GOVERNMENT OF MAHARASHTRA

Smart City
MISSION TRANSFORM-NATION

Pune Towards Smart City

Challenge Stage 1

Pune Smart City – Vision Document
(Version 1.0)

Volume - II

Pune Municipal Corporation
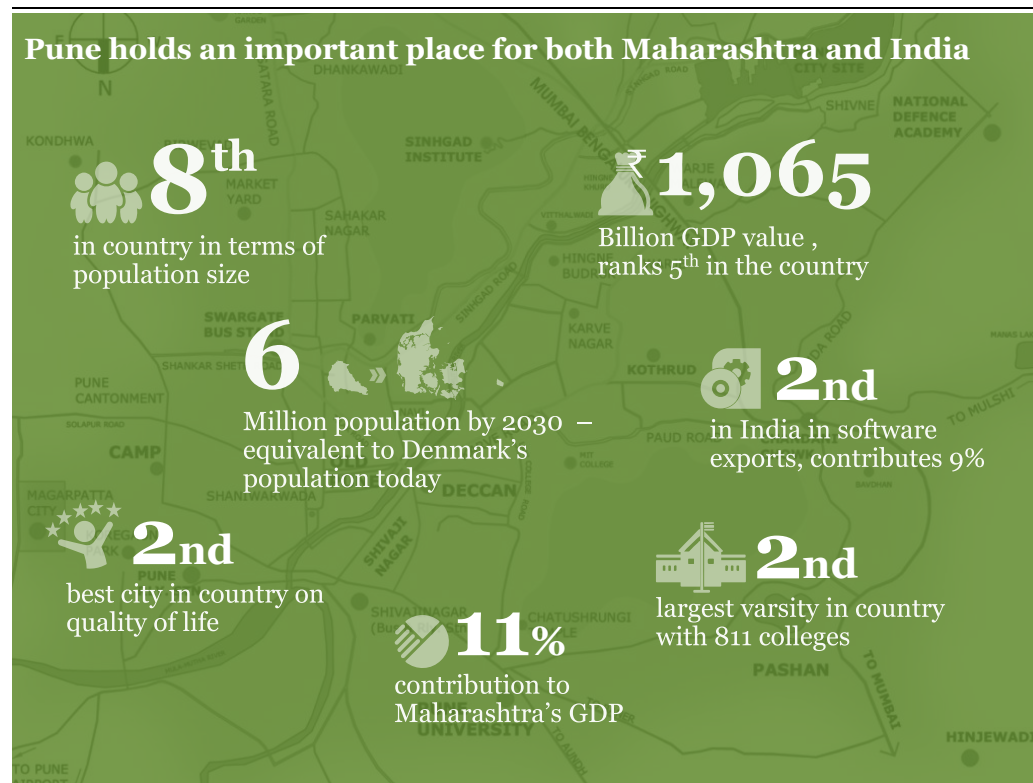e-Governance, to serve citizens better.

Contents

Disclaimer: Pune Smart City Vision Document Version 1.0 will keep on updating its content based on the process of stakeholder consultation periodically.

1. Assessing quality of life and key priorities for Pune

Pune, under the administration of Pune Municipal Corporation (PMC) is the second largest city in Maharashtra in terms of population, growing at 7.8% during 2005-14. The driving force for this growth is mainly the development of IT industry as well as the economic boom in the automobile sector which forms a major portion of the industries in and around Pune. It also has further strengths in the educational sector with many educational institutes and a well-skilled labour force which is why Pune has been anointed as the "*Oxford of the East*". The city boasts of a strong heritage and culture with picturesque historical, religious and natural zones and hence is called the 'culture capital' of Maharashtra. All these factors, in combination with on-going large scale infrastructure upgrades (like falling under DMIC project influence area), has made Pune one of the most attractive investment hubs of the state. As per 2014 India Attractiveness Survey by Ernst & Young, Pune is one of the top 5 FDI destinations of India, having attracted 291 FDI projects between 2007-12.

EXHIBIT 1

Pune holds an important place for both Maharashtra and India

8th in country in terms of population size

1,065 Billion GDP value, ranks 5th in the country

6 Million population by 2030 — equivalent to Denmark's population today

2nd in India in software exports, contributes 9%

2nd best city in country on quality of life

2nd largest varsity in country with 811 colleges

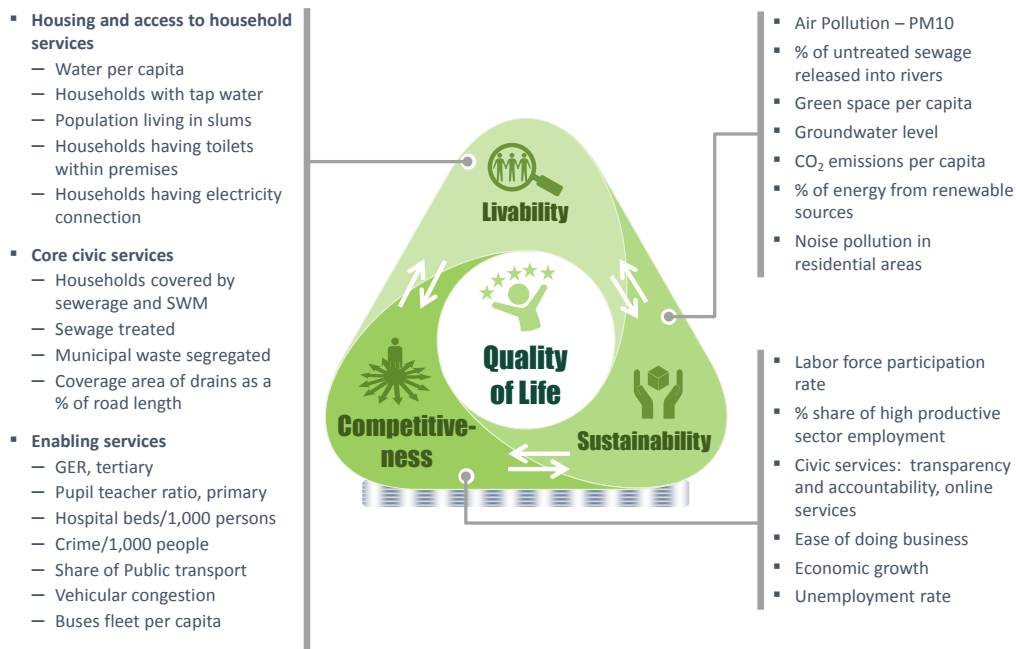**11**% contribution to Maharashtra's GDP

1.1 LIVABILITY, COMPETITIVENESS AND SUSTAINABILITY DRIVE A CITY'S QUALITY OF LIFE

A city's well-being is dependent on three core pillars a.) Livability – related to citizen's access to basic, core and enabling services required for a dignified life, b.) Competitiveness - set of institutions, policies and factors that determine the level of productivity & economic well-being of a city and, c.) Sustainability – economic growth with minimum drain on the environment.

Mercer conducts its Quality of Living survey annually. The rankings cover 230 prevalent destinations for globally mobile talent and are based on the "Quality of Living Survey". According to Mercer's Quality of Living Rankings in 2015 Pune is 2nd best city in the country after Hyderabad and hold 145thposition globally. Pune is also one among 9 cities termed as evolving business centres around the world with citation "Hosts IT and automotive companies".

EXHIBIT 2

City's health can be evaluated along three core parameters of livability, competitiveness and sustainability

- **Housing and access to household services**
  - Water per capita
  - Households with tap water
  - Population living in slums
  - Households having toilets within premises
  - Households having electricity connection
- **Core civic services**
  - Households covered by sewerage and SWM
  - Sewage treated
  - Municipal waste segregated
  - Coverage area of drains as a % of road length
- **Enabling services**
  - GER, tertiary
  - Pupil teacher ratio, primary
  - Hospital beds/1,000 persons
  - Crime/1,000 people
  - Share of Public transport
  - Vehicular congestion
  - Buses fleet per capita

- Air Pollution – PM10
- % of untreated sewage released into rivers
- Green space per capita
- Groundwater level
- CO_2 emissions per capita
- % of energy from renewable sources
- Noise pollution in residential areas

- Labor force participation rate
- % share of high productive sector employment
- Civic services: transparency and accountability, online services
- Ease of doing business
- Economic growth
- Unemployment rate

Livability

Quality of Life

Competitive-ness

Sustainability

1.2 INPUTS FROM CITIZENS

In keeping with the best traditions of involving citizens in the decision-making process, Pune has adopted different tools as part of a "Pune Citizen's

Participation Framework" to get substantial inputs from citizens and various stakeholders on the availability of civic services in the city. It initiated a **household level survey** as part of preparing the updated CDP for 2041, to gauge the most pressing issues in citizens' minds.

