



# Reimagining Pune



Mission Smart Cities





Golden Barren land of Ananda Valley Pune  
— Getty Images

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Aga Khan Palace, Pune  
- Getty Images

# Understanding Pune



Pune's strengths



Areas of improvement



The future beckons

1

**Maza Swapna  
Smart Pune Contest**  
 14th July - 15th August 2015

Sourcing  
Smartest  
Ideas!!

**5,35,310** hits to the contest page  
**6,653 Ideas** Received online  
**203 ideas** Received by post

**30 ideas** Subjected to a crowd-sourced  
vetting process on punesmartcity.in  
**Top 10 ideas** shortlisted  
 Total **11,87,512** hits and **64,194** votes

## VISIONING EXERCISE AND DEVELOPMENT OF PAN-CITY SOLUTIONS IN 5 PHASES

### 1 ENVISION

17th - 28th Sept 2015

**7.5 lakh** Forms Printed  
**3 lakh** Families filled forms  
**12.32 lakh** Inputs received

#### CITIZENS' VISION

**Green Pune** 45%  
**Better Transport** 30%  
**Water Supply** 25%

**1,50,000**

Online Registrations

### 2 DIAGNOSE

3rd - 12th October 2015

**1.04 lakh families**  
**13.48 lakh votes**

were captured to identify goals  
within the priority sectors

### 3 CO-CREATE

16th - 31st October 2015

As part of co-creation, citizens were invited  
on the "sector days" to share their ideas

#### TOTAL IDEAS received from citizens

**10,207** Ideas

**2,500** www.punesmartcity.in  
Web Portal  
**6,653** Maza Swapna  
Smart Pune Contest  
**754** Smart Pune  
Mobile App  
**300** Hackathon  
Group discussion

### 4 REFINE

Two day-long Mini-labs  
were conducted with  
elected representatives  
and citizens for the priority  
sectors to refine solutions

### 5 SHARE

Signature campaign  
Pune Smart City -  
Citizens' Pledge of Support  
 Target Achieved  
**2.98 Lakh** Citizens via  
Door-to-Door campaign,  
missed calls and  
web portal

**50%**  
Pune households  
covered

**100+**  
Meetings

**200+**  
Core team  
members

FOR US  
BY THE PEOPLE

## Social Media Impression

Total Impressions  
**46,82,759**



**40K** missed calls  
in **10** days



**2,20,717**  
Post reach

**5,095** Page Likes  
**727** Posts  
**14,233** Likes  
**508** Shares



**42,79,624**  
Impressions

**10,417** Favorites  
**5,569** Tweets  
**10,118** Re-tweets  
**22,28,603** Reach  
**1,989** Followers



Door-to-Door  
Campaign  
**15** Wards covered

★★★★★

**1355** Downloads  
**939** Ideas  
**115** Votes  
**6,700+** Responses



http://www.punesmartcity.in/

**1,5 Lakhs** Registrations  
**2500** Ideas



**21,767** Views  
**3951** Like

## VISIONING AND SELECTION OF LOCAL AREA FOR DEVELOPMENT

A comprehensive citizen engagement process was run for local area selection, with 1.40 lakh inputs for the area selection based on the criteria shared by the PMC. Citizen selection process, along with discussions with urban planners and elected representatives formed the basis for a very objective local area selection.

### 1 AREA EVALUATION AND SELECTION

**1.40 lakh** Inputs received for area selection  
from citizens from **23,393** families.

**11** Potential options for local development were  
selected based on inputs

#### Aundh-Baner-Balewadi (ABB)

1000+ Acres of Aundh-Baner-Balewadi (ABB)  
have been identified.

### 2 AREA-BASED COMPETITIONS AND PROFILING

**50+** Teams from architecture  
colleges across Pune participated  
in the ABB local area development  
competition.

### 3 ENGAGEMENT WITH RESIDENTS OF ABB

Citizens asked the issues in basic services they face  
and the smart features that their area should have.

**10,194** Families gave  
**3.47 lakh** Inputs

### 4 SHARING AND ACCEPTANCE

Final proposal is being shared. Citizens are pledging acceptance  
of the solutions and the Smart City proposal

**Goal > 60%** of households of ABB  
 Achieved **19,210** citizens acceptance

Pune citizens' votes, ideas, inputs **34.65 lakhs**

Understanding Pune was critical before any initiative of this scale was undertaken across the city. Pune undertook one of the most extensive desk research and citizen engagement exercise to get a sense of real priorities.

## Desk Review

**12** crack teams formed across 12 sectors for comprehensive research

**80+** experts involved in desk research

**100+** suppliers involved in desk research

**25+ PMC** officials/HODs fully involved

**60+ KPIs** collected and assessed to develop a holistic understanding of Pune SWOT

**All 24** Smart city features are assessed based on objective KPIs

# Pune's strengths

## Economic Strength



- All the top IT companies have their presence in Pune, making it the 2nd biggest software hub in the country.
- Pune has a very strong manufacturing base across auto and engineering.
- Pune is one of the top 5 FDI destinations in India.
- The city is also a successful start-up destination in India with more than 400 local start-ups.
- Pune City Connect is a forum to bring corporates and eminent citizens together to work on CSR activities on city-level issues.

## Strong Human Capital



- With 811 colleges, Pune is often called the “Oxford of the East”.
- This has resulted in more than 30% graduate workforce, which has triggered the IT revolution in Pune.
- Pune’s educated citizens have also been instrumental in driving participative governance, which is again one of the best across Indian cities.



## Natural and Cultural Heritage



- Pune has sufficient water at aggregate level (1,250 mld).
- It also has a comfortable climate with temperatures ranging from 12 to 38 degrees Celsius.
- It is also known as the cultural capital of Maharashtra, with a thriving arts and culture centre.
- It was the seat of power of Deccan India during the rule of the Peshwas in the 17th and 18th centuries, and has promoted arts and literature ever since.

## Strong Delivery of Urban Services



- In Pune, 94% households have tap water, 57% MSW segregation and 97% are covered by sewage systems.
- There is 98% electricity coverage with no load-shedding.
- The Pune Municipal Corporation (PMC) spent INR 9,461 per citizen in 2013–14, 3rd highest in India after Delhi and Mumbai.
- Pune has also received an AA rating from Fitch—an independent testimony to its strong balance sheet and fiscal prudence.

# Delivery of core urban services to citizen

## Transportation

- Detailed roadmap created for 98 km of an integrated BRT system, of which 8 km is already functional, with good daily ridership of 30,000. Another 14 km will be functional by January 2016. 660 buses have been hired by the PMPML for the BRT corridors. Intelligent traffic management system (ITMS) has been installed in 220 buses (PIS, two-way communication, control centre). Online ticketing rolled out based on Common Mobility Card Guidelines. 464 new bus shelters were installed and 2 new depots will be functional.
- 100 km of roads and 200 km of footpaths have been constructed
- Two metro lines totaling 31 km have been approved by the Government of India

## Water supply

- Pune has sufficient water at aggregate level—1,250 mlpd, or 219 lpd per citizen. Focus has been to improve supply and reduce leakages
- It addresses 95% of visual leakages in 24 hours with a team of 75 members. Commissioned New Warje WTP (200 mld) in 2015; about to complete Vadgaon WTP (125 MLD); construction of Parvati WTP (500 MLD) is currently underway.
- Construction of jackwell in Khadakwasla dam is in final stages. Initiated systems for online collection of water bills; received approval to kick off drive to regularize illegal water connections. Constructed 3 new reservoirs at Kharadi, Katraj and Bakri Hill.

## Solid Waste Management

- Significant progress under Swachh Bharat - featured as model city in the GOI newsletter, [https://swachh-bharaturban.gov.in/writereaddata/SBM\\_newsletter.pdf](https://swachh-bharaturban.gov.in/writereaddata/SBM_newsletter.pdf)
- Increase in segregation from 23.8 percent in 2012 to 57.2 percent by 2015 and in collection efficiency from 70.9 percent in 2012 to 90 percent in 2015. Door-to-door collection is underway in 15 prabhags and 15 prabhags have zero waste
- PMC is in process to sign contracts with SWaCH and Janwani to improve collection efficiency in slums from 35% to 100%.
- 100 percent scientific disposal since 2010 and no open dumping – scientific land filling and capping



### Safety/ security conditions in the city

- Pune's share of crimes (for million-plus cities) has come down from 2.6 percent in 2012 to 2.3 percent in 2014.
- First city in Maharashtra to have 24x7 surveillance using around 1,300 CCTV cameras.
- Apps used to check registration details of vehicles on a real-time basis.
- Automatic number plate recognition (ANPR) cameras used to identify stolen cars.
- Social media services used to connect and communicate with citizens.

### Energy

- 98 percent households have electricity connections, as compared to 93 percent for urban India
- Pune has 90 percent billing efficiency and collection efficiency has increased from 97% in 2013 to 99.7% in 2015
- Aggregate technical and commercial (AT&C) losses are low at 9.8 percent, as compared to overall utility (Maharashtra State Electricity Distribution Company Limited [MSEDCL]) losses at around 25 percent.
- The Pune Municipal Corporation doesn't have official load-shedding schedule
- Promotion of solar energy - solar water heating compulsory in certain buildings in DC

### Housing

- 85% coverage ratio of properties under the property tax net has been achieved
- Property tax increased from nearly INR 293 cr in 2011 to around INR 550 cr by 2014.
- Slum Rehabilitation Authority has completed 38 projects till now, 21 over the last 3 years, targeting 7176 tenements. 34 projects are currently going on targeting 10,092 tenements
- Permission time has been reduced from around 45–50 days to 21 days through the automated building plan approval system.
- 6.7 mn sq ft of new floor space index (FSI) was approved in 2014–15.



# Governance mechanisms

## Overall attendance of functionaries

- Initiated the biometric attendance system in 2011 for nearly 13,000 PMC employees
- Provided PMC employees with information on software, hardware drivers, orders, GRs, quick links to frequently used portals, font-conversion tools (Marathi to English and vice versa), daily announcements via department scorecards, smartgov newsletters, smartgov websites and the smartgov roadmaps
- Arranged for continuous evaluation of department-wise service level benchmarks (SLBs) and highlighted key areas for improvements updated regularly
- Started departmental scorecards, smartgov newsletter, smartgov website/ roadmap

## Two-way communication between citizens and administration

- Online engagement with PuneKars through Facebook page, YouTube channel, Instagram page, monthly newsletter, official website, Twitter and other apps
- Developed the online Complaint Management System for citizens to raise their grievances, supported by tracking of status through SMS and e-mails to citizens
- Provided PMC connect portal for citizens to obtain information on community-level facilities, property tax, etc. This is facilitated with SMS feedback from PMC
- Received public views, opinions, updates and feedback through e-mails
- Facilitated citizen-to-administration communication through the development of a citizen-centric call centre and app marketplace

## Use of e-governance to ensure free access to statutory documents

- The PMC website hosts a range of statutory documents, communications, notifications and forms
- The PMC shares major statutory documents on its website, e.g., Development plan (DP), annual budgets, project reports (DPR), expenditure statements (EOI) and tendering, recruitment information, RTI monthly reports, newsletter, contact information and right to services and citizen charter
- Consequently, efficiency has improved significantly - 1.5 mn downloads of DP over the last 3 years; revenue of property tax increased by 10% in 2012–13 to INR 123 crore in 10 months of the current fiscal year



## Reduced hassle documents

All important com- and citizen-centric

Statutory documents development plan property tax, detailed expression of interest commitment related reports, e-news- , elections details, citizens' charter

has increased downloads of the old online payment from INR 47 cr in the first six months of the financial year

## Dashboards that integrate analytics and visualization of data

- Track key indicators of the property tax department, e.g., target, status of property tax collection and collection by each inspector via a centralized dashboard
- Requisite management information system (MIS) details of all welfare schemes administered through the urban community development (UCD) department, represented on the UCD dashboard
- Requisite MIS details of all marriage registration approvals issued through the PMC's 15 ward offices, represented on the marriage registration dashboard.
- Single-click information availability and analysis facilitated through integration of multiple dashboards to be started in the 2-3 months

## Availability of basic information relevant to citizens

- All basic information involving DP, annual budgets, property tax, DCR, EOI and tendering, recruitment-related information, RTI monthly reports, e-newsletter, contact information, etc. are available on the PMC web portal.
- Information available through mobile apps and call centres, which have wider reach among citizens
- Basic information provided through FAQs and the RTI section (4)
- Telephone directory of officers, with details like name, designation, phone numbers is published and frequently updated on the website: [punecorporation.org/informpdf/TelephoneBill/Telephone\\_Directory\\_June\\_2015.pdf](http://punecorporation.org/informpdf/TelephoneBill/Telephone_Directory_June_2015.pdf)
- Until now, the PMC website has received 5.7 mn unique visitors over the last 3 years



# Mobility – Pune’s #1 problem

A significant rise in the number of private vehicles and the lack of public transportation options have led to massive congestions across the city, with an average speed of 18 kmph. Pune is the only city among the top eight in the country without a mass rapid transit system (MRTS). The average number of buses per lakh population is only 37, compared to the benchmark of 55.



## Transportation and Mobility

Traffic and transportation consistently appear as the single biggest issue for Pune-kars, by a wide margin. Traffic moves at a very slow pace in the city with average speed during peak hour being <20 km/hour. Buses are the major means of public transport but they are not sufficient.

People have to wait for at least

**20**  
minutes

Before they get a bus

Only about a

**5<sup>th</sup>**

of all commuters use public transport leading to a big push on private vehicles

Pedestrian safety remains another major area of concern as

**1/4<sup>th</sup>**

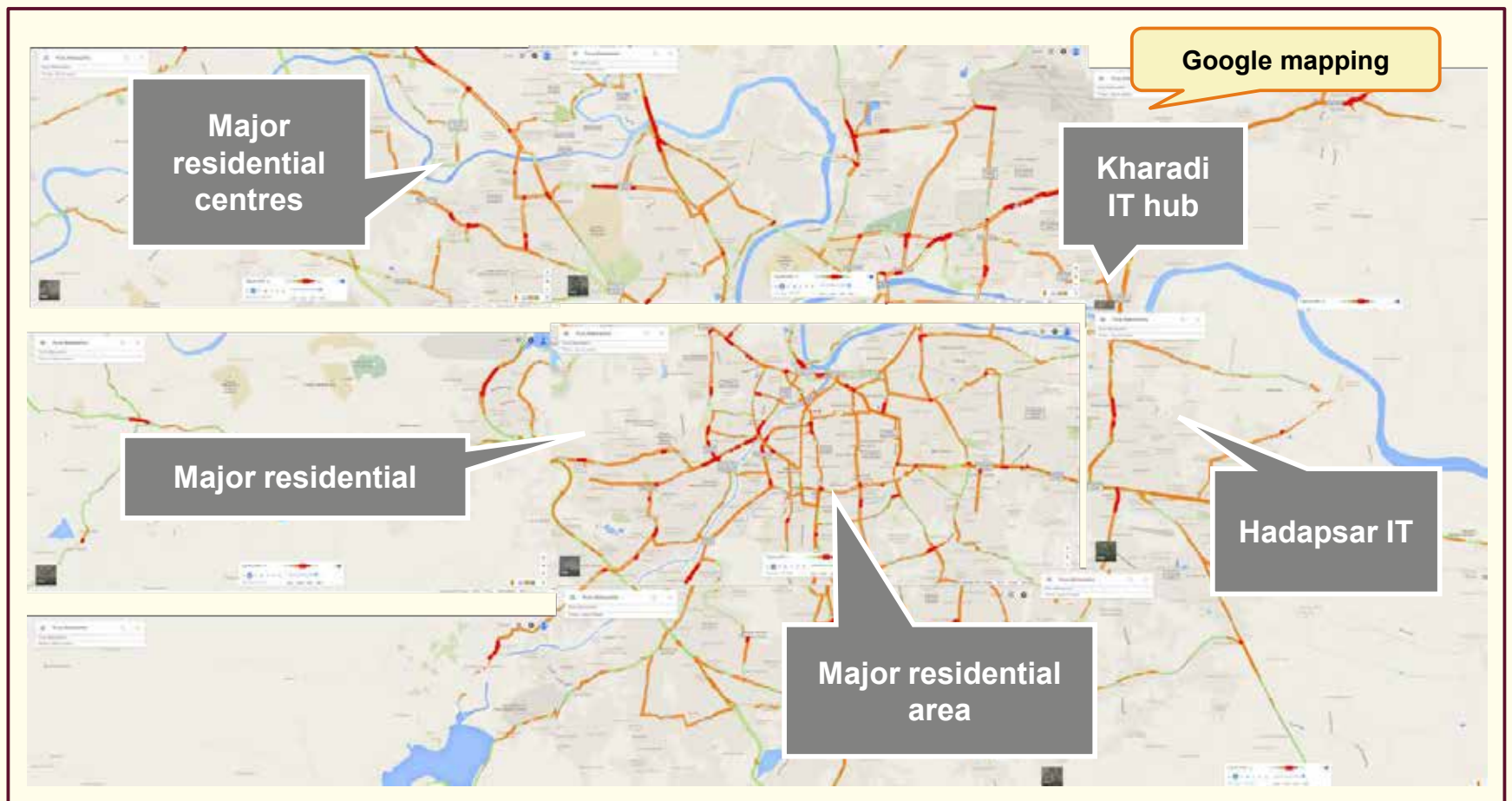
of the city does not have footpaths and even where they exist, they are marred by significant obstructions

Average trip length is already at

**10**  
kms

today which will increase in future with the city expanding into the hinterlands

## Google maps traffic image at 7:30 pm on Monday



# Water – abundant but inequitable

While there is abundant water at an aggregate level, inequality of water distribution among citizens is a challenge. Around 85 percent of citizens get more than 150 litres per capita, per day (lpcd), 14 percent of citizens get less than the stipulated amount on daily basis. This is driven by the lack of infrastructure (e.g., reservoirs, pipelines) in certain regions, about 30 to 35 percent non-revenue water (NRW) due to internal leakages and lack of water metering leading to excess consumption.



## Water Supply

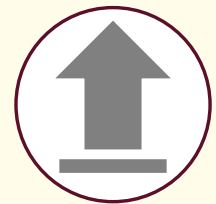
Pune as a city gets ample supply of water from Khadakwasla Dam

**200**  
liters

Quality of water supplied currently stands

**100**  
%

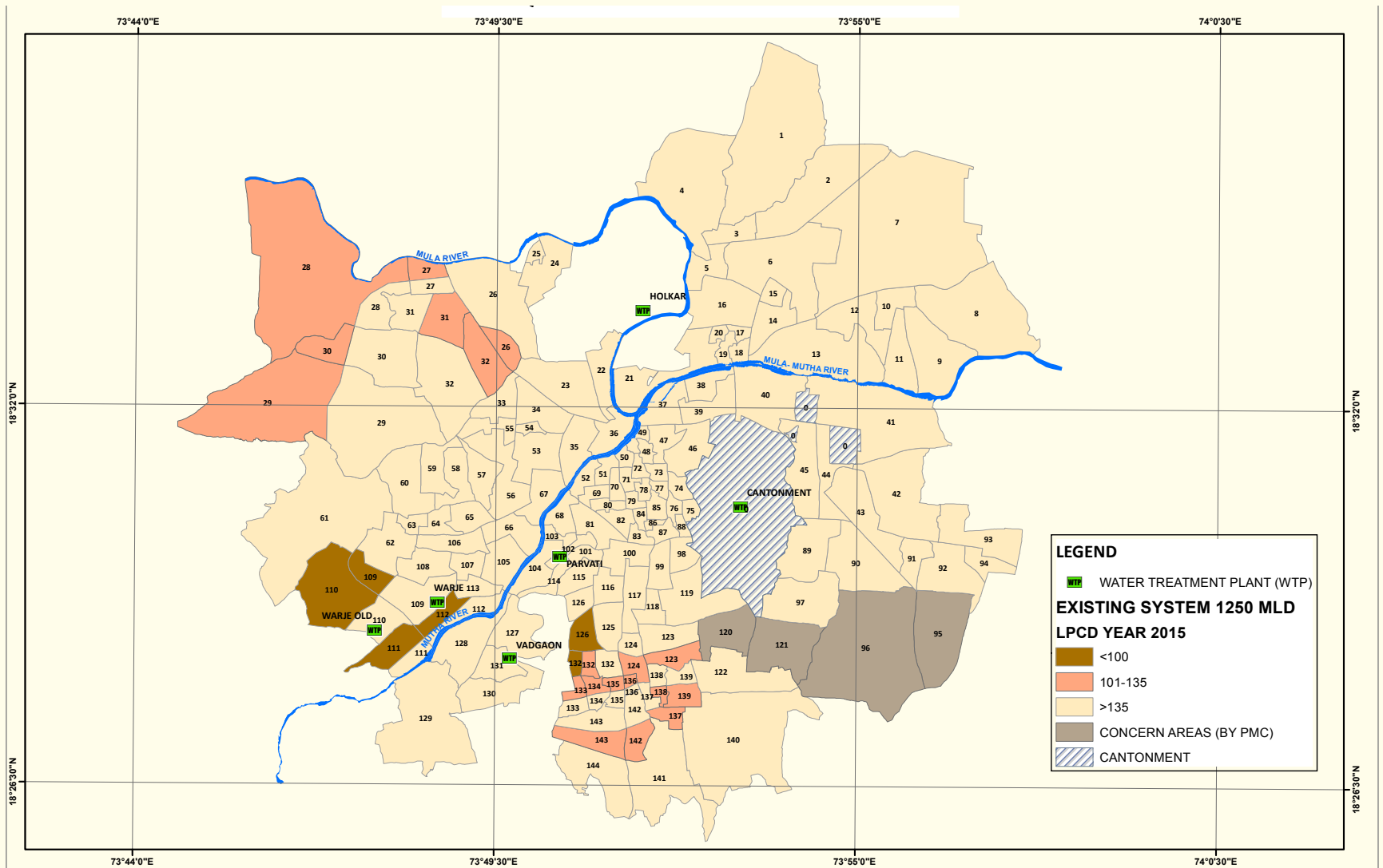
Water supply always emerges as one of the top problem faced by Pune-kars



In a recent survey, water supply has been voted as the second most important issue faced by the citizens. The cause of this problem can be attributed to the inextensive water distribution network in the city (around 93% of the city is covered by the distribution system), which doesn't ensure equitable supply of water to Pune-kars. Further, lack of water meters in the households and fixed annual charges lead to a lot of wastage. As a result, approximately 14% of the city gets less than 150 lpcd



# Pune Municipal Corporation: Areas of deficient water supply, inadequate network and low water supply



# Housing – Need for slum redevelopment



## Slums and Housing

Approximately 36% of Pune city's population lives in

**486**

Slum colonies. This is significantly higher than the 22% slum share present in a typical Indian city



A large proportion of slum households have access to basic amenities like toilets and electricity

**55%**

of slum families have in-house toilet facilities

**90%**

of them have electricity connections

Effort are being made to tackle the problem however, a lot more needs to be done. So far, SRA been able to rehabilitate around 8,000 slum households, the rehabilitation process is tough due to two core reasons

**70%**

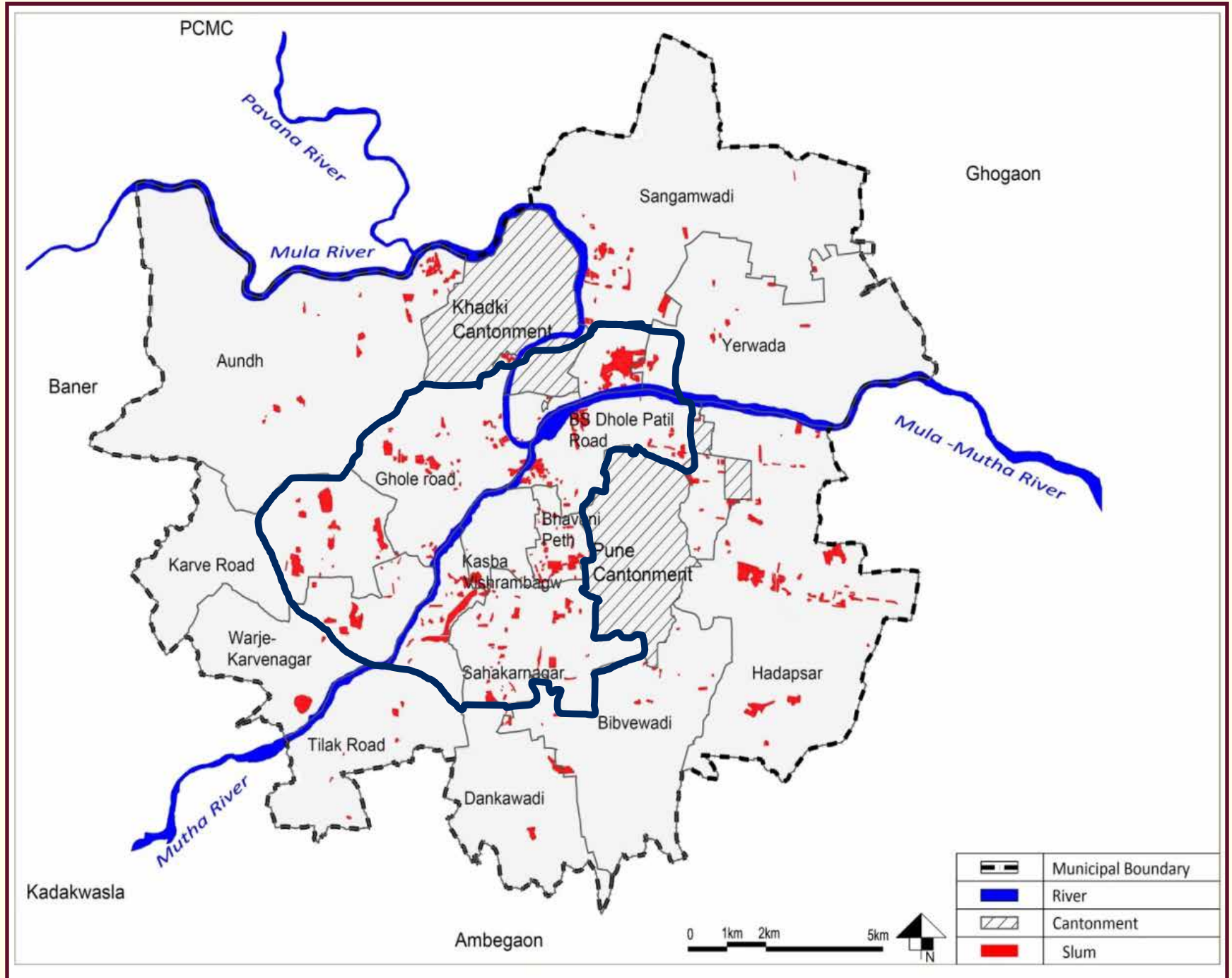
Consent of the affected households before a proposal can be accepted, and

