

# Impact Assessment of Toilets Constructed by Bharat Electronics Limited (BEL) under Corporate Social Responsibility (CSR) - Swachh Bharat Mission(SBM) Swachh Vidyalaya Abhiyan (SVA)



Submitted to



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## **ACKNOWLEDGEMENT**

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IPE CSR Team

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# EXECUTIVE SUMMARY

BEL has undertaken various CSR programmes and initiatives under its Corporate Social Responsibility Policy, in line with Section 135 and Schedule VII of the Companies Act, 2013. The objective of CSR is to contribute towards inclusive growth, sustained and equitable development in society through capacity building measures and empowerment of the marginalized and underprivileged sections/communities. Focused interventions are undertaken in the sectors of healthcare, education, rural development, environmental sustainability & vocational skill development as approved by the Board.

## About the Project

As a part of the Government initiative on Swachh Vidyalaya Abhiyan (SVA), BEL has undertaken the construction of Toilets in selected schools in the vicinity of their various units located across the country. Nine units of BEL actively worked for the implementation of the project by conducting field surveys for identifying the requirement and formulating a process for the implementation of the project. All the units have initiated the construction in the select schools in 2014-15 and completed the project during 2016-17. On completion of the projects, the various BEL units have handed over the projects to respective schools. A total of 330 toilets have been constructed by BEL in 99 schools and three public places in the vicinity of the nine BEL units spread across eight states thereby contributing to the Government's Swachh Bharat Mission (SBM).

Institute of Public Enterprise, Hyderabad has been entrusted with the assignment of conducting an Impact Assessment Study to assess the effectiveness of these projects by BEL.

## Objectives of the Study

The main objective of the evaluation and impact assessment study of these projects are:

- To identify the focus and relevance of the selected CSR projects by BEL
- To conduct an exploratory study on the impact of the activities undertaken by BEL
- To identify the areas for change in the policy or methods of CSR activities by which more and more people are benefitted
- To look for opportunities and possibilities for strengthening the existing programs

## Impact Assessment

The impact is measured in terms of relevance, utility, effectiveness, efficiency, operation and maintenance, tangible and intangible benefits and sustainability. An impact assessment Matrix was prepared on a five-point Likert scale (1= Very Low, 2= Low, 3= Moderate, 4= High and 5= Very High) and the findings are as given below.

- **Relevance:** Schools under the BEL units at Chennai, Hyderabad, Kotdwara, Ghaziabad and Panchkula have shown a very high degree of performance in this metric while in the other units the performance has been a shade lower, though still high. All the projects have improved awareness on the sanitation and hygiene practices among the young students in primary and high schools across the country and the general public.

- **Utility:** Schools under the BEL units at Kotdwara and Panchkula have shown very high utility followed by the other units. BEL followed a unique style in the construction of toilets in various selected schools as compared to the existing facilities. The design and specifications used in the construction were approved by BEL. More than 98 per cent of the students are satisfied with the toilets constructed by BEL.
- **Operation and Maintenance:** All the schools have shown high impact on the operation and maintenance. All the projects have been implemented in government schools and the data reveals that there are challenges in the maintenance and operational activities. 80 percent of the schools have no special budget towards operation and maintenance. In some schools the toilets are cleaned and maintained by the school support staff. In 80 per cent of the schools the cleaning is done twice while in the rest, it is done once in a day. In a small percentage of schools, students are involved in cleaning the toilets. All the schools have provided for running water, hand wash, soaps, related sanitary material and electricity. Privacy for girl children also has been given enough attention in most of the facilities.
- **Effectiveness:** By and large, the toilets are functioning effectively in most of the schools barring a few. The asset created by BEL has resulted in improvement in health /hygienic practices, students' enrolment, their health etc.
- **Tangible and Intangible Benefits:** The student attendance is an indication of the student health. It is observed that absenteeism due to ill health of students has reduced. Access to toilet hygiene in schools brought tangible benefits including toilet hygiene, reducing risk of infectious diseases and improvement in children's health by practicing good hand washing habits.
- **Sustainability:** The sustainability of the project depends on the quality of construction, utility and maintenance. The construction being of very good quality, the various schools / agencies have been instructed about the need for proper maintenance, creating awareness and upkeep of the facilities and the study reveals that by and large these are being managed effectively. Periodic monitoring of the functioning of the facilities will help in making the projects more sustainable.

## Outcomes

- The project has had its impact in improving the admission of boys and girls and there has been an improvement in the enrollment numbers of students in the schools last year.
- The school dropouts' numbers have reduced in most of the schools.
- Students who were often sick due to unhygienic conditions at schools are not facing those problems now and the attendance has improved.
- Provision of good toilet facilities helped the students to develop good sanitation habits.
- Open defecation practice among the school children has decreased as they have enough toilets.
- Running water provision and construction of overhead tank, hand wash facilities, separate toilets and urinals for boys and girls in schools and for men and women in the public toilets, adequate lighting and good ventilation are some of the major features at all the project sites.



- Toilets usage has improved due to sufficient facilities available at toilet locations thereby contributing to increasing the Open Defecation Free places.
- Easy access to public and cleanliness.
- Parents and other stakeholders have expressed complete satisfaction of the facilities created by BEL and encouraged children to go to school regularly.

## Conclusions

In conclusion we can summarize that BEL has achieved all the stated objectives of this Exercise. The projects have contributed substantially to promoting the Government's SVA scheme and creating a better environment for school going children apart from contributing to the Swachh Bharat Mission through the construction of facilities in public places. The study shows that there is a marked improvement in the awareness levels of students about hygiene and good sanitation habits that has helped in creating the basis for a cleaner society. Periodic monitoring of the assets on their usage, maintenance and condition will help in improving the sustainability of this BEL CSR initiative.



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# CORPORATE SOCIAL RESPONSIBILITY AT BEL

## Introduction

Corporate social responsibility (CSR) has been in the limelight in the recent past due to the importance given to it by successive governments. According to the UNIDO<sup>1</sup>, CSR is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. CSR is generally understood as being the way through which a company achieves a balance of economic, environmental and social imperatives (Triple-Bottom-Line Approach) while addressing the expectations of shareholders and stakeholders.

## CSR in India

The CSR provisions of the Companies Act, 2013 seek to create an enabling environment by promoting and facilitating enhanced connections between corporates and communities. It aims at facilitating deeper thought and longer-term strategies for addressing some of the most persistent social, economic, and environmental problems, assisting in synergizing partnerships between corporate, governments, CSOs (civil society organizations), academic institutions and social entrepreneurs. Through these provisions, business resources can be channeled into various programmes to address social, economic, and environmental problems and bring about a sustainable future for all. Thus, the latest Companies Act, 2013, recognizes the importance of CSR as part of a firm's business strategy. Section 135 contains 5 sub-sections on CSR. Schedule VII of the Companies Bill lists out the CSR activities.

## Introduction to Bharat Electronics Limited

Bharat Electronics Limited (BEL) is a Navaratna Central Public Sector Undertaking (CPSU) under the Ministry of Defence, Government of India. The company manufactures and provides advanced products and systems for military, government and civilian customers. The company aims at customer centered state-of-the-art products and solutions at competitive prices, meeting the demands of quality, delivery and service; generate internal resources for profitable growth; attain technological leadership in defence electronics through in-house R&D; partnership with defence / research laboratories and academic institutions; thrust to exports; create a facilitating environment for people to realize their full potential through continuous learning and teamwork; give value for money to customers and create wealth for shareholders; constantly benchmark company's performance with best-in-class internationally; raise marketing abilities to global standards; strive for self-reliance through indigenization.

<sup>1</sup> <https://www.unido.org/our-focus/advancing-economic-competitiveness/competitive-trade-capacities-and-corporate-responsibility/corporate-social-responsibility-market-integration>

## BEL Performance Highlights

The company has achieved a turnover of Rs. 13,81,816 Lakhs during 2020-21 against Rs. 12,60,776 Lakhs in 2019-20 with a registered growth of 9.60 per cent. BEL achieved an export sale of 51.93 million USD during the year. The major products / systems exported during the year include coastal surveillance system, data link II, EOS CoPASS, IFF-I Mk-XI, radar finger printing system, communication equipment's, TR Modules, Vacuum Interrupters, Mechanical Parts, Cable Looms, Radar Spares, Sub assembly of radar & EW systems, assemblies and sub-assemblies of missile systems, shelter spares, electronic fuzzes, etc. The company has been exporting products to countries including USA, France, Israel, Germany, Switzerland, Sweden, China, Republic of Armenia, Maldives, Indonesia, Sri Lanka, Turkey, Bhutan and SEZs. The following Table-1.1 depicts the financial performance of BEL from 2014-15 to 2020-21.

**Table-1.1: Financial Performance of BEL FY 2014 to 2021<sup>2</sup> (Rs. in Lakhs)**

Details	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>Turnover</b>	669457	752164	882470	1008484	1178922	1260776	1381816
<b>Profit Before Tax</b>	146669	180914	202942	194784	2,70,319	247917	293481
<b>Profit After Tax</b>	116724	135767	154762	139929	192729	179383	206542

## CSR Interventions at BEL

BEL has undertaken various CSR programmes and initiatives as per the Corporate Social Responsibility Policy, in line with Section 135 and Schedule VII of the Companies Act, 2013. The objective of CSR is to contribute towards inclusive growth, sustained and equitable development in society through capacity building measures and empowerment of the marginalized and underprivileged sections/communities. Focused interventions are undertaken in the sectors of healthcare, education, rural development, environmental sustainability & vocational skill development as approved by the Board. During 2020-21 the company has spent Rs. 2,279 Lakhs in thrust areas such as Healthcare, Nutrition, Education and Vocational Skill Development. BEL also diligently supported the country to fight against COVID-19 and was one among the few CPSEs chosen by the Department of Public Enterprises (DPE) to supply Cold Chain Equipment for the COVID-19 Vaccination program of the Government of India. The following Table-1.2 details the composition of CSR committee:

**Table-1.2: Composition of the CSR Committee During the FY 2020-21**

S. No.	Name of Directors	Designation / Nature of Directorship
1	Mr. M V Gowtama	Chairman & Managing Director / Chairman
2	Mr. Shivakumaran K M	Director (HR) / Member
3	Mrs. Shikha Gupta	Director (Other Units) / Member
4	Mr. Dinesh Kumar Batra	Director (Finance) & CFO / Member
5	Mr. Sunil Kumar Kohli	Independent Director / Member

(Source: Annual Report 2020-21)

## CSR Expenditure

The budgetary allocation for CSR expenditure shall be at least 2% of average net profits of the company made during the three immediately preceding financial years. The average Net profit shall be calculated in accordance with the provision of Section 198 of the Companies

<sup>2</sup> BEL Annual Report 2020-21

Act, 2013 and amendments thereof. This budgetary allocation will need to be approved by the Board on recommendation of CSR Committee of the Board. The company strives to maximize its spending on CSR activities. The table 1.3 details the budget allocation for the years 2014-15 to 2020-21.

**Table-1.3: CSR Budget Allocation from 2014-15 to 2020-21 (Rs. in Lakhs)**

Details	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Prescribed CSR Expenditure	2238	2523	2972	3475	3543	4310	4648
CSR Budget	2304	2569	2986	3499	3741	4310	4688

(Source: BEL Annual Reports from FY 2014-15 to FY 2020-21)

## BEL CSR Policy Statement

BEL CSR policies are detailed below:

- BEL recognizes its role and responsibility as a corporate entity and constantly endeavors to actively participate in the social and economic development of the communities in which it operates through CSR initiatives.
- BEL is committed to its stakeholders to conduct CSR activities in an economically, socially and environmentally sustainable manner that is transparent and ethical.
- CSR activities shall include initiatives which aim at achieving sustainable development goals.

## BEL CSR Objectives

The following are the broad objectives of BEL in its CSR interventions.

- BEL's capacity to identify and provide solutions in diverse environments, leveraging technology, will be used to address identified issues in the social, economic and environmental ecosystem that the company operates in.
- Creating awareness on CSR within the organization through trainings / workshops / seminars etc.
- Contributing to inclusive growth, sustained and equitable development in society through capacity building measures, empowerment of the marginalized and underprivileged sections / communities.

## Areas of CSR Initiatives (as per Schedule VII of Companies Act, 2013)

- Eradicating hunger, poverty and malnutrition, promoting health care including preventive health care and sanitation including contribution to the Swachh Bharat Kosh set-up by the Central Government for the promotion of sanitation and making available safe drinking water.
- Promoting education, including special education and employment enhancing vocation skills especially among children, women, elderly and the differently abled and livelihood enhancement projects.
- Promoting gender equality, empowering women, setting up homes and hostels for women and orphans; setting up old age homes, day care centers and such other facilities for senior



citizens and measures for reducing inequalities faced by socially and economically backward groups.

- Ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agroforestry, conservation of natural resources and maintaining quality of soil, air and water including contribution to the Clean Ganga Fund set-up by the Central Government for rejuvenation of river Ganga.
- Protection of national heritage, art and culture including restoration of buildings and sites of historical importance and works of art; setting up public libraries; promotion and development of traditional art and handicrafts.
- Measures for the benefit of armed forces veterans, war widows and their dependents, Central Armed Police Forces (CAPF) and Central Para Military Forces (CPMF) veterans, and their dependents including widows.
- Training to promote rural sports, nationally recognized sports, paralympic sports and Olympic sports
- Contribution to the Prime Minister's national relief fund or Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM CARES Fund)] or any other fund set up by the central govt. for socio economic development and relief and welfare of the schedule caste, tribes, other backward classes, minorities and women.
- Contribution to incubators or research and development projects in the field of science, technology, engineering and medicine, funded by the Central Government or State Government or Public Sector Undertaking or any agency of the Central Government or State Government; and Contributions to public funded Universities; Indian Institute of Technology (IITs); National Laboratories and autonomous bodies established under Department of Atomic Energy (DAE); Department of Biotechnology (DBT); Department of Science and Technology (DST); Department of Pharmaceuticals; Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH); Ministry of Electronics and Information Technology and other bodies, namely Defense Research and Development Organization (DRDO); Indian Council of Agricultural Research (ICAR); Indian Council of Medical Research (ICMR) and Council of Scientific and Industrial Research (CSIR), engaged in conducting research in science, technology, engineering and medicine aimed at promoting Sustainable Development Goals (SDGs)
- Rural development projects.
- Slum area development. Explanation: For the purposes of this item, the term 'slum area' shall mean any area declared as such by the Central Government or any State Government or any other competent authority under any law for the time being in force.
- Disaster management, including relief, rehabilitation and reconstruction activities.

### **About Swachh Bharat: Swachh Vidyalaya Abhiyan**

Swachh Vidyalaya Abhiyan is the national campaign driving 'Clean India: Clean Schools'. A key feature of the campaign is to ensure that every school in India has a set of functioning and well-maintained water, sanitation and hygiene facilities. Water, sanitation and hygiene in schools

refers to a combination of technical and human development components that are necessary to produce a healthy school environment and to develop or support appropriate health and hygiene behaviors. The technical components include drinking water, hand washing, toilet and soap facilities in the school compound for use by children and teachers. The human development components are the activities that promote conditions within the school and the practices inculcated in children that help to prevent water, hygiene and sanitation related diseases. Water, sanitation and hygiene in school aims to make a visible impact on the health and hygiene of children through improvement in their health and hygiene practices, and those of their families and the communities. It also aims to improve the curriculum and teaching methods while promoting hygiene practices and community ownership of water and sanitation facilities within schools. It aims to improve children's health, school enrolment, attendance and retention and paves the way for a new generation of healthy children.

## Project Initiation

As a part of this Government initiative on Swachh Bharat, Swachh Vidyalaya Abhiyan, BEL has undertaken the construction of toilets in selected schools in the vicinity of their Units. The nine units of BEL actively worked for the implementation of the project by conducting field surveys for identifying the requirement and formulating a process for the implementation of the project. All the units have initiated the construction in selected schools in 2014-15 and completed the project during 2016-17. On completion of the projects, the various BEL units have handed over the projects to respective schools.



# SCOPE AND METHODOLOGY

## Scope of the Study

The scope falls within the broader tasks outlined in the Companies Act, 2013 and DPE's National CSR and Sustainability guidelines.

- Documentary evidence is to be verified.
- Interactions with stakeholders of the projects are to be organized. Select project sites should be visited to confirm the initiatives.
- Data is to be collected from the beneficiaries through questionnaires, discussions etc. The questions are to be so framed as to check background, development, current conditions, and overall project implementation.
- Opinions from the various stakeholders like villagers, key role holders of the villages, students, parents, teachers, farmers, contractors of the project and other key officials involved in the project implementation also are to be considered to analyze the impact of the CSR initiative.

## Methodology

Mixed method research has been followed for this study. The data has been collected using primary and secondary data sources. The information collected from BEL Corporate Social Responsibility (CSR) reports and annual reports from BEL formed the sources of secondary data. We have followed quantitative and qualitative methods for the collection of primary data. The survey-based method has been used to collect quantitative data. Moreover, Focus Group Discussions (FGDs), Interviews with unit heads and stakeholders were used to collect qualitative data.

## Objectives of the Study

The main objective of the evaluation and impact assessment study of CSR are:

- To identify the focus and relevance of the selected CSR projects by BEL
- To conduct an exploratory study on the impact of the activities undertaken by BEL
- To identify the areas for change in the policy or methods of CSR activities by which more and more people are benefitted.
- To look for opportunities and possibilities for strengthening the existing programs

## Approach and Methodology

- Teams visited the project sites and interacted with the principals, teachers, stakeholders, including students, parents and other beneficiaries

- To get a more holistic view, the teams interviewed the implementation agencies to understand the implementation of the project, challenges, and results.
- The teams verified the documents relating to the project in respective BEL Units.
- Data has been collected from the beneficiaries through questionnaires and by conducting focused group discussions. The questions majorly focused on the background, development, current conditions, and overall project implementation.
- The assessment framework of the project is detailed in terms of its relevance, efficiency, effectiveness, innovation, sustainability and community participation. Five points Likert scale has been used to measure the impact.

## Study Design

Study being descriptive in nature, both primary and secondary data has been used for analysis. Primary data is collected by visiting field locations. Both quantitative and qualitative data was collected by inspecting and examining the toilets constructed by the BEL Units. Besides collecting the requisite information about the projects from the implementing agencies, the evaluation team also interacted with the beneficiaries to find out the impact of the projects. Secondary data relating to the facilities created by BEL was collected from the implementing agencies and the CSR department at BEL.

## Study Tools

Structured questionnaires were used to collect the data. Focus group interviews were conducted with stakeholders, including the school principals, teachers, students, parents, implementing agencies, BEL officials, etc.

- Need for the project
- Project outcomes
- The total cost of the project
- Role of stakeholders
- Whether branding has been done to promote the CSR activities of BEL, etc.
- Stakeholders' involvement and their response
- Sustainability of the project

**Table-2.1 Stakeholder's Interaction Details**

S. No.	Unit	Interaction Date	IPE Team	Interacted BEL Officials' Details
1	BEL Ghaziabad	21.03.2022	Prof J Kiranmai Ms Deepa B	Smt Aparna Tiwari, Senior DGM (CSR)
2	BEL Kotdwara	22.03.2022	Prof J Kiranmai Ms Deepa B	Mr Anand Tripathi, DM (HR)
3	BEL Bangalore	23.03.2022	Prof Ch Lakshmi Kumari	Dr Shashibhushana H S, DGM (CSR & EED)
4	BEL Chennai	24.03.2022	Prof S Satish Kumar	Mr Murugadoss D, Senior DGM (CSR)





S. No.	Unit	Interaction Date	IPE Team	Interacted BEL Officials' Details
5	BEL Panchkula	24.03.2022	Prof J Kiranmai Ms Deepa B	Mr KP Garg, Sr DGM (Services)
6	BEL Navi, Mumbai	24.03.2022	Dr Samarendra Kumar	Mr Anuj Ranjan Toppo, Manager (HR)
7	BEL Pune	25.03.2022	Dr Samarendra Kumar	Mr Chetan Jaysing Patil Auti, Senior DGM (HR)
8	BEL Hyderabad	28.03.2022	Prof P S Janaki Krishna Mr Vaman Reddy	Mr Siddeswara M N, DGM (HR)
9	BEL Machilipatnam	30.03.2022	Prof J Kiranmai Mr Vaman Reddy	Mr V S V R Phani Kumar, Manager (HR)

## Study Sample

Study was carried out in 330 locations across eight states in India as detailed below:

**Table-2.2: Study Sample**

S. No.	Name of the Location	Stakeholders							Sample Surveyed
		Total Schools Number / Public Places	Total Number of Toilets	Total Sample Size	Students	Headmaster and Teachers	Parents	Various Stakeholders	
1	Chennai school toilets	6 schools	18	550	414	53	49	36	552
2	Bangalore School toilets	4 schools	16	160	124	22	16	08	170
	Bangalore Public toilets	1 public place	04	50	Public toilet stakeholders: 52 and Public toilets in-charge: 01				53
3	Hyderabad School toilets	21 schools (Actual)	38	570	450	72	62	40	624
		Survey has been conducted in 19 schools due to demolishing of toilets in 2 schools							
4	Machilipatnam school toilets	9 schools	18	270	208	35	18	09	270
5	Kotdwara school toilets and public toilets Uttarakhand	7 schools	25	210	159	21	19	11	210
		one public place	13	100	100 public toilet users; 10 management committee members of temple				110
6	NAMU school toilets	5 schools	10	150	115	14	15	7	151
7	Pune school toilets	4 schools	22	120	95	12	12	6	125
8	Ghaziabad school toilets and public toilets	41 schools 1 public place Mohan Nagar bus stand	148 6	1200 30	951	115	123	41	1230 33
		Various stakeholders (toilet users): 32; Public toilet in-charge: 1							
9	Panchakula schools toilets	2 schools	8	150	116	20	8	7	151

## Impact Analysis Framework (for schools)

BEL, through its CSR initiatives has supported an important initiative of the Government and also enhanced the Swachhata slogan by constructing toilets in the selected schools in various regions. The impact is measured in terms of relevance, utility, effectiveness, efficiency, operation and maintenance, tangible and intangible benefits and sustainability. The following are the details of the impact analysis framework followed in the study:

**Relevance:** The project is relevant as Swachh Vidyalaya Abhiyan, a national initiative is the national campaign driving 'Clean India: Clean Schools'. A key feature of the campaign is to ensure that every school in India has a set of functioning and well-maintained water, sanitation, and hygiene facilities. Water, sanitation and hygiene in schools refers to a combination of technical and human development components that are necessary to produce a healthy school environment and to develop or support appropriate health and hygiene behaviors.

**Utility:** Toilets' functional utility performance depends on proper toilet design, quality of construction, running water availability, and regular maintenance at toilet locations.

**Operation & Maintenance:** Running water provision, hand wash provision, soaps and related sanitary material, proper budget allocation for toilets maintenance and operation, toilets maintenance personnel, frequency of cleaning of toilets, implementing the best practices for schoolchildren on how to use school toilets, electricity, and privacy for girl children etc. are the important key checklist components for operation and maintenance of school toilets.

**Effectiveness:** The criterion of effectiveness is applied at both the output and outcome levels.

- The output is effective when the created assets (toilets and urinals) are used. At the same time, the outcome is effective when anticipated results are obtained, i.e. increase in prudent utilization of the facility provided, usage of school toilets for a longer period, improvement in hygiene/hygienic practices, students' enrolment, schoolchildren health etc.
- The combination of adequate water and sanitation facilities, correct behavioral practices and education is critical for securing children's good health, learning, and overall development.
- Toilet hygiene measures are applied to control viral infections in the schools. Regarding the impact of toilet hygiene among schoolchildren, common hygiene measures include hand washing, drying hands, disinfecting or covering the toilet seat surface before use, and flushing the toilet with the lid closed.

### Tangible and Intangible Benefits

**Tangible Benefits:** Access to toilet hygiene in schools brings many tangible benefits. For example, good toilet hygiene in schools reduces the risk of infectious diseases and ensures that children are healthy by practicing good hand washing habits. Providing accessible and acceptable toilets contributes to well-being and increases the ability to concentrate during classes. Access to safe toilet sanitation in schools is essential for ensuring good health and overall well-being of students. The lack of safe sanitation facilities may lead to infections such as diarrhea and school absence.



**Intangible Benefits:** These benefits are hard to quantify in monetary terms but are largely in addition to the benefits evaluated. Cleanliness and hygiene, Convenience, privacy, safety and security are important intangible benefits to be discussed.

### **Sustainability**

The criterion of sustainability depends on the level of outcome. In the case of the construction of toilets the project outcomes such as improved academic performance, quality of education, improvement in students' enrolment, etc. for a longer time, which are possible only when the college authorities undertake the regular maintenance and repairs from time to time and allocate proper budget to meet maintenance activities.

### **Impact Analysis Framework (for public toilets)**

**Relevance:** By Public Toilets, it is implied that these are to be provided for the floating population / general public in places such as markets, train stations, tourist places, near office complexes, bus stands or other public areas where there are considerable number of people passing by.

**Utility:** Toilets' functional utility performance depends on proper toilet design, quality of construction, running water availability, and regular maintenance at toilet locations.

**Operation and Maintenance:** Running water provision, hand wash provision, soaps and related sanitary material, proper budget allocation for toilets maintenance and operation, toilets maintenance personnel, frequently cleaning toilets, are components are important key aspects for operation and maintenance of public toilets.

**Effectiveness:** The criterion of effectiveness is applied at both the output and outcome levels.

- The output is effective when the created assets (toilets and urinals) are used.
- The combination of adequate water, sanitation facilities, correct behavioral practices are essential elements for effective utilization of public toilets.
- Toilet hygiene measures are applied to control viral infections in the public places.

### **Tangible Benefits and Intangible Benefits**

**Tangible Benefits:** Access to toilet hygiene in public places brings many tangible benefits. For example, good toilet hygiene in public places reduces the risk of infectious diseases and ensures that public are healthy by practicing good hand washing habits. Access to safe toilet sanitation in public places is essential for ensuring good health and overall well-being of the society. The lack of safe sanitation facilities may lead to infections such as diarrhea and other diseases.

**Intangible Benefits:** Which are hard to quantify in monetary terms but are largely in addition to the benefits evaluated. Cleanliness and hygiene, Convenience, privacy, safety, and security are important intangible benefits to be discussed.

## Sustainability



The project outcomes such as improved when more stakeholders use the facility created meeting the objectives of the study. As the project is being maintained by the temple / bus stand management, it is evident that the project is sustainable.

## Impact Analysis Matrix

Impact is measured considering majorly the six criteria of relevance, utility, operation and maintenance, effectiveness, tangible and intangible, and sustainability on a five-point Likert scale.

1= Very Low, 2= Low, 3= Moderate, 4= High and 5= Very High

The following Impact Analysis Matrix is used in the unit-wise analysis.

Very Low	Low	Moderate	High	Very High
				

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

## Deliverables

- Questionnaires administered for the study in English and local languages viz; Kannada, Tamil, Hindi, Telugu and Marathi (Annexure)
- Draft Assessment reports
- Final Impact assessment Report with photographs in English and Hindi languages.



# CONSOLIDATED ANALYSIS

BEL implemented the project titled 'Toilets constructed by BEL under CSR - SVA' in its nine units. The unit wise details of the project are depicted in the following Table-3.1:

**Table-3.1: Unit-wise Number of Toilets Constructed**

S. No.	Name of the BEL Unit	State	Total Number of Toilets Constructed	Total Number of Schools / Locations
1	Machilipatnam	Andhra Pradesh	18	9
2	Panchkula	Haryana	8	2
3	Bangalore	Karnataka	20	5
4	NAMU	Maharashtra	10	5
5	Pune	Maharashtra	22	4
6	Chennai	Tamil Nadu	18	6
7	Hyderabad	Telangana	42	21
8	Ghaziabad	Uttar Pradesh	154	42
9	Kotdwara	Uttaranchal	38	8

This project also aligned with Government of India's prestigious project 'Swachh Vidyalaya Abhiyan'. The study suggests that BEL units has achieved the project objective after construction / renovation of schools' toilets in these selected schools. Stakeholders including students, teachers, parents, villagers / citizens, education department officials, public representatives were satisfied about the way BEL constructed / renovated school toilets, provided running water facility, facilities in school toilets, students' toilet usage, cleaning and maintenance process, awareness on how to use school toilets etc. There was a positive improvement in school children's attitude towards cleanliness, attendance, health, and awareness levels. BEL has undertaken various types of toilets in different locations. These types include:

Type A	1 WC, 1 urinal, 1 washbasin for boys toilet and 2 WC, 1 wash basin for girls toilet
Type B	2 WC, 3 urinal, 1 wash basin for boys toilet and 2 WC, 1 wash basin for girls toilet
Type C	3 WC, 5 urinal, 2 wash basin for boys toilet and 3 WC, 2 wash basin for girls toilet
Type F	3 WC, 5 urinal, 2 wash basin for boys toilet and 6 WC, 4 wash basin for girls toilet

It is evident from the following Table-3.2 that all the constructed toilets are functional except 2 school toilets in the case of schools in Hyderabad. The toilets were constructed and later demolished due to the extension activities undertaken by the school. Table-3.2 details available Vs. functional toilets in all the BEL units.

**Table-3.2: Available Vs. Functional Toilets in All Units**

S. No.	Name of the BEL Unit	Total Number of Schools / Locations	Available	Functional	Total Number of Toilets Constructed
1	Bangalore	5	20	20	20
2	Chennai	6	18	18	18
3	Ghaziabad	42	154	154	154
4	Hyderabad	19	38	38	38
5	Kotdwara	8	38	38	38
6	Machilipatnam	9	18	18	18
7	NAMU	5	10	10	10
8	Panchkula	2	8	8	8
9	Pune	4	22	22	22

The Table-3.3 depicts the consolidated details of boys and girls in all the schools who benefited directly from the implementation of the project.

**Table-3.3: Unit-wise Boys Vs. Girls in the Schools**

S. No.	Name of the Unit	Number of Toilets	Number of Schools	Boys	Girls
1	Bangalore	20	04+1	435	452
2	Chennai	18	06	1740	1333
3	Ghaziabad	154	41+1	5747	5283
4	Hyderabad	38*	19*	2239	2282
5	Kotdwara	38	07+01	406	401
6	Machilipatnam	18	09	480	442
7	NAMU	10	05	255	278
8	Panchakula	08	02	358	345
9	Pune	22	04	253	246
	<b>Total</b>	<b>326</b>	<b>100</b>	11913	11062

\* Note : indicates available number of toilets and schools

## Consolidated Impact Assessment

Table 3.4 details the consolidated unit-wise impact on the various parameters such as relevance, utility, operation and maintenance, effectiveness, tangible and intangible and Sustainability. The impact is measured on the outcomes of the project.

**Relevance:** Schools under the various BEL Chennai, Hyderabad, Kotdwara, Ghaziabad and Panchkula units have shown a very high relevance followed by Bangalore, Pune, NAMU and Machilipatnam. The projects are very relevant, as it has been a part of the SBM-SVA initiative of the Government of India towards Clean India- Clean Schools. The project has improved awareness on the sanitation and hygiene practices among the young students in primary and high school across the country.

**Utility:** Schools under BEL Kotdwara and Panchakula have shown high utility followed by the other units. BEL followed unique style in construction of toilets in various selected schools. The design and specifications were approved the BEL CSR division and have been implemented in the schools. The functional utility of toilets depends basically on the infrastructure and the availability of water. The project has taken care to provide quality construction, made running water available through pipelines, electric fittings and other required sanitary material. As all



the facilities are in place the utility of the project has been very high. **More than 98 per cent of the students are satisfied with the toilets constructed by BEL.**

**Operation and Maintenance:** All the schools have shown high impact on the operation and maintenance. All the projects have been implemented in government schools and the data reveals that there are challenges in the maintaining and operational activities. **80 percent of the schools have no special budget towards operation and maintenance. The toilets are cleaned and maintained by the school support staff. In 80 per cent of the schools the cleaning is done twice while in the rest, only done once in a day. In 5 per cent of schools students are involved in cleaning the toilets.** All the schools are providing running water provision, hand wash provision, soaps and related sanitary material, electricity, and privacy for girl children etc as key components for operation and maintenance of school toilets. BEL Chennai unit have also supported some schools with the regular maintenance and repairs / replacements of the electric appliances, taps, windows, etc.

**Effectiveness:** By and large, the toilets are functioning effectively in most of the schools barring a few. The asset created by BEL has resulted in improvement in health / hygienic practices, students' enrolment, their health etc.

**Tangible and Intangible Benefits:** The student attendance is an indication of the student health. It is observed that absenteeism due to ill health of students have reduced. Access to toilet hygiene in schools brought tangible benefits including toilet hygiene reducing risk of infectious diseases and improvement in children's health by practicing good hand washing habits.

**Sustainability:** The criterion of sustainability depends on the level of outcome. The sustainability of the project depends on the quality of construction, utility and maintenance. The schools are maintaining the toilets by undertaking timely repairs and renewals. The maintenance has been included in the schools budget enabling the school management to utilize funds for the payment of salaries to the staff. The construction of toilets improved the project outcomes by increasing the enrollment numbers, low dropout rate, quality of education, etc.

**Table-3.4 : Unit-wise Consolidated Impact**

	Name of the Unit	Impact Parameters (1: Very Low; 2: Low; 3: Moderate, 4: High; 5: Very high)					
		Relevance	Utility	Operation and Maintenance	Effectiveness	Impact	Sustainability
1	Bangalore	4	4	4	5	5	5
	Jalahali - Public toilets	4	4	4	5	5	5
2	Chennai	5	4	4	5	5	5
3	Ghaziabad	5	4	4	4	4	4
	Mohan Nagar bus stand public toilets	5	4	4	4	4	4
4	Hyderabad	5	4	4	4	4	4
5	Kotdwara	4	4	4	5	5	5
	Mela site public Toilets - Kotdwara	5	4	4	4	4	4
6	Machilipatnam	4	4	4	5	5	5
7	NAMU	4	4	4	5	5	5
8	Panchakula	5	5	4	5	5	5
9	Pune	4	4	4	5	5	5

## Highlights of Unit-wise Impact Analysis

### **Bangalore BEL Unit**

BEL Bangalore has constructed 20 toilets in four government schools located in Kolar, Tumkur, Karwar and Bangalore and one public toilet at BEL circle, Jalahalli, Bangalore during 2015-16, 2018-19 and 2019-20.

The impact level of the project is very high in all the four schools.

- The project has its impact on students' enrolment levels. All four schools' strength has increased from 6% to 20% in the last year.
- The school dropouts' numbers have reduced. Students who were often sick due to unhygienic conditions at schools are not facing those problems now and the attendance has improved.
- Provision of good toilet facilities helped the students to develop good sanitation habits,
- Open defecation practice among the school children has decreased as they have enough toilets.

### **Public Toilets at BEL Circle, Jalahalli, Bangalore**

Bharat Electronics Limited - Bangalore unit constructed public toilets at bus stand, BEL Circle, Jalahalli in Bangalore during 2015-16 and 2016-17. General public access BEL circle bus stands to reach their workstations or homes. The important features in this facility at the bus stand are given below.

- Running water provision and construction of overhead tank; Hand wash facilities; separate toilets and urinals are available men and women; adequate privacy is available for women; adequate light and ventilation.
- Easy access to public and cleanliness.

### **Chennai BEL Unit**

The BEL Chennai unit constructed 18 toilet units at selected six schools in three educational Districts viz., Thiruvallur, Kanchipuram and Thriuvannamalai Districts during 2015-16 and 2016-17.

- The objective of the construction of school toilets and urinals at selected Government schools by the BEL Chennai unit was to strengthen toilets facilities in selected government schools and make them open defecation free places.
- The student's attendance, health and enrolments have improved in all the schools
- 90 per cent of stakeholders were satisfied on the way BEL constructed school toilets and provided running water facility in school toilets.

### **Ghaziabad BEL Unit**

The BEL Ghaziabad Unit had constructed 154 toilets in the year 2015-16 in 41 government schools and one public toilet at Mohan Nagar Bus stand in Ghaziabad district. The project has been highly impactful in the 41 schools where it was implemented.





- The project has had its impact in improving the admission of boys and girls and there has been a marginal improvement in the enrollment numbers of students in the schools in the last year.
- The school dropout numbers have reduced. Students who were often sick are now being regular to classes.
- The project has improved the goodwill in the local community, and this has helped in improving the brand image of BEL.
- 85 % Parents and other stakeholders have expressed complete satisfaction of the facility created by BEL and encouraged children to go to school regularly.

### **Mohan Nagar Bus Stand, Ghaziabad**

The Mohan Nagar Bus Stand, Ghaziabad is well connected to all the areas in UP. BEL constructed two ladies toilets, two gents toilets and one for physically challenged persons. The overall impact of the public toilets:

- Strengthened public toilet facilities and converted them into open defecation free places.
- Improved utility by stakeholders including travelers, industrial labour, shopkeepers, businesspeople, general public, etc.
- The stakeholders expressed their levels of satisfaction with the way BEL constructed public toilets, provided running water facilities, electricity facilities in public toilets, safety and security at public toilets.
- The operation and maintenance of public toilets, cleaning and maintenance process, is handled well.
- The Nagar Nigam Ghaziabad created awareness on how to use public toilets etc. There was an overall improvement in public toilet accessibility.

### **Kotdwara BEL Unit**

The BEL Kotdwara unit had constructed 38 toilets in the year 2015-16 in seven government schools.

- The principal and teachers conveyed that the school dropout and absenteeism has reduced ever since the number of toilets were increased in the school. Parents expressed their happiness on the additional toilets constructed by BEL. They also felt that children are not prone to infections as the toilets were cleaned every day and are kept clean.
- Enough care is taken care by the school managements to provide the sanitation material for students including soap, Dettol, etc.
- There has been improved number of admission of boys and girls and there was a small improvement in the enrollment numbers of students in the schools after the construction of toilets by BEL.
- Most of the villages have become defecation free.

### **Toilet Complex - Mela Site at Grastan Ganj Village near Sidhballi Temple**

BEL constructed 13 toilets and handed them over to Temple Management. The temple management has taken complete responsibility of managing these constructed toilets.

- BEL constructed toilets for both men and women at Sidhballi Temple in Kotdwara of Uttarakhand. The toilets are fully functional and utilized by both men and women.
- On an average, 250 public, both men and women, access the public toilet facility on daily basis. But during festivals and melas, the number could be double.
- BEL toilets are more efficient in delivering the desired outcome - providing good sanitation/ toilet facilities to public.
- Toilets usage has improved due to sufficient facilities available at toilet locations.
- BEL has provided proper electrification, running water provision, separate toilets, and urinals for both men and women.
- Toilets are in a convenient place with adequate space

### **Machilipatnam BEL Unit**

The BEL Machilipatnam unit had constructed 18 toilets for both boys and girls in the year 2015-16 in nine government schools in Machilipatnam. The objective of the construction of school toilets and urinals at selected Government schools under jurisdiction of BEL Machilipatnam unit was to strengthen toilets facilities and make them open defecation free places and the project has achieved this objective as found in the survey.

The project has been highly impactful in the 9 schools where it was implemented.

- The project has had limited impact in improving the admission of boys and girls and there was only a marginal improvement in the enrollment numbers of students in the schools after the construction of toilets by BEL.
- The school dropout numbers have reduced. Students who were often sick are now being regular to classes.
- All the stakeholders have expressed high levels of satisfaction with the facilities created.

### **NAMU BEL Unit**

The BEL NAMU Unit constructed 10 toilets in the year 2015-16 in five Government schools in NAMU

The project has been impactful in the five schools where the project was implemented.

- The project has impacted in improving the school enrollment marginally.



- Stakeholders expressed high degree of satisfaction about the construction of toilets by BEL and the awareness created by the school management among students on the good habits.
- The data reveals that there is an increase in enrollment ratio, change in dropout ratio and reduction in the student's absenteeism post project implementation
- Teachers expressed satisfaction regarding student enrollment ratio. It is observed that, all five schools' teachers are satisfied about the student's enrollment ratio, drop out ratio and school absenteeism.
- All the stakeholders at ZPHS Khanacha Bungla, Mahodar and Nitlas, and 50 percent stakeholders at Kuttarapada were satisfied on managing toilets. At ZPHS Kuttarapada 50 percent stakeholders were neither satisfied nor dissatisfied. Managing the day-to-day maintenance & operation of the toilet block lies with the school administration.

### **Panchkula BEL Unit**

The F type toilet were made as per the technical specifications in both Mandhana and Hangola. The projects were completed and handed over to the schools in 2016.

The project has been highly impactful in the 2 schools where it was implemented.

- The project has impacted in improving the admission of boys and girls and there is an increase of 5% students' strength in Mandhana and 9% strength in Hangola in the current year compared to the previous year.
- The school dropouts' numbers have reduced. Students who were often sick are now being regular to classes
- All the stakeholders have expressed high levels of satisfaction with the facilities created.

### **Pune BEL Unit**

The BEL Pune unit had constructed 22 toilets in the year 2014-15 in four government schools in Pune. Based on the survey conducted by the evaluation team the observations are made. The project is aimed to provide construction of Toilets at Government primary ZP schools

The project has been highly impactful in the 4 schools where it was implemented.

- The project has had mixed impact in improving the admission of boys and girls after the construction of toilets by BEL. Out of the total 4 schools 2 schools had increase in the admission and the rest two had decrease in admissions but the reduction is only marginal.
- The project has improved the goodwill in the local community, and this has helped in improving the brand image of BEL.
- Parents and other stakeholders also expressed complete satisfaction of the facility created by BEL and encouraged children to go to school regularly.

## SDG Alignment

### Uniqueness of the Project

- This project aims to address the school toilets problem.
- This project creates awareness among school children about good health habits / practices and sanitation facilities.
- This project aims to support Government of India prestigious programme Swachh Vidyalaya Abhiyan - construction of school toilets in government schools.
- Project addresses the sanitation and waste management problems at school
- Project contributed to the cause of developing open defecation free places at school

### SDG and CSR Alignment

- Project supports SDG Goal Number 3: Good Health and Well-being and SDG Goal Number 6: Clean Water and Sanitation.
- Project covers schedule VII, Companies act 2013 i.e., promoting healthcare including preventive healthcare and sanitation, item No. 1.



# UNIT-WISE ANALYSIS

## 4.1. BEL Bangalore Unit

Bharat Electronics Limited (BEL) was set up in Bengaluru in 1954 by the Government of India under the Ministry of Defence (MoD). It is a Navaratna Enterprise and India's foremost Defence electronics company. Since its inception, societal development has always been one of the prime commitments of BEL.

<b>BEL Bangalore</b>	Swachh Vidyalaya Abhiyan
<b>Activity</b>	Construction of Toilets for schools
<b>Total Budget Sanctioned</b>	Rs. 58.77 Lakhs
<b>Budget Utilised</b>	Rs. 63.20 Lakhs
<b>Project Objective</b>	To provide clean and congenial atmosphere at educational institutions
<b>Project Addresses Area</b>	<ul style="list-style-type: none"> <li>• Improving infrastructure facilities at school</li> <li>• Protection of environment</li> </ul>
<b>Start Date And End Date</b>	2015-16, 2018-19 and 2019-20

### Data Analysis

BEL Bangalore has constructed 20 toilets in four government schools located in Kolar, Tumkur, Karwar and Bangalore and one public toilet at BEL circle, Jalahalli, Bangalore during 2015-16, 2018-19 and 2019-20.