Recently, as part of the Smart Cities Mission, it has undertaken many pioneering steps to involve all the stakeholders such as organizing consultative events, workshops, meetings, competitions such as:

Ward Level Consultation

PMC is conducting ward level consultation process to involve all the stakeholders to shape up the vision for Pune as a Smart city. All the 15 Wards of Pune have been doing the consultation process with Ward Committees and Mohalla Committees. The agenda for the meetings has been mainly focused on prioritization of sectors which need immediate attention, working on the criteria for selection of area for the Mission implementation, and generation of Smart City ideas among others.
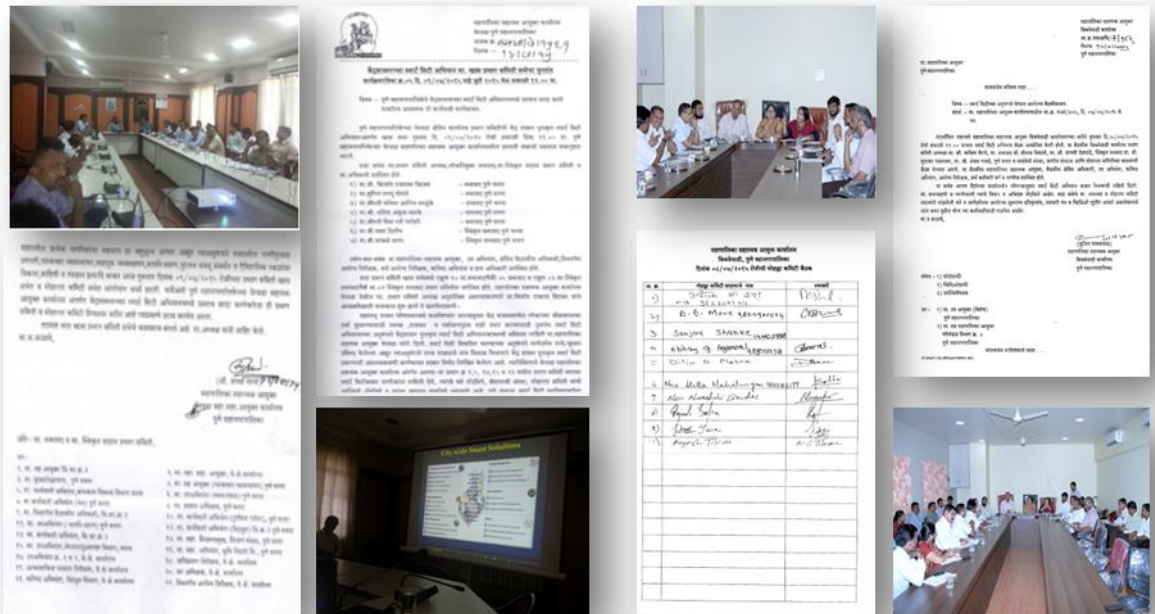
Datameet Organization

Other important effort by PMC is to experiment with applying open source data and software for addressing civic issues, which are usually led by data science experts. As part of the Smart City proposal development process,

PMC will invite data science experts to both the Ward and Sectoral Samvads where a number of civic issues and concerns are expected to be discussed and critical issues would be highlighted.

The **Smart Solutions Samvad** is envisaged as a process where the data science experts can reflect on the multiple views and systems view of issues that may accrue through preceding Samvads, focus on particular problems that may be addressed through different ICT tools and applications, and develop and propose different types of solutions.

Solutions may relate to applications for

- Gathering inputs (including text, photo and geo locations) from citizens/ users
- Complaints and feedback management, and analytics that feed into management processes
- Data repositories
- Data visualization
- Decision support tools, such as for optimization of civic services, networks
- Online services such as submission of application forms, payments
- Monitoring tools such as score cards and rating systems that citizens can use through mobile phones

MCCIA's Smart City Samvad Portal

Smart City Samvad is an initiative of Mahratta Chamber of Commerce Industries and Agriculture (MCCIA), Confederation of Real Estate Developers of Pune (CREDAI) – Pune Metro and Savitribai Phule University of Pune.

"Smart City Samvad" is platform created by CREDAI – Pune Metro as a forum for getting the Citizens of Pune to participate in the Smart Cities Mission. Citizens' suggestions will be shared on regular basis with the Corporations.

The platform will also work towards creating awareness about the concept of Smart Cities, keep Citizens updated with latest news on the topic, give experts views and opinions so that there can be an informed discussion on this important topic.

www.smartcitysamvad.org

Online Competition

"Maza Swapna, Smart Pune" is an effort to be in touch with what Pune's citizens feel about development priorities and also their ideas for a Smart Pune.

The contest was launched on 14th July 2015. Citizens were invited to come and participate in the Best Smart City Idea competition and share their views on how they and the PMC could make Pune a better and smarter city.

The contest was publicized through media conferences and also through mobile phone messages, newspapers and local radio channels. Citizens have shown huge excitement about being part of their city's transformation and in the contest period, there have been 535310 hits to the contest page, and 6251 have participated in the survey.

Inputs from MP's, MLA's, People's Representatives

Pune Municipal Commissioner has also written to all H'ble Public representatives for their valuable inputs. In response MP's, MLA's, People's Representatives are have given valuable suggestions & recommendations regarding the future of Pune as a Smart City.

1.3 COMBINATION OF CITIZENS' PRIORITIES AND PUNE'S SITUATION INDICATES THAT PUSH ON TRANSPORT, HOUSING AND WATER/ GARBAGE/ SEWAGE ARE BIG PRIORITIES

There are two fundamental ways of assessing a city's priorities – assessing the most pressing areas for citizens and comparing gap between existing level of service delivery versus accepted levels. Putting both these lenses together clearly highlights that while Pune is at a relatively advanced stages on a number of core urban services, it needs to make a big push on transport and drainage.

■ *Based on the household survey we conducted, an average citizen in Pune primarily wants solution to their transport and water issues followed by road conditions and sewage: Ward level analysis of this survey reflects broadly similar pattern of concern areas, with some minor differences in a few places. For e.g. though education is the least priority sector overall, but BS Dhole Patil ward ranks it as the 3rd most important area. On the other hand road infrastructure overall is 3rd most prioritized sector, while Yerwada ranks it at 6th.*

EXHIBIT 3

Transport and Drainage appear as two big focus areas

Rank of 'need-to-act' on core urban services
% of households

| Transport | Drainage | Road | Health | Water supply | Sewage/ Sanitation | SWM | Education |
| 52 | 50 | 36 | 34 | 26 | 25 | 22 | 11 |
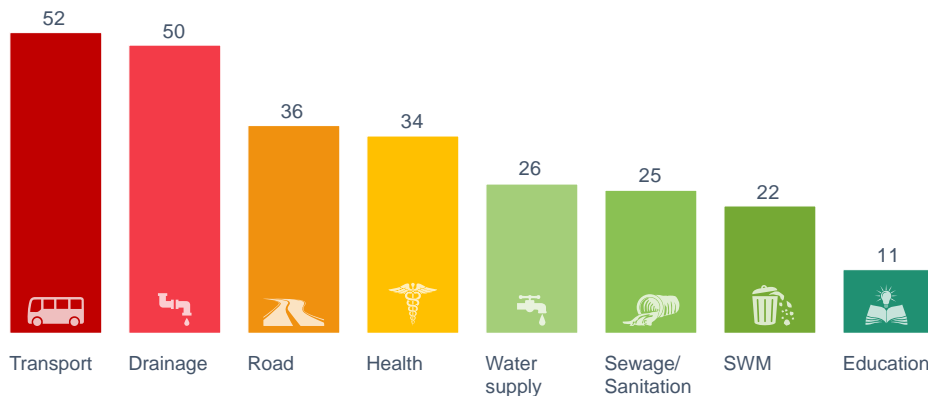
▪ Looked at 8 core urban services using two lenses – service delivery level in Pune versus what is acceptable and what is citizen's priority list
▪ Took simple average to calculate the rank – transport and drainage appear as the two big focus areas

EXHIBIT 4

An average Punekar wants solution to his transport and water related issues on a priority

■ Public transport system   ■ Road infrastructure   ■ Solid waste management   ■ Health facilities
■ Water supply   ■ Sewerage/Sanitation   ■ Storm water drainage   ■ Education facilities

Citizens' satisfaction with various urban services
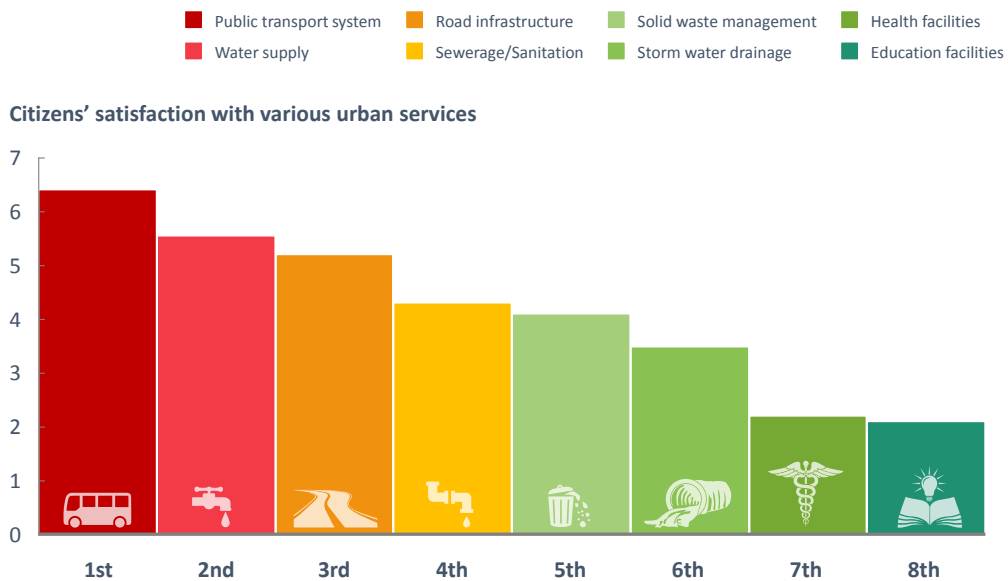
Based on a survey conducted at the household level which was primarily of qualitative nature, where each citizen was asked to rank the various infrastructure services according to their priority giving the most urgently required service as first rank and the least prioritized sector as the last rank
SOURCE: Pune, CDP

- *Online survey in 2015 (535310 hits within7 days) also shows transport, sanitation& garbage and environment as the biggest priorities*: As per the latest results of contest, while transport tops citizen's concern by a wide gap with 37% votes, it is followed by Garbage/ Sanitation at 18% and environment at 11%. This is just a part of series of initiatives which PMC has taken to involve citizens and stakeholders to make the process as much participative as possible.

- *Quantitative benchmarking of Pune with global service standards reveal Pune has serious service delivery gaps in transport and housing, though it fares well in most of other metrices:* Barring few areas like housing, health and transport infrastructure, Pune fares significantly better than urban India on most of the Livability indicators. However, when compared to its peer group of top 10 cities, picture is mixed. Pune performs very low on indicators like households having toilet facilities within premises, covering only 86% households, while in Bangalore 97% of households have toilets in their premises. On the other hand, in terms of access to tap water within premises Pune outperforms cities like Surat which covers

only 86% households compared to 94% coverage in Pune. In-fact, it acts as a shining example in terms of developing successful models for provisioning of basic urban services like Solid Waste Management (SWaCH model) and Participative Governance, making those one of the successful models of adoption for the entire country. Nonetheless, there is no room for complacency, as despite its decent standing within India peers, it lags behind globally accepted service level benchmarks on host of key parameters, most notably being in transport and affordable housing. Pune has a share of public transport at a mere ~20%, which is significantly lower than the benchmark of 50% which is needed for a well-functioning city. Even on housing, the city's position needs significant improvement with a large proportion of population living in slums (almost 40%), where the desired state is to have zero slums.

