

**Preparation of Action Plan for
Conservation of Heritage
Precincts in MMR
Deulwadi Precinct**

**STAGE 5
PREPARATION OF ACTION PLAN**

April 2012



To be submitted to

**Mumbai Metropolitan Regional Heritage
Conservation Society**

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Preparation of Action Plan for Conservation of Heritage Precincts in MMR

Deulwadi Precinct

STAGE 5 PREPARATION OF ACTION PLAN

COMPONENTS:

- Vision & strategies
- Identification of actions as a set of Regulations, Projects & Programmes.
- Block estimates for the Projects and Programmes including capital and recurring costs.
- Identification of financial sources for the implementation of the Projects and Programmes.
- Prioritization and phasing of the Projects and Programmes.

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List of Acronyms

CIDCO	City and Industrial Development Corporation of Maharashtra Limited
DCR	Development Control Regulations
DP	Development
DPR	Detailed Project Report
DWMS	Decentralized Wastewater Management System
EOI	Expression of Interest
FSI	Floor Space Index
IEC	Information – Education – Communication
INTACH	Indian National Trust for Architectural and Cultural Heritage
MAP	Mangroves Action Project
MIS	Management Information System
MMR	Mumbai Metropolitan Region
MMRDA	Mumbai Metropolitan Regional Development Authority
MMR-HCS	Mumbai Metropolitan Region-Heritage Conservation Society
O & M	Operation & Maintenance
ONGC	Oil and Natural Gas Corporation Limited
PPP	Public Private Partnership
TDR	Transferable Development Rights
UDRI	Urban Design Research Institute
ULB	Urban Local Body
UMC	Urban Management Centre

Disclaimer

MMR-HCS entrusted Urban Management Centre for the preparation of an Action Plan for the conservation of heritage precincts in the MMR – Deulwadi Precinct, Uran. The scope of this report entails the following:

1. Vision and Strategies for conservation of the precinct.
2. Formulation of actions as a set of projects, programmes and regulations.
3. Block cost estimates for projects and programmes.
4. Prioritization and Phasing.
5. Devising implementation plan and institutional mechanism.

In the course of preparation of this report we were provided with both written and verbal information. Nothing has come to our attention to cause us to believe that the facts and data provided by Uran Municipal Council, MMR-HCS, and other stakeholders are not true or is incorrect. The data has been collected between March 2010 until October 2011 and all efforts have been made to ensure incorporation of new developments being implemented on ground which affect this study directly or indirectly. Hence October 2011 has been considered as the cut-off date for preparation of projects and block cost estimates.

Any development implemented henceforth, either fully or partially, has been incorporated to the limit feasible for the technical purposes. Any additions or modifications made to independent ongoing developments by Uran Municipal Council, MMRDA or any other stakeholders post October 2011 should be duly studied and incorporated in subsequent revisions to this study.

No investigation of the ownership title of the tangible and intangible assets has been conducted and claims made by Uran Municipal Council, MMR-HCS and other stakeholders have been assumed to be valid. Matters of legal nature relating to title of assets have not been considered.

With this report Urban Management Centre intends to provide only professional advice to MMR-HCS on conservation of Deulwadi Precinct and its related issues identified herein. The report also presents recommendations which Urban Management Centre believes are most suited solutions amongst various alternatives that may exist.

CHAPTER 1: INTRODUCTION

1.1. Project Background:

Uran is part of the *Navi Mumbai* city township in the *Raigarh* district near *Panvel* and *Karjat*. It is situated east of *Mumbai* across the *Dharamtar* Creek. *Uran* has developed over time and due to proximity to *Mumbai*. It is facing increasing urbanization pressure.

This pressure of urbanization is tearing apart the versatility and culture of the area. The old is giving way to new, which lacks any visual or cultural connection with the context it is placed in. This calls for an urgent need of an action plan to conserve the tangible and non tangible heritage of *Uran*.

1.2. Objectives of the study:

The current study is intended-

- To evaluate current status and condition of the precinct through detailed documentation and analysis of key issues.
- To identify schematic projects, programmes for conservation of precincts through participation of local communicates and stakeholders.
- To formulate financial, institutional and regulatory strategies for project implementation, phasing, operation and maintenance.
- To prepare draft guidelines for conservation of the heritage precinct.

1.3. Scope of work:

Based on the above objectives, the scope of work for the project has been formulated as given below-

The *Deulwadi* precinct of *Uran* has been delineated by (MMR-HCS) and for the said project an Action Plan is to be prepared for the management of the heritage precinct. This pilot project involves a precinct level study. As a part of the Action Plan it would suggest guidelines for the conservation of heritage in the precinct and would broadly propose physical interventions (alongwith block costs) required for the upkeep of the precinct. These physical interventions would be related to two aspects: a) Strengthening municipal infrastructure services and b) Conservation & restoration. These proposed physical interventions shall be have to be followed by the preparation of respective detailed project reports – a task to be undertaken by the ULB, which would suggest the exact amount and kind of repairs required in each of the built-form falling into the precinct boundary and the proposals for improvement of respective municipal infrastructure services. For the said purpose the ULB would have to invite EOI and appoint an agency or consultant accordingly for preparation of respective DPRs and execution of the same.

The current study report would thus focus on the regulatory and institutional reforms needed for the conservation of heritage in the precinct.

In the process of arriving at guidelines to be suggested and institutional reforms to be achieved, the study would provide the following:

- Recorded history and socio-cultural rituals and festivals - acquired from review of available literature and from the discussion with the stakeholders (which could be used as a written record of intangible heritage) (Stage-1 & 2)
- Detailed documentation of the temples in the *Deulwadi* Street (Stage-2)
- Assigning of significances & Identification of issues (Stage-3 & 4)
- Suggestions (Physical interventions along with block costs) related to infrastructure and conservation and restoration of the existing structures in the precinct (Stage-5)

1.4. Overview of *Deulwadi* Precinct:

Figure 1 Location of Uran Tehsil (Source: <http://www.regionalplan-mmrd.org>)

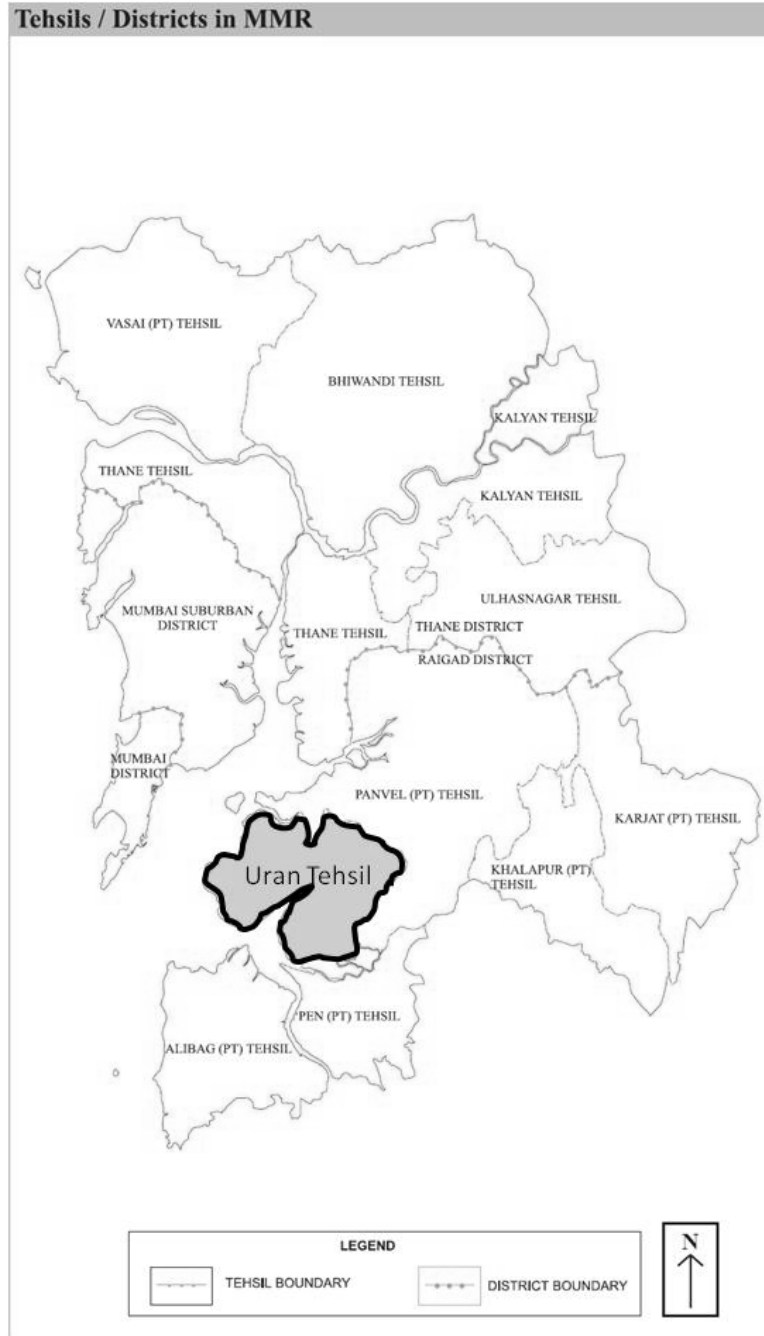


Figure 2 Location of Uran (Source: MMRDA - Regional Plan of MMR 1996-2011: Land Use Plan)

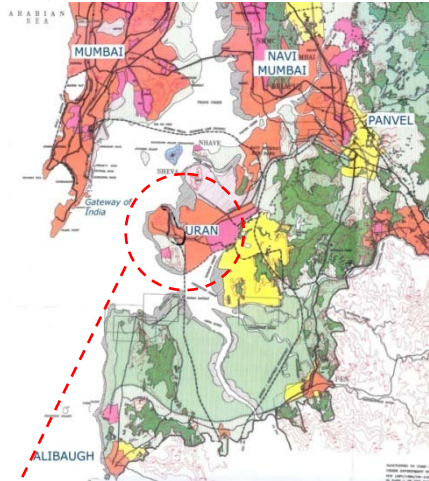
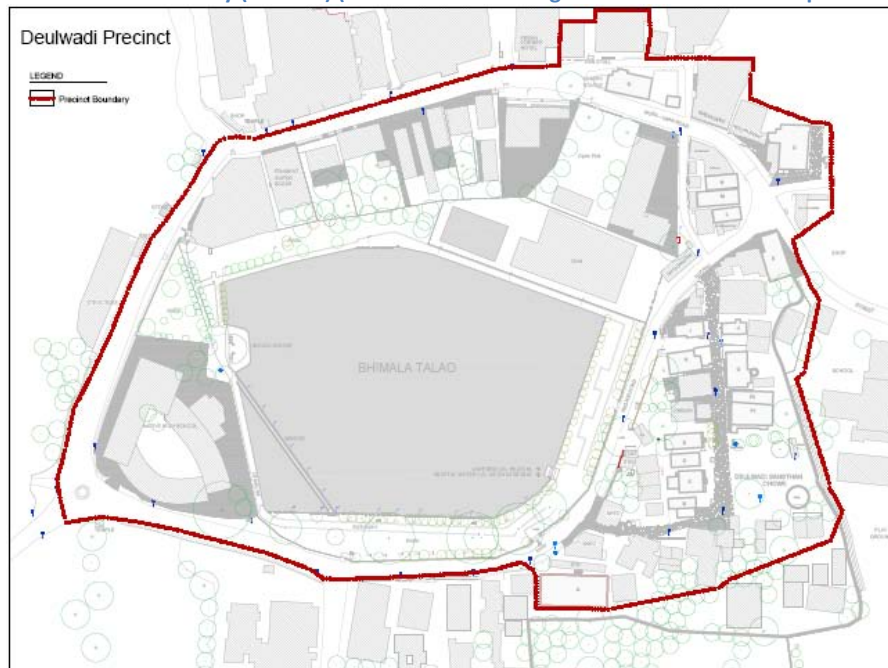


Figure 3 Aerial view of Uran (left) and Deulwadi Street (right) (Source: Google Earth)

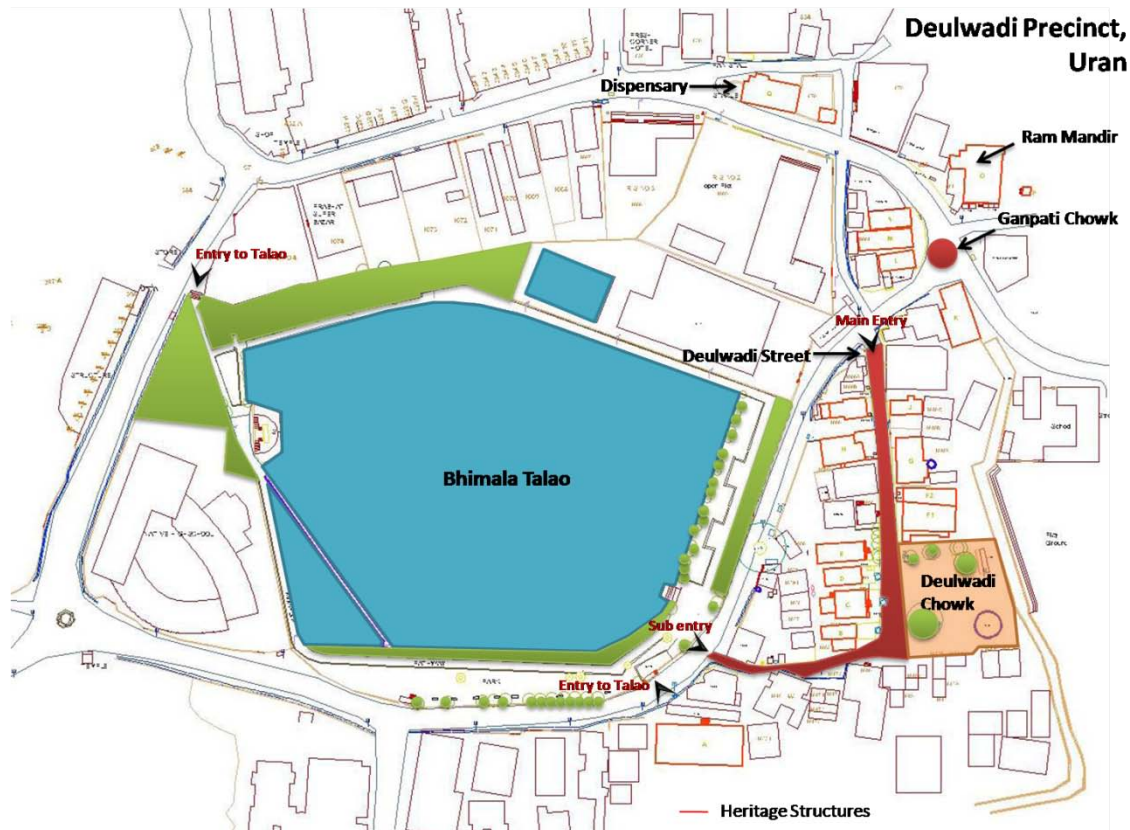


Figure 4 Deulwadi Precinct Boundary (Revised) (Source: Urban Management Centre – Base Map of Deulwadi Precinct)



Uran is part of Navi Mumbai city in Raigarh district near Panvel. It is situated east of Mumbai across Dharamtar Creek. The Deulwadi precinct is a core and oldest area of Uran town located near Bhimala¹ Talao. The precinct consists of the Deulwadi Sansthan Chowk, a series of temples located in Temple Street, Ganpati Chowk and peripheral road of Bhimala Talao. The temple street has a series of temple specimens which possess a high religious value for people of Maharashtra. Apart from all the listed heritage buildings, the Bhimala talao and its surrounding area form the core of Uran town.

