

# Varanasi Smart City

Feb, 2019

## Project Overview



## Varanasi Smart City – An Overview and Vision

The Varanasi Smart City Limited (VSCL) in a Special Purpose Vehicle (SPV) constituted on 29.10.2016 as per directives of MoHUA, Govt. of India for is executing SMART CITY MISSION (SCM) in Varanasi.

VSCL has been entrusted to design and manage IT and Non- IT projects under Smart City Mission with prime focus for Citizen upliftment and upgrading the city infrastructure and living standards adding value to Varanasi’s core culture and Heritage with a vision –

*“To rejuvenate the oldest Indian living city of Varanasi as a great place to live and visit by conserving and showcasing its enriched heritage, culture, spirituality and traditions through innovative social and financial inclusion solutions.”*

From the vision – “Six Key Pillars” of Varanasi’s future were formulated in smart city proposal. These six pillars are -

### 1. Suramya Kashi | Area Based Development | INR 572.14 Cr.

- To rejuvenate historic temples & riverfront ghats.
- To provide worthy platform to visitors to experience & imbibe Varanasi’s inherently rich cultural heritage.
- To capitalize on Varanasi’s status under the UNESCO City of music label.

### 2. Nirmal Kashi | Area Based Development | INR 241.08 Cr.

- To rejuvenate sacred water bodies and parks.
- To provide effective and accountable solid waste management solutions.
- To increase adoption of earth friendly initiatives such as green rooftops and rain water harvesting.

### 3. Surakshit Kashi | Area Based Development | INR 15.81 Cr.

- To monitor through surveillance based on analytics to reduce violations.
- To augment emergency response services.

### 4. Samunnat Kashi | Area Based Development | INR 1209.84 Cr.

- To improve aspects of police citizen interface.
- To introduce Skill Development Centre for a “right-skilled work force.
- To promotion of local artefacts by establishing market linkages.
- To provide a platform to street vendors while decongesting streets.
- To develop a system of incentives to boost R&D and innovation.
- To implement smart technologies to enhance the lives of local boatmen & e-Rickshaw drivers
- To boost health by providing multi-purpose facilities such as hospitals, sports stadium etc. for a healthier future.

### 5. Ekikrit Kashi | Pan-City Initiative | INR 572.14 Cr.

- To provide access to transparent information and quality services for all citizens,
- To provide One-stop-shop smart card.
- To make the easy access of information on palm – Mobile app,
- To make the grievance redressal mechanism effective.

### 6. Sanyojit | Pan-City Initiative | INR 737.39 Cr.

- To create multi-modal transportation hubs with Metro and other public transport.
- To integrate traffic management system with CCTV surveillance.
- To provide multi-level smart parking in the city for reducing congestion.
- To introduce e-rickshaws for clean last mile connectivity.
- To develop waterways as an alternate mode of transport.

Together, the municipal administration of Varanasi and our residents believe each of these solutions, if successfully implemented and nurtured would go miles to unleash the true potential of our people and India’s ancient heritage.

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## Varanasi Smart City – Strategy & Approach

In line with compact area approach of Smart City Mission Statement, the strategy of Varanasi Smart City follows the identification of clustered sectors.

### 1. Strategy

#### a) Area Based Development

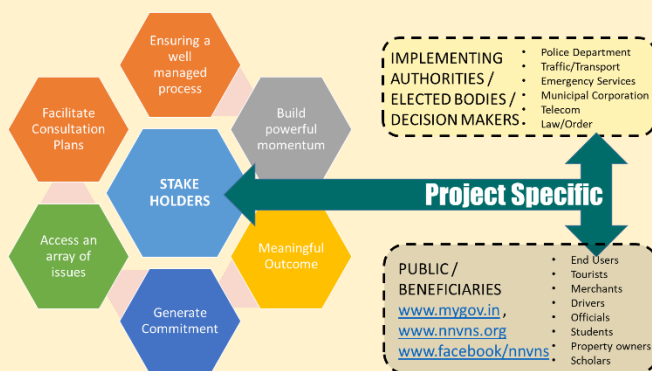
- Re-development
- Retrofitting
- Inclusive places
- Transformation
- Rejuvenation
- Rehabilitation
- Restoration
- Beautification
- Connect to Smart Solutions

#### b) Pan-City Solutions

- City wide IT Solutions
- Urban Mobility & Traffic Management
- Recycling
- Metering

### 2. Approach

- Citizen engagement is employed in conceptualizing every intervention.
- Relevant authorities/stakeholder consulted for holistic formulation of the action plan.