EXHIBIT 5

Barring few areas, Pune offers a better quality of life to its residents than an average Indian city

Legend: Pune, Urban India, Basic service standard, Pune is worse than Urban India

Livability

Housing and access to household services

Availability and Accessibility to water		Housing	Sanitation	Sources of energy
Water per capita/day	% of households having tap water	% of population living in slum	% of households having toilets within premises	% of households having electricity connection
194 / 105 / 150	94 / 71 / 100	40 / 22 / 0	86 / 81 / 100	98 / 93 / 100

Core civic services

Sewage		Solid waste management	Solid waste management	Storm water drain
% of sewerage treated	% of households covered by sewage systems	% of households covered by SWM	% of municipal waste segregated	Coverage area of drains as a % of road length
76 / 30 / 100	92 / 63 / 100	80 / 72 / 100	45 / 12 / 100	20 / 20 / 100

Enabling services

Education		Health	Vehicular congestion	Transport infrastructure
GER, tertiary	Pupil-teacher ratio, primary	Hospital beds per 1,000	Peak vehicles/lane km	Share of public transport
49 / 23 / 60[1]	32 / 48 / 30	2 / 3 / 4	140-200 / 170 / 112	22 / 30 / 50

1 Pune's own target

SOURCE: Pune CDP, Census, DISE, NSSO, NCRB

1.4 PUNE'S ECONOMY HAS STRONG FUNDAMENTALS, WHICH ARE NOT FULLY LEVERAGED IN ITS CURRENT GROWTH TRAJECTORY

Relative to India, Pune has a strong economy in terms of higher share of organized sector employment, e-governance and accountability, etc. Yet, these are not fully reflected in its historical performance of late – its unemployment rate is higher than India and GDP growth slower than Maharashtra. For Pune to do justice to its position and strong fundamentals, it should aspire to become a leader in a couple of sunrise industries like defence and healthcare.

EXHIBIT 6

On competitiveness, Pune fares well than urban India, but there is room for improvement compared to benchmarks

Legend:
- ■ Pune
- ■ Urban India
- ■ Basic service standard
- □ Pune is worse than Urban India

Competitiveness

Job engine

Unemployment rate, %
- 6
- 4
- 3

% share of organized sector employment
- 22
- 13
- 50

Civic services

Transparency and accountability score
- 38
- 36
- 95[1]

Online services, score
- 32
- 23
- 88[1]

1 New York

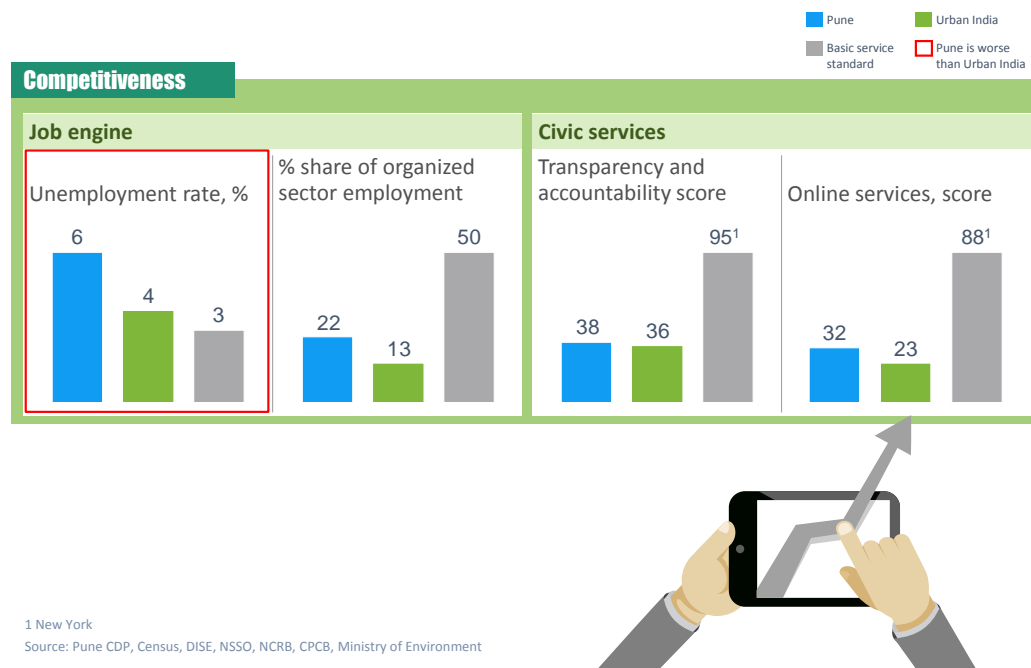Source: Pune CDP, Census, DISE, NSSO, NCRB, CPCB, Ministry of Environment
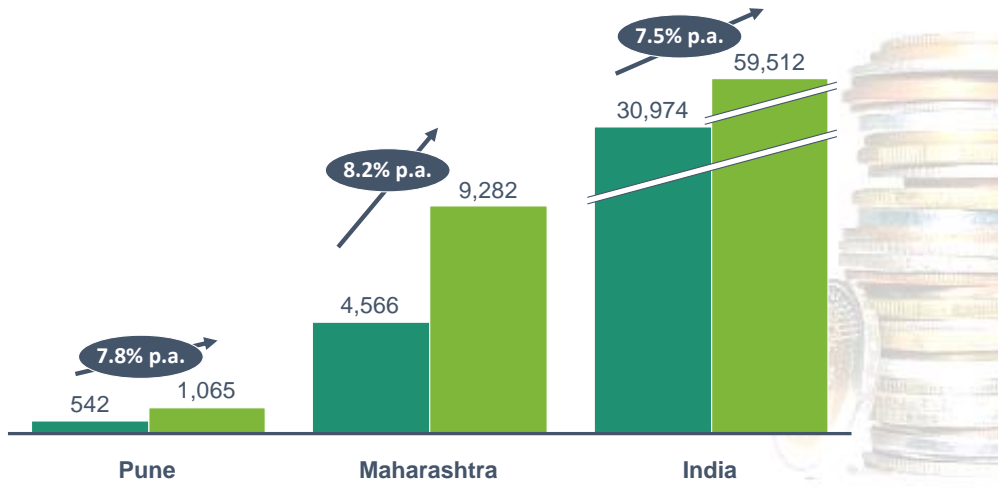
EXHIBIT 7

Pune is critical for Maharashtra's performance, but under delivered on growth in the last decade

COMPETITIVENESS
- 2005
- 2014

Pune contributes 11% to Maharashtra's GDP
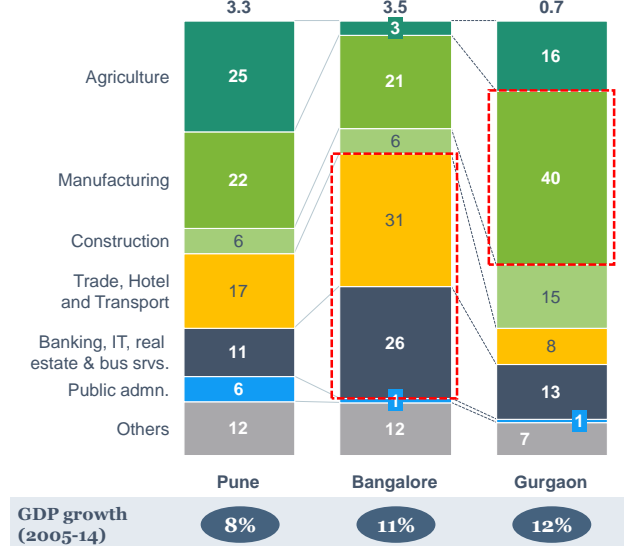
GDP, INR billion, 2005 prices

	Pune	Maharashtra	India
2005	542	4,566	30,974
2014	1,065	9,282	59,512
growth	7.8% p.a.	8.2% p.a.	7.5% p.a.

SOURCE: CSO

EXHIBIT 8

Pune lacks a core sector focus like other faster growing cities

Pune employment scenario compared to other cities[1]

In million, 2012

Sector with maximum share

	Pune (3.3)	Bangalore (3.5)	Gurgaon (0.7)
Agriculture	25	21	16
Manufacturing	22	6	40
Construction	6	31	
Trade, Hotel and Transport	17		15
Banking, IT, real estate & bus srvs.	11	26	8
Public admn.	6	1	13
Others	12	12	7
GDP growth (2005-14)	8%	11%	12%

Pune lacks a core sector area to capitalize despite its structural advantages:

- Gurgaon has established itself as a manufacturing hub, especially in automotive
- Bangalore is called the 'Silicon Valley of India' as well as is an attractive tourist destination
- Pune's current strength lies in automotive and IT sector, which is happening at its periphery, like auto cluster lies in Chakan corridor, at the boundary of Pune. It can become a leader in defence and pharmaceuticals

1 Numbers pertain to district and not cities
SOURCE: NSSO, Census

1.5 PMC – INITIATIVES TOWARDS IMPROVED SERVICE DELIVERY

Solid waste management: Pune has shown stellar performance on solid waste management and is considered a role model for other cities of India, which has resulted in it achieving 95% collection efficiency, lowest per household per month outgoings for door to door collection, highest number of decentralized organic waste management plants, etc.

■ Integrating the informal sector in Municipal solid Waste Management (SwaCH model) where it partners with waste pickers organization for end-to-end solid waste management, esp. door to door collection helping the city save Rs 15 crore per annum in waste handling costs

■ Power generation from solid waste generated (Biogas): Pune is frontrunner in implementing decentralized MSW treatment plants with 21 bio-methanation cum electricity generation plants.