Figure 5 Major Highlights of Deulwadi Precinct (Source: UMC)



The natural heritage of the Deulwadi Precinct is evident from the following images:

¹ Bhimala Talao is also known as Vimla Talao (according to Google), Bimla or Bhimla Talao (according to Gazetteer of Raigarh District), Bemala Talao (according to draft Development Plan 2011). We have adopted most commonly used spelling as Bhimala Talao.

Figure 6 Panoramic view of Bhimala Talao and surrounding area (Source: UMC)



Figure 7 Tree platforms in Deulwadi Chowk (left & centre) and landscape around Bhimala Talao (right) (Source: UMC)



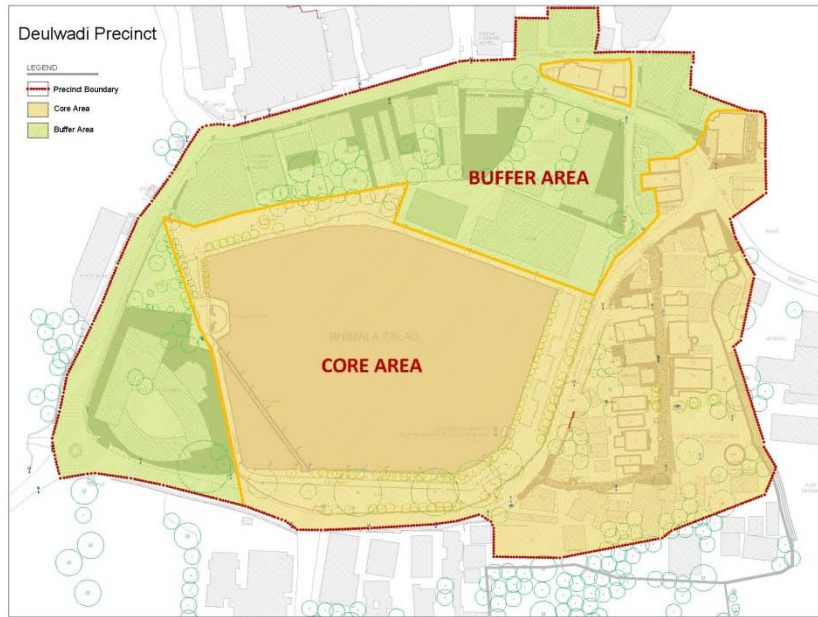
The built heritage of the *Deulwadi* Precinct is depicted through following images:

Figure 8 Stambhas & Temples along the Deulwadi Chowk (left) & Ram Mandir (right) (Source: UMC)



After carrying out reconnaissance surveys and documentation of the *Deulwadi* Street, it was found that the area falling into the precinct-boundary could be categorized into two categories: Core & Buffer.

Figure 9 Core Area and Buffer Area - Deulwadi Precinct, Uran (Revised) (Source: UMC)



The temples in the *Deulwadi* Street and along the *Ganpati Chowk*, the Dispensary, the *Shankar Chawl* and the *Bhimala Talao* – all are categorized in the Core Area since they possess prime importance as compared to the other areas or buildings in the delineated precinct.

Remaining other buildings and areas are of comparatively lesser importance and architectural or cultural value. Hence they comprise the Buffer Area of the delineated precinct.

Thus, *Deulwadi* precinct has buildings and areas which vary in terms of significance when it comes to heritage. The *Deulwadi* precinct can be seen in totality by analyzing the precinct at two levels- at a zonal level and at an individual building level.

- (a) Core Area
- (b) Buffer Area

Core Area: The Core Area comprises of buildings/elements which are of historic importance, natural water bodies, embodying excellence in architecture, material and construction techniques been use, associated with personalities or cultural events. The Core Area of the *Deulwadi* Precinct includes the *Bhimala talao* along with its built up edges, the temples in the *Deulwadi* Street, *Sansthan Chowk* and the *Ganpati chowk* and the Dispensary.

Buffer Area: Buffer Area means a special regulated zone where protective measures would be enacted for the protection of the heritage precinct.

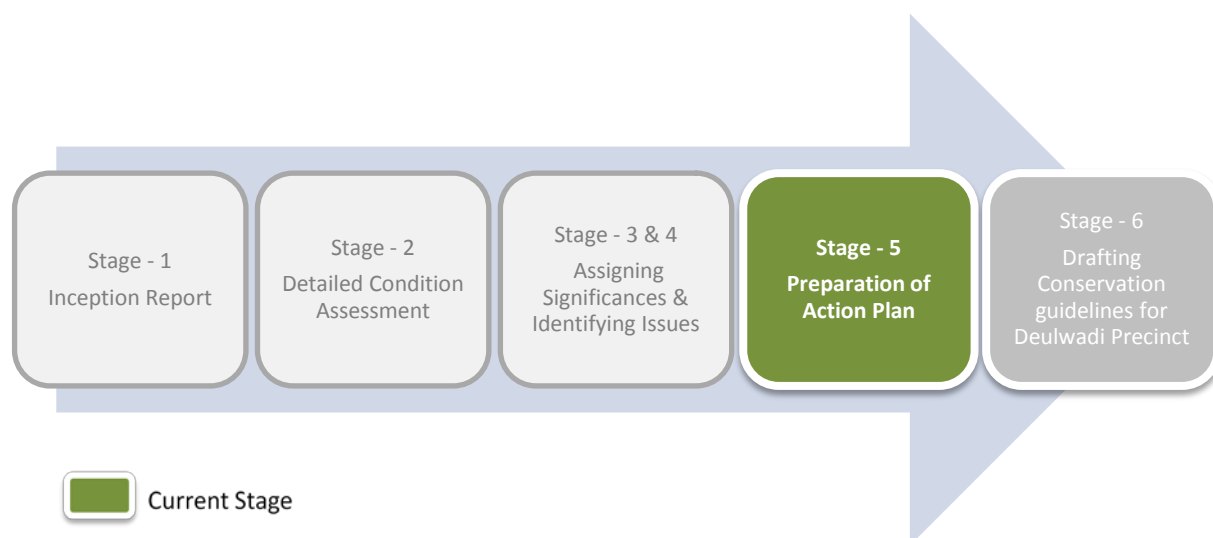
This area or zone comprises of buildings which have a local historical importance, local landmarks, religious tangible or intangible events, special activities or special markets, special features of facades or uniform height etc. This also includes building or precinct of important for townscape that evoke architectural, aesthetics or sociological interest.

The approach towards development would be regulated and understood on the basis of ground reality. The distinct character of Temple Street of *Deulwadi* Precinct represents its great traditional

and cultural values so the further development would be in direction of continuity of the same traditions.

1.5. Work done so far:

The following flow diagram shows the stage-wise process -



The stage-wise details of work done so far are described in the subsequent paragraphs:

1.5.1. Stage-1: Inception Report

Understanding the *Deulwadi* Precinct: Urban Management Centre mobilized a team for developing an understanding with the area, and with the stakeholders involved. A reconnaissance survey was undertaken and meetings with different stakeholders were done.

The teams also conducted primary and secondary survey on the history of the region and the precinct and built an understanding on the transformations in the built fabric.

1.5.2. Stage-2: Detailed Condition Assessment

After the reconnaissance survey, a detailed documentation has been undertaken for understanding the constituent elements and the impacts to the site. The survey comprised a study of morphology, its usage patterns and activity mapping of the site.

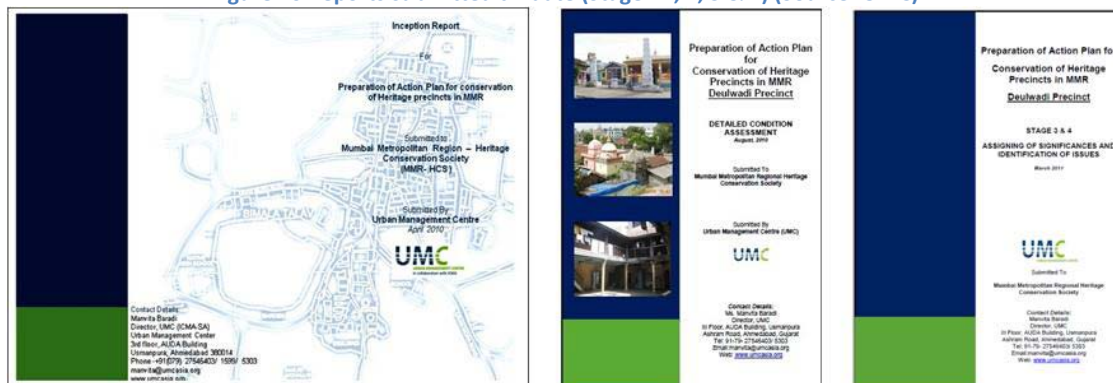
A team of architects and surveyors conducted measured drawings and detail photographic documentation of each buildings. A survey was undertaken to assess the condition of the *Deulwadi* precinct. A detailed form was made after extensive research to assess the condition of the listed heritage buildings. Several visits were made to understand the usage of the different architectural and cultural elements of the precinct like neighbourhood landmarks, nodes and its activity, street shrines, public spaces, open spaces, existing infrastructure etc.

1.5.3. Stage-3 & 4: Assigning of significances and Identification of issues

In this stage the task of assigning of significances and identification of issues was done on the basis of the surveys and studies carried out which include condition mapping and interaction with the stakeholders. The task of assigning significances has been done on the basis of primary survey and

discussions with owners to anchor understanding of its value. The team had also initiated numerous discussions with **Uran Municipal Council** to discuss the significance of the precinct.

Figure 10 Reports submitted till date (Stage - 1, 2, 3 & 4) (Source: UMC)



1.6. Stage 5: Preparation of Action Plan

The details of the current stage (Stage-5) are sequentially described in the following respective heads:

1.6.1. Components of the Action Plan:

Based on the objectives the components of the Action Plan have been formulated as follows-

- Vision & Strategies
- Identification of Actions as a set of regulations, projects & programmes
- Block costs for the projects and programmes including capital costs and recurring (O & M) costs
- Funding mechanism for the projects and programmes
- Institutional mechanism for implementation of the projects and programmes
- Prioritization and phasing of the projects and programmes

1.6.2. Introduction to Stage-5 Preparation of Action Plan:

In a general sense, perception of 'heritage conservation' is limited to architectural specimens only. But over the last decade the concept of heritage has evolved further. On ground reality background it can be found that owning a heritage building/property which is enlisted as a heritage building, is taken as a loss of development potential in the market and a burden of maintenance for the owner instead of a feeling of pride of owning a structure/property of historic importance.

In case of *Uran*, the ground-work on *Deulwadi* Precinct has revealed that the building / temples / structures in the precinct do not have so high potential that they could be categorized as Grade-I Heritage. Even their architectural merit is not so great.

But the cultural importance of *Deulwadi* is so high that it attracts more than one lakh tourists and pilgrims every year during various religious and cultural festivals. Based on such observations and as per the requirements of the project, the current stage assignment is undertaken with the following intention-

The making of Action plan for heritage precinct of *Deulwadi* would include identification of short term and long term actions, suggestions for building regulations and overall project programmes. The evaluation of these would lead to formation of estimates and recurring cost of the pilot projects. The articulation of fiscal management would separate the phases of the projects and its implementation strategies. The understanding of each pilot project would strengthen list of various activities in the long term for appropriate integrated management.

1.6.3. Vision & Strategies:

The vision and strategies for heritage management of the *Deulwadi* Precinct have been framed on the basis of the current scenario of the precinct -

Current Scenario:

The architecturally important area of *Deulwadi* temple street been impacted due to densification of newly constructed concrete buildings. These new buildings have degraded the visual importance of watershed edge. Overall building heights have increased which has changed the skyline of the area. At a zonal level, the green soft landscaped with traditional buildings set up has changed since 2003 and is turning into a concrete jungle around *Bhimala talao* and corners of *Bazar Peth*. The architectural expression of temples and other buildings are still holding the character of streets but haphazard unregulated modifications has impacted overall visual degradation of area. Rapidly changing building materials such as concrete and steel/iron grills has replaced the wooden carved and vernacular designed grilles from the area. The change of roof line and colours of temples have degraded the visual expression of architectural values. The architectural significant elements such as wells and corners of common areas are becoming garbage collection points. So this synthesis reflects overall transformations in physical, architectural and people's mindsets.

Vision:

After analyzing the current scenario of the *Deulwadi* precinct and its various significances, it can be stated that in general such urban heritage precincts are living evidences of the growth and evolution of that settlement through the ages. They are footprints of the past formed during the process of development of the city in the context of its political and cultural background. Their existence should have to be respected and protected against the prevalent market forces through an incorporation of appropriate measures in the policies and regulations framed for the management of such precincts. However the guidelines for conservation of such precincts should be flexible enough so that the respective owners of the heritage properties do not feel deprived of monetary gains or development potential of their properties.