**1/3<sup>rd</sup>**

Of the slums are on mixed ownership land, which makes any rehabilitation plan much more difficult to execute

In the new DP, the government is proposing mandatory construction of affordable/EWS housing for all projects >2,000 sq. metre

# Slums located across Pune



# Challenges for the future

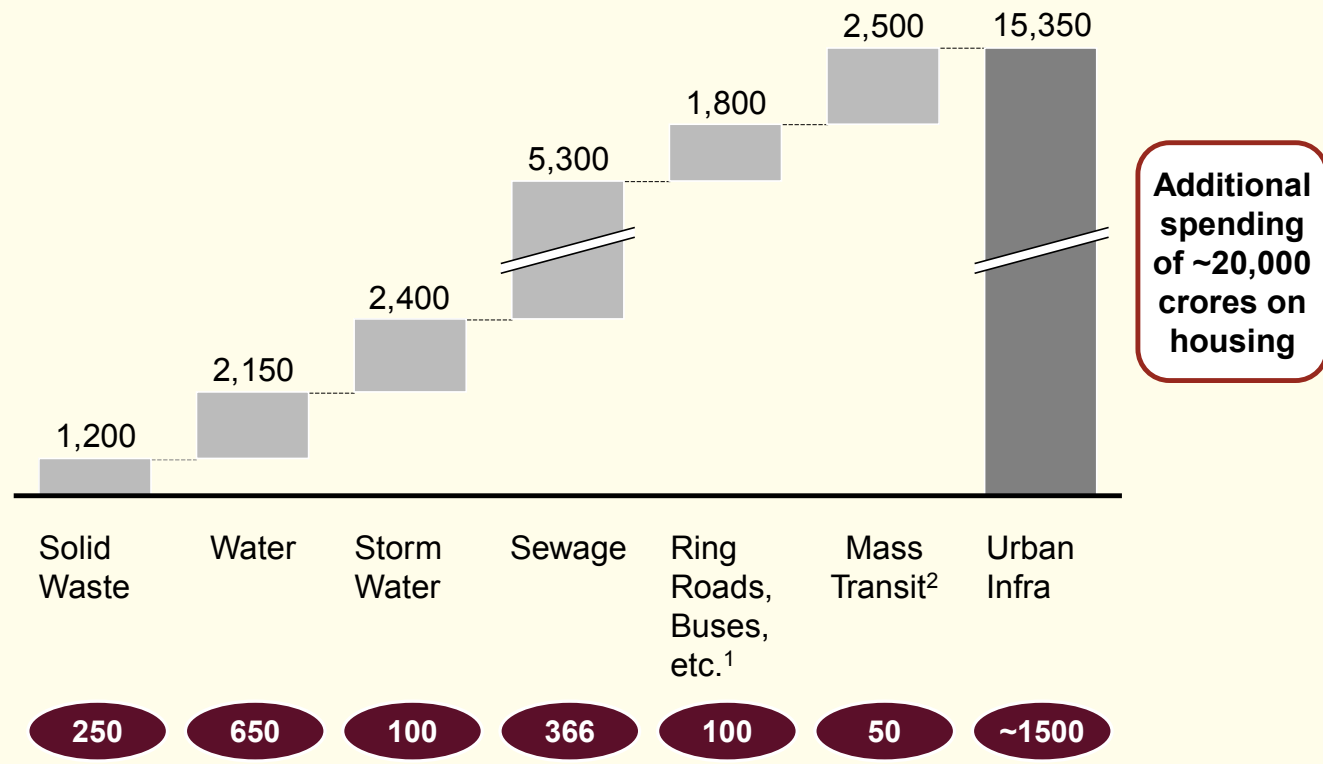
## USD 5.89 Bn

investment required to meet infrastructure needs of the PMC in the next 15 years

PMC must find different sources of funds to finance it's infrastructure as population grows from 3.5 mn to 5 mn by 2030

### Funding requirement for PMC between 2015 and 2030

INR Crore



1 Assuming that Ring Roads will be constructed by PMRDA, PMC will bear 60% of bus cost (40% by PCMC)

2 Assuming that PMC will bear the 10% cost of constructing the Metro

USD/INR exchange rate at 60

# Opportunities

## Top investment destinations in Asia

With India continuing to grow at 7-8% for the next decade, Pune should become one of the magnets of investments coming in India for high-end jobs. It has the necessary human capital to be the destination for high-end jobs, such as technology start-ups, high-end IT, R&D and innovation labs for manufacturing companies.

## Most liveable city in India

With three rivers, Pune has tremendous potential to develop its riverside tourism. Multiple planned riverfront developments could make Pune vibrant and attractive like other global cities, e.g., Seoul, London and Amsterdam



80 ↑

80 ↑

30 ↑

# Vision and Strategic Plan



Vision for Pune



Aspiration for Pune



Five strategic imperatives

2

# Vision

Leveraging its **rich cultural and**  
capital and strong business envi  
aspires to become **one of the**  
solving its core infrastructure issue  
making its **neighbourhoods beau**



# n for Pune

**natural heritage**, strong human  
environment as key strengths, Pune  
**most liveable cities in India** by  
s in a **“future-proof”** way, and by  
**utiful, clean, green and liveable.**

# Aspiration for Pune

## Solve core infrastructure issues in a “future-proof” way

### **Provide equitable water across Pune**

Capitalizing on Pune’s water abundance, one of the key goals will be to ensure at least 150 lpcd of water to 100 percent of citizens 24x7. Like transportation, this will also require a holistic set of solutions, both short-term and long-term. The ICT solutions will be driven under the Smart City framework. Specific goals in water and sewerage include:

- Provide 100 percent of citizens with 150 lpcd water 24x7
- Reduce leakage and NRW from 30 to 15 percent
- Increase in reservoir storage capacity from 23 to 33 percent
- Coverage of 100 percent of the city by sewage network (as compared to the current 91.3 percent)
- Treat 100 percent of waste water (up from 73 percent), and usage of recycled water by various industries, the railways and the construction sector

## 8 ‘ICT’ solutions, 3 ‘Less is more’ and 3 ‘High capex’ solutions to solve Pune’s water problems

	Short term <12 months	Medium term 1 year – 5 years	Long term >5 years
<b>1 ICT solutions</b>	<ul style="list-style-type: none"> <li>• Customer survey on GIS Platform</li> <li>• Smart Bulk Meters with SCADA</li> <li>• Grievance redressal and bill payment through website and mobile app</li> <li>• Smart Metering for commercial establishments</li> <li>• Smart Consumer awareness campaign</li> </ul>	<ul style="list-style-type: none"> <li>• Helium technology based Leak Identification across 2688Km.</li> <li>• Generate 1.92 million units of electricity annually from Naidu STP</li> </ul>	<ul style="list-style-type: none"> <li>• Smart metering for domestic households through a “Give up water subsidy” campaign along with a revised telescopic tariff</li> </ul>
<b>2 “Less is more” solutions</b>	<ul style="list-style-type: none"> <li>• Sell 5-7 MLD of treated water to industry, construction and railways</li> <li>• Use standby lines to treat 355 MLD of mixed sewage water from Nalas/Drains</li> </ul>	<ul style="list-style-type: none"> <li>• Restructure water department into three verticals (O&amp;M, Projects, PR)</li> </ul>	
<b>3 High capex solutions</b>		<ul style="list-style-type: none"> <li>• Initiate 24x7 water supply pilot across 5 DMA’s (6000 connections)</li> </ul>	<ul style="list-style-type: none"> <li>• Do phase wise 24x7 water supply project across the city</li> <li>• Installation on treatment mechanism to meet gap in installed treatment capacity of 177 MLD</li> </ul>

# Aspiration for Pune

## Solve the mobility challenge

This is critical since mobility has featured as the biggest issue in citizen engagement as well as desk profile. The aspirations on transportation include:

- Increased the use of public transportation from **18 to 30%** in **5 years** and achieve benchmark of **50% by 2030**
- Fully implement all ICT solutions in 5 years – ITMS and adaptive traffic control
- Fully implement all “less is more” non-ICT solutions – street, junction and footpath **redesign – in 5 years**
- Moving significantly in public transportation options in **5 years (70 km BRT, 31 km metro)** with aspiration to complete balance metro **(44 km) by 2025**
- Create **2 ring roads in next 5 years** to address **50% bypass traffic**
- Increase trip **share of NMT to 30 percent** with PBS and walkable foot-paths

## Solving Pune’s transport and mobility problem . . .

	Short term <12-18 months	Medium term 18 months– 60 months	Long term >5 years
<b>1 ICT solutions</b>	<ul style="list-style-type: none"> <li>Public transport ITMS                             <ul style="list-style-type: none"> <li>– GPS, real-time tracking, health monitoring in buses</li> <li>– Smart bus stops with PIS</li> <li>– Mobile apps for real time tracking</li> </ul> </li> <li>Adaptive Traffic Management System across 319 signals:                             <ul style="list-style-type: none"> <li>– Pedestrian safety buttons</li> <li>– Solar Panel &amp; UPS backup</li> <li>– Emergency response system</li> </ul> </li> <li>Advanced traffic management                             <ul style="list-style-type: none"> <li>– E-challans</li> <li>– Mobile GPS based traffic analysis</li> <li>– Intelligent road asset mgmt</li> </ul> </li> </ul>		
<b>2 “Less is more” solutions</b>	<ul style="list-style-type: none"> <li>Private bus aggregator to complement public buses</li> </ul>	<ul style="list-style-type: none"> <li>Procurement of ~2,500/ ITMS enable buses</li> <li>Depot and terminal development</li> <li>Public bicycle sharing system</li> <li>Smart Redesign of 50 km of streets</li> <li>Redesign of 75 Junctions</li> </ul>	<ul style="list-style-type: none"> <li>Smart street redesign for entire Pune</li> </ul>
<b>3 High capex solutions</b>		<ul style="list-style-type: none"> <li>~60 km of BRT Network</li> <li>~31 km of Metro</li> <li>2 Ring Roads to be completed</li> </ul>	<ul style="list-style-type: none"> <li>~10-20 km BRT network</li> <li>~44 km metro network</li> </ul>

# Aspiration for Pune

## Taking other core infrastructure from “good to great”

While Pune has done well compared to other cities on many dimensions of core urban infrastructure, it will still need to work on them to fulfil its aspiration of becoming one of the most liveable cities in India. Specific goals include:

### Swachh Pune Mission

- 100 percent segregation at source (currently 57 percent) and efficient ITMS-enabled solid waste management (SWM) system with 100 percent of waste recycled, all organic waste used for energy generation.
- 100 percent of slums to be covered by SWM services (30 percent currently)
- 100 percent of population to have access to toilets (from 96.5 percent currently), with 29,000 toilets built
- Clean streets and public spaces with dustbins at every 300 metre (m)

### Energy

- Smart grid set-up with net metering across the entire city
- All new buildings in city to be energy efficient and green
- Smart public lighting to reduce consumption by 15 to 20 percent
- Solar usage in neighbourhoods to be at least 15 to 20 percent

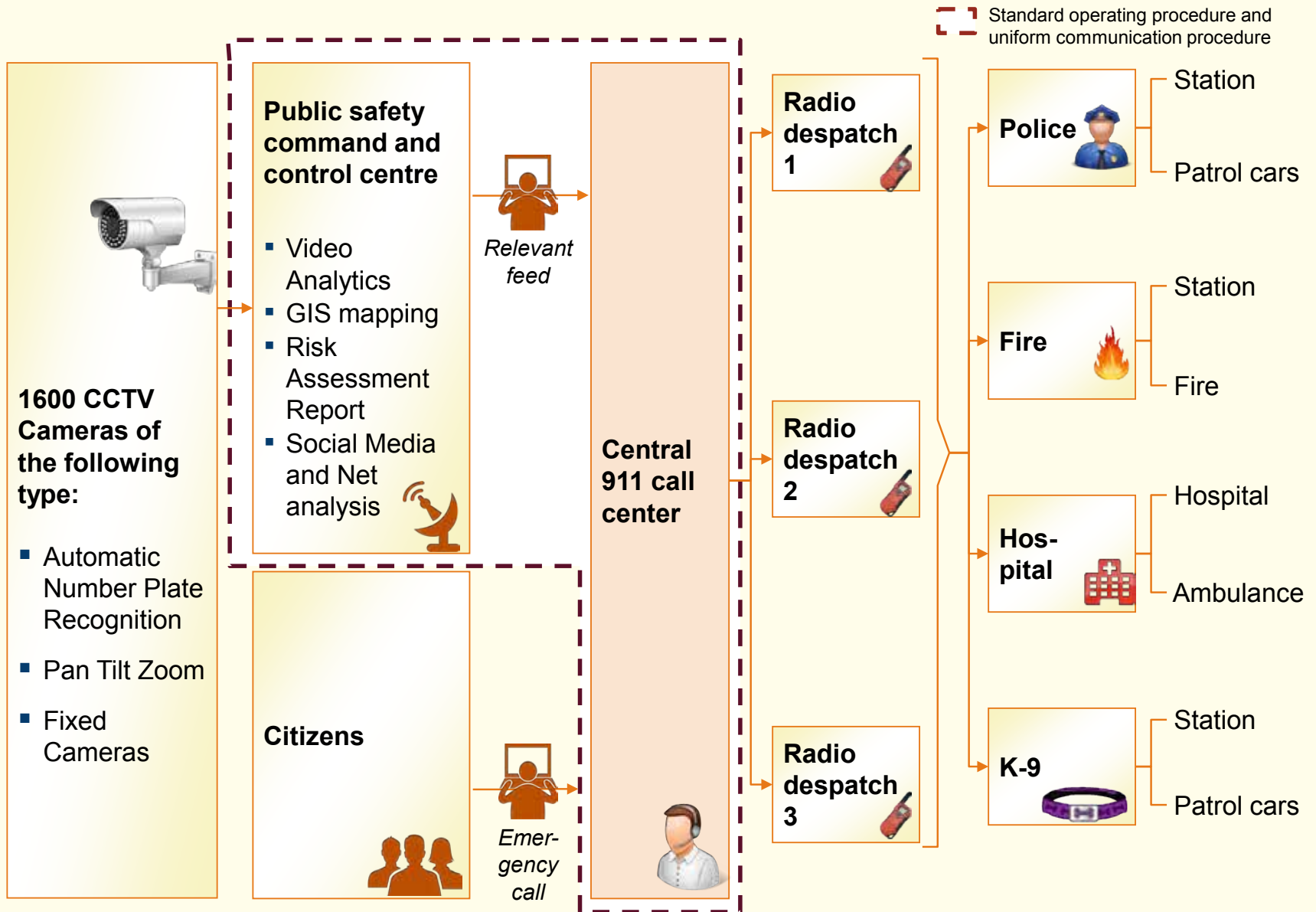
### Housing

- Making Pune slum-free by 2025 by constructing 20,000 affordable houses every year, for the next 10 years

### Safety and security

- While Pune already has extensive CCTV surveillance, the vision will be to make it fully “crime-free” by enhancing surveillance further and providing emergency help
- All these will be driven in the local area and then replicated across the city.

# Centralized emergency response



# Aspiration for Pune

Leverage the rich cultural and natural heritage, strong human capital and effective business environment as key strengths

## **Create 5,00,000 high-end jobs in the start-up hub and other locations within the core city**

With more than 10 km of lead travel and slowing speed of traffic, Pune-kars are feeling the commute challenge in a city that is growing radially. Creating at least 0.5 million high-end jobs in the heart of the city will be one of the key goals. As the first step, the PMC wants to create at least 40,000 to 45,000 jobs in the start-up hub of ABB (i.e. selected local area: Aundh-Baner-Balewadi), which will be the catalyst for mixed-use development across Pune and promote walk-to-work.

## **Become one of the top 10 cities in the ease of doing business and e-governance parameters**

With a high-performing municipality that has been able to perform well in most urban services and has leveraged ICT to improve citizen services and interaction, the next challenge is to significantly improve the ease of doing business and e-governance, to be at par with top 10 cities worldwide. As the first step, the special purpose vehicle (SPV) in the local area (ABB) will implement five specific solutions end-to-end, which could be replicated across the city.



## Make the riverfronts clean, green and iconic

Punekars love their riverfront. In the citizen survey on specific goals, clean rivers and water bodies along with zero discharge of unauthorized water featured among top priorities. One of the visions of Pune, then, will be to develop its large riverfront along three rivers.

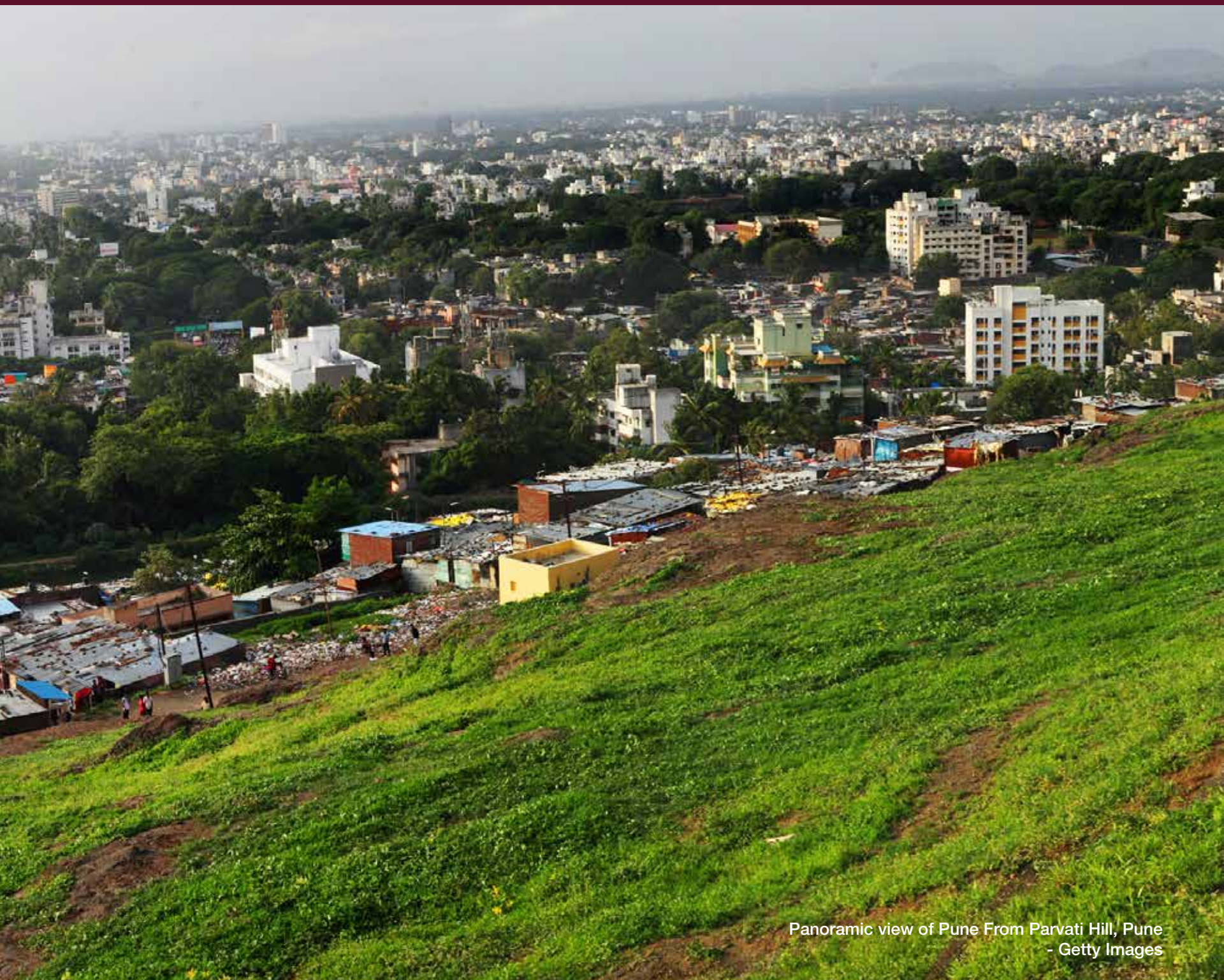
Bimal Patel of HCP Consultants, one of the top urban planners (redeveloped Sabarmati riverfront), has already been engaged. A key short-term goal will be to develop 3.5 km of riverfront in the selected local area under the Smart City Mission (SCM), which will be replicated across the city.



# Aspiration for Pune

**M**aking its neighbourhoods beautiful, clean, green and fully liveable

- With “clean”, “beautiful” and “green” featuring as the top three adjectives in Pune-kars’ visioning exercise, the idea will be to transform all neighbourhoods on these dimensions, by first driving change in the local area and then replicating it across the city. Specific goals include:
  - Increasing open space from the 7 percent to the 15 percent benchmark
  - Developing adequate number of parks and doing open space innovation/placemaking
  - Making all neighbourhoods zero garbage through waste segregation and disposal systems
- Beautifying certain streets and creating go-to recreation zones in waterfront development



Panoramic view of Pune From Parvati Hill, Pune  
- Getty Images

# Five strategic imperatives

## **Fix core urban infrastructure and make it “future proof”**

Based on proprietary econometric model, the PMC will require around INR 2,500 cr per year (capex + opex) up to 2030 to completely overhaul and fix its infrastructure (note: this is assuming that the PMC contributes 10% for metro, 60% for additional buses and nothing on ring roads, with funds coming from other sources for the balance). As strategy, the PMC will think proactively to fix infrastructure for the future. Most cities do not take into account urbanization and population growth, thus creating infrastructure that always lags demand.

Besides a long-term fix, the city would also like to move quickly in the next five years and fix infrastructure as much as possible, with all “less is more” (e.g. junction/ street design) and ICT solutions implemented along with significant progress in BRT (70 km in 5 years), ring road (2 done in 5 years) and metro (phase 1 - 31 km done in 5 years). A comprehensive framework has been drawn for the core sec-

tors, e.g., mobility and water. Pune will also need to fix the housing challenge with approx. INR 20,000 cr required for affordable and mass housing in the next 5 years (around INR 5,000 cr for slums).

## **Leverage multiple sources of funds to fulfil long-term infrastructure demand**

Funding INR 2,500 cr of opex + capex every year for next 15 years will require multiple sources, e.g., government missions, own funds, debt and public-private partnership (PPP). The PMC has created a detailed roadmap consisting of current capex plan (INR 1400 cr per year), land monetization (INR 1,250-1,450 cr per year), other government missions (INR 500-700 cr per year), debt and PPP (INR 1,000-1,200 cr per year). The PMC has been rated AA by Fitch and has also moved ahead to create a separate, ring-fenced infrastructure fund (a first of its kind in India). This will help Pune to borrow from the market at attractive rates.

## **Transform Pune into the most liveable city in India**

In addition to fixing infrastructure, Pune will also upgrade its neighbourhoods to world-class liveability standards in a phased manner, starting with the local area development pilot. This would be a holistic transformation of neighbourhoods across core infrastructure, social infrastructure (e.g., schools, health-care), livability parameters (e.g., open spaces, pollution control, recreation options), resource productivity, e.g., (ICT solutions), sustainability (e.g., recycling, energy efficiency), and neighbourhood governance through a suite of citizen and business interfacing solutions.

A detailed roadmap has been created in the proposal for the local area selected, which will be replicated across Pune. This would require funds of INR 1,500 cr to 2,000 cr per neighbourhood.

## **Focus on creating of sufficient high-end jobs to leverage Pune's human capital**

In order to remain a leading IT services and manufacturing city, Pune will need to create at least 5,00,000 jobs in the heart of the city, in technology start-ups, high-end IT, R&D and innovation labs in manufacturing. An exclusive start-up zone will be created in Pune to trigger the next wave of the start-up revolution. While Pune has one of the largest numbers of start-ups in India, their success rate is relatively low due to lack of incubators, accelerators and early-stage venture capital (VC) funds. The PMC will try to create a complete ecosystem through the proposed start-up hub. An initial roadmap has already been drawn in the local area, in collaboration with Microsoft Incubator and Future Cities Catapult to accelerate urban ideas.