■ Zero Garbage Ward (Katraj Model): Application of end to end solid waste management solutions through awareness building and effective monitoring helped it achieve 90% door to door collection saving huge amounts in transport cost

■ Pyrolysis Gasification based solid waste to Energy Solution: Rochem plant, having capacity of processing 700 TPD& electricity generation@ 10 MW

■ Data collection for MIS using mobile SMS

Participatory Governance: Pune has been one of the pioneer cities in implementation of 'organic' public participation in terms of active civil society, rights based social movement as well as 'induced' participation in terms of community driven development and decentralization. Pune Municipal Corporation has taken several initiatives to promote engagement of citizen and other segments of the society in overall governance like
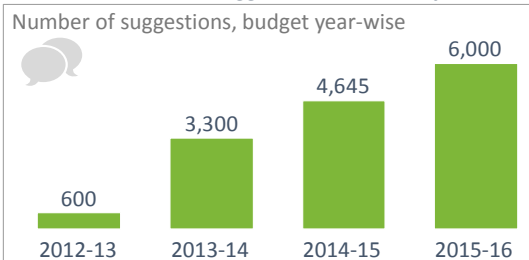
■ Participatory budgeting since 2007

■ Online Complaints Management System &*'Lokshahi din'* - an open forum for citizens to lodge complaints against civic problems directly with administrative heads

■ Use of social media – Facebook, Instagram& Twitter

■ Citizen surveys to assess their priorities and perception, like the one conducted in 2012 as a part of their city development plan

■ Contests among citizens for idea generation, like the recent *Maza Swapna Smart Pune Contest*, an online competition of ideas on how to make Pune a better and smarter city which received 535310hits during the 7 days competition period i.e., 14th July 2015 to 20th July 2015.

■ Sector specific interventions with key stakeholders like Comprehensive Mobility Plan, Urban Street Design Guidelines, BRTS stakeholder consultations and outreach, SWM Apex Committee, Mohalla Committees

EXHIBIT 9

Pune is one of the only 3 cities that have implemented participatory budgeting in India, resulting in 10x increase in suggestions from people

PMC launches process for participatory budget

Citizens Can Suggest Infrastructural Needs In Their Wards

Trends in number of suggestions received by PMC

Number of suggestions, budget year-wise

Year	Suggestions
2012-13	600
2013-14	3,300
2014-15	4,645
2015-16	6,000

Trends in the budgetary allocations made by PMC

Budgetary allocations, in crore

Year	Allocation
2012-13	26.2
2013-14	36.9
2014-15	37.5
2015-16	37.4
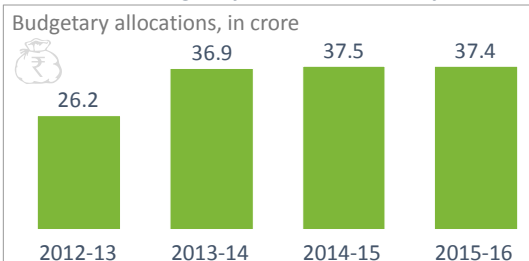
1.6 PUNE NEEDS TO TAKE CARE OF ITS ENVIRONMENTAL SUSTAINABILITY

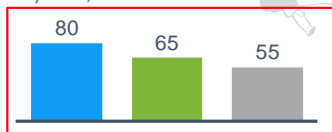Economic and population growth of the last few decades has started taking toll on Pune's environment. It ranks below India on a number of key pollution indicators. The stress is quite visible and is getting reflected in citizens' voice.

EXHIBIT 10

On sustainability, Pune lags behind major cities as well as service standards

- Pune
- Urban India
- Basic service standard
- Pune is worse than Urban India

Noise pollution
Levels in residential areas, daytime, db[1]
80 65 55

Air pollution
PM 10, µg/m3[2]
99 116 60
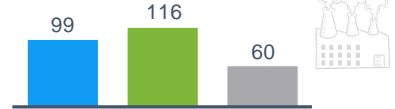
Parks and open space
Sq m per capita
2-3 3 9
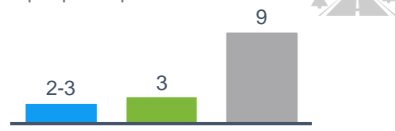
Level of noise pollution in top cities
Db, 2012

City	Level
Delhi	58.6
Bangalore	59.4
Kolkata	62.0
Lucknow	62.0
Hyderabad	64.0
Mumbai	66.2
Chennai	69.4
Pune	**80.0**
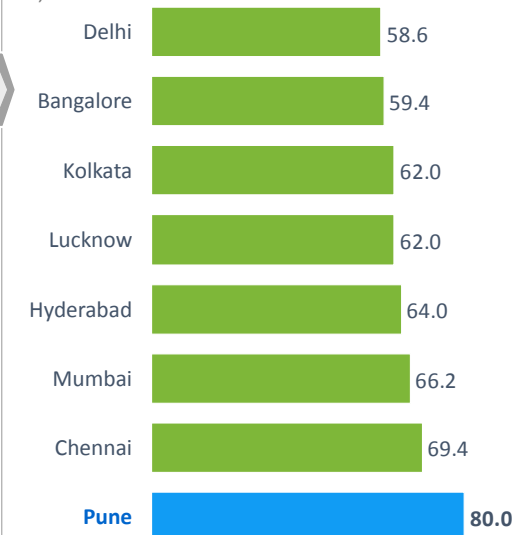
1 Urban India based on average of 7 major cities
2 Urban India figure is based on average of ~200 cities in India
SOURCE: Pune CDP, Census, DISE, NSSO, NCRB, CPCB, Ministry of Environment

EXHIBIT 11

Citizens are concerned about the deteriorating air and noise pollution levels in the city

Condition of air pollution

Percent, average

Ward	Value
Aundh	82
BS Dhole Patil Road	77
Bhawani Peth	60
Bibvewadi	66
Ghole road	63
Karve road	96
Dankevadi	37
Hadapsar	80
Kasba Vishrambag	50
Shahakarnagar	98
Yerwada	72
Sangamwadi	85
Warje-Karvenagar	58
Tilak road	60

90-92% people in wards like Shahakar nagar, Hadapsar, Aundh, Yerwada, Karve Road have stated that air quality has been decreasing at a very fast rate

SOURCE: Pune CDP

Condition of noise pollution

Percent, average

Ward	Value
Aundh	80
BS Dhole Patil Road	76
Bhawani Peth	60
Bibvewadi	66
Ghole road	64
Karve road	100
Dankevadi	36
Hadapsar	75
Kasba Vishrambag	53
Shahakarnagar	90
Yerwada	74
Sangamwadi	88
Warje-Karvenagar	58
Tilak road	54
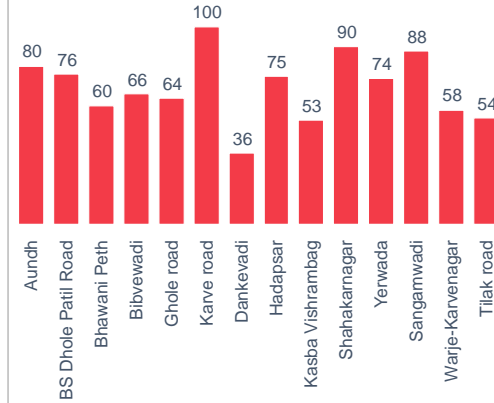
Majority of the city population assessed that either noise pollution levels are worsening or are stagnant

2. Pune's *vision* and the way forward
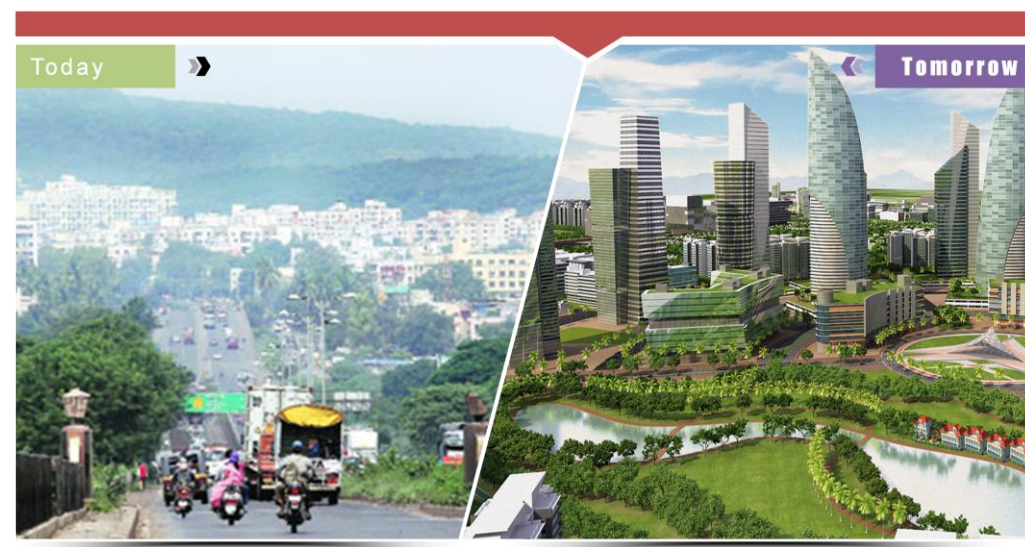
Pune should aspire to be *an economically vibrant andsustainable city with diverseopportunities and rich culture; whereall citizens enjoy a safe and livableenvironment with good connectivity.***In other words, it gets transformed from a** *"good to a great city".*