The *Deulwadi* precinct is a regional pilgrimage centre since years. And as mentioned earlier it attracts a huge amount of tourists during various religious festivals. Apart from the temples in the *Deulwadi* Street, the *Bhimala Talao* is the only urban level public space available with the people of *Uran*. Looking at these significances and issues of the precinct at present the vision for the precinct has been framed. The vision is -

"To conserve tangible & intangible heritage of *Deulwadi* Precinct as a town level urban space"

Strategies:

The Action Plan for *Deulwadi* precinct **integrates ongoing or proposed initiatives.**

Some redevelopment/ improvements works have already been executed in *Deulwadi* precinct including:

- Restoration of *Bhimala Talao* with Embankments
- Landscaping and open space development around *Bhimala Talao*
- New street furniture installed around *Bhimala Talao*

Figure 11 Hard & Soft Landscape around Bhimala Talao (Source: UMC)



Figure 12 New street furniture installed around Bhimala Talao (Source: UMC)



Urban Management Centre studied the above works undertaken and adopted an **inter - sectoral approach ensuring complimenting development works.**

Looking at the complexity of the project certain strategies were formed by Urban Management Centre for the upkeep of the Heritage Precinct. Broadly, strategies adopted by Urban Management Centre can be framed as follows:

- 1) Adopting collaborative and interdisciplinary planning processes.
- 2) Eliminating infrastructural deficiencies in the precinct.
- 3) Reforming institutional framework to facilitate heritage management.

These broad strategies can be further bifurcated into specific strategies against respective issues related to various significances. They are enlisted in the below table:

Table 1 Issues & Strategies

Historical & Architectural Significance	
Issues	Strategies
No significant literature/ reference material for town's history and heritage	Increase awareness of heritage amongst residents and visitors
Lack of awareness towards environment	
Absence of heritage sensitive development Guidelines	Introduce appropriate regulatory framework for encouraging conservation
Damage to heritage structures	Capacity enhancement of Uran Municipal Council for undertaking/ managing heritage conservation
	Introduce innovative financial mechanisms for owners/ residents/ Uran Municipal Council to promote conservation of heritage
No signage, information dissemination for heritage	Increasing visibility of the buildings and of the precinct
Infrastructure	
Issues	Strategies
Inadequate municipal water supply hours, (existing well supplies non- potable water)	Detailed diagnosis of municipal water supply system; municipal capacity enhancement
Unmanaged waste on road-sides	Improvements in management of Municipal Solid Waste (MSW); municipal capacity enhancement
Regulatory Planning & Management	
Issues	Strategies
Lack of efficient management for public toilets (O &M), solid waste, heritage and tourism infrastructure	Introducing suitable implementation mechanisms (like PPP) for public toilets
	Amend building by-laws with special provisions for heritage properties and precinct
Large unutilized FSI – potentially harmful if not regulated	Enhancing capacity of ULB to <ul style="list-style-type: none"> - Manage the heavy flow of tourists during festivals, - Monitoring of other heritage related assets & programmes, - Undertake conservation works – self or outsourced.
	Retaining the fabric of the precinct and discouraging rebuilding on heritage plots/ buildings

The above set of issues and strategies might differ from those enlisted in the earlier Stage reports. This is because there have been several changes in the precinct since we started with the project and until current times. This implies that certain proposals which were formed in the earlier stages have been eliminated and certain actions which were not required at that stage might have been proposed now.

The above strategies can be translated in to two basic categories:

1. Projects

(All actions whether physical interventions or programmes related to conservation of the tangible and intangible heritage and also those related to infrastructural improvements)

2. Development Guidelines

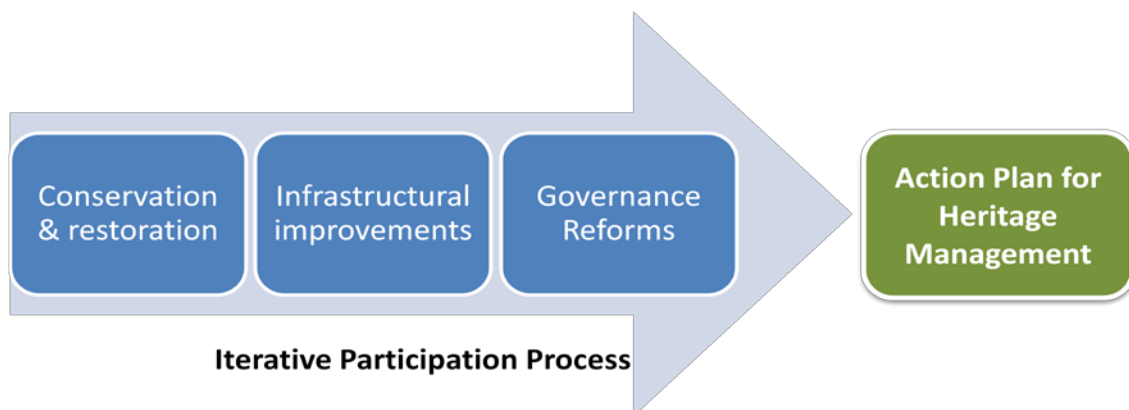
(All suggested guidelines and institutional reforms for the regulation of the built heritage in the precinct)

The above two categories can be translated into following components of action plan required for the conservation of the precinct:

Component A: Conservation & Restoration

Component B: Infrastructural Improvements

Component C: Governance Reforms



CHAPTER 2: ACTIONS & PRIORITIES

The region of *Uran* is a melting pot of different faiths and religions. The diverse culture of *Uran* makes it a unique town in Maharashtra. Customs and rituals are an integral part of the *Maharashtrian* way of life. These customs and traditions traverse the boundaries of religion, caste and creed.

The *Deulwadi* precinct is a central pocket of *Uran*. It comprises of temples which were built in 18th and 19th centuries and presently maintained and managed by owners. These temples are a large cultural and religious resource which would help future generations to understand the traditional practices and their importance.

The tangible cultural heritage of *Deulwadi* comprises series of temples and artefacts like water body, open spaces for celebration of festivals, architectural buildings and houses and landscape. The intangible cultural heritage includes behaviour of the society, social values and traditions, festivals, customs and rituals, artistic expressions, language and other aspects of human activity. Thus it is clear that the region of *Uran* high socio-cultural significance apart from other aspects like architecture and environmental significance. Hence the present project is intended to conserve the heritage precinct of *Uran*.

Heritage management is a gradual process. And an effective implementation of the same can be achieved through various reforms in the Governance and Infrastructure sector. Community participation is also primly required in the process for the effective sustenance of the projects. Here, the actions have been classified as *Short-term* (0-3 yrs.) and *Mid-term* (3-7 yrs.) actions on the basis of their probability to finish within the stipulated time-period. The actions which are classified as 'Shortterm' are those related to immediate actions for micro-level planning; those termed as 'Midterm' actions are concerned with public awareness programmes, heritage educational programmes, workshops and street plays. It is assumed that **Uran Municipal Council** will be responsible for carrying out the proposed actions.

2.1. Identification of Projects:

2.1.1. List of attributes and issues from which the projects have evolved:

The identification of projects or proposed actions in the precinct has been done after a thorough study of various attributes of the *Deulwadi* Precinct. These attributes include several relevant significances and issues. The studied attributes were - History, Architectural merits, Socio-cultural significance, Economic potential and Environmental aspects. Various features taken into consideration were –

- Identification of community nodes (*Deulwadi Chowk*, entry to *Deulwadi* Street from *Talao* side, *Ganpati Chowk* and Landscape around *Bhimala Talao*)
- Neighbourhood landmarks, cultural & religious elements (*Deep Stambhas*, *Tulsi Kyara*, *Shivaji* statue beside *Bhimala Talao*, Temples in *Deulwadi* Street and along *Ganpati Chowk*)
- Cultural practices (Various socio-cultural and religious festivals)

- Street character – *Deulwadi Street*
- City level urban open space – *Bhimala Talao*
- Transformations occurred through the years
- Building use Analysis
- Ownership Analysis
- Building Height Analysis
- Infrastructure facilities in the precinct
- Governance and management of *Deulwadi Sansthan*

After the study of above features and relevant issues existing in the precinct the proposed interventions were formulated as a set of projects, programmes and suggested guidelines for development. The proposed interventions are enlisted as a part of three categories (*Conservation & Restoration, Infrastructural Improvements and Governance Reforms*) as mentioned earlier.

Before enlisting proposed interventions, a brief summary of issues of *Deulwadi Precinct* would clarify the need of the each proposed intervention. Thus the issues have been highlighted category-wise as follows-

COMPONENT A: CONSERVATION & RESTORATION

The issues regarding 'Conservation & Restoration' at precinct level are listed below:

- The *Deulwadi Chowk* has a totally exposed surface due to which maintenance and upkeep becomes difficult.
- Street lights are inadequate in number. However, there are 12 Light poles in the Deulwadi Street. But there is no proper Operation and Maintenance (Some of them are not working, few have broken lamps and few light poles are totally broken and are lying useless at various locations in the Temple Street).
- Lack of cleaning and maintenance of the well in the *Deulwadi Chowk*.
- Tree platforms are damaged.
- Hand pumps and wash area in the *Chowk* and near the *Talao*-entrance are in a dilapidated condition.

Figure 13 Well in Deulwadi Chowk (left), Hand pump beside the entry to Deulwadi Street from Talao side (centre) & dilapidated tree platform in Deulwadi Chowk (right) (Source: UMC)



- Lack of reference material informative of the town and its heritage (architectural, natural and socio-cultural, etc.)
- Lack of information signage for all heritage buildings mentioning their history, heritage and religious values
- Absence of Cataloging of trees in the precinct

Figure 14 Trees around Bhimala Talao (left & centre) and lack of signage at heritage structures (Source: UMC)



Issues of restoration at individual dwelling unit / building level are enlisted in the later part of the report.

COMPONENT B: INFRASTRUCTURAL IMPROVEMENTS

The issues regarding 'Infrastructure services and facilities' provided by the **Uran Municipal Council** are enlisted below:

- *Nala* behind the well is not maintained. Waste is littered in it and eventually it poses health hazard.
- Lack of litter bins at appropriate locations and their regular maintenance
- The public toilet in the *Chowk* in bad condition.
- Existing electric cables hanging from poles in front of the temples in the *Deulwadi* Street spoil their appearance and they pose potential hazard of electrocution.

Figure 15 Public Toilet in dilapidated condition (left & centre) and electric cables spoiling the appearance of the Temples (left) (Source: UMC)



COMPONENT C: GOVERNANCE REFORMS

The issues which arise in the precinct due to lack of appropriate regulations or constraints are enlisted below:

- No heritage specific regulatory mechanism for the precinct.
- Unutilized FSI in the precinct (details mentioned earlier in Stage – 2).
- Street Vendors do not have designated spaces during festivals and gatherings.
- Complex and plural process of attaining building permission - including Uran Municipal Council, Navy, CIDCO, ONGC, etc.) Now an airport is also proposed in Uran, due to which every building plan will have to pass through the Airport Authority. This would add to the complexity of the process.
- Absence of Demarcated parking zones leading to haphazard parking in the precinct.

Figure 16 Auto rickshaw parking in Ganpati Chowk (left), Encroachment-stalls in narrow street bazaar (centre) and waste dumped on road (right) (Source: UMC)



2.1.2. List of proposed projects:

Our visit to Uran on 26th April 2012 for the discussion of 'Stage-6 Conservation Guidelines for Deulwadi Precinct' with the staff members of the Uran Municipal Council revealed certain recent developments, which demanded revisions not only in the drafted guidelines but also in some of the interventions proposed in the Action Plan (Stage-5).

Accordingly, the proposed interventions are tabulated as follows-

Table 2 Proposed interventions for Deulwadi Precinct

Component A: Conservation & Restoration	Component B: Infrastructure Improvements	Component C: Governance Reforms
A.1 Revitalization of Bhimala Talao A.2 Revitalization of Deulwadi Chowk A.3 Conservation & Restoration of Heritage Structures A.4 Developing Reference Material & creating awareness	B.1 Precinct level issues in Water Supply B.2 Precinct level issues in Storm water & Sewerage B.3 Precinct level issues in Solid Waste Management B.4 Electric Cables B.5 Public Toilets	C.1 Drafting guidelines for conservation of the precinct C.2 Streamlining process of attaining building permission C.3 Regulating Encroachment & Parking

Actions for all components have been classified as-

- **Short Term Actions (1-3 years):** Immediate actions for micro-level planning;
- **Mid Term Actions (3-7 years):** public awareness and heritage educational programmes through workshops and street plays.

The Short-term and Mid-term actions planned in accordance with the above mentioned criteria for each respective proposed intervention are tabulated as follows-

COMPONENT A: CONSERVATION & RESTORATION

No.	ACTIONS	SHORT TERM (0-3 YRS.)	MID TERM (3-7 YRS.)
A.1.	Revitalization of Bhimala Talao	<ul style="list-style-type: none"> - Provision of required number of Street lights (Total of 54 street lights throughout the precinct out of which 8 street lights along Nagaon road going around Bhimala Talao campus) - Plantation of new indigenous trees - Provision of appropriate parking spaces - Regular maintenance plan 	<ul style="list-style-type: none"> - Regularising and organising Vendors and their management – Vendors’ policy - Introducing a kiosk in PPP mode - Setting up a facility of Boating in PPP mode
A.2.	Revitalization of Deulwadi Sansthan Chowk	<ul style="list-style-type: none"> - Hard Kota stone paving in <i>Deulwadi Chowk</i>. - Planting few indigenous shade giving trees along the <i>Nala</i> and the edges of the <i>Chowk</i> in order to enhance the experience of the <i>Chowk</i> for the people. - O and M plan - Covering the well (dia. - 8.63 mts.) in such a way that there are provisions for the people to draw water from the well. - Cleaning and covering of the drain channel around the well. - Repairing the hand pump – wash area and constructing a threshold around the same. Also providing proper drainage to it. - Planning for provision of new street lights (as per dwg.) and repair of the existing non working street poles (10 out of total 12). 	-
A.3.	Conservation & Restoration of heritage structures	<ul style="list-style-type: none"> - There are several locations in different structures, where attention is required. Each of these specific actions needed in various heritage structures is mentioned in the description following this table. - Identification and small repairs of each temple regarding floor, roof, wall surface, front façade etc. - Policy making and Advocacy (design incentives/etc) 	-
A.4.	Developing Reference Material and creating awareness	<ul style="list-style-type: none"> - Creation of reference material informative of the town and its heritage (architectural, flora and fauna, socio-cultural, etc. - partially covered under the current project) and making the same accessible to the local people as well as tourists by setting up tourist information centre. - Recommendation to the Tourist Department for inclusion of Uran on the ‘Bombay Tourist Map’ such that it is a designated tourist spot/destination. - Installation of information signage for all heritage buildings mentioning their history, heritage and religious values. - Cataloguing of all the trees (natural heritage) in the town. - Taking up an Initiative of an Information, Education and Communication (IEC) campaign. 	<ul style="list-style-type: none"> - Carrying out research on various species of birds coming to the town and documenting the same.