*Authorities/Stakeholder Consultation Process*

- Specific experts involved to study, analyze and provide solutions and accurate outcome.
- Diagnosis of the subject area by complete technology, physical, social, financial and environmental feasibilities for localized application of the designs, models and solutions.

## Smart City Projects – Under SCM

### 1. Varanasi Integrated Smart Solutions

ICT and e-Governance interventions which majorly include Command and Control Centre, Data Centre, ITMS, Surveillance through CCTV and Video analytics, Smart Parking Management, Solid Waste Management, Smart Street Lighting, Environment Monitoring, etc.



**Total Project Cost is INR 173.54 Cr. with GST.**

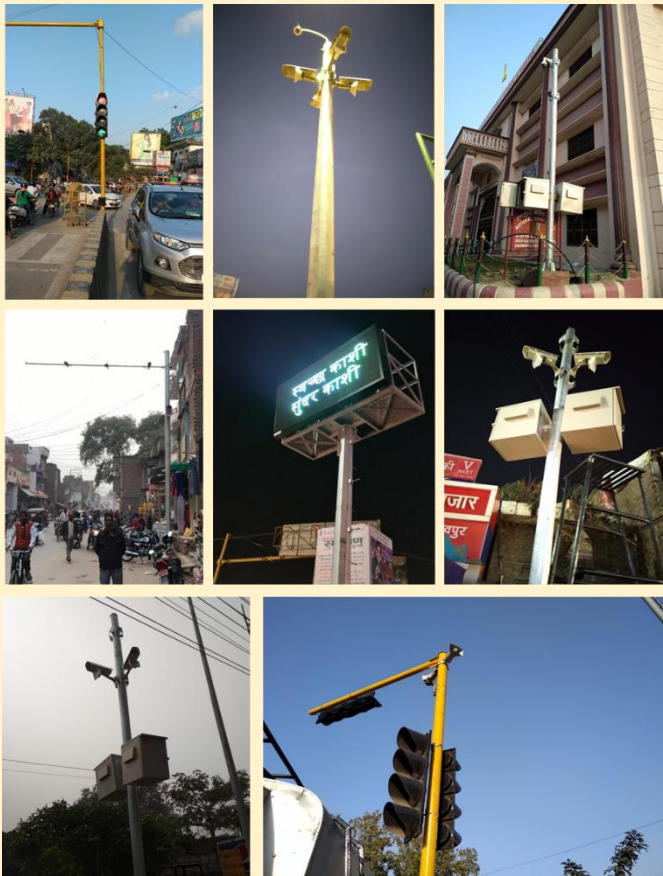
Project is completed and inaugurated by Hon'ble Prime Minister of India on 19<sup>th</sup> Feb, 2019.

#### Key Outcomes:

- Monitoring of City Surveillance
- Citizen can check availability of Parking in City
- Managed parking spaces in efficient manner
- Tracking of field attendant for picking of waste
- Smart Light reduces the power consumption
- Smart Sensors on dustbins and GPS tracker on vehicles to track the status of waste
- Monitoring of City Air pollution and take preventive actions.
- Mobile application to provide various citizen services

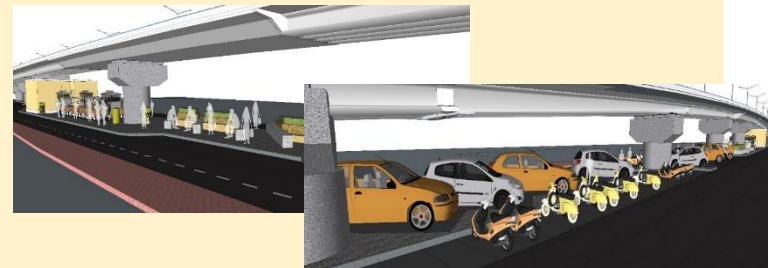
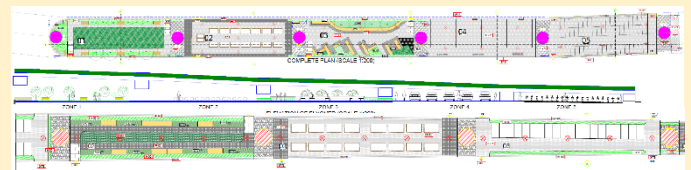