# Five strategic imperatives

## **Build city attractiveness further through iconic riverfront development**

Leveraging on Pune's strength of multiple riverfronts, the PMC will endeavour to fully clean the rivers and develop them as attractive recreational destinations. This could be a strong distinguishing factor vis-à-vis other cities. The National River Conservation Fund of a staggering INR 900 cr has been approved by the Government of India for river cleaning, while the contract for consultancy for the riverfront development has been issued to HCP consultants to create a detailed master plan (which drove Sabarmati riverfront development)



Pavana Dam, Pune  
- Getty Images



Wari procession, Pune  
- Getty Images



# The Voice of Citizens

- ◆ Pune's citizen engagement model
- ◆ Distinctive 5S approach
- ◆ Output of citizen engagement
- ◆ Online pledge and stakeholder support

3

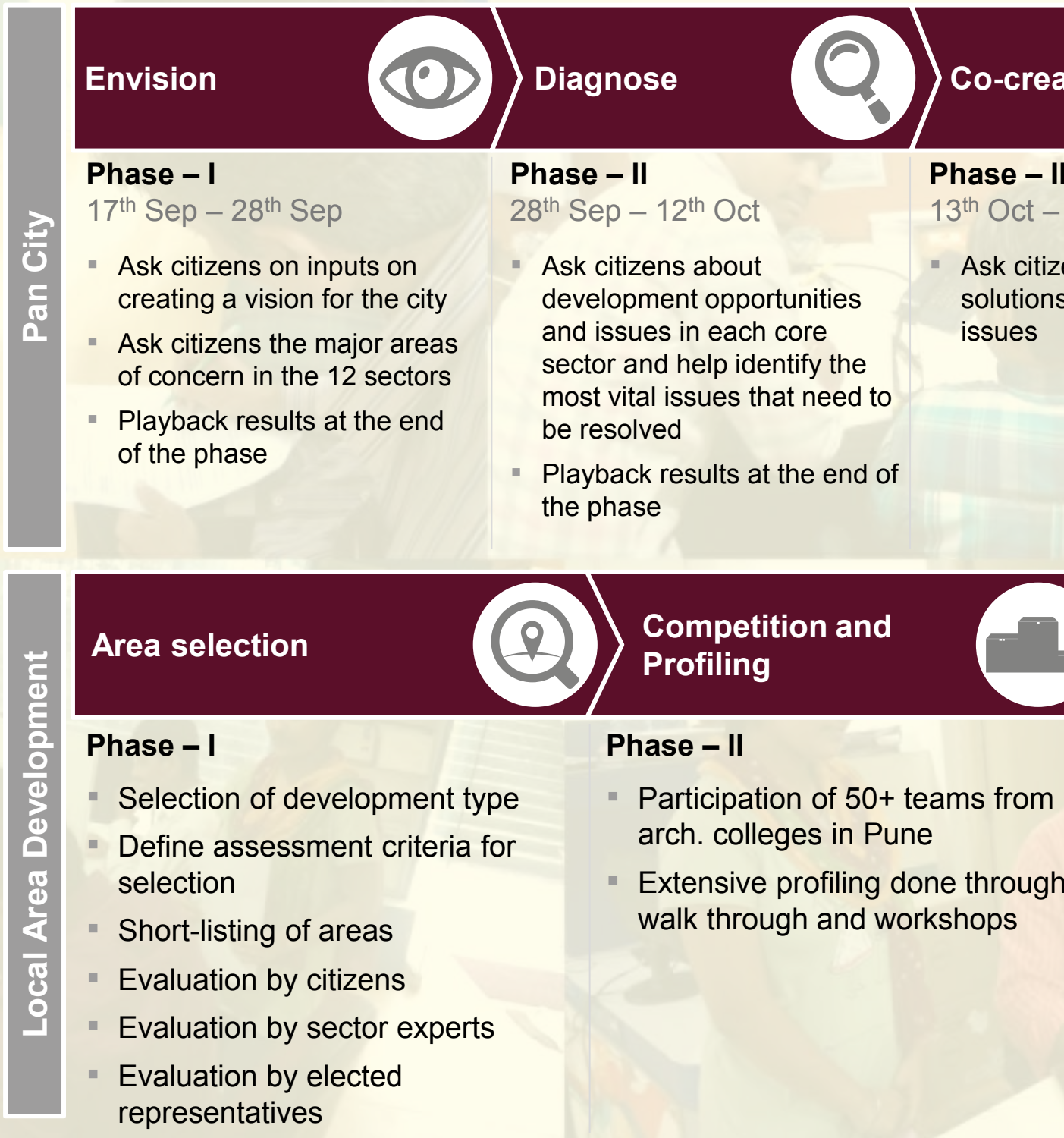
# Pune's citizen engagement model



The most  
extensive citizen eng  
an **Urban Loca**



# Pune's citizen engagement model





Phase – III  
 23<sup>rd</sup> Oct  
 Citizens for detailed discussions to key pan-city

**Phase – IV**  
 Over a period of 3 days

- Conduct delivery labs for extensive problem solving with key experts and citizens to refine solutions
- Open citizen discussion forums

**Phase – IV**  
 15<sup>th</sup> Nov – 15<sup>th</sup> Dec

- Share the final set of solutions with citizens and open for suggestions and discussions



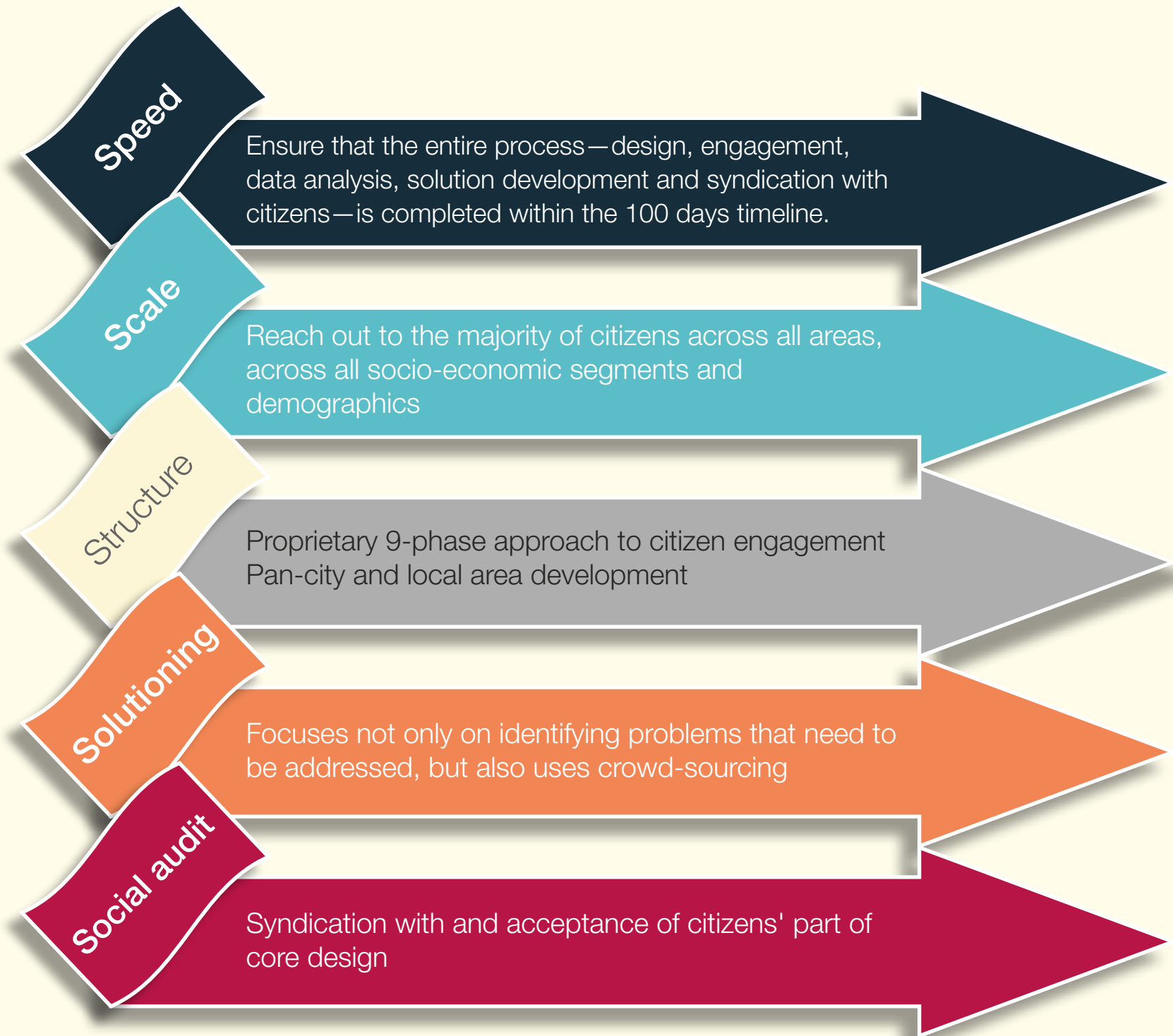
**Phase – III**

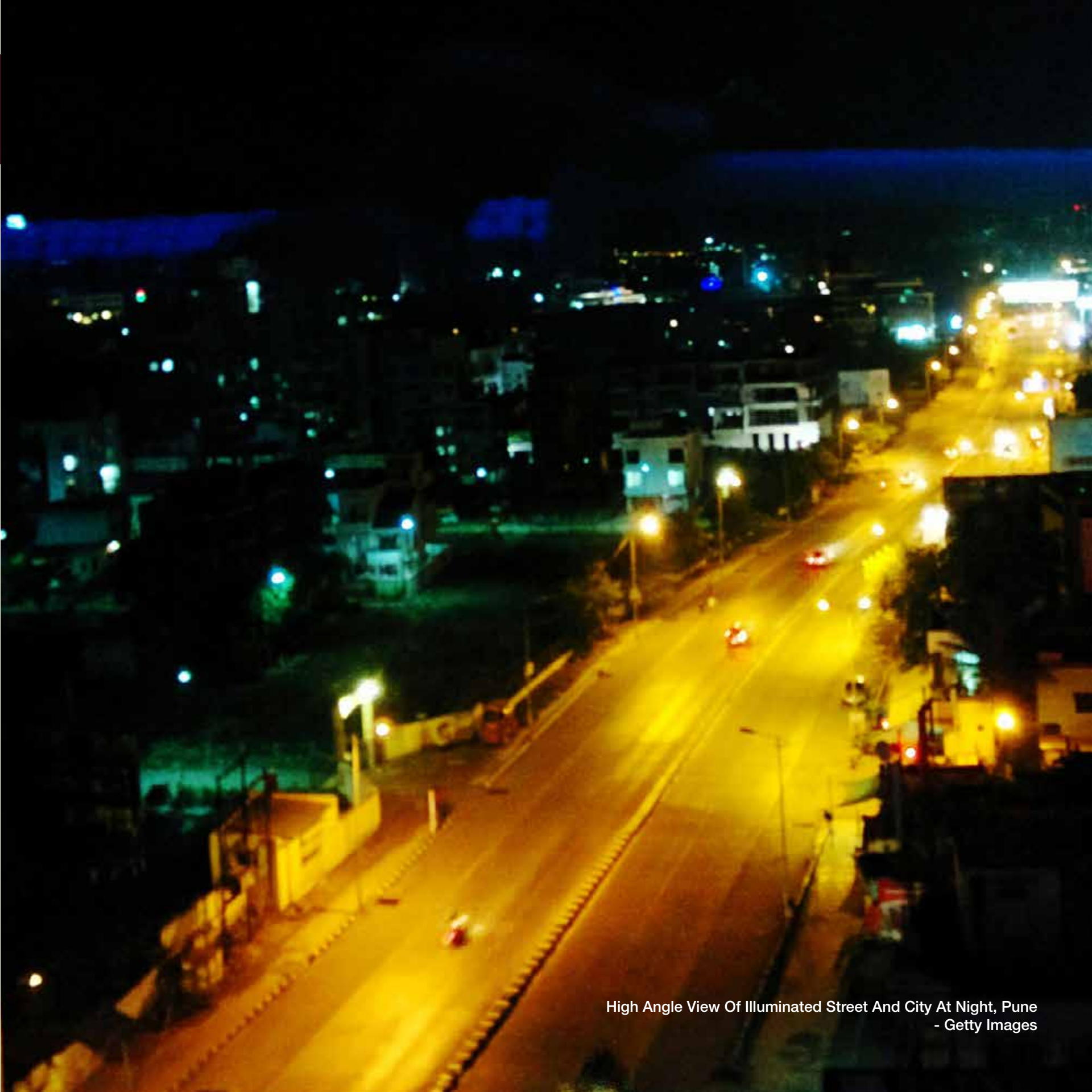
- Citizens asked issues they face in basic services
- Vision for the area and the smart features it should have were understood

**Phase – IV**

- >60% of the households to pledge support for the initiatives planned

# Distinctive 5S approach





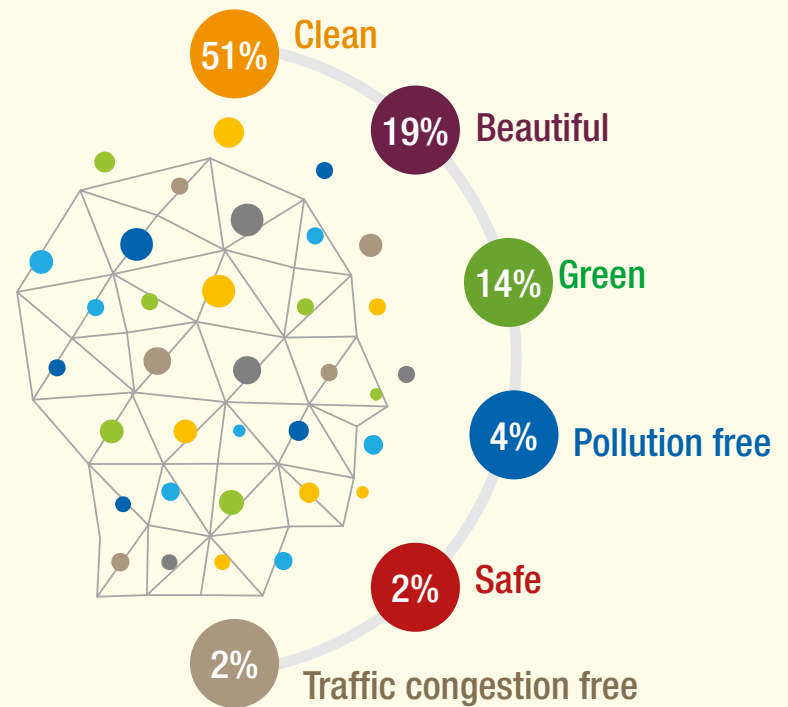
High Angle View Of Illuminated Street And City At Night, Pune  
- Getty Images

# Envision Phase Output

Citizens' top dream for the Pune of the future



Top six vision ideas along with their percentage





# Diagnose Phase Output

## Top 5 goals within the prioritised sectors

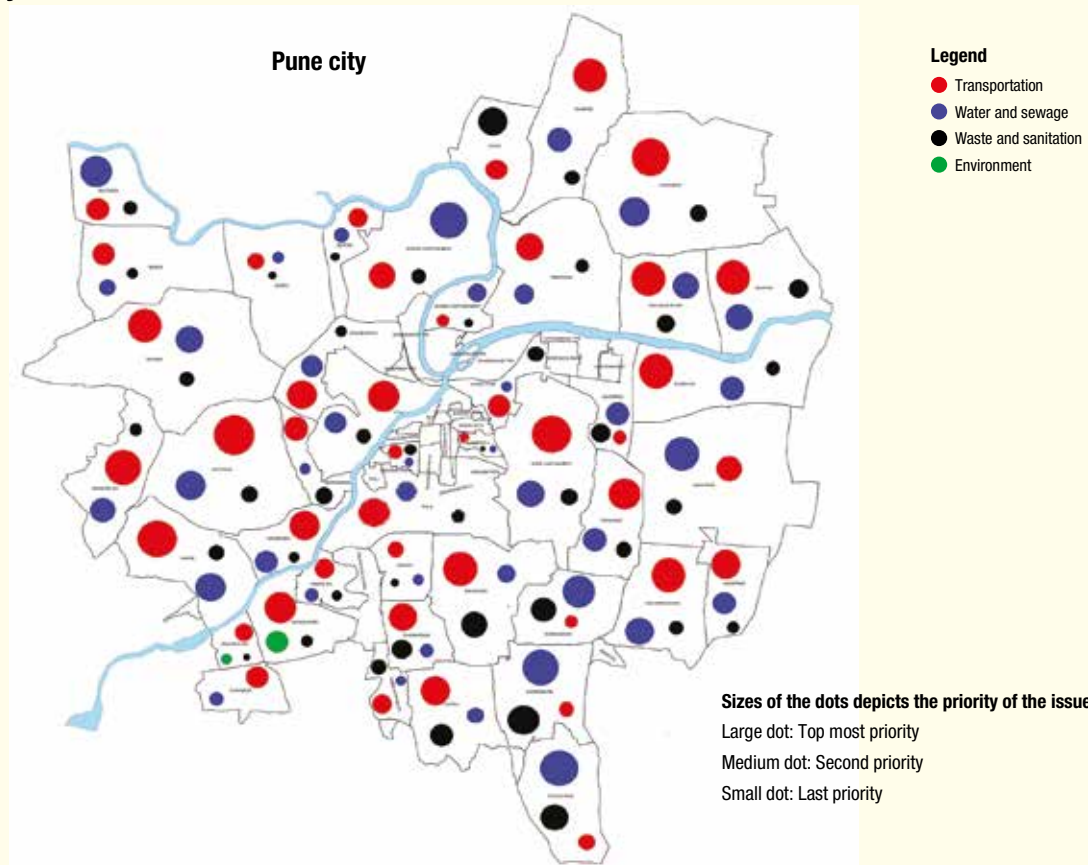


# Diagnose Phase Output

Citizen driven word cloud for core issues



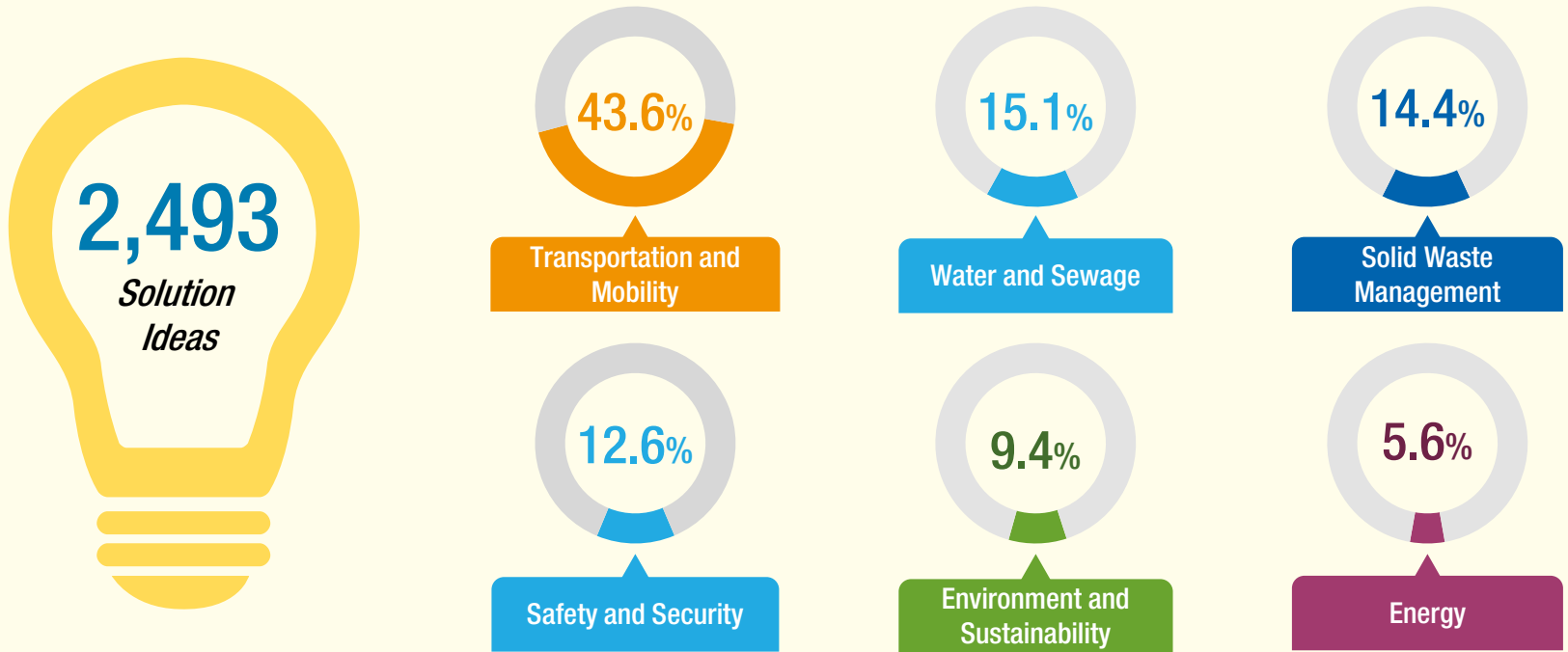
Summary of area-wise issues identified



Note: Obtained from citizen engagement exercise with ~50% Pune households

# Co-create Phase Output

## Co-Create phase – Summary of output



### Top 3 solutions in Solid Waste Management

# Pledge by citizens



**PUNE MUNICIPAL CORPORATION  
SMART CITY MISSION- ABB CITIZEN PLEDGE OF SUPPORT**

I/We, \_\_\_\_\_ area resident(s) of Aundh- Baner- Balewadi (ABB) area of Pune selected for retrofit development under the local area development concept under the “Smart Cities Mission”. I/We want to make ABB the most livable place in the world and a model smart area that can be later replicated across Pune. My/our vision is to ensure every citizen of ABB has a very good quality of life and has convenient access to all resources and opportunities required for the same. I/we understand that the journey towards becoming a smart City will require active participation from me/us in the future. I/We commit to be the driver of this change in my/our own respective ways. I/we will comply with the rules and regulations framed and take up the responsibility of co-creating a sustainable, transparent and participatory smart society as a responsible resident/s.

I/we pledge support to below smart initiatives

- Pay appropriate user charges and adopt Smart metering in all residential and commercial establishments
- Solar panels on rooftops, net electricity and smart grid
- Setup and treat all sewage through individual sewage treatment plants (STP) in all societies with more than 150 residents
- Rain-water harvesting in all buildings
- Segregate all organic, recyclable and other waste
- Swachh ABB with zero garbage on streets and public spaces
- E-governance and digital services and applications
- Collaboration and support to make ABB a zero-crime area

Sl	Full Name of each family member	Place (Aundh/Baner/Balewadi)	Contact No. of head of family/ any member	Signature
1				
2				
3				
4				
5				
6				

*Note: Please fill the names of all family members and atleast the signature of head of family/ any one member of the family/ all family members*

Web Site: [www.punsmartcity.in](http://www.punsmartcity.in), Email: [punsmartcity@gmail.com](mailto:punsmartcity@gmail.com)  
Twitter: @SmartPune, Facebook: smartpunecity,

## Online pledge



I, citizen of Pune want to make Pune the smartest City of India. Our vision is to make Pune the most liveable City, with great quality of life, ample resources and opportunities for all Pune-kars. I understand that the journey towards becoming a smart City will require active participation from us in the future. I commit to be the driver of this change in my own respective ways. I pledge to take up responsibilities that the City may require us to undertake in this journey. I together with the City Corporation will strive to improve and maintain the infrastructure in the city, starting with the most pressing problems of transport, water, and waste management. I would help develop model areas and replicate them across the City. This way I not only intend to set an example in front of the country, but also to the entire world. I hereby affirm my sincere support to our City's Smart City Proposal, which captures the hopes and aspirations of all of us through probably the largest ever citizen engagement program in the history of the urban world.

## Support Pune's Smart City Proposal through this Signature Campaign.

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# Stakeholder support

Charter of Association  
Pune Smart City Proposal



*We pledge to work together towards our shared vision of Smart Pune*



# Workshops and offline engagement

Snapshot from refine phase

## ▼ Traffic Workshop



## ▼ Water Workshop



## ▼ SWM and Sanitation Workshop



## Door-to-door form distribution and filling

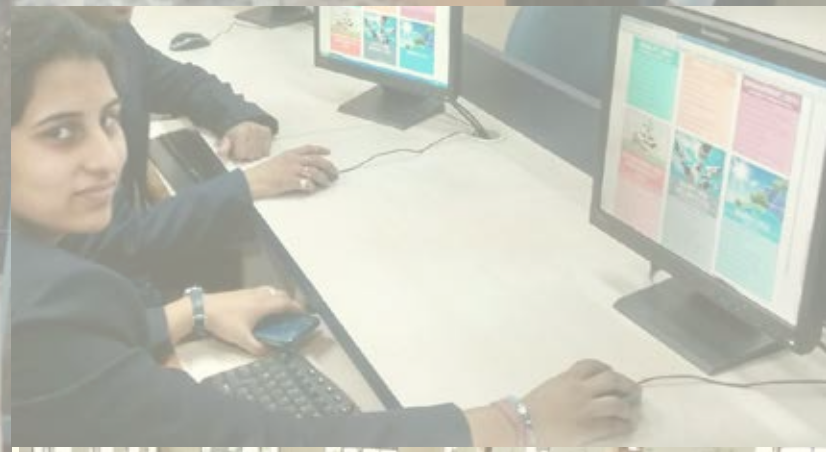


## Banners and hoardings at public places



## Engaging with citizen groups, organizations and associations







Pune Expressway, Pune  
- Getty Images



# Pan City - Transport and Water ICT solutions

-  Summary
-  Key issues
-  Solutioning process
-  Solutions
-  Long term strategy

4

# Ideas for Pan City

Smart City Mission specifically mentions ICT based “less is more” solutions as part of pan-city initiatives. Accordingly, Pune has identified 19 ICT solutions in mobility and water, the #1 and #2 issues across all interactions and research. These 19 ICT solutions will cost approx. INR 700 cr (both capex and opex for 5 yrs) and are centred around three themes.