### Gender Distribution, Social Status and Teachers Strength

Gender distribution, social status and the teachers strength are studied in all the schools. The total strength in the schools that are surveyed range between 84 to 507 students. There are 11 male and 20 female teachers in all the schools (Table-4.1).

Among the four schools that are surveyed, two schools have classes from I to VII, one school has XI and XII classes, and another school has classes from VIII to X. In all these schools, 75 percent of the students belong to SC / ST / OBC community.

**Table-4.1: Gender Distribution, Social Status, and Teachers Strength**

Name of the School	Students			Social Status				Total	Teachers Strength		
	Boys	Girls	Total	SC	ST	OBC	General		M	F	Total
Government PU College Tumkur	75	104	179	9	31	139	0	179	7	0	7

Name of the School	Students			Social Status				Total	Teachers Strength		
	Boys	Girls	Total	SC	ST	OBC	General		M	F	Total
Government Higher Primary School, Karwar	59	58	117	3	16	89	9	117	0	4	4
Government High School Hebbal	266	241	507	29	210	53	215	507	3	13	16
Government Higher Primary School, Vanarasi	35	49	84	14	36	34	0	84	1	3	4

It is observed that in all schools the student enrolment has increased from 6% to 20% after the construction of toilets. The student strength before construction of toilets was 776 while it was 877 in the current year (Table-4.2). There has been a small reduction in the student strength in all the schools in the last one year due to pandemic.

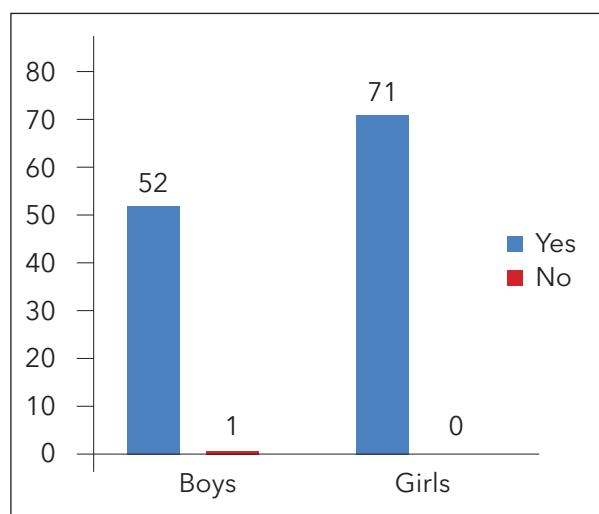
**Table-4.2: Comparison of Student Strength**

Name of the School	Students Strength (2020-21)			Students Strength (2021-22)		
	Boys	Girls	Total	Boys	Girls	Total
Government PU College Tumkur	75	104	179	76	92	168
Government Higher Primary School, Karwar	59	58	117	45	49	94
Government High School Hebbal	266	241	507	212	224	436
Government Higher Primary School, Vanarasi	35	49	84	32	46	78

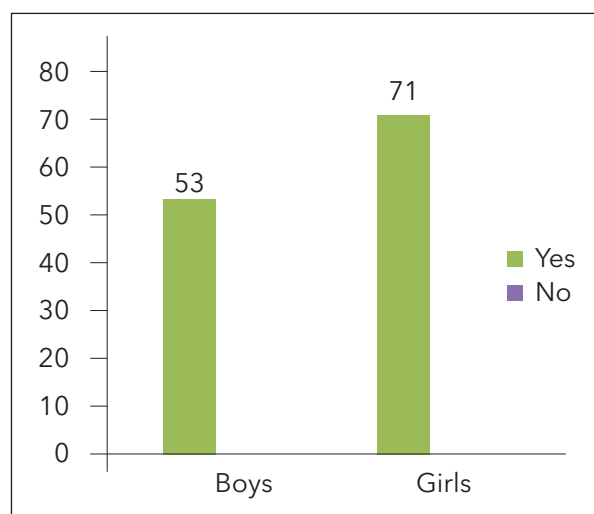
### Awareness on the Newly Constructed Toilets

It is observed that many of the school children are aware of the newly constructed toilets. Out of 53 boys and 71 girls from four schools in Bangalore unit, only one boy student does not have the awareness on the toilets being constructed by BEL (Chart-4.1). Mere construction of toilets would not create awareness on sanitation. Management needs to train the students in the best practices in sanitation to the children. It is identified that all students (53 boys and 71 girls) have attended the best practices sessions the usage of toilets (Chart-4.2).

**Chart-4.1: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.2: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



## Operations and Maintenance

All the toilets that are constructed by BEL are in effective operation. The field study and direct interaction with the stakeholders reveals that the toilets are cleaned every day. Government PU College - Tumkur and Government higher primary school, Hebbal have allocated separate budget for the maintenance of school toilets (Table-4.3). The provision of running water is available in all the four schools. The water is sufficiently available with an overhead tank for all the constructed toilets. All four school headmasters / headmistresses informed that sufficient sanitary material is available in their school toilets.

**Table-4.3: Operations and Maintenance**

S. No.	Name of the School	Are the Toilets Cleaned Everyday	Toilet Cleaning Personnel	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget	Toilets are Having Running Water	Source of Water
1	Government PU College Tumkur	Yes	Temporary hired staff	1	4300/- per month	Yes	Tap water
2	Government Higher Primary School, Karwar	Yes	Temporary hired staff	2	5000/- per month	Yes	Tap water
3	Government High School Hebbal	Yes	Temporary hired staff	1	Nil	Yes	Tap water
4	Government Higher Primary School, Vanarasi	Yes	Temporary hired staff	1	Nil	Yes	Tap water

## Students' Satisfaction Levels

The information from students and teachers has been collected through a structured questionnaire to measure the satisfaction level on the construction of toilets, availability of running water in the toilets, safety and security, availability of electricity in the toilets and students' perception on cleanliness.

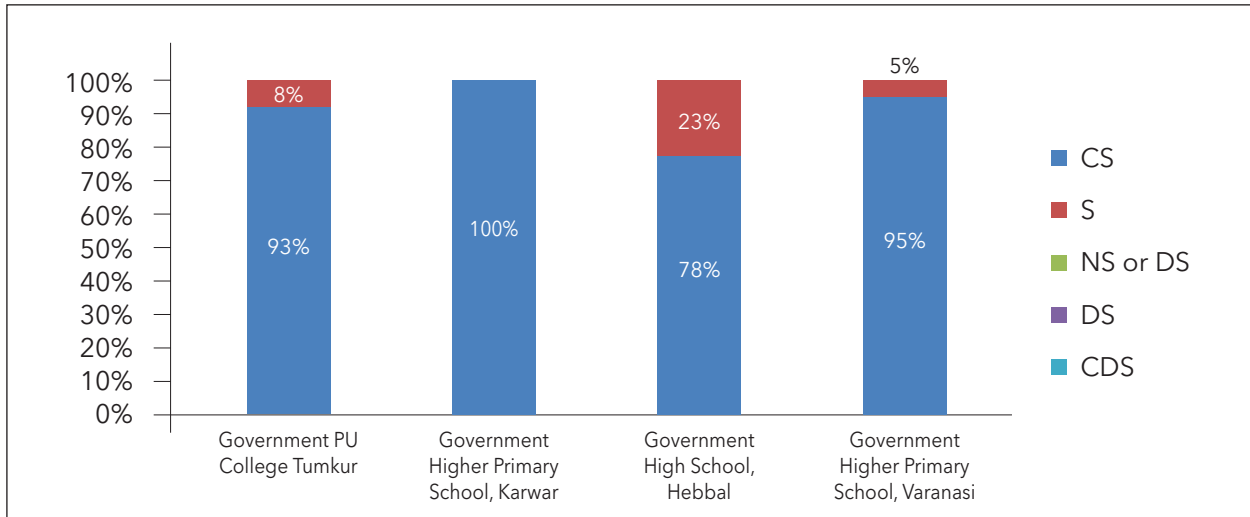
To understand the usage and the satisfaction level, a questionnaire related to student satisfaction has been circulated. All the students in the four schools (total 124 students) have expressed their satisfaction with respect to the facility created and the availability of running water in the toilets (Chart-4.3 & 4.4).

Students' opinion regarding safety security and electricity has been surveyed. In all the four schools, students have expressed their high degree of satisfaction levels on safety, security and the electricity facility available in the school toilets (Chart-4.5 & 4.6).

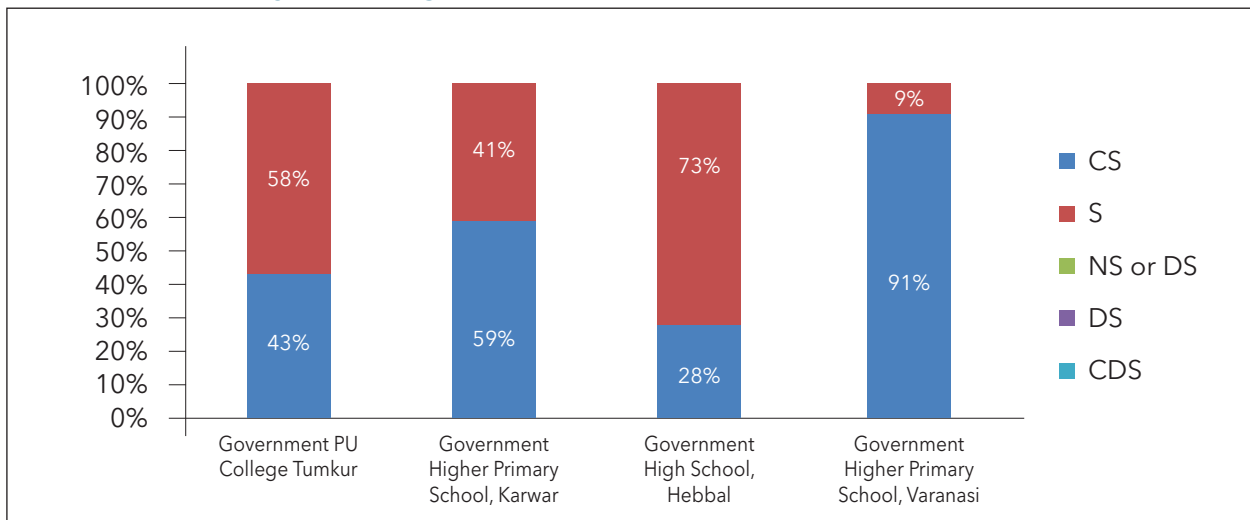
Note : CS: Completely satisfied; S: Satisfied; NS nor DS: Neither Satisfied nor Dissatisfied; DS: Dissatisfied; CDS: Completely Dissatisfied.

Note: Numbers are merged

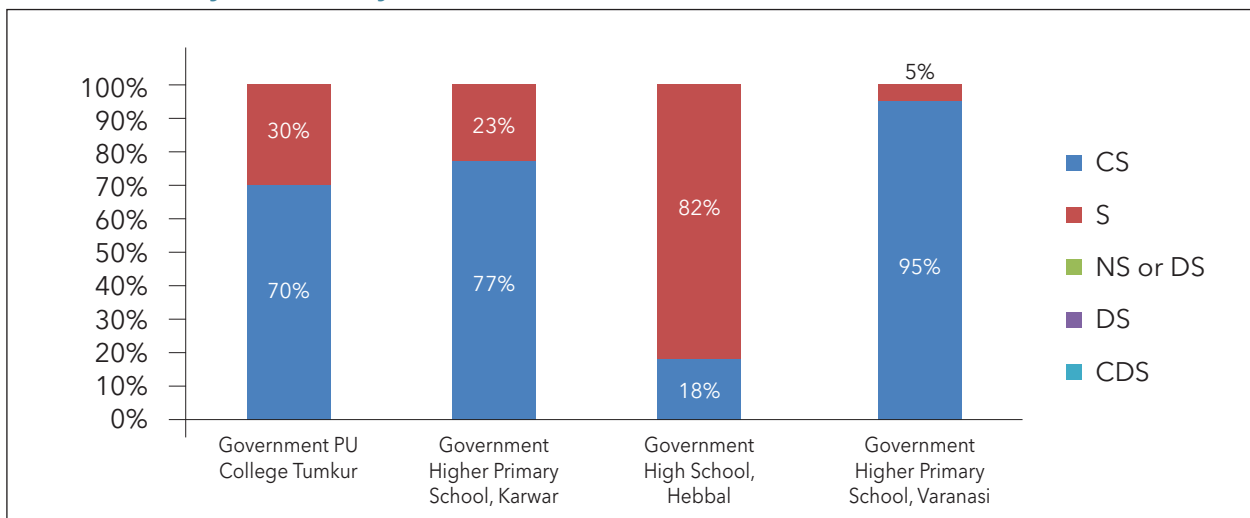
**Chart-4.3: Student's Satisfaction with the Toilets**



**Chart-4.4: Availability of Running Water**

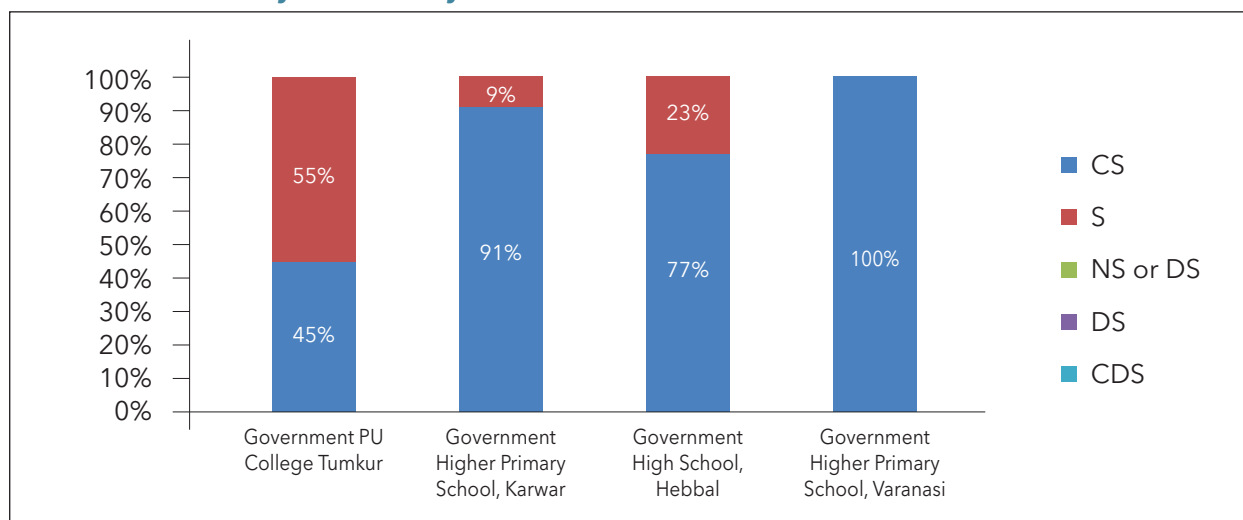


**Chart-4.5: Safety and Security**





**Chart-4.6: Availability of Electricity in the Toilets**



## Impact Analysis

### Overall Impact

The impact level of the project is very high in all the four schools.

- The project has its impact on students' enrolment levels. All four schools' strength has been increased from 6% to 20%.
- The school dropouts' numbers has reduced. Students who were often sick due to unhygienic conditions at schools are not facing those problems now and the attendance has improved.
- Provision of good toilet facilities helped the students to develop good sanitation habits,
- Open defecation practice among the school children has decreased as they have enough toilets.
- The project also contributed in meeting the Government prestigious project objective Swachh Vidyalaya Abhiyan.

## Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation and maintenance, effectiveness aspects. The objective of the construction of school toilets and urinals at selected four Government schools under the jurisdiction of BEL Bangalore unit was to strengthen toilet facilities. This project also aligned with Government of India's prestigious project "Swachh Vidyalaya Abhiyan". The BEL-Bangalore unit achieved project objective after construction of schools' toilets in these selected units. Most stakeholders expressed their high degree of satisfaction on the way BEL constructed school toilets with water facility and maintenance process. Schools also conducted awareness programmes. The observations are given below:

S. No.	Impact Parameter	Observation
1	Relevance	Lack of sufficient toilets, drinking water, and other facilities in schools have adversely impacted schoolchildren attendance, education, and health, especially among girl children. The project has addressed all the issues. This project also created awareness among school children about good hand wash habits, clean drinking water, hygiene and good environment practices.

S. No.	Impact Parameter	Observation
2	Utility	<p>The BEL constructed/renovated toilets and urinals for both boys and girls children at the 4 government schools in Bangalore unit are fully functional and utilized by both boys and girls. Out of 877 students (435 boys + 452 girls), 701 schoolchildren are utilizing BEL constructed toilets.</p> <p>Most of the toilets are effectively put in use and the students are using the facility.</p> <ul style="list-style-type: none"> <li>• 100% of the toilets are functional.</li> <li>• Water resources and plumbing facilities are well connected to school toilets.</li> <li>• The disposal facilities of these toilets were well in place and hygienically maintained.</li> <li>• School authorities followed proper hygiene standards in maintaining toilets and implemented best practices for using of school toilets.</li> </ul>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at BEL constructed toilets in four schools of the Bangalore unit. Running water provision is available inside the toilets.</p> <p>All schools deployed toilet cleaning personnel on temporary basis. One higher secondary school (PU college) has allocated only Rs. 4300/- per month and Government higher primary school has allocated Rs. 5000/- per month for maintenance of schools. All schools clean the toilets once or twice a day. Most of the toilets are well connected with water pipelines. All toilets are functioning properly.</p>
4	Effectiveness	<p>All four schools conducted classes on good health habits and cleanliness.</p> <p>All schools have implemented good sanitation practices and hand wash habits to enhance usage of school toilets by the students.</p> <p>All four schools created awareness among the children about sanitation and good health habits.</p> <p>Schools also trained schoolchildren on hand-washing habits, keeping the toilet surroundings clean, and using the toilet facility. These programs helped children to improve their education and health levels</p> <p><b>Increase in student enrolments:</b> School strength increased from 6% to 20% and also positively impacted school children attendance.</p> <p><b>Prudent utilization of the facility provided.</b></p> <p>79 % of schools' strength are utilizing BEL constructed school toilets due to sufficient facilities available therein viz.,</p> <ol style="list-style-type: none"> <li>1) Running water provision and construction of overhead tank</li> <li>2) Hand wash facilities</li> <li>3) Separate toilets and urinals available for school children</li> <li>4) Adequate privacy for girl children</li> <li>5) Adequate light and ventilation</li> <li>6) Easy access to schoolchildren</li> <li>7) cleanliness and proper maintenance by school authorities</li> <li>8) Electricity</li> </ol> <p>Sufficient running water is available at all toilets locations. All schools have both public taps and bore well water facilities. School authorities deployed temporary staff for toilets cleaning.</p>

S. No.	Impact Parameter	Observation
		They clean toilets once or twice a day. School authorities are maintaining toilets at regular intervals. They ensure to keep sufficient water levels at toilet locations, do the regular maintenance of taps, windows, tiles, wash basins, lights, exhaust fans to provide better toilet facilities for their schoolchildren
5	<b>Impact</b>	<p><b>Tangible Benefits</b> Increased number of school toilets and urinals for students with electrical fixtures and fittings</p> <p><b>Intangible Benefits</b> 1) Closer to the main building and easy access. 2) Safety and security for schoolchildren to access the toilets 4) Improved the schoolchildren health</p> <p>The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village. The objective of the Swachh Vidyalaya Abhiyan has been achieved successfully at length and the social transformation in terms of hygienic standards has increased within the society. Most schools have been declared as open defecation free school places</p>
	<b>Suitability</b>	<b>Sustenance of the intervention over a period:</b> Except two schools, other schools has running water facility, allocate a proper budget for regular maintenance and operation of toilets, and provide best practices for schoolchildren to keep toilet surroundings clean and use school toilets properly. All these best practices followed by schools help them to make the project sustainable.

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

### General Observations

The following are some of the important observations from the project

- A total of 18 teachers from four schools felt that there was a positive change in attitude and a civic sense among their children after BEL provided a toilet facility (Table-5).
- 16 teachers from four schools confirmed that schoolchildren social behavior has improved tremendously after construction of school toilets by BEL. Only two teachers from Government high school, Hebbal opined that they were neither satisfied nor dissatisfied on this count. (Table-4.4).
- The newly constructed toilets by BEL have helped the schools to promote social behavior among students and found that this has changed their perception towards utility of toilets, cleanliness, good habits, etc (Table-4.5).

- Out of 18 teachers from four schools, 15 teachers have confirmed that there was a positive change of reduction in school dropout ratio due to increased facilities in schools. On the other hand, two teachers from Govt. high school, Hebbal and one teacher from Government PU College, Tumkur, were not supportive of this view. (Table-6)
- Total 17 teachers from four schools agreed that there was a reduction in school absenteeism after BEL constructed school toilets (Table-6)

### Overall Field Investigator Observations About the Toilets in Four Schools

Name of the Parameters	Field Investigator Observation
Toilet Cleaning	Daily
Scavenger	Deployed by the school management in all the cases
Hand Wash Habits	School teachers conducted sessions to children on hand wash habits
School declared as open defecation free place	Yes
Separate urinals and toilets	Yes
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

**Table-4.4: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

Name of the School	Change in Attitude and Civic Sense Orientation Among Students			Development of Social Behavior of the Students		
	Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied	Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied
Government High School Hebbal	1	5	0	1	3	2
Government Higher Primary School Karwar	3	0	0	3	0	0
Government Higher Primary School, Vanarasi	3	0	0	2	1	0
Government PU College, Tumkur	5	1	0	4	2	0

**Table-4.5: Change in School Dropout Ratio and Reduced Absenteeism**

Name of the School	Change in School Dropout Ratio			Reduction in School Absenteeism		
	Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied	Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied
Government High School Hebbal	0	4	2	0	5	1
Government Higher Primary School Karwar	3	0	0	3	0	0
Government Higher Primary School, Vanarasi	2	1	0	3	0	0
Government PU College, Tumkur	2	3	1	2	4	0



## Glimpses of Toilet Construction by BEL Bangalore Unit

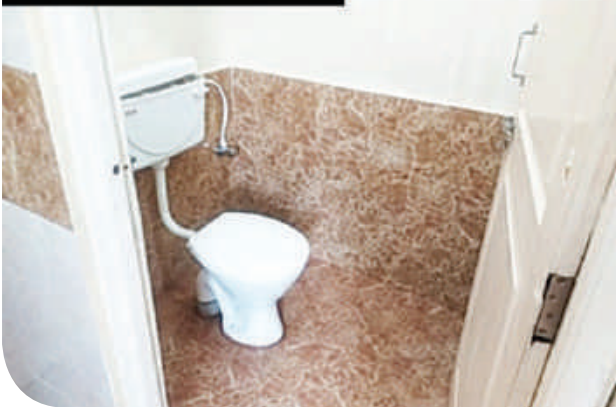
14.808663; 74.134094 NW 78  
R45M+CG3, Konekar Wada, Karwar,  
Karnataka 581301, India



13.038114; 77.590820 NW 82  
2HQQR+68V, Ayyappa Layout, Hebbal,  
Bengaluru, Karnataka 560024, India



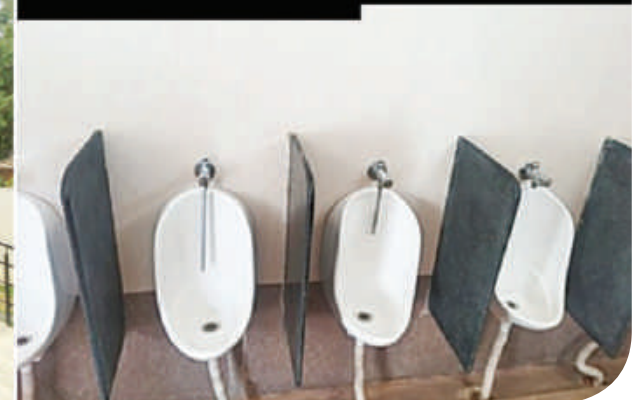
14.809738; 74.134117 NW 20  
R45M+XHP, Konekar Wada, Karwar,  
Karnataka 581301, India



13.203563; 76.819397 NE 19  
Mayasandra - Sira Rd, Mathighatta,  
Karnataka 572220, India



13.239209; 78.152420 SE 78  
65Q3+GJX, Vanarasi, Karnataka 563126,  
India



## 4.1.1 Public toilets at BEL Circle, Bangalore

### BEL Public Toilets Details

Bharat Electronics Limited – Bangalore unit constructed public toilets at bus stand, BEL Circle, Jalahalli in Bangalore during 2015-16 and 2016-17. General public access BEL circle bus stands to reach their workstations or homes. Due to lack of public toilets at BEL circle bus stand surrounding areas, public would travel more than 2 kilometres to access the public toilets. BEL has addressed this public issue by constructing public toilets for both men and women supporting Government of India prestigious project Swachh Bharat Abhiyan. BEL constructed 4 toilets for men and women during 2015-16 and 2016-17 with a cost of Rs. 31.3 lakhs. BEL has handed over toilet to Swachha City Foundation to look after the daily maintenance.

<b>Start and end Date</b>	4.12.2015 and 15.11.2016
<b>Budget Allocation</b>	Rs 26.512 Lakhs
<b>Utilized Actual</b>	Rs 31.30 Lakhs

**Operations and Maintenance:** The operation and maintenance of the public toilets has been handed over to Swachha City Foundation. The in charge is responsible for monitoring timely the maintenance of public toilets. The toilets are cleaned daily. There are four toilets for men and women. All the toilets are functional. On an average around 150 to 175 men and women use the toilets. The foundation has recruited two people to clean and maintain the toilets. The toilets are constructed as per the specification and design approved by BEL. The foundation levy minimum charge of Rs. 2 Rs for accessing urinals and Rs. 5 for accessing toilets. They collect amount of Rs. 10,000 to Rs. 15,000 from user charges against the incurred expenditure of Rs. 15,000 to Rs. 20,000 in a month. Sufficient running water is available at public toilet place. Borewell water is main sources of running water for public toilets. cleaning personnel (two members team) clean the toilets twice in day. Local body / Swachh India contracting agency conduct awareness programmes among public on good health habits, cleanliness, and sanitation practices.

### Stakeholder Satisfaction Levels

A satisfaction survey is a study that measures a person's perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from public toilet users was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. More than 98 per cent of the public are aware about the BEL constructed public toilets. Bangalore Municipal corporation conducts various awareness programmes on the utility and cleanliness.

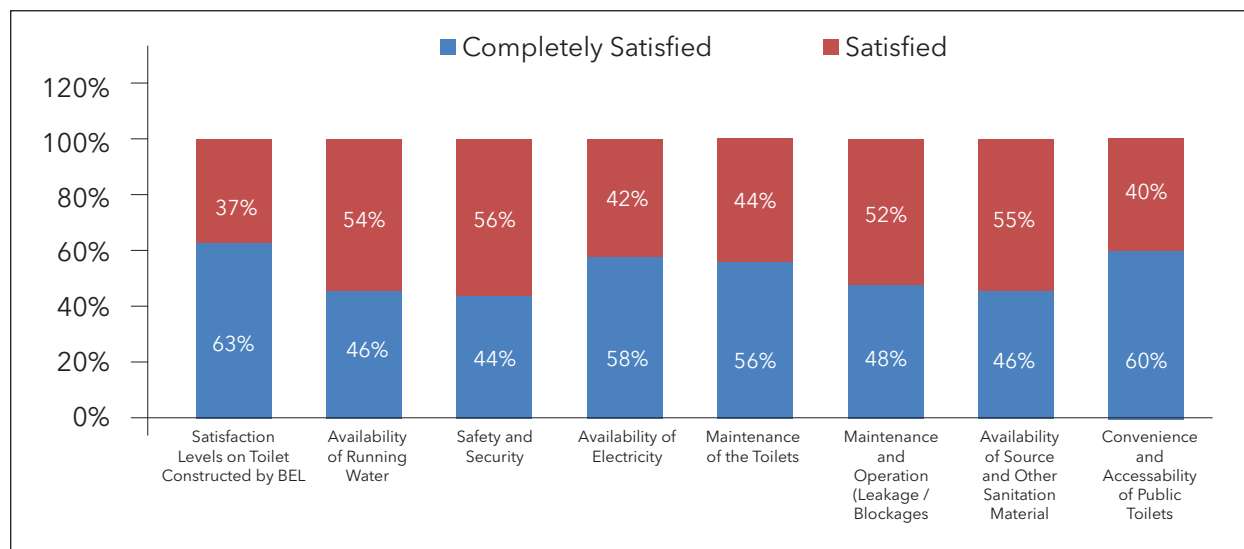
### Public's Satisfaction Levels

To understand the utility of the toilets, public satisfaction questionnaire has been circulated to know the level of satisfaction on the BEL constructed toilets. Chart-4.1.1 depicts the level of satisfaction among various toilet users at public toilet place in Bangalore. All public toilet users (52 users both men and women) are satisfied with the i) facility created by BEL, ii) availability of running water, iii) safety and security, iv) electricity, v) maintenance of toilets (cleanliness),



vi) maintenance and operations of leakage, overflow, blockage), vii) the availability of sanitary material and soaps, viii) convenience and accessibility of public toilets. Overall, all stakeholders are satisfied but degree of satisfaction levels' varies from "completely satisfied" to satisfied.

**Chart-4.1.1: Stakeholders' Satisfaction Levels on BEL Bangalore - Public Toilets (Total sample: 52) (in %)**



### Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation & maintenance, effectiveness, tangible and intangible benefits and sustainability. The objective of the construction of public toilets at selected public place in Jalahalli, Bangalore was to strengthen public toilets facilities to make open defecation free places. The BEL-Bangalore unit achieved project objective after construction of public toilet complex in Bangalore city. Stakeholders include public, daily wage laborers, shopkeepers, traveler's etc who visited the toilets. As Jalahalli is a prime locality, the project has achieved 100 percent utility. The public expressed their high degree satisfaction on the way BEL constructed public toilets which provided running water facility and managed neatly. The table details the various impact parameters along with the observations.

### Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	The project was highly desirable and relevant in the given situation and had a potential to contribute Swachh Bharat Abhiyan with its holistic approach and need of the general public in the area.
2	Utility	BEL constructed toilets and urinals for both men and women at public toilet location in Bangalore are fully functional and utilized by both men and women. The stakeholders' satisfaction levels are high. On an average, 150 public, both men and women, access the public toilet facility. BEL toilets are more efficient in delivering the desired outcome - providing good sanitation / toilet facilities to public. In addition, toilets usage has improved due to sufficient facilities available at toilet locations.

S. No.	Impact Parameter	Observation
		<p>BEL has provided proper electrification, running water provision, separate toilets, and urinals for both men and women. Toilets were being constructed in adequate space with proper engineering drawings and followed proper civil structures, facilitating proper ventilation, lighting to public</p> <p>100% of the toilets were functional with all necessary fixtures in place</p> <p>Sufficient running water</p> <p>The disposal facilities of these toilets were well in place and hygienically maintained.</p> <p>Implementing agency followed proper hygiene standards in maintaining toilets and implemented best practices for using of public toilets.</p>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at public toilets. Running water provision was given to toilets. Swachha City Foundation deployed cleaning personnel who clean the toilets twice a day.</p> <p>The maintenance and operation cost of public toilet is 10,000/- to 20000/- which includes regular maintenance and repairing of toilet assets. The collected user charges from public toilets is around 10,000 to 15,000/-.</p> <p>Public toilets are well connected with water through the plumbing work. All toilets are functioning properly.</p>
4	Effectiveness	<p>Implementing agency / Local administration conducted awareness programs on good health habits and cleanliness. During all these operation and maintenance initiatives, The Swachha City Foundation implemented good sanitation practices and hand wash habits, enhancing public use of public toilets. Foundation also created awareness among the citizens about sanitation and good health habits.</p> <p><b>Prudent utilization of the facility provided.</b></p> <p>On an average 150 general public is utilizing BEL constructed public toilet facility due to sufficient facilities available in toilets. They are running water provision and construction of overhead tank; Hand wash facilities; separate toilets and urinals are available men and women; adequate privacy is available for women; adequate light and ventilation</p> <p>Easy access to public and cleanliness.</p>
5	Impact	<p><b>Tangible Benefits</b></p> <p>i) Increased number of public toilets and urinals for men and women with electrical fixtures and fittings</p> <p>Intangible benefits:</p> <ol style="list-style-type: none"> <li>1) Convenience</li> <li>2) Closer latrine access &amp; improved latrine population ratio</li> <li>3) Safety and security for general public to access the toilets</li> <li>4) Privacy during defecation</li> <li>5) Reduce the incidence of infectious diseases</li> <li>6) Improved the general public health</li> </ol> <p>General public have also educated their families and communities about the importance of hygienic conditions and use of these public toilets and subsequently this message has made an impact on the other citizens of the community</p> <p>The objective of the Swachh Bharat Abhiyan has been achieved by and large and the social transformation in terms of hygienic standards has increased within the society.</p>



S. No.	Impact Parameter	Observation
		Most public places in Bangalore city declared as open defecation free places. The area around the toilets have become ODF. The structure and design of the toilet constructed was highly appreciated by the various community members and was quite evident during the inspection especially comparing them with other public toilets. Further, it was also told by them that they were satisfied with the construction of these toilets
	<b>Sustainability</b>	The foundation authorities are maintaining toilets as per the schedules and at regular intervals leading to sustainability of the project

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

### General Observations

The following are some of the important observations from the project:

- It is observed that the toilets are cleaned during regular intervals
- The utility of the toilets is very high
- The foundation is taking the responsibility of maintenance from time to time improving the project sustainability

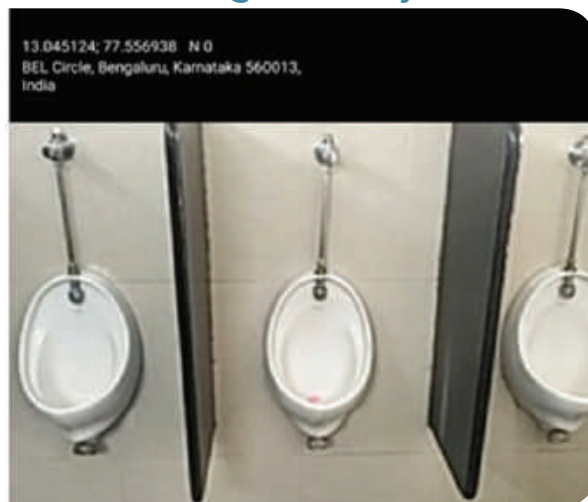
### Overall, Field Investigator Observations About the Public Toilets

Name of the Parameters	Field Investigator Observation
Toilet Cleaning	Daily
Scavenger	Implementing agency deployed permanent cleaning personnel staff
Hand Wash Habits	Implemented in public toilet location
Public place declared as open defecation free place.	Yes
Separate urinals and toilets for general public	Yes
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

## Bangalore Unit - Construction of School Toilets and Public Toilet Details

S. No.	Name of the School	As per plan / MoU Vs Actual Execution				Budget Allocation Vs Utilized Actual		Dimensions and Specifications	Project Handing over Details
		Plan / MoU		Actual Execution		Allocated	Utilized / Actual		
		Start Date	End Date	Start Date	End Date				
1	GHPS, Vanarasi	3.8.2018	2.2.2019	1.10.2018	31.5.2019	6855400	6033000	42 sqm	17.7.2019
2	Govt PU College, Mattighatta	21.2.2019	20.11.2019	20.3.2019	14.12.2019	10901363	10903161	42 sqm	16.6.2020
3	Govt. HPS, Karwar	29.3.2019	28.8.2019	16.12.2019	17.4.2021	10914308	11500515	30 sqm	4.8.2021
4	GHS, Hebbal, Bangalore	26.10.2018	25.1.2019	12.12.2018	30.5.2019	3593242	3461578	46 sqm	7.12.2019
5	Public toilets at BEL Circle, Bangalore	4.12.2015	3.10.2016	20.1.2016	15.11.2016	26513362	31301444	50 sqm	1.3.2017

## Public Toilets Constructed by BEL at Jalahalli in Bangalore City



## 4.2 BEL-Chennai Unit

BEL Chennai has been doing CSR activities for more than a decade. Main focus of BEL Chennai CSR activities have been in the areas of Good Sanitation, Water, Healthcare, Education and other Rural development programs, mainly to neighbourhood areas around BEL Chennai premises and in adopted villages in the backward district of the state that are far away from the BEL Chennai premises.

<b>BEL Chennai</b>	CSR 2014-15
<b>Activity</b>	Construction of 18 toilets in 6 Schools
<b>Total Budget Sanctioned</b>	Rs 84.5 Lakhs
<b>Budget Utilised</b>	Rs 78.09 Lakhs
<b>Project Objective</b>	Providing clean and congenial atmosphere at educational institutions
<b>Project Addresses Area</b>	Improving infrastructure facilities at school Protection of environment
<b>Start Date And End Date</b>	2015-16 and 2016-17

### Data Analysis

The BEL Chennai unit constructed 18 toilet units at selected six schools in three educational Districts viz., Thiruvallur, Kanchipuram and Thriuvannamalai Districts during 2015-16 and 2016-17.

### Gender Distribution, Social Status and Teachers Strength

Table-4.6 depicts the gender distribution, social status and the teachers strength. The number of students range from 403 to 687 in all the six schools. Out of six schools selected for toilets construction, four schools offer higher secondary education from V to XII standards, while the other two schools provide high school education from classes VI to XII. Out of these six schools, four schools offer co-education for both boys and girls and while the other two schools are boys' and girls' schools. Of the total strength of 3073 students in these six schools, 1740 are boys and 1333 are girls. Around 96 percent of the students belong to SC / ST / OBC community.

**Table-4.6: Gender Distribution, Social Status and Teachers Strength**

S. No.	Name of the School	Students			Social Status				Total	Teachers Strength		
		Boys	Girls	Total	SC	ST	OBC	General		M	F	Total
1	Govt. ADW Boys Hr. Secondary School, Vadagarai	498		498	7	376	110	5	498	13	7	20
2	Govt. ADW Girls Hr. Sec. School, Vadagarai	0	423	423	5	305	106	7	423	4	13	17
3	Govt. Higher Secondary School, Azhividaithangi	229	174	403	7	87	309	0	403	14	3	17
4	GHS Gerugambakkam	231	255	486	2	147	231	106	486	3	9	12
5	Govt. High School Pattur (Muslim)	355	326	681	0	81	589	11	681	8	12	20
6	Popili Raja Govt. Hr. Sec. School, Puzhal	427	155	582	0	307	275	0	582	9	19	28

The Table-4.7 shows the comparison of student strength in previous year and current year. As can be seen from the table, the schools' strength has gone up by 14% in the last one year.

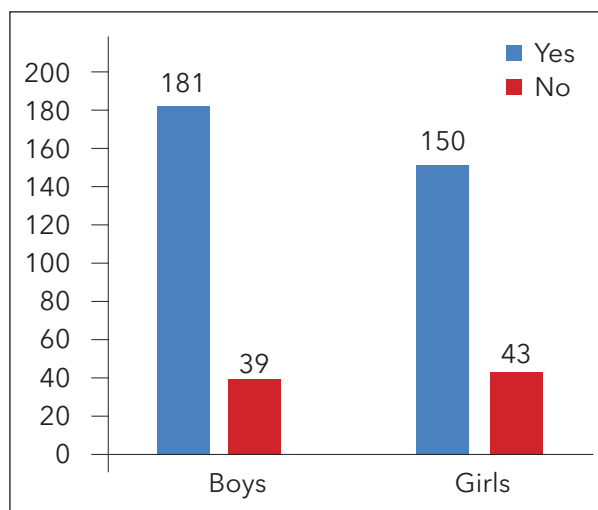
**Table-4.7: Comparison of Student Strength**

S. No.	Name of the School	Students' Strength - Current Year			Students' Strength - Previous Year		
		Boys	Girls	Total	Boys	Girls	Total
1	Govt. ADW Boys Hr. Secondary School, Vadagarai	498	-	498	432	-	432
2	Govt. ADW Girls Hr. Sec. School, Vadagarai	-	423	423	-	417	417
3	Govt Higher Secondary School, Azhividaithangi	229	174	403	216	181	397
4	GHS Gerugambakkam	231	255	486	194	223	417
5	Govt. High School Pattur (Muslim)	355	326	681	303	301	604
6	Popili Raja Govt. Hr. Sec. School, Puzhal	427	155	582	308	115	423

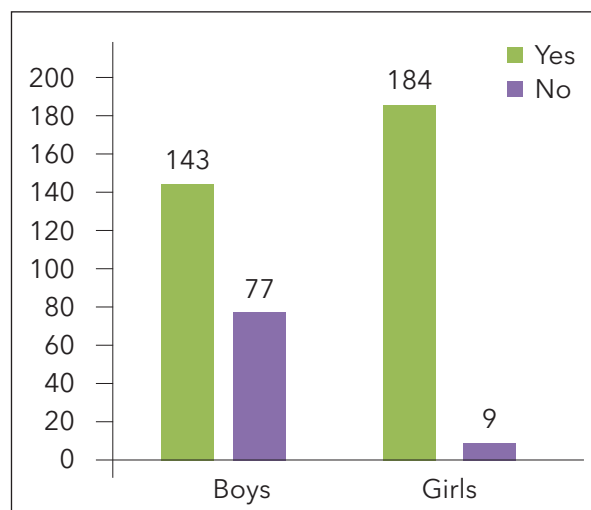
### Awareness on the Newly Constructed Toilets

Out of 193 girls surveyed, 150 girls were aware of toilets construction made by BEL in their respective schools, while on the other hand, of the 220 boys surveyed, 181 boys were aware of the BEL constructed school toilets (Chart-4.7). Chart-4.8 reveals that out of 220 boys, 77 boys (35% boys) and out of 193 girls, only 9 girls (5%) were not aware about the special sessions conducted by the schools on 'best practices' and 'toilet usage' idea, while the rest were aware of the same.

**Chart-4.7: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.8: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



### Operations and Maintenance

The toilets constructed by BEL are made available for students in different locations. The data reveals that 3 schools clean toilets once a day and other 3 schools clean toilets twice a day. Out of 6 Schools, only three schools allocated specific budget for maintenance of toilets. In the remaining schools money is spent from the general budget of the school only. The provision



of running water is available in all the six schools. Bore well water is main source of water for toilets in these six schools. Table-4.8 details the information on the operation and maintenance of toilets in schools. Water is sufficiently available with an overhead tank for all the constructed toilets.