- Helpdesk for Women and old age citizens



### 3. Smart Placemaking under Pandeypur, Mahmoorganj and Chaukaghat to Andhra Pul Flyover.

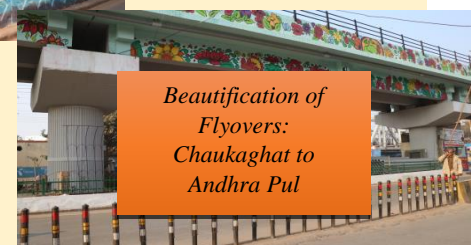
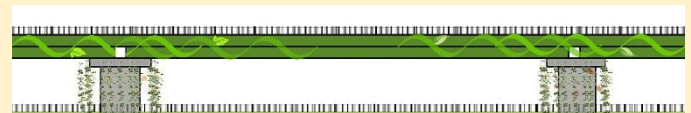
Leftover spaces /voids underneath Mahmoorganj, Pandeypur and Chaukaghat to Andhra Pul Flyover are one such type of space worth exploring, one that yields much innovation and creativity under Smart Place Making Project. The main objectives of the smart place making / Re-development projects is to transform ‘Urban Voids’ into creative venues for various community facilities and outdoors activities such as markets, public spaces, playgrounds, attractive and usable green spaces, art galleries, street vending zone, seating areas, etc.”



Proposed Plans

**Total Project Cost is INR 5.78 Cr. including GST.**

Current achieved progress: 70%



Beautification of Flyovers: Chaukaghat to Andhra Pul

### 2. Beautification of 5 over head tanks

The main objective of this project is to enhance the visual beauty of the tall landmarks that can act as – Focal points/landmark location for tourist and local while moving around the city, Give special identity to place/ neighbourhood. This project represents Varanasi culture and art at special node of tourist.

**Total Project Cost is INR 0.67 Cr. including GST.**

Current achieved progress: 100%





#### 4. Redevelopment & Landscaping of Parks

The main objective of the redevelopment & landscaping of parks is to provide recreational /green space to the residents as well as visitors. The aim is to cater the facility for both residents and tourists with a provision for differently abled children where possible, to encourage physical activity and to boost social interaction by-

- Increase access to open space and recreational areas to the citizens. of Varanasi that are safe, promote physical activity.
- Improving the green cover of the city for better environmental quality while preserving the local culture and heritage.
- Special emphasis for children & elderly-friendly components & especially abled people.

#### Important Feature of Smart Parks

- 80% landscape and 20% hardscape
- Specific area for disabled children.
- Rain water harvesting pit
- Play area/Rolling ground for Kids, Seating Area, Outdoor Gym, Jogging Path
- Geometric Pattern under OHT
- Introduction of flowering vegetation
- Adequate garbage bins, public amenities, drinking water.
- Visual enhancement of existing structure



Proposed Layout/Plan

**Total Project Cost is INR 20.46 Cr. with GST**

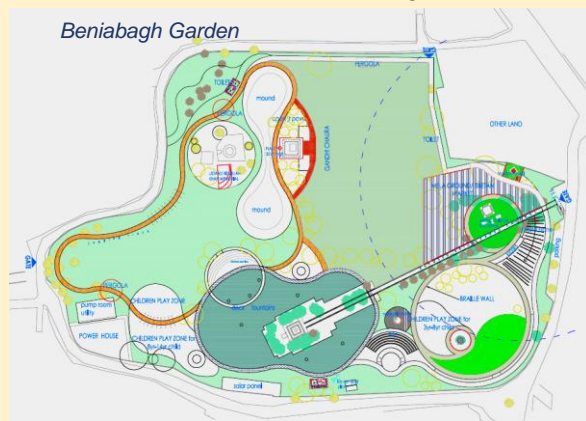
Current achieved progress: Three park completed and inaugurated by Hon'ble Prime Minister of India on 19<sup>th</sup> Feb, 2019. Works in remaining parks are ongoing and shall be completed soon.