COMPONENT B: INFRASTRUCTURAL IMPROVEMENTS

No.	ACTIONS	SHORT TERM (0-3 YRS.)	MID TERM (3-7 YRS.)
B.1.	Water supply	<ul style="list-style-type: none"> - Cleaning and maintenance of the well in the <i>Deulwadi Chowk</i>, - Providing water connection to every house in the precinct, - Regular water supply and relocation of water supply line on road-side. 	<ul style="list-style-type: none"> - Preparation of a DPR for W/S of the town
B.2.	Sewerage	<ul style="list-style-type: none"> - Proposal for setting up a new underground sewerage system in the entire <i>Deulwadi</i> precinct and provision of proper storm water outlet on one side of the road. - Introducing DWMS (Decentralized Wastewater Management System) for sewerage treatment, in order to reduce the investment and maintenance cost of project and still meeting the requirements stipulated in environmental laws & regulations. - Covering and improving the gradient of the <i>Nala</i> to prevent foul smell and blockage. - Cleaning and covering the drainage channel around the well in the <i>Chowk</i>. - Taking up an initiative for storm water collection at an appropriate location to utilize the same whenever required. 	<ul style="list-style-type: none"> - Preparation of a DPR for sewerage of the town.
B.3.	SWM	<ul style="list-style-type: none"> - Provision of well designed litter bins at appropriate spots in the precinct and regular maintenance of them. - Placing litter boxes at regular intervals in the <i>Chowk</i> and proposing and initiating everyday door to door garbage collection. - Developing methods for waste treatment before disposal. 	-
B.4.	Electric cables	<ul style="list-style-type: none"> - Underground electric wiring to be implemented in the temple street. - Wires should be laid in a separate box on road side and away from the wet areas. - Thus, total 200 mts. long trench line along the road side of <i>Deulwadi</i> area and around the <i>Bhimala talao</i> periphery is to be planned 	-
B.5.	Public Toilets	<ul style="list-style-type: none"> - Repairing the existing public toilets by replacing the roof, structural and architectural members in dilapidated condition and sanitary fixtures. 	<ul style="list-style-type: none"> - Erecting new Pay & Use toilets such that one public toilet has two toilets and one bathroom with a wash area and a movable tank. - PPP model will be used for maintenance of pay & use public toilets and other required amenities.

COMPONENT C: GOVERNANCE REFORMS

No.	ACTIONS	SHORT TERM (0-3 YRS.)	MID TERM (3-7 YRS.)
C.1.	Guidelines for <i>Deulwadi</i> Precinct	- Framing guidelines for heritage management in the precinct and institutional mechanism for the enforcement of the same (under ongoing project for MMR-HCS)	- Conducting training programmes and workshops for sensitizing people towards their own heritage.
C.2.	Building Permission	- Issue heritage notification to owners/users - Information available on Website	- MIS/ e-governance for permission process
C.3.	Encroachments & Parking	- Adapt National vendor policy - Prepare mainstreaming plan for hawkers - Initiative of a Slum Policy - Reorganise stalls and temporary shops from <i>Ganpati Chowk</i> to make the place congestion free - Parking zones to be demarcated	-

The need of each project and the proposed interventions therein have been described in detail in the subsequent section of the report-

2.1.3. Proposed Projects: Need of the project and proposed interventions

COMPONENT A: CONSERVATION & RESTORATION

The *Deulwadi* precinct is a core and oldest area of *Uran* town located near *Bhimala talao*. The precinct consists of the *Deulwadi Sansthan Chowk*, a series of temples located in Temple Street, *Ganpati Chowk* and peripheral road of *Bhimala talao*.

The temple street has a series of temple specimens which possess a high religious value for people of Maharashtra. They are the main attractions for the tourists coming to *Uran* for religious ceremonies and rituals. Apart from all the listed heritage buildings, the *Bhimala talao* and its surrounding area form the core of *Uran* town. The *Bhimala talao* and its periphery is the only community space available for the people of the town.

However inspite of this, the *Deulwadi* precinct faces several issues which need to be addressed individually as mentioned below:

Short term Projects (0-3 years)

A.1. Revitalization of *Bhimala Talao* premises

Need:

The *Bhimala talao* campus is the heart of the *Deulwadi* Precinct. *Bhimala Talao* is not only the core area of the town but also the only community space available to the people of *Uran* at an urban level. It is the only place which people of *Uran* can utilize for small gatherings, youth meetings, morning walks, and evening walks or for any other purpose. The *talao* has a peripheral road and garden where people can hang around and gather. The *Bhimala talao* is also used for the ritual of *visarjan* during *Ganesh Chaturthi*.

Figure 17 *Bhimala Talao* & its campus showing (from left) *Ganesh Visarjan*, community gatherings, vistas and recreational area (Source: UMC)



Based on the primary survey conducted in Sep.-2010, *eleven* out of *sixteen* participants emphasized that “*The Bhimala Talao serves as the most interactive space for communities living in the vicinity. We use this place in the mornings for two hours and in the evenings for two hours every day. We usually meet our friends there. This place provides a peaceful atmosphere to relax. The garden is a safe place for our children to play.*”

However, there are certain issues in the area like inadequate number street lights in the peripheral road along the *Talao*. There is also a lack of maintenance of solid waste disposal. But the latter shall be focused in the projects or actions under the Infrastructure sector head. One more issue is that of the street vendors who do not have regularized spaces for them and so they end up creating chaos

at various locations on the road. For this there is a need to regularize spaces for vendors, as per the *National Policy of Urban Street Vendors, 2004*. Maharashtra has directed all the Municipal corporations and Councils to prepare their own byelaws for their respective areas by making necessary amendments/changes in the *Model byelaws* depending upon the local circumstances.

Figure 18 Mismanagement of streets due to vendors (left), waste dumped (centre) & informal market (right)
(Source: UMC)



Proposed Interventions:

- Re-designing the street such that it incorporates paved parking spaces, recreational spaces along with appropriate shaded sitting spaces, sufficient no. of street lights/lamp posts and allotted spaces for street vendors.
- During our visit to *Uran* on date 2nd June' 2011, it was found that a sufficient number of new street benches have already been installed around the *Bhimala talao*. So this terminates the need to propose any new street benches around the *talao*. Landscaping has also been undertaken by the *Uran Municipal Council*. So this terminates the need of proposing any additional trees or landscape around *Bhimala Talao*.

Figure 19 Street Benches installed around Bhimala Talao (Source: UMC)



Analyzing the existing no. of street lights and proposing an appropriate number of street lights at suitable locations. The proposed locations of street lights are depicted on the map as follows:

Block Estimate: 72,200 INR (Alongwith O & M for next one year)-for 08 nos. of street lights along Nagaon road

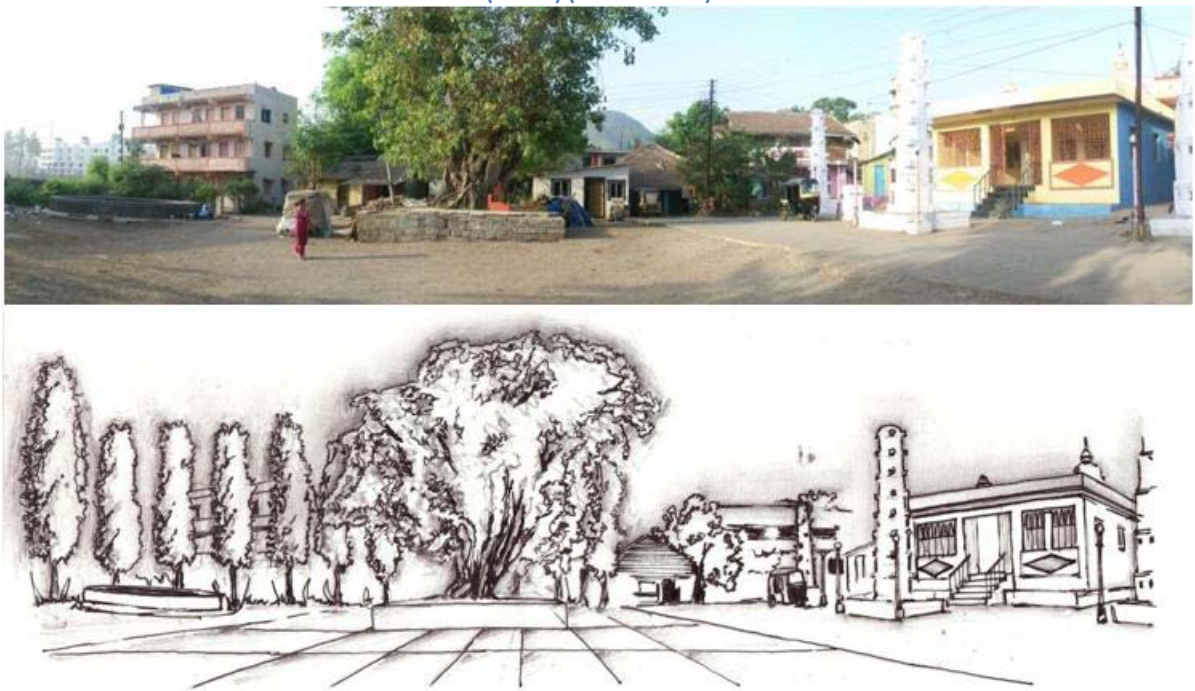
A.2. Revitalization of Deulwadi Chowk

Need:

a) Hard & Soft Landscape in the Chowk:

- *Deulwadi Sansthan Chowk* is also one of the important locations in the *Deulwadi* Precinct. Every year when there is an inflow of almost one *lakh* tourists to visit the temples in the *Deulwadi* Street, this *Chowk* is the only place where this huge lot of tourists can gather. Still the *Chowk* and several parts of the street with exposed untreated top surface. The *Chowk* also has two huge shaded tree platforms which need to be mended. And the *Chowk* has the only public toilet in the Street, since there is no toilet connection to any house in the temple street.

Figure 20 Exposed Surface in the Chowk (above) and after completion of proposed hard & soft landscape in the Chowk (below) (Source: UMC)



b) Other specific areas of intervention in the Chowk:

The functionality of the *Deulwadi Chowk* could be improved tremendously by undertaking small actions required at the locations depicted in the following images:

Figure 21 Views of Dilapidated areas of the Deulwadi Chowk (Source: UMC)



The issues which need to be addressed are as follows:

- The well in the *Chowk* is not covered which increases the risk of contamination of water. Due to this there are chances of accidents since lot of small children also play in the *Chowk*.
- The drain channel around the well is also exposed and urgently needs to be cleaned.
- The hand pump - wash area needs to be repaired since the tiles applied to it have got damaged and the edges of the wash have also broken.
- There is lack of adequate number of street lights in the *Deulwadi Street*. During festivals when the *Deulwadi Street* is highly congested with people, proper lighting is required.
- The two tree platforms in the *Chowk* are also damaged.

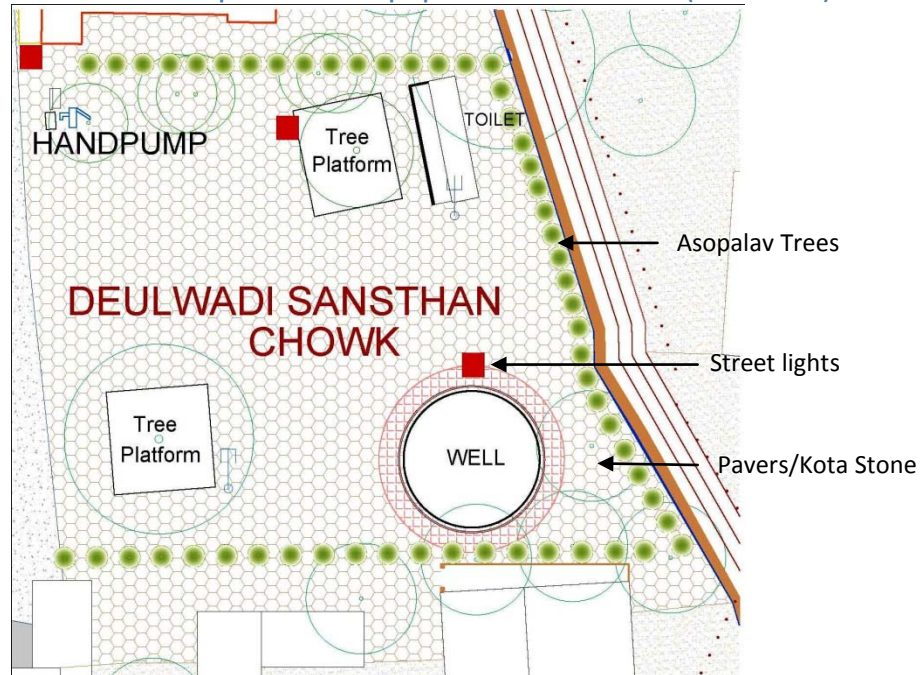
Proposed Interventions:

1. Hard Kota stone/Paver blocks paving in *Deulwadi Chowk*. (967 m² as per dwg.)
2. Planting indigenous giving trees along the *Nala* and the edges of the *Chowk* in order to enhance the experience of the *Chowk* for the people.
 - o Identified Trees: *Asopalav* (*Polyalthia Longifolia*) can be a good option for the *Chowk* edges.

Figure 22 Exposed Surface in the Chowk (above) and after completion of hard & soft landscape in the Chowk (below)
(Source: UMC)



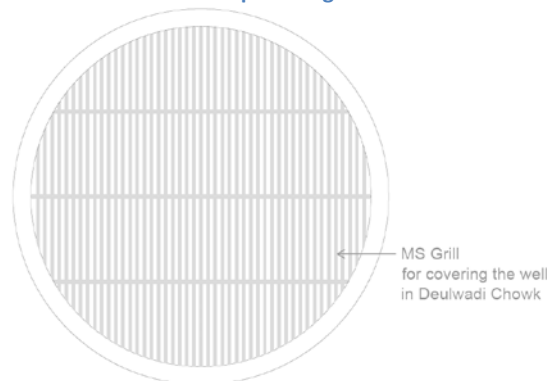
Figure 23 Hard & Soft Landscape interventions proposed in Deulwadi Chowk (Source: UMC)



Note: The trees/planters & pavers/kota stone depicted in the above figure are indicative.

3. Covering the well in such a way that there are provisions for the people to draw water from the well.
 - Dia. of the Well opening: 8.63 mts.

Figure 24 Plan of Well-covered with help of MS grill in Deulwadi Chowk (Source: UMC)



4. Repairing the hand pump – wash area and constructing a proper threshold around the same. Also providing proper drainage to it.
5. Repair of the existing non working 10 out of total 12 light poles in the Temple Street and proposal of setting up new street lights (54 new street lights proposed) at specific locations as shown in the map.