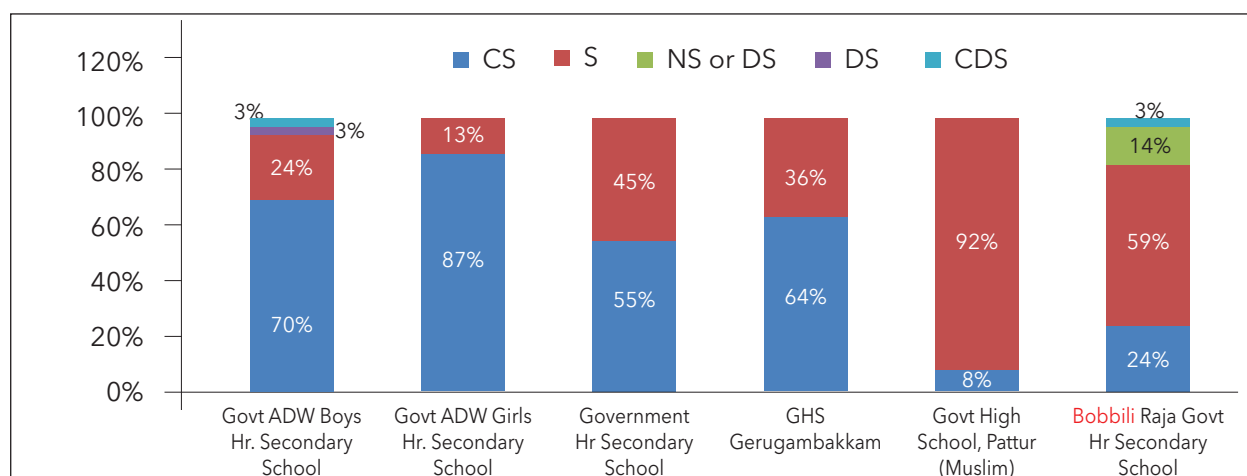
**Table-4.8: Operations and Maintenance**

Name of the School	Are the Toilets Cleaned Everyday	If Yes, How Many Staff Members are There to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget for Maintenance of School Toilets in Rs Per Month	Availability of Water for Toilets	Toilets are Having Running Water Provision through Overhead Tank	Source of Running Water for Overhead Tank
Govt. ADW Boys Hr. Secondary School, Vadagarai	1	2	1	1000	1	1	3
Govt. ADW Girls Hr. Sec. School, Vadagarai	1	1	2	0	1	1	3
Govt. Higher Secondary School, Azhividaithangi	1	2	2	0	1	1	3
GHS Gerugambakkam	1	1	1	3000	1	1	3
Govt. High School Pattur (Muslim)	1	1 person cleans random visits	1	Adhoc . No specific amount	1	1	3
Popili Raja Govt. Hr. Sec. School, Puzhal	1	1	2	6000	1	1	3

### Students' Satisfaction Levels

A satisfaction survey is a study that measures a person's perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised various questions including the construction of toilets, availability of running water in the toilets, safety and security, availability of electricity in the toilets and students perception of cleanliness.

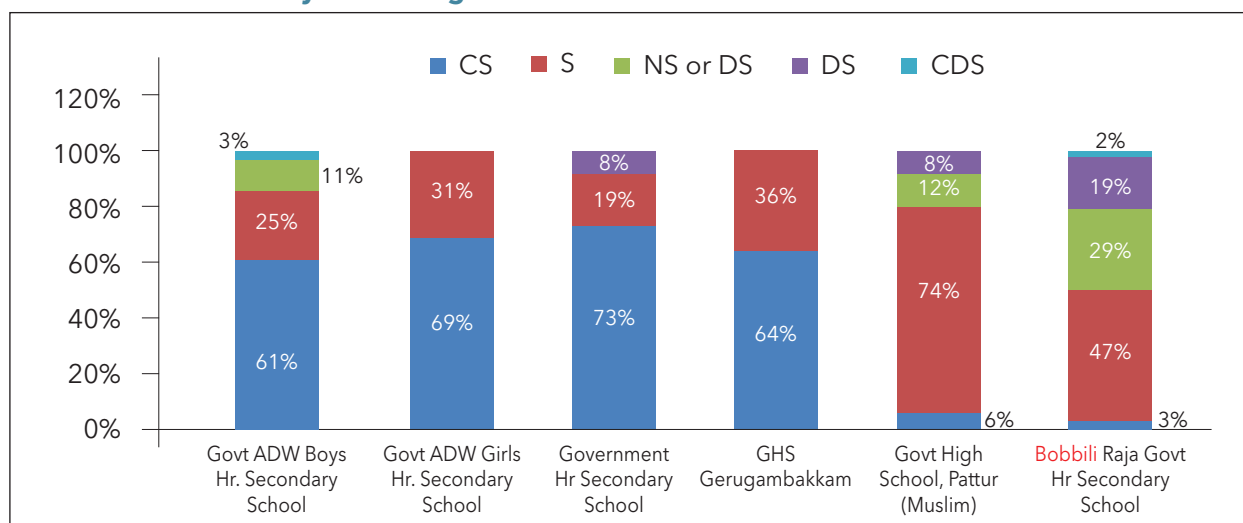
**Chart-4.9: Students' Satisfaction with the School Toilets**



(Note : Percentages in the chart are rounded off to nearest zero)

To understand the utility of the toilets, students' satisfaction questionnaire has been circulated to know the level of satisfaction with the BEL constructed toilets. Chart-4.10 depicts surveyed students' satisfaction with BEL constructed toilets in six schools. 100% of surveyed students from four schools have expressed their complete satisfaction or satisfaction with the way BEL constructed school toilets in their schools. 94% of surveyed students from Government ADW Boys Higher Secondary school were satisfied with BEL constructed toilets, and 6% of students have expressed their complete dissatisfaction or dissatisfaction with the same. 83% of surveyed students from Popili Raja Government higher secondary school children were satisfied with BEL constructed school toilets, 14% students have opined that they were neither satisfied nor dissatisfied, and the remaining 3% students have expressed their complete dissatisfaction with BEL constructed school toilets.

**Chart-4.10: Availability of Running Water**



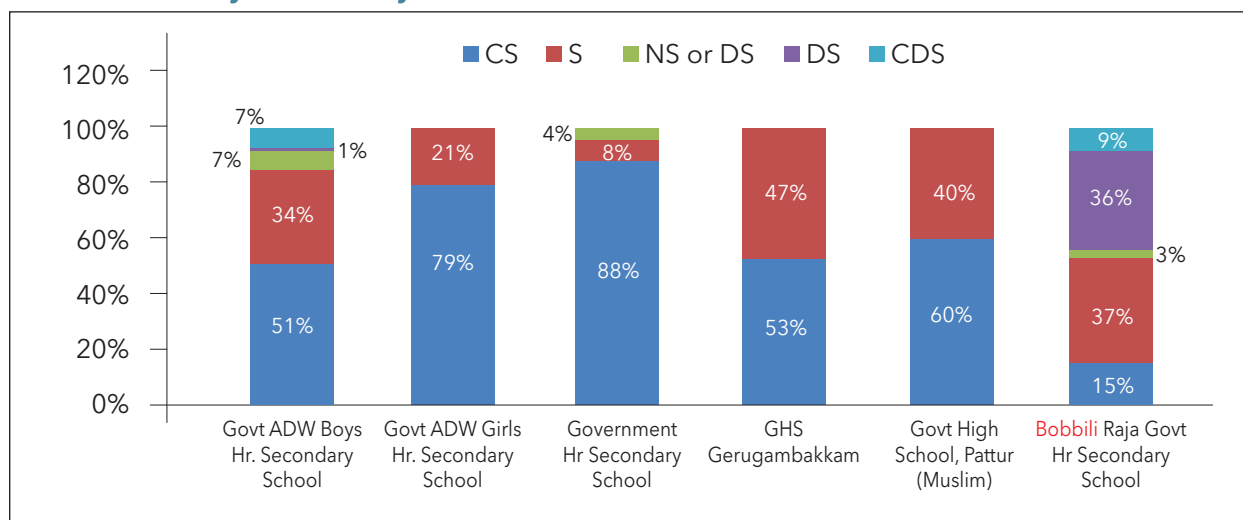
(Note : Percentages in the chart are rounded off to nearest zero)

Mostly the students in all the schools are satisfied with the availability of running water. 3% of surveyed students from Govt ADW Boys Hr. Secondary School, 8% of students from Government Secondary school-Azhividaithangi, 8% of students from Govt. High School Pattur and 21% of students from Popili Raja Government Hr. secondary school have expressed their complete dissatisfaction or dissatisfaction with running water availability in their schools' toilets. 29% of surveyed students from Bobbili Raja Govt Hr. secondary school, 12% of students Govt ADW Boys Hr. Secondary School and 12% of students from Govt High school were neither satisfied nor dissatisfied with running water in their schools' toilets. (Chart-4.10)

Chart-4.11 discloses the students' opinions regarding safety and security at the toilets. A majority of the surveyed students from all six schools have expressed their complete satisfaction or satisfaction with the safety and security of the toilets at their schools. But, 44% of surveyed students from Bobbili Raja Govt. Hr. Secondary school and 8% of students from Govt ADW Boys Higher secondary school have expressed their complete dissatisfaction or dissatisfaction with safety and security of toilets, 7% of students from Govt ADW Boys Higher secondary school, 4% of students from Govt Higher secondary school, Azhividaithangi, and 3% of students from Bobbili Raja Govt Higher secondary schools were neither satisfied nor dissatisfied with safety and security of school toilets.

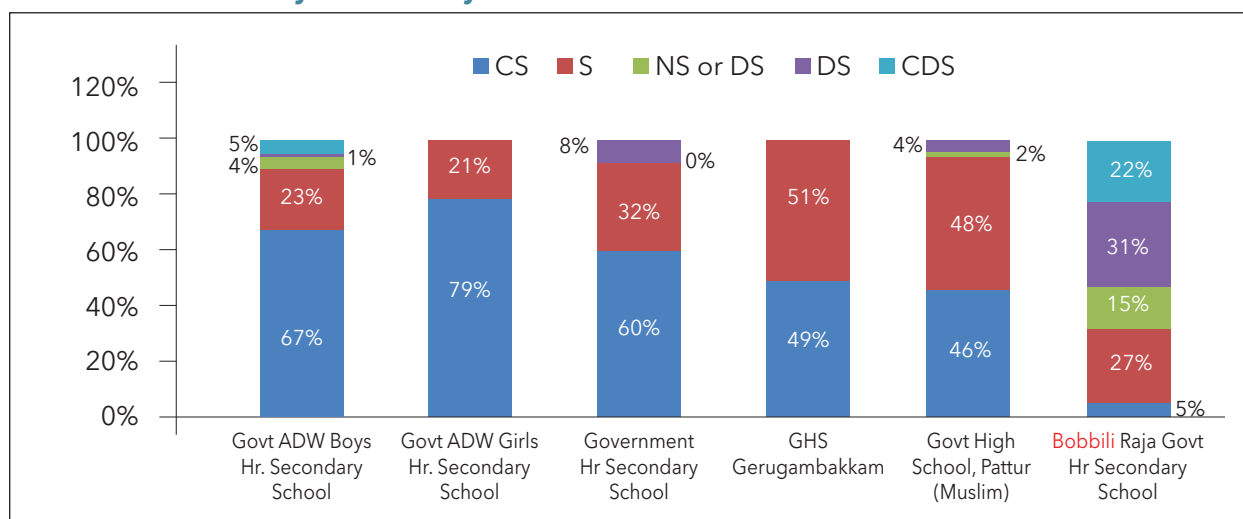


**Chart-4.11: Safety and Security**



(Note : Percentages in the chart are rounded off to nearest zero)

**Chart-4.12: Availability of Electricity in the Toilets**



(Note : Percentages in the chart are rounded off to nearest zero)

Most surveyed students from five schools have expressed their complete satisfaction or satisfaction with electricity facilities of schools' toilets, However, 53% of students from Bobbili Raja Government Hr. Secondary were dissatisfied with electricity supply available at their toilets.

### Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation & maintenance, effectiveness, Impact aspects.

### Overall impact

- The objective of the construction of school toilets and urinals at selected Government schools by the BEL Chennai unit was to strengthen toilets facilities in selected government schools and make them open defecation free places.

- The students attendance, health and enrolments have improved
- Most stakeholders were satisfied on the way BEL constructed/renovated school toilets and provided running water facility in school toilets.
- Most of the stakeholders also expressed their satisfaction on the way awareness was created in the students about Swachhta and hygiene, the existing cleaning and maintenance process etc.
- This project also aligned with Government of India's prestigious project "Swachh Vidyalaya Abhiyan".

There was a positive improvement in school children attendance, health, and education levels. The table details the various impact parameters along with the observations.

### Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	Most schoolchildren studying in government schools belong to marginalized communities. Earlier lack of toilets, drinking water, and other facilities in schools adversely impacted schoolchildren attendance, education, and health, especially among girl children. To overcome these problems in government schools, the Government of India carved out the prestigious project "Swachh Vidyalaya Abhiyan" to provide toilets and urinals in government schools across the country. Along similar lines, BEL initiated this project at selected schools under their project unit Chennai. The project strengthened the Government school toilets system and provided sufficient toilet facilities for government school children in the 6 selected schools. This project also created awareness among school children about good hand wash habits, need for clean drinking water, hygiene and good environment practices
2	Utility	BEL constructed toilets and urinals for both boys and girls children at the 6 selected government schools in three districts in around Chennai unit are fully functional and utilized by both boys and girls. 2) A total of 3000 students both boys and girls are utilizing BEL constructed school toilets. Students' toilet usage percentage is close to 100%. BEL toilets have been efficient in delivering the desired outcome - providing good sanitation/toilet facilities to school children. In addition, toilets usage has improved due to sufficient facilities available at toilet locations. BEL has provided proper electrification, running water provision, separate toilets, and urinals for both boys and girl children. Toilets were being constructed in adequate space based on proper engineering drawings facilitating proper ventilation and lighting to the user. Most of the toilets were effectively put in use and the students were actively participating in usage of the facility.





S. No.	Impact Parameter	Observation
		<ul style="list-style-type: none"> <li>• 100% of the toilets were functional.</li> <li>• Water resources and plumbing facilities were well connected to school toilets.</li> <li>• The disposable facilities of these toilets were well in place and hygienically maintained.</li> <li>• School authorities followed proper hygiene standards in maintaining toilets and implemented best practices for using of school toilets.</li> </ul>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at BEL constructed school toilets in all the six schools. Running water provision is given to all BEL constructed school toilets. All schools deployed toilet cleaning personnel permanently. Three schools allocate nominal budget for maintenance of school toilets. while other three schools do not allocate separate fund for maintenance of toilets but spend from the school budget whenever necessary for all maintenance activities. Lack of sufficient funds has resulted in sub-par maintenance at times. Most school toilets are well connected with water through the plumbing work.</p>
4	Effectiveness	<p>The toilet design has many value added features which are not seen in such public facilities.</p> <p>All the schools conducted classes on good health habits and cleanliness. During all these operation and maintenance initiatives, all schools implemented good sanitation practices and hand wash habits, enhancing children's use of school toilets.</p> <p>Schools also created awareness among the children about keeping the toilet surroundings clean and using the toilet facility. These programs helped children improve their education and health levels, which showed positive feedback in the children's satisfaction level survey conducted by the IPE team.</p> <p><b>Increase in student enrolments:</b> There was a small increase in student enrolment in the last year and the creation of the facilities also had a positive impact on attendance, education, and health levels as found in the survey.</p> <p><b>Prudent utilization of the facility provided.</b>  100 % of schools' strength is utilizing BEL constructed school toilet facility due to sufficient facilities available in toilets. They are</p> <ol style="list-style-type: none"> <li>1) Running water provision</li> <li>2) Hand wash facilities</li> <li>3) Separate toilets and urinals are available for school children</li> <li>4) Adequate privacy is available for girl children</li> <li>5) Adequate light and ventilation</li> <li>6) Easy access to schoolchildren</li> <li>7) cleanliness and proper maintenance by school authorities</li> </ol>

S. No.	Impact Parameter	Observation
5	<b>Impact</b>	<p>The project has been able to reduce open defecation with no school children going for open defecation</p> <p><b>Tangible Benefits</b> i) Increased number of school toilets and urinals for students</p> <p><b>Intangible Benefits</b> 1) Convenience 2) Closer access and improved population ratio 3) Safety and security for schoolchildren to access the toilets 4) Reduce the incidence of infectious disease 6) Improved the schoolchildren health</p> <p>The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village.</p> <p>The objective of the Swachh Vidyalaya Abhiyan has been achieved by and large. Most of the schools were declared as open defecation free school places.</p>
6	<b>Sustainability</b>	<p><b>Sustenance of the intervention over a period:</b> Toilets are being maintained properly by schools even after 5 years of construction. Most schools ensure the availability of running water, allocate a proper budget for regular maintenance and operation of toilets</p>

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

### Overall Investigator Observations about the Toilets in Two Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	Daily once in all the schools
Scavenger	All the schools have toilets cleaning personnel, one cleaning personnel each in four schools and 3 cleaning personnel each in 2 schools
Hand Wash Habits	All six schools imparted information to children on hand wash habits
School declared as open defecation free place.	Yes.
Separate urinals and toilets	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available in 3 schools



Name of the Parameters	Investigator Observation
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

General observations from Teachers' satisfaction level survey:

### General Observations

The following are some of the important observations from the project

- The newly constructed toilets by BEL have helped the schools to promote social behavior among students and found that this has changed their perception towards utility of toilets, cleanliness, good habits, etc. (Table-4.9)
- Almost all the 46 teachers surveyed from six schools were satisfied with students' change in attitude and civic sense orientation (Table-4.9)
- BEL Chennai Unit has taken care of some of the maintenance activities in some schools by replacing the taps, lights, bulbs, repairing leakages, etc to increase the sustainability of the toilets.(4.10)

**Table-4.9: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

Name of the School	Change in Attitude and Civic Sense Orientation Among Students			Development of Social Behavior of the Students		
	Completely Satisfied	Satisfied	Neither Satisfied Nor Dis-Satisfied	Completely Satisfied	Satisfied	Neither Satisfied Nor Dis-Satisfied
Govt. ADW Boys Hr. Secondary School	2	8	0	2	8	0
Govt. ADW Girls Hr. Sec. School	1	1	0	2	0	0
Govt. Higher Secondary School	4	5	0	4	4	1
GHS Gerugambakkam	7	0	0	6	1	0
Govt. High School Pattur (Muslim)	0	7	0	2	5	0
Popili Raja Govt. Hr. Sec. School, Puzhal	4	6	1	4	6	1

**Table-4.10: Change in School Dropout Ratio and Reduced Absenteeism**

Name of the School	Change in School Dropout Ratio				Reduction in school Absenteeism		
	Completely Satisfied	Satisfied	Neither Satisfied Nor Dis-satisfied	Dis-satisfied	Completely Satisfied	Satisfied	Neither Satisfied Nor Dis-satisfied
Govt. ADW Boys Hr. Secondary School	3	6	0	1	1	9	0
Govt. ADW Girls Hr. Sec. School	2	0	0	0	2	0	0
Govt. Higher Secondary School	3	6	0	0	3	6	0
GHS Gerugambakkam	2	5	0	0	2	5	0
Govt. High School Pattur (Muslim)	0	3	4	0	0	4	3
Popili Raja Govt. Hr. Sec. School, Puzhal	2	8	1	0	2	8	1



Government ADW Boys Hr. Secondary School, Vadagarai Thiruvallur District



Government Girls HR. Secondary School, Vadagarai, Thiruvallur District



Government High School, Gerugambakkam, Kanchipuram

Government High School Pattur, Kanchipuram



Popili Raja Govt Hr. Sec. School - Puzal Thiruvallur

Popili Raja Govt. Hr. Sec. School, Puzhal



### 4.3 BEL Ghaziabad Unit

BEL Ghaziabad (BEL GAD) is located in Delhi NCR and is the second largest unit of BEL. The Unit was established in 1974 to manufacture critical products like high power Radars & sophisticated Communication Equipment's for IAF. From its humble beginning, this Unit has progressively expanded its product range to cater to the requirements of all the 3 wings of Defence services. The products of the Unit also find applications in civilian organizations like Shipyards, MHA, ISRO etc. To address the changing business scenario in Indian Defence industry / market, the Unit was restructured twice and currently it has 4 Strategic Business Units - NCS (Network Centric Systems), DCCS (Defence Command and Control System), SCCS (Satellite and Cellular communication Systems), Radar, and Antenna.

In the Financial year 2022, a turnover of Rs 2,651.44 Crs was achieved by Ghaziabad Unit and Rs 15,000 Crs was turnover of BEL as a whole. Ghaziabad Unit is sensitive towards the requirements of society and executes socially useful projects with the aim of creating a difference in life of different segments of our society. Several meaningful CSR projects are completed by Ghaziabad Unit in the domain of Skill India, Health Care and Sanitation. This Unit also focused on construction of public facilities near Ghaziabad Bus Stop and in School premises, at remote locations of **Kasganj** to provide better sanitation and hygiene to people residing in these locations as part of its CSR activities in the years 2014-15 & 2015-16.

<b>BEL Ghaziabad CSR 2014-15</b>	Swachh Bharat Abhiyan - SVA
<b>Activity</b>	Construction of Toilets for schools
<b>Total Budget Sanctioned</b>	Rs 341.18 Lakhs
<b>Budget Utilised</b>	Rs 274.97 Lakhs
<b>Project Objective</b>	To provide sufficient toilets in select government schools of Ghaziabad district
<b>Start Date and End Date</b>	2015-16

#### Data Analysis

The BEL Ghaziabad Unit had constructed 154 toilets in the year 2015-16 in 41 government schools and one public toilet at Mohan Nagar Bus stand in Ghaziabad district. Based on the survey conducted by the evaluation team the following observations are made.

#### Gender Distribution, Social Status and Teachers' Strength

Table 4.11 depicts the gender distribution of the students, social status and the teacher's strength of the 41 schools where BEL has constructed toilets. The number of students ranged from 83 to 797 in all the forty-one schools. Around 76 percent of the students belong to SC/ST / OBC community. There are 210 teachers among whom 114 teachers are male. Out of 41 schools, 24 schools are imparting primary education from class I to V, while the others have upper secondary classes from VI and X.

**Table-4.11: Gender Distribution, Social Status and Teacher's Strength**

S. No.	Name of the School	Students			Social Status					Teachers' Strength	
		Boys	Girls	Total	SC	ST	OBC	General	Total	M	F
1	Primary School Pathreki, Kasganj (composite school)	116	127	243	0	20	220	3	243	0	7
2	Primary School Bhitona (Kasganj)	162	152	314	0	26	265	23	314	4	3
3	Primary School Ahroli (Kasganj)	187	170	357	0	115	216	26	357	2	6
4	Primary School Manouta (Kasganj)	122	110	232	0	81	149	2	232	1	5
5	Primary School Nawab No 1 (Kasganj)	41	43	84	0	56	25	3	84	0	1
6	Primary School Nadrai 1st (Kasganj)	420	368	788	0	326	462	0	788	4	7
7	Primary School Gandhiyaretan (Soron) Kasganj (composite school)	55	57	112	0	55	55	2	112	1	0
8	Primary School Faroli (Sahawar) Kasganj	159	154	313	0	171	131	11	313	4	2
9	Junior High School Khojpur (Sahawar) Kasganj	116	108	224	0	81	129	14	224	3	2
10	Junior High School Sadikpur (Sahawar) Kasganj	35	48	83	0	72	11	0	83	1	0
11	Junior High School Ram Chitoni (Sahawar) Kasganj	57	48	105	0	28	73	4	105	4	0
12	Primary School Rara (Sahawar), Kasganj	169	152	321	0	0	321	0	321	2	3
13	Junior High School Jamalpur (Sahawar), Kasganj	72	88	160	0	5	154	1	160	3	3
14	Junior High School Faroli (Sahwar) Kasganj	70	51	121	0	80	36	5	121	1	2
15	Primary School Bahta (Amanpur), Kasganj (composite school)	198	239	437	0	114	321	2	437	4	4
16	Primary School Bahoranpur (Sidhpura), Kasganj	94	105	199	0	26	166	7	199	3	3
17	Primary School Fatehpur (Sidhpura), Kasganj	89	76	165	0	16	125	24	165	6	1
18	Primary School Hamirpur (Sidhpura), Kasganj	147	149	296	0	74	222	0	296	3	3
19	Primary School Jasmai (Sidhpura), Kasganj (composite school)	150	124	274	0	35	125	114	274	5	4
20	Junior High School Fatehpur Kala (Soron), Kasganj	68	55	123	0	65	54	4	123	2	0
21	Primary School Tatarpur (Kasganj) (composite school)	113	116	229	0	37	180	12	229	0	1
22	Junior High School Nangla Ashanand (Patiyali), Kasganj	67	57	124	0	48	76	0	124	2	1
23	Primary School Ramnagarkarsena (Patiyali), Kasganj	54	55	109	0	15	92	2	109	3	1
24	Primary School Nagla munshi (Patiyali), Kasganj	126	134	260	0	18	241	1	260	3	1
25	Primary School Daruapur (Amanpur), Kasganj	64	42	106		53	45	8	106	1	3
26	Primary School Bondar (Sahawar), Kasganj (Composite school)	213	165	378	0	136	189	53	378	2	5
27	Primary School Tharachetra (Amanpur), Kasganj	42	60	102	0	13	88	1	102	1	2
28	Junior High School KaderganjPukhta ,Kasganj	103	122	225	0	53	161	11	225	2	0



S. No.	Name of the School	Students			Social Status					Teachers' Strength	
		Boys	Girls	Total	SC	ST	OBC	General	Total	M	F
29	Junior High School Ranidamar (Patiyali), Kasganj (composite school)	200	202	402	0	109	245	48	402	5	0
30	Junior High School Bahora (Patiyali), Kasganj	77	70	147	0	56	89	2	147	3	0
31	Primary School Usmanpur (Ganjdundwara), Kasganj	45	47	92	0	13	79	0	92	2	
32	Junior High School Majhola (Patiyali) Kasganj	43	50	93	0	33	51	9	93	2	0
33	Primary School Tigratajpur (Patiyali), Kasganj	83	61	144	0	12	132	0	144	2	4
34	Primary School Nawabganj Nagariya (Kasganj) (composite school)	198	190	388	0	103	240	45	388	3	3
35	Primary School Khijarpur (Kasganj)	108	99	207	0	13	114	80	207	4	0
36	Primary School Manikapur (Sahawar) Kasganj (composite school)	342	262	604	0	82	515	7	604	9	2
37	Primary School Satpuramafi (Kasganj) Kasganj (composite school)	114	123	237	0	2	235	0	237	5	1
38	Junior High School Gaupura (Soron) Kasganj (composite school)	417	380	797	0	350	368	79	797	5	4
39	Primary School GaneshpurGanjdundwara Kasganj	342	186	528	0	64	353	111	528	2	6
40	Primary School Manoharpur (Baldeo) Mathura	180	175	355	0	110	235	10	355	4	3
41	Uchcha Prathik Vidyalaya Maharajpur	289	263	552	0	49	142	361	552	1	3
	Total	5747	5283	11030	0	2815	7130	1085	11030	114	96

### Students' Strength after the Construction of the Toilets by BEL

Table 4.12 shows the comparison of students' strength in previous year (2021-22) and current year (2022-23). From the table it is observed that the students' strength has increased from 10120 to 11030 in 41 schools. Students' strength decreased in 13 schools ranging from 2% to 18%, while in 26 schools strength increased in the range of 3% to 63%. There was no change in students' strength in 2 schools. In Uchcha Prathmik Vidyalay, Maharajpur the strength has increased form 220 during 2019 to 587 in 2022.

**Table-4.12: Comparison of Student's Strength**

S. No.	Name of the School	Students			Students		
		Boys	Girls	Total	Boys	Girls	Total
1	Primary School Pathreki, Kasganj (composite school)	116	127	243	96	106	202
2	Primary school bhitona (Kasganj)	162	152	314	133	143	276
3	Primary school Ahroli (Kasganj)	187	170	357	188	150	338
4	Primary school Manouta (Kasganj)	122	110	232	96	92	189
5	Primary school Nawab No 1 (Kasganj)	41	43	84	53	49	102
6	Primary School Nadrai 1 <sup>st</sup> (Kasganj)	420	368	788	392	338	730

S. No.	Name of the School	Students			Students		
		Boys	Girls	Total	Boys	Girls	Total
7	Primary School Gandhiyaretan (Soron) <b>Kasganj</b> (composite school)	55	57	112	76	36	112
8	Primary School Faroli (Sahawar) <b>Kasganj</b>	159	154	313	143	117	260
9	Junior High School Khojpur (Sahawar) <b>Kasganj</b>	116	108	224	93	98	191
10	Junior High School Sadikpur (Sahawar) <b>Kasganj</b>	35	48	83	42	52	94
11	Junior High School Ram Chitoni (Sahawar) <b>Kasganj</b>	57	48	105	50	52	102
12	Primary School Rara (Sahawar), <b>Kasganj</b>	169	152	321	151	138	289
13	Junior High School Jamalpur (Sahawar), <b>Kasganj</b>	72	88	160	47	88	136
14	Junior High School Faroli (Sahwar) <b>Kasganj</b>	70	51	121	65	64	129
15	Primary school Bahta (Amanpur), <b>Kasganj</b> (composite school)	198	239	437	188	228	416
16	Primary School Bahoranpur (sidhpura), <b>Kasganj</b>	94	105	199	101	111	212
17	Primary school Fatehpur (Sidhpura), <b>Kasganj</b>	89	76	165	98	91	189
18	Primary School Hamirpur (Sidhpura), <b>Kasganj</b>	147	149	296	110	84	194
19	Primary School Jasmai (Sidhpura), <b>Kasganj</b> (composite school)	150	124	274	141	113	254
20	Junior High School Fatehpur Kala (soron), <b>Kasganj</b>	68	55	123	50	43	93
21	Primary School Tatarpur ( <b>Kasganj</b> ) (composite school)	113	116	229	113	64	177
22	Junior High School Nangla Ashanand (Patiyali), <b>Kasganj</b>	67	57	124	80	67	147
23	Primary School Ramnagarkarsena (Patiyali), <b>Kasganj</b>	54	55	109	65	64	129
24	Primary School Nagla Munshi (Patiyali), <b>Kasganj</b>	126	134	260	105	111	216
25	Primary School Daruapur (Amanpur), <b>Kasganj</b>	64	42	106	69	45	114
26	Primary School Bondar (Sahawar), <b>Kasganj</b> (composite school)	213	165	378	202	152	357
27	Primary School Tharachetra (Amanpur), <b>Kasganj</b>	42	60	102	50	55	105
28	Junior High School Kaderganj Pukhta, <b>Kasganj</b>	103	122	225	91	92	183
29	Junior High School Ranidamar (Patiyali), <b>Kasganj</b> (composite school)	200	202	402	208	203	411
30	Junior High School Bahora (Patiyali), <b>Kasganj</b>	77	70	147	54	62	116
31	Primary School Usmanpur (Ganjdundwara), <b>Kasganj</b>	45	47	92	41	45	86
32	Junior High School Majhola (Patiyali) <b>Kasganj</b>	43	50	93	29	28	57

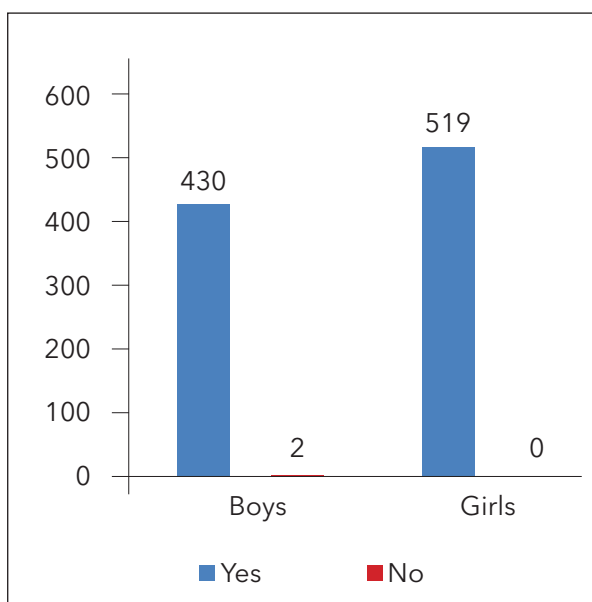


S. No.	Name of the School	Students			Students		
		Boys	Girls	Total	Boys	Girls	Total
33	Primary School Tigratajpur (Patiyali), <b>Kasganj</b>	83	61	144	83	68	151
34	Primary School Nawabganj Nagariya ( <b>Kasganj</b> ) (composite school)	198	190	388	160	153	313
35	Primary School Khijarpur ( <b>Kasganj</b> )	108	99	207	96	95	191
36	Primary School Manikapur (Sahawar) <b>Kasganj</b> (composite school)	342	262	604	260	150	410
37	Primary School Satpuramafi ( <b>Kasganj</b> ) <b>Kasganj</b> (composite school)	114	123	237	95	129	224
38	Junior High School Gaupura (Soron) <b>Kasganj</b> (composite school )	417	380	797	355	329	684
39	Primary School Ganeshpur Ganjdundwara <b>Kasganj</b>	342	186	528	240	288	528
40	Primary School Manoharpur (Baldeo) Mathura	180	175	355	217	209	426
41	Uchcha Prathik Vidayalya Maharajpur	289	263	552	307	280	587
	Total	<b>5747</b>	<b>5283</b>	<b>11030</b>	4981	4672	10120

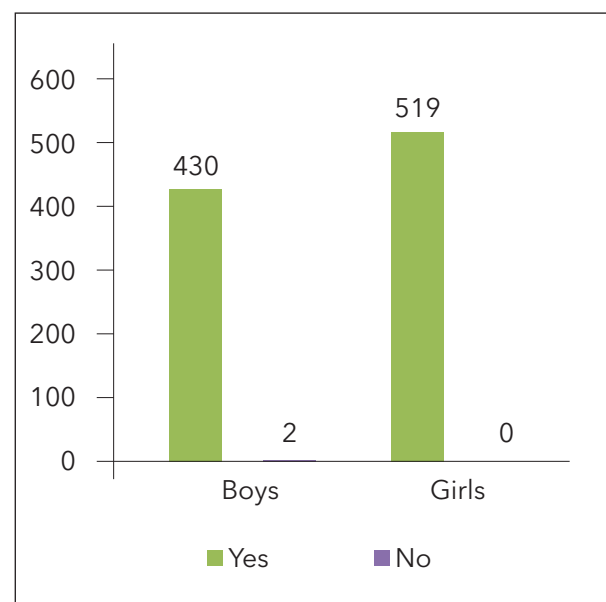
### Awareness on the Newly Constructed Toilets and on the Best Practices Imparted to Students in Using Toilets

Chart-4.13 depicts that most of the boys and girls in the 41 schools were aware of the construction of the toilets by BEL. Only two boys informed that they were not aware of toilets that are constructed by BEL. Chart-4.14 reveals that majority of the boys and girls were aware of the sessions conducted by the school on best practices. Only two boys were not aware about the conduct of any sessions on how to use school toilets. It was reported that the schools regularly conduct classes on good health habits and cleanliness once / twice per week.

**Chart-4.13: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.14: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



## Operations and Maintenance

The 148 toilets were constructed in all the schools by BEL are available for use in all the locations. The data from the questionnaires reveal that in many schools the toilets were cleaned regularly. No school has allocated specific budget for maintenance of school toilets, which is part of school budget and schools utilize little amount of their school budgets for maintenance of school toilets and are temporarily hiring cleaning personnel. In some cases, teachers themselves spend their pocket money to meet the regular maintenance of school toilets due to paucity of school funds. Out of 41 schools, 38 schools deployed temporary cleaning personnel to clean the toilets. Only three schools have permanent cleaning personnel. Table-4.13 details the information on the operation and maintenance of toilets in all the forty-one schools. The water is sufficiently available with overhead tank for all the constructed toilets. All 41 schools have borewell facility which is the main source of running water in toilets.

**Table-4.13: Operations and Maintenance**

S. No.	Name of the School	Are the Toilets Cleaned Everyday	How Many Staff Members are there to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget	Source of Running Water School Toilets
1	Primary School Pathreki, Kasganj composite school	No.	-	Every two days	No special budget, included in school budget	Borewell
2	Primary School Bhitona (Kasganj)	No	-	Every two days		Borewell
3	Primary School Ahroli (Kasganj)	No	-	Every two days		Borewell
4	Primary School Manouta (Kasganj)	No	-	Every two days		Borewell
5	Primary School Nawab No 1 (Kasganj)	No	-	Every two days		Borewell
6	Primary School Nadrai 1 <sup>st</sup> (Kasganj)	No	-	Every two days		Borewell
7	Primary School Gandhiyaretan (Soron) Kasganj (composite school)	No	-	Every two days		Borewell
8	Primary School Faroli (Sahawar) Kasganj	No	-	Every two days		Borewell
9	Junior High School Khojpur (Sahawar) Kasganj	No	-	Every two days		Borewell
10	Junior High School Sadikpur (Sahawar) Kasganj	No	-	Every two days		Borewell
11	Junior High School Ram Chitoni (Sahawar) Kasganj	Yes	1	Once a day		Borewell
12	Primary School Rara (Sahawar), Kasganj	Yes	1	Once a day		Borewell
13	Junior High School Jamalpur (Sahawar), Kasganj	No	-	Every two days		Borewell
14	Junior High School Faroli (Sahwar) Kasganj	No	-	Every two days		Borewell
15	Primary School Bahta (Amanpur), Kasganj (composite school)	No	-	Every two days		Borewell
16	Primary School Bahoranpur (Sidhpura), Kasganj	No	-	Every two days		Borewell
17	Primary School Fatehpur (Sidhpura), Kasganj	No	-	Every two days		Borewell
18	Primary School Hamirpur (Sidhpura), Kasganj	No	-	Every two days		Borewell
19	Primary School Jasmai (Sidhpura), Kasganj (composite school)	No	-	Every two days		Borewell
20	Junior High School Fatehpur Kala (Soron), Kasganj	No	-	Every two days		Borewell
21	Primary School Tatarpur (Kasganj) (composite school)	No	-	Every two days		Borewell



S. No.	Name of the School	Are the Toilets Cleaned Everyday	How Many Staff Members are there to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget	Source of Running Water School Toilets
22	Junior High School Nangla Ashanand (Patiyali), Kasganj	No	-	Every two days	No special budget, included in school budget	Borewell
23	Primary School Ramnagarkarsena (Patiyali), Kasganj	No	-	Every two days		Borewell
24	Primary School Nagla Munshi (Patiyali), Kasganj	No	-	Every two days		Borewell
25	Primary School Daruapur (Amanpur), Kasganj	No	-	Every two days		Borewell
26	Primary School Bondar (Sahawar), Kasganj (composite school)	No	-	Every two days		Borewell
27	Primary School Tharachetra (Amanpur), Kasganj	No	-	Every two days		Borewell
28	Junior High School Kaderganj Pukhta, Kasganj	No	-	Every two days		Borewell
29	Junior High School Ranidamar (Patiyali), Kasganj (composite school)	No	-	Every two days		Borewell
30	Junior High School Bahora (Patiyali), Kasganj	No	-	Every two days		Borewell
31	Primary School Usmanpur (Ganjdundwara), Kasganj	No	-	Every two days		Borewell
32	Junior High School Majhola (Patiyali) Kasganj	No	-	Every two days		Borewell
33	Primary School Tigratajpur (Patiyali), Kasganj	No	-	Every two days		Borewell
34	Primary School Nawabganj Nagariya (Kasganj) (composite school)	No	-	Every two days		Borewell
35	Primary School Khijarpur (Kasganj)	No	-	Every two days		Borewell
36	Primary School Manikapur (Sahawar) Kasganj (composite school)	No	-	Every two days		Borewell
37	Primary School Satpuramafi (Kasganj) Kasganj (composite school)	No	-	Every two days		Borewell
38	Junior High School Gaupura (Soron) Kasganj (composite school )	No	-	Every two days		Borewell
39	Primary School Ganeshpur Ganjdundwara Kasganj	No	-	Every two days		Borewell
40	Primary School Manoharpur (Baldeo) Mathura	No	-	Every two days		Borewell
41	Uchcha Prathik Vidyalaya Maharajpur	Yes	-	Once a day		Borewell

### School Codes for Graphs

S. No.	Name of the School
1	Primary School Pathreki, <b>Kasganj</b> (composite school)
2	Primary School Bhitona ( <b>Kasganj</b> )
3	Primary School Ahroli ( <b>Kasganj</b> )
4	Primary School Manouta ( <b>Kasganj</b> )
5	Primary School Nawab No 1 ( <b>Kasganj</b> )
6	Primary School Nadrai 1 <sup>st</sup> ( <b>Kasganj</b> )
7	Primary School Gandhiyaretan (Soron) <b>Kasganj</b> (composite school)
8	Primary School Faroli (Sahawar) <b>Kasganj</b>
9	Junior High School Khojpur (Sahawar) <b>Kasganj</b>

S. No.	Name of the School
10	Junior High School Sadikpur (Sahawar) <b>Kasganj</b>
11	Junior High School Ram Chitoni (Sahawar) <b>Kasganj</b>
12	Primary School Rara (Sahawar), <b>Kasganj</b>
13	Junior High School Jamalpur (Sahawar), <b>Kasganj</b>
14	Junior High School Faroli (Sahwar) <b>Kasganj</b>
15	Primary School Bahta (Amanpur), <b>Kasganj</b> (composite school)
16	Primary School Bahoranpur (Sidhpura), <b>Kasganj</b>
17	Primary school Fatehpur(sidhpura), <b>Kasganj</b>
18	Primary School Hamirpur (Sidhpura), <b>Kasganj</b>
19	Primary School Jasmai (sidhpura), <b>Kasganj</b> (composite school)
20	Junior High School Fatehpur Kala (soron), <b>Kasganj</b>
21	Primary School Tatarpur ( <b>Kasganj</b> ) (composite school)
22	Junior High School NanglaAshanand (Patiyali), <b>Kasganj</b>
23	Primary School Ramnagarkarsena (Patiyali), <b>Kasganj</b>
24	Primary School Nagla munshi (Patiyali), <b>Kasganj</b>
25	Primary School Daruapur (Amanpur), <b>Kasganj</b>
26	Primary School Bondar (Sahawar), <b>Kasganj</b> (composite school)
27	Primary School Tharachetra (Amanpur), <b>Kasganj</b>
28	Junior High School Kaderganj Pukhta, <b>Kasganj</b>
29	Junior High School Ranidamar (Patiyali), <b>Kasganj</b> (composite school)
30	Junior High School Bahora (Patiyali), <b>Kasganj</b>
31	Primary School Usmanpur (Ganjdundwara), <b>Kasganj</b>
32	Junior High School Majhola (Patiyali) <b>Kasganj</b>
33	Primary School Tigratajpur (Patiyali), <b>Kasganj</b>
34	Primary School Nawabganj Nagariya ( <b>Kasganj</b> ) (composite school)
35	Primary School Khijarpur ( <b>Kasganj</b> )
36	Primary School Manikapur (Sahawar) <b>Kasganj</b> (composite school)
37	Primary school satpuramafi ( <b>Kasganj</b> ) <b>Kasganj</b> (composite school)
38	Junior High School Gaupura (Soron) <b>Kasganj</b> (composite school )
39	Primary School Ganeshpur Ganjdundwara <b>Kasganj</b>
40	Primary School Manoharpur (Baldeo) Mathura
41	Uchcha Prathik Vidayalya Maharajpur

### Students' Satisfaction Levels

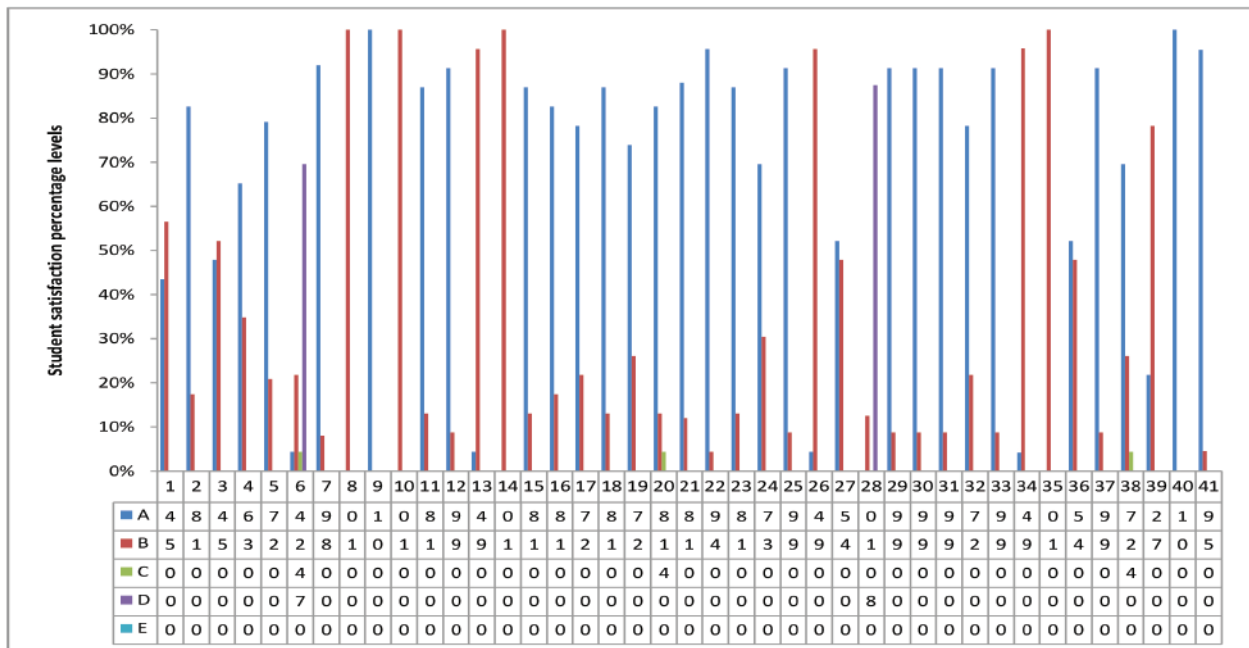
A satisfaction survey is a study that measures a person's perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised various questions including the construction of toilets, availability of running water in the toilets, safety and security, availability of electricity in the toilets and students perception of cleanliness.