Ravindrapuri Park



Shastri Park



Proposed Layout/Plan



## 5. Kanha Upvan (Gaushala) for Stray Cattle at Chhitauni Village

The main objective of this project is to decongest the streets from stray cattle and provide shelter for rehabilitation to the stray cattle at appropriate place identified at Chhitauni Village, Varanasi. It encompasses facilities like –

- Shelter to 450 Cattle,
- Administration and Hospital Building to pre-screen, diagnose and treat sick cattle,
- Dedicated calf and fodder shed,
- Residential quarters for staff,
- Bio-Gas Plant of 180 cum. capacity and composting chamber.
- Roof Top Solar Panels to save energy.



Proposed Layouts/Plans

**Total Project Cost is INR 11.84 Cr. with GST**

Current achieved progress: 80%



Fodder & Cattle



Admin & Hospital

## 6. Improvement and Up-gradation of 8 Road Intersections, Phase - I & II

The main objective of the project is to re-design the prominent 16 intersections of the city to facilitate the safe and efficient movements of all vehicles including heavy vehicles (buses, trucks etc.) and NMT (bicycles, pedestrians etc.). The upgraded design options so made have considered the following key points-

- No damage to green belt.
- Improvisation of all the medians for smooth traffic flow.
- Improvisation of existing NMT facilities.
- Smoothing of all entry exit curves.
- Providing free left turns based on space availability and traffic flow.
- Improvisation of existing pedestrian crossing facilitating with pedestrian refuge.



Proposed Layout Plans of Junctions

**Total Project Cost is INR 36.08 Cr. including GST.**

Current achieved progress: 22% work completed for Phase – I.



Police Chowk Chauraha



Kutchahari Chauraha





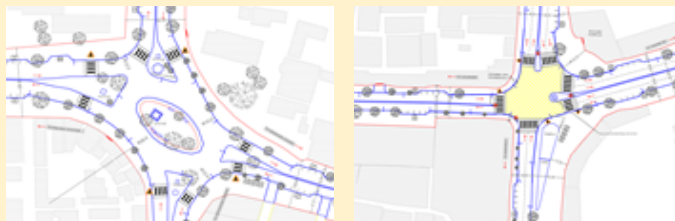
## 7. Urban Revitalization of Roads and Junction Improvement Project ABD, Phase – I & II

The roads of the ABD area are the major physical feature in the old city which connect the integral parts of the old city, act as a medium of access and also acts as an interface for the built environment and heritage character of the old city.

The main objective of the project is to -

- Revitalize the urban street scenario,
- Strengthen the street and public infrastructure on the streets
- Improve the transport and mobility condition on the streets and roads, and
- Simultaneously address the issues related to the sensitivity towards heritage identity of the street.

Alltogether in phase –I & II 16 prominents junctions with a total roads length of 20.5 kms of ABD area is covered.



Lahurabir Chauraha

Maidagin Chauraha

Proposed Layout Plans of Junctions

**Total Project Cost is INR 93.60 Cr.** (Phase – I) including GST.

**Total Project Cost is INR 159.27 Cr.** (Phase – II) including GST.

Current achieved progress: 6% work completed under Phase – I.