Figure 25 Broken and damaged light poles in Deulwadi Street (Source: UMC)



6. Mending of the two main tree platforms (see previous figure). Their dimensions are mentioned as follows:
 - Peepal tree platform: 6.41 x 6.51 x 0.65 mts. (*l x b x h*)
 - Banyan tree platform: 5.68 x 6.81 x 0.45 mts. (*l x b x h*)
7. Recommendation of purchasing a flood light which can be used during festival-times.

S. No.	Action/Task to be undertaken	Quantity	Amount (INR)
1.	Hard Kota stone paving	967 m ²	7, 43, 800
2.	Planting trees along Chowk edges	L.S	1, 05, 600
3.	Covering the well and drain around it	Dia.-8.6 m	56, 317
4.	Repair of hand pump	Nos.-1	40, 000
5.	Street lights	54	3, 86, 400
6.	Mending two tree platforms	Nos.-2	64, 800
7.	Flood light for the Chowk	Nos.-1	16, 004
Total			14, 12, 921

Block Estimate: 14, 57, 921 INR (Alongwith O & M for the next one year)

A.3. Conservation & restoration of heritage structures

There are several locations related to this issue where immediate actions are required:

Figure 26 Vitthal Mandir (left) & Vitthal Rukmani Mandir (right) (Source: UMC)



- **Vitthal Mandir:** Water Seepage from roof has caused damage to wall plaster.
- **Vitthal Rukmani Mandir:** Seepage on rear side of the wall. And surface cracks have developed in the inside hall window. Flaking of cement plaster on the plinth.

Figure 27 Ram Mandir (left-above & below) & Dispensary (right-above & below) (Source: UMC)



- **Ram Mandir:** Structural deformation is observed on the first floor. And foliation of colour-coat due to seepage from floor/ground near *garbhagrha*.
- **Dispensary:** Flaking of plaster from inside the wall. Water proofing is required to stop leakage from the roof.

Figure 28 Shankar Chawl (Residence - 1) - Need of maintenance & repairs (Source: UMC)



- **Residence-1 (Shankar Chawl):** MS railing in bad condition and cracked beam junction.

Figure 29 Residence – 3 (left) and Residence – 4 (right) (Source: UMC)



- **Residence-3:** Roofing Material deteriorated due to water seepage from the roof.
- **Residence-4:** Water drips during monsoons from roof, displacement of tiles due to poor maintenance.

Figure 30 Residence - 5 (Commando Academy) (Source: UMC)



- **Residence-5 (Commando Academy):** Bulging and flaking of plaster, broken cornice detail and cracking plasters on outer surface.

Figure 31 Chabutra - different views (Source: UMC)



- **Chabutra:** Exfoliation of plaster on outer surface, water dripping from roof during monsoon season and loosening of lime pointing work.

As shown above there are specific problems in various structures of the precinct. The following major tasks need to be undertaken:

S. No.	Action/Task to be undertaken	Total area (m ²)	Amount (INR)
1.	Water proofing	365	1, 05, 850
2.	Painting	17, 487	2, 79, 792
3.	Roofing with Mangalore tiles	185	93, 980
4.	Restoring of stone work	250	27, 500
5.	Wood work finishing	250	17, 000
Total			5, 24, 122

Block Estimate: 5, 39, 122 INR (Alongwith O & M for the next one year)

A.4. Developing reference material and creating awareness about town's history and heritage.

Need for the project:

Since there is no significant literature or reference material concerning the town's history or heritage, it is very essential to develop the same and house it in the Municipal Council itself to make it accessible to the people. Again, this reference material shall prove helpful for public awareness towards the town – heritage as well as its natural features, and birds coming there. It can be compiled as a tourist guide book also. It can be put for sale for the tourists. Apart from this there is a vast natural wealth of trees in *Uran* which can be catalogued to make the tourists and local people sensitive towards them.

Parallel initiative:

The '**Mangroves Action Project**' raises the issue of total devastation of one of the biggest extends of wetlands tracts and mangroves in this part of India (Mangrove_Action_Project, No Year).

The website also mentions that *Uran* was home to around 200 species, including migratory birds. Not less than an estimated 75 species would be breeding there. First breeding record of several bird species had been found there in the last 5 years; for example, the black breasted weaver birds, a species which was found breeding in the region after 52 yrs. Several of the IUCN Red Data status birds were regularly wintering there. Many of the species fall under schedule I & IV of the Wildlife protection act of India, 1972.

It was a wintering area for many bird species, including several Critically Endangered, Vulnerable and Near-threatened species. It was an important stopover for several passage migrant birds that came in from as far as Europe, Central Asia and the Arctic Tundra. Many bird ringing studies have been conducted by senior ornithologists who prove this fact. *Uran* was also home to other endangered species like the monitor lizard.

As a matter of fact, it is surprising that *Uran* is not yet classified as an Important Bird Area despite its richness and numbers of birds. In fact, it should be proposed for the same, more so since our government has pledged to conserve wetlands in the country.

Figure 32 Natural heritage - Birds found in Uran (Mangroves Action Project, No year)



Figure 33 Present condition due to developmental activities - Uran (Mangroves Action Project, No year)



Proposed interventions:

1. Creation of reference material informative of the town and its heritage (architectural, flora and fauna, socio-cultural, etc.) and making the same accessible to the local people as well as tourists.

The following actions could be taken in this direction:

- Cataloguing of all the trees (natural heritage) in the town.
 - Carrying out research on various species of birds coming to the town and documenting the same. Several research studies which are already carried out by researchers should be compiled, unified and made accessible to public.
 - Dispensary building and its compound could be designated and developed as a Heritage Cell cum Tourist Information Centre cum Exhibition space.
2. Recommendation to the Tourist Department for inclusion of *Uran* on the 'Bombay Tourist Map' such that it is a designated tourist spot/destination.
 3. Installation of information signage for all heritage buildings mentioning their history, heritage and religious values.

Figure 34 Different species of trees (left & centre) and birds (right) in the Talao & its campus (Source: UMC)



Block Estimate: 15, 00, 000 INR (5, 00, 000 INR for IEC campaign (annual) + 10, 00, 000 INR for developing Dispensary as a Tourist Information centre/Heritage Cell/Exhibition space)

COMPONENT B: INFRASTRUCTURAL IMPROVEMENTS

Short-term Projects (0-3 years)

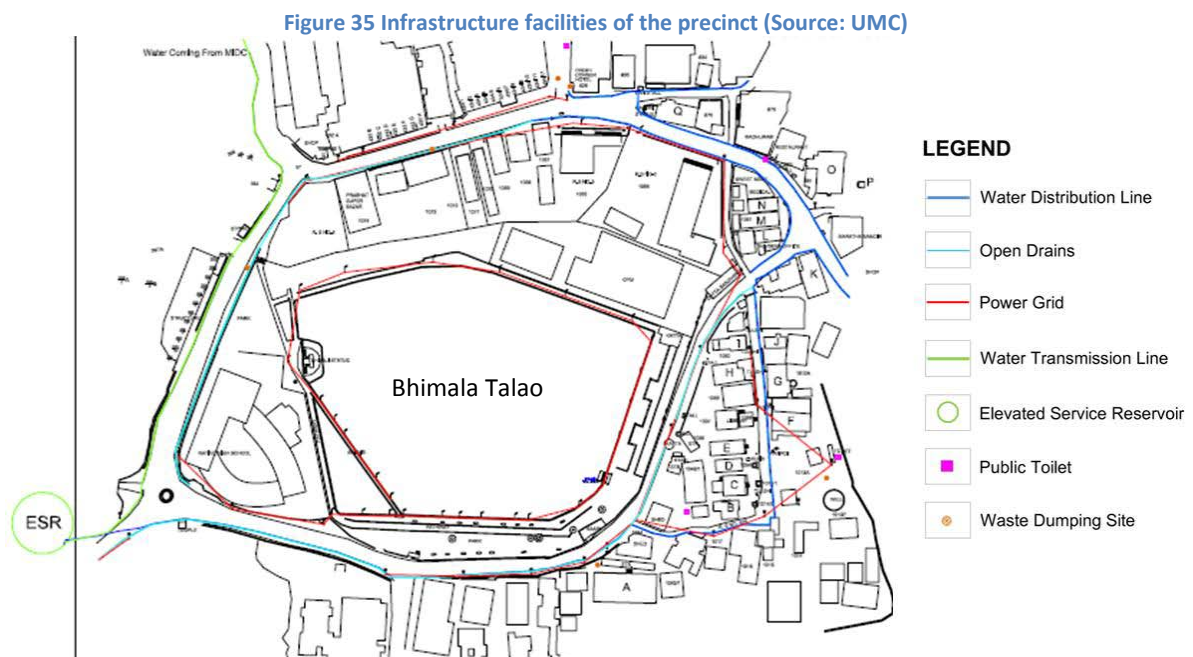
PROPOSALS OF PLANNING AND IMPLEMENTATION STRATEGIES FOR VARIOUS INFRASTRUCTURAL ISSUES

Need for the project:

There are several issues regarding infrastructure of the town. With efficient planning and management implementation of projects and reforms can be achieved effectively.

Issues regarding various infrastructure services are listed as follows:

- Water supply: Inadequate number of connections provided to the people of Deulwadi Street.
- There is poor 'storm water drainage' facility in the town.
- Solid Waste Management: There is a lack of efficient solid waste management services in the precinct.
- The public toilets are inadequate in number and are in a bad condition.



Hence the present initiative has been suggested regarding the following heads:

B.1. Water supply

Need:

- Currently *Deulwadi* Street has 20 water connections but only six houses have a tap in their houses.
- The existing wells in the Deulwadi Street are rendered non-useful for the purpose of acquiring drinking water.
- The people in Deulwadi get water supply only for 1 hour (6:00 AM-7:00 AM).

Figure 36 Well (left) & handpump (right) in Deulwadi Chowk (Source: UMC)



Proposed intervention:

- A Detailed Project Report of Water Supply should be prepared under UIDSSMT of other applicable schemes. Special consideration should be given to the Deulwadi precinct to ensure fulfilment of water supply related norms and standards.

Block Estimate: 6, 00, 000 (DPR cost)

B.2 Sewerage and Storm water drainage

Need:

- There is no sewerage line in the *Deulwadi* area but an underground sewerage line needs to be set up.
- The open drain or *Nala* carries sewage and hence it is potentially hazardous.

Figure 37 Open drains in the precinct (Source: UMC)



Proposed interventions:

- Proposal for setting up a new underground sewerage system in the entire *Deulwadi* precinct and provision of proper storm water drain on one side of the road.
- Introducing Decentralized Wastewater Management Systems (DWMS*) for sewerage treatment, in order to reduce the investment and maintenance cost of project and still meeting the requirements stipulated in environmental laws & regulations.
- Covering and improving the gradient of the *Nala* to prevent foul smell and blockage.
- Cleaning and covering the drainage channel around the well.
- Taking up an initiative for storm water collection at an appropriate location to utilize the same whenever required.
- Cleaning of the existing gutter-line and setting up new underground gutter line connecting to the main drain.

* DWMS (Decentralized Wastewater Management Systems)

DWMS represents a technical approach rather than merely a technology package. DWMS applications are designed to be low maintenance. It is capable to treat domestic and industrial wastewater. It requires low initial investment and can efficiently treat daily wastewater flows upto 1000 m³. DWMS applications are based on the principle of low-maintenance since most important parts of the system work without technical energy inputs and cannot be switched off intentionally.

DWMS applications are based on four basic technical treatment modules which are combined according to demand:

- Primary treatment: sedimentation and floatation
- Secondary anaerobic treatment in fixed-bed reactors: baffled upstream reactors or anaerobic filters
- Tertiary aerobic treatment in sub-surface flow filters
- Tertiary aerobic treatment in polishing ponds

To arrive at a block cost estimate of DWMS system, the following fundamental points regarding DWMS were kept in mind:

- DWMS - deals with primary + secondary treatment
- Optimal population density required for successful working of DWMS ranges from 160-200 Per./Ha. upto 400 Per./Ha.
- Each module of DWMS can have a capacity of treating 2 lac litres of waste water and the cost incurred would be around 18 to 25 lacs per 2 lac litres.

- The main benefit of this system is that it has a negligible O & M cost as compared to the conventional sewerage system. (It requires cleaning at a frequency as low as once in 3 years and only persons are required for maintaining one module of DWMS)

Block Estimate: 6, 00, 000 INR (DPR cost)

B.3. Solid waste management

Need:

Solid waste management is also one of the major issues which need to be dealt with in the town.

- Uran generates around 6.5 tonnes of solid waste per day out of which the **Deulwadi precinct contributes to 1 tonne**. Thus per capita waste generation: 190 gms. / Day.
- But there is a lack of proper maintenance of the existing bins and methods of waste treatment before it is disposed off. Even the people at times are used to dispose waste directly in *Bhimala talao*.
- There is problem of garbage dumped behind heritage structure and on the main street which results in an unhygienic condition and blockage of the open drain.

Figure 38 Poor solid waste management in the precinct (Source: UMC)



Proposed interventions:

- Provision of well designed litter bins at appropriate spots in the precinct and regular maintenance of them.
- Placing litter boxes at regular intervals in the *Chowk* and proposing and initiating everyday door to door garbage collection.
- Developing methods for waste treatment before disposal by the concerned body.

Block Estimate: 1, 50, 000 INR (cost of new litter bins)

B.4. Electric cables

Need:

- In the present scenario the existing electric lines are placed in such a way that they spoil the natural fabric or setting of the town and especially the precinct. They are loose and they cross each other in front of the facades spoiling the visual appeal of the buildings. So if it is managed to be laid underground it would not cause any unwanted problems.

Figure 39 Electric cables hanging from the poles in the precinct (Source: UMC)



Proposed interventions:

- Underground electric wiring to be implemented in the temple street.
- Wires should be laid in a separate box on road side and away from the wet areas.
- Thus, total 200 mts. long trench line along the road side of *Deulwadi* area and around the *Bhimala talao* periphery is to be planned.

Block Estimate: 1, 00, 000 INR

B.5. Public toilets

Need:

Only two public toilets are there in *Deulwadi* area and they also are in a dilapidated condition.

Figure 40 Public toilets (opp. Bhimala Talao-left) and (in Deulwadi Chowk-right) (Source: UMC)



Proposed interventions:

- Repairing the existing public toilets by replacing the roof, structural and architectural members in dilapidated condition and sanitary fixtures.
- Erecting new Pay & Use toilets such that one public toilet has two toilets and one bathroom with a wash area and a movable tank.