To understand the utility of the toilets, a students' satisfaction questionnaire has been circulated to know the level of satisfaction with the BEL constructed toilets. Chart-4.15 depicts the level of satisfaction among students in all the forty-one schools. Most Students in 39 schools reported that they were satisfied with the facility created by BEL. However, most of the students in two schools, i.e., S.No. 6. Primary school Nadrai 1<sup>st</sup> (**Kasganj**). and S.No. 28, i.e., Junior High School



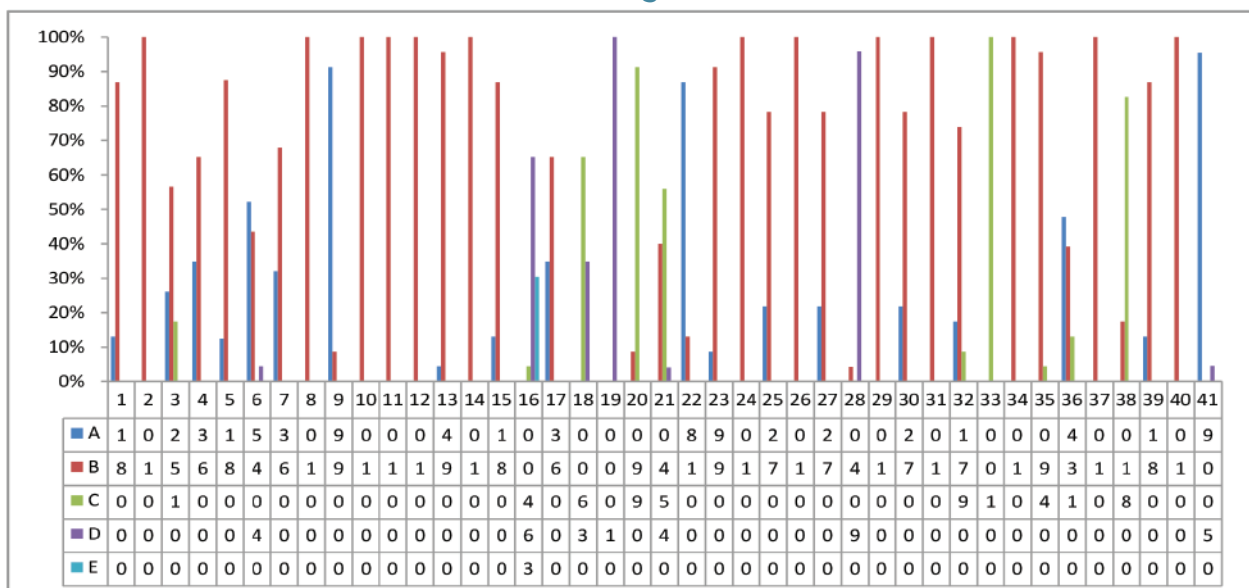
KaderganjPukhta, **Kasganj**, have expressed their dissatisfaction with the toilets. The students' satisfaction with the availability of running water in the toilets constructed by BEL is mentioned in Chart-4.16. Mostly the students in 33 schools have expressed their complete satisfaction or satisfaction with the availability of running water. The majority of students in 3 schools, i.e., S.No 16: Primary School Bahoranpur (Sidhpura), **Kasganj**; S.No 19: Primary School Jasmai (Sidhpura), **Kasganj** (composite school) and S.No 28: Junior High School Kaderganj Pukhta, **Kasganj** expressed their dissatisfaction with running water availability in their school toilets. Most students in 5 schools were informed that they were neither satisfied nor dissatisfied with running water availability in their school toilets.

**Chart-4.15: Students' Satisfaction with the Toilets**



(Completely Satisfied: A; Satisfied: B; Neither Satisfied Nor Dissatisfied: C; Dissatisfied: D; Completely Dissatisfied: E)

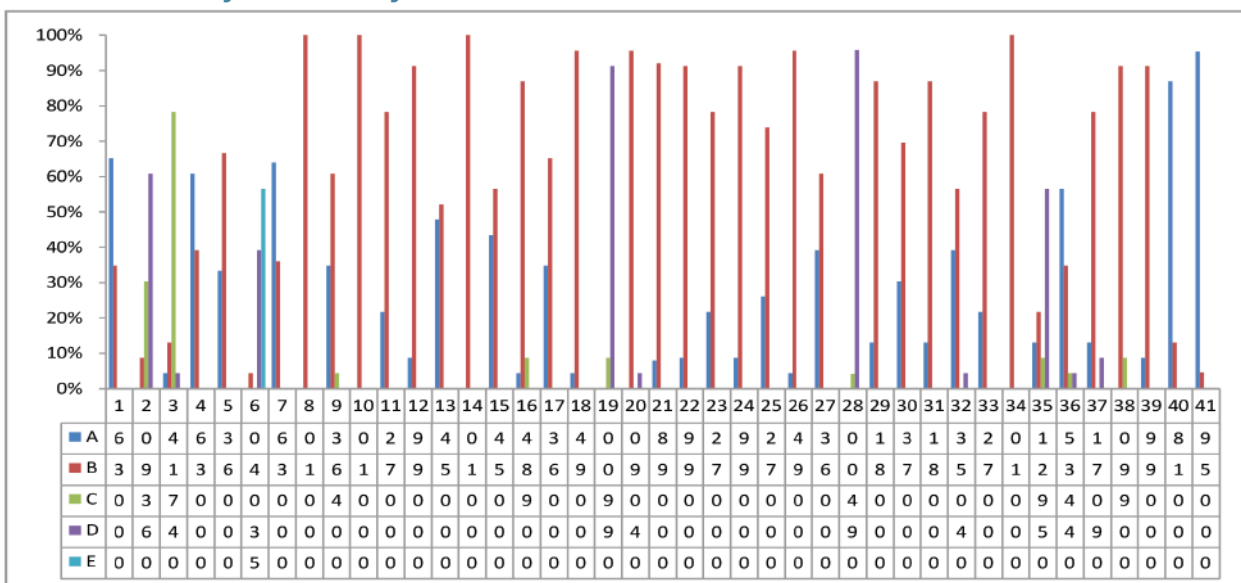
**Chart-4.16: Student Satisfaction Levels on Running Water Available in School Toilets**



(Completely Satisfied: A; Satisfied: B; Neither Satisfied Nor Dissatisfied: C; Dissatisfied: D; Completely Dissatisfied: E)

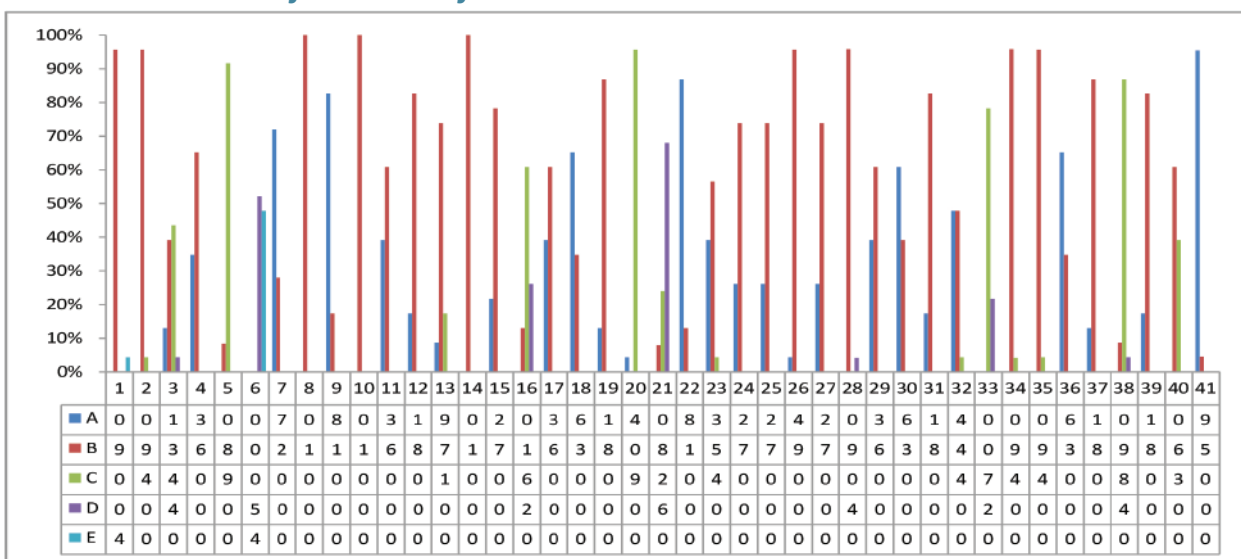
Chart-4.17 discloses the student’s opinions regarding safety and security at the toilets. Many of the students in 35 schools have expressed their complete satisfaction or satisfaction with the availability of safety and security at their school toilets. However, many of the students in five schools informed about their complete dissatisfaction or dissatisfaction with safety and security at their school toilets. Most of the students from Primary school Ahroli (Kasganj), i.e., S.No. 3, were neither satisfied nor dissatisfied with the availability of safety and security at school toilets. In Chart-4.18, the student’s reaction regarding the availability of electricity in toilets is displayed. Most students in 34 schools have expressed their complete satisfaction or satisfaction with the availability of electricity in their school toilets. However, most students in two schools, i.e., S.No. 6: Primary school Nadrai 1<sup>st</sup>(Kasganj) and S.No. 21: Primary School Tatarpur (Kasganj), expressed their complete dissatisfaction or dissatisfaction with the availability of electricity at their school toilets. Most students from the rest of 5 schools were neither satisfied nor dissatisfied with the availability of electricity at their school toilets.

**Chart-4.17: Safety and Security at School Toilets with Doors and Locks**



(Completely Satisfied: A; Satisfied: B; Neither Satisfied Nor Dissatisfied: C; Dissatisfied: D; Completely Dissatisfied: E)

**Chart-4.18: Availability of Electricity in the Toilets**



(Completely Satisfied: A; Satisfied: B; Neither Satisfied Nor Dissatisfied: C; Dissatisfied: D; Completely Dissatisfied: E)



## Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation and maintenance, and effectiveness of the toilets constructed by BEL. The objective of the construction of school toilets and urinals at selected Government schools under jurisdiction of BEL Ghaziabad unit was to provide/ strengthen toilet facilities and make them open defecation free places. This project is also aligned with Government of India's prestigious project "Swachh Vidyalaya Abhiyan". The study suggests that BEL-Ghaziabad unit has achieved this project objective after construction of schools' toilets in these selected units. Most stakeholders like students, teachers, parents, villagers/citizens, education department officials, public representatives were satisfied about the way BEL constructed school toilets, the running water facility, facilities in school toilets, students' toilet usage, cleaning and maintenance process, awareness on how to use school toilets etc. There is a positive improvement in school children attitude towards cleanliness, their attendance, health, and awareness levels.

## Overall Impact

The project has been highly impactful in the 41 schools where it was implemented.

- The project has had its impact in improving the admission of boys and girls and there has been a marginal improvement in the enrollment numbers of students in the schools in the last year.
- The school dropout numbers have reduced. Students who were often sick are now being regular to classes.
- The project has improved the goodwill in the local community and this has helped in improving the brand image of BEL.
- By constructing toilets, BEL has supported the government's SVA initiative.
- Parents and other stakeholders also expressed complete satisfaction of the facility created by BEL and encouraged children to go to school regularly.

The table presented below details various impact parameters studied along with the observations.

## Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	Primary schools, middle school, high schools and higher secondary schools in Ghaziabad district of Uttar Pradesh had shortages of toilets and urinals. The existing government toilets were not sufficient to fulfill the needs of huge strengths of these schools. More so, the existing government toilets in various schools were not in a usable condition. Toilets problems in government schools were a long-pending issue and to address this important issue, Govt. of India initiated Swachh Vidyalaya Abhiyan in 2014-15. Based on Government of India directions, BEL took up construction of toilets in 41 government schools in Ghaziabad district during 2014-15 and helped the government in achieving the stated objectives of Swachh Vidyalaya Abhiyan.

S. No.	Impact Parameter	Observation
2	Utility	<p>1) BEL constructed school toilets in 41 schools. Out of which 35 schools' toilets/urinals/toilets are fully functional. Remaining 6 schools' toilets/urinals are partially functioning.</p> <p>Minor issues found during IPE's team field visit are:</p> <ol style="list-style-type: none"> <li>1) <u>Running water problem in some schools' toilets</u></li> <li>2) Safety and Security at school toilets with doors and locks</li> <li>3) Maintenance and operations (Leakage, overflow, blockage) of the toilets</li> <li>4) Regular maintenance issues - permanent toilet cleaning personnel and proper budget allocation</li> </ol> <p>41 Schools' total strength and utilization: 11030; Utilization: Around 7500 (68%)</p> <p><b>Highlights of BEL Constructed Toilets</b></p> <p>BEL toilets are more efficient in delivering the desired outcome of providing good sanitation/toilet facilities to school children. In addition, toilets usage has improved due to sufficient facilities available at toilet locations. BEL has provided proper electrification, running water provision, separate toilets, and urinals for boys and girls. Toilets were constructed in a scientific manner with all necessary facilities, proper lighting and ventilation.</p> <p>Most of the toilets were effectively put into use and the students are happily using the facility.</p> <ul style="list-style-type: none"> <li>• Water resources and plumbing facilities were well connected to school toilets.</li> <li>• The disposal facilities of these toilets were well in place and hygienically maintained.</li> <li>• School authorities followed proper hygiene standards in maintaining toilets and implemented best practices for using of school toilets.</li> </ul>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at BEL constructed school toilets in 41 schools of the Ghaziabad unit. Running water provision was given to most of the BEL constructed school toilets. All schools deployed toilet cleaning personnel temporarily. No school allocates any specific budget for maintenance of school toilets which is part of school budget. This is a major drawback resulting in schools not allocating sufficient budget for purchasing sanitary material, paying salaries to hired cleaning personnel, repairing of broken taps, pipelines, tiles, doors, windows and other physical infrastructure at school toilets, etc. This in turn is resulting in suboptimal levels of operations and maintenance in some of the schools.</p> <p>Out of 41 schools, only 3 schools have permanent cleaners for toilets. Remaining 38 schools hired cleaning personnel temporarily, who will clean toilets once in two days which is highly unhygienic.</p> <p>Most school toilets are well connected with running water facility. All toilets are functioning properly even after six years of construction.</p>
4	Effectiveness	<p>All forty one schools conducted classes on good health habits and cleanliness. As part of operation and maintenance initiatives, all schools implemented good sanitation practices and hand wash habits that enhanced the children's use of school toilets.</p> <p>All schools created awareness among the children about sanitation and good health habits. Schools also trained schoolchildren on hand-washing habits, keeping the toilet surroundings clean, and using the toilet facility. These programs helped children in improving their education and health levels, which is exhibited through positive feedback from the students on the usage of toilets.</p>





S. No.	Impact Parameter	Observation
		<p><b>Increase in student enrolments:</b> Present strength: 11030; total 41 schools; previous year's strength 10120; increased schools' strength was 9% in the last year.</p> <p><b>Prudent utilization of the facility provided.</b> 68% of schools' strength is utilizing BEL constructed school toilets + facility as sufficient facilities are available in toilets such as.</p> <ol style="list-style-type: none"> <li>1) Running water provision</li> <li>2) Separate toilets and urinals for school children</li> <li>3) Adequate privacy is available for girl children</li> <li>4) Adequate light and ventilation and Easy access to schoolchildren</li> </ol>
5	<b>Impact</b>	<p><b>Tangible Benefits</b> Increased number of school toilets and urinals for students</p> <p><b>Intangible Benefits</b></p> <ol style="list-style-type: none"> <li>1) Convenience</li> <li>2) Closer latrine access &amp; improved latrine population ratio</li> <li>3) Safety and security for schoolchildren to access the toilets</li> <li>4) Privacy during defecation</li> <li>5) Reduce the incidence of infectious disease</li> <li>6) Improved the schoolchildren health</li> </ol> <p>The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village.</p> <p>The objective of the Swachh Vidyalaya Abhiyan has been successful by and large and the social transformation in terms of hygienic standards has increased within our society.</p> <p>Most schools declared as open defecation free school places.</p>
6	<b>Sustainability</b>	<p><b>Sustenance of the intervention over a period:</b> Toilets are being maintained reasonably well by schools. Most schools ensure the availability of running water and provide best practices for school children. Toilet surroundings are kept clean.</p>

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Impact					
Sustainability					

### General Observations

The following are some of the important observations from the project:

- Total 74 teachers informed that the newly constructed toilets by BEL have helped the schools to promote social behavior among students and found that this has changed their perception towards utility of toilets, cleanliness, good habits, etc. (Table-4.14)
- Out of 74 teachers surveyed from 38 schools, 72 teachers have expressed their complete satisfaction or satisfaction with students' change in attitude and civic sense. BEL constructed school toilets provided proper facilities to children in accessing toilet facilities and school authorities also followed best practices to provide better sanitation facilities to their children.

BEL provided toilet facilities and schools' better sanitation practices caused to change students' attitude and civic sense towards better sanitation practices at schools, families and communities. (Table-4.14)

- The opinion of the teachers regarding change in school dropout ratio after the construction of toilets by BEL revealed their complete satisfaction or satisfaction. While three teachers were neither satisfied nor dissatisfied, one teacher was completely dissatisfied with change in school dropout ratio. (Table-4.15)
- Out of 74 teachers surveyed from 38 schools regarding reduction in school absenteeism after initiation of school toilets construction by BEL, most teachers (65 numbers) agreed that there was reduction in school absenteeism due to improved toilet and sanitation facilities provided by BEL in these schools.

### Overall Investigator Observations About the Toilets in Nine Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	every two days
Scavenger	hired cleaning personnel in 38 schools, regular staff in 3 schools
Hand Wash Habits	School teachers imparted children on hand wash habits.
School declared as open defecation free place.	Yes.
Separate urinals and toilets	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

Total teachers: 74; Surveyed in 38 schools

**Table 4.14: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

S. No.	Name of the School	Change in Attitude and Civic Sense Orientation Among Students		Development of Social Behavior of the Students		
		Completely Satisfied	Satisfied	Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied
1	Primary School Pathreki, Kasganj (composite school)	1	1	2	0	0
2	Primary School Bhitona (Kasganj)	1	1	1	1	0
3	Primary School Ahroli (Kasganj)	0	2	2	0	0



S. No.	Name of the School	Change in Attitude and Civic Sense Orientation Among Students		Development of Social Behavior of the Students		
		Completely Satisfied	Satisfied	Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied
4	Primary School Manouta (Kasganj)	1	1	0	2	0
5	Primary School Nawab No 1 (Kasganj)	0	1	1	0	0
6	Primary School Nadrai 1 <sup>st</sup> (Kasganj)	1	1	1	1	0
7	Primary School Gandhiyaretan (Soron) Kasganj (composite school)	0	0	0	0	0
8	Primary school Faroli (Sahawar) Kasganj	0	2	0	2	0
9	Junior High School Khojpur (Sahawar) Kasganj	0	2	0	2	0
10	Junior High School Sadikpur (Sahawar) Kasganj	0	0	0	0	0
11	Junior High School Ram Chitoni (Sahawar) Kasganj	0	2	2	0	0
12	Primary School Rara (Sahawar), Kasganj	0	2	1	1	0
13	Junior High School Jamalpur (Sahawar), Kasganj	0	2	2	0	0
14	Junior High School Faroli (Sahwar) Kasganj	0	2	0	2	0
15	Primary school Bahta (Amanpur), Kasganj (composite school)	1	1	1	1	0
16	Primary School Bahoranpur (Sidhpura), Kasganj	2	0	0	2	0
17	Primary school Fatehpur (Sidhpura), Kasganj	2	0	2	0	0
18	Primary School Hamirpur (Sidhpura), Kasganj	1	1	1	1	0
19	Primary School Jasmal (Sidhpura), Kasganj (composite school)	0	2	0	2	0
20	Junior High School Fatehpur Kala (Soron), Kasganj	0	1	0	0	1
21	Primary School Tatarpur (Kasganj) (composite school)	0	0	0	0	0
22	Junior High School Nangla Ashanand (Patiyali), Kasganj	2	0	0	2	0
23	Primary School Ramnagarkarsena (Patiyali), Kasganj	2	0	0	2	0
24	Primary School Nagla Munshi (Patiyali), Kasganj	1	1	0	2	0
25	Primary School Daruapur (Amanpur), Kasganj	0	2	1	1	0
26	Primary School Bondar (Sahawar), Kasganj (composite school)	0	2	0	2	0
27	Primary School Tharachetra (Amanpur), Kasganj	0	2	0	2	0
28	Junior High School Kaderganj Pukhta, Kasganj	0	1	0	0	1
29	Junior High School Ranidamar (Patiyali), Kasganj (composite school)	2	0	1	1	0
30	Junior High School Bahora (Patiyali), Kasganj	1	1	1	1	0
31	Primary School Usmanpur (Ganjdundwara), Kasganj	1	1	0	2	0
32	Junior High School Majhola (Patiyali) Kasganj	1	1	1	1	0
33	Primary School Tigratajpur (Patiyali), Kasganj	0	2	0	2	0

S. No.	Name of the School	Change in Attitude and Civic Sense Orientation Among Students		Development of Social Behavior of the Students		
		Completely Satisfied	Satisfied	Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied
34	Primary School Nawabganj Nagariya (Kasganj) (composite school)	0	2	0	2	0
35	Primary School Khijarpur (Kasganj)	0	2	0	2	0
36	Primary School Manikapur (Sahawar) Kasganj (composite school)	1	1	2	0	0
37	Primary School Satpuramafi (Kasganj) Kasganj (composite school)	0	2	0	2	0
38	Junior High School Gaupura (Soron) Kasganj (composite school)	0	2	0	2	0
39	Primary School Ganeshpur Ganjdundwara Kasganj	0	2	2	0	0
40	Primary School Manoharpur (Baldeo) Mathura	2	0	0	2	0
41	Uchcha Prathik Vidyalaya Maharajpur	0	3	0	3	0

**Table-4.15: Change in School Dropout Ratio and Reduced Absenteeism**

S. No.	Name of the School	Change in School Dropout Ratio After the Construction of Toilets by BEL				Reduction in School Absenteeism After the Construction of Toilets by BEL			
		Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied	Dissatisfied	Completely Satisfied	Satisfied	Neither satisfied Nor Dissatisfied	Dissatisfied
1	Primary School Pathreki, Kasganj (composite school)	2	0	0	0	2	0	0	0
2	Primary School bhitona (Kasganj)	0	2	0	0	0	2	0	0
3	Primary School Ahroli (Kasganj)	2	0	0	0	1	1	0	0
4	Primary School Manouta (Kasganj)	1	0	1	0	1	1	0	0
5	Primary School Nawab No 1 (Kasganj)	0	1	0	0	0	1	0	0
6	Primary School Nadrai 1 <sup>st</sup> (Kasganj)	1	1	0	0	2	0	0	0
7	Primary School Gandhiyaretan (Soron) Kasganj (composite school)	0	0	0	0	0	0	0	0
8	Primary School Faroli (Sahawar) Kasganj	1	1	0	0	0	2	0	0
9	Junior High School Khojpur (Sahawar) Kasganj	0	2	0	0	0	2	0	0
10	Junior High School Sadikpur (Sahawar) Kasganj	0	0	0	0	0	0	0	0
11	Junior High School Ram Chitoni (Sahawar) Kasganj	0	2	0	0	1	1	0	0
12	Primary School Rara (Sahawar), Kasganj	1	1	0	0	0	2	0	0
13	Junior High School Jamalpur (Sahawar), Kasganj	0	2	0	0	0	0	2	0
14	Junior High School Faroli (Sahwar) Kasganj	0	2	0	0	0	2	0	0
15	Primary school Bahta (Amanpur), Kasganj (composite school)	0	2	0	0	1	1	0	0



S. No.	Name of the School	Change in School Dropout Ratio After the Construction of Toilets by BEL				Reduction in School Absenteeism After the Construction of Toilets by BEL			
		Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied	Dissatisfied	Completely Satisfied	Satisfied	Neither satisfied Nor Dissatisfied	Dissatisfied
16	Primary School Bahoranpur (Sidhpura), <b>Kasganj</b>	0	0	2	0	0	0	2	0
17	Primary School Fatehpur (Sidhpura), <b>Kasganj</b>	1	1	0	0	0	2	0	0
18	Primary School Hamirpur (Sidhpura), <b>Kasganj</b>	0	2	0	0	0	1	1	0
19	Primary School Jasmai (Sidhpura), <b>Kasganj</b> (composite school)	0	2	0	0	0	2	0	0
20	Junior High School Fatehpur Kala (Soron), <b>Kasganj</b>	0	1	0	0	0	1	0	0
21	Primary School Tatarpur ( <b>Kasganj</b> ) (composite school)	0	0	0	0	0	0	0	0
22	Junior High School Nangla Ashanand (Patiyali), <b>Kasganj</b>	0	2	0	0	1	1	0	0
23	Primary School Ramnagarkarsena (Patiyali), <b>Kasganj</b>	2	0	0	0	1	1	0	0
24	Primary School Nagla munshi (Patiyali), <b>Kasganj</b>	1	1	0	0	0	2	0	0
25	Primary School Daruapur (Amanpur), <b>Kasganj</b>	0	2	0	0	0	2	0	0
26	Primary School Bondar (Sahawar), <b>Kasganj</b> (composite school)	0	2	0	0	0	2	0	0
27	Primary School Tharachetra (Amanpur), <b>Kasganj</b>	0	1	0	1	0	2	0	0
28	Junior High School Kaderganj Pukhta, <b>Kasganj</b>	0	1	0	0	0	0	0	1
29	Junior High School Ranidamar (Patiyali), <b>Kasganj</b> (composite school)	2	0	0	0	0	2	0	0
30	Junior High School Bahora (Patiyali), <b>Kasganj</b>	0	2	0	0	1	1	0	0
31	Primary School Usmanpur (Ganjdundwara), <b>Kasganj</b>	1	1	0	0	0	2	0	0
32	Junior High School Majhola (Patiyali) <b>Kasganj</b>	2	0	0	0	2	0	0	0
33	Primary School Tigratajpur (Patiyali), <b>Kasganj</b>	0	2	0	0	0	2	0	0
34	Primary School Nawabganj Nagariya ( <b>Kasganj</b> ) (composite school)	0	2	0	0	0	2	0	0
35	Primary School Khijarpur ( <b>Kasganj</b> )	0	2	0	0	0	0	2	0
36	Primary School Manikapur (Sahawar) <b>Kasganj</b> (composite school)	0	2	0	0	2	0	0	0
37	Primary School Satpuramafi ( <b>Kasganj</b> ) <b>Kasganj</b> (composite school)	1	1	0	0	1	0	1	0
38	Junior High School Gaupura (Soron) <b>Kasganj</b> (composite school)	0	2	0	0	0	2	0	0

S. No.	Name of the School	Change in School Dropout Ratio After the Construction of Toilets by BEL				Reduction in School Absenteeism After the Construction of Toilets by BEL			
		Completely Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied	Dissatisfied	Completely Satisfied	Satisfied	Neither satisfied Nor Dissatisfied	Dissatisfied
39	Primary School Ganeshpur Ganjdundwara Kasganj	0	2	0	0	0	2	0	0
40	Primary School Manoharpur (Baldeo) Mathura	0	2	0	0	0	2	0	0
41	Uchcha Prathik Vidayalya Maharajpur	0	3	0	0	0	3	0	0

## Glimpses of Toilet Construction by BEL Ghaziabad Unit



Primary School Bhitona (Kasganj)



Primary School Manouta (Kasganj)



Primary School Faroli (Sahawar), Kasganj

## Interaction of IPE Team with BEL Officials



### 4.3.1 Toilet Complex - Mohan Nagar Bus Stand, Ghaziabad

The Mohan Nagar Bus Stand, Ghaziabad is well connected to all the areas in UP. BEL constructed two ladies toilets, two gents toilets and one for physically challenged persons. As the bus stand is located centrally and existing toilets are not meeting the requirements, BEL has undertaken the construction of a toilet block in the bus stand. The toilets were outsourced for maintenance purposes. Mr Joginder Patel is presently the in-charge person for the toilets on behalf of Nagar Nigam Ghaziabad. For maintenance purposes the agency collects Rs 3 from gents and Rs 2 from ladies.

#### Operations and Maintenance

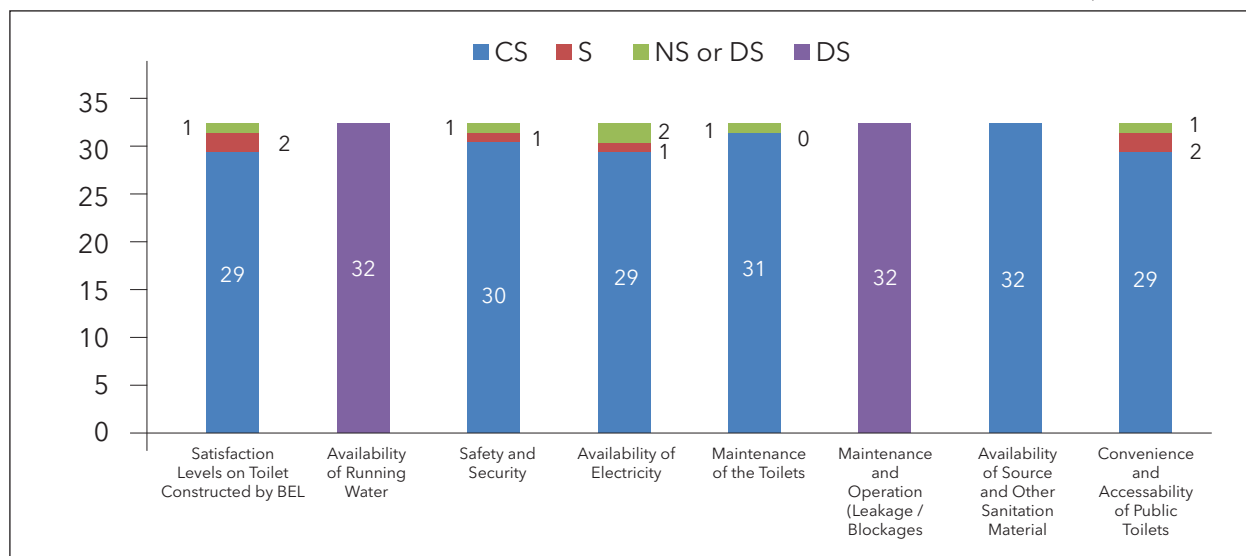
Chart 4.3.1 depicts the level of satisfaction and the utility of the toilets. A questionnaire has been circulated to various public toilet users to know the level of satisfaction on the BEL constructed toilets.

- Out of 32 toilet users, 31 users (overall 96.87% of users) in Mohan Nagar bus stop have expressed their complete satisfaction or satisfaction with public toilets constructed by BEL. On the other hand, only one toilet user (3.13%) was neither satisfied nor dissatisfied with the same.
- 100% of public toilet users (32 users) have expressed their dissatisfaction with running water availability at toilet locations. Local body / local community should provide proper running water facilities to public toilets to meet the proper regular maintenance and operation of toilets. More numbers of the general public access this toilet as it is located in a prime area of the bus stand, and the floating population is more in this region due to more industries.
- Most public toilet users, i.e., 31 users (overall 96.87% of users), have reported that they were completely satisfied or satisfied with the availability of safety and security at public toilets. Only one public toilet user (3.13% of users) was neither satisfied nor dissatisfied with the same.
- Most public toilet users, i.e., 30 users (Overall 93.75% of users), have reported that they were completely satisfied or satisfied with the availability of electricity at public toilets. On the other hand, two public toilet users (6.25% of users) were neither satisfied nor dissatisfied with the availability of electricity at public toilets.
- Out of 32 public toilet users, 31 (96.88% of users) informed that they were completely satisfied with the maintenance of public toilets by the local contracting agency and local body. Only one toilet user (3.13% of users) was neither satisfied nor dissatisfied with the same.
- A total of 32 users (100% of toilet users) have expressed their complete dissatisfaction with the operation and maintenance of water leakages and blockages of running water pipelines and drainage systems of public toilets.
- A total of 32 users (100% of toilet users) have reported that they were completely satisfied or satisfied with the availability of soaps and sanitary material at the toilet location.
- Thirty-one users (96.87% of toilet users) have felt that BEL constructed public toilets are more convenient and accessible. Only one toilet user (3.13% of users) neither agrees nor disagrees with the convenience and accessibility of BEL public toilets to them.

### Chart-4.3.1: Stakeholders' Satisfaction Levels on BEL Mohan Nagar Bus Stop - Public Toilets

Total sample: 32 Male: 32; Female: Nil

(in numbers)



CS: Completely Satisfied; S: Satisfied; NS or ND: Neither Satisfied Nor Dissatisfied; DS: Dissatisfied; CDS: Completely Dissatisfied

### Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation and maintenance, effectiveness, and Impact aspects. The objective of constructing public toilets at the public bus stand place, Mohan Nagar, in Ghaziabad, under the jurisdiction of BEL Ghaziabad unit.

The overall impact of the public toilets:

- Strengthened public toilets' facilities and make them open defecation free places.
- Improved utility by stakeholders including travelers, industrial labour, shopkeepers, businesspeople, general public, etc.
- The stakeholders expressed their levels of satisfaction with the way BEL constructed public toilets, provided running water facilities, electricity facilities in public toilets, safety and security at public toilets,
- The operation and maintenance of public toilets, cleaning and maintenance process,
- The Nagar Nigam Ghaziabad created awareness on how to use public toilets etc. There was an overall improvement in public toilet accessibility.

The table details the various impact parameters along with the observations.

### Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	The project was highly desirable and relevant
2	Utility	BEL constructed toilets for men, women and physically challenged person at Mohan Nagar bus stand in Ghaziabad of Uttar Pradesh The toilets are fully functional and utilized by both men and women





S. No.	Impact Parameter	Observation
		<p>On an average, 100 public men, women and physically challenged persons to access the public toilet facility on daily basis.</p> <p>BEL toilets are more efficient in delivering the desired outcome – providing good sanitation/toilet facilities to public. Toilets usage has improved due to sufficient facilities available at toilet locations.</p> <p>BEL has provided proper electrification, running water provision, separate toilets, and urinals for men, women and physically challenged person.</p> <p>Toilets were constructed in adequate space and public can access them easily.</p>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at public toilets. There was no running water provision for public toilets. Toilet users draw water from stored tank and use the toilet facility. All toilets are functioning properly. Maintenance is taken care by the local contracting agency.</p> <p>Agency collects the nominal user service charges to meet the regular maintenance and operation of public toilet.</p>
4	Effectiveness	<p>Agency conducted awareness programs on good health habits and cleanliness.</p> <p>Operation and maintenance initiatives were implemented</p> <p>Good sanitation practices and hand wash habits, enhancing public use of public toilets</p> <p>The project helped public to improve their civic sense about spreading the message of usage of toilets</p> <p><b>Increase in accessibility of toilets:</b> More number of toilets and urinals are available for general public</p> <p><b>Prudent utilization of the facility provided.</b></p> <p>On average 100 public are utilizing BEL constructed public toilet facility due to sufficient facilities.</p> <ol style="list-style-type: none"> <li>1) Running water provision and construction of overhead tank</li> <li>2) Hand wash facilities</li> <li>3) Separate toilets and urinals are available men, women and physically challenged person</li> <li>4) Adequate light and ventilation</li> <li>5) Easy access to public</li> <li>6) Cleanliness and proper maintenance by maintenance agencies</li> </ol>
5	Impact	<p><b>Tangible Benefits</b></p> <p>Increased number of public toilets and urinals for men, women and physically challenged person with electrical fixtures and fittings</p> <p><b>Intangible Benefits</b></p> <ol style="list-style-type: none"> <li>1) Convenience and close to a busy area.</li> <li>2) Improved the general public health</li> </ol> <p>General public have also educated their families and communities about the importance of hygienic conditions and use of these public toilets and subsequently this message has made an impact on the other citizens of the community</p> <p>The objective of the Swachh Bharat Abhiyan has been achieved by and large and the social transformation in terms of hygienic standards has increased within the society.</p>

S. No.	Impact Parameter	Observation
		Mohan Nagar Bus stand was declared as open defecation free place as declared by local body. The structure and design of the toilets constructed was highly appreciated by the various community members.
	Sustainability	<b>Sustenance of the intervention over a period</b> 1) Sufficient water is available at all public toilet location. Public toilets have both public taps and bore well water facilities. 2) Maintaining toilets on regular intervals.

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

The following are some of the important observations from the project.

### Overall Investigator Observations about the Toilets

Name of the Parameters	Investigator Observation
Toilet Cleaning	Daily clean the toilet
Scavenger	Implementing agency deployed permanent cleaning personnel staff
Hand Wash Habits	Implemented in public toilet location
Public place declared as open defecation free place.	Yes
Separate urinals and toilets for general public	Yes
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available



## 4.4 Hyderabad BEL Unit

BEL Hyderabad unit was established in 1986. It is the ninth BEL unit manufacturing electronic warfare equipment. The unit is active in promoting CSR in the local region.

<b>BEL Hyderabad</b>	CSR 2014-15, 2015-16 and 2016-17
<b>Activity</b>	Construction of 44 toilets in 21 Schools Phase 1: Construction, renovation of dysfunctional toilets in 13 Government schools under Swachh Bharat - Swachh Vidyalaya Abhiyan Phase 2: Construction of boys and girls toilets at 8 government schools under Swachh Bharat - Swachh Vidyalaya Abhiyan
<b>Total Budget Sanctioned</b>	Phase 1: Rs. 4439150.00 (44 lakhs) Phase 2: Rs. 8104280.00 (81 lakhs)
<b>Budget Utilised</b>	Phase 1 : Rs. 4800238.00, 13 schools Phase 2: Rs. 7663653.00, 8 schools
<b>Project Objective</b>	Providing clean and congenial atmosphere at educational institutions
<b>Project Addresses Area</b>	Nacharam - Mallapur Rd, BEL, Industrial Development Area, Mallapur, Hyderabad, Telangana 500076
<b>Start Date and End Date</b>	Phase I: Start date: 18.03.2015; End date: 27.4.2015 Phase 2: Start date: 20.02.2016; End date: 04.05.2016

### Data Analysis

Table 4.16 depicts the gender distribution, social status and the teacher's strength. The number of students range from 12 to 946 in all the twenty schools. About 91.44 percent of the students belong to SC / ST/ OBC community. There are 146 teachers among whom 73 teachers are male and 73 are female. Out of the nineteen schools, 8 schools impart primary education from class I to V, while 8 schools provide high school education from classes VI to X, and two remaining schools offer primary and upper primary classes from I to VIII classes.

**Table-4.16: Gender Distribution, Social Status, and Teachers Strength**

S. No.	Name of the School	Students			Social Status					Teachers Strength		
		Boys	Girls	Total	ST	SC	OBC	General	Total	M	F	Total
1	M.P.P.S, Nuthankal	90	75	<b>165</b>	4	38	98	25	<b>165</b>	4	4	8
2	ZPHS, Rajabollaram	84	83	<b>167</b>	66	30	71	0	<b>167</b>	5	3	8
3	MPHS, Chengicherla	294	340	<b>634</b>	59	89	399	87	<b>634</b>	2	6	8
4	Primary School SP Nagar, Malkajgiri	52	36	<b>88</b>	12	18	42	16	<b>88</b>	2	1	3
5	ZPHS, Mulkalapally	28	34	<b>62</b>	37	2	23	0	<b>62</b>	3	4	7
6	ZPHS, Cheekatimamidi	179	187	<b>366</b>	235	28	99	4	<b>366</b>	8	9	17
7	MPUPS, Pallepahad	40	40	<b>80</b>	9	22	49	0	<b>80</b>	1	5	6
8	MPPS, Barsiguda	5	7	<b>12</b>	0	2	6	4	<b>12</b>	1	1	2
9	UPS Maktha Anantharam	81	75	<b>156</b>	0	18	138	0	<b>156</b>	3	3	6

S. No.	Name of the School	Students			Social Status					Teachers Strength		
		Boys	Girls	Total	ST	SC	OBC	General	Total	M	F	Total
10	MPPS Athvelly	130	112	<b>242</b>	10	92	95	45	<b>242</b>	3	2	5
11	ZPHS Rampally	296	277	<b>573</b>	32	186	327	28	<b>573</b>	10	5	15
12	ZPHS Nagawaram	447	499	<b>946</b>	53	191	597	105	<b>946</b>	7	10	17
13	ZPPS Yadgar Pally	81	91	172	1	30	141	0	<b>172</b>	4	7	11
14	MPPS Madhapur	25	29	<b>54</b>	29	0	23	2	<b>54</b>	2	2	4
15	ZPHS Yapral	230	167	<b>397</b>	31	157	190	19	<b>397</b>	8	3	11
16	MPPS Ahmedguda	88	84	<b>172</b>	4	58	65	45	<b>172</b>	3	0	3
17	ZPHS Bhogaram	6	46	<b>52</b>	6	20	25	1	<b>52</b>	5	2	7
18	PS Cheryal HW	19	26	<b>45</b>	2	41	2	0	<b>45</b>	0	2	2
19	MPPS Bhogaram	64	74	<b>138</b>	4	34	94	6	<b>138</b>	2	3	5
	Total	2239	2282	4521	594	1056	2484	387	4521	73	73	146

Table-4.17 compares student strength in the previous year and the current year. This shows an increasing trend, the change being about 12.65%.