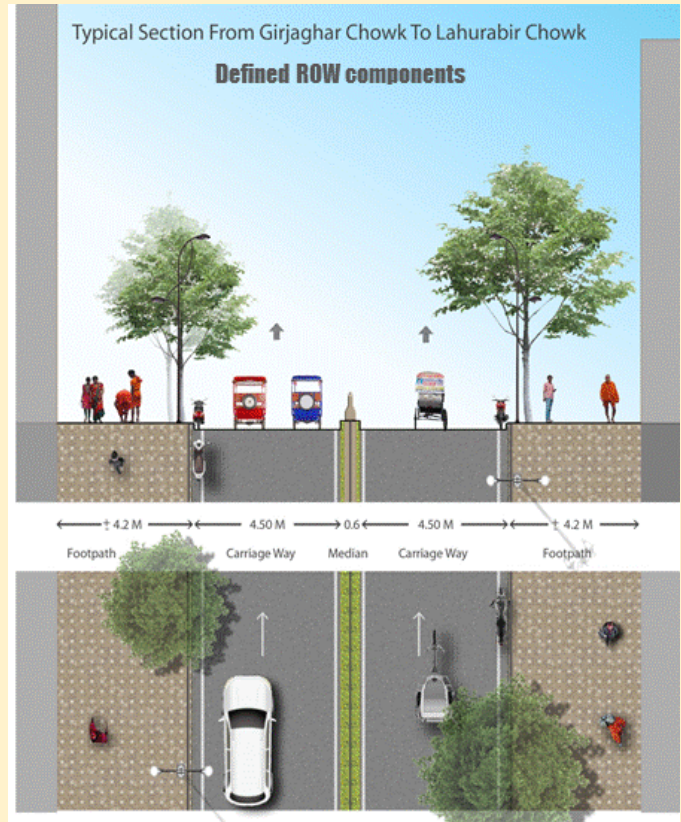
Better environment conditions and viable functional spaces would be the outcome in the process so that there is a direct impact by the proposed measures and immediate project benefits.



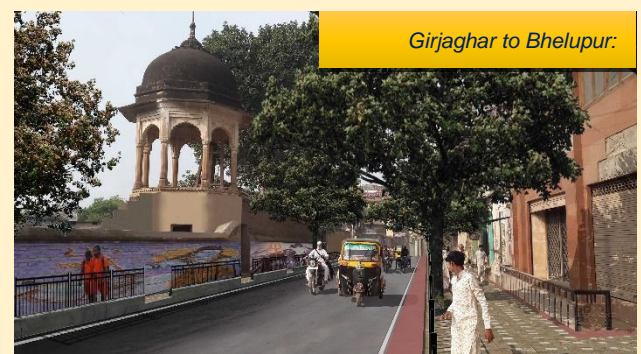
Existing Scenario of street section



Proposed Scenario of street section



Girjaghar to Bhelupur:



Girjaghar to Bhelupur:



## 8. Ghat Revitalization and Façade Restoration

The Ghats of old city of Varanasi are the most prominent and historically significant feature of the city. However, there is constant withering on the ghat edges, piecemeal repairs, incongruent additions, disorganized spaces, indistinct connectivity which have led to a negative impact on the original character of ghats and needs to be improved.

The façade of the immediate private properties, which are also integral part of entire ghats are mostly incongruent and insensitively repaired & modified, depleting the aesthetics of the ghats.

These trends on continuation shall gradually overturn the aesthetics we witness today and therefore holistic effort has been strategized to preserve the character of the ghats as well as the immediate façade on the river bank.



### Main objective of the Conservation project is to -

- Restore and consolidate the broken degraded elements of the ghats,
- Revive the heritage identity to the ghats.
- Reorganization of functional spaces on the ghats.
- Improve connectivity and access on the ghats.
- Restore the façade on the ghats to conserve the heritage integrity and visual identity.
- Provide public facilities and features which improve tourist/visitor experience.

**Total Project Cost is INR 11.88 Cr.** including GST.

Current achieved progress: Work Started at site.

### The prime features of the project are –

- Restoration of the Ghats.



*Before:*  
Dashashwamedh Ghat



*After:*  
Dashashwamedh Ghat

- Structural and architectural restoration of Ghats and façade of the structures facing the Ghats
- Dismantling of incoherent material finishes.
- Re-organization of services and space.
- Provision of dustbins, benches and drinking water kiosks at adequate spaces
- Installation of signage's for better way-finding and connectivity.
- Installation of traditional bamboo umbrellas for priests
- Installation of bamboo canopies for the vendors on the Ghats
- **Stone *takhat*** on the ghats
- **Removal of paints and graffiti** from facade and cleaning of the stone surfaces of the structures
- **Removal of incongruent additions** made on the facade and relocate them as per scheme.
- Treatment of the additions on the buildings along the ghats with defined colour, characteristic features as per the adopted scheme.