EXHIBIT 12

Vision

A sustainable city

A culturally vibrant city

An economically progressive City

A knowledge city
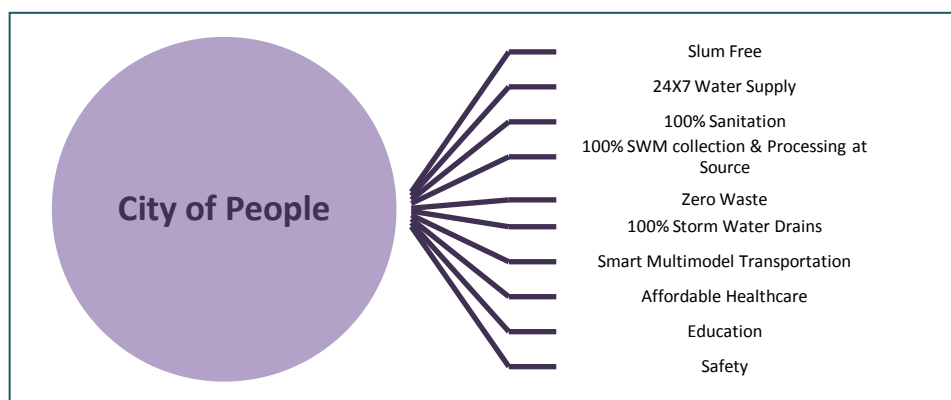
A connected city

A city for people

The city intends to achieve excellence in civic amenities' provision and have a responsive, accountable, modern and transparent administration.
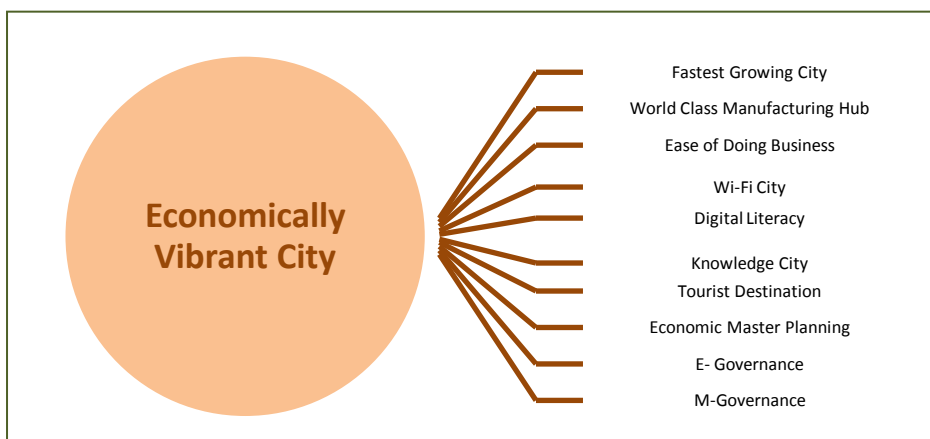
Pune's Vision

Equal livability for all its citizens

- Slum free city by creating 7 lakh affordable houses by 2030

- 24x7 universal & sufficient access to potable water

- 100% access to sanitation facilities within premises & eradicate manual scavenging in consonance with Swachh Bharat Abhiyaan.

- 100% solid waste collection, processing & recycling with Zero garbage across all wards

- Universal coverage and adequate maintenance of storm water infrastructure

- Efficient, cost effective & 'smart' multimodal transportation system that is accessible to all residents

- Affordable and effective healthcare to all , leveraging smart technologies and beefing up core infrastructure by creating 20,000 additional beds by 2030.

- 100% enrolment across primary and secondary education and establishment of vocational institutes to skill all citizens to fulfill national Skill India targets

- Crime free city with smart surveillance systems installed around the city and 100% trial of criminal cases

City of People

- Slum Free
- 24X7 Water Supply
- 100% Sanitation
- 100% SWM collection & Processing at Source
- Zero Waste
- 100% Storm Water Drains
- Smart Multimodel Transportation
- Affordable Healthcare
- Education
- Safety

Economically vibrant and competitive economy

■ Fastest growing city of Maharashtra growing at ~12% in the next 10 years

■ World class manufacturing hub, supporting "Make in India" and "Make in Maharashtra" , with 30-35% share in employment by creating industrial clusters focused on automotive, pharmaceuticals, defense and tourism

■ Top 3 cities on foreign and domestic investment & one of the top 3 destinations on Ease of Doing business, consistent with India's target of reaching 50th rank

■ Universal access to mobile phones & broadband access, as a part of Digital India and 100% rollout of free Wi-Fi across the city. 100% coverage of digital literacy by 2020.

■ Making Pune a renowned knowledge city worldwide that supports innovation and technology

■ Attractive tourist destination with theme based circuits and riverfront development

■ 20 year economic master plan.

■ 100% rollout of e-governance & m-governance along with business process re-engineering of government functions.

Economically Vibrant City

- Fastest Growing City
- World Class Manufacturing Hub
- Ease of Doing Business
- Wi-Fi City
- Digital Literacy
- Knowledge City
- Tourist Destination
- Economic Master Planning
- E- Governance
- M-Governance

Sustainable and environment friendly

■ Effective disaster management plans to make Pune a safe and secure city

- Pioneer in promoting walkability and bicycle plan to decongest the city & implement concept of 'Walk to Work'

- Air and noise pollution within permissible limits with greater coverage of parks and open spaces

- Reduce GHG emissions by using smart technologies like solar streetlights, smart grid etc.

- Environment friendly construction of all new buildings following green rating norms.
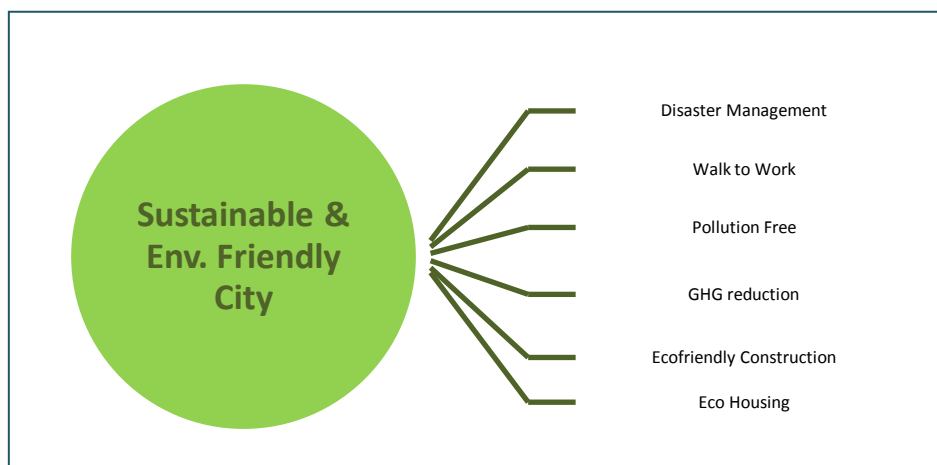
2.1 THIRTY SIX POINT PROGRAM TO UNLEASH THE PROCESS OF URBAN RENEWAL IN 4 YEARS

Creating a vision is simple; achieving it is a gargantuan task. Pune can't wait to first fix the basics and only then start the development work in the right earnest. It can make significant improvements across all the three dimensions of livability, growth and sustainability by focusing on 36 prioritized initiatives, most of those could be initiated and completed in the next 3-5 years. This will usher in a virtuous cycle of development leading to faster economic growth, creating conditions conducive for further action. PMC should pick and drive the below mentioned 36 projects on a mission-mode

These programs are chosen with a view to give immediate relief on the city's burning needs, while at the same time ensuring that a beginning is made to accelerate the growth process to kick-start the virtuous cycle.

EXHIBIT 13

36 point program to kick start the process of urban renewal

| Sectors	1-2 years	2-3 years	> 3 years
Transport	▪ Augment bus fleet via pvt. participation ▪ Intelligent traffic management system: Digitisation of route and traffic light ▪ Congestion charge to discourage pvt. transport using automated payment system	▪ Construction of High capacity mass transport (HCMTR) corridor around CBD ▪ Road widening across key intersections and proposed metro corridors	▪ Construction of metro along 2 prioritized corridors
Water	▪ Differential water tariffs ▪ SCADA (supervisory control and data acquisition system) to monitor water plants	▪ Universal water metering to plug leakage, using 'smart' tools like GIS images ▪ Reduction in NRW	▪ District Metering Access in 5 most water starved wards ▪ 24X7 water Supply Scheme
Sewage/ SWM/ sanitation/ SWD	▪ 100% coverage of population with toilet facilities ▪ 100% Door to Door Garbage Collection ▪ C&D waste Management	▪ Increase MSW segregation to 100% ▪ 100% processing of waste ▪ Implementation of zero garbage model to all wards	▪ Achieving "Zero" Discharge in the River ▪ Recycling of Sewerage to be used for Irrigation Purpose
Housing	▪ Increase FSI ▪ Computerize and simplify land records and usage change	▪ In-situ redevelopment of tenable slums by collaborating with civil society	
Health	▪ Bring in technology enabled health workers to deliver health services	▪ Beef up core infrastructure to deliver affordable and quality health care services	
Job creation	▪ Conserve core areas and develop as tourist hotspots	▪ Ease of doing business and improvement of investment climate	▪ Creation of 2nd CBD ▪ Riverfront across *Mula-Mutha*
Governance	▪ Encourage participative democracy by increasing the ticket size ▪ Rationalize bureaucratic processes through business process re-engineering ▪ Create a central data platform for real time monitoring and coordination	▪ Leverage tech. for better inter-departmental coordination ▪ Application of e-governance and m-governance ▪ Smart solutions for monitoring	▪ Setting of sustainable citizen consultation process

TRANSPORT

■ *Improve mobility by efficient utilization of existing stock and targeted interventions and investments for maximum bang for the buck:* Pune's transport problems top the agenda across all stakeholders – residents, civil society, experts, etc. Almost 65-70% of citizens would prefer to travel by public transport in the city, further highlighting the intensity of the issue. As is evident from the above analysis, transport is amongst few areas where the city under-performs by a distance relative to urban India. Improving the mobility, so that residents do not have to travel for more than 30-45 minutes within the city boundaries is a time consuming and expensive proposition. However, situation can be greatly improved even in the short to medium run by increasing the efficiency of the existing facilities and making targeted investments and interventions that generate maximum bang for the buck

– *Smart technology solutions to enhance efficiency:* Use of technology to optimize route planning of the bus system and managing traffic lights to optimize for traffic flow will go a long way in decreasing the

commuting time. Even in advanced cities like Stockholm, these smart technology solutions have yielded significant benefits and are all the more effective in scenarios where road infrastructure is inadequate compounded by lack of manpower to regulate (Pune has <900 people managing the traffic)