**Table-4.17: Comparison of Student Strength**

S. No.	Hyderabad Unit	Students' Strength - Current Year			Students' Strength - Previous Year		
	Name of the School	Boys	Girls	Total	Boys	Girls	Total
1	M.P.P.S, Nuthankal	90	75	165	60	60	120
2	ZPHS, Rajabollaram	84	83	167	63	83	146
3	MPHS, Chengicherla	294	340	634	188	236	424
4	Primary School SP Nagar, Malkajgiri	52	36	88	44	38	82
5	ZPHS, Mulkalapally	28	34	62	30	46	76
6	ZPHS, Cheekatimamidi	179	187	366	157	155	312
7	MPUPS, Palleshahad	40	40	80	32	36	68
8	MPPS, Barsiguda	5	7	12	8	7	15
9	UPS Maktha Anantharam	81	75	156	76	69	145
10	MPPS Athvelly	130	112	242	107	99	206
11	ZPHS Rampally	296	277	573	278	261	539
12	ZPHS Nagawaram	447	499	946	410	459	869
13	ZPPS Yadgar Pally	81	91	172	71	81	152
14	MPPS Madhapur	25	29	54	22	27	49
15	ZPHS Yapral	230	167	397	216	150	366
16	MPPS Ahmedguda	88	84	172	81	82	163
17	ZPHS Bhogaram	6	46	52	8	41	49
18	PS Cheryal HW	19	26	45	21	28	49
19	MPPS Bhogaram	64	74	138	58	61	119
	Total	<b>2239</b>	<b>2282</b>	<b>4521</b>	<b>1930</b>	<b>2019</b>	<b>3949</b>

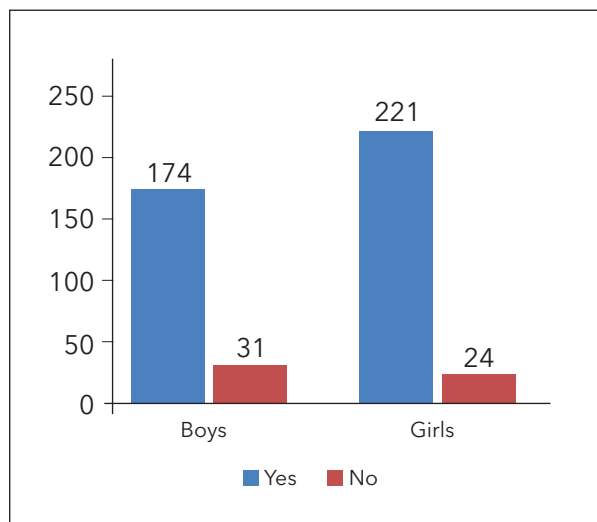
1) Awareness on the newly constructed toilets and 2) has the school conducted any best practices sessions on how to use school toilets

Male: 205, Female: 225; Total sample 450.

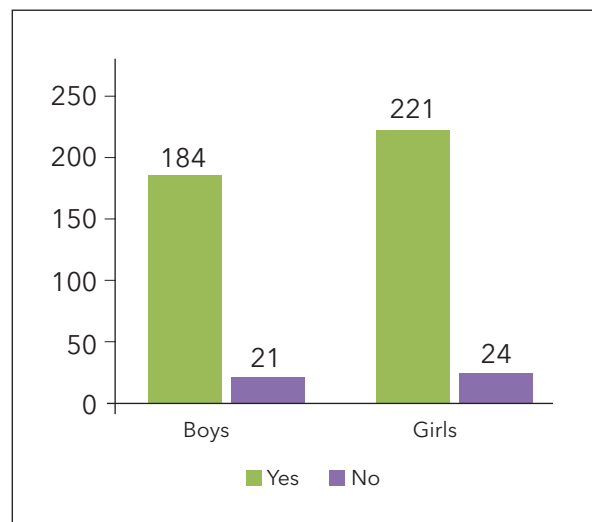


Chart-4.19 depicts responses from students of 19 schools about their awareness of BEL constructed school toilets. In these schools, 174 boys out of 205 students, (84.88%), and 221 girls out of 245 girls, (90.20%) have an awareness of the toilets being constructed by BEL. Chart-4.20 reveals that 21 boys (10.24%) and 24 girls (9.80%) lacked awareness of the sessions conducted by the schools on best practices on how to use school toilets.

**Chart-4.19: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.20: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



### Operations and Maintenance

Table 4.18 details the information on the operation and maintenance of toilets in all the 19 schools. All the toilets constructed by BEL are available for use in all the locations. BEL Hyderabad unit has constructed 42 toilets in twenty-one schools for both boys and girls. Data collected from the MPPS-Chilkanagar School and MPPS-Rampally School were excluded due to damage to school toilets. (Toilets constructed by BEL are not in existence now)

The data from the questionnaires reveal that out of 19 schools, toilets are cleaned daily in nine schools; again toilets are cleaned every two days in 9 schools and the remaining one school, i.e. MPPS Madhapur clean their toilets only once a week. Out of 19 schools, only five schools have permanent toilet cleaning personnel, and the remaining 14 schools deploy temporary cleaning personnel to clean their toilets, given in Table-3. ZPHS-Mulkalapally, MPUPS-Pallepahad, MPPS-Athvelly and MPPS-Bhogaram have allocated a budget of Rs. 2,000, Rs. 2,000, Rs. 5,000 and Rs. 2,500 for maintenance of the toilets. In the remaining 15 schools toilets maintenance is part of their school budget. Schools utilize the budget majorly to purchase sanitary / cleaning material and pay the salaries of hired cleaning personnel. Sometimes school teachers spend their money from their pocket to maintain school toilets, as shared with the surveyed team during the field visit of the IPE team. Out of 19 schools, 16 schools have sufficient water levels for toilets and maintenance. Seventeen schools have given running water provision to BEL constructed school toilets. 2 schools, i.e. MPHS, Chengicherla, and MPPS Madhapur, have not provided running water provision facilities to their school toilets. Public tap or bore well water is the main running water source in most schools. Hand pump MPPS is the main source of running water in MPPS Ahmedguda.

**Table-4.18: Operations and Maintenance**

S. No.	Name of the School	Are the Toilets Cleaned Everyday	If Yes, How Many Staff Members are There to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget for Maintenance of School Toilets in Rs Per Month	Availability of Water for Toilets	Toilets are Having Running Water Provision Through Overhead Tank	Source of Running Water for Overhead Tank
1	M.P.P.S, Nuthankal	Yes	Hired cleaning personnel	Once a day	Part of school budget	Yes	Yes	Public tap water
2	ZPHS, Rajabollaram	Yes	Hired cleaning personnel	Once a day	Part of school budget	Yes	Yes	Bore well
3	MPHS, Chengicherla	Yes	Hired cleaning personnel	Once a day	Part of school budget	No	No	Bore well
4	Primary School SP Nagar, Malkajiri	No	Hired cleaning personnel	Every two days	Part of school budget	Yes	No	Public tap
5	ZPHS, Mulkalapally	No	Hired cleaning personnel	Every two days	Rs. 2000/-	Yes	Yes	Bore well
6	ZPHS, Cheekatimamidi	No	Hired cleaning personnel	Every two days	Part of school budget	Yes	Yes	Bore well
7	MPUPS, Palleshahad	No	Hired cleaning personnel	Every two days	Rs. 2000/-	Yes	Yes	Public tap
8	MPPS, Barsiguda	No	Hired cleaning personnel	Every two days	Part of school budget	Yes	Yes	Public tap
9	UPS MakthaAnantharam	Yes	Hired cleaning personnel	Once a day	Part of school budget	Yes	Yes	Public tap
10	MPPS Athvelly	Yes	One	Once a day	Rs. 5000/-	Yes	Yes	Public tap
11	ZPHS Rampally	No	One	Every two days	Part of school budget	Yes	Yes	Public tap
12	ZPHS Nagawaram	Yes	Hired cleaning personnel	Once a day	Part of school budget	Yes	Yes	Bore well
13	ZPPS Yadgar Pally	No	Hired cleaning personnel	Every two days	Part of school budget	Yes	Yes	Public tap
14	MPPS Madhapur	No	Hired cleaning personnel	Once a week	Part of school budget	No	Yes	Bore well
15	ZPHS Yapral	Yes	One	Once a day	Part of school budget	Yes	Yes	Bore well
16	MPPS Ahmedguda	No	Hired cleaning personnel	Every two days	Part of school budget	Yes	Yes	Hand Pump
17	ZPHS Bhogaram	Yes	One	Once a day	Part of school budget	Yes	Yes	Public tap
18	PS Cheryal HW	No	Hired cleaning personnel	Every two days	Part of school budget	No	Yes	Public tap
19	MPPS Bhogaram	Yes	One	Once a day	Rs. 2500	Yes	Yes	Public tap



## Satisfaction Survey

A satisfaction survey is a study that measures a person’s perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised various questions including the construction of toilets, availability of running water in the toilets, safety and security, availability of electricity in the toilets and students perception of cleanliness.

### Students Satisfaction Levels

To understand the utility of the toilets, students’ satisfaction questionnaire has been circulated to know the level of satisfaction on the BEL constructed toilets in Hyderabad.

**Chart-4.21 Students’ Satisfaction with the School Toilets**

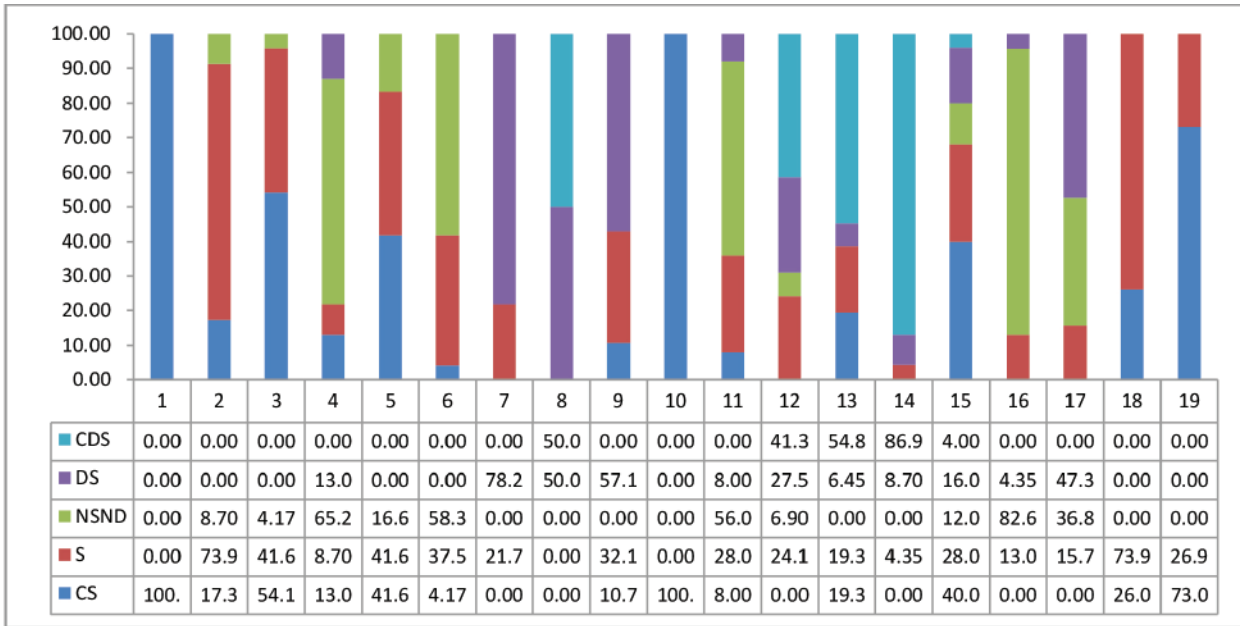
(in percentage)



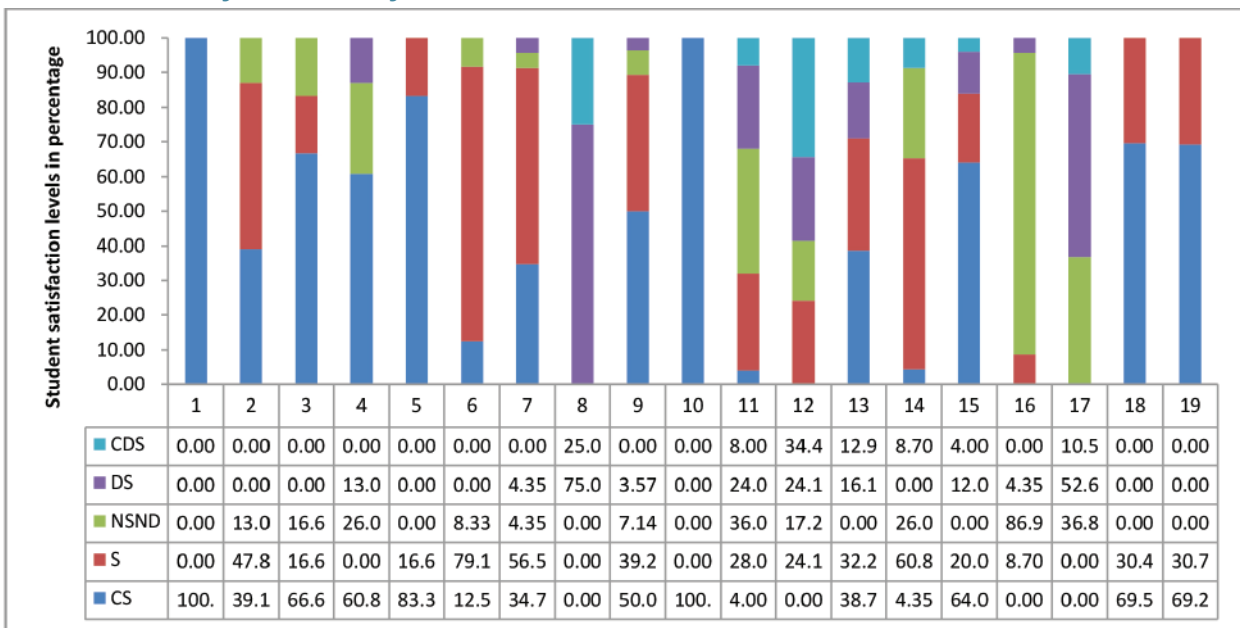
Chart-4.21 depicts the level of satisfaction among students in all the nineteen schools. Most Students in 14 schools reported that they were satisfied with the facility created by BEL. However, most surveyed students in two schools, i.e., S.No. 13: ZPPS Yadgar Pally and S.No 17: ZPHS Bhogaram have expressed their complete dissatisfaction or dissatisfaction with the toilets. Most students in two schools i.e., S.No. 8: MPPS Barsiguda, S.No. 16: MPPS Ahmedguda have expressed that they were neither satisfied nor dissatisfied with the toilets.

Chart-4.22 depicts the availability of running water. Most surveyed students in 8 schools have expressed their complete satisfaction over running water availability in their schools. On the other hand, most surveyed students in 6 schools have shared that they were dissatisfied with running water availability in their schools. Most students from 4 schools have reported that they were neither satisfied nor dissatisfied with running water availability in their school toilets.

**Chart-4.22: Availability of Running Water**



**Chart-4.23: Safety and Security**

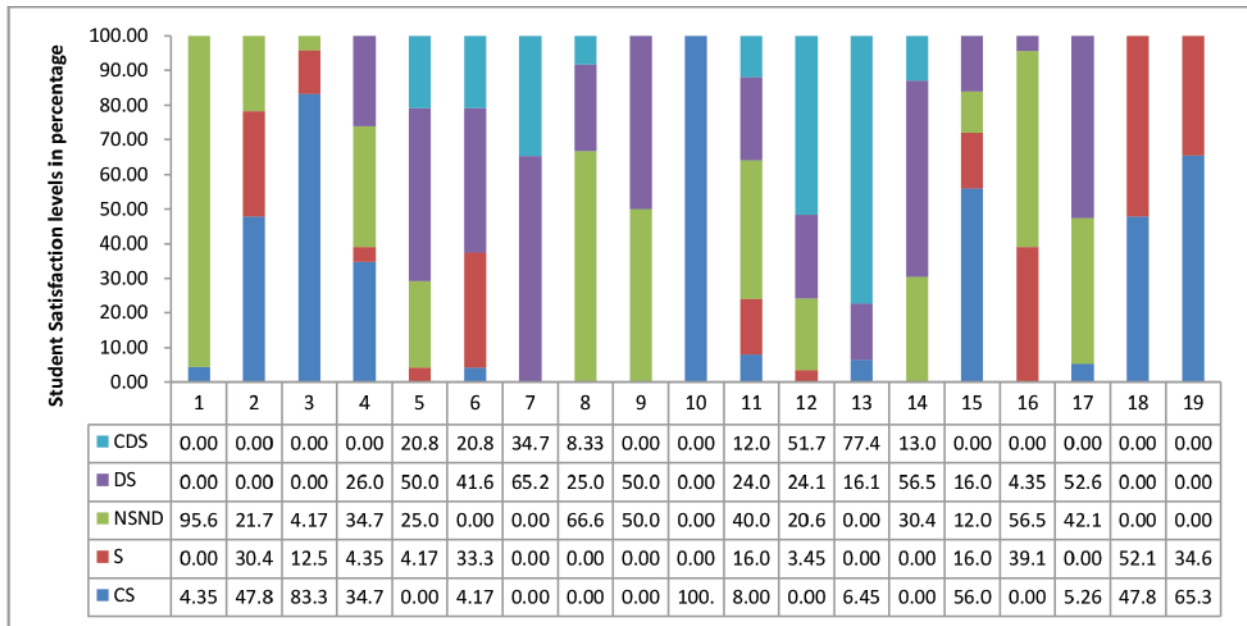


The majority of the surveyed students from fourteen schools have expressed their complete satisfaction or satisfaction with the safety and security of the toilets. Most students in 3 schools i.e., S.No. 8:MPPS, Barsiguda, S.No. 12: ZPHS Nagawaram and S.No. 17: ZPHS Bhogaram have reported that they were dissatisfied with the safety and security of the toilets. Most of the surveyed students from MPPS Ahmedguda (S.No. 16) have informed that they were neither satisfied nor dissatisfied with safety and security of school toilets.





**Chart-4.24: Availability of Electricity in the Toilets**



The majority of the students from 6 schools have expressed their complete satisfaction or satisfaction with the availability of electricity at the toilets. Other hand, most surveyed students in 7 schools have reported that they have dissatisfied with electricity facilities in their schools. Most students in 3 schools i.e., S.No. 1: M.P.P.S, Nuthankal, S.No. 8: MPPS, Barsiguda and S.No. 16: MPPS Ahmedguda have informed that they are neither satisfied nor dissatisfied with electricity facilities in their schools. 50% of surveyed students from UPS Maktha Anantharam (S.No. 9) school expressed neither satisfaction nor dissatisfaction and the rest 50% of students are dissatisfied with the electricity facilities in their school toilets.

The two schools where the impact analysis could not be conducted are, MPPS Rampalli and MPPS Chillkanagar.

**MPPS Rampalli:** At MPPS Rampalli, BEL constructed Toilets during 2014 and handed over to the school on 22.04.2015. BEL constructed these toilets with support of the old compound wall. Due to cracks in the old compound wall, the school had to demolish these toilets and urinals. BEL also constructed / renovated two urinals and one toilet for girls’ children with the support of the walls of the old classroom building. Presently, another public sector enterprise has constructed toilets and urinals for girls’ children in place of BEL renovated / constructed 2 toilets and 2 urinals for boys’ children.



*BEL constructed/renovated toilets and urinals at MPPS, Rampally (Boys: Urinals 2 + Toilets and Girls: Urinals 2 + Toilets 1)*

## MPPS-Chilkanagar

**School strength: Total 265 (Boys: 142, Girls: 123)**

As informed by the School head, BEL renovated 4 urinals and 2 toilets for boys during 2014-15 to strengthen boys' toilet block. Due to lack of maintenance and operation of urinals and toilets, school toilets and urinals became dysfunctional. It is observed that the boy's urinal commodes and toilets are broken, and tiles walls are collapsed. The toilet block has collapsed and damaged completely and hence not in use.



*BEL renovated school toilets became dysfunctional due to lack of operations and maintenance by school authorities of Chilkanagar*

## Impact Analysis

### Overall Impact

The project has been moderately impactful in the 19 schools where it was implemented.

- The project has impacted improving the admission of boys and girls, and there has been a good change in the enrollment numbers. On an average, students' enrolment increased by 12.65% in 19 schools during the last year.
- The school dropouts' numbers have reduced. Students who were often sick are now regular to classes.

### Impact Analysis

- The project's impact is analyzed by studying the relevance, utility, operation & maintenance, effectiveness, Impact aspects. The objective of the construction of school toilets and urinals at selected Government schools in under jurisdiction of BEL Hyderabad unit was to strengthen toilets' facilities and make them open defecation free places. This project also aligned with Government of India's prestigious project SVA. The BEL-Hyderabad unit achieved project objective after construction / renovation of schools' toilets in these selected units. Most stakeholders like students, teachers, parents, villagers / citizens, education department officials, public representatives were satisfied with the way BEL constructed /

renovated school toilets, provided running water facility, facilities in school toilets, students' toilet usage, cleaning and maintenance process, creating awareness on how to use school toilets etc. which is supported by the data shown below. There was a positive improvement in school children attendance, health, and education levels. The table details the various impact parameters along with the observations.

The table presented below details various impact parameters studied along with the observations.

### Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	Primary schools, middle school, high schools and higher secondary schools in Hyderabad and its surrounding areas of Telangana had shortages of toilets and urinals. The existed government toilets were not sufficient to fulfill the needs of huge strengths of these schools. Even the existing government toilets in various schools were not in a usable condition. Toilets problems in government schools were a long-pending issue. To address toilet problems in government schools, Govt. of India initiated Swachh Vidyalaya Abhiyan in 2014-15. Based on Government of India directions, BEL took up construction of toilets at selected 21 government schools in Hyderabad and its surrounding areas during 2014-15 and 2015-16, and participated in the government initiative.
2	Utility	<p>1) BEL constructed school toilets in 21 schools, out of which 16 schools' toilets urinals / toilets are being functioned fully. 3 schools' toilets/urinals are being functioned partially and two schools toilets' blocks were not in functional due to demolition / damages as found in IPE team visit.</p> <p>Minor issues found during IPE team field visit are:</p> <ol style="list-style-type: none"> <li>1) Running water problem in some schools' toilets</li> <li>2) Safety and Security at school toilets with doors and locks</li> <li>3) maintenance and operations (Leakage, overflow, blockage) of the toilets</li> <li>4) Regular maintenance issues - permanent toilet cleaning personnel and proper budget allocation</li> </ol> <p>19 schools' total strength and utilization: 4521; Utilization: 3500 (77%)</p> <p><b>Highlights of BEL Constructed Toilets</b></p> <p>BEL toilets are more efficient in delivering the desired outcome - providing good sanitation/toilet facilities to school children. In addition, toilets usage has improved due to sufficient facilities available at toilet locations. BEL has provided proper electrification, running water provision, separate toilets, and urinals for both boys and girl children. Toilets were constructed as per approved drawings with adequate space and lighting and ventilation. Though some of the schools could not maintain the facilities properly due to various reasons, most of the toilets were effectively put to use and the students are contented with the use of the facilities.</p> <ul style="list-style-type: none"> <li>• Water resources and plumbing facilities were well connected to school toilets.</li> <li>• The disposal facilities of these toilets were well in place and hygienically maintained.</li> <li>• School authorities followed proper hygiene standards in maintaining toilets and implemented best practices for using of school toilets.</li> </ul>

S. No.	Impact Parameter	Observation
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at most of the locations. Running water provision was given to all the toilets. Most schools deployed toilet cleaning personnel temporarily. Only four schools had allocated specific budget for maintenance of school toilets. This is a major drawback resulting in schools not allocating sufficient budget for purchasing sanitary material, paying salaries to hired cleaning personnel, repairing of broken taps, pipelines, tiles, doors, windows and other physical infrastructure at school toilets, etc. This in turn has resulted in suboptimal levels of operations and maintenance in some of the schools.</p> <p>Out of 19 schools, only 5 schools have permanent toilet cleaning personnel and they clean the toilets daily. Remaining 16 schools hired temporary cleaning personnel; they clean toilets every two days. Most school toilets are well connected with water through the plumbing work. Most of the toilets are functioning properly even after six years of construction.</p>
4	Effectiveness	<p>All IPE team surveyed 19 schools conducted classes on good health habits and cleanliness. During all these operation and maintenance initiatives, all schools conducted sessions on good sanitation practices and hand wash habits, enhancing children's use of school toilets.</p> <p>All 19 schools created awareness among the children about sanitation and good health habits. Schools also trained schoolchildren on hand-washing habits, keeping the toilet surroundings clean, and using the toilet facility. These programs helped children improve their education and health levels, which resulted in the positive feedback from the students.</p> <p><b>Increase in student enrolments:</b> Present strength: 4521; total 19 schools; previous year's school strength 3949; increased schools' strength was 12.65% during the year.</p> <p><b>Prudent utilization of the facility provided.</b> 77% of schools' strength is utilizing BEL constructed school toilet facility as sufficient facilities are available in toilets such as;</p> <ol style="list-style-type: none"> <li>1) Running water provision</li> <li>2) Hand wash facilities</li> <li>3) Separate toilets and urinals are available for school children</li> <li>4) Adequate privacy is available for girl children</li> <li>5) Adequate light and ventilation</li> <li>6) Easy access to schoolchildren</li> <li>7) cleanliness and proper maintenance by school authorities</li> </ol> <p><b>Sustenance of the intervention over a period:</b> Toilets are maintained reasonably well by most schools even six years after the toilets came into existence. Most schools ensure the availability of running water and provide best practices for schoolchildren to keep toilet surroundings clean and use school toilets properly. All these best practices followed by schools help the project to become sustainable.</p>
5	Impact	<p><b>Tangible Benefits</b> i) Increased number of school toilets and urinals for students</p> <p>Intangible benefits:</p> <ol style="list-style-type: none"> <li>1) Convenience</li> <li>2) Closer latrine access &amp; improved latrine population ratio</li> <li>3) Safety and security for schoolchildren to access the toilets</li> <li>4) Privacy during defecation</li> <li>5) Reduce the incidence of infectious disease</li> <li>6) Improved the schoolchildren health</li> </ol>

S. No.	Impact Parameter	Observation
		The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village. The objective of the Swachh Vidyalaya Abhiyan has been successful by large and the social transformation in terms of hygienic standards has increased within our society. Most school declared as open defecation free school places.

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and maintenance					
Effectiveness					
Impact					
Sustainability					

### Overall Investigator Observations About the Toilets

Name of the Parameters	Investigator Observation
Toilet Cleaning	Every two days in most schools
Scavenger	Out of 19 schools, only 5 schools have permanent toilet cleaning staff as found in IPE field survey
Hand Wash Habits	School teachers conducted sessions to children on hand wash habits.
School declared as open defecation free place.	Most schools
Separate urinals and toilets	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Most schools
Hand wash facility is available	Yes
Soap	Not available in most schools
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

**Table-4.19: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

S. No.	Name of the School	Change in Attitude and Civic Sense Orientation Among Students					Development of Social Behavior of Students				
		CS	S	NSND	DS	CDS	CS	S	NSND	DS	CDS
1	MPPS, Nuthankal	0	3	0	0	0	1	1	0	0	1
2	ZPHS, Rajabollaram	2	1	0	0	0	2	1	0	0	0
3	MPHS, Chengicherla	0	3	0	0	0	0	3	0	0	0

S. No.	Name of the School	Change in Attitude and Civic Sense Orientation Among Students					Development of Social Behavior of Students				
		CS	S	NSND	DS	CDS	CS	S	NSND	DS	CDS
4	Primary School SP Nagar, Malkajgiri	2	0	1	0	0	1	0	2	0	0
5	ZPHS, Mulkalapally	0	3	0	0	0	0	3	0	0	0
6	ZPHS, Cheekatimamidi	1	3	0	0	0	0	4	0	0	0
7	MPUPS, Pallepahad	3	0	0	0	0	2	1	0	0	0
8	MPPS, Barsiguda	0	1	0	0	0	0	1	0	0	0
9	UPS, Maktha Anantharam	3	0	0	0	0	3	0	0	0	0
10	MPPS, Athvelly	3	0	0	0	0	3	0	0	0	0
11	ZPHS, Rampally	0	3	0	0	0	0	3	0	0	0
12	ZPHS, Nagawaram	0	0	1	1	0	0	1	0	0	1
13	ZPPS, Yadgar Pally	1	3	0	0	0	0	4	0	0	0
14	MPPS, Madhapur	1	1	0	0	0	1	1	0	0	0
15	ZPHS, Yapral	0	0	0	3	0	0	0	0	3	0
16	MPPS, Ahmedguda	0	2	0	0	0	0	2	0	0	0
17	ZPHS, Bhogaram	0	2	1	0	0	0	2	1	0	0
18	PS, Cheryal HW	0	0	2	0	0	0	0	2	0	0
19	MPPS, Bhogaram	2	1	0	0	0	1	2	0	0	0

**Table-4.20: Change in School Dropout Ratio and Reduced Absenteeism**

S. No.	Name of the School	Change in School Dropout Ratio After the Construction of Toilets by BEL					Reduction in School Absenteeism After the Construction of Toilets by BEL				
		CS	S	NSND	DS	CDS	CS	S	NSND	DS	CDS
1	M.P.P.S, Nuthankal	0	0	2	1	0	1	1	0	0	1
1	ZPHS, Rajabollaram	1	2	0	0	0	1	2	0	0	0
3	MPHS, Chengicherla	0	0	3	0	0	2	1	0	0	0
4	Primary School SP Nagar, Malkajgiri	3	0	0	0	0	1	0	2	0	0
5	ZPHS, Mulkalapally	0	3	0	0	0	0	2	1	0	0
6	ZPHS, Cheekatimamidi	1	3	0	0	0	1	3	0	0	0
7	MPUPS, Pallepahad	0	3	0	0	0	2	1	0	0	0
8	MPPS, Barsiguda	0	1	0	0	0	0	1	0	0	0
9	UPS, Maktha Anantharam	2	1	0	0	0	3	0	0	0	0
10	MPPS, Athvelly	3	0	0	0	0	3	0	0	0	0
11	ZPHS, Rampally	0	3	0	0	0	1	2	0	0	0
12	ZPHS, Nagawaram	0	0	1	1	0	0	0	1	1	0
13	ZPPS, Yadgar Pally	2	2	0	0	0	2	2	0	0	0
14	MPPS, Madhapur	1	0	0	1	0	1	0	0	1	0
15	ZPHS, Yapral	0	0	0	3	0	0	0	0	3	0
16	MPPS, Ahmedguda	0	0	2	0	0	0	2	0	0	0
17	ZPHS, Bhogaram	0	2	1	0	0	0	1	2	0	0
18	PS, Cheryal HW	0	0	2	0	0	0	0	2	0	0
19	MPPS, Bhogaram	2	1	0	0	0	2	1	0	0	0



# Glimpses of Toilet Construction by BEL Hyderabad Unit



ZPHS, Yaprul, Malkajgiri, Ranga Reddy District, Telangana



ZPHS, Chikatmamidi, Bommala Ramaram, Nalgonda District, Telangana

## 4.5 Kotdwara BEL Unit (KBELU)

Kotdwara as the name implies 'Gateway to the Himalayas', has been the traditional route to a host of pilgrimage towns like Badrinath, Kedarnath, Karnprayag, Rudraprayag etc. With the advent of Railways in 1914, Kotdwara has developed into a market town with a population of about 75,000. Kotdwara is situated 200 Kms. North-East of New Delhi and is well connected by Road. BEL Kotdwara unit was established in 1988. There are 450 employees. The unit is certified for ISO 9001-2008, ISO 14001-2015 and AS 9100D. The unit was awarded with "Golden Peacock" and "Strong Commitment to Excel" for its performance. The BEL Kotdwara unit is in Pauri Garhwal district, Uttaranchal region.

<b>BEL Kotdwara</b>	Swachh Bharat Abhiyan
<b>Activity</b>	Construction of Toilets for schools
<b>Total Budget Sanctioned</b>	63,500,00
<b>Budget Utilised</b>	53,19,231.10
<b>Project Objective</b>	The project provides clean and congenial atmosphere at educational institutions
<b>Project Addresses Area</b>	Improving infrastructure facilities at school Protection of environment

The BEL Kotdwara unit had constructed 38 toilets in the year 2015-16 in seven government schools. Table 4.21 depicts the gender distribution, social status and the teachers strength. There are 807 students enrolled in the nine schools. The composition of boys and girls strike an equal gender balance. Majority of the students are from ST community followed by general category. The school has a greater number of male teachers numbering to 23 while there are only 15 female teachers. There are 38 teachers in all the seven schools. Out of seven schools, three schools are imparting primary education from class I to V while four schools are having upper secondary and higher secondary classes from VI to VII and IX to XII.

**Table-4.21: Gender Distribution, Social Status and Teacher's Strength**

S. No.	Name of the School	Students			Social Status				Total	Teachers' Strength		
		Boys	Girls	Total	SC	ST	OBC	General		M	F	Total
1	G.M.U.P.S Jhandichaur West	35	37	72	0	65	0	7	72	2	3	5
2	G.P.S. Jhandichaur West	56	61	117	0	92	0	25	117	1	2	3
3	G.P.S. Kotridhang	69	55	124	21	31	39	33	124	2	2	4
4	G.I.C. Kotridhang	90	97	187	0	57	50	80	187	10	2	12
5	G.H.S.S. Grastanganj	18	20	38	0	14	0	24	38	4	1	5
6	G.G.U.P.S. Grastanganj	32	24	56	0	16	3	37	56	2	2	4
7	G.P.S. Jhandichaur North	106	107	213	0	134	6	73	213	2	3	5

The Table-4.22 shows the comparison of student strength in previous year (20-21) and current year (21-22). From the information got, it was understood that there is a small increase in the enrolment ratio in these schools over the years.





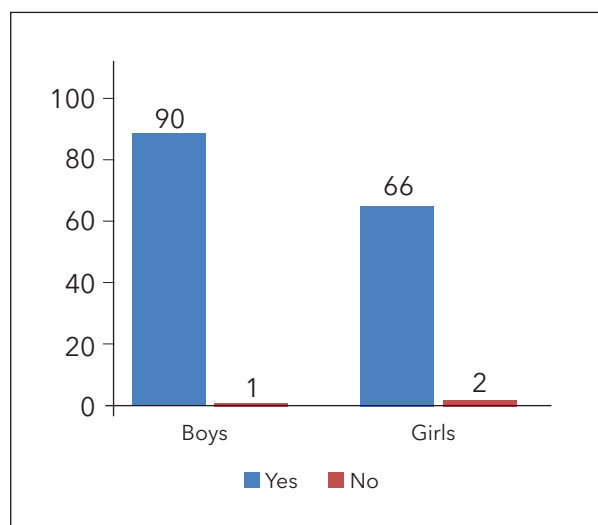
**Table-4.22: Comparison of Student Strength**

S. No.	Name of the School	Students' Strength - Current Year			Students' Strength - Previous Year		
		Boys	Girls	Total	Boys	Girls	Total
1	G.M.U.P.S Jhandichaur West	35	37	72	36	44	80
2	G.P.S. Jhandichaur West	56	61	117	52	49	101
3	G.P.S. Kotridhang	69	55	124	63	53	116
4	G.I.C. Kotridhang	90	97	187	NA	NA	NA
5	G.H.S.S. Grastanganj	18	20	38	20	14	34
6	G.G.U.P.S. Grastanganj	32	24	56	37	23	60
7	G.P.S. Jhandichaur North	106	107	213	93	85	178
				807			569

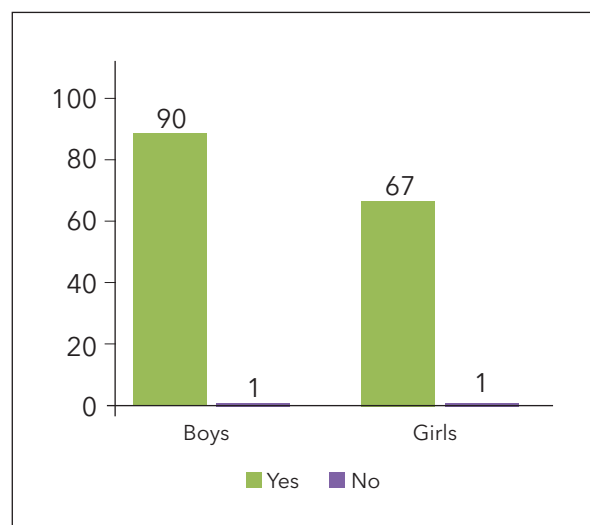
**Awareness on the Newly Constructed Toilets**

Among the total sample, 90 boys and 66 girls were aware of the construction made by BEL in the respective schools (Chart-4.25). Chart-4.26 reveals that majority of the students were aware of the trainings conducted by the school on best practices. The school organizes all the events to promote good and healthy habits which also are being promoted by the Government from time to time.

**Chart-4.25: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.26: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



**Operations and Maintenance**

BEL Kotdwara unit has constructed toilets in as per the requirement of the selected schools. The toilets constructed by BEL are made available for students. BEL Kotdwara unit has constructed 38 toilets in seven schools and one at a Mela site at Grastan Ganj Village near Sidhbali Temple. The data reveals that most of the all the toilets are cleaned once a day. Schools maintain toilets from their regular maintenance expenses. No special budget provision is created for this purpose in the schools. However, in GPS. Jhandichaur West and GPS. Kotridhang schools students are cleaning the toilets themselves. All seven schools have the water provision for maintaining the toilets. Table-4.23 details the information on the operation and maintenance of toilets in schools.

**Table-4.23: Operations and Maintenance**

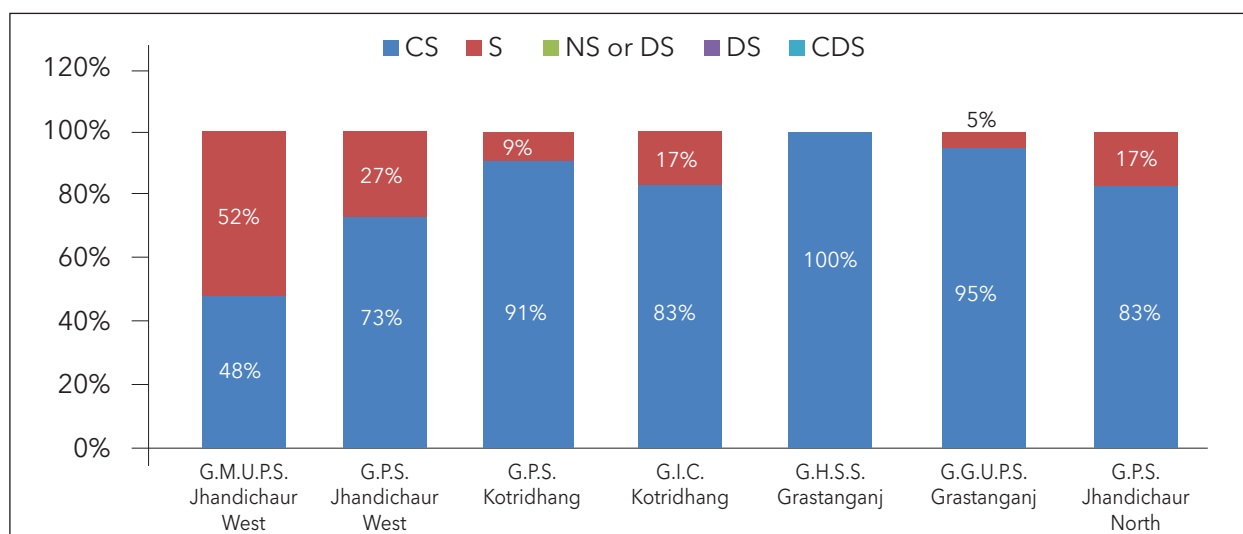
Name of the School	Are The Toilets Cleaned Everyday	If Yes, How Many Staff Members Are there to Clean the Toilets	Frequency of Toilets Cleaning in A Day	Availability of Water for Toilets	Toilets are Having Running Water Provision Through Overhead Tank	Source of Running Water for Overhead Tank
G.M.U.P.S Jhandichaur West	1	0	1	Yes	Yes	Yes
G.P.S. Jhandichaur West	1	students	1	Yes	Yes	Yes
G.P.S. Kotridhang	1	students	1	Yes	Yes	Yes
G.I.C. Kotridhang	1	1	2	Yes	Yes	Yes
G.H.S.S. Grastanganj	1	3	1	Yes	Yes	Yes
G.G.U.P.S. Grastanganj	1	3	1	Yes	Yes	Yes
G.P.S. Jhandichaur North	1	students	1	Yes	Yes	Yes

**Students’ Satisfaction Levels**

A satisfaction survey is a study that measures a person’s perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised various questions including the construction of toilets, availability of running water in the toilets, safety and security, availability of electricity in the toilets and students’ perception of cleanliness.

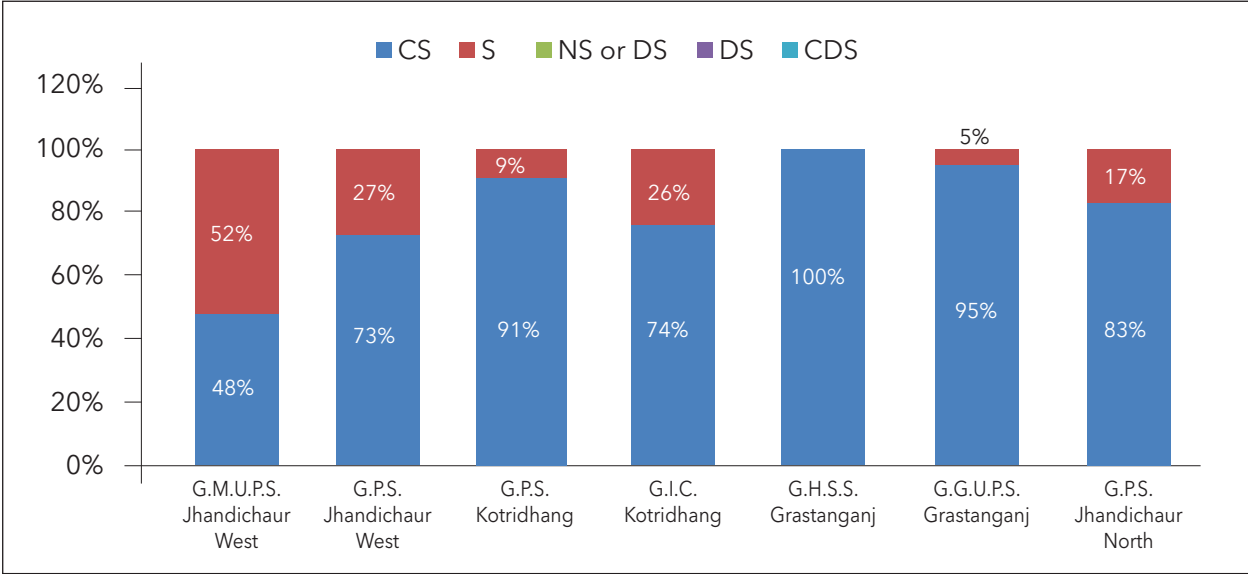
Chart-4.27 depicts the level of satisfaction among students in all the seven schools as ‘satisfied’. 48 per cent of the students are fully aware and are fully satisfied of created by BEL. The percentage of complete satisfaction in the schools range between 48-95 percent. The students’ satisfaction with the availability of running water in the toilets constructed by BEL is mentioned in Chart-4.28. Mostly the students in all the schools are satisfied with the availability of running water. As the water facility is available with overhead tank, students expressed complete satisfaction regarding the water facility in the newly constructed toilets.