*Before:*  
Dashashwamedh Ghat



*After:*  
Dashashwamedh Ghat



## 9. Rejuvenation of Mandakini kund, Varanasi

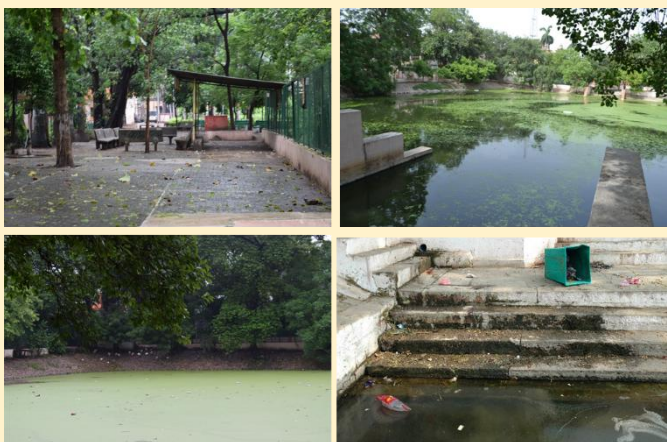
Mandakini kund is an old kund situated in company garden near Maidagin crossing. It's a culturally important physical feature however it has issues regarding the degradation of the kund, deposition of silt, garbage and poor water quality. Sewer overflow in the kund leads to the bad water quality in the kund. The stone steps and the stone pitching on the edges is also withering etc. have led to a negative impact which needs to be improved to have better green public space.



*Proposed Layout Plan*

### **Main components of the projects -**

- Cleaning and dredging of kund
- Diversion of sewer inflow into water-body.
- Restoration and Consolidation of the kund edges with maintaining its original character.
- Improve the interface of kund with the visitors.
- Provision of pavilion shelters, benches, drinking water, dustbin as visitor facilities.
- Provision of separate Visarjan area within the kund.
- Fountain for aeration and beautification.
- Provision of stone Chhatris near steps to impart heritage character, and periphery railing in cohesive design to secure the perimeter.
- Landscaping of the immediate surroundings to emphasize the character of kund and enhance the visitor experience.
- Dedicated bore-well for the garden horticulture.
- Phytoid technology based constructive wetland STP(150 KLD).
- Proposed new main entrance gate.



*Existing status of Madakini Kunds*

### **The main objective of this project is to -**

*“Rejuvenate the kund in terms of the water quality, restore the physical features and heritage assets such that it remains an integral part of the company garden which is largely used by the morning walkers and also as a community park by the locals”.*

**Total Project Cost is INR 8.40 Cr.** including GST.

*Current Status: Project to be start soon on ground.*



*Activities around kund*



*Cross sections of Kund*



## 10. Development and Construction of Multi-level Two Wheeler Parking

The proposed two wheeler parking site is located at Godowlia Chowk which is one of the busiest & congested place of Old Kashi i.e. ABD area of Smart City. Opposite to Marwari Hindu hospital, Godowlia is also one of the biggest and busiest markets of Varanasi which required adequate parking for local and visitors. The total site area is approximately 918.87 sqm. which at present accommodates several services such as – jal kal pump house, transformers & electric poles, police booth, garbage disposal centre, public amenities, markets etc.



Location of Proposed Parking

### Main components of the projects -

- Jal Kal Office with Pump Room,
- Police Booth,
- Public Convenience,
- Emergency/VIP Car Parking #3,
- Roof Top Restaurant,
- Information Desk,
- Drop off Point.
- Vehicle Lifts
- **Revenue Sources:**
  - Parking Tariffs,
  - ODM Advertisement,
  - Indoor Media Advertisement,
  - Public Convenience

### Proposal Parameters: Semi –Automatic Parking

Site Area	918 Sqm
Ground Coverage	574 Sqm, 62.5 % of plot
Built Up Area	1890 Sqm (all floors included)
No. of 2 Wheelers Parking	272
Proposed Height	15 m (G + 4)



Existing condition of proposed Multi-level Parking Site

### The main objective of this project is to -

- Provide a much needed parking at Godowlia Chowk, to decongest the streets.
- Create an architectural heritage reflecting iconic building at a prominent junction of Varanasi.