Block Estimate: 2, 21, 186 INR (for repair of two public toilets)

COMPONENT C: GOVERNANCE REFORMS

C.1. Guidelines for Deulwadi Precinct:

Note: Guidelines for the precinct are supposed to be a part of the current project itself. Hence no block estimate has been mentioned in this category.

Need:

The development guidelines for the precinct are required to protect the existing heritage structures from the risk of demolition, to maintain an overall character of the precinct and to protect the natural heritage (*flora and fauna*) in the precinct. In addition the guidelines would also pave way for heritage sensitive development in future. Apart from this, the current project is also conceived by MMR-HCS with an intention to form a set of guidelines for the delineated precinct; which would become a part of the bye-laws for the *Uran* town.

- An absence of development guidelines for heritage, especially urban heritage; might result in to visually degraded and insensitive developments around it. For instance, as shown in the following image:

Figure 41 Case of Urban heritage in Ahmedabad – Bheed Bhanjan Hanuman Mandir(left) and Temple in Uran just outside the Deulwadi Precinct(right) (Source: UMC)



- The unutilized FSI in the heritage structures of the precinct may also prove to be a tempting factor for the owners of the heritage properties to demolish and reconstruct the structure or execute extension/addition to the existing structure to utilize the unused FSI.

The amount of unutilized FSI in various structures of the precinct has been found during the reconnaissance surveys conducted as a part of the current project. They are listed in the below table:

Sr. No	Building Name & survey no.	Plot area	No of floors	Total built up area	Utilized FSI	Allowable FSI	Un-utilised FSI
1	Vitthal Mandir 1052	89 sq.mt	G	74 sq.mt	0.8	1.8	1
2	Sangmeshwar Mahadev mandir	117 sq.mt	G	108 sq.mt	0.9	1.8	0.9
3	Shitla devi Mandir	82 sq.mt	G	63 sq.mt	0.7	1.8	1.1
4	Vitthal Rukmani mandir	221 sq.mt	G	90 sqmt	0.4	1.8	1.4
5	Residence 2	185 sq.mt	G+1	G – 175 F.F – 63 Total - 238	1.2	1.8	0.6
6	Residence 3	72 sq.mt	G+1	G- 95 F.F – 41 Total - 136	1.8	1.8	NA
7	Balaji temple	491 sq.mt	G	Balaji temple – 106 Adjoining buildings – 124 Total – 230sqmt	0.4	1.8	1.2
8	Dutt Temple	261 sq.mt	G	Dutt mandir-85 Adjoining Structure-69 Total-154	0.5	1.8	1.3
9	Residence 4	181 sq.mt	G	48 sq.mt	0.2	1.8	1.6
10	Commando Building	213 sq.mt	G+1	G-156 FF-147 Total-303	1.4	1.0	-0.4
11	Hanuman Temple	73 sq.mt	G	60 sq.mt	0.8	1.0	0.2
12	Ganpati Temple	191.42 sq.mt	G+1	G-103 FF-103 Total-206	1.0	1.0	NA
13	Laxmi Narayan Temple	191.42 sq.mt	G+1	G-74 FF-72 Total-152	1.2	1.0	-0.2
14	Ram Mandir	591 sq.mt	G+1	G-263 FF-225 Total-488	0.8	1.0	0.2
15	Dispensary	625 sq.mt	G	Dispensary-156.71 Store-23.11 Total-279.81	0.4	1.0	0.4
16	Residence	175 sq.mt	G+1	NA	NA	NA	NA
17	Shankar Chawl	NA	G+1	G-347 sq.mt FF-285 sq.mt	NA	NA	NA

- The guidelines can help to protect the heritage from the increased pressure of urbanization and real estate market. For instance, the 'Ban Ganga' – case of Mumbai as shown in the following figure depicts a clear picture of how beneficial the development guidelines could prove to be.

Figure 42 Ban Ganga Lake – Mumbai (Source: www.mumbailocal.net)

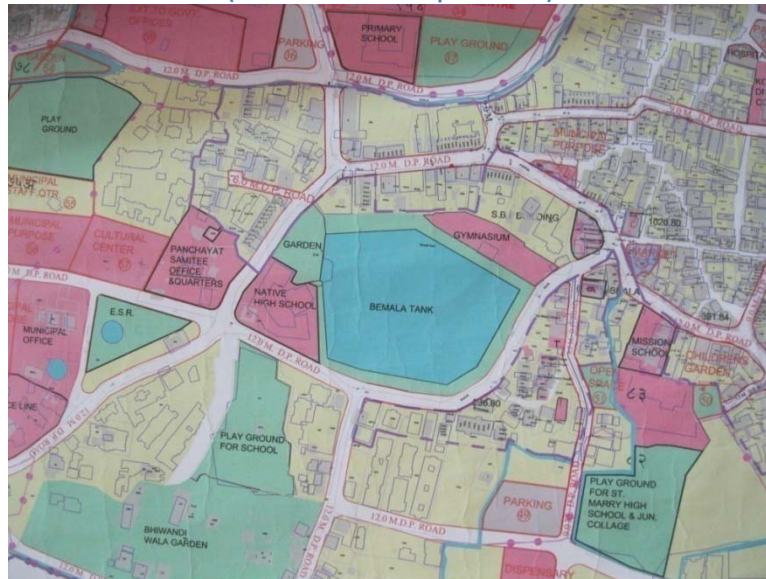


Figure 43 Festival at Ban Ganga - During night time (Source: www.mumbailocal.net)



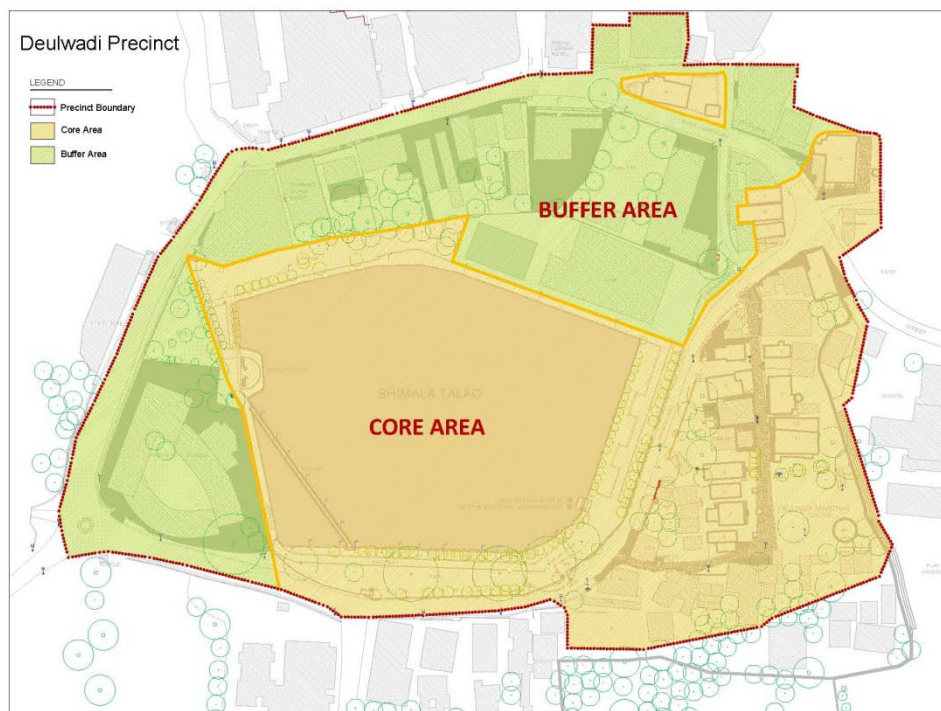
The provisions in the Development Plan are also considered in the action plan. The DP (Development Plan) recognizes Bhimala Talao as a No Development Zone and Deulwadi Chowk as an Open Space:

Figure 44 Partial image of Draft Development Plan of Uran – 2nd Revised; 2012 – Proposed Land use Plan
(Source: Uran Municipal Council)



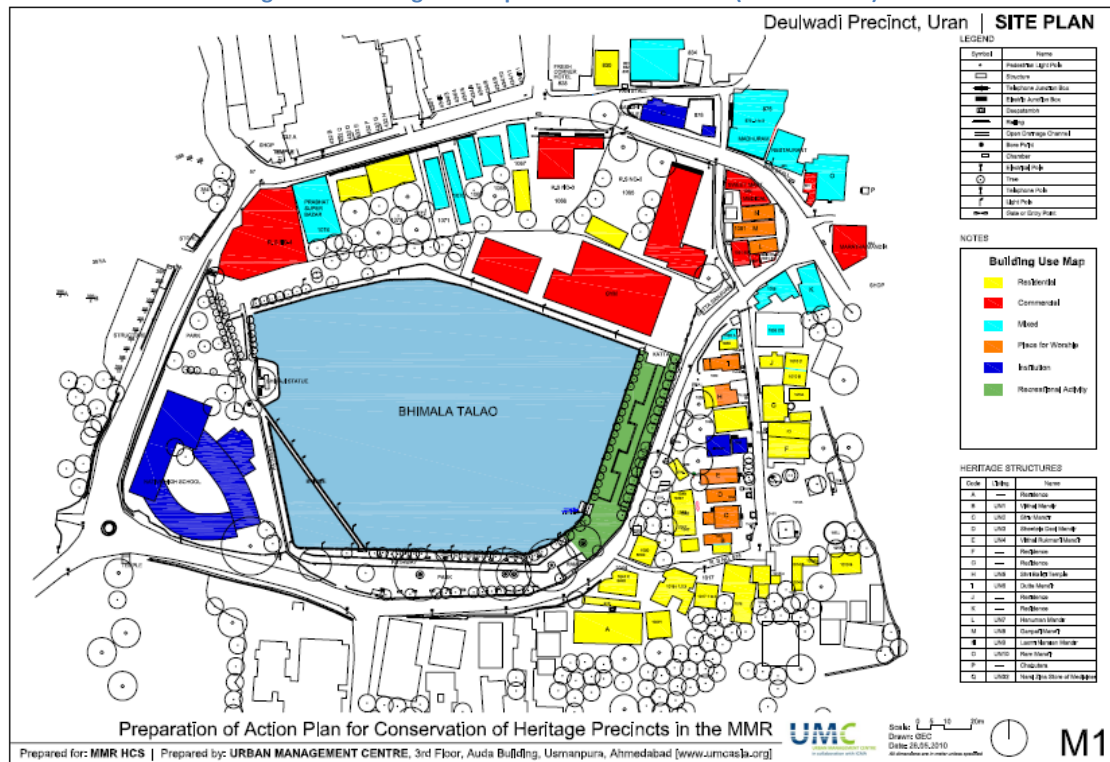
The guideline categorizes areas into **Core and Buffer area** looking forward to effective control and sensitive development. The suggested proposals would try to manipulate the newer developments and modifications to the existing structures in such a way that they do not spoil the existing fabric of the delineated heritage precinct and yet facilitate the owners to make suitable changes as per their requirements.

Figure 45 Core & Buffer areas of Deulwadi Precinct, Uran (Source: UMC)



Before arriving at suggestions for guidelines, it is better to have an overview of the existing **Building Use, Building Heights and Ownership Maps**; which are already depicted in Stage-2 Report, but for ready reference they are shown as follows:

Figure 47 Percentage of various Building Uses - Deulwadi Precinct



Inferences:

Core area (Temple Street) shows predominantly Residential and Religious use.

Buffer area displays more of commercial and Mixed building use.

Figure 48 Building Heights Map - Deulwadi Precinct (Source: UMC)

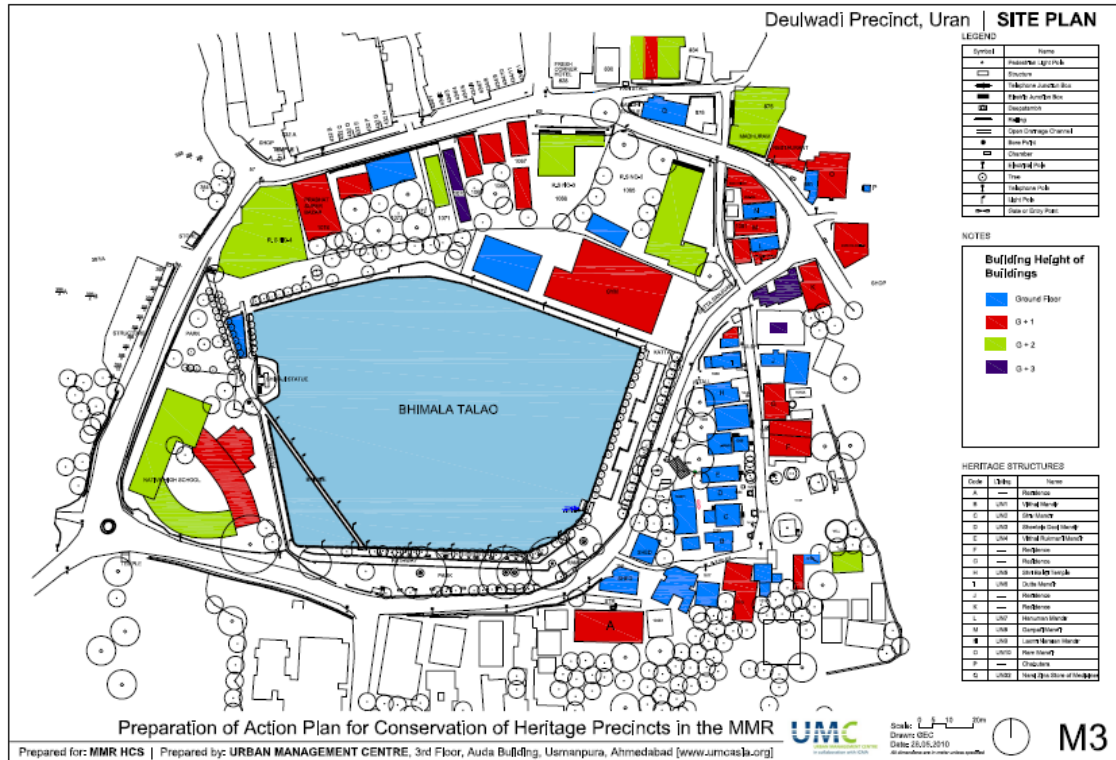
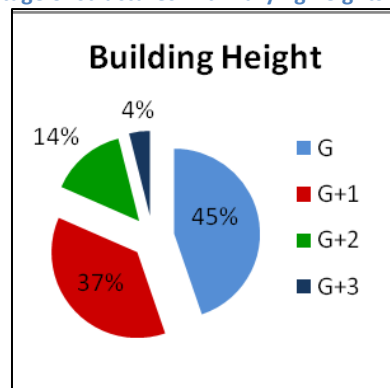


Figure 49 Percentage of structures with varying heights- Deulwadi Precinct

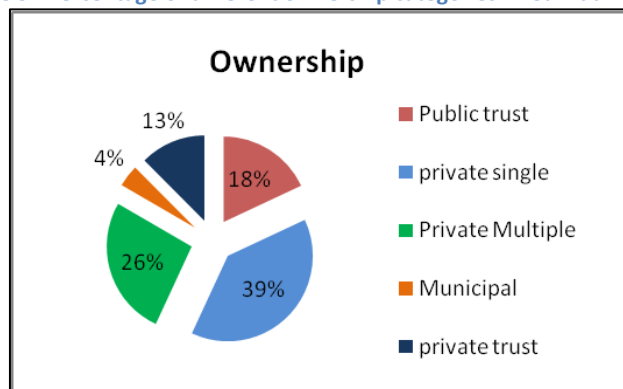


Inferences:

Deulwadi Temple Street has more single storied structures

Buffer area – more than G+2 heightened structures

Figure 51 Percentage of different ownership categories - Deulwadi Precinct



It is clear that Maximum ownership is in private domain.