1

Develop a “Smart Pune Public Transport System” to significantly increase public transportation usage from current 18%. Use ICT solutions to improve the reliability, availability and the “look and feel” of buses and bus stops

2

Develop “Intelligent Pune Traffic System” to reduce congestion on roads (peak hour speed of only 18 kmph). Use a suite of ICT solutions to synchronise driving through real-time parking and driving through real-time traffic analysis

3

Move towards 24x7 water availability across Pune through a host of ICT solutions for equitable distribution (smart metering), leak/ NRW reduction (helium detection) and best-in-class customer experience



Pavana Dam, Pune  
- Getty Images

# Why transport and water

1

**Envision:** With 12 lakh inputs from three lakh households (50 percent of total households), transport and mobility emerged as the biggest concern of citizens with 30 percent votes, while water and sewage was the next major concern with 25 percent votes

2

**Diagnose:** Four lakh inputs from citizens identified the biggest goals with mobility and water.

- In transport, the top goals were reduction of traffic congestion, improvement of public transport and better parking facilities.
- In water and sewerage, the top goals were clean river/water bodies, zero discharge of untreated water, increased use and sale of recycled water, availability of 24x7 water supply and reduction in leakage and NRW (29 percent).
- Citizens were already acutely aware of the key issues revealed by city profiling!

Therefore, Pune identified the exact issues that citizens wanted resolved across the city, and worked on them to develop truly inclusive solutions.

3

**Co-create:** Post identification of specific issues, ideas were captured from citizens in crowd-sourcing mode through workshops and the website. Forty-four percent of the solutions were related to transport and 15 percent to water and sewage.

4

**Refine:** Two day-long mini-labs were conducted with elected representatives and citizens for the two priority sectors to refine solutions.

5

**Share:** Finally, the developed pan-city solutions were shared with citizens for their approval before submission, with a total of seven lakh citizens supporting the solutions proposed for the city.

# Citizen engagement output top concerns for citizens of Pune



# Key issues: Transport

**No mass transit in Pune** and number of buses per population lags benchmark (30 buses per lakh vs. 55 benchmark).

**Buses in Pune have significant** issues with availability (25 percent fleet off-road most of the time) and reliability (84 percent routes have a waiting time of more than 20 minutes).

**Public transport trip** share is a low 18% vs. 50% benchmark.

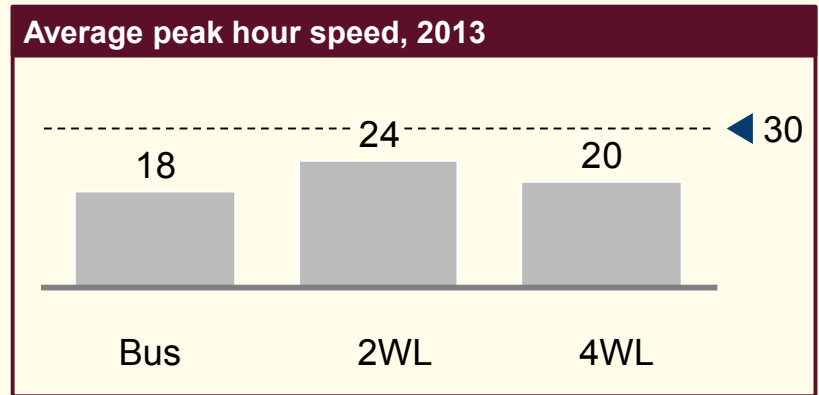
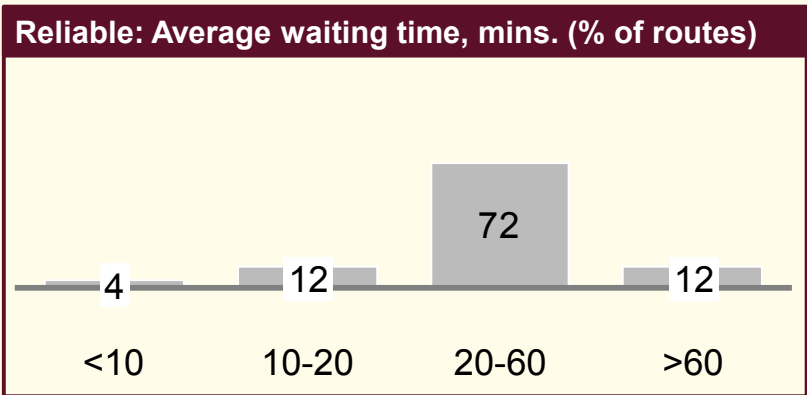
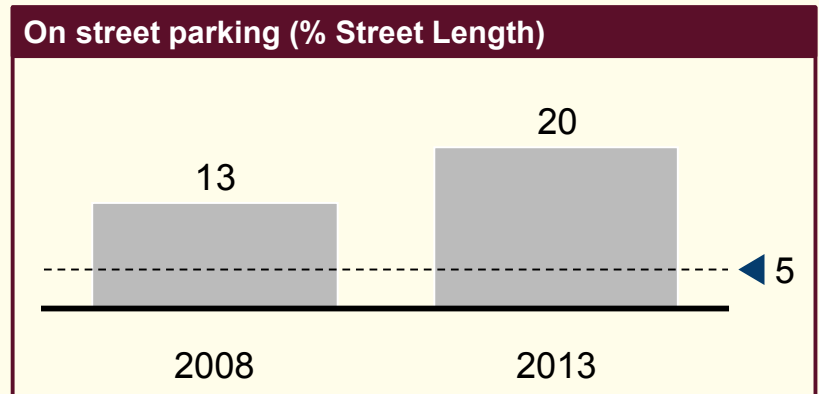
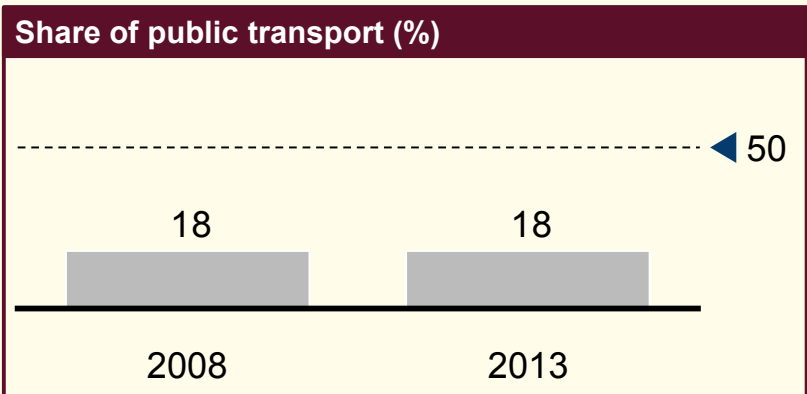
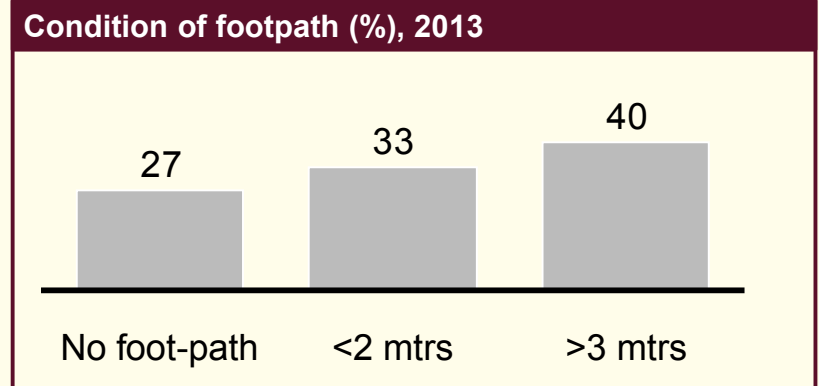
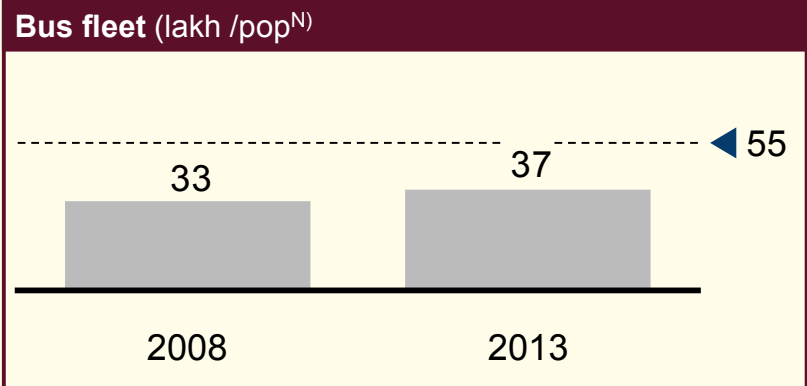
**Public perception** of buses is an issue and people earning more than INR 20,000 each month hardly use buses.

**Congestion has increased** dramatically in Pune due to additional reasons beyond public transportation.

**Most roads are not uniformly wide**, leading to bottlenecks, signal timings are not synchronized, on-street parking is high due to limited parking options, and there is lower than benchmark share of NMT (33 percent as against 45 to 50 percent) due to the lack of safe NMT infrastructure and pedestrian walkaways (60 percent of footpaths are about 2 m wide).

**As a result of all this, the average speed is 18 kmph and is likely to come down dramatically to 12 kmph by 2030 if no action is taken.**

# City profile: Transport



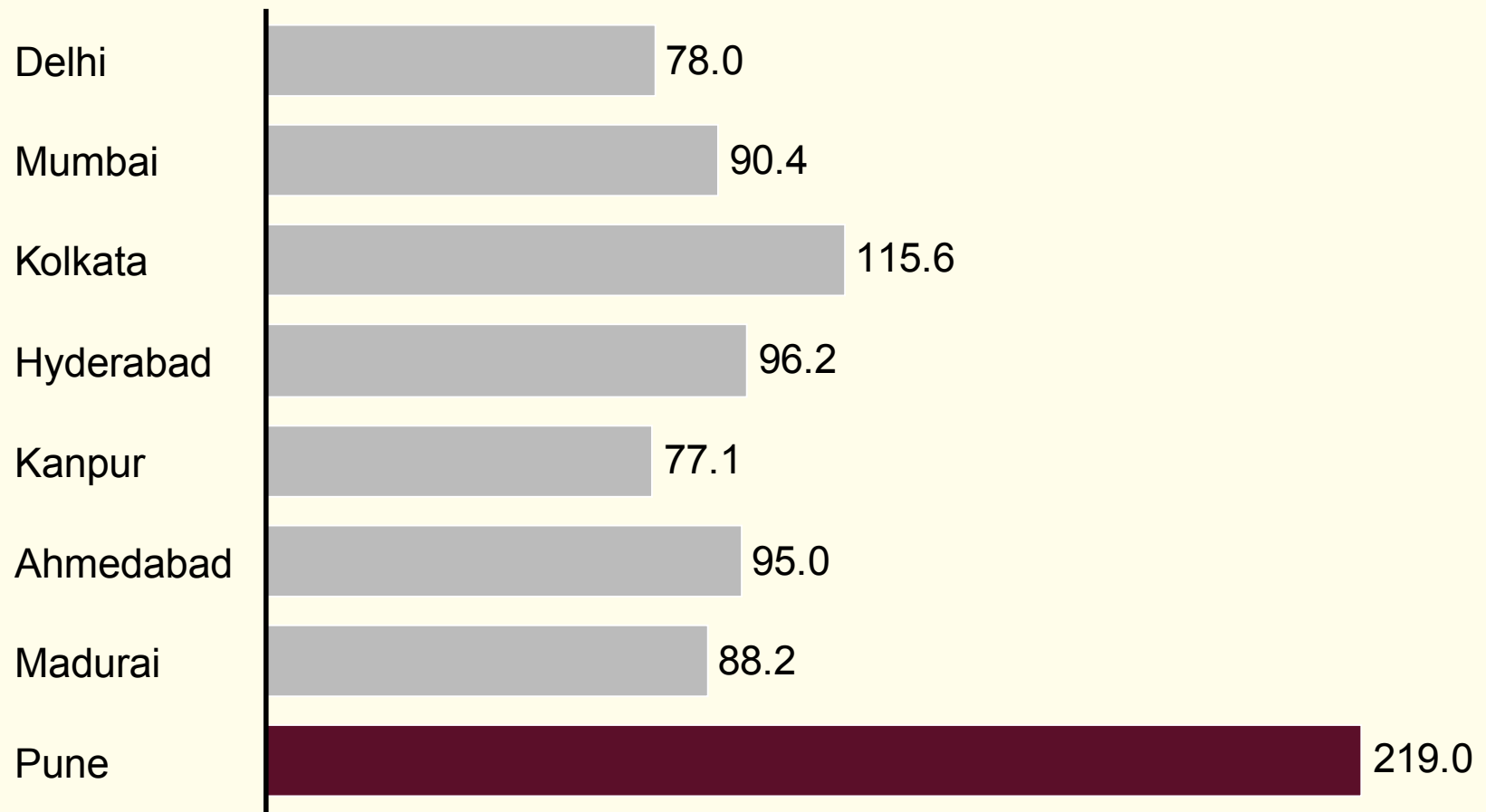
# Key issues: Water supply

Water supply is sufficient at an aggregate level

**1,250**  
MLD

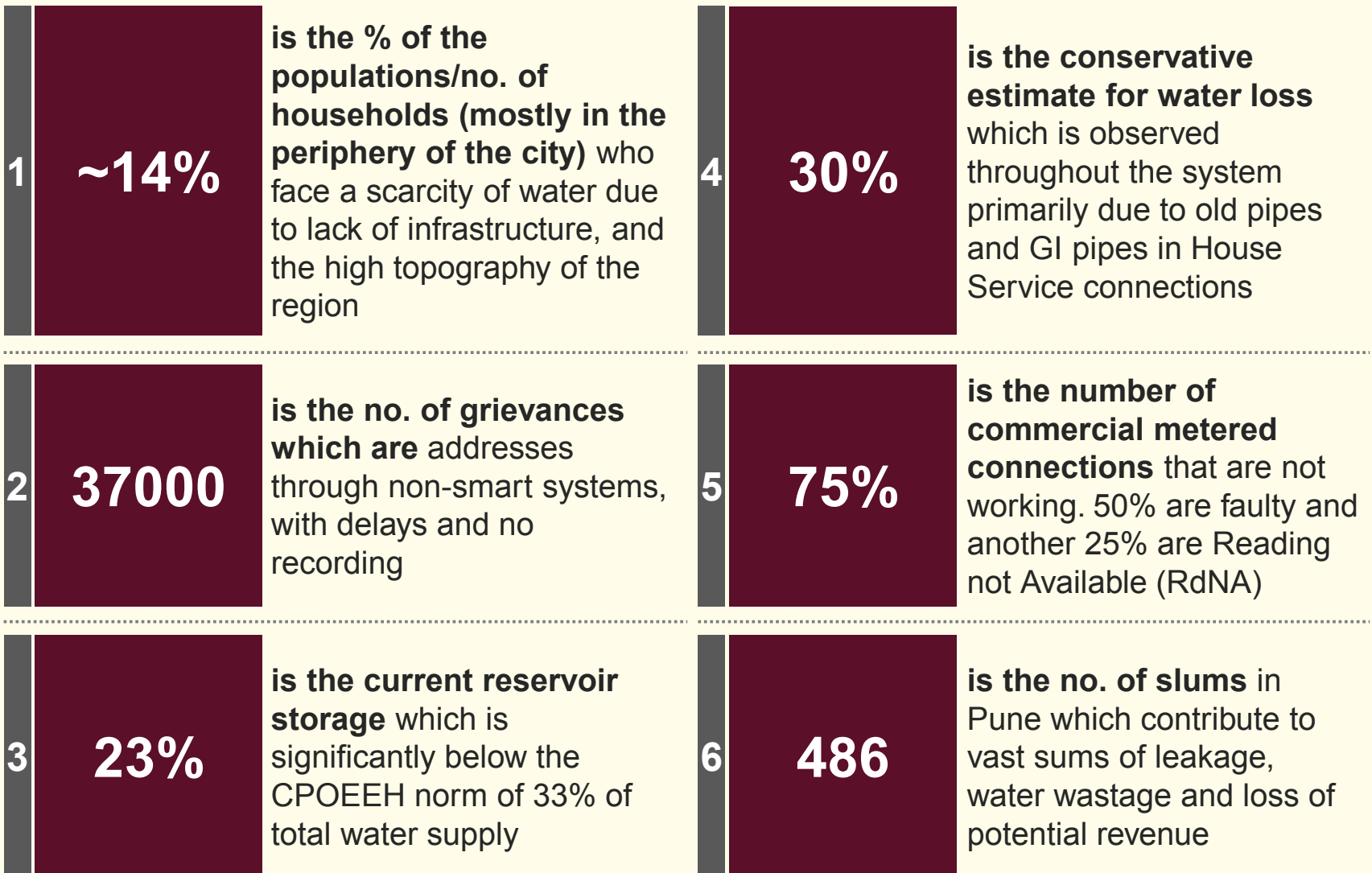
**219**  
LPCD

## Domestic water consumption per capita per day Litre per capita per day (LPCD)





## However, inspite of high aggregate availability, there are several challenges



# Solutioning process

## Opinion of elected representatives

- For the approval of pan-city initiatives by the elected representatives, an extensive four-phase engagement was conducted:
- Meetings with more than 30 elected representatives presenting the Pune city profile across 12 key sectors; also discussing potential pan-city solutions
- Review of pan-city solutions by the Mayor, Deputy Mayor and other elected representatives to solicit their views
- Two day-long mini-labs were conducted for the transport and mobility sectors, where elected representatives (corporators) and citizens were invited to work with the PMC to refine the solutions developed in each sector
- Finally, the Smart City proposal was presented to the standing committee for their approval

## Discussion with urban planners and sector experts

More than 80 Indian experts and 25 global experts were engaged to develop pan-city solutions.

- Local and pan-India experts and academics, who have worked extensively on projects in

other Indian cities (e.g., 24x7 water projects in Nagpur and Amanora ) were consulted, including former secretaries of Maharashtra Jeevan Pradhikaran (MJP), Delhi Jal Board and MSMPCB, former president of the Indian Water Works Association (IWWA), and professors from the Indian Institute of Technology (Madras and Delhi).

- Global experts, such as Geoff Gage, who has worked with more than 20 water utilities in the European Union (EU) and the United States (US)
- Fifteen urban planners, consultants (e.g., ITDP, Embarq, SGI), architects (e.g., Water Moore, RSP) and building contractors were asked to design sustainable and implementable solutions.
- Four two-day long subject workshops were conducted where focus groups were created to brainstorm on issues, prioritize the most critical ones, determine causal factors and develop feasible solutions. These were attended by a mix of local (e.g., Parisar, Pedestrians First) and global NGOs (e.g., WRI), transportation consultants (e.g., ITDP, Embarq), urban planners (e.g., PDA, CREDAI), academicians (e.g., CIRT) and PMC experts.

## Discussion with suppliers/partners

- Around 70 best-in-class suppliers were engaged across all sectors to determine the applicability and feasibility of the solutions.
- Five day-long supplier workshops were conducted with more than 50 best-in-class players (e.g., Siemens, Bosch, IBM, Veolia, ESRI, KPIT, L&T, Fairwood Infrastructure, IL&FS, Intel Solutions, Essel Infra).
- Continuous engagement with suppliers, such as KPIT, Wipro, rBus and Shuttl, Siemens, IBM, Wabag, Essel Infra, Suez and Veolia, helped to develop initial solutions as well as detailed costing and implementation timelines.
- Several MoUs were signed and PPP models were explored with interested suppliers, e.g., KPIT for ITMS deployment across buses in Pune, Veolia for 24x7 water supply, Embarq for the public bicycle sharing system, and rBus and Shuttl for private bus aggregators
- Attracting technology start-ups to Pune, e.g., private bus aggregators (Shuttl & rBus) to create reliable, premium, low-capex public transport options

# ICT solutions

## **Four specific issues related to transportation and mobility need to be resolved.**

### **Improving low availability of buses (25 to 30 percent of the fleet down at any time)**

- VHMS with provisions for diagnosing harsh braking, acceleration, engine transmission, brake failure etc., and a back-end maintenance management system, which can reduce fleet downtime by nearly 5 to 7 percent (estimated by technology vendor KPIT) and therefore increase availability

### **Improving low reliability and visibility of buses to commuters (more than 84 percent of commuters have to wait for around 20 to 40 minutes for a bus)**

- VTS and PIS comprising GPS, ETA algorithms, LED/LCD screens on all eligible buses and 190 major BRTs and bus stops to improve reliability and provide visibility of bus arrivals
- Mobile apps and online portal to provide real-time information on bus arrival, position, routes, stops and frequency, thereby reducing waiting time for passengers
- Bar codes and code-based SMS ETA ser-

vice at 100 percent bus stops to improve reliability and provide visibility of bus arrival

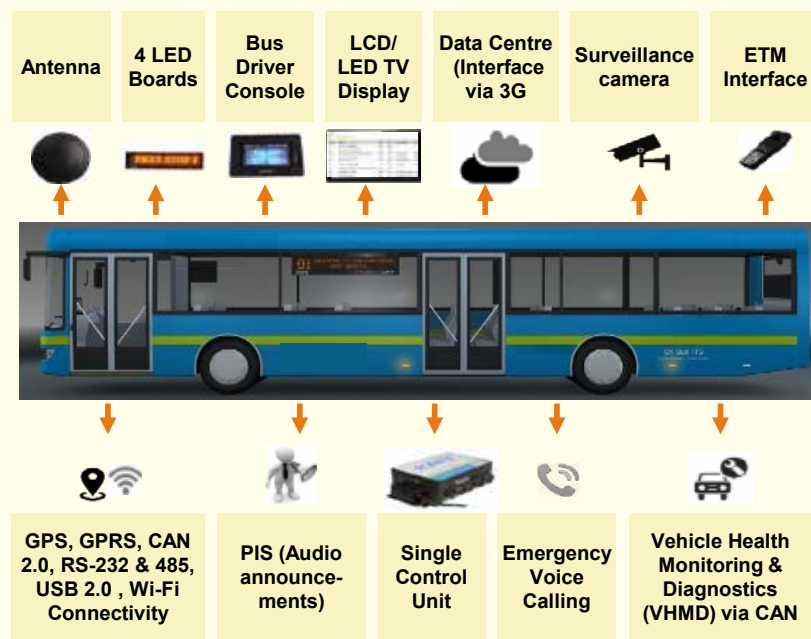
- Continuous route optimization of buses using ITMS data and creation of open data sources to enable crowd-sourcing along with citizen apps will further reduce waiting time and crowding of buses

### **Improving poor public perception of buses (more than 60 percent of users have a monthly income of less than INR 20,000)**

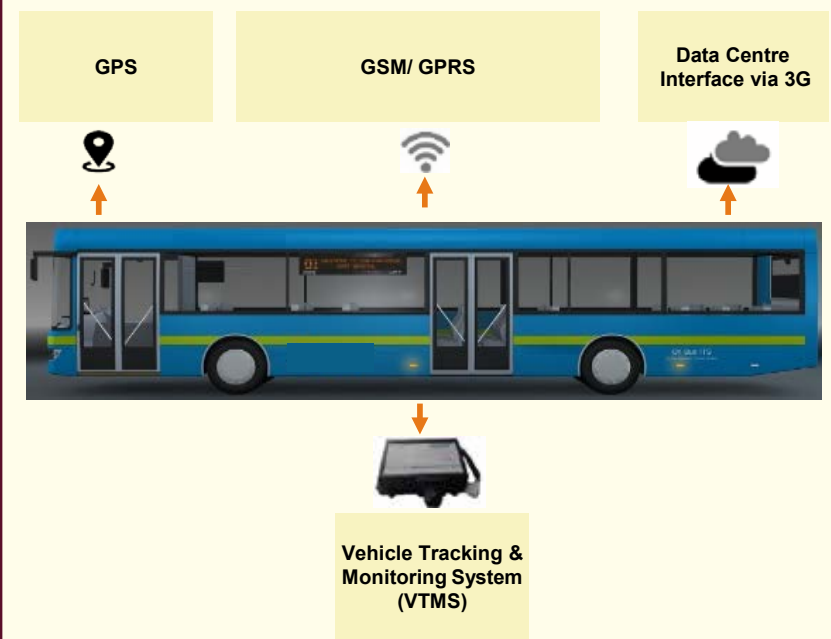
- Refurbishment of 100 percent of buses and bus stops to improve the “look and feel” to expedite the increase in adoption of buses for transport by the higher-income group
- Installation of surveillance systems in nearly 510 buses and provision of panic buttons and smart shut-downs to improve the security of commuters
- Use of VTS to monitor and control over-speeding and harsh-braking and skipping traffic lights to ensure a comfortable ride for commuters, to further increase adoption
- In-bus Wi-Fi and preloaded entertainment systems in around 510 buses