**Total Project Cost is INR 18.09 Cr. including GST.**

*Current Status: Project to be start soon on ground.*



3D and Side View of Proposed Parking



education and specialized training to the poor people living in vicinity.

**Total Project Cost is INR 14.21 Cr. including GST.**

*Current Status: Project to be start soon on ground.*

**Main components/features of the projects -**

The Project including all features of modern smart high school such as -

- Smart class rooms and Auditorium,
- Computer rooms and Laboratories
- Library and Playground
- Toilets and drinking water,
- Skill Development Center for urban poor's, widows and transgender.



*Proposed layout Plan and 3D View of Smart School*

**11. Development of Macchodari Smart Senior Secondary School and Skill Development Center**

The school is situated in eastern part of Varanasi approx. 250m away from Ghats at adjacent to the famous Machodari Park and surrounded by residential colonies of economical weaker sections. School established in Yr. 1932 up to 5th class, is an oldest government public school, named as Nagar Nigam Uccharat Madhyamik Vidyalaya, Machhodari. In 1966-67 upgraded to Junior High School- 6th to 10th. However, during decade of 80's the Primary Section (1st to 5th) is been handed over to Basic Education Department, Govt. of U.P.

At present the total area covered under school (both Primary and Secondary) is about 1.6 acres and the entire infrastructure facilities including school building is in dilapidated condition which required immediate



attention.

*Existing condition of Macchodari School*

**The main objective of this project is to -**

- Provide develop and construct a modern smart school & Skill Development Centre which can contribute in provide better quality of

**Key Outcomes/Benefits:**

- Improved and quality education facility to urban poor's.
- Improvemtn in physcial and mental education of students.
- Opportunities of specialized training to urban poor's, widows and transgender that in turns self-employment.

- Enhancement in social interaction.

## Smart City Projects – Under Convergence

### 1. Redevelopment of Town Hall

- Project Started on 19.09.2016
- Project Completed on 31.05.2018

Total Project Cost is 2.26 Cr.

*Main works carried out under the projects -*

- Cleaning of outer wall of Town Hall.
- Repairing of Town Hall boundary wall
- Construction of Toilet.
- Flooring of Kota Stone.
- Maintenance and repairing of Stage.
- Improvement work for Sound System.



### 2. Heritage Development of Durga Kund and Assi Ghat

- Project Started on 23.09.2016
- Project Completed on 28.02.2018

Total Project Cost is 1.54 Cr.

*Main works carried out under the projects -*

- Directional Signage Board.
- Construction of Water ATM

- Block paving, Bollard and Seating arrangements around site.
- Construction of main entrance gate.
- Stone cladding at out area of kund.
- Façade improvement
- Provision of dust bins



### 3. Other Important Completed Projects:

- Construction of Trade Facilitation Centre and Weavers Museum at Badalapur. (INR 257.80 Cr.)
- Repair and Development of 24 Heritage Roads (INR 27.89 Cr.)
- Under Ground wiring to reduce and remove unwanted clutters on the streets under IPDS Scheme (INR 431.00 Cr.)
- Heritage Street Light (8000) in ABD area (INR 36.60 Cr.)
- Energy Efficient Street Lighting (36000) in City (INR 58.60 Cr.)
- Development of Heritage walk at Piplani Katra, Kabir Chaura to Assi Ghat (INR 2.51 Cr.)
- Development of new community toilet complex under JACA GAP – II (INR 18.72 Cr.)
- Construction of Dhobi Ghats (INR 5.37 Cr.)
- Development of Instrumental Central Discovery Centre at BHU (INR 73.00 Cr.)
- Renovation and Development of Homi Bhabha Cancer Hospital at Lahartara, Varanasi (INR 140.00 Cr.)
- Development and construction of Sewerage Treatment Plant at Goitha (INR 217.57 Cr.)
- Drinking Water Supply Priority – I under JNNURM (INR 139.79 Cr.)
- Drinking Water Supply Priority – II (Trans Varuna) under JNNURM (INR 268.38 Cr.)
- Renovation of Man Mandir Virtual Museum (INR 11.01 Cr.)



- Development of Mahamana Pandit Madan Mohan Malviya Cancer Centre (INR 1000.00 Cr.)

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