- *Road widening and building across key stretches:* Less than 25%of Pune's roads are more than 24 mts. wide. The municipality should do a GIS survey of key bottlenecks and start a drive to widen those roads. **Delhi-Gurgaon expressway** has witnessed significantly low congestion ever since ~1km road stretch on cyber city has been widened! This should be supplemented with creating ring roads around the CBD and one covering the periphery of the city boundary. Observance of best practices like constructing during off peak hours, clear demarcation, etc alleviates the congestion a great deal as exemplified by the experience of DMRC (Delhi Metro Rail Corporation)

- *Augmenting the fleet by bringing private sector participation*: Pune currently is operating at 50% of its required bus fleet. PMC should bring in private sector to own and operate a significant share of the new fleet. **Delhi** introduced privately owned and operated 'Orange' buses starting 2011 to supplement the DTC (Delhi Transport Authority); currently they form ~20-25% of the entire bus fleet in the city

- *Implementation of BRTS as proposed in Pune's Comprehensive Mobility Plan (CMP)*:One of the successful ways of increasing the public transport trips in addition to the fleet augmentation is to increase the speed and capacity of the public transportation system by way of dedicated public transport corridors. In the past decade or so, bus rapid transit (BRT) has become a popular mass transit option for a number of cities around the world firstly by Curitiba, Brazil in 1974 followed, Colombian city Bagota in the year 2000. In the same line Pune introduced the BRTS whichas per the CMP,in addition to fleet augmentation will in turn increase the public transport share to 60%.

PMC Comprehensive Mobility Plan Scenarios for 2031
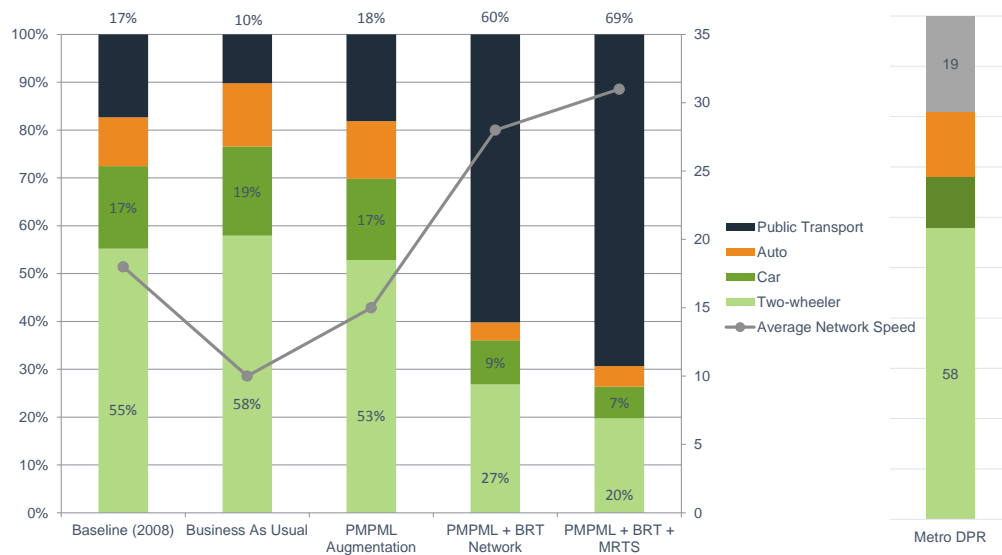
CMP: The graph gives the alternative public transport scenario for conditions such as – Do nothing (BAU), Augment PMPML Bus System, Augment PMPML Bus system + BRTS network & Augment PMPML Bus system + BRTS network + MRTS

Kick-start implementation of MRTS in a staggered manner: All global cities have a dense metro rail network and Pune can't afford to be an exception. As per plan estimates, the city needs six corridors of metro network over the next twenty years covering 76 km for effective and hassle free mobility costing ~USD 3 bn. In the spirit of making constant improvements, Pune should identify couple of prioritized corridors – PCMC to Swargate and from Ramwadito Vanaz – and initiate quick implementation of metro network on these routes.
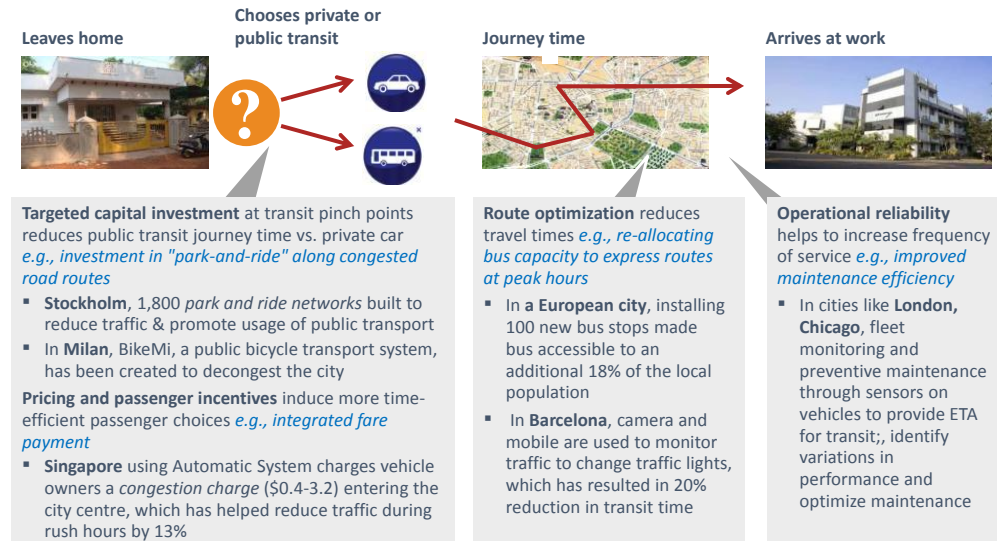
EXHIBIT 14

Leveraging technology can go a long way in alleviating transport congestion in a short span of time

TRANSPORTATION

Impact on a typical commuter journey

Leaves home

Chooses private or public transit

Journey time

Arrives at work

Targeted capital investment at transit pinch points reduces public transit journey time vs. private car *e.g., investment in "park-and-ride" along congested road routes*
- **Stockholm**, 1,800 *park and ride networks* built to reduce traffic & promote usage of public transport
- In **Milan**, BikeMi, a public bicycle transport system, has been created to decongest the city

Pricing and passenger incentives induce more time-efficient passenger choices *e.g., integrated fare payment*
- **Singapore** using Automatic System charges vehicle owners a *congestion charge* ($0.4-3.2) entering the city centre, which has helped reduce traffic during rush hours by 13%

Route optimization reduces travel times *e.g., re-allocating bus capacity to express routes at peak hours*
- In **a European city**, installing 100 new bus stops made bus accessible to an additional 18% of the local population
- In **Barcelona**, camera and mobile are used to monitor traffic to change traffic lights, which has resulted in 20% reduction in transit time

Operational reliability helps to increase frequency of service *e.g., improved maintenance efficiency*
- In cities like **London, Chicago**, fleet monitoring and preventive maintenance through sensors on vehicles to provide ETA for transit;, identify variations in performance and optimize maintenance

Total time savings could equal one week per commuter, per year

WATER SUPPLY

■ *Ensure adequate water to All by reducing wastage, leakage coupled with better monitoring of supply:* Pune is one of the few big cities in the country which is not water scarce in terms of per capita availability. Still, water figures in as the 2nd most pressing issue for the residents. The core reason is the highly inequitable distribution of available water, with some areas like Dhole Patil Road receiving >20 hours, whereas others like Yerwada getting less than 2 hours per day. While ensuring 24X7 water supplyto all its residents is a long term vision, in the medium term the city should aspire to at least supply reasonable quantity to all. This requires beefing up the supply by cutting down on wastage and leakage and bringing technology and infrastructure so that water availability is tracked at local level and necessary corrective action taken on a real time basis.

– *24X7 water supply:* 24x7 supply is achieved when water is delivered continuously to every consumer of the service 24 hours a day, every day of the year, through a transmission and distribution system that is

continuously full and under positive pressure. Developing a 24X7 water supply system has been the foremost important feature of the city.

- *Reduce wastage and leakage:* Less than 30% of users have water meters and water tariff is charged on property value as opposed to actual usage. City needs to move to universal metering and tariffs based on usage. Also, close to 35% of water goes waste due to leakages in the system, which needs to be plugged out. Setting up of Non Revenue Water (NRW) cells as an institutional response for tackling the issue can bring the tangible result of leakage mapping.

- *Equitable distribution through District Metering Area (DMA):*Localized area for storing and pumping water to an earmarked population monitored on a real time basis using smart technology to ensure that all catchments have enough water needed for the target population

SANITATION/ SEWERAGE/ SOLID WASTE MANAGEMNT/ STORM WATER DRAINAGE

- *Achieve service delivery benchmarks on Sanitation and Sewage in the next 3-4 years***:** The basic needs of people such as safe drinking water, improved hygiene and sanitation must be fulfilled for a dignified life of human being. Sanitation is one of the major components which directly

impact the living standards of people.Pune is at an advanced stage of achieving the SBM (Swachh Bharat Mission) objective of eliminating open defecation. Involvement of NGOs has helped to identify such households and ensure their 100% coverage by providing appropriate solutions. Presently Pune city has the sewerage treatment capacity of 567 MLD which will increase to 873 MLD by 2018 and the treated water will be used for irrigation purposes.

– *100% Open Defecation Free (ODF) by 2nd October 2017:*OD has severe repercussions both on the citizen's health and the country's economy. There is a vast and authoritative body of evidence which substantiates the fact that open defecation can result in increased infant deaths, undernutrition, stunting and Faecally Transmitted Diseases (FTDs). To achieve the vision of 100% ODF city sanitation needs to be strengthened by constructing & upgrading clean, safe, well maintained & accessible community toilets and sanitation facility for the urban poor. The city will be made ODF by 2ndoctober 2017.