# Solution component architecture for Public Transport ITMS

## On Bus ITS with UBS-2 Components (510 Nos)



## On Bus ITS with Non-UBS-2 Components (570 Nos.)



## Passenger Information System (PIS)



LCD/LED TV Screen on Bus, at 95 Bus Stops

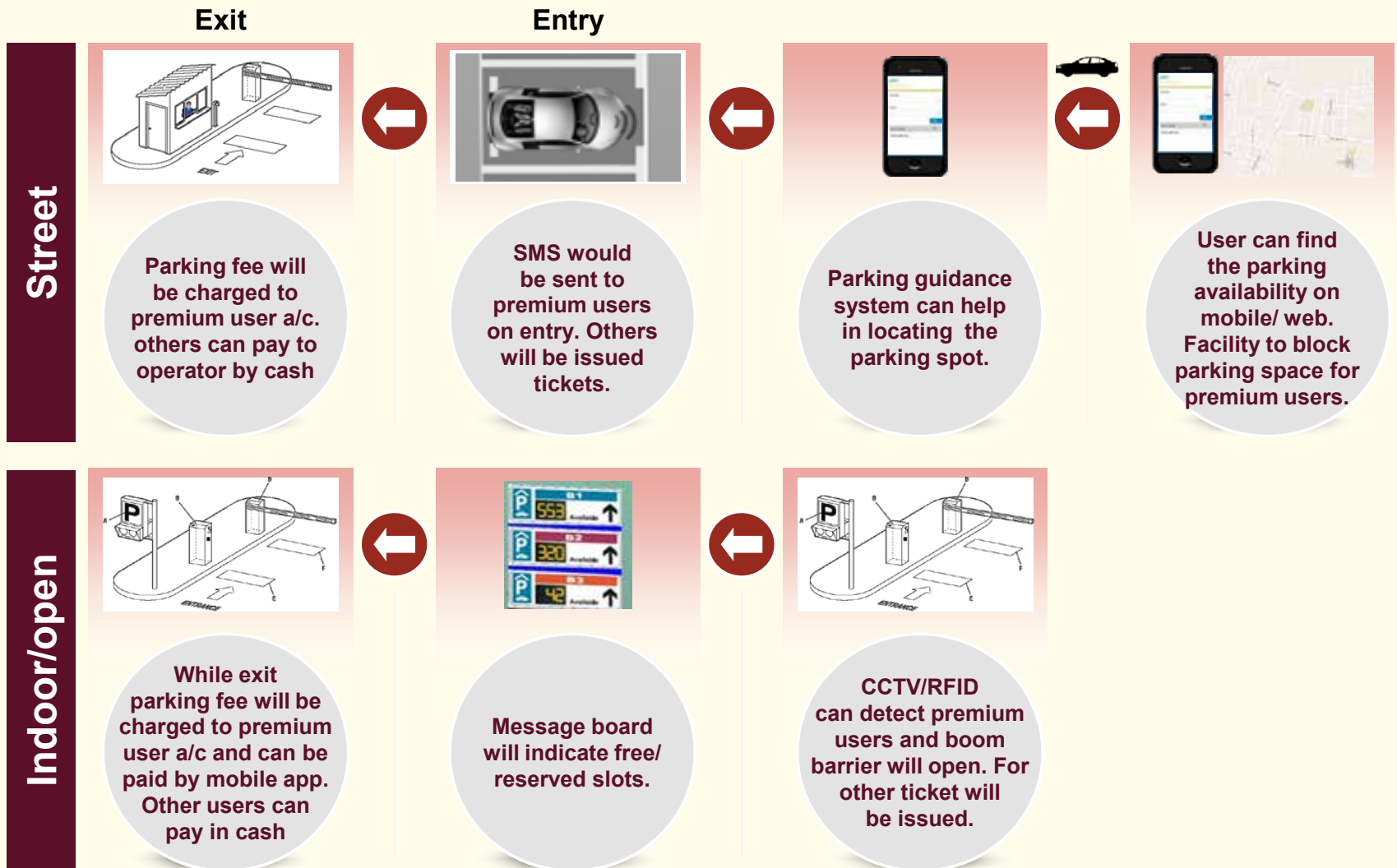


# ICT solutions

## **Reducing high congestion on roads (more pronounced in peak hours of 9:30 am to 10 am and 7:30 pm to 8:30 pm) with average speed of 18 kmph**

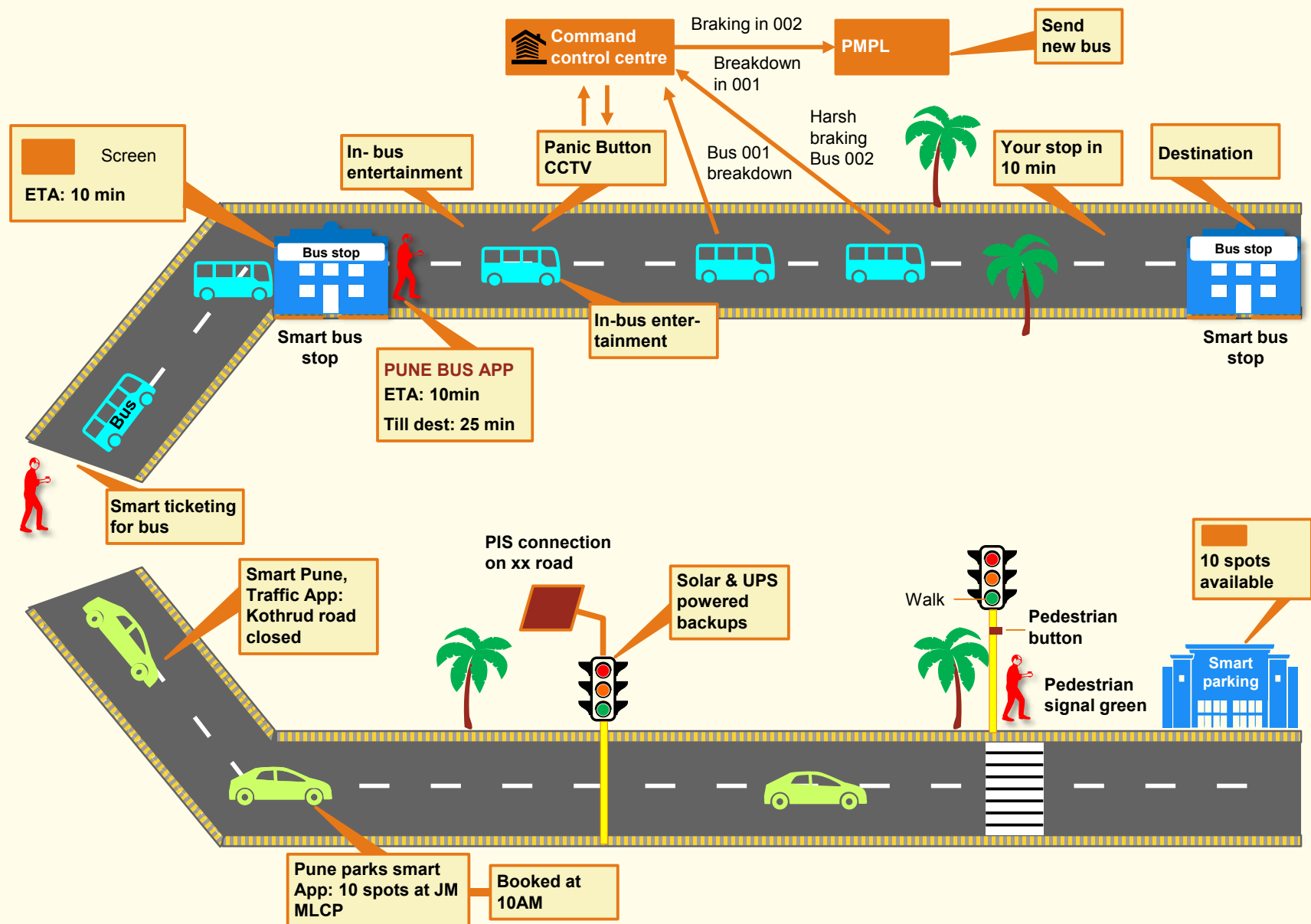
- Adaptive traffic management systems (with solar and UPS backups) across 100 percent signals in Pune, to dynamically adjust traffic light timings based on vehicle density (e.g., a study in Pune reveals the potential to reduce travel time by nearly 30 percent and increase average speed by 10 to 15 percent). The adaptive traffic management system will also have pedestrian switches on select junctions to extend times and make crossings safer for citizens, a central command control room with emergency response systems and green corridors, solar-powered traffic lights with power backup and mobile apps, and alerts and portals for live and forecasted traffic.
- Intelligent road asset management system (GIS-based) to optimize the number of roads being maintained at any time and reduce road-maintenance funds based on road conditions.
- Attract and promote bus aggregators like rBus and Shuttl to create a premium public service option for car-goers, reducing the number of private vehicles by 1 to 2 percent (around 60 to 70 percent users of rBus have private vehicles).
- Smart parking with real-time mobile app, smart cards and integrated ticketing infrastructure across seven parking locations to curb movement of vehicles in search of parking spaces.
- Traffic analysis and forecasting using CCTV footage and mobile GPS that improves decision-making and reduces disruptions.

## 2 types of ITMS parking solutions tailored for on-street and MLCP parking



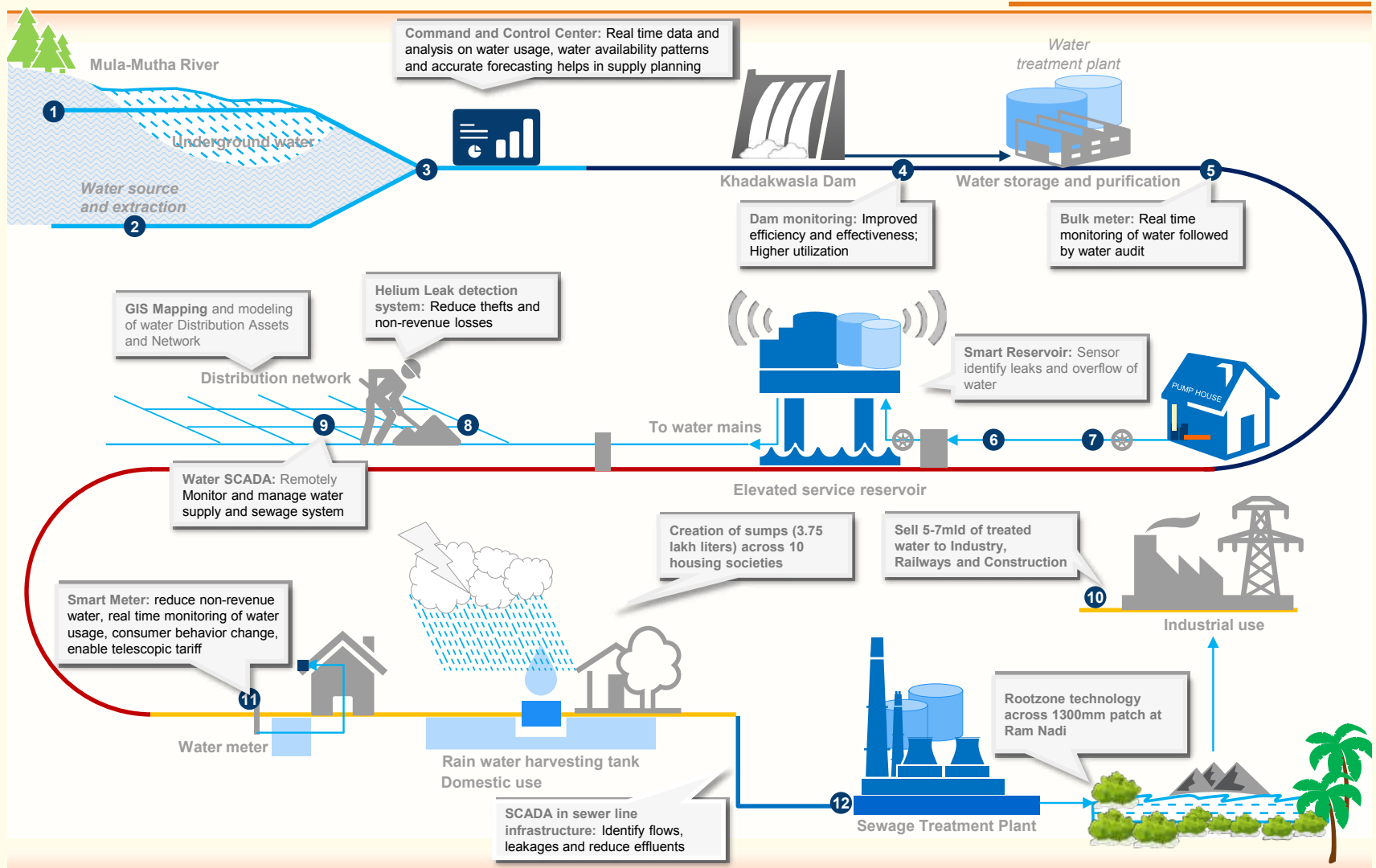
# ICT solutions

## Integrated ICT Solution: Smart transport





# Integrated ICT Solution: Smart water management



# ICT solutions

**Similarly, there are six specific issues related to water and sewerage that need to be addressed:**

**Finding a solution to the inequitable distribution of water (14 percent of population get less than the stipulated 135 lpcd)**

- Smart bulk metering across the distribution network with SCADA to determine lpcd consumption across the city with 80 percent accuracy and ability to take corrective action by pin-pointing leaks and overconsumption
- Creating a planning department with independent access to all network data via SCADA to ensure all pipelines are laid in line with the overall network plan

**Improving intermittent water supply throughout Pune combined with lack of pressurized water in taps**

- Round-the-clock water supply will be piloted in five DMAs (6,000 connections), accounting for 2.2 percent of Pune's population, with end-to-end activities from DMA formation to consumer awareness, done through a pay-for-performance model in a

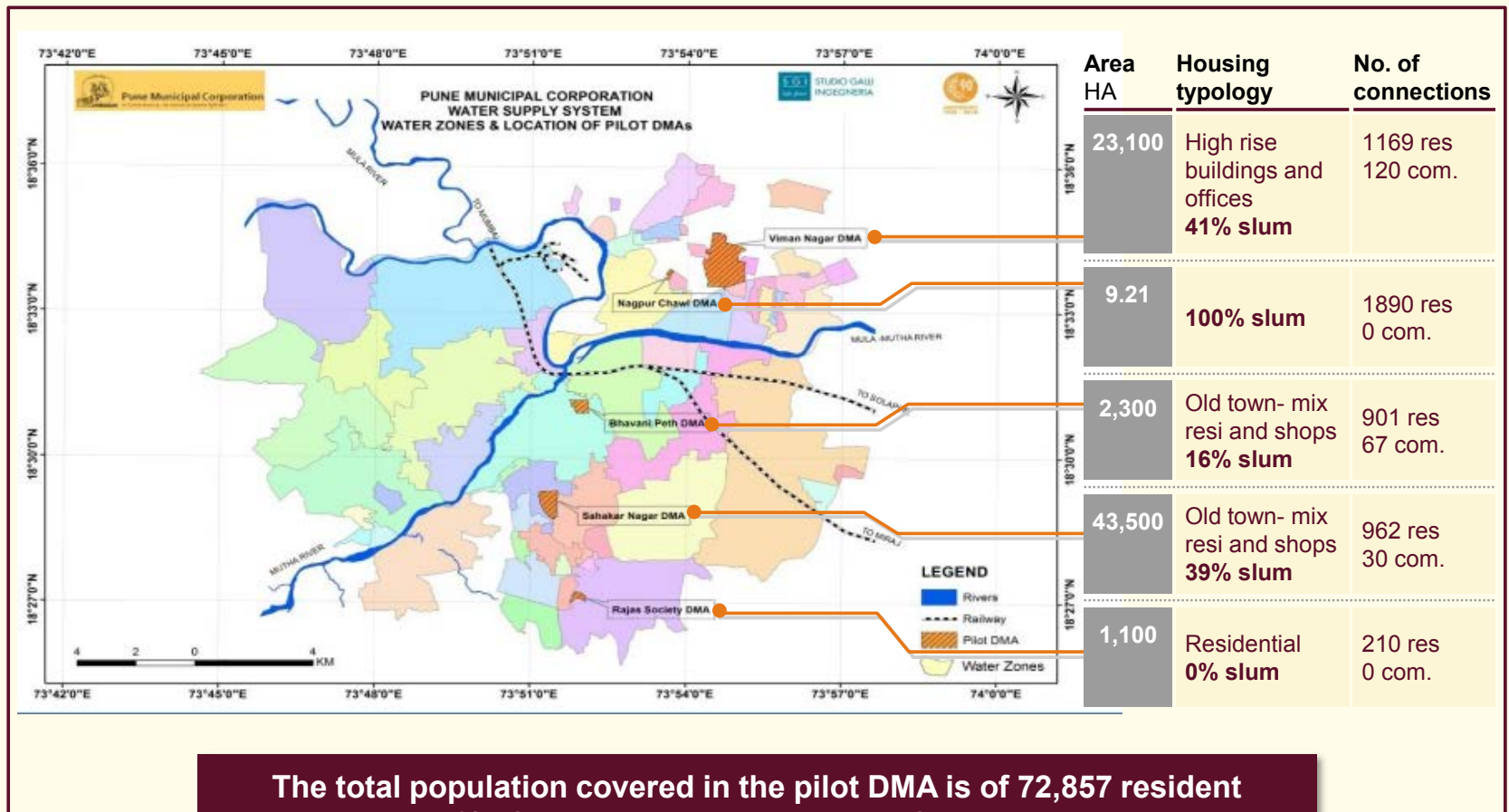
one-year timeline with a total cost of INR 18 cr to 24 cr. Eleven steps to make it happen have been outlined.

- Introduce smart metering, with a revised telescopic tariff to domestic households, through the "Give up water subsidy" campaign, where citizens give up paying cess in property tax and pay according to consumption.

**Reducing the number of unrecorded and illegal connections that cause more than 30 percent NRW, with only 1,50,000 of the total 4,00,000 connections being legal**

- Comprehensive customer survey based on a GIS platform to identify and legitimize all unrecorded and illegal connections, thereby reducing excess pressure on the network, lowering energy costs and increasing the PMC's annual revenue by INR 84 cr (i.e., 18.67 percent of the PMC budget) from new connections.

5 DMA's have been selected to represent Pune's housing typologies and prevailing conditions



# ICT solutions

- **Poor recovery of water charges with nearly INR 400 cr of arrears, high cost of recovery at 10 percent (compared to the benchmark of 1 percent) with 50 percent of commercial meters being faulty**
- Ensuring 100 percent smart metering for commercial establishments to increase revenue by 40 to 50 percent (i.e., INR 30 cr) and cut consumption and energy costs
- Establishment of a separate recovery department with lean management to reduce the cost of earning revenue and focus on collection of revenue from slums (INR 6 cr), new connections identified through survey (INR 80 cr) and recovery of arrears (INR 25 cr)

**Addressing the management of approximately 37,000 grievances received annually, since the current set-up is inadequate to meet service levels:**

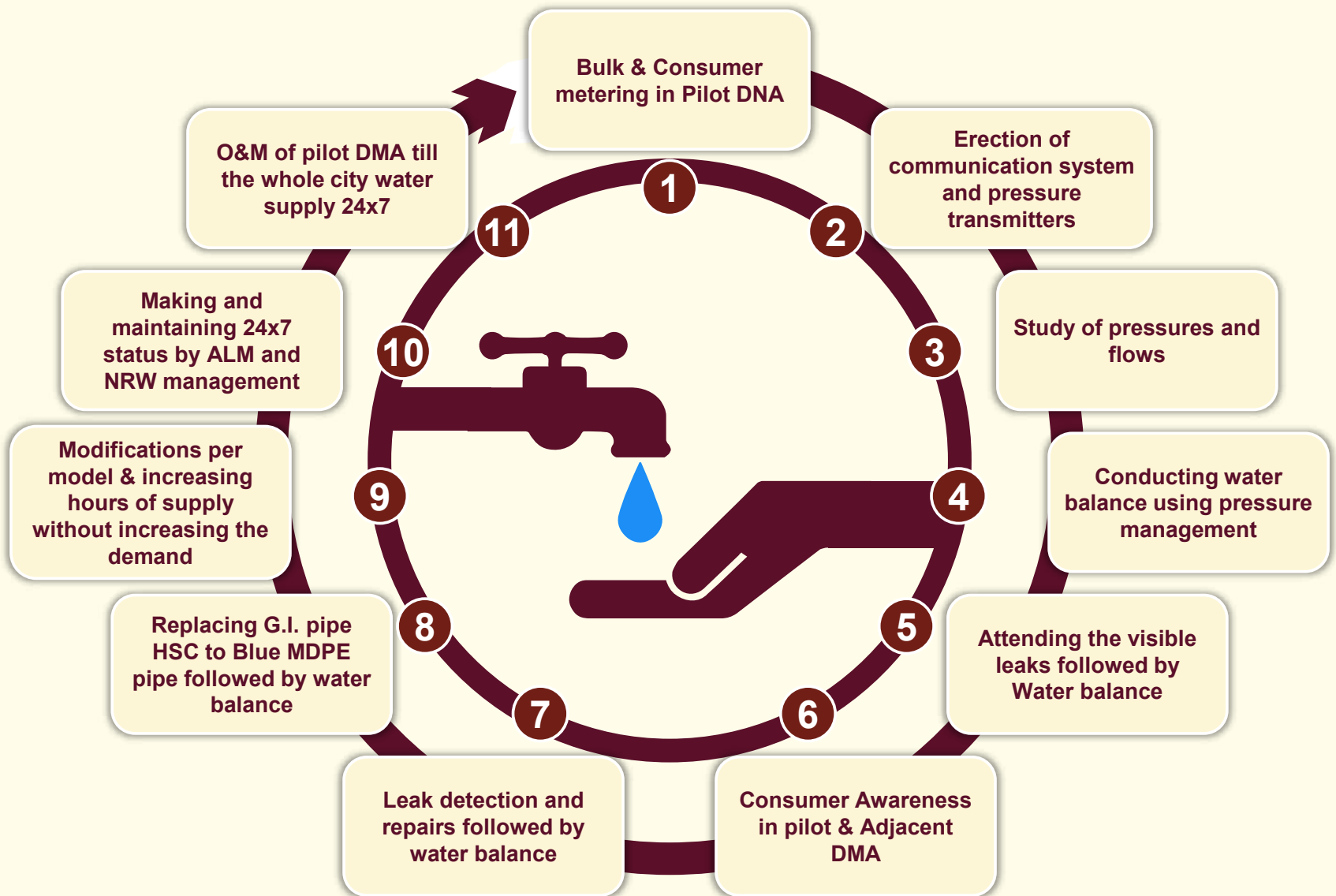
- Develop a suite of web and app-based solutions for grievance redressal and online bill payment, which includes an IVR (automated calling system), a 24x7 call centre, a user-friendly website and a mobile app for

clicking pictures and giving GPS co-ordinates to the local junior engineer/ward officer

**Addressing lack of awareness among citizens and high levels of wastage at the household level:**

Mass online and offline consumer awareness campaigns through physical as well as digital modes that include gamification campaigns, hackathons for idea generation, and competitions for making TV adverts

# 11 steps to converting the 5 DMA's (6000 connections) in to 24x7 water supply zones<sup>1</sup>



<sup>1</sup> This is without accounting for hard infrastructure requirements such as reservoirs, pipelines and pumping stations



Aundh, Pune  
- Getty Images

# Local Area Development



Ideas for ABB



How did we get there?



36 interventions across  
6 themes for ABB



Essential features



Seven Smart urban forms

5





# Idea for ABB

Pune aspires to create a model neighbourhood of liveability and sustainability to match global standards in the selected local area, Aundh–Baner–Balewadi (ABB). It aims to fully deploy all 24 Smart City features in a “future-ready” manner. Future-readiness is critical, because as the area develops, its population will grow four-fold by 2030 (from 40,000 to 160,000). Examples of some planned initiatives are:

1

**Mobility:** Take public transportation percentage to 40 percent from the current 18 percent through 100 e-buses, 26 km BRT route, overhaul of 54 bus stops, 100 e-rickshaws; take NMT from 33% to 50% through 27 km of bicycle tracks, 60 km of footpath redesign and placemaking.

2

**Livability:** Increase open spaces from 4 percent to 10 percent of total area through 13 parks and a 3.4 km world-class riverfront.

3

**Employment:** Create 45,000 jobs in the start-up hub for mixed use and walk-to-work.

**Citizen services:** Create an interconnected ABB with a suite of citizen services/e-governance on top of it (ABB card, e-ABB customer services, 911 emergency, pan-area Wi-Fi connectivity).