**Chart-4.27: Student’s Satisfaction with the Toilets**

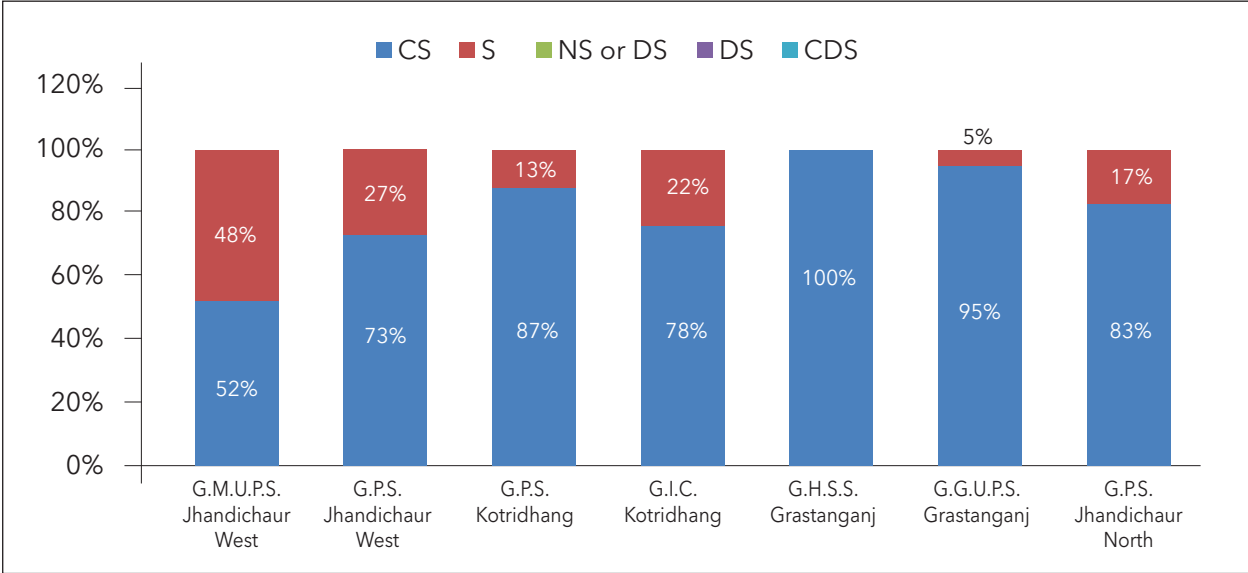


Toilets are constructed based on BEL specifications and hence all the related fixtures and electric fittings are provided. Hence students expressed high level of satisfaction on the newly constructed toilets. Chart-4.29 discloses the student’s opinion regarding safety and security at the toilets. GHSS Grastanganj students expressed 100 percent satisfaction. The students from rest of the schools have expressed high degree of satisfaction regarding safety and security at the toilets. Chart-4.30 depicts the students’ reaction regarding availability of electricity in toilets is displayed. The students from all the schools have expressed that they are completely satisfied. ’

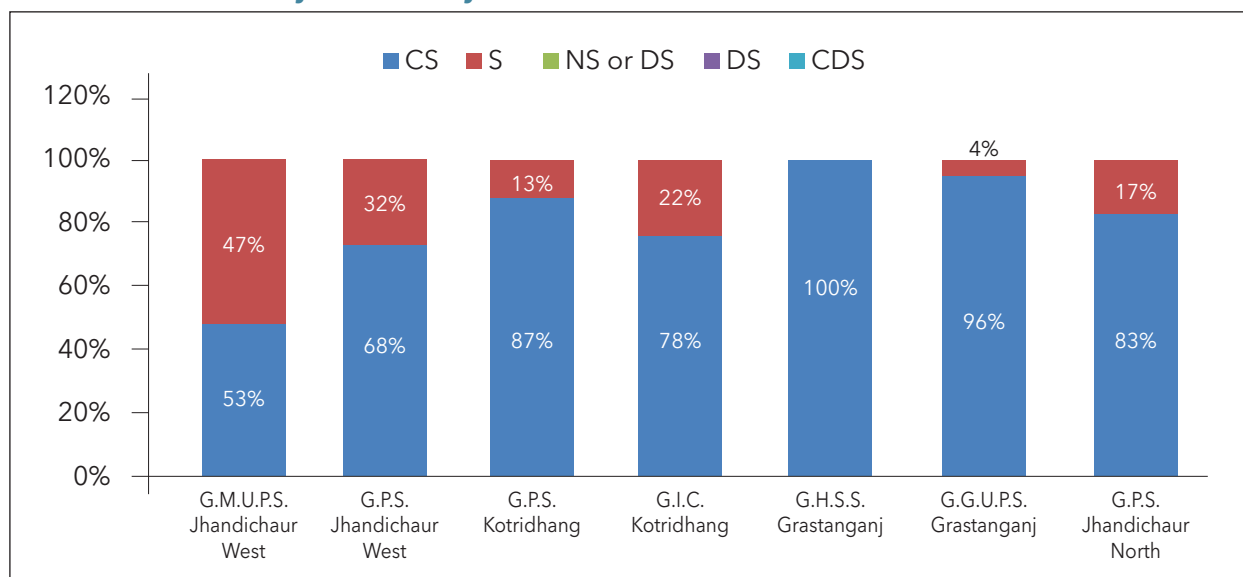
**Chart-4.28: Availability of Running Water**



**Chart-4.29: Safety and Security**



**Chart-4.30: Availability of Electricity in the Toilets**



## Impact Analysis

### Overall Impact

The project has been significantly impactful in the seven schools where it was implemented.

- The principal and teachers conveyed that the school dropout and absenteeism has reduced ever since the number of toilets were increased in the school. Parents expressed their happiness on the additional toilets constructed by BEL. They also felt that children are not prone to infections as the toilets were cleaned every day and are kept clean.
- Enough care is taken care by the school managements to provide the sanitation material for students including the soap, Dettol, etc.
- There has been improved number of admission of boys and girls and there was a small improvement in the enrollment numbers of students in the schools after the construction of toilets by BEL.
- Most of the villages have become defecation free.
- Parents and other stakeholders also expressed complete satisfaction of the facility created by BEL and encouraged children to go to school regularly.

### Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation & maintenance and effectiveness aspects. The objective of the construction of school toilets and urinals at selected Government schools was to strengthen toilets facilities and make them open defecation free places. This project is aligned with Government of India's prestigious project "Swachh Vidyalaya Abhiyan".

The need assessment in the local region helped the BEL unit to identify and construct the additional new toilets in this area. The local educational officers worked with school headmasters in identifying the need and proposed to construct toilets. The study suggests that BEL Kotdwara

unit has achieved this project objective after construction/renovation of schools' toilets in these selected units. Most stakeholders like students, teachers, parents, villagers / citizens, education department officials, public representatives were satisfied. The data reveals a positive impact on the students' attitude towards cleanliness, attendance, health, and awareness levels. The table presented below details various impact parameters studied along with the observations.

### Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	<p>All the seven schools in Kotdwara lacked sufficient number of toilets, drinking water, and other facilities earlier and this adversely impacted schoolchildren attendance, education, and health, especially among girl children.</p> <p>By the construction of toilets, BEL has supported the seven schools to overcome these problems.</p> <p>The project strengthened the Government school toilets system and provided sufficient toilet facilities for government school children in selected seven schools. The project also created awareness among school children about good hand wash habits and civic sense</p>
2	Utility	<p>BEL toilets are more efficient in delivering the desired outcome - providing good sanitation/toilet facilities to school children. Toilets were being constructed in adequate space followed proper civil structures, facilitating proper ventilation.</p> <p>In addition, toilets usage has improved due to sufficient facilities available at toilet locations.</p> <p>As the toilets are not very far from the main academic block students are not wasting time.</p> <p>The toilets are having all kind of electric fixtures as per the specifications, which have given students a feel of safety and security.</p>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at BEL constructed / renovated school toilets in seven schools of the BEL Kotdwara unit.</p> <p>In few schools children are involved in the cleaning process while the school is taking care of the operational maintenance of the toilets.</p> <p>There is no special budget allocation for the schools to meet the maintenance and repairs, and it is included in the schools' annual budget.</p> <p>All schools clean the toilets once. Most school toilets are well connected with water through the plumbing work.</p> <p>All toilets are functioning without any leakages and issues even after six years of construction.</p>
4	Effectiveness	<p>All seven schools conduct session on good health habits and cleanliness. Schools implemented good sanitation practices and hand wash habits, enhancing children's use of school toilets.</p> <p>Schools also trained schoolchildren on hand-washing habits, keeping the toilet surroundings clean, and using the toilet facility.</p> <p>These programs helped children improve their education and health levels, which is supported by the positive feedback in the children's satisfaction level survey conducted by the IPE team.</p> <p>It is evident that there is some increase in student enrollment after the new facility created by BEL.</p> <p>As the construction is very strong, the project is sustainable and schools have been using it for the past six years.</p>

S. No.	Impact Parameter	Observation
		<p>While there was only a marginal increase in student enrolment in many of the schools, the survey confirmed that there was certainly a positive impact in terms of improved attendance, awareness about health and hygiene etc. in all the locations.</p> <p><b>Prudent utilization of the facility provided</b>            90 % of schools' strength is utilizing BEL constructed school toilet facility as sufficient facilities are available in toilets such as;            1) Running water provision            2) Hand wash facilities            3) Separate toilets and urinals are available for school children            4) Adequate privacy is available for girl children            5) Adequate light and ventilation            6) Easy access to schoolchildren            7) cleanliness and proper maintenance by school authorities</p>
5	<b>Impact</b>	<p><b>Tangible Benefits</b>            Increased number of school toilets and urinals for students</p> <p><b>Intangible Benefits</b>            Closer toilet access            improved latrine population ratio            improved Safety and security for girl children            4) Privacy during defecation            5) Reduce the incidence of infectious disease            6) Improved the student's health            7) Improved civic sense among students</p> <p>The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village.            Most school declared as open defecation free school places.</p>
	<b>Sustainability</b>	<p><b>Sustenance of the intervention over a period:</b> Toilets are being maintained reasonably well by schools even six years after the toilets came into existence. All these best practices followed by schools help them make the project sustainable.</p>

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and maintenance					
Effectiveness					
Tangible and intangible					
Sustainability					

### General Observations

The following are some of the important observations from the project

- Most of the students and parents have reported complete satisfaction on the changed behavior on the use of toilets. All schools are maintaining the clean toilets. The satisfaction levels among school children is very high.



- Teachers have expressed their concern on school not allocating special budget for maintenance and students are made to clean. School the teachers have found that there is a change in the dropout ratio of the school children and reduced absenteeism among students.
- Parents expressed positive improvement in the children's health
- The toilets are located close to the classrooms resulting in no wastage of time.
- All the seven schools are protected with a compound wall and a gate

### Overall Investigator Observations About the Toilets in Seven Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	Daily clean the toilet
Scavenger	Deployed by the school management in many schools.
Hand Wash Habits	School teachers conducted sessions to children on hand wash habits.
School declared as open defecation free place.	Yes.
Separate urinals and toilets	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Yes, in all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

**Table-4.24: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

S. No.	Name of the School	Change in Attitude and Civic Sense Orientation Among Students		Development of Social Behavior of the Students	
		Completely Satisfied	Satisfied	Completely Satisfied	Satisfied
1	G.M.U.P.S Jhandichaur West	2	0	1	1
2	G.P.S. Jhandichaur West	0	2	0	2
3	G.P.S. Kotridhang	0	2	0	2
4	G.I.C. Kotridhang	1	1	2	0
5	G.H.S.S. Grastanganj	2	0	2	0
6	G.G.U.P.S. Grastanganj	1	1	0	2
7	G.P.S. Jhandichaur North	0	2	0	2

**Table-4.25: Change in School Dropout Ratio and Reduced Absenteeism**

S. No.	Name of the School	Change in School Dropout Ratio		Reduction in School Absenteeism	
		Completely Satisfied	Satisfied	Completely Satisfied	Satisfied
1	G.M.U.P.S Jhandichaur West	0	2	0	2
2	G.P.S. Jhandichaur West	0	2	0	2
3	G.P.S. Kotridhang	0	2	0	2
4	G.I.C. Kotridhang	0	2	2	0
5	G.H.S.S. Grastanganj	0	2	0	2
6	G.G.U.P.S. Grastanganj	1	1	1	1
7	G.P.S. Jhandichaur North	0	2	0	2

### Glimpses of Toilet Construction by BEL Kotdwara Unit



(Left) Rajkiya Uchtam Prathamik Vidyalaya, Jhandichod Pashchimi; (Right) Rajkiya Uchtam Vidyalaya, Jhandichod Uttar



Rajkiya Uchtam Vidyalaya, Jhandichod Uttar



Rajkiya Prathamik Vidyalaya, Kotridhang



Rajkiya Inter College, Kotridhang



Left: Rajkiya Kanya Purav Madhyamik Vidyalaya, Grastan Ganj; Right: Rajkiya Uchtam Madhyamik Vidyalaya, Grastan Ganj





### 4.5.1 Toilet Complex - Mela Site at Grastan Ganj Village near Sidhbali Temple



Bharat Electronics Limited - Kotdwara unit constructed public toilets at Sidhbali Temple, place in Kotdwara of Uttarakhand state during 2014-15. Around 200 to 250 pilgrims visit this temple daily these numbers doubled during weekends and festivals. The problems due to shortages of toilets facilities at temple causing inconvenience to pilgrims during their visit to temple was addressed by BEL-Kotdwara by the construction of public toilets. The project was initiated in 2014 and completed by 2015.

BEL constructed 13 toilets with a cost of Rs. 40.5 Lakhs and handed over to the Temple Management. The temple management has taken complete responsibility of managing these constructed toilets. On an average around 250 public access the public toilet in this location daily. The management has recruited a male and a female person to maintain the toilets. The temple management is responsible for their salaries. The persons are responsible for maintenance of the toilets. The toilets have sufficient running water with overhead tank. Borewell water is main sources of running water for public toilets. Toilets are cleaned on daily basis. Temple management conducts the awareness on the utility and cleanliness of the toilets. The toilets are constructed based on approved technical specifications by BEL.

#### **Operations and Maintenance**

Chart 1 depicts the level of satisfaction and the utility of the toilets. A questionnaire has been circulated to know the level of satisfaction on the BEL constructed toilets.

100% of users were aware that BEL constructed public toilets because BEL branding - logo and other details are visible to the public.

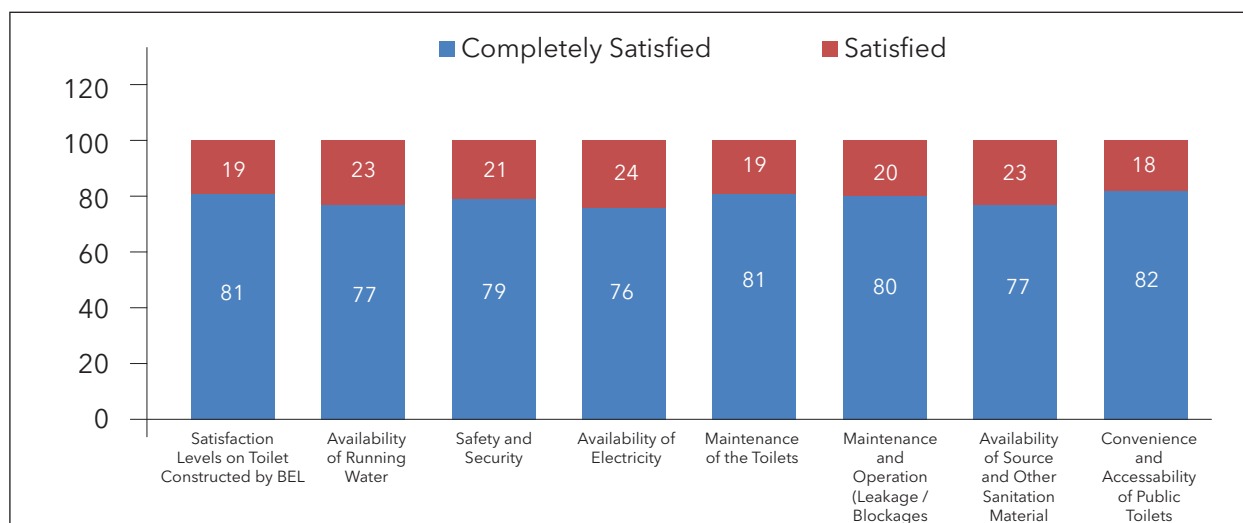
100% users agreed that local contracting agency conducted awareness programs for them to know how to use the toilets properly.

All public toilet users (100 users both men and women) are satisfied with the facility created by BEL, availability of running water, safety and security, electricity, maintenance of toilets (cleanliness), maintenance and operations of leakage, overflow, blockage, the availability of sanitary material and soaps and convenience and accessibility of public toilets. It is observed

that all stakeholders are satisfied but degree of satisfaction levels' varies from "completely satisfied" to satisfied.

**Chart-4.5.1 Stakeholders' Satisfaction Levels on BEL Kotdwara - Public Toilets**

Male: 51; Female: 49 and Total sample: 100



### Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation and maintenance, effectiveness, Impact aspects. The objective of the construction of public toilets at selected public place in Kotdwara in under jurisdiction of BEL Kotdwara unit was to strengthen public toilets' facilities and make them open defecation free places. The BEL-Kotdwara unit achieved project objective after construction of public toilet complex. Stakeholders include pilgrims, shopkeepers, temple authorities etc. expressed their high degree satisfaction on the way BEL constructed public toilets, provided running water facility and other facilities in the toilets, cleaning and maintenance process, and this is supported by the results given below. This has helped more public using the toilets.

### Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	The project was highly desirable and relevant in the given situation and had a potential to contribute Swachh Bharat Abhiyan with its holistic approach and need of the public in the area.
2	Utility	BEL constructed toilets for both men and women at Sidhali Temple in Kotdwara of Uttarakhand. The toilets are fully functional and utilized by both men and women. On an average, 250 public, both men and women, access the public toilet facility on daily basis. But during festivals and melas, the number could be double. BEL toilets are more efficient in delivering the desired outcome - providing good sanitation/toilet facilities to public. Toilets usage has improved due to sufficient facilities available at toilet locations. BEL has provided proper electrification, running water provision, separate toilets, and urinals for both men and women. Toilets are located in a convenient place with adequate space.



S. No.	Impact Parameter	Observation
3	Operation & Maintenance	Sufficient water supply and hand wash facilities are available at public toilets. Running water provision was given to toilets. Public toilets are well connected with water through the plumbing work. All toilets are functioning properly. Maintenance is taken care by the temple management
4	Effectiveness	Temple management conducted awareness programs on good health habits and cleanliness. Operation and maintenance initiatives were implemented Good sanitation practices and hand wash habits, enhancing public use of public toilets The project helped public to improve their civic sense about spreading the message of usage of toilets <b>Increase in accessibility of toilets:</b> More number of toilets and urinals are available for general public <b>Prudent utilization of the facility provided.</b> On an average 250 public are utilizing BEL constructed public toilet facility due to sufficient facilities. 1) Running water provision and construction of overhead tank 2) Hand wash facilities 3) Separate toilets and urinals are available men and women 4) Adequate light and ventilation 5) Easy access to public 6) Cleanliness and proper maintenance by maintenance agencies
5	Impact	<b>Tangible Benefits</b> i) Increased number of public toilets and urinals for men and women with electrical fixtures and fittings <b>Intangible Benefits</b> 1) Convenience and close to the rest house 2) Improved the general public health General public have also educated their families and communities about the importance of hygienic conditions and use of these public toilets and subsequently this message has made an impact on the other citizens of the community The objective of the Swachh Bharat Abhiyan has been successful by and large and the social transformation in terms of hygienic standards has increased within the society. Sidhballi temple, Kotdwara was declared as an open defecation free place as declared by temple authorities. The structure and design of the toilets constructed was highly appreciated by the various community members and was quite evident during the inspection. Further, it was also told all the stakeholders that they were satisfied with the construction of these toilets
	Sustainability	<b>Sustenance of the intervention over a period</b> 1) Sufficient running water is available at all toilets locations. Public toilets have both public taps and bore well water facilities. 2) Maintenance of the toilets is good.

### General Observations

- The toilets are being utilized by the pilgrims and shopkeepers
- The newly created facility is being maintained well and is being utilized 100 per cent

The following are some of the important observations from the project.

### Overall Investigator Observations About the Toilets in Nine Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	Daily clean the toilet
Scavenger	Implementing agency deployed permanent cleaning personnel staff
Hand Wash Habits	Implemented in public toilet location
Public place declared as open defecation free place.	Yes.
Separate urinals and toilets for general public	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available



## 4.6 BEL Machilipatnam Unit

Machilipatnam BEL unit was earlier, Andhra Scientific Company (ASCO), taken over by BEL in 1983. The Andhra Scientific Company was founded in 1926 by Sri Ayyagari Ramamurthy Pantulu (a schoolteacher), primarily to achieve import substitution in the field of Optical Instruments. Realising the capabilities of ASCO in catering to the sophisticated needs of defence forces, the Ministry of Defence took over the company management in 1981. Total Manpower in the unit is 138.

<b>BEL Machilipatnam CSR 2014-15</b>	Swachh Bharat Abhiyan - SVA
<b>Activity</b>	Construction of Toilets for schools
<b>Total Budget Sanctioned</b>	Rs. 75 lakhs
<b>Budget Utilised</b>	Rs. 63 Lakhs
<b>Project Objective</b>	To provide clean and congenial atmosphere at educational institutions
<b>Project Addresses Area</b>	Improving infrastructure facilities at school Protection of environment
<b>Start Date And End Date</b>	2014-15 and 2015-16

### Data Analysis

The BEL Machilipatnam unit had constructed 18 toilets in the year 2015-16 in nine government schools in Machilipatnam. Based on the survey conducted by the evaluation team, the following observations are made.

### Gender Distribution, Social Status and Teachers Strength

Table 4.26 depicts the gender distribution of the students, social status and the teachers strength of the nine schools where BEL has constructed toilets. The number of students ranged from 20 to 444 in all the nine schools. Around 76 percent of the students belong to SC / ST / OBC community. There are 44 teachers among whom 30 teachers are male. Out of nine schools, four schools are imparting primary education from class I to V, while five schools have upper secondary classes from VI and X.

**Table-4.26: Gender Distribution, Social Status and Teachers Strength**

Name of the School	Students			Social Status					Teachers Strength	
	Boys	Girls	Total	SC	ST	OBC	General	Total	M	F
MPPS - Pasubhotlapalem	19	30	49	0	14	33	2	49	1	1
ZPHS Mopidevi	237	207	444	6	187	251	0	444	16	6
MPPS S N PURAM - Gudivada	8	12	20	0	15	3	2	20	0	2
MPPS Mallavolu (H.W)	27	29	56	5	47	0	4	56	2	0
MPPS Pochiganilanka	17	8	25	0	3	20	2	25	1	1
MPUPS Chandrala	36	28	64	0	25	35	4	64	3	2
MPUP Urdu School	84	98	182	0	0	0	182	182	5	2
ZPHS Parnasa	34	13	47	0	33	14	0	47	0	0
MPPS JP Gudem	18	17	35	0	35	0	0	35	2	0

### Students Strength Before and After Construction of the Toilets by BEL

The Table-4.27 shows the comparison of student strength in previous year (2020-21) and current year (2021-22). From the table it is observed that the student strength before construction of toilets by BEL is 836 while student strength in the current year is 922. It is observed that except for two schools the total number of students has decreased. The Headmistress informed that the decrease is due to the new private schools coming up in the region. But there is no substantial change in the enrolment figures due to the intervention.

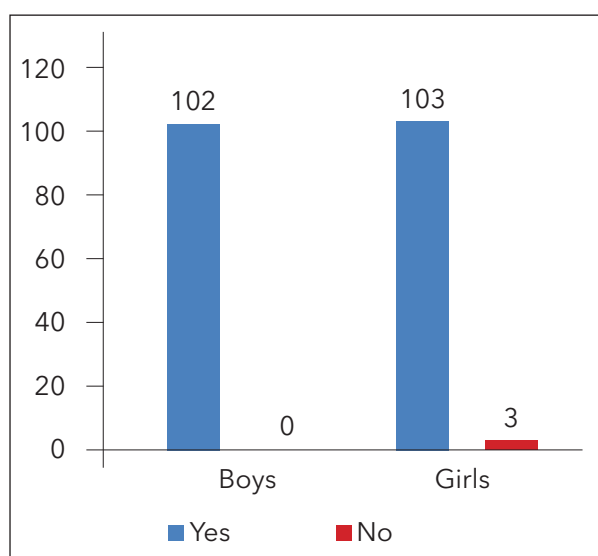
**Table-4.27: Comparison of Student Strength**

S. No.	Name of the School	Students Strength - Current Year			Students Strength - Previous Year		
		Boys	Girls	Total	Boys	Girls	Total
1	MPPS Pasubhotlapalem	19	30	49	18	31	49
2	ZPHS Mopidevi	237	207	444	252	261	513
3	MPPS S N PURAM - Gudivada	8	12	20	12	11	23
4	MPPS Mallavolu (H.W)	27	29	56	35	29	64
5	MPPS Pochiganilanka	17	8	25	16	10	26
6	MPUPS Chandrala	36	28	64	47	31	78
7	MPUP Urdu School	84	98	182	NA	NA	0
8	ZPHS Parnasa	34	13	47	38	14	52
9	MPPS JP Gudem	18	17	35	15	15	31

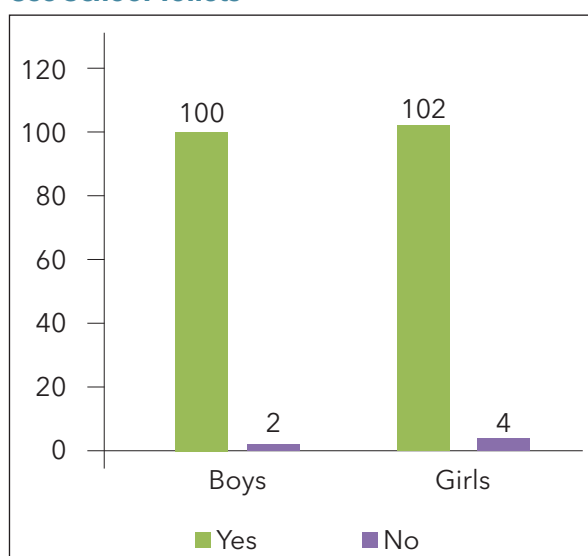
### Awareness on the Newly Constructed Toilets

Chart-4.31 depicts that most of the boys and girls in the nine schools were aware of the construction of the toilets by BEL. Only three girls informed that they are not aware of toilets that are constructed by BEL. Chart-4.32 reveals that majority of the boys and girls were aware of the sessions conducted by the school on best practices. It was reported that the schools regularly conduct classes on good health habits and cleanliness once / twice per week. However, it was reported that MPPS Pasubhotlapalem school conducts classes four times a week.

**Chart-4.31: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.32: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



## Operations and Maintenance

The toilets constructed by BEL are available for use in all the locations. There are 18 toilets constructed in nine schools. The data from the questionnaires reveals that in many schools the toilets were cleaned regularly. Eight schools have not allocated any budget for maintenance of the toilets. It is observed that MPPS S N Puram - Gudivada allocates Rs. 2000 per month for the maintenance of the toilets. The provision of running water is available in all the nine schools. Table-4.28 details the information on the operation and maintenance of toilets in all the nine schools. Water is sufficiently available with overhead tank for all the constructed toilets. In terms of availability of sanitation material, ZPHS Mopidevi school and ZPHS Parnasa schools have expressed dissatisfaction on the availability of sanitation material. In some of the schools, stakeholders expressed their dissatisfaction about the operations and maintenance of the toilets.

**Table-4.28: Operations and Maintenance**

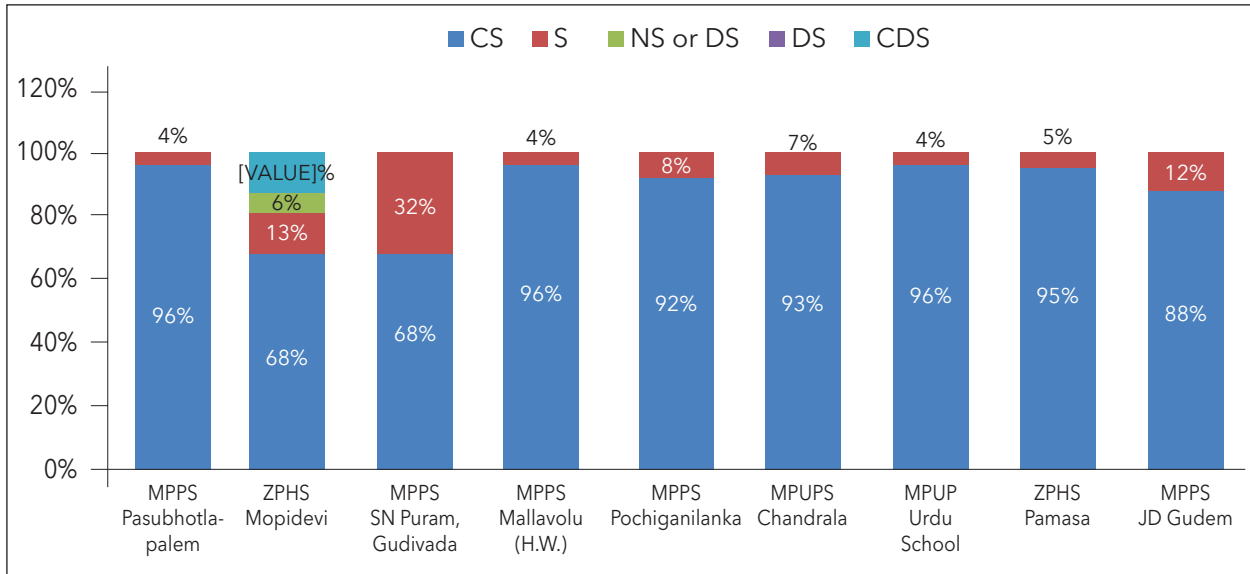
S. No.	Name of the School	Are the Toilets Cleaned Everyday	How Many Staff Members Are there to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget	Toilets Are Having Running Water	Source of Water
1	MPPS Pasubhotlapalem	Yes	1 to 2	Twice	Part of school budget	Yes	Borewell
2	ZPHS Mopidevi	Yes	1 to 2	Once	Part of school budget	Yes	Tap water
3	MPPS S N Puram - Gudivada	Yes	1 to 2	Once	Rs. 2000/- Per month	Yes	Tap water
4	MPPS Mallavolu (H.W)	Yes	1 to 2	Twice	Part of school budget	Yes	Borewell
5	MPPS Pochiganilanka	Yes	1 to 2	Once	Part of school budget	Yes	Borewell
6	MPUPS Chandrala	Yes	1 to 2	Twice	Part of school budget	Yes	Borewell
7	MPUP Urdu School	Yes	1 to 2	Twice	Part of school budget	Yes	Borewell
8	ZPHS Parnasa	Yes	1 to 2	Twice	Part of school budget	Yes	Borewell
9	MPPS JP Gudem	Yes	1 to 2	Twice	Part of school budget	Yes	Borewell

## Students' Satisfaction Levels

A satisfaction survey is a study that measures a person's perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised various questions including the construction of toilets, availability of running water in the toilets, safety and security, availability of electricity in the toilets and students perception of cleanliness.

To understand the utility of the toilets, student's satisfaction questionnaire has been circulated to know the level of satisfaction on the BEL constructed toilets. Chart-4.33 depicts the level of satisfaction among students in all the nine schools. Students in eight schools reported that they are completely satisfied with the facility created by BEL. However, in ZPHS Mopidevi school, 13 percent of students have expressed their strong dissatisfaction with the toilets and eight per cent of the students have expressed neither satisfaction nor dissatisfaction with the toilets. The students' satisfaction with the availability of running water in the toilets constructed by BEL is mentioned in Chart-4.34. Mostly the students in all the schools are satisfied with the availability of running water. About eight per cent of students in ZPHS Mopidevi school have expressed neither satisfaction nor dissatisfaction with the availability of running water. In MPUP Urdu school, MPPS S N Puram Gudivada schools and ZPHS Mopidevi school, the students were less satisfied when compared to other schools.

**Chart-4.33: Student's Satisfaction with the Toilets**



**Chart-4.34: Availability of Running Water**

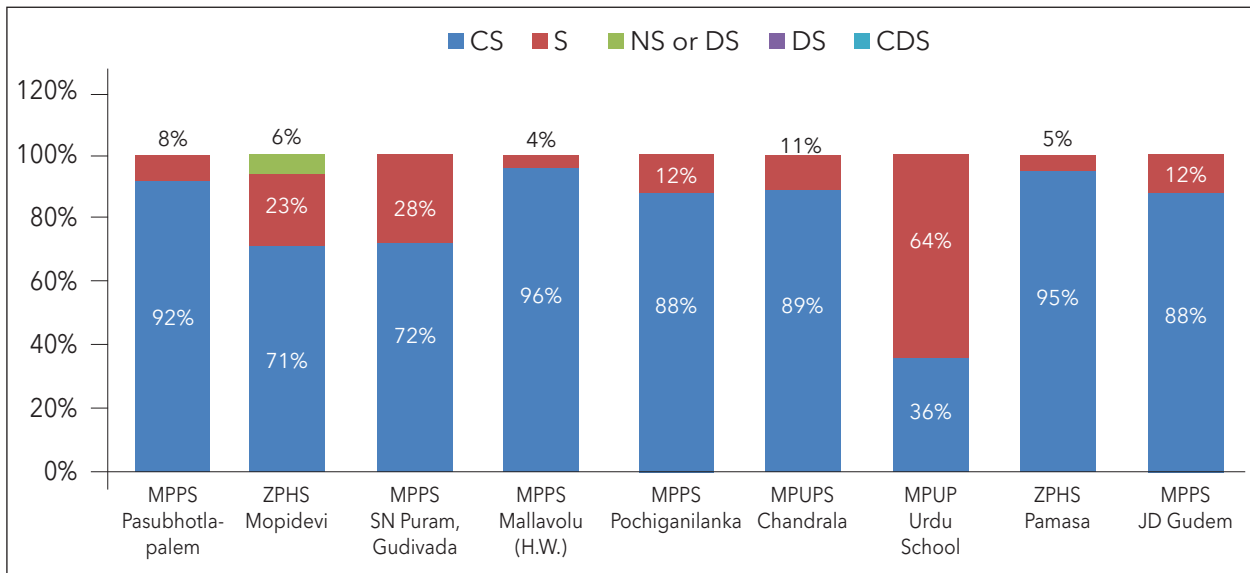
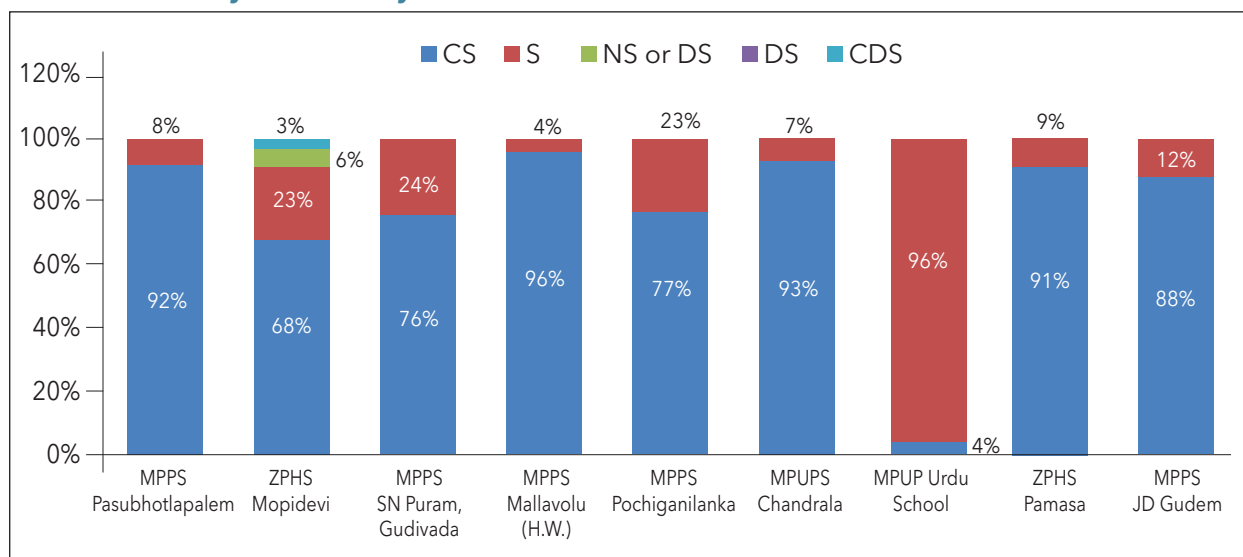


Chart-4.35 discloses the students' opinion regarding safety and security at the toilets. In MPUP Urdu School, complete satisfaction level among the students is quite low at four per cent. The students from rest of the schools expressed high degree of complete satisfaction regarding safety and security measures taken at the toilets by the school authorities. In Chart-4.36, the student's reaction regarding availability of electricity in toilets is displayed. In MPUP Urdu School regarding the availability of electricity the complete satisfaction is at the lowest. Also complete satisfaction is reduced at MPPS S N Puram Gudivada school and ZPHS Mopidevi school. Moreover, 19 per cent of the students have expressed dissatisfaction over the availability of electricity in toilets at ZPHS Mopidevi school. In ZPHS Mopidevi school, students have expressed dissatisfaction over the cleanliness of the toilets. Again, in MPUP Urdu School the complete satisfaction is at the lowest regarding the cleanliness of the toilets. In rest of the schools the complete satisfaction is quite high.

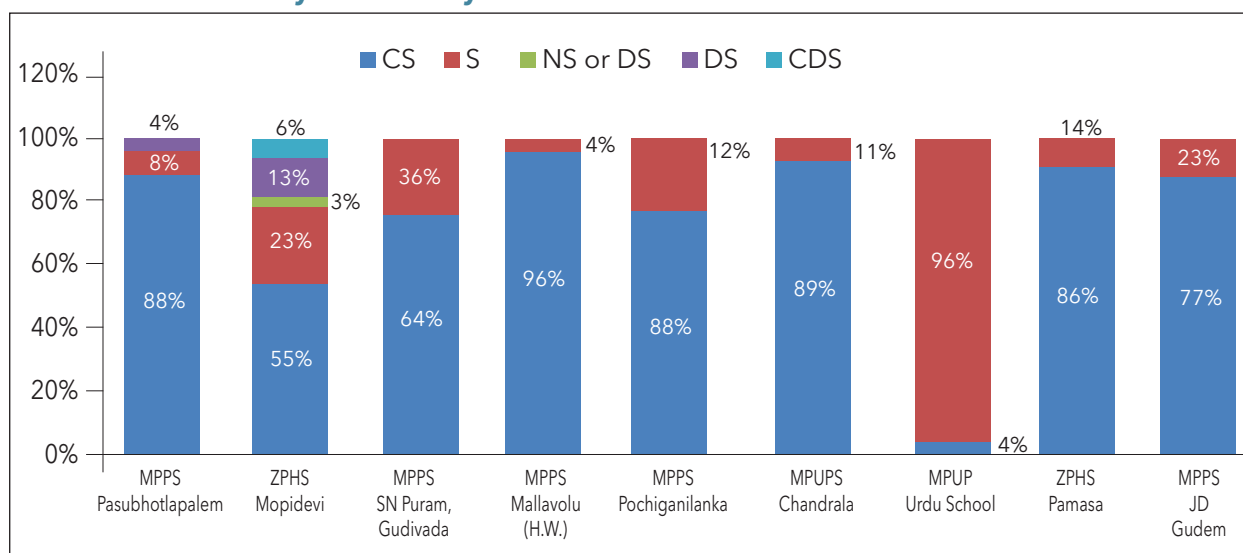




**Chart-4.35: Safety and Security**



**Chart-4.36: Availability of Electricity in the Toilets**



### Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation & maintenance, and effectiveness. The objective of the construction of school toilets and urinals at selected Government schools under jurisdiction of BEL Machilipatnam unit was to strengthen toilets facilities and make them open defecation free places. This project also aligned with Government of India's prestigious project "Swachh Vidyalaya Abhiyan". The study suggests that BEL-Machilipatnam unit has achieved this project objective after construction/renovation of schools' toilets in these selected units. Most stakeholders like students, teachers, parents, villagers / citizens, education department officials, public representatives were satisfied about the way BEL constructed/renovated school toilets, provided running water facility, facilities in school toilets, students' toilet usage, cleaning and maintenance process, awareness on how to use school toilets etc. There was a positive improvement in school children's attitude towards cleanliness, attendance, health, and awareness levels.

## Overall Impact

The project has been highly impactful in the 9 schools where it was implemented.

- The project has had limited impact in improving the admission of boys and girls and there was only a marginal improvement in the enrollment numbers of students in the schools after the construction of toilets by BEL.
- The school dropout numbers have reduced. Students who were often sick are now being regular to classes.
- The project has improved the goodwill in the local community, and this has helped in improving the brand image of BEL.
- By constructing toilets, BEL has supported the government's SVA initiative.
- Parents and other stakeholders also expressed complete satisfaction of the facility created by BEL and encouraged children to go to school regularly.

The table presented below details various impact parameters studied along with the observations.

### Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	Most schoolchildren studying in government schools belong to marginalized communities. Earlier lack of toilets, drinking water, and other facilities in schools adversely impacted schoolchildren attendance, education, and health, especially among girl children. To overcome these problems in government schools, the Government of India carved out the prestigious project "Swachh Vidyalaya Abhiyan" to provide toilets and urinals in government schools across the country. Along similar lines, BEL - Machilipatnam initiated this project at selected schools under their project unit Machilipatnam. The project strengthened the Government school toilets system and provided sufficient toilet facilities for government school children in the selected 9 schools of BEL-Machilipatnam. This project also created awareness among school children about good hand wash habits, clean drinking water, hygiene and good environment practices
2	Utility	1) BEL constructed/renovated toilets and urinals for both boys and girls children in all the 9 government schools in Machilipatnam unit are fully functional and utilized by both boys and girls and this is supported by the satisfaction levels shown in the survey conducted for various stakeholders which is given below. 2) Out of 922 students (480 boys + 442 girls), 800 schoolchildren are utilizing BEL constructed/renovated school toilets. BEL toilets are more efficient in delivering the desired outcome - providing good sanitation/toilet facilities to school children. In addition, toilets usage has improved due to sufficient facilities available at toilet locations. BEL has provided proper electrification, running water provision, separate toilets, and urinals for both boys and girl children. Toilets were being constructed in adequate space with proper engineering drawings and followed proper civil structures, facilitating proper ventilation, lighting to schoolchildren. Most of the toilets were effectively put in use and the students are happily using the facility.