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Suggestions for the 'Development guidelines' for the *Deulwadi* precinct:

Objective	Strategy	Proposal	Applicability
1. To prevent excessive through traffic (especially during festivals)	<ul style="list-style-type: none"> - Restrict vehicular movement and prioritize pedestrians - Identify parking plots/street lines 	<ul style="list-style-type: none"> - The Uran Municipal Council should restrict four wheeler vehicular entries in the Temple Street during festivals. 	<ul style="list-style-type: none"> - Core Area
2. Parking facility	<ul style="list-style-type: none"> - Identify plots/street lines where parking is feasible 	<ul style="list-style-type: none"> - In the Development Plan provision should be made for paid car-parks (<i>proposed parking plot is shown in the figure 44 Draft DP</i>) 	<ul style="list-style-type: none"> - Core and buffer Areas
3. To protect the existing buildings, structures and temples from the risk of demolition	<ul style="list-style-type: none"> - Frame regulations such that the owners of heritage properties are not encouraged to demolish their building to use the unutilized FSI 	<ul style="list-style-type: none"> - Freeze the current FSI and use the unutilized FSI in the form of TDR or sell it off to a developer to be used in a specified receiving zone 	<ul style="list-style-type: none"> - Core Area
4. To preserve significant heritage structures and conserve architectural character (wherever applicable)	<ul style="list-style-type: none"> - Enlist buildings with architectural character - Enlist peculiar architectural features and frame specific guidelines - Offer incentives to retain, repair and maintain buildings - Facilitate repairs and maintenance works by suitably qualified agencies to carry out such tasks. 	<ul style="list-style-type: none"> - A Heritage Cell or committee should be set up to advice on repair, additions and alterations - Listing of buildings and notification to the owners - Grading of listed buildings - All alterations or changes to the heritage buildings have to be approved by the Municipal Council through an NOC from the Heritage Cell. 	<ul style="list-style-type: none"> - Core and Buffer Areas
5. To preserve green cover	<ul style="list-style-type: none"> - Prohibit cutting of trees - Maintenance of branches to be done regularly - Generate awareness of flora and fauna species 	<ul style="list-style-type: none"> - A tree census be conducted and important trees be catalogued/labelled - Fine/penalty on cutting of trees 	<ul style="list-style-type: none"> - Core and Buffer Areas
6. To address issues of garbage disposal & sewerage	<ul style="list-style-type: none"> - Initiating door to door waste collection practice - Placement of litter bins at regular intervals at suitable locations 	<ul style="list-style-type: none"> - Adapting innovative and effective techniques like DWMS for decentralized treatment of waste - Residential units that compost their wet garbage and recycle their non bio-degradable waste shall get reduction in the property tax 	<ul style="list-style-type: none"> - Core and Buffer Areas
7. To prevent further densification	<ul style="list-style-type: none"> - Curb accelerating growth of residential buildings 	<ul style="list-style-type: none"> - Maximum built up should be restricted to a allowable FSI as per Development Control Regulations (D.C.R). However ground coverage should be controlled appropriately. 	<ul style="list-style-type: none"> - Buffer Area

C.2. Building Permission

Need:

Currently all the building plan proposals are sanctioned through the Uran Municipal Council. However in some cases the higher authorities seek advice of Town Planning Department in Alibaug and CIDCO.

At times this takes so long that by the time plans are approved, owners come up with an unauthorized construction on site.

Proposed reform:

- Issuing of Heritage Notification to the owners/users and IEC activities for general awareness.
- The planning department of *Uran Municipal Council* can make the process of building permission on a fast track mode by introduction of MIS/e-governance for permission-process.

C.3. Informal activities & Parking

Need:

- The temporary extensions and shades erected by the shopkeepers at ground floor level extend into the street.
- Even the hawkers and vendors block the pedestrian movements in the street.
- Traffic congestion problems occur frequently at locations like *Ganpati Chowk* and at some spots during festivals.

Proposed intervention:

- Designating locations for street vendors and hawkers (such as hawker zone) in compliance with the **National Policy on Urban Street Vendors, 2009**.
- Regularizing the hawkers and stalls and relocating them from highly congested areas to a location where pedestrian and traffic movement is hindered.
- Reorganize stalls and temporary shops from *Ganpati Chowk* to make the place congestion free.
- Parking zones to be demarcated.

Parallel initiative:

The Draft Development Plan of Uran – 2nd Revised: Proposed Land use plan demarcates parking zone near the Deulwadi Precinct. This terminates the need for proposing any new parking lots for the precinct.

Figure 52 Partial image of Draft DP of Uran - Proposed Land use 2nd revised 2012; (Source; Uran Municipal Council)



2.2. Institutional Mechanism for Implementation of the Projects:

The vision for *Deulwadi* Precinct can be achieved only with the co-operation of the local authority and the willingness of the citizens of *Deulwadi* to conserve their physical and socio-cultural heritage.

It is a known fact that not only citizens of *Deulwadi* or *Uran* have high socio-cultural importance in their minds for *Deulwadi*, but pilgrims from all over Maharashtra hold *Deulwadi* as a pious pilgrimage centre for them.

However when around one *lakh* pilgrims come to the place every year during *Ganesh Chaturthi* and other several festivals, it becomes difficult to maintain the precinct, its cleanliness, traffic and adequate tourist facilities.

Keeping this in mind the following projects have been proposed:

A.1. Revitalization of *Bhimala Talao* premises

A.2. Revitalization of *Deulwadi Chowk*

All above projects would play a vital role in revitalizing the important areas of the precinct. Apart from these the following project is proposed to restore the existing heritage structures of the precinct:

A.3. Conservation and Restoration of Heritage Structures

To develop an authentic source of information (reference material) regarding the history of the town and its heritage the following initiative has been suggested:

A.4. Developing reference material regarding the town's history and heritage

However, the information regarding the town's history, *Deulwadi* precinct and its significance, various festivals and customs has been furnished in the earlier stages of this project. But additionally research study needs to be initiated for trees and birds' species making the information accessible to public.

In addition to the above, there are other projects related to infrastructural improvement which are necessary to be accomplished for the upkeep of the precinct. These projects demand interventions in the following demand interventions in the following sectors:

Water supply, Sewerage, Solid Waste Management, Electric Cables and Public toilets

Along with these interventions there are Development Control Guidelines which would help to protect the existing heritage structures from demolition and to maintain the overall character of the precinct.

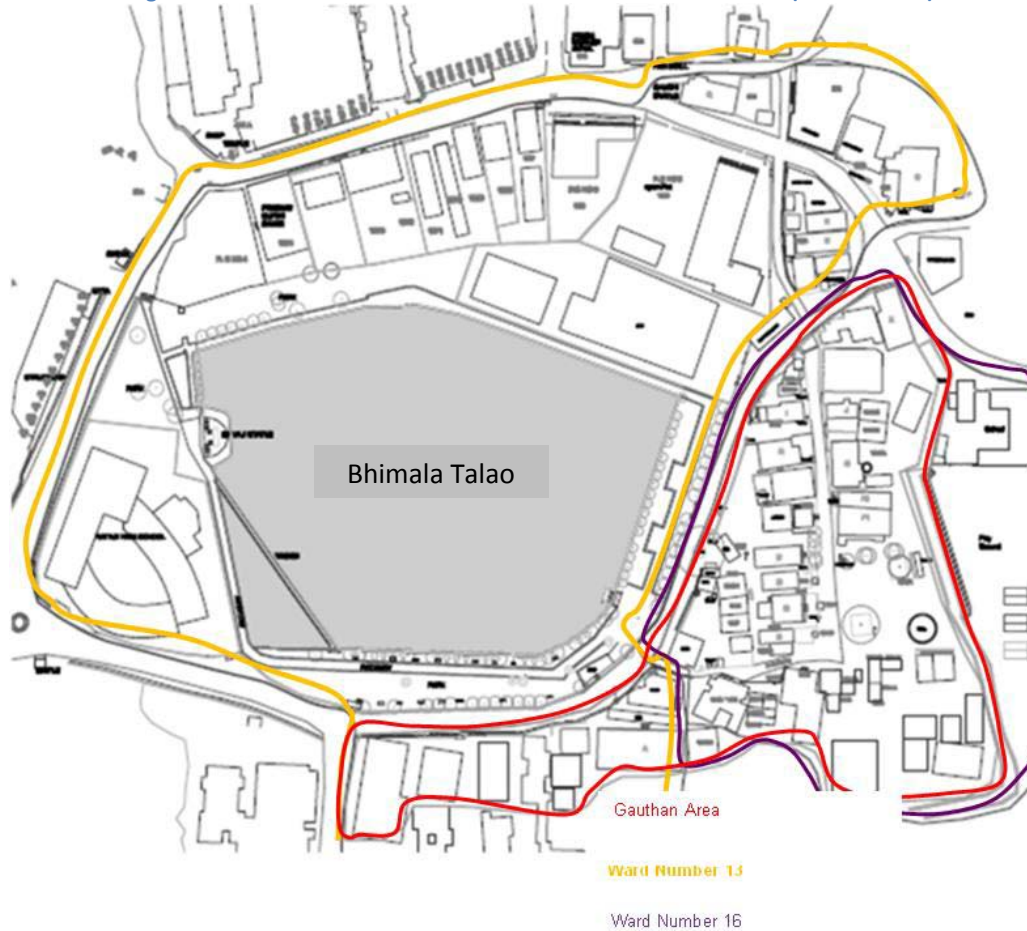
The **local body** (Uran Municipal Council) would play a prime role in executing and managing the proposed projects.

Currently the *Deulwadi Sansthan* is governed by **six trusts**:

- 1) *Shree Sangmeshwar trust – Public Trust: Vitthal Mandir, Mahadev Mandir, Urnavati Devi Mandir, Vitthal Rukmani Mandir, Dutta Mandir*
- 2) *Balaji Trust – Private Trust (Shroff family): Balaji Mandir*
- 3) *Hanuman Mandir – Private Trust (Chavate family): Hanuman Mandir*
- 4) *Laxmi Narayan Mandir – Private Trust (Brahmin family): Laxmi Narayan Mandir*
- 5) *Ganpati Mandir – Private Trust: Ganpati Mandir*
- 6) *Ram Mandir – Private Trust (Thakkar family): Ram Mandir*

Apart from these, the *Deulwadi* Precinct falls in to two wards – 13 & 16:

Figure 53 Deulwadi Precinct - Ward boundaries and Gauthan Area (Source: UMC)

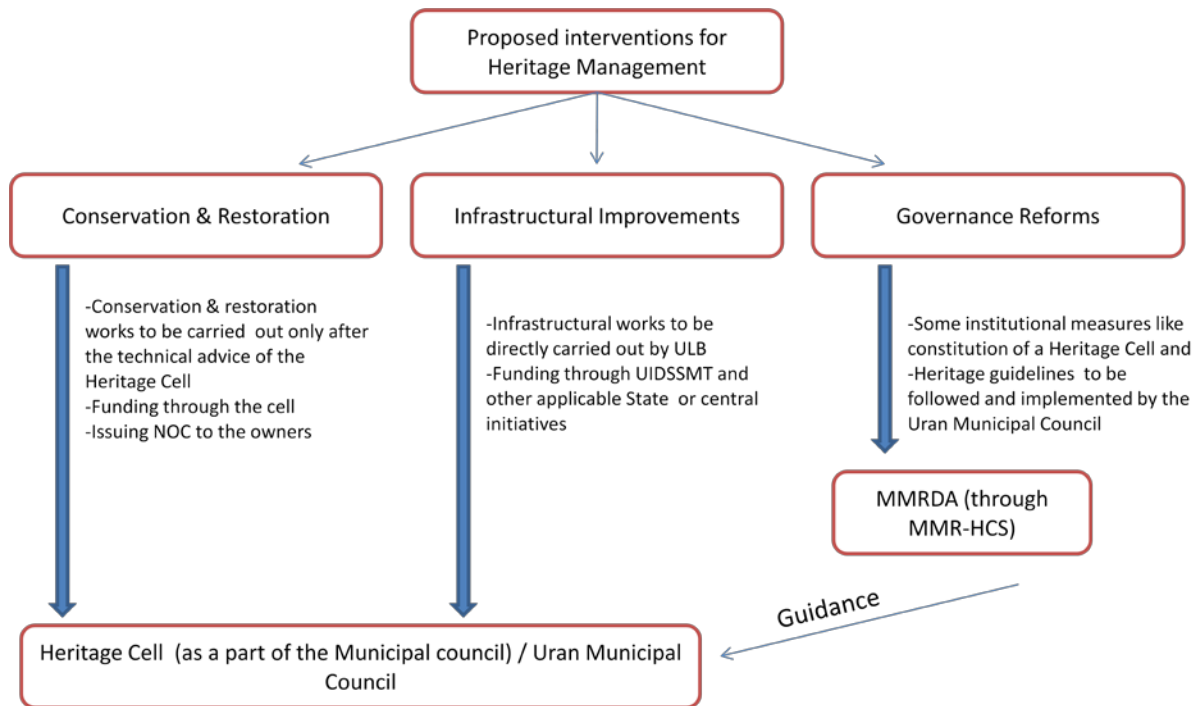


- **Deulwadi precinct falls into two ward boundary 13 and 16**
- **The decisions for developments and funds for water, sanitation, roads and public facilities are given directly by General Body (17 councilors and president) with advisory staff**

Thus, the respective General Body can play a significant role in taking up a responsibility of implementation of projects proposed for the betterment of the precinct.