# Idea for ABB

Planned 3.5 km of riverfront development in ABB

**Now (from)**



**To**



- Urban Farming • 18 Acres \*
- Iconic Residential Mixed Use • 32 Acres
- Performance Gallery & Public Zone • 9 Acres
- River Promenade • 7 Acres
- Exhibition Retail Area • 9.7 Acres
- Public Utility & Green Area • 9.4 Acres
- Residential And Mixed Use • 29.6 Acres

SCULPTURAL BUILT MASS AS ANCHOR POINTS  
Viewing decks/ rooftop for solar energy harnessing



HARDSCAPING IN SEMI PERMEABLE MATERIALS  
(to allow ground water percolation)

LANDSCAPED PARKS AND PATHWAYS  
FOR PEDESTRIAN COMFORT

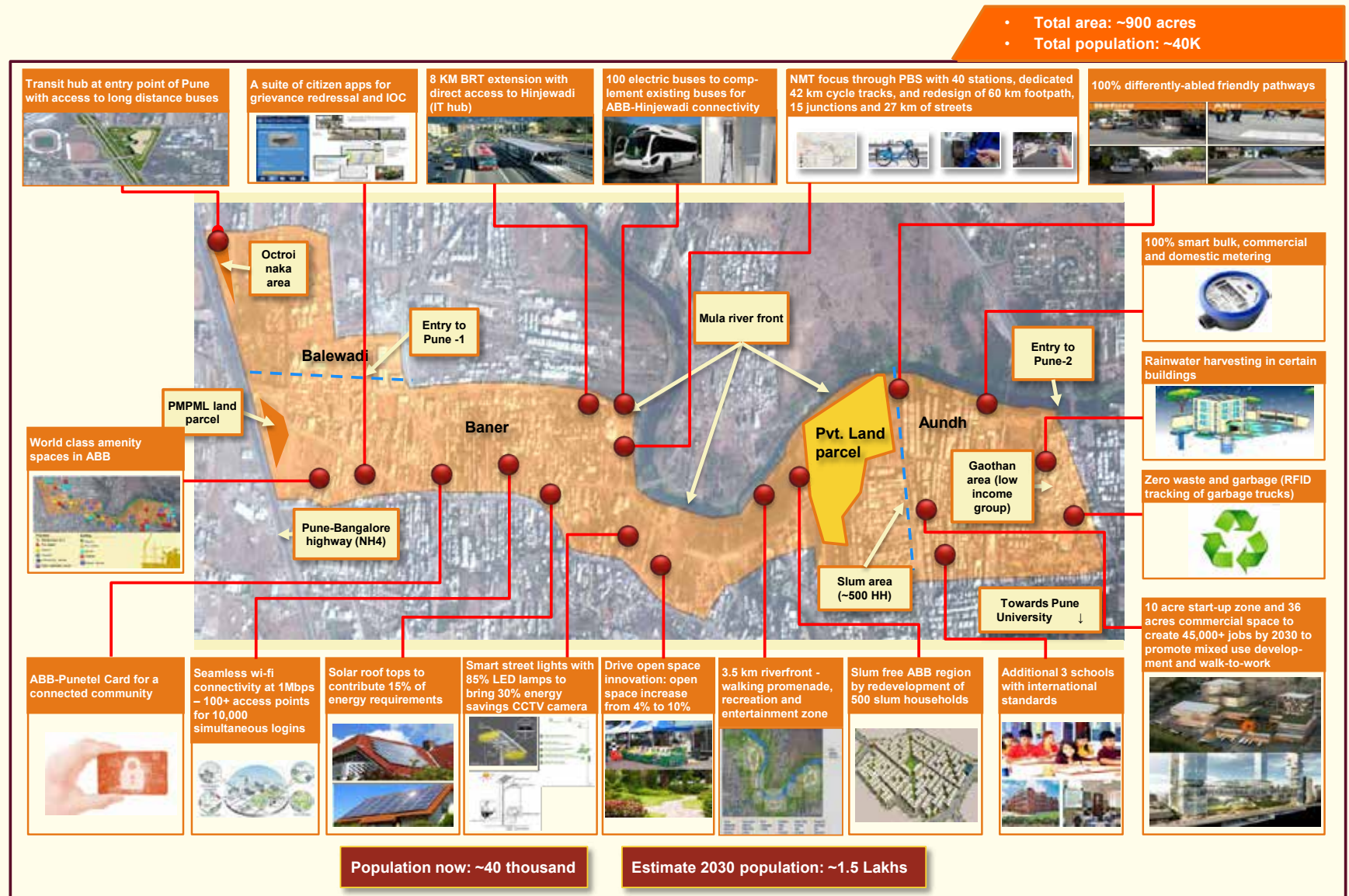


STEPPED PLAZA FOR CASUAL SEATING  
(creation of Amphitheater for cultural purposes)














Credits: RSP Design Consultants

# Integrated solutions for Aundh Baner Balewadi



# Aspirations

## Aspirations for key metrics of liveability in ABB

Sector	Metric	From	To	Benchmark
1 Transport and mobility 	• Public transport usage (% of trip share)	• 18%	• 40%	• >50%
	• Number of buses (# per Lakh population)	• 46	• 79	• >55
	• Non-motorized vehicles (NMT) usage (%)	• 33%	• 50%	• >50%
	• Average traffic speed (km/hr)	• 18	• 22-23	• -
2 Water and Sewage 	• Average water supplied (lpcd)	• 90-120	• 150	• >135
	• Water deficient areas (%)	• 60-70%	• 0%	• 0%
	• Sewage discharged into the river without treatment (%)	• 30%	• 0%	• 0%
	• Leakage and Non-revenue Water (%)	• 30%	• 15%	• <15%
	• Households with rain water harvesting	• 0%	• 100%	• 100%
3 Sanitation and waste 	• Door-to-door garbage collection coverage (%)	• 0%	• 100%	• 100%
	• Waste segregated at source (%)	• 55%	• 100%	• 100%
	• Public toilets (number per lakh of population)	• 23	• 50	• >50
4 Energy and Solar 	• Energy from renewable sources (0%)	• 0%	• 15-20%	• 20%
	• Energy efficient street-lights (% of total)	• 0%	• 100%	• 100%
5 Amenities 	• Open spaces (% of total area)	• 3%	• 15%	• 10%
	• Number of pedestrian roads	• 0	• 1	• -
	• Roads with inadequate footpaths (>2 m footpath)	• 40%	• 0%	• 0%
6 Safety and security 	• CCTV security coverage	• 20%	• 100%	• 100%
	• Response time (minutes)	• 20-30	• <10	• <10
	• Number of security personnel per Lakh of population	• 60	• 120	• 136
7 E-governance and digital 	• Number of services provided via single window	• 0	• 20-25	• -
	• Public Wi-fi coverage	• 0%	• 100%	• 100%
	• Digital literacy	• 60-70%	• 100%	• 100%
8 Slum re-development 	• Number of HH living in slums	• 483	• 0	• 0
	• Unemployment (especially in slums, %)	• 6%	• 2%	• 2%
9 Affordable housing 	• # of affordable houses in the region	• 0	• 400-500	• 400-500
	• % of affordable houses in the region	• 0%	• 2%	• 10%
10 Health 	• Hospital beds per 10,000 population	• 104	• >40	• >40
11 Education 	• School area per student (sq ft of school area available per student)	• 29	• 35	• 35



# How did we get there?

**How could the entire city select a local area in an objective and transparent manner in the fastest possible time?**

**Two things made this possible:**

- **Objective criteria:** Well thought-out criteria were followed at every stage—city profiling, citizen engagement, discussions with elected representatives, and discussions with urban planners.
- **Scale of engagement and involvement of expertise:** Besides objective criteria, Pune continued its unprecedented stakeholder engagement even for local area selection.

Consequently, ABB emerged as a top choice in a fair, transparent way, evident from the snapshot of results. This gave Pune significant strength to drive the local area development (LAD) agenda in a full-fledged manner.

**Retrofitting and why?**

While selecting the options among retrofitting, redevelopment or greenfield development, retrofit was chosen because:

- **Retrofit** had far better replicability across the entire city
- **A larger area (1,000 acres)** can be covered, impacting the maximum number of citizens in the pilot phase itself.
- **The time to impact** is relatively shorter compared to greenfield or redevelopment.
- **The cost of retrofitting** is relatively lower compared to greenfield or redevelopment these need much more hard infrastructure. This makes implementation far more feasible.

# Objective criteria

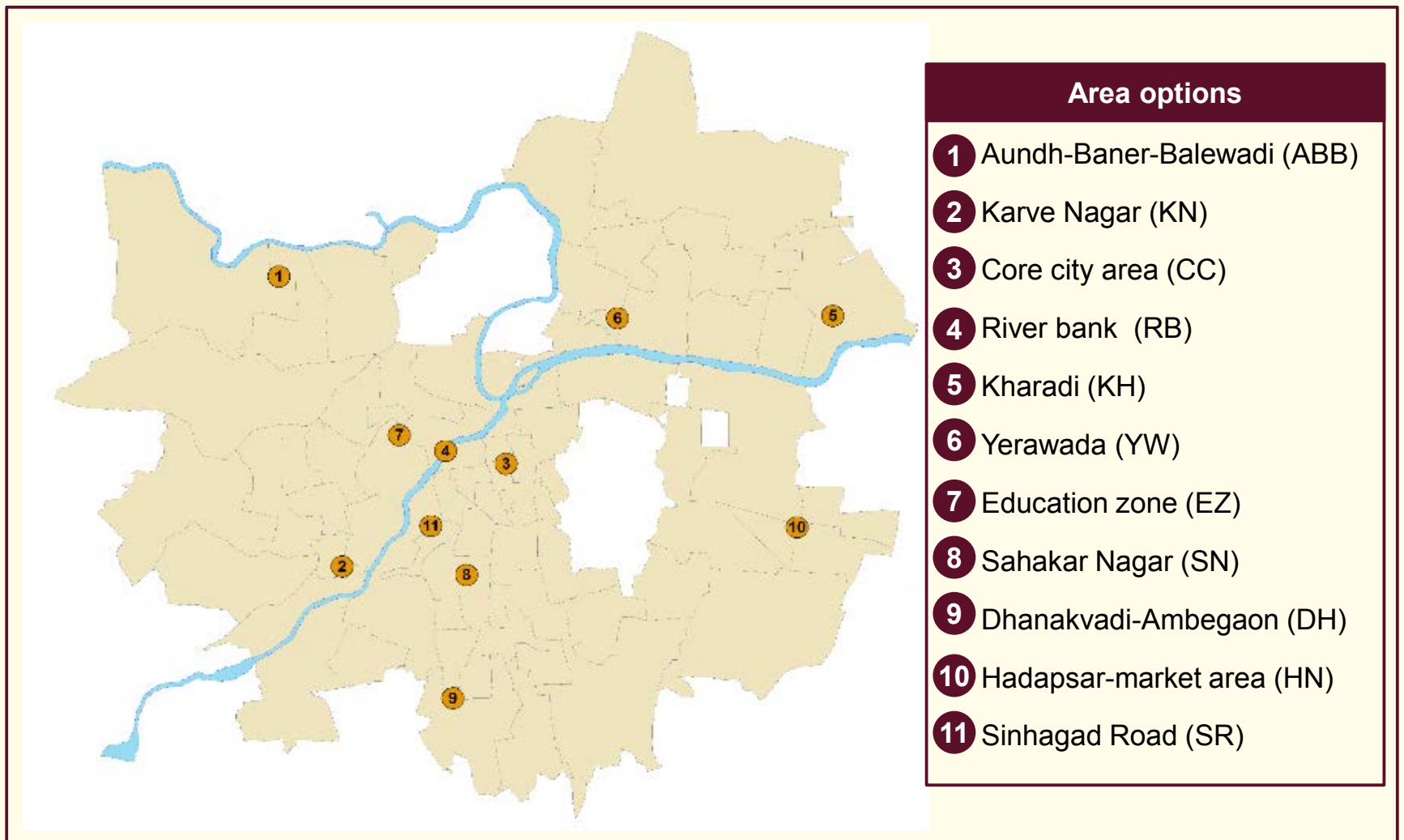
## Objective 10 point criteria for area selection

- |   |   |
|---|---|
| <b>1</b> Ease of replicability                          | <b>6</b> Scope for mixed-use development      |
| <b>2</b> Ease of implementation                         | <b>7</b> Critical to city's identity/heritage |
| <b>3</b> Criticality to the city                        | <b>8</b> Scope for inclusive transition       |
| <b>4</b> Future development potential                   | <b>9</b> Existing degree of liveability       |
| <b>5</b> Number of people impacted (population density) | <b>10</b> Scope for sustainable development   |

After applying these criteria and the results of detailed desk research, 11 contiguous areas were shortlisted across Pune.

# Shortlisted areas

Eleven areas across Pune were initially considered as potential options for LAD based on expert inputs





# Evaluation

Criteria for area selection	CC	RB	SN	KN	EZ	ABB	DH	SR	HM	YW	KH
1. Population density	H	M	M	M	L	M	H	M	M	M	L
2. Mixed Use	H	M	L	M	H	M	L	L	M	M	M
3. Identity / Heritage	H	H	M	M	H	M	L	L	L	M	L
4. Slums	L	L	L	L	L	M	M	H	H	H	M
5. Criticality to the city	H	L	M	M	H	M	H	H	M	M	L
6. Existing degree of liveability	L	M	M	H	H	H	L	M	M	L	M
7. Future proposals coming up	H	H	M	M	M	M	L	M	M	M	M
8. Replicability	H	H	H	H	L	H	M	M	M	L	H
9. Environmental concern	L	H	H	H	H	M	M	H	L	L	M
10. Ease of implementation	M	M	H	H	M	H	M	M	M	H	H
Probability of final selection	H	H	L	M	H	H	M	M	M	M	M

Area important for identity of Pune		Area you would like to live in		Area you would like to invest		Favourite destination for youth of Pune		Which area will benefit a larger cross section of society		Recreational hub for Pune	
Area Name	%	Area Name	%	Area Name	%	Area Name	%	Area Name	%	Area Name	%
CC	26%	ABB	17%	ABB	17%	EZ	21%	CC	15%	ABB	16%
ABB	20%	CC	15%	CC	14%	ABB	15%	ABB	12%	CC	13%
KN	10%	KN	13%	KH	13%	CC	11%	RB	10%	RB	12%
EZ	9%	EZ	8%	HM	10%	KH	8%	DH	10%	SR	10%
KH	7%	KH	8%	DH	8%	SR	7%	HM	9%	EZ	8%

# Scale of engagement

**Several layers of involvement from stakeholders ensured that all viewpoints were considered, debated, assessed and realized before deciding upon the area for local development.**

Expert panel review involved more than 10 renowned urban planners, who practically seconded themselves to the PMC for a month to see the entire process through.

Furthermore, Citizen engagement was done across the city, with 24,000 citizens sharing their views on area selection—1,16,965 inputs were collected online/offline.

More importantly, around 40 key elected representatives from all major political parties including local ministers, MPs, MLAs, party leaders engaged in the selection process. Getting support across all parties in such a short time was unprecedented even in the history of Pune.



**24,000**

citizens involved

**40**

elected representatives

**1,16,965**

citizen inputs & opinions

**10**

urban planners

# The result: ABB and why?

In this exhaustive exercise, the ABB area emerged as the democratic and rational choice. About 900 acres in the area were demarcated for LAD. The ABB area is indeed the right choice for several strategic reasons:

**IMPACT:** Impact can happen over a large area (900 acres) with a sizeable population (40,000 population)

**STRATEGIC LOCATION:** Located right at the entry point into Pune from Mumbai side

**RIVERFRONT:** Large 3.5 km riverfront, which could be leveraged for riverfront development

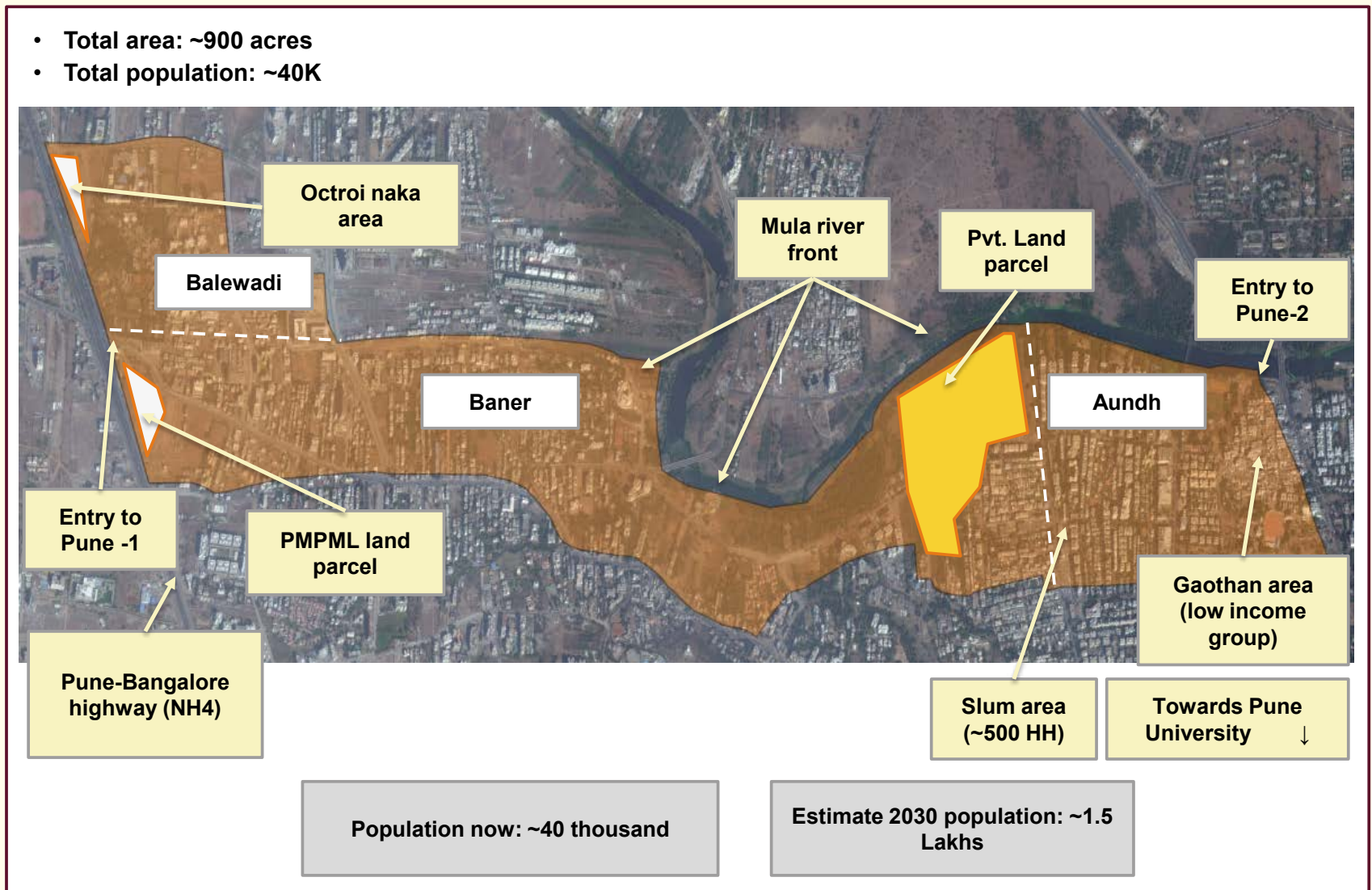
**MIXED USE:** Mostly residential area today with people going to Hinjewadi to work; can be developed for mixed-use development due to vacant pieces of land

**ENTREPRENEURIAL CAPACITY:** Potential to create a start-up zone, leveraging entrepreneurial energy of Pune

**INCLUSIVENESS:** Potential for inclusive transformation of the neighborhood with 500 households in the slums

**MODEL AREA:** Large private land parcel (70 acres) next to riverfront for model development

# ABB: 900 acres identified with the possibility of many potential interventions



# 6 themes for ABB

In line with the aspirations of making the ABB area a model neighbourhood, six themes were identified.

**Theme #1: Fix hard infrastructure and make it future-ready as the population grows four fold (across mobility, water, SWM and security)**

**Theme #2: Create social infrastructure as per benchmark standards**

**Theme #3: Enhance liveability quotient considerably on top of fixing infrastructure**

**Theme #4: Drive socially-inclusive inclusive growth in the region**

**Theme #5: Improve sustainability quotient of the region**

**Theme #6: Leverage ICT solutions for citizen convenience and e-governance**

## Transit hub along with commercial development



Examples of world class amenity spaces in ABB

'Aundh-Baner-Balewadi' (ABB): ~7 acres of additional amenity space is planned to be used to ensure we meet the international benchmarks on Public social infrastructure



Credits for Exhibit 15: Pavetech, Embarq, Prasanna Desai Architects, Infraking

# 36 interventions for ABB

1. Build 8-km elevated BRT extension with direct access to Hinjewadi (IT hub).
2. Overhaul 54 regular bus stops with ICT solutions.
3. Launch 100 e-buses to complement existing buses for ABB–Hinjewadi connectivity.
4. Introduce express airport service.
5. Improve 46 km of road.
6. Ease access to mass public transport through 100 e-rickshaws.
7. Focus on NMT through PBS with 40 stations, dedicated 42 km of cycle tracks, and redesign 60 km of footpath, 15 junctions and 27 km of streets.
8. Create a transit hub at Pune entry point with access to long-distance buses.
9. Make 100 percent pathways accessible for the differently-abled.
10. Increase water availability from 90 lpd to 150 lpd to pilot the availability of water 24x7.
11. Install 100 percent smart bulk, commercial and domestic metering.
12. Development of 3.5 km riverfront for replication across Pune
13. Rainwater harvesting through creation of 4 million litre sumps across housing societies
14. 10% waste water recycling in the ABB region
15. Zero waste and garbage ABB region through garbage truck augmentation, RFID tracking of vehicles, RFID based attendance system and monitoring of garbage areas
16. Centralized command and control centre with camera feed from critical areas, emergency services through 5 SWAT vehicles
17. Build three additional hospitals with 110 beds in the area.
18. Build three additional schools with international standards in the area.
19. Create and maintain 74 additional public toilets to global standards.
20. Build state-of-the-art fire stations for high-rise cum compact development.
21. Provide smart parking for 750 cars.
22. Drive open-space innovation: Use increased open space (from 4 percent to 10 percent of total area) to create intercon-



# Placemaking, street redesign, road widening and new roads

**PERSPECTIVE OF PROPOSED BUS BAY, PARKING AND GREEN SPACE**

**BEFORE** **PELICAN CROSSING** **BEFORE**

**BEFORE** **IMPROVED BUS BAY WITH SOLAR PANEL, PUBLIC INFORMATION SYSTEM, WI-FI AND TOILETS** **BEFORE**

**BEFORE** **SMART POLE WITH VEHICLE ACTUATED SIGNAL, CCTV & STREET LIGHT WITH SOLAR PANEL** **BEFORE**

**BEFORE** **TRAFFIC INFORMATION SYSTEM AND DIGITAL SIGNAGES** **BEFORE**

**PLAN INDICATING PROPOSED IMPROVEMENTS FOR BUS BAY**

**BEFORE** **BEFORE**

**WALTER P MOORE ENGINEERING INDIA PVT. LTD.**  
 Down Town City Centre,  
 Office No. 7B, 7th Floor,  
 S, No 8+23/1/2, Near Mhatre Bridge,  
 Erandwane, Pune - 411 004, INDIA  
 91 9021182131

**NOTES:**  
 THE INFORMATION SHOWN IS FOR CONCEPTUAL USE ONLY AND NOT FOR ESTIMATION & CONSTRUCTION. THESE OPTIONS WERE PREPARED WITHOUT ANY TOPOGRAPHICAL, TRAFFIC & GEOTECHNICAL DATA. THESE DRAWING SHALL NOT BE USED OR FURTHER DEVELOPED WITHOUT PRIOR CONSULTATION OF WALTER P MOORE ENGINEERING INDIA PVT.LTD.

SCALE: NTS

Credits: Walter P Moore Engineering India Pvt Limited, RSP Design Consultants

# 36 interventions for ABB

- nected gardens 5 minutes away from each resident, open vegetable market.
23. Create a 3.5-km riverfront with promenade, recreation zone and entertainment zone.
  24. Build an 10 acre start-up zone and 36 acres commercial space to create over 45,000 jobs by 2030 and promote mixed-use development and walk-to-work.
  25. Improve the area's appearance by moving all wiring underground and creating a vehicle-free road.
  26. Make the ABB area slum-free by redeveloping 500 slum households.
  27. Drive the socio-economic transformation of slums by focusing on four problem areas: sanitation, healthcare, education and skill building.
  28. Install smart street lights with 85 percent LED lamps, saving 30 percent of the energy spend; fit lampposts with air-pollution sensors, panic button, wi-fi access point and CCTV camera.
  29. Create a smart grid in ABB for 100 percent power supply and to reduce AT&C losses by 3 percent.
  30. Install solar roof-tops to contribute 15 percent of energy requirements.
  31. Seamless wireless Internet connectivity at 1 Mbps with 100+ access points for 1,00,000 simultaneous logins
  32. Launch ABB Punetel Card for a connected community.
  33. Set up an intelligent operations centre with integrated data across utilities, transport and public safety.
  34. Develop a citizen app to redress grievances and integrate multiple functions with the Intelligent Operations Centre (IOC).
  35. Create a digital SPV to improve SPV functioning with geo-enabled city operations for multiple activities such as land management and tax assessment.
  36. Launch e-SPV, a comprehensive ABB portal online with multiple activities across all departments and a citizen desk for physical verification.