– *100% Door to Door Collection &Segregation of Waste:*Door to Door collection &Segregation at sourceare important method of handling municipal solid waste. Keeping different categories of recyclables and organics separate at source, i.e. at the point of generation, to facilitate reuse, recycling and composting should be the concept to achieve the target.

– *Decentralized Model of Waste Processing:*Decentralization will have many advantages. The localized collection and processing of wastes, will avoids the carting of wastes too far off to dumping site. Decentralized schemes will also provide the right impetus to waste treatment methods. They will have many direct as well as indirect economic, social, health and environmental benefits.

– *Development of Scientific Landfill Sites:*Landfill sites provide many benefits to the ecosystem. They are a necessary solution to a growing waste management problem. They are effective in managing waste and are often equipped to treat hazardous waste and compost trash. Some

landfill sites are even able to harness the gas byproducts from that waste into renewable and environmentally friendly fuel. This practice of developing scientific landfill sites will have both environmental benefits.

– ***Strengthening Partnership with SWaCH& other NGO's:***The PMC-SWaCH partnership has allowed PMC to put in place a simple, transparent and sustainable model of door-to-door waste collection and resource recovery at local level. It has also significantly helped the waste pickers to upgrade their livelihoods and earn a living in a dignified, safe manner without having to rummage into garbage piles and community bins. These initiatives should be increased in number by collaborating with associated organization & NGO's.

AFFORDABLE HOUSING& SLUM ERADICATION

- *Scale up and expedite redevelopment and rehabilitation of slums by involving civil society*: Proportion of population living in slums is on the increase in Pune – it was ~33% in 1991 and stands at ~37% in 2011. For Pune to become a truly global city, it needs to create affordable housing on a mass scale

  - *In-situ up-gradation:* Suitable for slums that are on tenable land and where density is not excessively high. In such a condition, only up-gradation of services and dwelling units may be required. This may involve a mixture of provision or upgrading of service and infrastructure levels, incremental housing improvements or selective replacement of kutchcha houses. PMC successfully upgraded 4000 households in Yerwada under this scheme, where civil society played an instrumental role

  - *Rehabilitation:* If the slum is on non-tenable land and density is excessively high for safe habitation, those households are rehabilitated at different locations by creating affordable housing for them through easing of land markets and standardization of designs and technology

  - *Prevent creation of new slums by reforming the land market:* Propensity of slum creation in a city is directly proportional to its real estate prices, which in turn is dependent on how well developed is the real estate market. Thus, one of the fundamental ways to tackle slum problem is through easing of land markets by computerization of land records (Karnataka), simplification of legal and procedural framework for conversion of agricultural land for non-agricultural purpose, increasing the FSI, GIS survey of PMC's land bank to identify land parcels fit for slum redevelopment, among others

  - *Strengthening the role of SRA (Slum Rehabilitation Authority):*

    - By modification of rules in simplifying the procedures and more accessible to beneficiaries

    - By making Slum Rehabilitation Scheme (SRS) more attractive

EXHIBIT 15

Slum eradication involves multi-pronged approach

WORK IN PROGRESS

	Initiatives	Successful examples
Formalizing land	▪ Form robust legal and administrative procedures for legalizing land tenure ▪ Provide incentive for residents to legalize their assets and change their acceptance of informality	▪ **Thailand** launched the *Baan Mankong* (Secure Housing) program, 2003 and encouraged communities to come together to negotiate with landowners to regularize the status of slum property. By 2011, 800 projects were completed or under way, benefiting 300,000 poor families.
Assembling land	▪ Assemble land applying suitable assembly scheme based on legal, physical, and social context of the site: Land acquisition, readjustments, sharing	▪ In **Turkey,** to assemble land for its *gecekondu* slum upgrading program in 2003, the TOKİ housing agency acquired land for development by authority, temporarily settled occupants of existing slums, then resettled them in new homes.
Setting incentive and funding	▪ Set incentive and funding balancing source and use — Source of funding: floor-area ratio multiple, share of land given, market value of land, tenant contribution, government subsidy — Use of funding: construction cost, infrastructure development, resettlement costs, land purchase, developer profits	▪ In **Mumbai, India,** to accelerate redevelopment of Dharavi slums, the state housing authority is allowing developers to build at 3 times the density normally allowed in the area. In addition, for every 100 sq ft of free housing for slum dwellers, the builders have the right to build 133 sq ft of market-rate housing
Involving the community	▪ Create and train local leadership ▪ Ensure consensual evacuation ▪ Drive confidence-building measures	▪ In **Bangladesh,** the Local Partnerships for Urban Poverty Alleviation Project has been building capabilities among leaders of poor urban communities and involving local institutions in project design, implementation co-management, and local governance
Creating robust delivery model	▪ Choose appropriate delivery model aligned with aspiration and context of development — Community-led model — Market-driven, developer-incentivizing model — Public-private partnership model	▪ In **Morocco,** PPP model was adopted where government offered 3,800 hectares of land at a reduced price to developers who used land to sell flats as outlined in the guidelines, tax breaks given to private developers, public fund was created to guarantee up to 70% of the loan, which has resulted in 130,400 housing units built
Financing from investors and aid agencies	▪ Financing options beyond bank loan, especially on land acquisition and evacuation phase	▪ In **Brazil's** Minha Casa Minha Vida (My House My Life) program, government put up non-refundable financing, a refundable fund was provided by the Workers Severance Fund and refundable financing also came from the Brazilian Development Bank
Integrating social and economic approaches	▪ Combination of urban policy reform with social and economic inclusive program	▪ In **Manuas Brazil,** more than 6,000 families were resettled with the assistance of Prosamim , which focused on the re-establishment of economic activities for people through credit, job and entrepreneurial training, allowing establishment of shops in the rehab blocks

SOURCE: Lit Search

HEALTH

■ *Supplement smart technology solutions to improve the quality and coverage of health care facilities:* Pune fares worse than an average city as far as health care facilities are concerned. Requires significant ramping up of basic infrastructure in terms of hospitals, etc. However, in order to make direct and impactful difference, the city should leverage technology enabled health workers as a force multiplier. Armed with proper technology, community health workers can deliver basic health services. SughaVazhvu in TN has equipped health extension workers with low-cost devices to access health management information system and render simple primary care to >100K population

– As per the World Health Statistics, 2011, At present, India has just 0.9 beds for every 1,000 citizens and it is way below the global average of 2.6 beds

– *Use of Innovative technologies:* Telemedicine can emerge as sustainable mechanism which can cater the health care needs of citizens. Primary Health Care Services using Mobile Devices ensures improved access to primary healthcare and its gate-keeping function leads to less hospitalization and less chance of patients being subjected to inappropriate health interventions.

JOB CREATION

■ **Re-energize the job creation engine in the short-medium term by developing a new CBD and push untapped sectors like tourism:** Pune needs to reignite its job creation engine. It has the fundamentals in terms of human capital, natural resources, etc. Needs to catalyze them to produce desired impact. Two specific things that the city should aspire to from an employment generation point of view

– *Creation of a 2nd Central Business District (CBD)* – Pune can fire up its job engine by reducing stress on the current CBD and creating an alternate one on the lines of Bandra Kurla Complex. BKC as second CBD to South Mumbai has given significant boost to its economic and employment growth. According to one estimate, in its steady state, BKC will provide employment to about 200,000 people. Pune should aspire to become a knowledge economy leveraging its fundamental strengths on human capital

– *Tourism:* Pune is abundant with natural resources and rich cultural heritage which makes it an ideal destination to emerge as a tourist destination. Currently, the city contributes not more than ~8% of all tourists that come to Maharashtra, compared to >25% for Mumbai. Given its inherent strength, it should aspire to double its share to more than 15%

■ *Creation of a riverfront:* Pune should harness its abundant water resources to create a world class river-front and promote water/adventure sports. This will not only help the environment as it involves cleaning up the rivers, but will help the city create tourism related jobs

■ *Conserve core areas:* Pune should start a movement to conserve its rich history and culture and create smart capsules like heritage walks around those to attract tourists

EXHIBIT 16

Sabarmati Riverfront: Riverfront development with inclusion can give an impetus to urban landscape & economic growth of a city

TOURISM

Sabarmati riverfront

▪ **Condition:** Sabarmati River, Gujarat was characterized by stench of sewage, dumpyard of industrial waste , prone to floods and lackluster development, becoming a virtual divide between the two parts of the city

▪ **Approach:** Envisaged a comprehensive and inclusive *riverbed land reclamation* to create approx 11 km of public riverfront on both the banks, starting 2005

  − Resettlement of 10,000 slum families into *pucca* houses
  − Transformed unhygienic *Gujari Bazaar* into first well developed informal market of India
  − Development of new streets with cycle tracks
  − Two-level, continuous promenade at the water's edge along each bank of the river with boating stations
  − Provision of designated *dhobi ghaat*, 27% of land with parks, recreational facilities, 60,000 sq m event area for hosting festivals
  − Interceptor sewer system which now goes directly to pumping stations

▪ **Impact:** Have been included in KPMG's *'100 Most Innovative Projects'* towards urban regeneration; Received multiple awards from PM, National Safety Council and HUDCO


SOURCE: SRFDCL website

GOVERNANCE

■ *Pune to maintain its head-start in good governance by leveraging technology:*Pune ranks 2nd amongst big Indian cities in terms of providing online services, however needs to go a long way to catch up with the global peers. Technology can greatly enhance efficiency and effectiveness of big and inter-related organizations and Government represents the biggest such entity.

  − The aim of PMC is to leverage the use of ICT to create a simplified interactive environment for delivery of citizen services and enable

active participation of its citizens in day to day affairs of the Corporation.