S. No.	Impact Parameter	Observation
		<ul style="list-style-type: none"> <li>• Water resources and plumbing facilities were well connected to school toilets.</li> <li>• The disposal facilities of these toilets were well in place and hygienically maintained.</li> <li>• School authorities followed proper hygiene standards in maintaining toilets and implemented best practices for using of school toilets.</li> </ul>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at BEL constructed / renovated school toilets in 9 schools of the Machilipatnam unit. Running water provision was given to all BEL constructed school toilets. All schools deployed toilet cleaning personnel temporarily. Only one school allocates Rs. 2000/- budget for maintenance of school toilets. At the same time, eight schools do not allocate budgets separately for the maintenance of school toilets and were spending from the available school budget.</p> <p>This is a major drawback resulting in schools not allocating sufficient budget for purchasing sanitary material, paying salaries to hired cleaning personnel, repairing of broken taps, pipelines, tiles, doors, windows, other physical infrastructure at school toilets, etc. This in turn has resulted in suboptimal levels of operations and maintenance in some of the schools.</p>
		<ul style="list-style-type: none"> <li>• All schools clean the toilets once or twice a day.</li> <li>• Most school toilets are well connected with water through the plumbing work. All toilets are functioning properly even after six years of construction.</li> </ul>
4	Effectiveness	<p>All nine schools conducted classes on good health habits and cleanliness. During all these operation and maintenance initiatives, all schools implemented good sanitation practices and hand wash habits, enhancing children's use of school toilets.</p> <p>All nine schools created awareness among the children about sanitation and good health habits. Schools also trained schoolchildren on hand-washing habits, keeping the toilet surroundings clean, and using the toilet facility. These programs helped children improve their education and health levels, which is supported by the positive feedback in the children's satisfaction level survey conducted by the IPE team.</p> <p><b>Increase in student enrolments:</b> While there was only a marginal increase in student enrolment in many of the schools, the survey confirmed that there was certainly a positive impact in terms of improved attendance, awareness about health and hygiene etc. in all the locations.</p> <p><b>Prudent utilization of the facility provided.</b> 80 % of schools' strength is utilizing BEL constructed school toilet facility as sufficient facilities are available in toilets such as;</p> <ol style="list-style-type: none"> <li>1) Running water provision</li> <li>2) Hand wash facilities</li> <li>3) Separate toilets and urinals are available for school children</li> <li>4) Adequate privacy is available for girl children</li> <li>5) Adequate light and ventilation</li> <li>6) Easy access to schoolchildren</li> <li>7) cleanliness and proper maintenance by school authorities</li> </ol>

S. No.	Impact Parameter	Observation
5	Impact	<p><b>Tangible Benefits</b> Increased number of school toilets and urinals for students</p> <p><b>Intangible Benefits</b> 1) Convenience 2) Closer latrine access &amp; improved latrine population ratio 3) Safety and security for schoolchildren to access the toilets 4) Privacy during defecation 5) Reduce the incidence of infectious diseases 6) Improvement in the schoolchildren health The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village. The objective of the Swachh Vidyalaya Abhiyan has been met by and large and the social transformation in terms of hygienic standards has increased within the society. Most schools have been declared as open defecation free zones.</p>
6	Sustainability	Toilets are being maintained reasonably well by schools even six years after the toilets came into existence. Most schools ensure the availability of running water, allocate a proper budget for regular maintenance and operation of toilets, and provide best practices for schoolchildren to keep toilet surroundings clean and use school toilets properly. All these best practices followed by schools help them make the project sustainable.

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

### General Observations

The following are some of the important observations from the project:

- Most of the students have reported complete satisfaction in their attitude and civic sense. Barring four schools all the other schools have displayed complete satisfaction in attitude and civic sense among students (Table-4.29)
- The newly constructed toilets by BEL have helped the schools to promote social behavior among students and found that this has changed their perception towards utility of toilets, cleanliness, good habits, etc. (Table-4.29)
- In MPPS S N Puram and MPUP Urdu School the teachers are neither satisfied nor dissatisfied at the change in dropout ratio and this feeling varies from 25% to 50% of the cases. (Table 4.30)
- The opinion of the teachers regarding reduction in school absenteeism is displayed for all the schools. Even though teachers from all the schools expressed satisfaction at the reduction in school absenteeism, three of the schools, viz., ZPHS Mopoidevi, MPPS S N Puram and MPUP Urdu School have expressed lower levels of satisfaction. In these three schools the level of complete satisfaction varied from 0% to 25% (Table-6).



## Overall Investigator Observations About the Toilets in Nine Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	Daily
Scavenger	Deployed by the school management in all the cases
Hand Wash Habits	School teachers gave sessions to children on hand wash habits.
School declared as open defecation free place	Yes.
Separate urinals and toilets	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Yes, in all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

**Table-4.29: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

Name of the School	Change in Attitude and Civic Sense Orientation Among Students		Development of Social Behavior of the Students	
	Completely Satisfied	Satisfied	Completely Satisfied	Satisfied
MPPS Pasubhotlapalem	2		2	
ZPHS Mopidevi	2	1	2	1
MPPS S N Puram - Gudivada	2		2	
MPPS Mallavolu (H.W)	2		2	
MPPS Pochiganilanka	1	1	1	1
MPUPS Chandrala	2		1	1
MPUP Urdu School	1	3	1	3
ZPHS Parnasa	5	2	5	2
MPPS JP Gudem	2		2	

**Table-4.30: Change in School Dropout Ratio and Reduced Absenteeism**

Name of the School	Change in School Dropout Ratio				Reduction in School Absenteeism	
	Completely Satisfied	Satisfied	Neither Satisfied Nor Dis-satisfied	Dis-satisfied	Completely Satisfied	Satisfied
MPPS Pasubhotlapalem	1			1	2	
ZPHS Mopidevi	2	1				3
MPPS S N Puram - Gudivada		1	1			2
MPPS Mallavolu (H.W)	2				2	
MPPS Pochiganilanka	1	1			2	
MPUPS Chandrala	2				2	
MPUP Urdu School	1	2	1		1	3
ZPHS Parnasa	5	2			5	2
MPPS JP Gudem	2				2	

## Glimpses of School-wise Toilet Construction by BEL Machilipatnam Unit



Mandala Parishad Upper Primari School, Chandrala, Krishna District



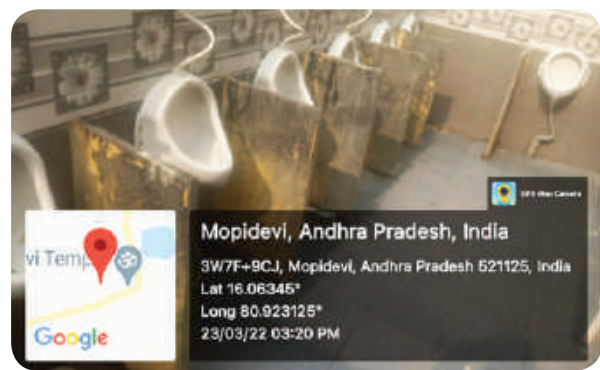
Zilla Parishad High School, Parnasa, Krishna District



Mandala Primary School, Satyanarayanapuram, Krishna District



Mandala Parishad Primary School, Juvandapudi Vari Gudem, Krishna District



Zilla Parishad High School, Mopidevi, Krishna District





Mandala Parishad Upper Primary Urdu School, Chorgudi, Krishna District



Mandala Parishad Primary School, Mallavolu, Krishna District



Mandala Parishad Primary School, Pochigani Lanka (Nagayyattippa), Krishna District



Mandala Upper Primary School, Pasupubhotlapalem, Krishna District

## 4.7 BEL Navi Mumbai Unit (BEL - NAMU)

BEL Navi Mumbai Unit (BEL-NAMU) has constructed ten toilet blocks in five schools during the year 2014-15 and 2015-16. The project aligned with Government of India's prestigious project SVA and the similar initiatives of Ministry of Education and Literacy and Ministry of Human Resource Development. The BEL-NAMU constructed the toilets in five schools as recommended by local government authorities.

<b>BEL NAMU Unit</b>	Swachh Bharat Abhiyan / Swachh Vidyalaya Abhiyan
<b>Activity</b>	Construction of Toilets for Schools
<b>Sanctioned Budget</b>	Rs 78.00 Lakhs
<b>Budget Utilized</b>	75.79 Lakhs
<b>Project Objectives</b>	To facilitate the rural govt. schools by construction of toilet blocks where the toilets are not available.
<b>Areas Addressed by the Project</b> (however day to day maintenance to be done by the school administration)	Improving infrastructure facilities at school Protection of environment

### Data Analysis

The BEL NAMU Unit constructed 10 toilets in the year 2015-16 in five Government schools in NAMU. Table-4.31 depicts the gender distribution, social status, and the teachers strength in the schools where BEL constructed toilets. The number of students ranged from 13 to 257 and 85.74 percent of the students belong to SC / ST / OBC community. There are 21 teachers among whom 11 teachers are male. All the five schools have upper secondary classes from VI and X. The following table details the type of construction of toilets in all the five schools.

### Type of Toilets Constructed in the Schools

FY	Toilet Location	No. of Boys Toilets	No. of Girls Toilets	Total Toilets	Type of Toilets
2014-15 and 2015-16	Zilla Parishad School, Chindaran	1	1	2	Type A - 1 Type B - 1
	Zilla Parishad School Khanacha Bungla	1	1	2	Type A - 2
	Zilla Parishad School Mahodar	1	1	2	Type A - 2
	Zilla Parishad School Kuttarpada	1	1	2	Type A - 2
	Zilla Parishad School, Nitlas	1	1	2	Type A - 1 Type B - 1

**Table-4.31: Gender Distribution, Social Status and Teachers Strength**

Name of the School	Students			Social Status					Teacher's Strength		
	Boys	Girls	Total	SC	ST	OBC	General	Total	M	F	Total
Zilla Parishad School, Chindaran	120	137	257	7	22	161	67	257	4	6	10
Zilla Parishad School, Khanacha Bungla	14	15	29	29	0	0	0	29	1	2	3
Zilla Parishad School, Mahodar	19	24	43	23	0	20	0	43	2	0	2
Zilla Parishad School, Kuttarpada	11	2	13	9	0	4	0	13	0	1	1
Zilla Parishad School, Nitlas	91	100	191	85	0	97	9	191	4	1	5





Table-4.32 shows the comparison of student strength in previous year (20-21) and current year (21-22). It is observed that there is no significant change in student strength before and after the construction of toilets.

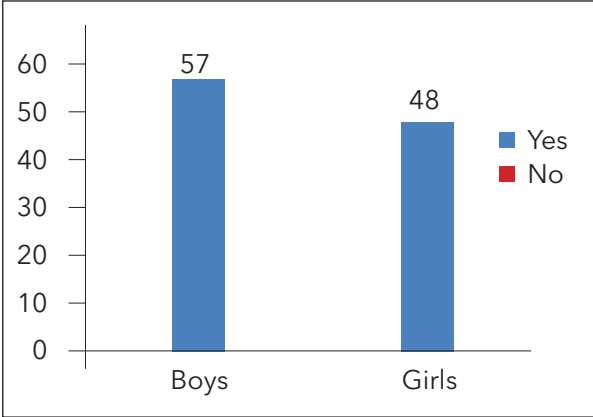
**Table-4.32: Comparison of Student Strength**

Name of the School	Students' Strength in Current Year			Student's Strength in Previous Year		
	Boys	Girls	Total	Boys	Girls	Total
Zilla Parishad School, Chindaran	120	137	257	125	151	276
Zilla Parishad School Khanacha Bungla	14	15	29	18	16	34
Zilla Parishad School Mahodar	19	24	43	20	20	40
Zilla Parishad School Kuttarpada	11	2	13	17	5	22
Zilla Parishad School, Nitlas	91	100	191	80	101	181

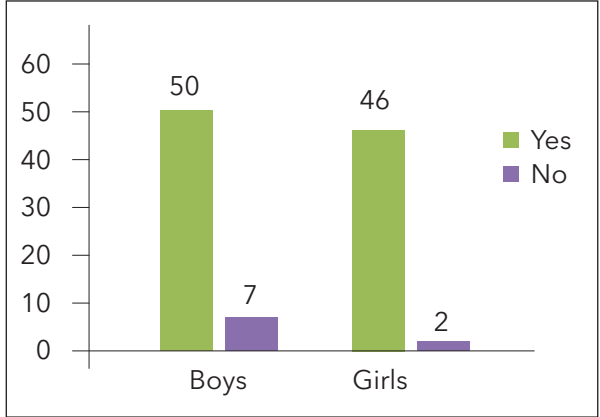
**Awareness on the Newly Constructed Toilets**

Among the total sample, 57 boys and 48 girls were aware of the construction made by BEL in the respective schools (Chart-3.37). Chart-3.38 reveals that most of the boys and girls (excepting two girls and seven boys) were aware about the sessions conducted by the school on best practices. Teachers also informed that they conduct classes at regular intervals on good and healthy habits, cleanliness, etc.

**Chart-4.37: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.38: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



**Operations and Maintenance**

The toilets constructed by BEL are made available for students in different locations. BEL constructed 10 toilets in five schools. The data reveals that all the toilets are cleaned everyday twice. It was observed that though schools have not allocated any special budget for the maintenance of the toilets it is included in the general maintenance budget, which is used for outsourcing purpose. The provision of running water is available in all the five schools. Table-4.33 details the information on the operation and maintenance of toilets in schools. The data shows that the water is sufficiently available with an overhead tank for all the constructed toilets. Excepting ZPHS Chindaran School, all other schools are providing sanitation materials. The consumable items like soaps, hand wash etc. need to be provided as part of the said CSR

project. The school administration has to look into the matter and not the company. BEL-NAMU will inform the school administration accordingly.

**Table-4.33: Operations and Maintenance**

Name of the School	Are the Toilets Cleaned Everyday	How Many Staff Members are there to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget for Maintenance of School Toilets	Availability of Water for Toilets	Toilets Are Having Running Water Provision Through Overhead Tank	Source of Running Water for Overhead Tank
Zilla Parishad School, Chindaran	Yes	Outsourced	2	Included in school maintenance	Yes	Yes	Bore-well exclusively provided for the toilets at the time of construction of toilet blocks.
Zilla Parishad School KhanachaBungla	Yes	Outsourced	1		Yes	Yes	Bore-well exclusively provided for the toilets at the time of construction of toilet blocks.
Zilla Parishad School Mahodar	Yes	Outsourced	1		Yes	Yes	Bore-well exclusively provided for the toilets at the time of construction of toilet blocks.
Zilla Parishad School Kuttarpada	Yes	Outsourced	1		Yes	Yes	Bore-well exclusively provided for the toilets at the time of construction of toilet blocks.
Zilla Parishad School, Nitlas	Yes	Outsourced	1		Yes	Yes	Bore-well exclusively provided for the toilets at the time of construction of toilet blocks-

### Students' Satisfaction Levels

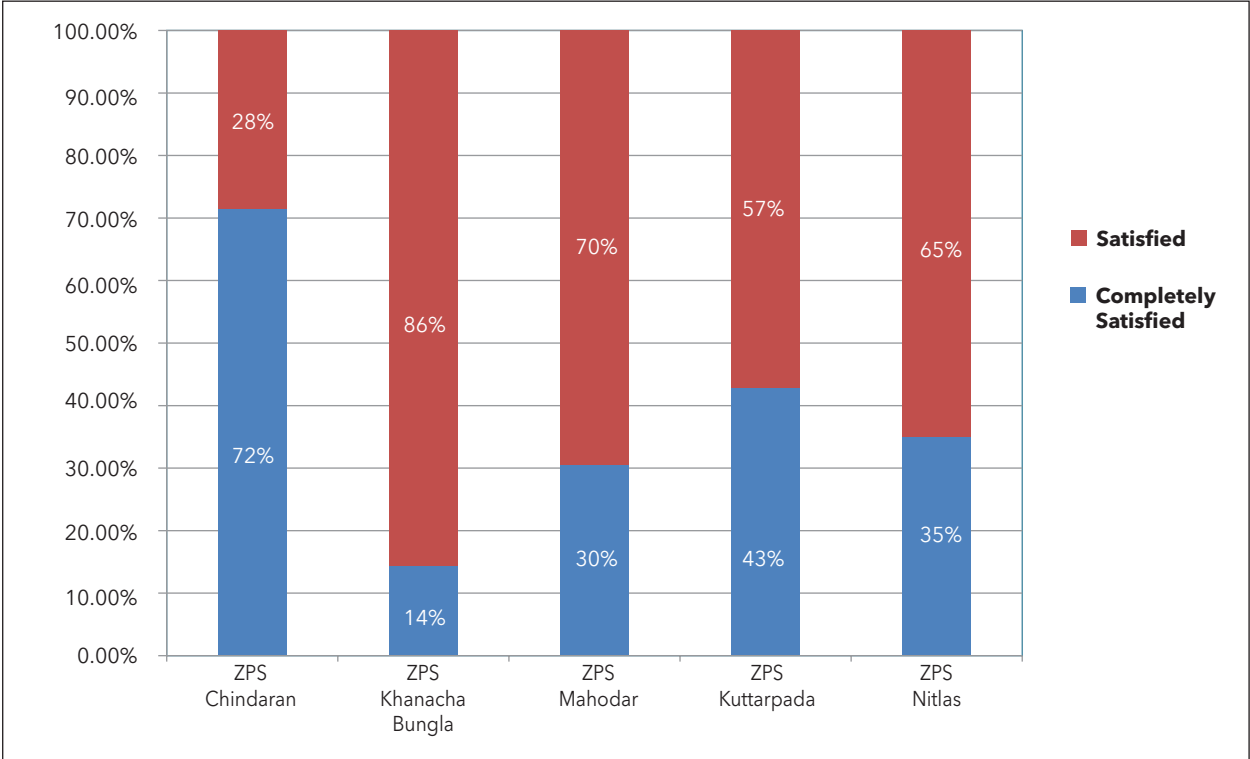
A satisfaction survey is a study that measures a person's perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised several questions including the quality of construction of toilets, availability of running water in the toilets, safety, and security, availability of electricity in the toilets and students' perception about cleanliness.

To understand the utility of the toilets, student's satisfaction questionnaire has been circulated to know the level of satisfaction on the BEL constructed toilets. Chart-3.39 depicts the level of satisfaction among students in all the five schools. Students of Four schools are by and large satisfied with the facility created by BEL. The student's satisfaction with the availability of



running water in the toilets constructed by BEL is mentioned in Chart-3.40. Mostly the students in all the schools are satisfied with the availability of running water. The responsibility lies with the school administration for providing the same.

**Chart-4.39: Student’s Satisfaction with the Toilets**



**Chart-4.40: Availability of Running Water**

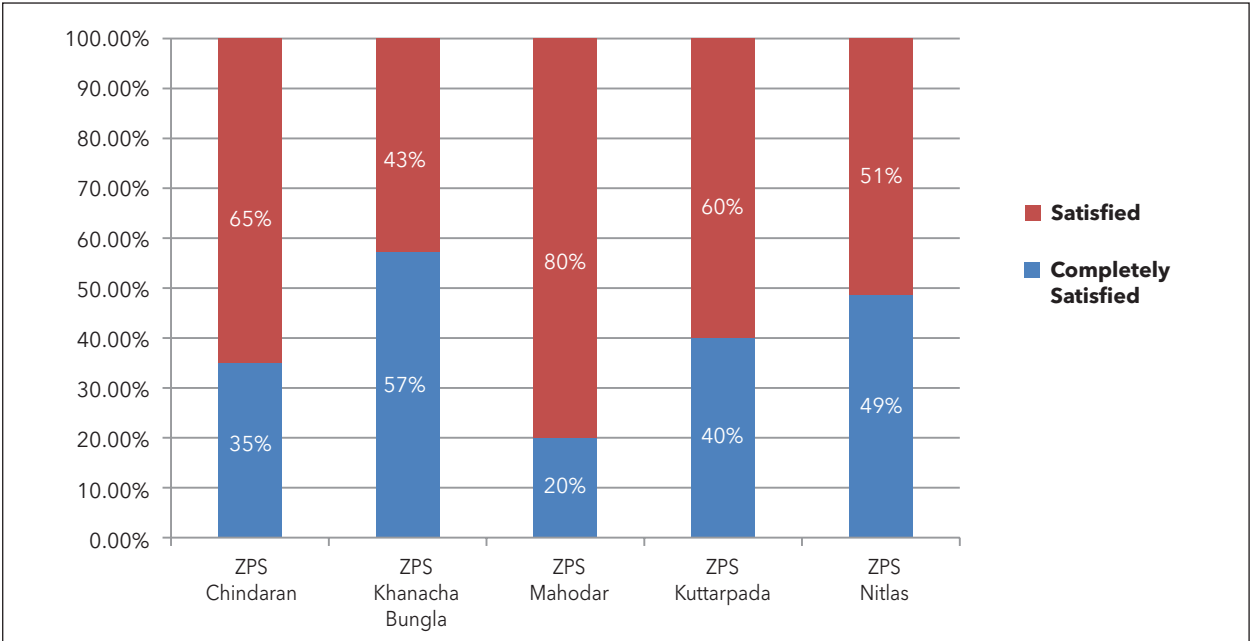
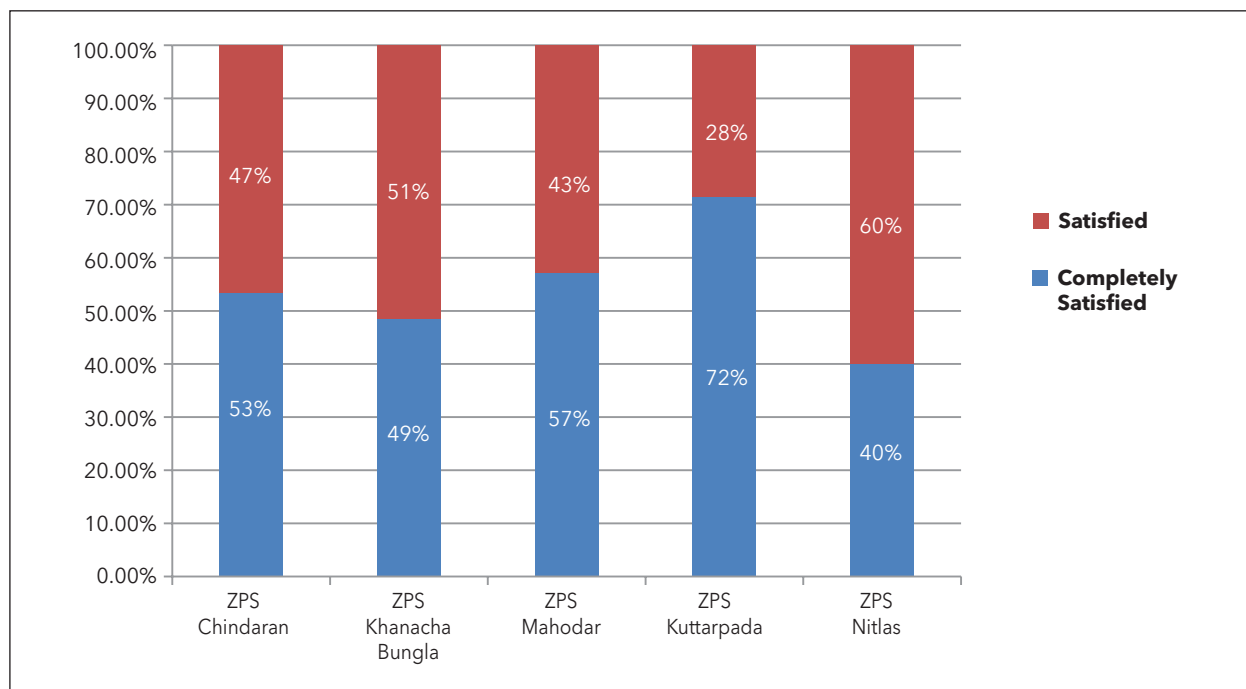


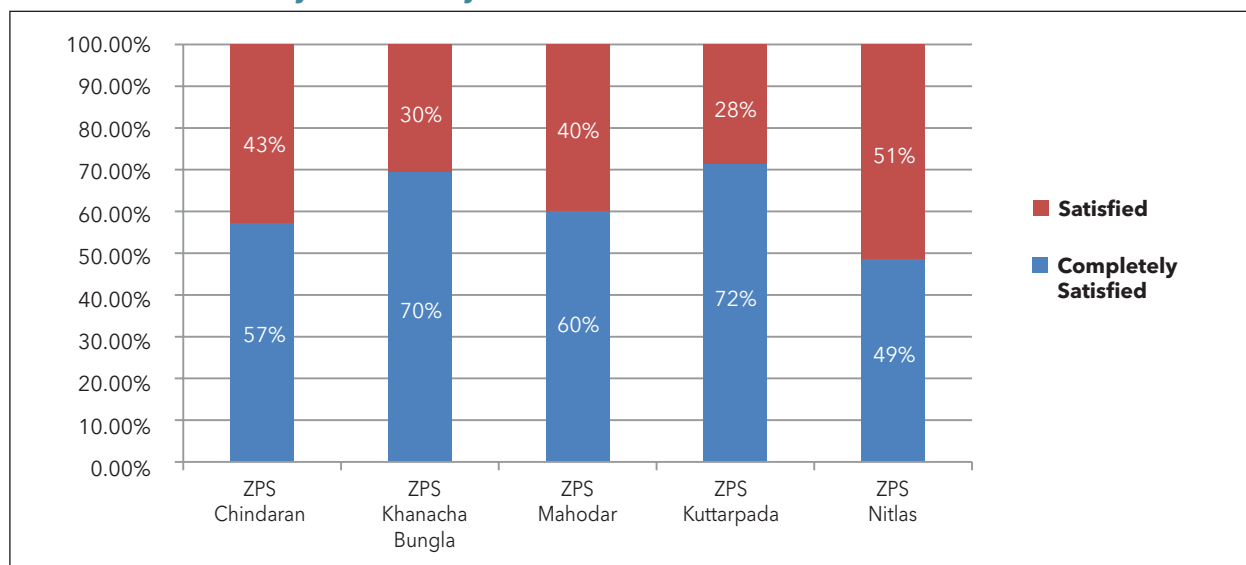
Chart-4.41 discloses the student’s opinion regarding safety and security at the toilets. The school administration is responsible for the safety, security, & maintenance of the toilet blocks, the same has been handed over to the school administration by the company in the

FY 2014-15 & 2015-16. The students from rest of the schools expressed high degree of satisfaction regarding safety and security at the toilets. Chart-4.42 depicts the student's reaction regarding availability of electricity in toilets and the students from all the schools expressed complete satisfaction or satisfaction. The newly constructed toilets in the schools were kept neat and clean, and that the schools have created awareness about cleanliness of village, healthy habits, attitude towards Swachhta, etc. It is clearly evident that all the stakeholders at ZPHS Chindaran, Khanacha Bungla, Mahodar, Kuttarpada and Nitlas were satisfied with the toilet facilities at school premises. The data revealed that stakeholders also have expressed their complete 'satisfaction' with the construction of toilets.

**Chart-4.41: Safety and Security**



**Chart-4.42: Availability of Electricity in the Toilets**



## Impact Analysis

### Overall Impact

The project has been impactful in the five schools where the project was implemented.

- The project has impacted in improving the school enrollment
- Stakeholders expressed high degree of satisfaction about the construction of toilets by BEL and the awareness created by the school management among students on the good habits.
- The survey has also considered the parameters like increased enrollment ratio, change in dropout ratio and reduction in the student's absenteeism after constructed BEL toilets. Teachers expressed satisfaction regarding student enrollment ratio. It is observed that, all five schools' teachers are satisfied about the student's enrollment ratio, drop out ratio and school absenteeism.
- The survey has raised various questions to stakeholders including their satisfaction levels of constructed toilets, cleanliness of village / town, awareness about healthy habits, attitude towards Swachhta, and managing toilets by school after construction of toilets by BEL. The stakeholders were asked to rank the satisfaction levels which ranged from complete satisfaction to complete dissatisfaction.
- All the stakeholders at ZPHS Khanacha Bungla, Mahodar and Nitlas, and 50 percent stakeholders at Kuttarapada were satisfied on managing toilets. At ZPHS Kuttarapada 50 percent stakeholders were neither satisfied nor dissatisfied. Managing the day to day maintenance & operation of the toilet block lies with the school administration.

### Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation & maintenance, effectiveness. The objective of the construction of school toilets and urinals at selected Government schools in under jurisdiction of BEL Navi Mumbai unit.

### Impact Parameters

S. No.	Impact parameter	Observation
1	Relevance	The project has overcome some setbacks that schools are facing in terms of lack of toilets, cleanliness, open defecation, etc that impacted school children attendance, education, and health. These setbacks were addressed by the "Swachh Vidyalaya Abhiyan". The aim of the project is to provide toilets and urinals in government schools across the country. BEL NAMU unit selected 5 schools and created toilets.
2	Utility	<ul style="list-style-type: none"><li>• BEL constructed toilets and urinals for both boys and girls children at selected 5 government schools. Approved designs were used in the construction and the desired outcomes were obtained in terms of lighting, ventilation, sanitation facilities etc.</li><li>• The project followed approved specification of drawings, structures facilitating proper ventilation, lighting, etc</li><li>• Toilets were regularly used by the students. Sufficient water has been made available in the toilets; overhead tank, taps and electric fixtures are also available</li></ul>

S. No.	Impact parameter	Observation
3	Operation and Maintenance (by school administration)	<ul style="list-style-type: none"> <li>Sufficient water supply is not available in most of the schools.</li> <li>Schools are not having enough personnel to clean toilets. No separate budget has been allocated. Schools pay to temporary workers on daily basis for maintenance purpose.</li> <li>All toilets are functioning properly</li> </ul>
4	Effectiveness	<ul style="list-style-type: none"> <li>All five schools conducted classes on good health habits and cleanliness.</li> <li>Teachers regularly conduct these sessions for the students</li> <li>Schools implemented good sanitation practices and hand wash habits; all sanitation material have been made available by the schools to children.</li> <li>There is mixed feedback by the children on the various satisfaction level survey conducted by the team.</li> <li>The survey shows that satisfaction levels of the students on the various counts is mixed.</li> <li>Among other factors, the toilets could also encourage parents to send children to school increasing the enrolments.</li> <li>Sustenance of the intervention over a period: Toilets are being maintained properly by schools even after completing six years. All are trying to maintain the toilets leading to project sustainability.</li> </ul>
5	<b>Impact</b>	<p><b>Tangible Benefits</b> More number of toilets and urinals are made available for students for both boys and girls</p> <p><b>Intangible Benefits</b></p> <ul style="list-style-type: none"> <li>Safety and security for school children to access the toilets</li> <li>Privacy during defecation</li> <li>Improved the schoolchildren health</li> <li>Improved civic sense among students</li> <li>Most schools declared as open defecation free school places.</li> </ul>
6	Sustainability	The project is sustainable as it has been aligned with the government scheme and the schools under the units have been maintaining cleanliness. The construction has been as per the BEL specifications.

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

### General Observations

- It is observed that the utility of the toilets has brought change in attitudinal and civic sense among the school students in all the schools. It is proved that all the students at ZPHS Kanacha Bungla and Kuttarpada expressed 100 per cent satisfaction while only 50 percent of students at Mahodar and Nitlas expressed complete satisfaction after construction of



BEL toilets and students of Chindaran, still less. But the general feeling is that some kind of positive behavioural change is observed among students.

- It is observed that utility of the toilets has brought change in attitudinal and civic sense among the school students in all the five schools.
- It is also felt that students had the sense of awareness about the Swachhta - government mission on clean toilets. The newly constructed toilets by BEL have helped the schools to promote social behavior among students and found that this has changed their perception towards utility of toilets, cleanliness, good habits, etc. (Table-4.34).
- A total of 09 surveyed teachers from five schools, all teachers have expressed their complete satisfaction or satisfaction with positive changes in reduction in school dropout ratio and school absenteeism (Table-4.34).
- It is observed that the toilets are maintained properly in ZPH School at Kanacha Bangla, Mahodar and Kuttarpada. Only 4.30 percent of the students from ZPHS Nitlas school were satisfied. The school administration of chindaran and nitlas have to maintain the day to day cleanliness, hygiene etc. by providing the sanitation materials.
- It is observed that soap and other sanitation material were provided in schools namely ZPHS Kanacha Bangla, Mahodar and Kuttarpada.

#### Overall Investigator Observations About the Toilets in Five Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	Clean toilets
Scavenger	Is a part of school staff
Hand Wash Habits	Training is conducted
School declared as open defecation free place.	Yes.
Separate urinals and toilets	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Yes, in all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations (to be provided by the school)	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

## Teacher Satisfaction Levels in Number

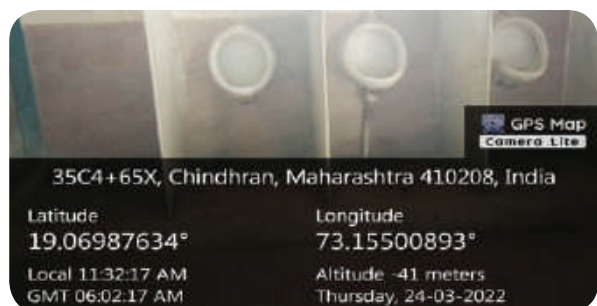
**Table-4.34: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

Name of the School	Change in Attitude and Civic Sense Orientation Among Students		Development of Social Behavior of the Students	
	Completely Satisfied	Satisfied	Completely Satisfied	Satisfied
Zilla Parishad School Chindaran	0	2	0	2
Zilla Parishad School Khanacha Bungla	0	2	0	2
Zilla Parishad School Mahodar	1	1	1	1
Zilla Parishad School Kuttarpada	0	1	0	1
Zilla Parishad School, Nitlas	1	1	0	2

**Table-4.35: Change in School Dropout Ratio and Reduced Absenteeism**

Name of the School	Change in School Dropout Ratio		Reduction in School Absenteeism	
	Completely Satisfied	Satisfied	Completely Satisfied	Satisfied
Zilla Parishad School Chindaran	0	2	0	2
Zilla Parishad School Khanacha Bungla	0	2	0	2
Zilla Parishad School Mahodar	1	1	1	1
Zilla Parishad School Kuttarpada	0	1	0	1
Zilla Parishad School, Nitlas	0	2	0	2

## Glimpses of Toilet Construction by BEL Navi Mumbai Unit



Zilla Parishad School, Chindaran, Tal - Panvel, Dist - Raigad



Zilla Parishad School, Khanacha Bungla, Tal - Panvel, Dist - Raigad



Zilla Parishad School, Mahodar, Tal - Panvel, Dist - Raigad





Zilla Parishad School, Kuttarpada, Tal - Panvel, Dist - Raigad



Zilla Parishad School, Nitlas, Tal - Panvel, Dist - Raigad

## 4.8 BEL Panchkula Unit

The F type toilet were made as per the technical specifications in both Mandhana and Hangola. The projects were completed and handed over to the schools in 2016.

<b>BEL Panchkula Unit: CSR 2014-15 and 2015-16</b>	Swachh Vidyalaya Abhiyan
<b>Activity</b>	Construction of school toilets
<b>Total Budget Sanctioned</b>	Rs 77.44 Lakhs
<b>Budget Utilised</b>	Rs 63.22 Lakhs
<b>Project Start Date and End Date</b>	14.10.2015 and 25.06.2016

### Data Analysis

The BEL Pachkula Unit constructed 8 toilets in the financial years 2014-15 and 2015-16 in two Government schools. Table 4.36 depicts the gender distribution, social status and the teacher's strength. There are 703 students in both schools of which 358 are boys and 345 are girls. Around 22% percent of the students belong to SC community and 10% of students belong to OBC communities, while rest are in the general category. There are 34 teachers among whom 18 teachers are female and 16 are male. Both the schools are imparting senior secondary education from class VI to XII.

**Table-4.36: Gender Distribution, Social Status, and Teacher's Strength**

Name of the School	Students			Social Status				Teachers' Strength		
	Boys	Girls	Total	ST	SC	OBC	General	Male	Female	Total
Government senior secondary school Mandhana, Block Morni Hills	181	182	363	0	41	0	322	8	10	18
G.S.S.S Hangola (PKL)	177	163	340	0	111	73	156	8	8	16

The Table-4.37 shows the comparison of student strength in previous year (2020-21) and current year (2021-22). The columns show the student strength before construction of toilets by BEL is 345 in Mandhana and 313 in Hangola. It is observed that there is an increase of 5% students' strength in Mandhana and 9% strength in Hangola after the construction of toilets by BEL.

**Table-4.37: Comparison of Student Strength**

S. No.	Name of the School	Students' Strength - Current Year (2021-22)			Students' Strength - Previous Year (2020-21)		
		Boys	Girls	Total	Boys	Girls	Total
1	Government senior secondary school Mandhana, Block Morni Hills	181	182	363	171	174	345
2	G.S.S.S Hangola (PKL)	177	163	340	161	152	313

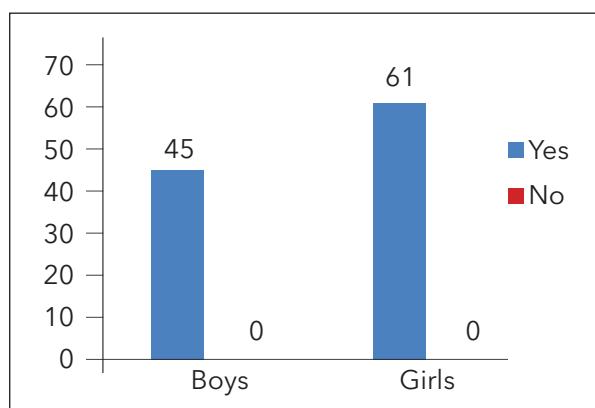
### Awareness on the Newly Constructed Toilets

Chart-4.43 and 4.44 depict the awareness created among the students on the toilets constructed by BEL and sessions conducted towards the cleanliness. Total 106 schoolchildren (45 boys and 61 girls) from both schools were aware about BEL constructed school toilets and being fully

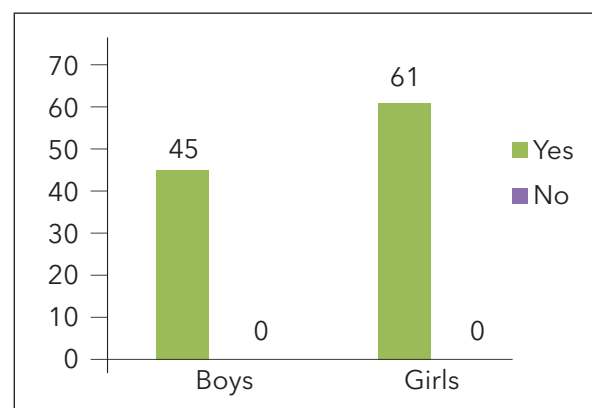


utilized by them. Students from both the schools informed that schools are regularly conducting best practices sessions and are explaining the students on how to use school toilets.

**Chart-4.43: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.44: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



### Operations and Maintenance

The toilets constructed by BEL are available for use in the respective locations. BEL Panchkula unit constructed 8 toilets in two schools. The data from the questionnaires revealed that all the toilets were cleaned everyday twice. GSSS in Hangola allocates Rs. 1000/- for maintenance of school toilets while other school GSSS Mandhna did not allocate any specific budget for maintenance of school toilets. However, School teachers collected their pocket money to utilize for toilet maintenance. The provision of running water is available in both the schools. Table 4.38 details the information on the operation and maintenance of toilets in both the schools. The water is sufficiently available with overhead tank for all the constructed toilets. Sufficient facilities are available in school toilets and various stakeholders' (students, teachers, parents, villagers/citizens, public representatives) expressed satisfaction about the BEL constructed school toilets, regular maintenance, and facilities provided to schoolchildren in using school toilets by schools.

**Table-4.38: Operations and Maintenance**

Name of the School	Are the Toilets Cleaned Everyday	How Many Staff Members are There to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget for Maintenance of School Toilets	Availability of Water for Toilets	Toilets are Having Running Water Provision Through Overhead Tank	Source of Running Water for Overhead Tank
Government Senior Secondary School Mandhna, Block Morni Hills	Yes	Hired temporary	Twice	No budget allocated paid by staff collection	Yes	Yes	Public tap water
G.S.S.S Hangola (PKL)	Yes	Hired temporary	Twice	1000/-per month	Yes	Yes	Public tap water

### Students Satisfaction Levels

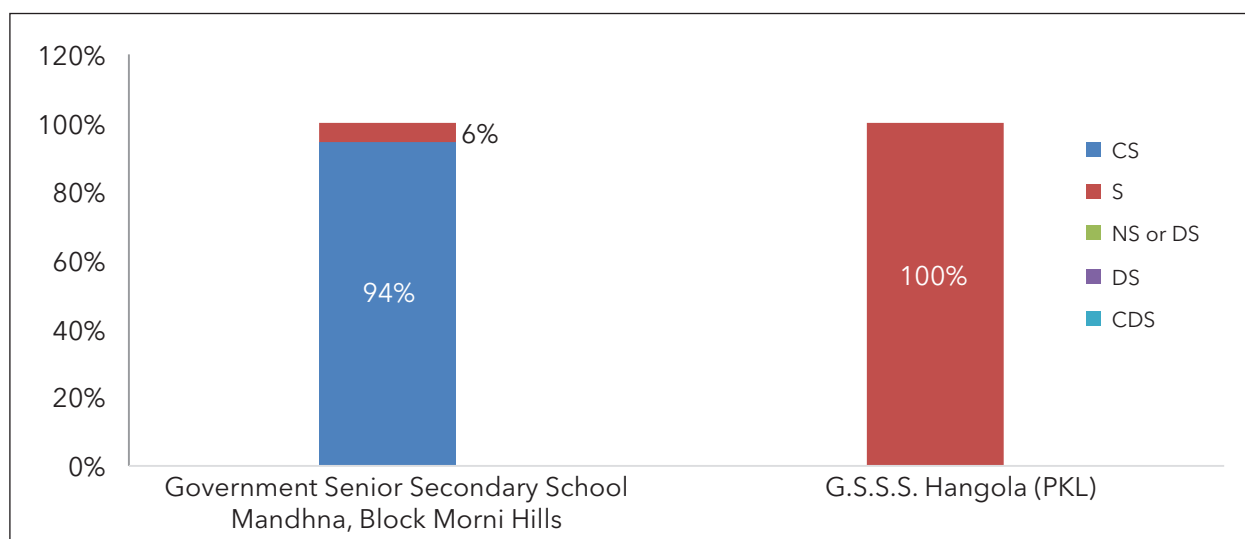
A satisfaction survey is a study that measures a person's perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to

measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised various questions including the construction of toilets, availability of running water in the toilets, safety, and security, availability of electricity in the toilets and students perception of cleanliness.

To understand the utility of the toilets, student’s satisfaction questionnaire has been circulated to know the level of satisfaction on the BEL constructed toilets. Chart-3 depicts the level of satisfaction among students in two schools.

A total of 106 surveyed schoolchildren including boys and girls from both schools informed that they were satisfied with the way BEL constructed school toilets and developed the facilities in their school toilets. While all are satisfied they vary in degree of satisfaction levels from “completely satisfied” to “satisfied”, but 100% children are satisfied with BEL toilet facilities detailed in Chart-4.45. The student’s satisfaction with the availability of running water in the toilets constructed by BEL is mentioned in Chart-4.46. 100% surveyed students from both schools were satisfied with the availability of running water in school toilets.