## Redesign and placemaking of junctions



**PROPOSED IMPROVEMENTS OVER EXISTING CONDITION**



**PERSPECTIVE OF PROPOSED CONDITION**

# Essential features

**Assured electricity supply:** A comprehensive 24x7 electricity plan consisting of smart grid, distribution and meters to make the system future-ready, reduce AT&C losses from 9% to 6%, and integrate solar-power supply to the grid at a total cost of INR 364 cr. There is no load shedding in ABB at present, except for the distribution transformers tripping (1.8% per month). The DPR prepared for distribution system in ABB area, including smart grid and T&D network strengthening, takes care of infrastructure requirements till 2030. It projects the load to grow at 15% till 2020 and at 6% thereafter. MSEDCL would enter into a PPA as and when required to ensure 100% power supply to this area. T&D network strengthening would cost INR 304 cr, which is expected to be covered under the IPDS scheme. Of the smart grid cost of INR 85 cr, 25 cr will be funded from the National Smart Grid Mission and the rest by SCM. PMC has entered into an MoU with India Smart Grid Forum (a PPP initiative of MoP) and MSEDCL to ensure successful implementation of the project.

**At least 10% of the Smart City's energy requirement coming from solar:** Make ABB area maximum solar city, with solar power fulfilling 15-20% of energy needs at zero cost model. A feasibility analysis is being conducted for installation of solar panels on all PMC owned buildings (with help from Pune International Center (PIC) and Prayas). PMC will conduct a bidding process in Dec '15-Jan '16 to shortlist 2-3 private agencies to install solar panels under a renewable energy service company (RESCO) model (capex and opex is borne by private agency, PMC would pay consumption charges as per the tariff defined in PPA signed between PMC and private agencies) A preliminary survey depicts the availability of 176 acre of roof-top space in ABB area. At a reasonable estimate of 25% coverage of roof-tops, 15% to 20% of energy supply will come from solar power. For ABB area, solar roof-top implementation would start with government buildings and then expand to commercial and residential establishments, all under the RESCO model. Net metering regulations in Maharashtra are already in effect, thereby providing incentive to consumers to install solar panels. PMC has entered into an MoU with Prayas energy group-a leading

Indian NGO-and would be responsible for conducting the solar awareness programs in the ABB area. PMC has entered into an MoU with MSEDCL to streamline the smart metering process.

**Adequate water supply including waste water recycling and storm water reuse:** Increase per capita water availability to 150 lpcd and ensure 10% waste water recycling in ABB region. Adequate water supply: Build infrastructure to increase per capita consumption in ABB from 90 to 150 lpcd (capex of INR 87 cr) - Create two reservoirs each at Balewadi and Baner, Augment Pashan reservoir with two reservoirs of 30 lakh litres each and install an additional 450 hp pump, Lay 40 km of pipeline in Baner-Balewadi and 10 km in Aundh, Create three reservoirs in Aundh at Pune University, Chaturashunghi and Panchvati.

**Waste-water recycling:** Recycle 48 mld sewage generated in ABB by enhancing the capacity of Baner STP by 30 mld under JICA-NRCP to ensure full treatment of sewage up to 2031, and then using the treated water for all consumption in parks (for irrigation) and construction activities. Storm water re-use: An INR 200 cr project under JnNURM launched 4 years ago has ensured efficient drainage of storm water in city.

**Sanitation including solid-waste management:** Create 74 world-class public toilets in the area and completely refurbish the 10 existing toilets to create a total of 84 public toilets to cater to 100 percent of the floating population in the area (5% of the projected 2030 population of 1.5 lakh) in line with cities like Singapore and Melbourne. Refurbish existing toilet spaces in public schools, including adding more WCs (creating a total of 76 WCs) to cater to 3,991 students and 120 teachers in the area, in line with standards followed internationally (1 per 50 people). Design each toilet space to have separate facilities for males, females and the differently-abled. All sanitation facilities will use smart features like solar panels to generate uninterrupted electricity and bring down O&M costs, be located close to accessible car parks with most cubicles

directly facing the open areas, optimizing casual surveillance, partial screening provided by fretwork screens and mesh screens above door height maximizing natural ventilation. 30 drinking-water fountains and 357 “smart” dustbins are to be installed in line with global benchmarks (eight drinking-water fountains and 89 dustbins per sq km). Solid-waste management: Pune is already one of the top Indian cities with 57% waste segregation. Deploy solutions to:

Achieve zero waste society with 100% collection, segregation and disposal with no garbage visible on any street, SPV to invest in the following, which will then be given to a professional third party for O&M: A) 3 modern road-sweeping machines; B) 3 garbage collection trucks for transportation; C) 100% enclosed transfer station with charging points for e-rickshaws, SWAT (Sanitation and Waste Action Team) with one garbage collection truck for picking up garbage not collected by third party or to act on complaints received at the Control Centre, 500 people (existing rag pickers) to be employed for door to door collection with e-rickshaws. All organic garbage to be transferred to Noble Exchange’s biomethanation plant in Baner.

**Rain-water harvesting:** Ensure 100% of establishments have rain-water harvesting pits. Under DC regulations of PMC rain-water harvesting is compulsory and a part of existing building codes. Increase enforcement of rain-water harvesting through audits. Provide increased tax incentives to households which adopt rain-water harvesting. Create society-level “sumps” to collect rain water that is then used for gardens, car washing, etc.

**Smart metering:** Implement 100% smart AMR (automatic meter reading) metering across 2,900 commercial and 8,500 domestic connections at a cost of INR 22 cr. Install smart bulk meters at inlets and outlets of Warje WTP, 7 reservoirs, 3 pumping stations and all DMAs in region. Link all data received via meters to centralized dashboard with SCADA.

**Robust IT connectivity and digitalization:** A fibre optic cable network along 250 Km of road will be placed across the ABB region costing Rs. 137 Crore. This will create the first layer of IT connectivity for all smart solutions as well as Wi-Fi hotspots across the city. A total of 100 hotspots will be placed across the city costing Rs. 1 Crore and the annual O&M will cost Rs. 0.6 Crores annually (bandwidth and core infra cost separate).

**Pedestrian-friendly pathways:** Creating pedestrian-friendly roads and footpaths with 100% of them being accessible for differently-abled (an expected cost of INR 189 cr) will complement mixed-use development, open spaces, gyms by creating inclusive, safe, pedestrian-friendly infrastructure. This will be done by increasing inclusivity of streets and pedestrian comfort through the intelligent redesign of 27 km of streets and 14 junctions— 10 km of streets to be taken in the first phase, 9 km in the second phase and 8 km in the last phase, 70 km (60 km retrofit) differently-abled friendly, pedestrian-friendly footpaths, 2 m wide, to be constructed. Kerb ramps will be constructed to ensure accessibility for the differently-abled.

**Encouragement for non-motorised transport (e.g., walking and cycling):** Increase NMT from ~30% to ~50%. While most of the cost is covered above, the additional cost will be INR 9.5 cr: NMT (particularly bicycles) to serve as feeders to public transportation systems and last-mile connectivity, i.e., a 5–6% modal shift to cycling possible as per a city-wide survey. Smart Public Bicycle Sharing System will be developed with the following (over 16.3 sq km)-1,230 bicycles, 112 cycle stops, Safe cycling infrastructure by accommodating demarcated cycle tracks through redesign of 27 km of streets, Traffic calming to be implemented on 14 km of streets, Smart, interoperable cards to be created

**Intelligent traffic management:** Pan-city transportation initiatives to cover public transport ITMS, adaptive traffic management systems, intelligent road asset management and smart parking initiatives. ABB specific initiatives (total

# Essential features

cost of INR 153 cr) include: 100 ITMS-enabled electric buses to run from transit hub to Hinjewadi: MoU already entered into between PMC and KPIT Technologies for supply of buses and a potential PPP model. 100 e-rickshaws for commuting within ABB. 54 bus stops to be revamped

– PIS system with LED screens, showing ETA for buses, Wi-fi enabled bus stops with charging ports for commuters

Non-vehicle streets/zones: Pedestrianization of half right of way (RoW) of DP road by redesign and cobbling at an expected cost of INR 5 cr

**Smart parking:** Provision of 1 smart multi-level car park (~750 cars) with PIS and apps (costing covered as part of pan city)

**Energy efficient street lighting:** 3,070 street lights to be replaced by LED lamps with wireless control(similar to Telensa Smart City IoT model) to increase the coverage from 7% to 83% and achieve energy savings of more than 30% at zero cost, under PPP model. Existing 1,000 70w sodium vapour lamps to be replaced by 45w LED fittings; 900 150w sodium vapour lamps by 90w LED fittings; 50 400w metal halide lamps by 200w LED fittings; and 1120 T5 fittings by 45w LED fittings. For the 700 250w sodium vapour lamps that cannot be replaced by LED, the plan is to put dimmers that would help to stabilize voltage at 230V in non-peak hours, thereby saving energy to the tune of 15–20%. Without incurring any cost, PMC could get LED lamps and dimmers installed through the PPP model, where the private player puts all the infrastructure required and maintains it for 7 years (typically). In return, the private player gets a percentage of savings (typically in the range of 75–85%) achieved by putting up LEDs. PMC recently ran a bidding process to get 35,000 lamps replaced by LED fittings in Pune city (non-ABB area).

**Innovative use of open spaces:** Through open parks, gardens, open gyms and multipurpose halls. 8,654 sq m area to be utilized for creating 7 new gardens/parks/open gyms,

taking total to 13. 2 community centres over an area of 1,878 sq m facilitating citizen engagement and skill development. 2 open vegetable markets over an area of 2,282 sq m catering to 20% of ABB's population.

**Visible improvement:** As part of the T&D network strengthening project (INR 364 cr), 100% of overhead electric cables would be re-laid underground. PMC has entered into an MoU with MSEDCL to support project implementation. ~500 m of busy DP road to be made a 12x7 vehicle-free street, from 9AM to 9PM

**Ensuring safety of citizens, especially children, women and the elderly:** Aspire to create a zero-crime area with the following initiatives on safety and security that focus on three broad areas:

## 1. Video surveillance and CCTV coverage:

- Installation of CCTV cameras across all areas of ABB with special emphasis on entertainment venues, schools, crowded markets, etc.
- Integrate video analytics software with CCTV camera, i.e., replace manual browsing with automated pattern analysis and recognition of faces, car number plates, unidentified objects, etc.
- Allow instant video search and retrieval of CCTV footage
- Use high-quality video imaging, i.e., use a second-generation Exmor CMOS chip that features back-lit sensor technology
- Automatically detect faulty cameras and have a dedicated maintenance team
- Use integrated hardware architecture enabling every hardware unit to store, distribute, and forward data streams,

thus minimizing the number of faulty points

- Use cluster deployment and 2-level security protection for data in the hard disk and host layers to prevent video data loss
- Ensure a dedicated live feed of relevant zones to police stations and command centres
- Multiple remote monitoring technologies can be leveraged
- Infrared
- Gun-shot / audio sensors
- Cyber patrol and communication monitoring system
- Integrated GIS-based automated vehicle tracking and management system

## 2. Citizens' participation

- Create comprehensive information online for travellers using crowd-sourced information with tips and tricks on guarding against being fleeced by taxis, bank/ATM fraud, etc.
- Develop ABB Punetel app along with a suite of other citizen apps that allow citizens to directly report crime in real time to the appropriate authorities
- Share effectiveness assessments, reports and research done by crime branch, police and other agencies with the public
- Develop heat maps using both police and citizen inputs which would help citizens avoid certain hot-beds of crime and gang violence

## 3. Special service for children, senior citizens and women

- Use location-based services and CCTV technologies to notify authorities and family members of emergencies involving children, the disabled, the elderly, and those suffering from Alzheimer's disease
- Use smart devices such that when the user leaves a designated safe zone or pushes its emergency button, an emergency alert is sent to guardians, police, fire departments and CCTV control centres
- Set up real-time CCTV networks and children's smart devices to use wireless networks to locate missing children as quickly as possible
- Create dedicated "children safety zones" using a multiple-input and multiple-output (MIMO) wireless infrastructure mesh network with 100% CCTV coverage

# Seven smart urban forms

## **Pune plans to incorporate seven Smart Urban Forms in ABB:**

- 1. Planned densification:** The ABB area has 16 acres of amenity space lying unutilized. This will be used to develop social infrastructure meeting the benchmark, which will also lead to planned densification. The plan is to have 7 additional schools, three multi-specialty hospitals and 74 public toilets to meet benchmarks. There is also a plan to create smart parking for 750 cars.
- 2. Creating uncluttered public and open space:** While pushing densification, there will be equal emphasis on creating uncluttered public spaces. Thirteen open spaces will be developed as gardens to ensure a garden just 5 minutes away from all residents. These gardens will remain open till late night with adequate security features and facilities like an open gymnasium for senior citizens. The open space identified near Parihar Chowk will be developed as a vegetable market to shift street hawkers.
- 3. Urban waterfront development:** 3.5 km of walking promenades and 18 acres of urban farms will be developed, adding further to open spaces.
- 4. Walkability and vehicle reduction:** Footpaths will connect all gardens to ensure 100 percent walkability to gardens. A total 60 km of footpaths will be redesigned to ensure 100 percent continuity and promote walkability; a public bicycle system will be initiated with connectivity to the university and more than 40 stations.
- 5. Mixed use:** A start-up zone will be created over 10 acres along with commercial office space over 36 acres to create 45,000 primary jobs, promoting a walk-to-work culture for working areas within 1 to 2 km of people's homes.
- 6. Uncluttered public space:** A transit hub will be created at ABB entry. No heavy ve-

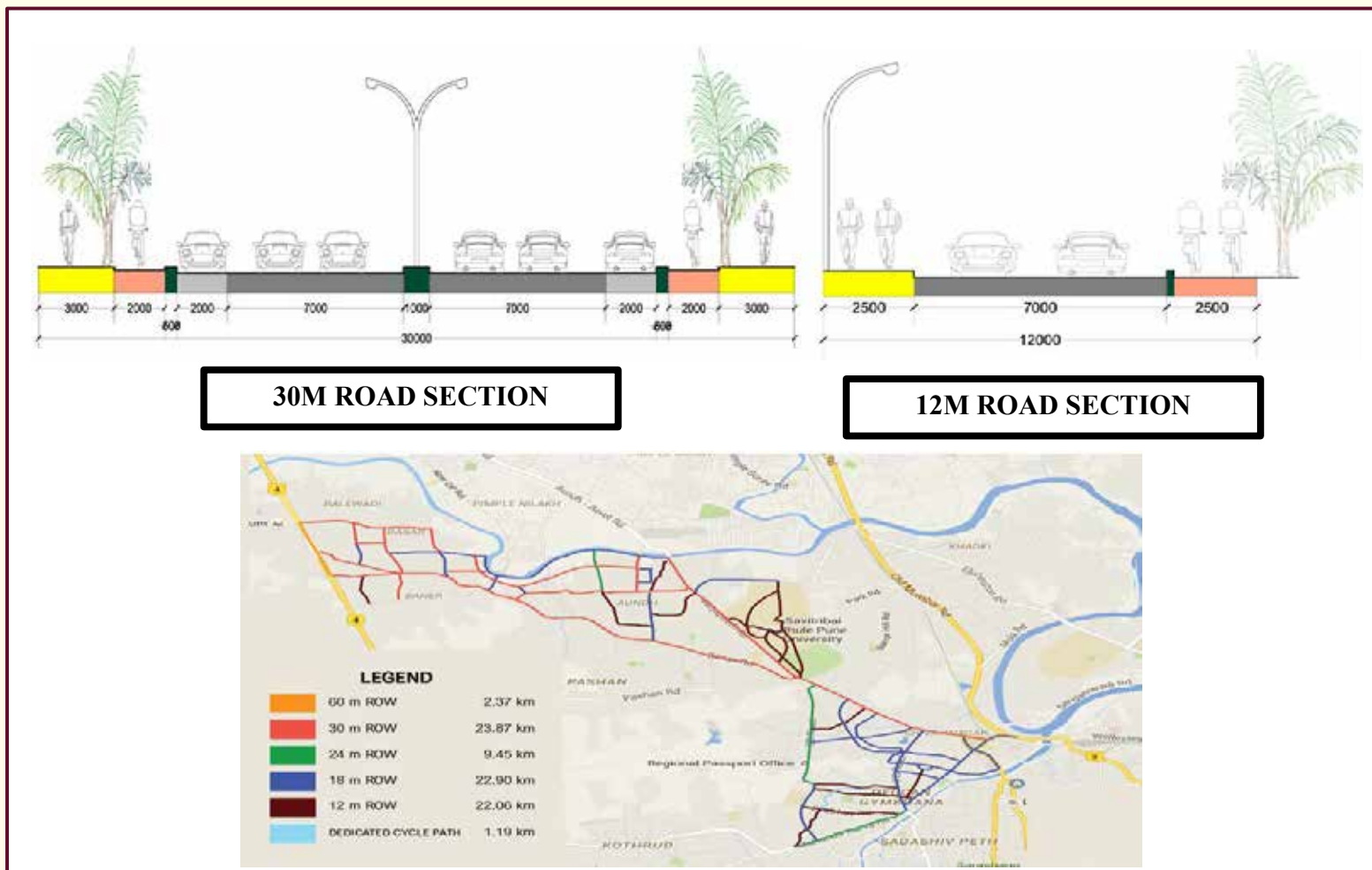
These measures will increase open space to 10 percent of the total area.



hicles will be allowed into the area. Special electric buses will operate between Aundh and Hinjewadi, serving over 50 percent of the working population in Aundh. There will also be a commercial hub in this area for mixed-use development

**7. Placemaking through street, footpath and junction redesign:** 60 km of footpath, 15 junctions and 27 km of streets will be redesigned as per smart urban forms

### Bicycle-friendly redesign of roads with integrated Bicycle network





Janmashtami Festival, Pune  
- Getty Images

# Making it Happen



Implementation framework



Funding model

6

# SPV

Resolution of the corporation/council approval of the Smart City plan including financial plan



Resolution of the corporation/council for setting up special purpose vehicle



Agreements with parastatal bodies, boards existing in the city for implementing the full scope of the SCP and sustaining pan-city and area-based developments



Preliminary human resource plans for the SPV



Institutional arrangement for operationalizing the SPV



Institutional arrangements with other operational SPV in the city



Pune realizes the importance of SPV in implementing the plan. Therefore, it is moving ahead towards the formation of a Smart City SPV for fulfilling the projects under the Smart City mission. The delegation of powers to the SPV has been proposed under Sections 66(41A) and 66A of the Maharashtra Municipal Corporation Act. Private investment will be suitably accommodated in the SPV structure, while ensuring that the balance of power between the state government and the PMC is maintained (including at the sub-SPV level).

Since the SPV aims to increase the revenue as well as reduce the cost of operations of the PMC by introducing innovative practices and improving efficiencies, the incremental benefit or that part of freed budget will be granted to the SPV to fill the O&M expenses gap. An escrow account will be opened to receive such revenues.

Any dividends will be ploughed back into the SPV till the time there are no private shareholders.

# SPV

The governing board shall convene once every quarter and will take major strategic decisions as well as approve the annual strategic plan of the SPV. It will comprise:

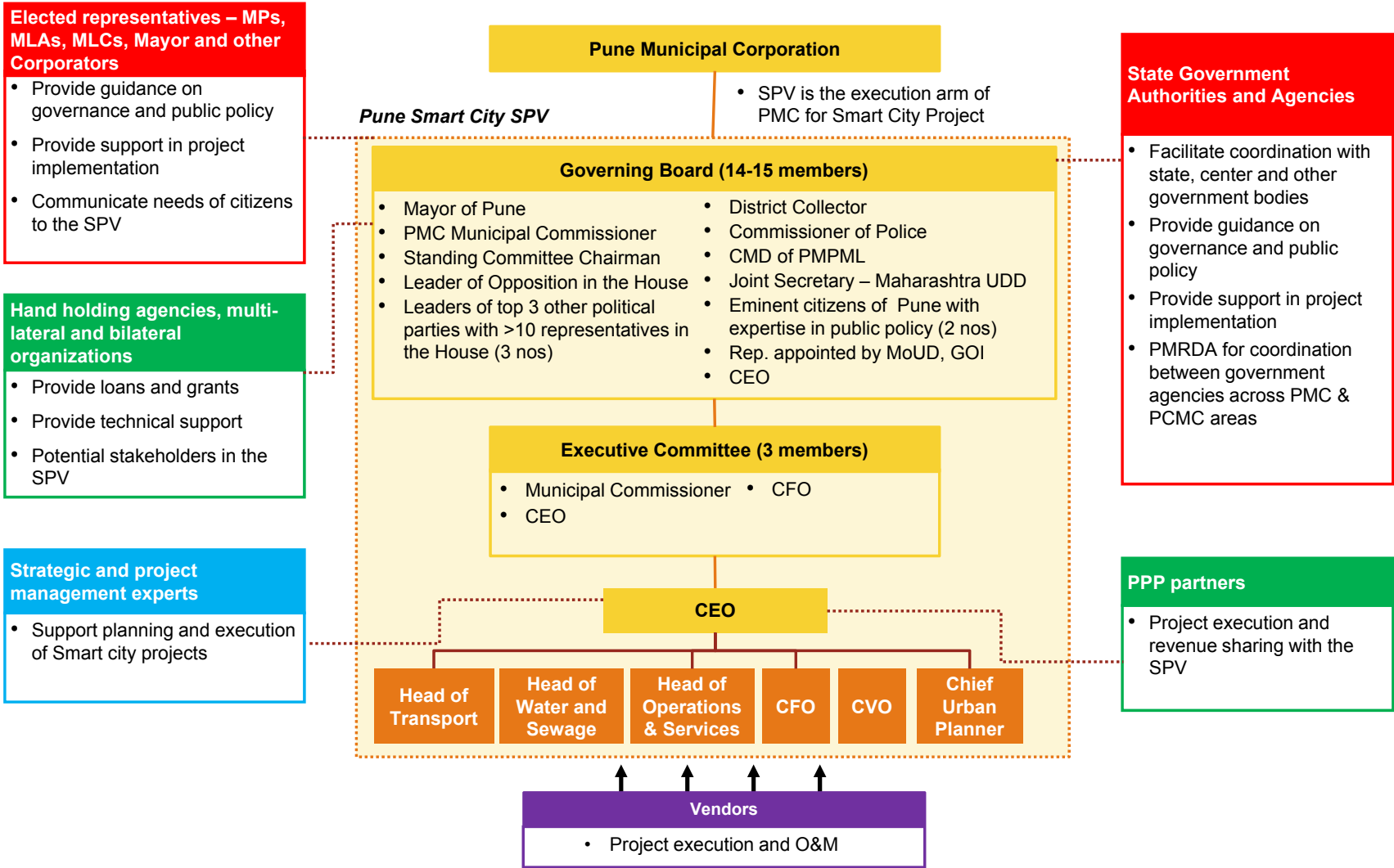
- a) The Municipal Commissioner of the PMC who will also be the Chairperson of the SPV.
- b) The Mayor, the Chairman of the Standing Committee, the Leader of the Opposition and three other Party Leaders (> 10 representatives in House)
- c) The state government will be represented by the District Collector, Commissioner of Police, CMD of PMPML, Chief Engineer of MSEDCL, Pune
- d) Two eminent citizens
- e) Representatives from the MoUD and Gol
- f) The Chief Executive Officer (CEO) of the SPV

The SPV shall also have an Executive Committee that will meet once a month to take

month-to-month decisions on the functioning of the SPV that are beyond the authority of the CEO. Executive committee will comprise: (a) Municipal Commissioner of the PMC (b) CEO of the SPV (c) Chief Financial Officer (CFO) of the SPV

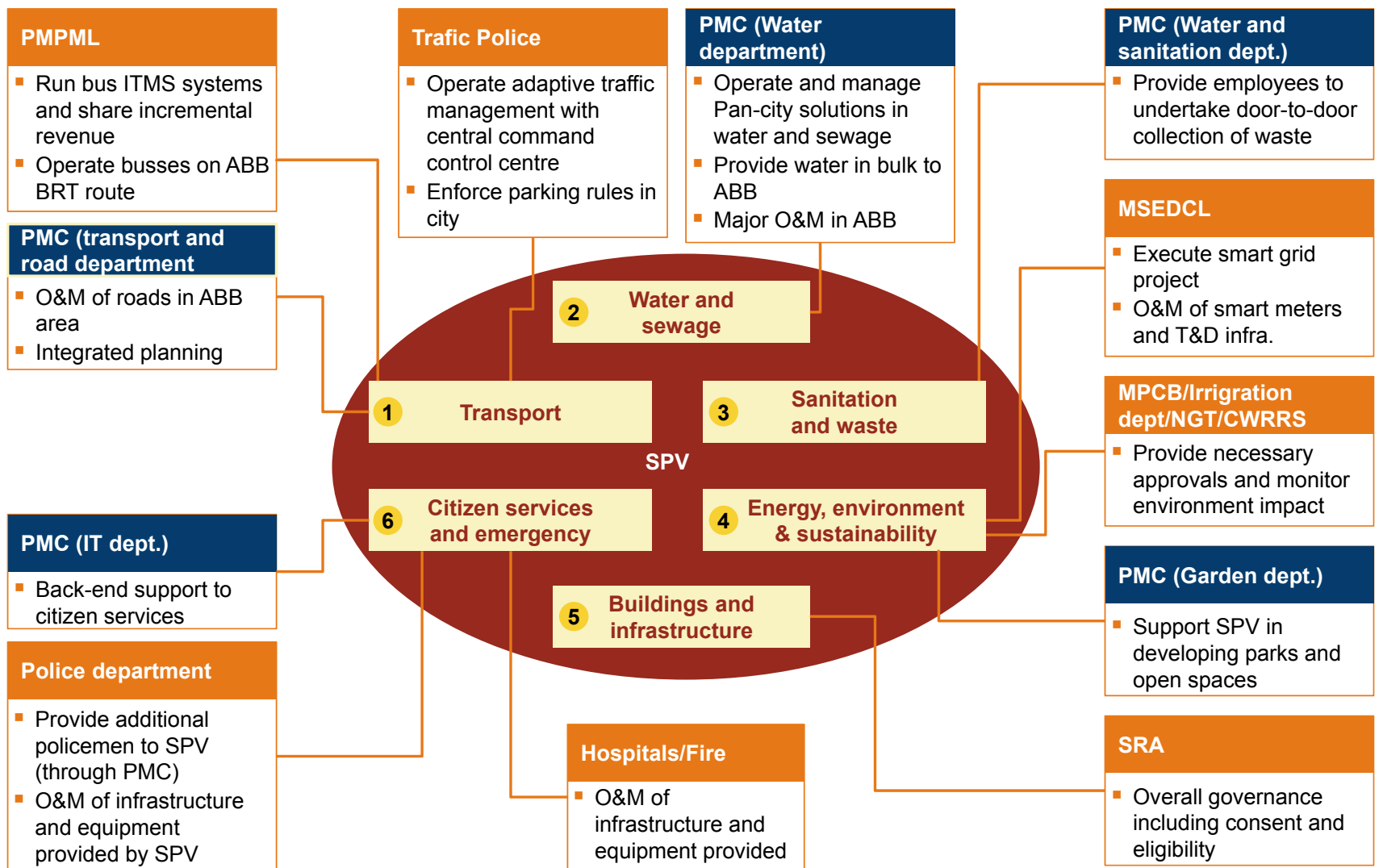
The Board shall appoint the CEO from open market with the concurrence of the MoUD for a fixed term of 3 years, to be extended by 2 years. The compensation of the CEO will be at par with market standards. Other key personnel in the SPV along with the end-state architecture of 45 to 50 employees. Project management experts may also be appointed by the SPV for designing, developing, managing and implementing projects.