As suggested earlier, formation of a ‘**Heritage Cell**’ cum ‘Tourist information centre’ would be very helpful in the management of the heritage in the precinct. It could include an Historian, an Architect, MMR-HCS representative and a senior resourceful person.

The role of the Heritage Cell could include: Issuing an NOC to any owner of a heritage property for carrying out any changes to the building, providing Technical Advice (related to conservation), Advice to Municipal Council on listed buildings and funding conservation & restoration works required for the maintenance of the precinct.



2.3. Summary of Block Cost Estimate

Sr. No.	Proposed intervention	Block Estimate (INR)
Conservation & Restoration		
A.1.	Revitalization of Bhimala Talao premises	67, 200
A.2.	Revitalization of Deulwadi Chowk	14, 12, 921
A.3.	Conservation & restoration of heritage structures	5,24, 122
A.4.	Developing reference material regarding town's history & heritage	15,00, 000
	Total Block cost of projects in Conservation & restoration	35,04,243
Infrastructural Improvements		
B.1.	Water Supply	12,00,000
B.2.	Sewerage	
B.3.	Solid Waste Management	1,50,000
B.4.	Electric Cables	1,00,000
B.5.	Public toilets	2,21,186
	Total Block cost of projects for Infrastructural Improvements	16,71,186
TOTAL		51,75,429

The Block Estimates for the above mentioned projects have been prepared as per the District Schedule of Rates for *Raigad* District 2009-10 as quoted on the website of Public Works Department, Government of *Maharashtra*.⁴ Operation & Maintenance (O &M) costs have been assumed for the next one year following after the completion of the proposed work. For every year following 2009-10, an increase of 10 % shall be assumed in the total costs of respective projects.

The detailed description of the block costs for each proposed intervention/project/programme mentioned above is given in the Annexure

2.4. Possible sources of funding

The possible sources of funding for the above mentioned projects/actions as per the Annual Budget of year 2011-12 of *Uran Municipal Council* are listed as follows:

Projects/Proposed interventions	Project Cost (In INR)	Possible sources of funding
Conservation & Restoration	35, 04, 243	Incentives like grant of loans, TDR, MMR-HCS
Infrastructural Improvements	16,71,186	Internal ULB fund: Rs. 11,47,773 /- Total income from Tax-Revenue: Rs. 2.10 Crores Property tax: Rs. 1.3 Crores (1,30,00,000/-) Water tax: Rs. 0.88 Crores (88,50,000/-) UIDSSMT (Urban Infrastructure Development Scheme for Small & Medium Towns) Maharashtra Suvarna Jayanti Nagarothan Mahabhiyan: Rs. 40, 00,000 /- (Income from Receivable Grant) Total Receivable Grant: Rs. 6,89,95,500 /-

- Above mentioned possible sources of funding denote the INCOME SOURCES which can be used for the respective projects.
- The provisions for the line items which are same are already planned in the Annual Budget:
 - Trees plantation: Rs. 2, 00,000/- (2 lakhs) – and against it requirement is of Rs. 1, 05,600/- according to the Block Cost mentioned above for Landscape.
 - *Maharashtra Suvarna Jayanti Nagarothan Mahabhiyan*: Rs. 10, 00,000/- (10 lakhs)

2.5. Prioritization and Phasing

As mentioned above a sum total of about 51, 75, 429 INR would be required to be spent on the conservation and upkeep of the Deulwadi Precinct. The proposed projects or interventions would require atleast two years for implementation.

Since the estimated amount is minimal, there is no need of phasing for planning the expense of the said capital costs.

In addition, all the interventions required for conservation & restoration and infrastructural improvements are essential for the betterment of the precinct. Hence no prioritization is required. However the proposals for the conservation and restoration activities could be taken up first since the project under consideration is meant for 'Heritage Management' of the Deulwadi Precinct.

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Mangrove_Action_Project. (No Year). *Save The Uran Wetlands*. Retrieved March 21, 2012, from Mangrove Action Project: <http://mangroveactionproject.org/news/action-alerts/save-the-uran-wetlands>

Annexure

Project-wise details of Block Costs

The Block Estimates for the above mentioned projects have been prepared as per the District Schedule of Rates for *Raigad* District 2009-10 as quoted on the website of Public Works Department, Government of *Maharashtra*.⁴ Operation & Maintenance (O &M) costs have been assumed for the next one year following after the completion of the proposed work. For every year following 2009-10, an increase of 10 % shall be assumed in the total costs of respective projects.

COMPONENT A: CONSERVATION AND RESTORATION

A.1. Revitalization of *Bhimala Talao* premises

Sr. No.	Item	Task / Description	Qty.	Unit	Item Rate (Rs./unit) As per SOR 2009-10	Labour Rate	Total	Amount (In INR)
1.	Street lights	Supplying & Erecting LED street light suitable with 30 W with minimum 18-20 lux level at ground level with p.f. > 0.95 with transparent lens (Equivalent to 2 x 36W CFL) as per specification no ESD-LED /OD	8	NOS.	-	-	8,400	67,200
TOTAL								67,200
O & M Cost (LS)								5,000
SUB TOTAL								72,200

Out of the proposed 54 street lights in the Deulwadi Precinct (as shown in the earlier dwg.), 8 street lights (as mentioned above) are proposed along the Nagaon road which goes along the periphery of the Bhimala Talao.

A.2. Revitalization of Deulwadi Chowk

Sr. No.	Item	Task / Description	Qty.	Unit	Item Rate (Rs./unit) As per SOR 2009-10	Labour Rate	Total	Amount (In INR)
1.	Machine cut polished kotah stone (available in size 2' x 1'6") (In Chowk)	Providing and laying polished Kotah stone flooring 25mm to 30mm thick & of reqd. width in plain/diamond pattern on a bed of 1:6 cement mortar including cement float, filling joints with neat cement slurry, curing, polishing and cleaning complete. [Spec. No. :Bd.M.3 Page No.380]	967	m ²	681	88	769	7,43,800
2.	Landscape (Asopalav)	On the edges of the Deulwadi Chowk	66	No.	LS	-	100	6,600
	Protection cover	To protect each newly planted tree	66	No.	LS	-	1,500	99,000
3.	Iron work (Well cover)	Providing and fixing mild steel grill work for windows, ventilators weighing 15.00 kg per Sq. M. as per drawing, including necessary fixtures, welding and painting with one coat of anti-corrosive paint etc. complete. [Spec. No.:Bd.U.-1 Page No.53]	58.49	m ²	801	46	847	49,541
4.	MS grill (Drain around well)	Same as above	8	m ²	801	46	847	6,776
5.	Street lights	Supplying & Erecting LED street light suitable with 30 W with minimum 18-20 lux level at ground level with p.f. > 0.95 with transparent lens (Equivalent to 2 x 36W CFL) as per specification no ESD-LED /OD	46	No.	-	-	8,400	3,86,400
6.	Flood light	Supplying & Erecting LED Flood Light fitting of appropriate size with 48 / 40 S W lux level at ground min 50 lux ,with p.f. > 0.95 with transparent lens (Equivalent to 75 W fitting) as per specification no ESD-LED /OD	1	No.	-	-	16,004	16,004

7.	Mending of Tree Platforms	Two tree platforms in the Deulwadi Sansthan Chowk	81	Ft. ²	LS	-	800	64,800
8.	Repair of Hand pump (Civil work)	Hand pump along the Deulwadi Chowk	-	-	LS	-	-	40,000
TOTAL								14,12,921
O & M Cost (LS)								45, 000
SUB TOTAL								14,57,921

A.3. Conservation and Restoration of Heritage Structures

Sr. No	Item	Task / Description	Qty.	Unit	Item Rate (Rs./unit) As per SOR 2009-10	Labour Rate	Total	Amount (In INR)
1.	Water Proofing	Providing and applying bitumen layer at 2kg/square metre <i>over terrace</i> structural slab including cleaning the surface for water proofing etc. complete. Spec. No. :Bd J. -3 Page No.356	365 (appx.)	m ²	84	12	96	35,040
		Providing leak proof treatment by injection grouting method to <i>old floor</i> without removing tiles of W.C./Bath with approved water proofing compound of IS standard and cement solution (fine sand, cement etc.) without breaking tiles making holes, refilling and making them water tight including making good the damages, cleaning etc. complete. Spec. As directed by Engineer-In-Charge	365 (appx.)	m ²	171	23	194	70,810
2.	Scraping out old paints	Scraping out old white wash/colour wash/distemper brushing and preparing the wall surface by applying full putty of approved make to complete surface scraping with sand paper and making smooth surface to receive further painting coats. etc. complete. [Spec. No.: As directed by Engineer incharge.]	17,487	m ²	3	4	7	1,22,409
3.	Application of new paints	Providing and applying colour-wash of approved colour and shade in two coats to old surfaces which are to be recoloured including scaffolding, brushing and brooming down.(including base coat of white-wash) etc. complete. [Spec.No.:Bd.P.3 Page No.412]	17,487	m ²	5	4	9	1,57,383
4.	Mangalore tiles	Providing and fixing Mangalore tiled roofing with class "AA" tiles including securing the last course of tiles near the eaves with steel flat 40 mm x 3mm and 1.22 mm wire fixing country teak wood sloping battens of 25 x 12 mm teak wood horizontal battens of 50mm x 25mm over the sloping battens, all iron work and coal tarring the battens complete (excluding ridge & hip tiles) [Spec. No. :Bd.R.2 Page No.450] - Residence 3 & 4	185	m ²	468	40	508	93,980
5.	Cleaning & Pointing of Stone-work	Providing flush grooved pointing with cement mortar 1:3 stone masonry work including scaffolding and curing complete. [Spec.No.:Bd.L.15 Page No.372]	250 (appx.)	m ²	57	53	110	27,500

6.	Finishing of All wood-works (old & new)	Providing and applying Wax polishing to the <i>new</i> wood work including knotting, preparing the surface, scaffolding etc. complete as directed. [Spec.No.:Bd.N.1.2 Page No.399]	250 (appx.)	m ²	22	20	42	10,500
		Providing and applying Wax polishing to the <i>old</i> wood work including knotting, preparing the surface, scaffolding etc. complete as directed. [Spec.No. :Bd.N.1.2 Page No.399]	250 (appx.)	m ²	15	11	26	6,500
TOTAL								5,24,122
O & M Cost (LS)								15,000
SUB TOTAL								5,39,122

A.4. Developing reference material regarding the town's history and heritage

In this case we shall assume a lump sum estimate of around **5, 00,000** INR for all the proposed interventions which are mentioned earlier in the report under the head: ***Developing Reference Material regarding the town's history and heritage.***

In addition to the above a lump sum amount of 10, 00, 000 INR for developing and setting up the Dispensary building as a Heritage Cell cum Tourist Information Centre cum Exhibition Space.

Thus a sum total of 15, 00, 000 INR has been assumed as a block cost estimate of this particular category of proposed intervention.

COMPONENT B: INFRASTRUCTURAL IMPROVEMENTS**B.1. Water Supply & B.2. Sewerage**

To undertake the preparation of a DPR regarding water supply and sewerage as mentioned earlier in the report, the estimate can be assumed to be around **Rs. 12 lakhs**.

B.3. Solid Waste Management

As mentioned earlier in the report, we have proposed newly designed litter bins which may be installed in the precinct at suitable locations.

Sr. No.	Item	Task / Description	Qty.	Unit	Item Rate (Rs./unit)	Labour Rate	Total	Amount (In INR)
1.	Litter bin	As per market survey	LS	-	-	-	LS	1,50,000

B.4. Electric Cables

To remove the unpleasant appearance of the electric cables in front of the temple-facades in the Deulwadi Street, the electric cables should be set up underground within the Temple Street premises.

Sr. No.	Item	Task / Description	Qty.	Unit	Item Rate (Rs./unit)	Labour Rate	Total	Amount (In INR)
1.	Laying underground electric cables	Excavating a trench, laying electric cables and filling.	200	m	LS	-	500	1,00,000
TOTAL								1,00,000

B.5. Public toilets

There are two community toilets in Deulwadi Precinct which need to be repaired immediately.

Sr. No.	Item	Task / Description	Qty.	Unit	Item Rate (Rs./unit) As per SOR 2009-10	Labour Rate	Total	Amount (In INR)
1.	Toilet requirements	Providing and laying ceramic tiles of IS Std. and approved quality 20X20 cm size for dado and skirting in required position with readymade adhesive mortar of approved quality in required position after making the wall portion in level in plaster of cement mortar 1:4 including joint filling with white/colour cement slurry, cleaning, curing etc. complete. Spec. No.:BdM.-13 Page No.38	70	m ²	834	204	1,038	72,660
		Providing and fixing steel louvered windows / ventilators (IS std.) of various sizes as per detailed drawing without hot dip zinc coating including fabrication with approved type and quality all fixtures and fastening without teak wood boxing including finishing with one coat of primer and two coats of oil painting etc. complete. (Sample to be got approved from Ex. Engineer before use) Spec As directed by Engineer-In-Charge	1.2	m ²	1,438	173	1,611	1,933
		Providing and fixing fibre glass reinforced polyester door (FRP Door) shutter 30 mm thick conforming to i.s. 4020 (1 to 7) 1994 without ventilator including iron oxidised fixtures fastening etc. complete. (Without Door frame) Specs As directed by Engineer-In-Charge	4	NOS.	3,911	0	3,911	15,644
2.	Sanitary Fixtures	Providing and fixing Orissa type White Glazed first class with flushing cistern & B.B. Coba (of IS Std.) earthenware 625 x 450 mm water closet pan including "P" trap, Cast Iron soil and vent pipes upto the outside face of the wall including 100 mm. diameter cast iron plug bend, cement concrete bedding, 10 litres capacity UPVC /Fibre flushing cistern of approved quality and make with fittings, inlet pipe with stop tap, brackets for fixing the cistern, 32 mm diameter UPVC flush pipe with fittings and clamps, 20 mm diameter galvanised iron overflow pipe with mosquito proof coupling, galvanised iron chain and pull, painting to the cistern and exposed pipes and cutting and making good the walls and floors etc. complete. Specs As directed by Engineer-In-Charge	4	NOS.	4,438	651	5,089	20,356
TOTAL								1,10,593
O & M Cost (LS)								9,000
SUB TOTAL								1,19,593

As shown above, cost of repairing one community toilet comes to around Rs. 1, 10,593

Therefore cost of repairing two community toilets shall be around **Rs. 2, 21,186** (Excl. O & M cost)