**Chart-4.45 Student’s Satisfaction with the Toilets**



**Chart-4.46: Availability of Running Water**

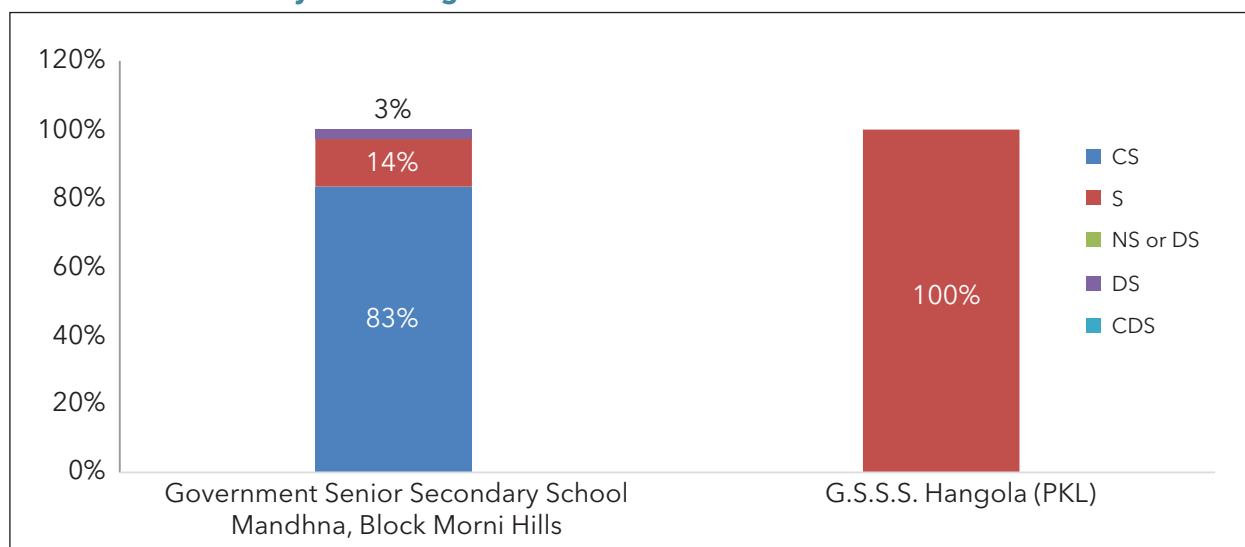
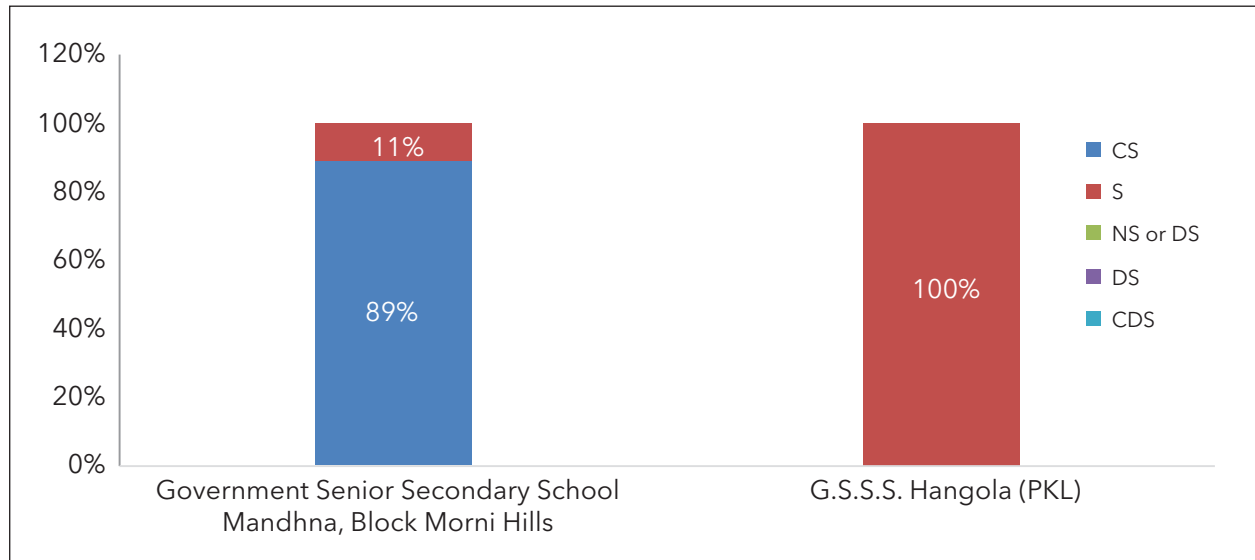
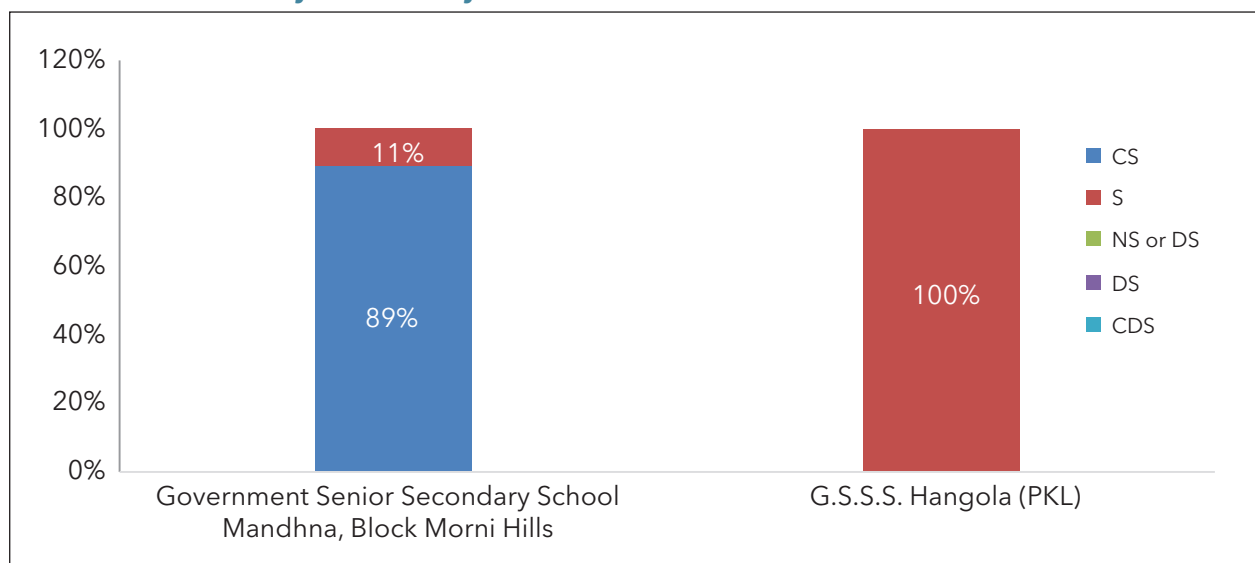


Chart-4.47 discloses the student’s opinion regarding safety and security at the toilets. The students from both the schools have expressed high degree of complete satisfaction regarding safety and security at the toilets. Chart-4.48 shows the student’s reaction regarding availability of electricity in toilets. Again, all surveyed students from both the schools expressed their complete satisfaction on availability of electricity in toilet locations.

**Chart-4.47: Safety and Security**



**Chart-4.48: Availability of Electricity in the Toilets**



## Impact Analysis

### Overall Impact

The project has been highly impactful in the 2 schools where it was implemented.

- The project has impacted in improving the admission of boys and girls and there is an increase of 5% students’ strength in Mandhana and 9% strength in Hangola compared to previous year.
- The school dropouts’ numbers have reduced. Students who were often sick are now being regular to classes.

## Impact Analysis

The project's impact is analyzed by studying the relevance, utility, operation & maintenance, effectiveness and Impact aspects. The objective of the construction of school toilets and urinals at selected Government schools is under jurisdiction of BEL Panchakula Unit was to strengthen toilets' facilities in selected government schools and make them open defecation free places .This project also aligned with Government of India's prestigious project "Swachh Vidyalaya Abhiyan". The BEL-Panchakula unit achieved project objective after construction of schools' toilets in these two places. Most stakeholders like students, teachers, parents, villagers/ citizens, education department officials, public representatives were satisfied on the way BEL constructed/renovated school toilets; running water facility, facilities in school toilets, students' toilet usage, cleaning and maintenance process, awareness on how to use school toilets etc. There was a positive improvement in school children attendance, health, and education levels. The table presented below details the various impact parameters studied along with the observations.

## Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	BEL initiated this project at selected schools under their project unit Panchakula. The project strengthened the Government school toilets system and provided sufficient toilet facilities for government school children in selected 2 schools of BEL-Panchakula. This project also created awareness among school children about good hand wash habits, clean drinking water, hygiene and good environment practices
2	Utility	<p>BEL constructed toilets and urinals for both boys and girls at selected 2 government schools in Panchakula unit are fully functional and are being effectively used by both boys and girls which was also observed during IPE's Team Visit to Panchkuala</p> <p>2) All 703 students from both the schools in Panchakula are utilizing BEL constructed/renovated school toilets. Students' toilet usage percentage is 100%.</p> <p>BEL toilets are more efficient in delivering the desired outcome - providing good sanitation/toilet facilities to school children. In addition, toilets usage has improved due to sufficient facilities available at toilet locations. BEL has provided proper electrification, running water provision, separate toilets, and urinals for both boys and girl children. Toilets were being constructed with adequate space and proper engineering designs by following proper civil structures, facilitating proper ventilation and lighting in the toilets.</p> <p>Most of the toilets were effectively put in use and the students were actively using of the facility.</p> <ul style="list-style-type: none"> <li>• 100% of the toilets were functional.</li> <li>• Water resources and plumbing facilities were well connected to school toilets.</li> <li>• The disposable facilities of these toilets were well in place and hygienically maintained.</li> <li>• School authorities followed proper hygiene standards in maintaining toilets and implemented best practices for using of school toilets.</li> </ul>

S. No.	Impact Parameter	Observation
3	Operation & Maintenance	Sufficient water supply and hand wash facilities are available at BEL constructed/ renovated school toilets in 2 schools of the Panchakula unit. Running water provision was given to all BEL constructed school toilets. All schools deployed toilet cleaning personnel temporarily. Only one school allocates Rs. 1000/- budget for maintenance of school toilets. while other school utilizes the temporarily collected fund by school teachers, which was drawback for schools to allocate sufficient budget for purchasing sanitary material, paying salaries to hired cleaning personnel, repairing of broken taps, pipelines, tiles, doors, windows and other physical infrastructure at school toilets All schools cleaned the toilets twice a day. Most school toilets are well connected with water through the good plumbing work.
4	Effectiveness	<p>The toilet design has many value added features which are not seen in other constructed toilets</p> <p>Both the schools conducted classes on good health habits and cleanliness. During all these operation and maintenance initiatives, all schools implemented good sanitation practices and hand wash habits, enhancing children's use of school toilets. Schools created awareness among the children about sanitation and good health habits. Schools also trained schoolchildren on hand-washing habits, keeping the toilet surroundings clean, and using the toilet facility. These programs helped children improve their education and health levels, which showed positive feedback in the children's satisfaction level survey conducted by the IPE team.</p> <p><b>Increase in student enrolments:</b> there was slight increase in student enrolment and also positively impacted school children attendance, education and health levels as found in IPE team field visit survey.</p> <p><b>Prudent utilization of the facility provided.</b> 100 % of schools' strength is utilizing BEL constructed school toilet facility due to sufficient facilities available in toilets. They are</p> <ol style="list-style-type: none"> <li>1) Running water provision</li> <li>2) Separate toilets and urinals are available for school children</li> <li>3) Adequate privacy is available for girl children</li> <li>4) Easy access to school children</li> <li>5) cleanliness and proper maintenance by school authorities</li> </ol>
5	<b>Impact</b>	<p><b>Tangible Benefits</b> The schools have constructed sufficient number of toilets for boys and girls.</p> <p><b>Intangible Benefits</b></p> <ol style="list-style-type: none"> <li>1) Convenience</li> <li>2) Closer latrine access and improved latrine population ratio</li> <li>3) Safety and security for schoolchildren to access the toilets</li> <li>4) Privacy during defecation</li> <li>5) Reduce the incidence of infectious disease</li> <li>6) Improved the schoolchildren health</li> </ol> <p>The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village. Most school declared as open defecation free school places.</p>
6	Sustainability	All these best practices followed by schools help them make the project sustainable.

## Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

## General Observations

The following are some of the important observations from the project

- Total 18 surveyed teachers from both schools were satisfied with change in attitude and civic sense orientation among students after BEL constructed toilets. BEL constructed school toilets provided proper facilities to children in accessing toilet facilities and school authorities also followed best practices to provide better sanitation facilities to their children. BEL provided toilet facilities and schools better sanitation practices helped in changing students' attitude and civic sense towards better sanitation practices at schools, families and communities. (Table-4.39)
- The newly constructed toilets by BEL have helped the schools to promote social behavior among students and found that this has changed their perception towards utility of toilets, cleanliness, good habits, etc. (Table-4.39)
- Out of 18 surveyed teachers from two schools, 17 teachers were satisfied with reduction in children absenteeism and schools drop out ratios (Table-4.40)

## Overall Investigator Observations about the Toilets in Two Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	Daily cleaned the toilet
Scavenger	Deployed by the school management in all the cases
Hand Wash Habits	School teachers imparted children on hand wash habits
School declared as open defecation free place	Yes
Separate urinals and toilets	Yes
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available





## Teacher Satisfaction Levels in Number

**Table-4.39: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

Name of the School	Change in Attitude and Civic Sense Orientation Among Students		Development of Social Behavior of the Students	
	Completely Satisfied	Satisfied	Completely Satisfied	Satisfied
Government Senior Secondary School Mandhna, Block Morni Hills	10	0	9	1
G.S.S.S Hangola (PKL)	4	4	0	8
Total	14	4	9	9

**Table-4.40: Change in School Dropout Ratio and Reduced Absenteeism**

Name of the School	Change in School Dropout Ratio			Reduction in School Absenteeism		
	Completely Satisfied	Satisfied	Neither Satisfied nor Dis-satisfied	Completely Satisfied	Satisfied	Neither Satisfied nor Dis-satisfied
Government Senior Secondary School Mandhna, Block Morni Hills	4	5	1	7	2	1
G.S.S.S Hangola (PKL)	7	1	0	8	0	0

## Glimpses of Toilet Construction by BEL Panchkula Unit



## IPE Team along with BEL Officials



## 4.9 BEL Pune Unit

BEL Pune Unit located at NDA Road, Pashan, Pune 411 021 was established in 1979. The land area of BEL Pune is 27 acres. Total manpower of the unit is 238. It has five different products as follows:

- Laser Systems - Handheld Laser Range Finders, High Repetition Laser Range finders, Laser Target Designators, Multi-Purpose Reflex Weapon Sight, Chemical Agent Monitor.
- Energy Storage Products - Ni Cd Batteries, Li-SO<sub>2</sub> Batteries, Li-Ion Batteries, EV Batteries
- Security Systems - X-Ray Baggage Inspection System, X-Ray Mail Inspection Scanner
- Combat Systems - Armored Engineer Reconnaissance Vehicle, Nuclear Biological Chemical Recce Vehicle, Remotely Operated Vehicle
- Electronics Fuses and Ammunition - Electronics Fuses for Artillery

BEL Pune is actively engaged in conducting various CSR projects in its region. During the year 2014-15, BEL Pune has constructed of toilets in 4 Government Schools under Swachh Vidyalaya Campaign. Total budget allocated was Rs. 52.50 lac. Project completed in 2016.

<b>BEL Pune</b>	Swachh Vidyalaya Abhiyan
<b>Activity</b>	Construction of Toilets at Government primary ZP schools
<b>Total Budget Sanctioned</b>	Rs 52.50 Lakhs
<b>Budget Utilised</b>	Rs 52.50 Lakhs
<b>Project Objective</b>	Providing clean and congenial atmosphere at educational institutions
<b>Project Addresses Area</b>	Improving infrastructure facilities at school Protection of environment

### Data Analysis

The BEL Pune unit had constructed 22 toilets in the year 2014-15 in four government schools in Pune. Based on the survey conducted by the evaluation team the observations are made.

### Gender Distribution, Social Status and Teacher's Strength

Table 4.41 depicts the gender distribution of the students, social status and the teachers' strength of the four schools where BEL has constructed toilets. The number of students ranged from 27 to 211 in all the four schools. Around 42 percent of the students belong to SC/ST/OBC community. There are 20 teachers among whom 10 teachers are female. Out of four schools, two schools are imparting primary education from class I to IV, while other two schools have upper secondary classes from I to VII.

**Table-4.41: Gender Distribution, Social Status and Teacher's Strength**

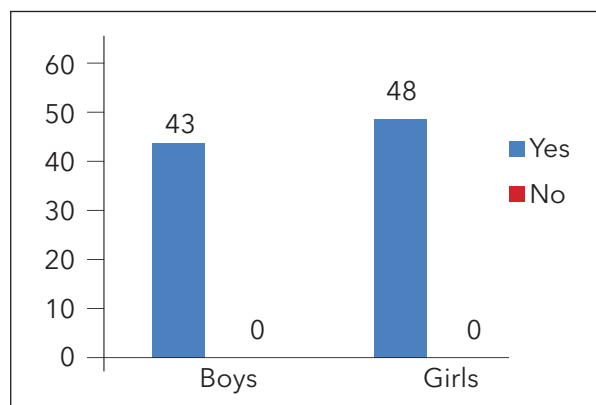
Name of the School	Students			Social Status				Total	Teachers' Strength		
	Boys	Girls	Total	SC	ST	OBC	General		M	F	Total
Zilla Parishad School NareshwarVasti	8	19	27	0	3	8	16	27	1	1	2
Zilla Parishad School Chakan Road	35	28	63	3	7	13	40	63	1	1	2
Zilla Parishad School Jategaon Khurd	103	95	198	59	22	23	94	198	3	4	7
Zilla Parishad School Karandi	107	104	211	23	34	15	139	211	5	4	9



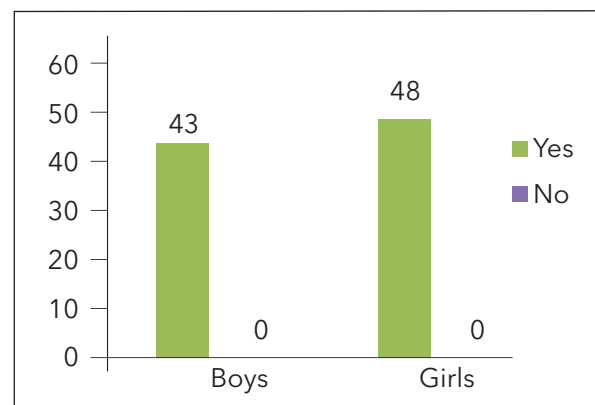
## Awareness on the Newly Constructed Toilets

Chart-4.49 depicts that all of the 43 boys and 48 girls in the four schools were aware of the construction of the toilets by BEL. Chart-4.50 reveals that all of the boys and girls were aware of the sessions conducted by the school on best practices. It was reported that the schools regularly conduct classes on good health habits and cleanliness at least once a week.

**Chart-4.49: Are you Aware of the Toilets Constructed by BEL**



**Chart-4.50: Has the School Conducted any Best Practices Sessions on How to Use School Toilets**



## Tudent's Strength Before and After Construction of the Toilets by BEL

The Table-4.42 shows the comparison of student strength in previous year (before construction of toilets) and current year (after construction of toilet). From the table it is observed that the student strength before construction of toilets by BEL was 506 while student strength in the current year is 499. It is observed that in two schools the numbers of students increased, and in the rest two of the schools the total number of students has decreased. However, there is minor decrease in the enrollment figures due to the intervention.

**Table-4.42: Comparison of Student Strength**

S. No.	Name of the School	Students' Strength - Current Year			Students' Strength - Previous Year		
		Boys	Girls	Total	Boys	Girls	Total
1	Zilla Parishad School Nareshwar Vasti	8	19	27	7	18	25
2	Zilla Parishad School Chakan Road	35	28	63	24	25	49
3	Zilla Parishad School Jategaon Khurd	103	95	198	100	115	215
4	Zilla Parishad School Karandi	107	104	211	122	95	217

## Operations and Maintenance

Table 4.43 details the information on the operation and maintenance of toilets in all the four schools. All the toilets constructed by BEL are available for use in all the locations. BEL Pune unit has constructed 22 toilets constructed in four schools for girls. The data from the questionnaires reveals that in all schools the toilets were cleaned regularly. Neither of the schools has allocated any budget for maintenance of the toilets. The provision of running water is available in all the four schools. The water is sufficiently available with overhead tank for all the constructed toilets.

**Table-4.43: Operations and Maintenance**

S. No.	Name of the School	Are the Toilets Cleaned Everyday	How Many Staff Members are there to Clean the Toilets	Frequency of Toilets Cleaning in A Day	School Allocated Total Budget for Maintenance of School Toilets in Rs	Availability of Water for Toilets	Toilets are Having Running Water Provision Through Overhead Tank	If Yes, Source of Running Water for Overhead Tank
1	Zilla Parishad School Nareshwar Vasti	1		1		1	1	3
2	Zilla Parishad School Chakan Road	1		1		1	1	1
3	Zilla Parishad School Jategaon Khurd	1		1		1	1	1
4	Zilla Parishad School Karandi	1		1		1	1	1

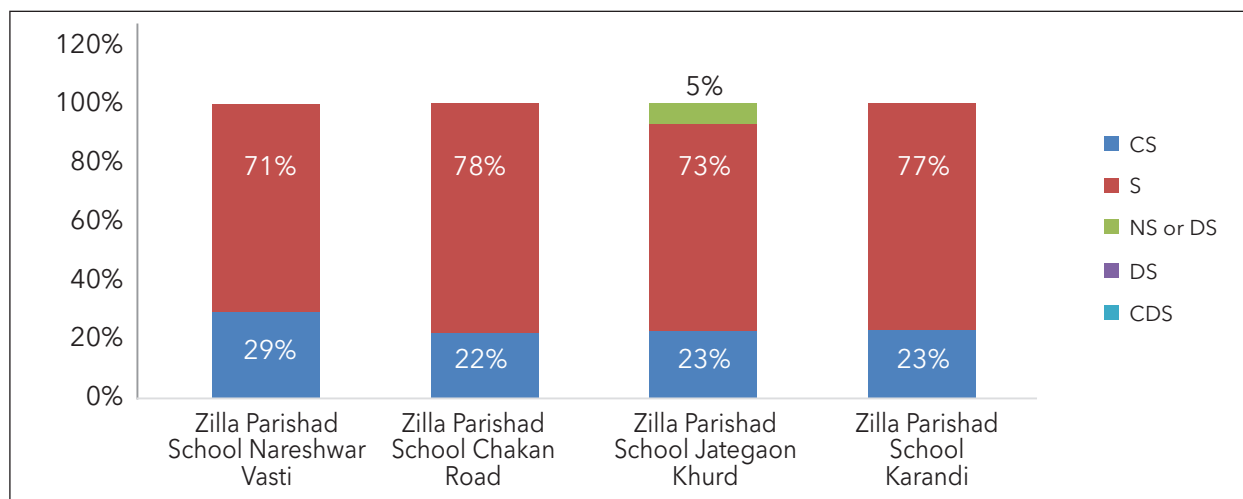
### Students' Satisfaction Levels

A satisfaction survey is a study that measures a person's perceived satisfaction with a product or service. A completed survey provides answers for a list of questions that are asked in connection with the product or service. The information from students and teachers was collected to measure the level of satisfaction on the construction and utility of the BEL constructed toilets. The survey has raised various questions including the construction of toilets, availability of running water in the toilets, safety and security, availability of electricity in the toilets and students perception of cleanliness.

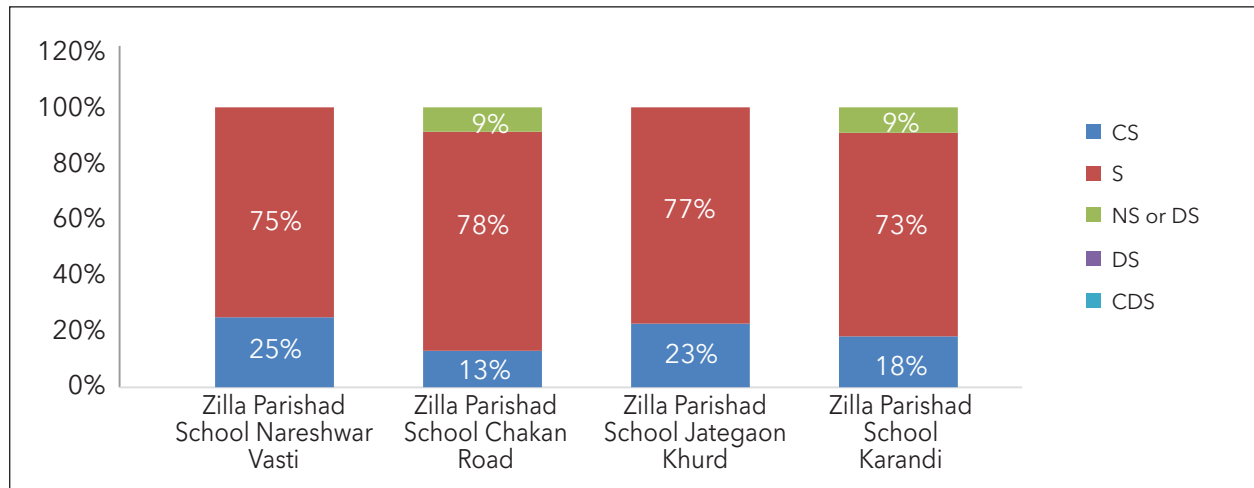
To understand the utility of the toilets, student's satisfaction questionnaire has been circulated to know the level of satisfaction on the BEL constructed toilets. Chart-4.51 depicts the level of satisfaction among students in all the four schools. 5% of the students from ZPHS Jategaon Khurd expressed neither satisfaction nor dissatisfaction at the toilets created by BEL. The rest of the students are satisfied with the toilets created by BEL.

The student's satisfaction with the availability of running water in the toilets constructed by BEL is mentioned in Chart-4.52. Mostly the students in all the schools are satisfied with the availability of running water. However 9% of the students from ZPS Karandi and ZPS Chakan road have expressed neither satisfaction nor dissatisfaction with the availability of running water.

**Chart-4.51: Student's Satisfaction with the Toilets**

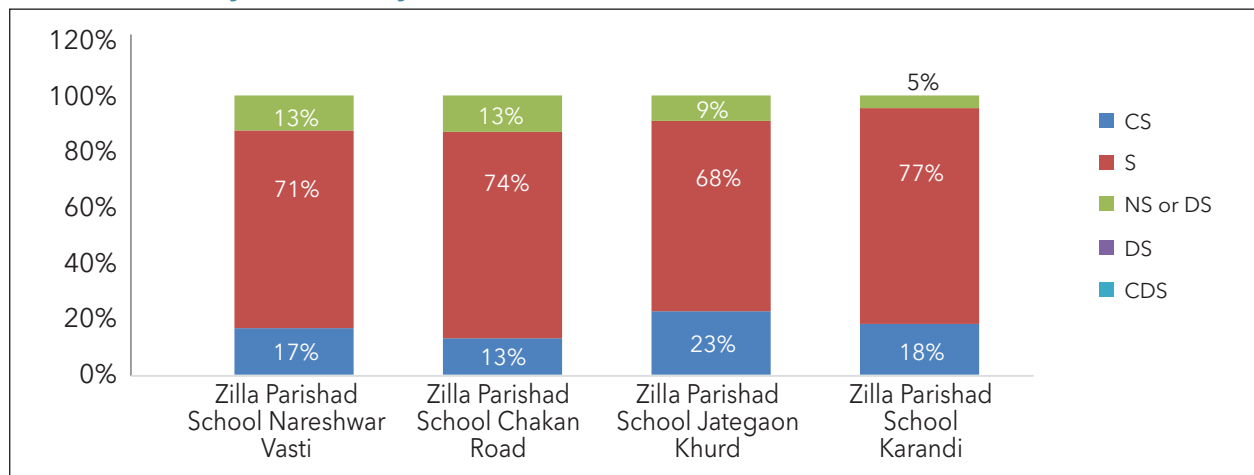


**Chart-4.52: Availability of Running Water**

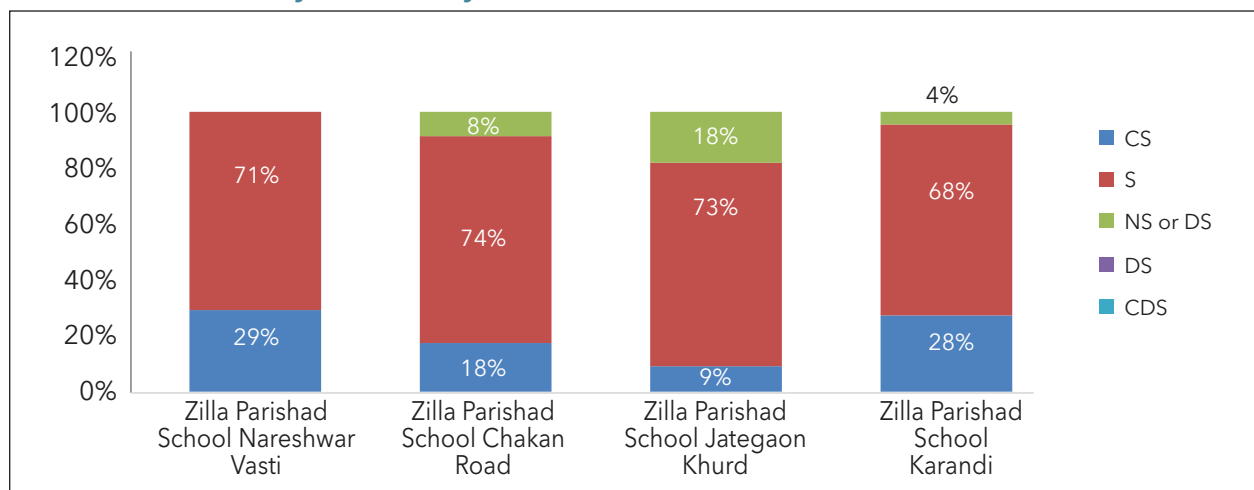


In all the schools most of the students are satisfied with the safety and security of the toilets with doors and locks. However in all these schools 3% to 13 % of the students? have expressed neither satisfaction nor dissatisfaction for safety and security at the toilets.

**Chart-4.53: Safety and Security**



**Chart-4.54: Availability of Electricity in the Toilets**



In all the schools most of the students are satisfied with the availability of electricity in the toilets. The students at ZPS Nareshwar Vasti, are completely satisfied with the availability of electricity in the toilets. In rest of schools 4.99% to 18.18% of students have expressed neither satisfaction nor dissatisfaction with the availability of electricity in the toilets.

## Impact Analysis

### Overall Impact

The project has been highly impactful in the 4 schools where it was implemented.

- The project has had mixed impact in improving the admission of boys and girls after the construction of toilets by BEL. Out of the total 4 schools 2 schools had increase in the admission and the rest two had decrease in admissions but the reduction is only a marginal.
- The project has improved the goodwill in the local community and this has helped in improving the brand image of BEL.
- By constructing toilets, BEL has supported the government’s SVA initiative.
- Parents and other stakeholders also expressed complete satisfaction of the facility created by BEL and also encouraged children to go to school regularly.

## Impact Analysis

The project’s impact is analyzed by studying the relevance, utility, operation and maintenance, effectiveness, Impact aspects. The objective of the construction of school toilets and urinals at selected Government schools under jurisdiction of BEL Pune unit was to strengthen toilets facilities and make them open defecation free places. The study suggests that BEL-Pune unit has achieved this project objective after construction / renovation of schools’ toilets in these selected units. Most stakeholders students, teachers and parents were satisfied about the way BEL constructed / renovated school toilets, provided running water facility, facilities in school toilets, students’ toilet usage, cleaning and maintenance process, awareness on how to use school toilets etc. There was a positive improvement in school children attitude towards cleanliness, their attendance, health, and awareness levels. The table presented below details various impact parameters studied along with the observations.

## Impact Parameters

S. No.	Impact Parameter	Observation
1	Relevance	Most schoolchildren studying in government schools belong to marginalized communities. Earlier lack of toilets, drinking water, and other facilities in schools adversely impacted schoolchildren attendance, education, and health, especially among girl children. To overcome these problems in government schools, the Government of India carved out the prestigious project “Swachh Vidyalaya Abhiyan” to provide toilets and urinals in government schools across the country. Along similar lines, BEL India Limited initiated this project at selected schools under their project unit Pune. The project strengthened the Government school toilets system and provided sufficient toilet facilities for government school children in selected 4 schools. This project also created awareness among school children about good hand wash habits, clean drinking water, hygiene and good environment practices



S. No.	Impact Parameter	Observation
2	Utility	<p>1) BEL constructed / renovated toilets and urinals for both boys and girls children at selected 4 government schools in Pune unit are fully functional and are being utilized by both boys.</p> <p>2) All the 499 students (253 boys + 246 girls) are utilizing BEL constructed / renovated school toilets.</p> <p>BEL toilets are more efficient in delivering the desired outcome – providing good sanitation / toilet facilities to school children. In addition, toilets usage has improved due to sufficient facilities available at toilet locations. BEL has provided proper electrification, running water provision, separate toilets, and urinals for both boys and girl children. Toilets were being constructed in adequate space with proper engineering drawings and followed proper civil structures, facilitating proper ventilation, lighting to schoolchildren. All the toilets were effectively put in use and the students are happily using the facility.</p> <ul style="list-style-type: none"> <li>- Water resources and plumbing facilities were well connected to school toilets.</li> <li>- The disposable facilities of these toilets were well in place and hygienically maintained. School authorities followed proper hygiene standards in maintaining toilets and implemented best practices for using of school toilets.</li> </ul>
3	Operation & Maintenance	<p>Sufficient water supply and hand wash facilities are available at BEL constructed / renovated school toilets in 4 schools of the Pune unit. Running water provision was given to all BEL constructed school toilets. None of the schools deployed specific budget for maintenance of school toilets. This is a major drawback resulting in schools not allocating sufficient budget for purchasing sanitary material, paying salaries to hired cleaning personnel, repairing of broken taps, pipelines, tiles, doors, windows and other physical infrastructure at school toilets, etc. However, it was observed that the toilets are clean and were maintained properly in the schools. All schools clean the toilets once every day. All school toilets are well connected with water through the plumbing work. All toilets are functioning properly even after six years of construction.</p>
4	Effectiveness	<p>All four schools conducted classes on good health habits and cleanliness. During all these operation and maintenance initiatives, all schools implemented good sanitation practices and hand wash habits, enhancing children’s use of school toilets.</p> <p>All four schools created awareness among the children about sanitation and good health habits. Schools also trained schoolchildren on hand-washing habits, keeping the toilet surroundings clean, and using the toilet facility. These programs helped children improve their education and health levels, which showed positive feedback in the children’s satisfaction level survey conducted by the IPE team.</p> <p><b>Increase in student enrolments:</b> While there was only a marginal decrease in student enrollment in the schools, the survey confirmed that there was mixed impact in terms of improved attendance, awareness about health and hygiene etc. in all the locations.</p> <p><b>Prudent utilization of the facility provided.</b></p> <p>100 % of schools’ strength is utilizing BEL constructed school toilet facility as sufficient facilities are available in toilets such as:</p>

S. No.	Impact Parameter	Observation
		1) Running water provision 2) Hand wash facilities 3) Separate toilets and urinals are available for school children 4) Adequate privacy is available for girl children 5) Adequate light and ventilation 6) Easy access to schoolchildren 7) cleanliness and proper maintenance by school authorities
5	<b>Impact</b>	<b>Tangible Benefits</b> Increased number of school toilets and urinals for students <b>Intangible Benefits</b> 1) Close to the classrooms and it is convenient 2) Closer latrine access & improved per latrine population ratio 3) Safety and security for schoolchildren to access the toilets 4) Privacy during defecation 5) Reduce the incidence of infectious disease 6) Improved the schoolchildren health The students have also educated their family about the importance of hygienic conditions and use of toilets and subsequently this message has made an impact on the other citizens of the village. The objective of the Swachh Vidyalaya Abhiyan has been successful by large and the social transformation in terms of hygienic standards has increased within our society. Most schools are declared as open defecation free school places.
6	Sustainability	Toilets are being maintained reasonably well by schools even six years after the toilets came into existence. Most schools ensure the availability of running water, allocate a proper budget for regular maintenance and operation of toilets, and provide best practices for schoolchildren to keep toilet surroundings clean and use school toilets properly. All these best practices followed by schools help them make the project sustainable.

### Impact Matrix

Impact Parameters	1 Very Low	2 Low	3 Moderate	4 High	5 Very High
Relevance					
Utility					
Operation and Maintenance					
Effectiveness					
Tangible and Intangible					
Sustainability					

### General Observations

The following are some of the important observations from the project

- Students have reported satisfaction in their attitude and civic sense. All the four schools have displayed complete satisfaction in attitude and civic sense among students
- The newly constructed toilets by BEL have helped the schools to promote social behavior among students and found that this has changed their perception towards utility of toilets, cleanliness, good habits, etc.
- The students from all four schools have reported satisfaction about the toilets and only a small percentage of students reported neither satisfied nor dissatisfied about the toilets, availability of electricity, water and overall maintenance.





- The opinion of teachers in all the four schools reported satisfaction with the change in school dropout ratio after the construction of toilets by BEL, reduction in school absenteeism after the construction of toilets by BEL.
- The stakeholders in all four schools have reported, satisfaction at the cleanliness of the village / town after the construction of toilets, awareness of healthy habits among students, students attitude towards overall 'Swachhta' and management of the toilets by the school

### Overall Investigator Observations About the Toilets in Nine Schools

Name of the Parameters	Investigator Observation
Toilet Cleaning	Daily clean the toilet
Scavenger	Deployed by the school management in all the cases
Hand Wash Habits	School teachers imparted education children on hand wash habits.
School declared as open defecation free place.	Yes.
Separate urinals and toilets	Yes.
Easy Access	Yes
Adequate light and ventilation	Yes
Availability of water	Yes.
Running water provision	Yes, all the places overhead tanks are constructed
Hand wash facility is available	Yes
Soap	Available
Toilets clean and functional	Yes
Trash bins are available at toilet locations	Available but insufficient
Sanitary materials and brooms	Available
Buckets	Available
Safety and security of toilets	Available
Signage	Available
Logo and branding of BEL	Available

**Table-4.44: Change in Attitude and Civic Sense Orientation Among Students and Development of Social Behavior of Students**

Name of the School	Change in Attitude and Civic Sense Orientation Among Students in Number	Development of Social Behavior of the Students in Number
	Completely Satisfied	Completely Satisfied
Zilla Parishad School Nareshwar Vasti	2	2
Zilla Parishad School Chakan Road	2	2
Zilla Parishad School Jategaon Khurd	2	2
Zilla Parishad School Karandi	2	2

**Table-4.45: Change in School Dropout Ration and Reduced Absenteeism**

Name of the School	Change in School Dropout Ratio in Number	Reduction in School Absenteeism in Number
	Completely Satisfied	Completely Satisfied
Zilla Parishad School Nareshwar Vasti	2	2
Zilla Parishad School Chakan Road	2	2
Zilla Parishad School Jategaon Khurd	2	2
Zilla Parishad School Karandi	2	2

## Glimpses of Toilet Construction by BEL Pune Unit



Zilla Parishad School, Nareshwar Vasti, Koregaon Bhima  
Tal - Shirur, Dist - Pune



Zilla Parishad School, Chakan Road, Shikrapur  
Tal - Shirur, Dist - Pune



Zilla Parishad School, Jategaon Khurd, Tal - Shirur, Dist - Pune



Zilla Parishad School, Karandi, Tal - Shirur, Dist - Pune

# OBSERVATIONS AND CONCLUSIONS

The CSR interventions towards the construction of toilets have focused on creating a sustainable impact on communities. The main aim of the project is to provide a clean and congenial atmosphere at the selected schools resulting in improved infrastructure facilities at the schools. The project has been implemented by all the nine units of BEL across the country in 99 schools and three public places. The total number of toilets constructed are 330 among which 326 toilets are fully functional. BEL has supported the schools in the construction of toilets/ additional toilets with an aim to improve students' health, reduce morbidity and improve attendances. Better attendance helped to attract more students to school thereby resulting in improved enrollment. Improved school enrollment resulted in better student performance.

The project has been successful as the school authorities, headmasters / headmistresses, teachers, students, parents, and others have expressed high levels of satisfaction. Sufficient running water and other infrastructural needs have been taken care of in majority of the schools and public toilets and this has resulted in better satisfaction of all the stakeholders.

To execute all components mentioned in the work order, it is necessary to structure a proper monitoring mechanism for corrective measures for all the project execution levels, estimate the work progress at each level, and assess the implementing agency work quality and standards. BEL unit in charges have taken care in proper implementation, execution and handing over of the projects.

The major key elements that made the project successful are the relevance of the project, provision of running water facility, deployment of people for regular maintenance, provision of safety and security for toilets, provision of sanitary kit, inculcating good health habits in children, meeting the maintenance expenses from the school budget, etc.

The project has also fulfilled the government mission on Swachh Vidyalaya intervention by providing physical facilities, i.e. construction of toilets with provisioning of water as input, which is expected to result in a 'functional' toilet as output.

## Challenges

Companies need to carefully think about the model to be used to provide the facility. Any CSR project should consider 'sustainability' as a key factor for getting the desired results of the project objective. To achieve this, companies should:

- Before implementation, identify the key stakeholders and resources, ask for clear and transparent reports from implementing agency at all levels of project implementation, form a committee comprising of various stakeholders' groups and ensure that they are

involved at the time of project execution period and finally transfer the responsibility of toilets' maintenance to them after handingover the project. This will ensure that the project is sustainable.

- The study found that many schools did not have enough funds to operate and maintain the facility in the best condition and in some cases, the school teachers also had to put in their contribution towards this effort. Care should be taken to ensure that the handing over of the project is to a body that will operate and maintain the asset in good condition with sufficient funds allotted for regular maintenance and operation.
- Branding of the company and information dissemination to students will create awareness on the contribution made by the company. For this a plaque with the name of the company together with the project details like name of the project, the total number of toilets and urinals constructed, the value of the project, project start date and end date, total number of school children benefitted from the project etc. can also be displayed, enabling visibility to the project.

### **Study Outcomes and Success of the Project**

The study was conducted in 99 schools and three public places in the vicinity of the nine BEL units spread across eight states to assess the impact of this CSR initiative of BEL i.e., 'Construction / Renovation of Toilets in Government Schools'.

It was observed that most of the toilets were effectively put to use, and the students were actively using the facility. More than 97% of the toilets were found to be fully functional with water resources and timely maintenance. The school managements were actively involved in maintaining the hygienic standards of these toilets and were also conducting necessary awareness programmes on cleanliness and good habits among the students. This resulted in transformations of students and also their family members resulting in positive social awareness among society.

Hence, we can confidently conclude that this CSR initiative of BEL has achieved its stated objective and has helped in transforming the living styles of thousands of students and other stakeholders thereby paving the way for a clean, healthy society.







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