## Organogram linking the SPV with ULB and parastatal agencies



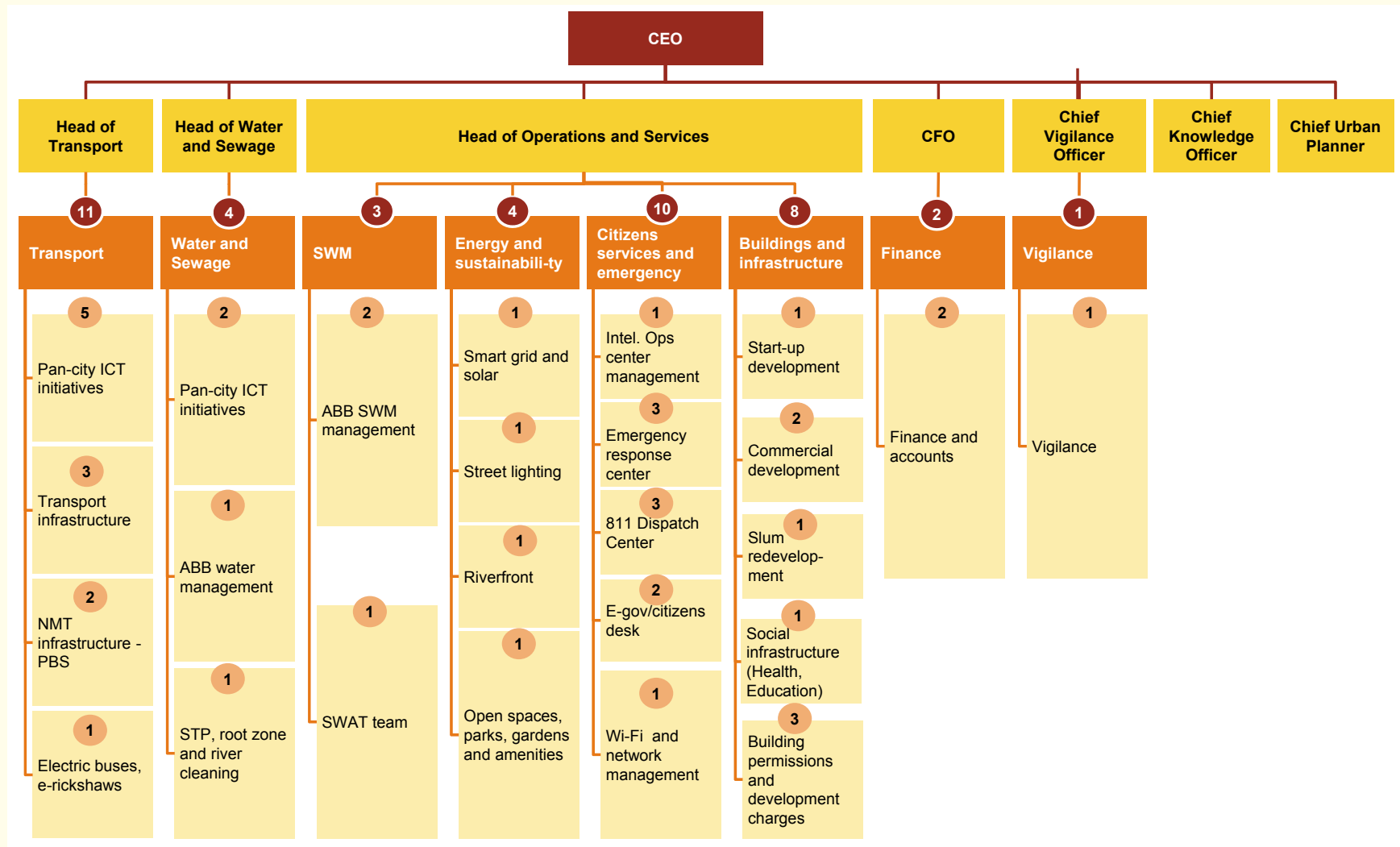
# SPV

## Relationship with government and non-government agencies





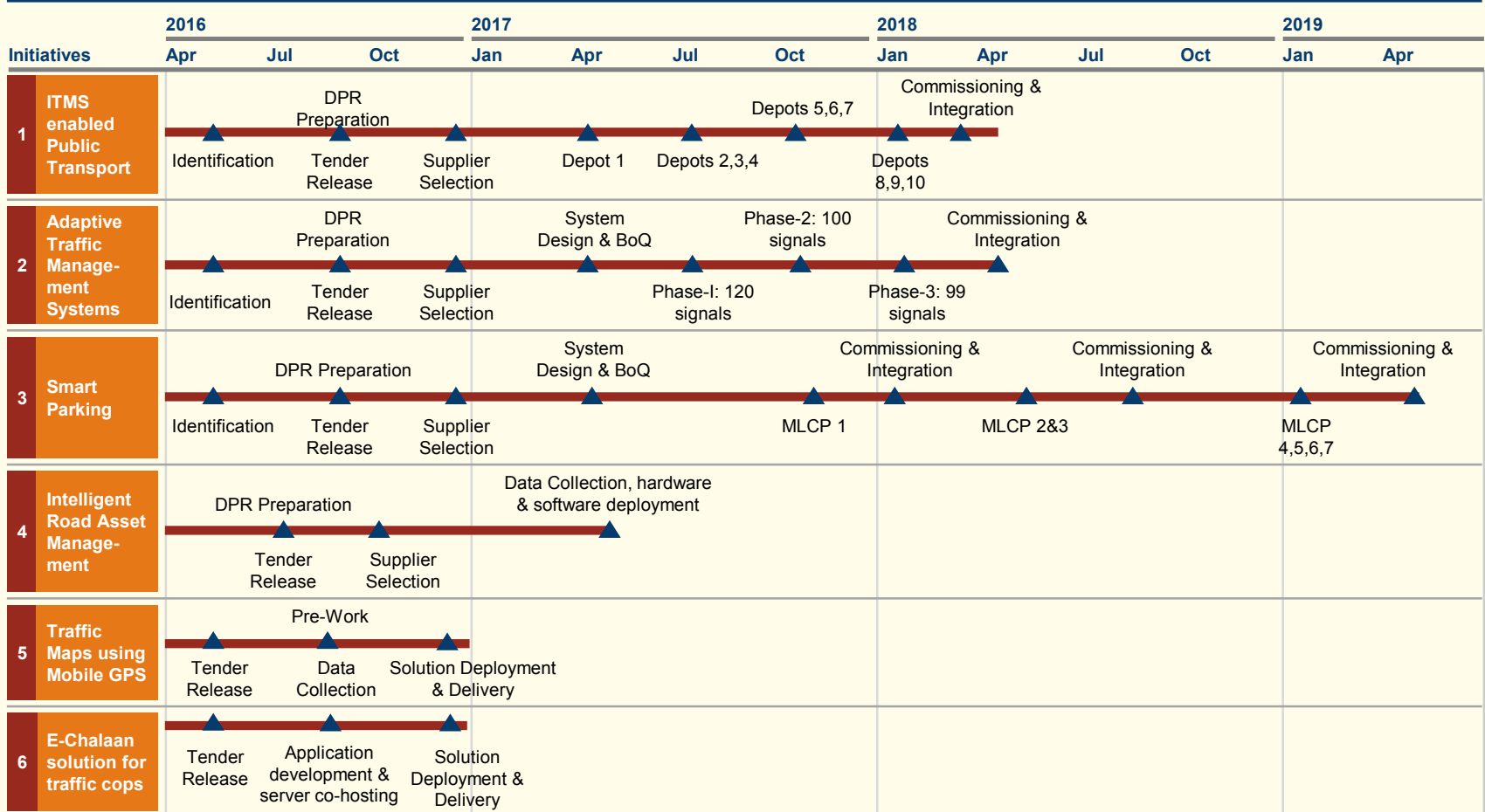
# SPV end-state organization structure (45 to 50 employees)



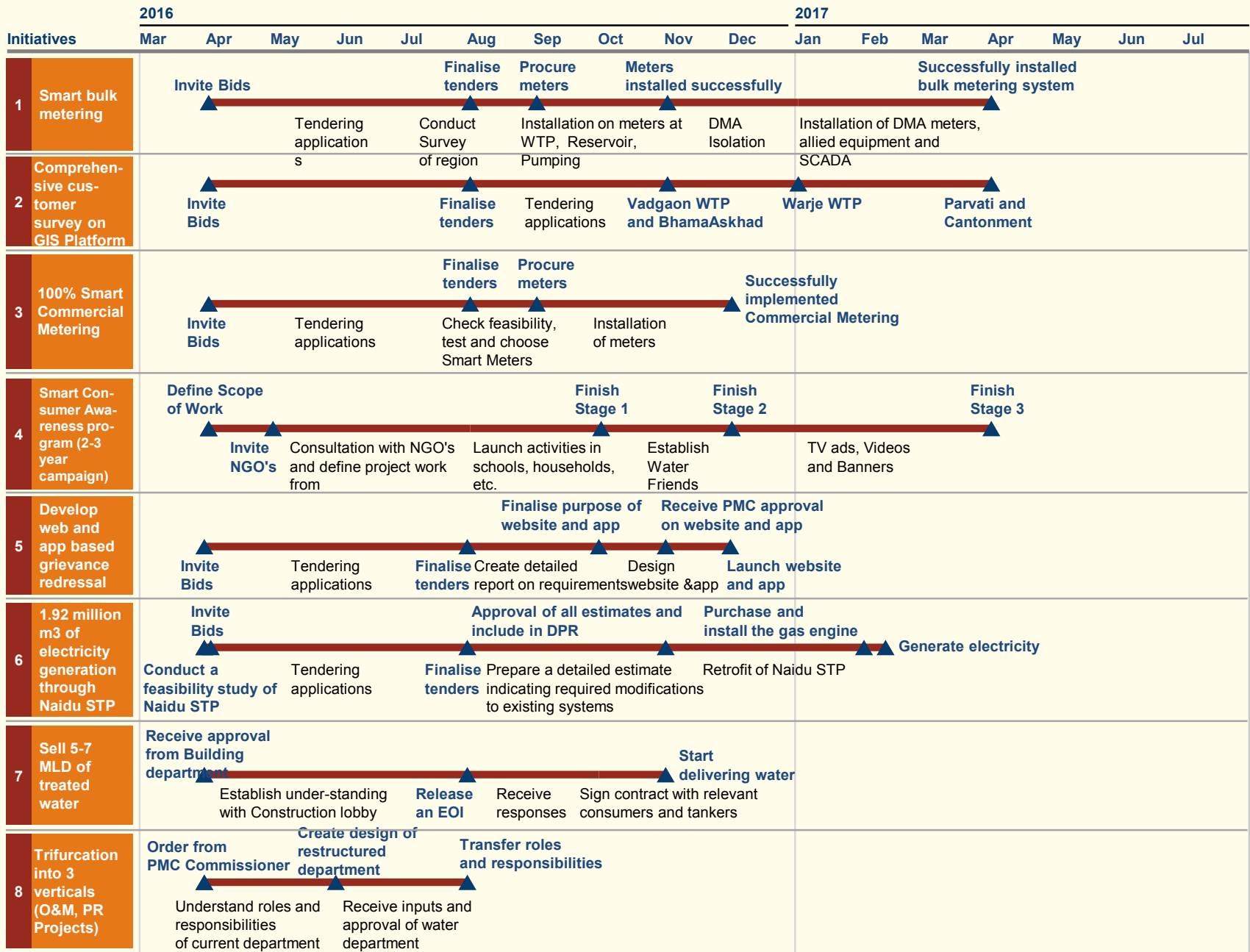
# Timelines for implementation

## Critical milestones and timelines of pan-city initiatives

### Transportation



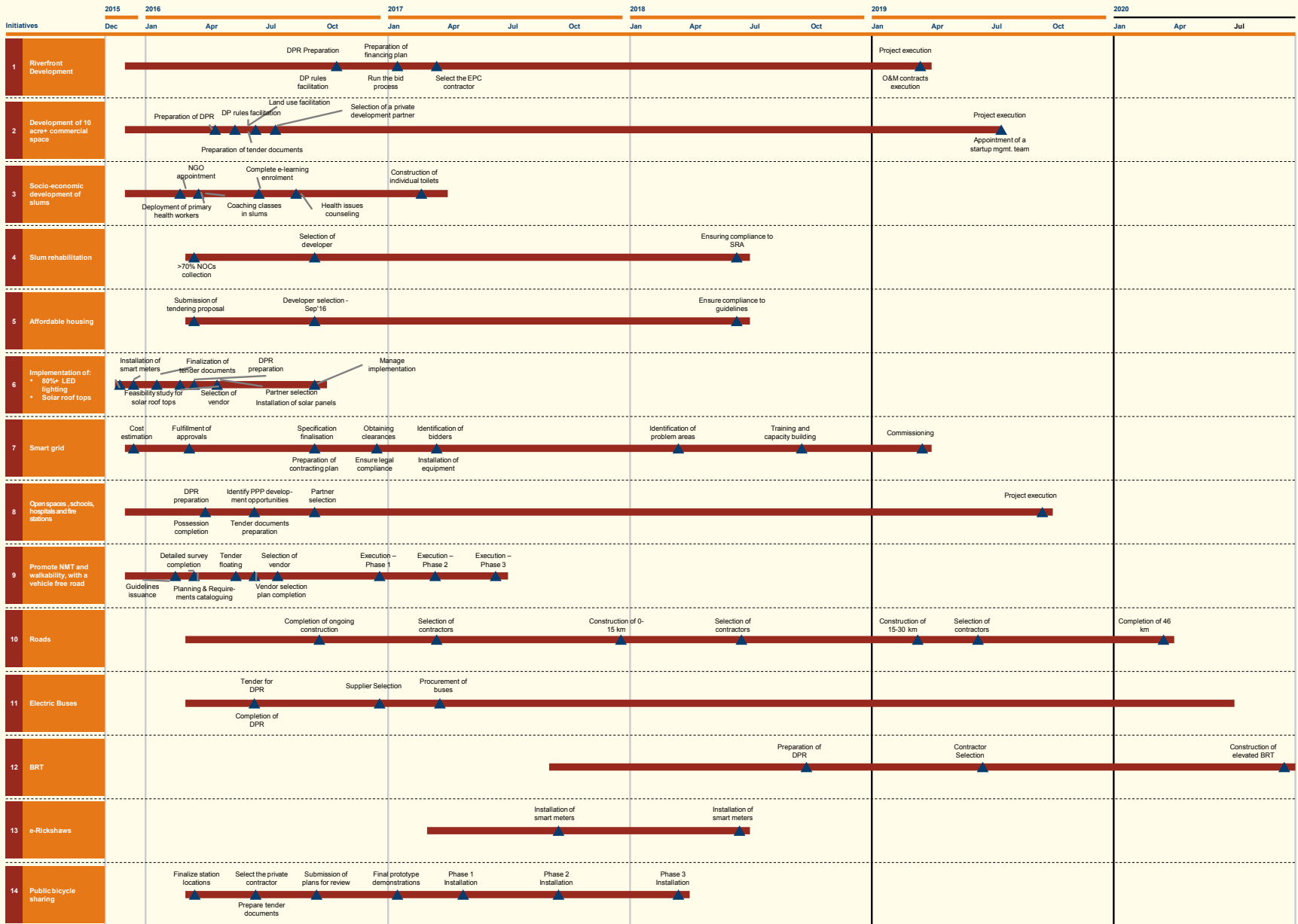
Water & sewage

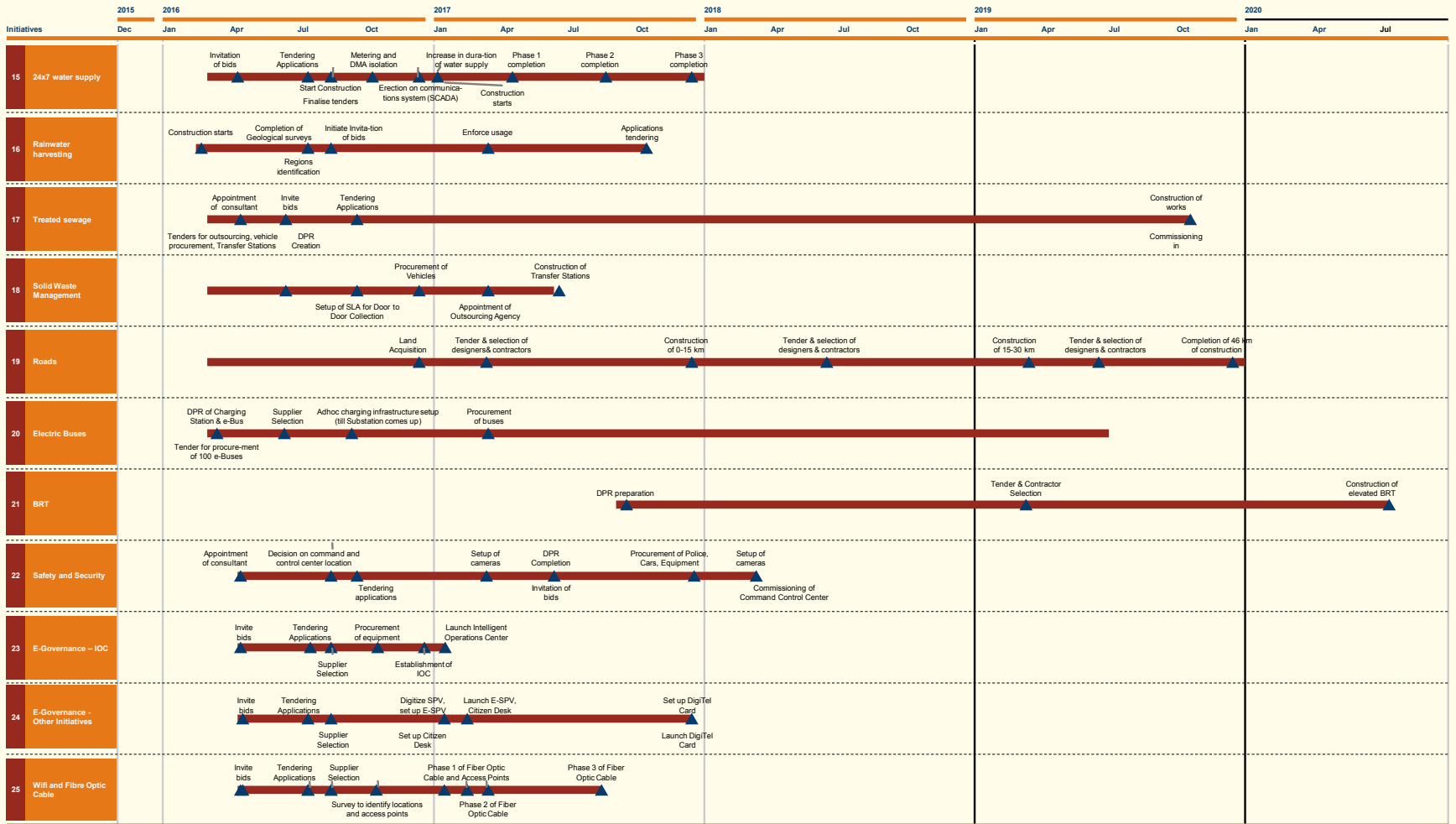


Note: Advanced Helium Leak identification across all 2688 Km will happen as a part of developing the distribution system in the 24x7 water supply project across the city

# Timelines for implementation

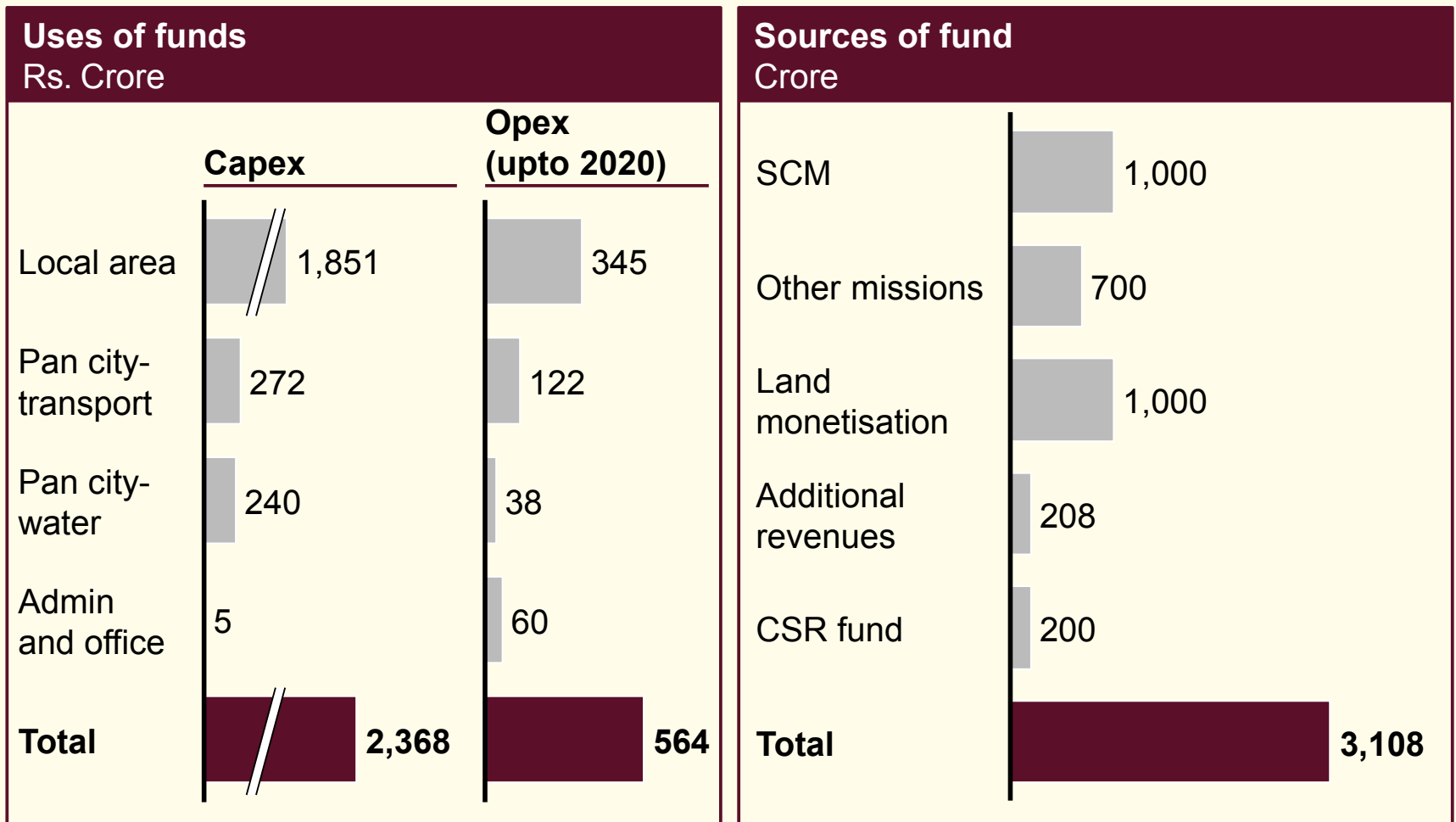
## Implementation plan for local area solutions





# Funding model

## Pune – Finances at a glance



**Total capex + opex of 5 years-2,932 crore**

**Additional scope of borrowing from the market with AA fitch rating**



Reimagining Pune - Mission Smart Cities

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