being collected			

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
52	Operator	Management Efficiency	Occupancy Ratio	It is a measure of capacity utilization i.e., passengers per seat. It is the ratio of total passenger km to the r total seat km. It is more suitable for intercity services i.e., where journey is longer.	Total passenger Kms	Already being collected	Total seat Kms	Already being collected
53	Operator	Management Efficiency	Fleet utilization (%)	It is the percentage of number of buses on road to the number of buses held by the unit	Number of Buses on road	Already being collected	Number of Buses held X 100	Already being collected
54	Operator	Management Efficiency	Percent seated capacity	The percentage of seated capacity (total seats as a percentage of total passenger places) is a useful indicator of service quality. A high proportion of seated passengers provides more comfort but requires more vehicles to carry a given number of passengers. Therefore, the cost per passenger is higher.	Passenger seats	Already being collected	Total carrying capacity (seats + standing spaces)	Already being collected

S. No.	Category	Sub-category	Indicator	Definition	Data input			
					Input 1	Status	Input 2	Status
55	Operator	Management Efficiency	Manpower productivity	This indicator is a measure of employee productivity. In effect it combines the vehicle productivity and staff per bus indicators and is influenced by the same factors. It is the total effective kilometres operated for a period divided by total man days paid for	Total effective kms operated	Already being collected	Total man days paid for	Already being collected