– Create a central data platform and update it regularly to keep a tab on progress made on key initiatives and emerging shortcomings for course correction

– Initiate competition amongst the various departments of PMC with an objective of going paper less in their operation in the next 3 years

– Better inter-departmental coordination leveraging technology

– Streamline and rationalize bureaucratic processes

– Use of automated systems like SCADA, GIS, online property tax collection

– Introduction and implementation of M Governance in the city will involve the utilization of all kinds of wireless and mobile technology, services, applications and devices for improving benefits to the parties involved in e-government including citizens, businesses and all government units.
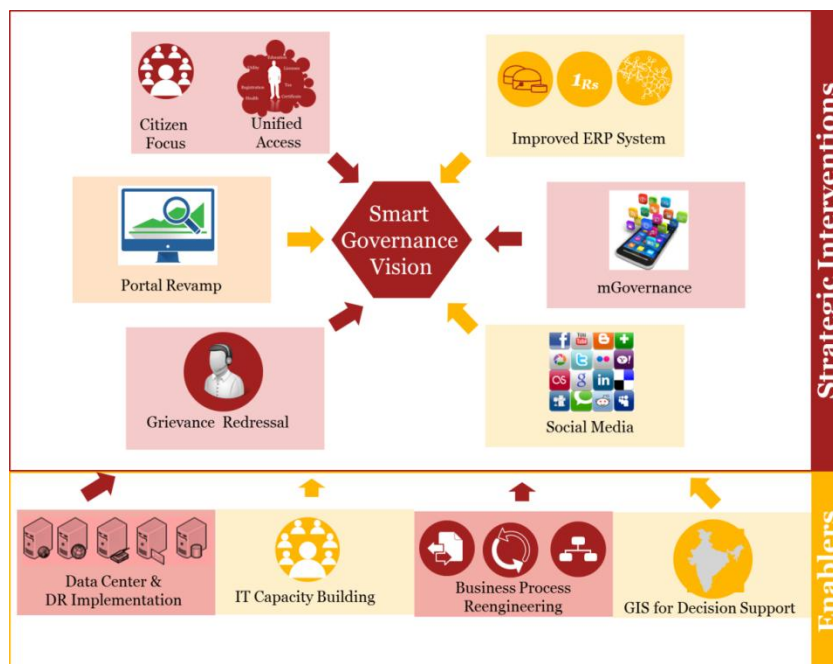
2.2   ACCOMPLISHING PUNE'S VISION ENTAILS FUNDAMENTAL IMPROVEMENTS IN GOVERNANCE, PLANNING AND FUNDING

Analysis of great cities of the world shows that all of them follow few broad principles, which make them great.

EXHIBIT 17

Realizing the vision is contingent on getting the fundamentals right

Elements of operating model »

Planning
How do cities plan and incentivize/enforce their planning choices?

Governance
What needs to change to empower our cities and make them accountable?

Funding
Where will requisite resources come from?

- *Governance:* To achieve its vision Pune needs to significantly ramp up its governance architecture using technology – as is shown above, while it is 2nd best in the country, needs to go a long way compared to global best practices – to increase efficiency and transparency, granting right to service (with well specified SLAs) to hold the government responsible for delivery, have a system of oversight watchdogs

- **Planning:** Effective and systematic urban planning has been in DNA of successful cities for very long now. Planning is important to allow cities to make informed choices with respect to scarce resources like land. It should be a transparent, detailed and time bound exercise and once a plan is made, exemptions should be an absolute exception. There are essentially two key steps in preparing an effective and efficient urban plan

- *Economic master planning:* Cities not economically vibrant are financially unviable and unsustainable**.** An economic master plan lays out the overall vision and strategy for the economy. It should detail out critical inputs like nature of job creation engine with anchor tenants

- *20 year physical master-planning***:** Physical planning estimates show that much physical infrastructure – housing, transportation, water, electricity, sewage, health care, open spaces, education – is needed for city's efficient functioning, which is consistent with its overall economic strategy, and population as well as density assumptions about the end state. For example, London planned 20 years in advance how to deal with peak hour morning traffic. China, too, has a mature urban planning regime that emphasizes the systematic redevelopment of run down areas in a way that is consistent with long plans for land use and transportation.

Pune has made a notable start in its planning process by revising its CDP and making it long term (till 2041). However, there still exists considerable room to make it detailed and holistic. For e.g., it needs to have a clearly laid out economic master plan and make other policies like land use planning consistent with that to give transparency and certainty to the overall framework. Use of GIS in spatial planning and digitization of existing development plans will help assess the current situation in required depth to plan better.
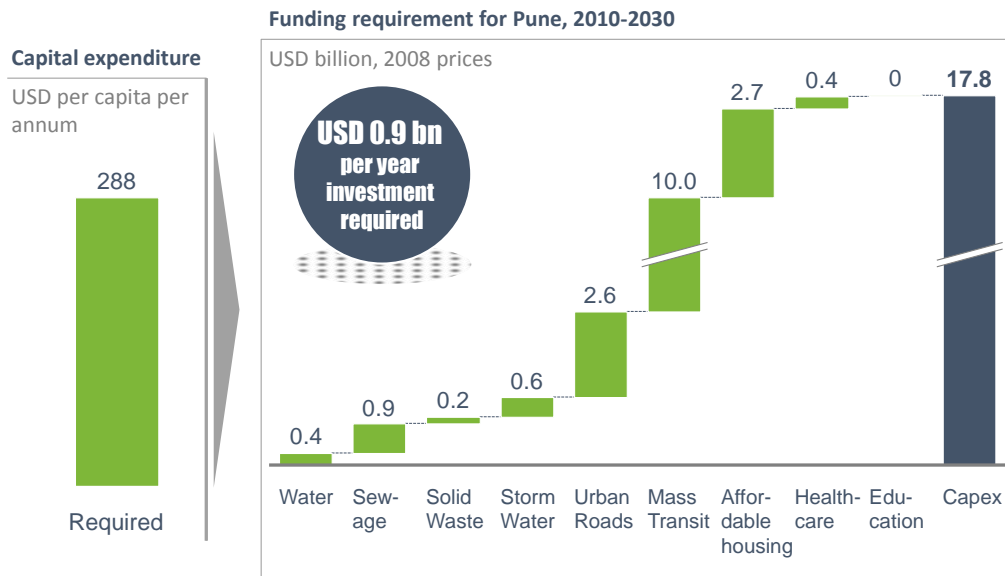
- *Funding:* Running a city is a complex and costly proposition. Large global cities spend ~USD 300 per capita on civic infrastructure every year. Pune, in comparison spends USD ~70 per year and needs to increase spend by 4-5 times. However, the good news is that because of the business dynamism and agglomeration benefits cities offer, they are typically able to raise almost 80% of the funding requirement from their own resources. Cities have 4 major sources of funding - land monetization, debt and PPP, Govt. support and property tax and user charges - and they need to leverage all these four sources to make a city economically viable. We briefly talk about what Shanghai has done and what Mumbai is experimenting to raise resources.

- **Shanghai**: Only half of Shanghai's estimated USD 29 billion spend on urban services is funded through local taxes and user charges. The rest is financed through monetization of land assets and bank loans on preferential terms, etc. China is also encouraging the private sector to invest in revenue-generating infrastructure projects through concession contracts, leasing and franchise, and other joint venture agreements

- **Mumbai:** Municipal Corporation of Greater Mumbai (MCGM) has only recently introduced policies to generate funds through land monetization. As per fungible FSI policy introduced by MCGM, developers have to pay a premium for additional FAR in areas under the jurisdiction of the corporation

  - Residential construction: for an additional 35% of FAR, developers need to pay a premium of 60% of the per square foot ready reckoner price

  - Commercial and industrial development: for an additional 20% of FAR, developers need to pay a premium of 80% to 100% of the per square foot ready reckoner price

- Pune's population is projected to rise from 3 million in 2011 to 6 million by 2030. Achieving service level benchmarks on core urban services after factoring into account the impact of population increase and taking care of the backlog necessitates investment to the tune of USD 18 billion over the next 20 years, with 3/4th of those funds going into provisioning for transportation and housing.

- Large cities typically have the ability to generate ~80% of their investment requirements and Pune is no exception. This requires Pune to utilize and raise funding from multiple sources

EXHIBIT 18

Pune city needs ~US$ 18 billion of capital expenditure over the next 20 years

FUNDING

Funding requirement for Pune, 2010-2030

Capital expenditure

USD per capita per annum

288

Required

USD billion, 2008 prices

USD 0.9 bn per year investment required

0.4	0.9	0.2	0.6	2.6	10.0	2.7	0.4	0	**17.8**
Water	Sew-age	Solid Waste	Storm Water	Urban Roads	Mass Transit	Affor-dable housing	Health-care	Edu-cation	Capex

1 Net of beneficiary contribution

SOURCE: Detailed project reports from the Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

EXHIBIT 19

Multiple potential sources of funding/financing need to be utilized

Seed fund sources

1 Initial equity funding of ` 1,000 crore

2 Contribution from State Government (for trunk infrastructure) and from central government schemes

3 Equal amount of debt funding from bonds/debentures, as well as low-cost loans from agencies such as ADB, World Bank, JICA, IFC

Exact financing model from each source to be finalized

Additional funding/financing sources

1 Share of property taxes/cess

2 Development charges

3 Premiums for FSI/FAR

4 Infrastructure impact fees

5 Land monetization

6 Betterment charges

7 Utility user charges

Will require government approval but has significant upside

Seed funding to be utilized for master-planning (economic and physical), land-aggregation cost, funding first tranche of infrastructure

Source: Team analysis, expert interviews

Funding assumptions

Estimate for Pune's funding requirement is based on 3 core drivers. Assumption on population increase determines the incremental addition of various services to more number of people (at current service delivery levels). However, we assume that the gap between current service delivery and desired is bridged by 2030 and hence there is additional build out for that. The amount that this increased infrastructure build out costs varies from service to service, where we have used detailed project reports under the previous urban program

Establishing Pune Development Fund could be a good start for the city to become economically viable and vibrant over the long run. Fund may start collecting proceeds from a) Land use conversion charges, b.) Development fee on FSI increase and c.) Betterment charges on properties benefitting from key transport projects and levied at the time of collecting stamp duty, among others. Along with raising of funds, ring-fencing it so that it can't be used for any other purpose is equally important.

3. How to make it happen

In all programs, implementation and execution is critical. We have given some thought to how these ideas can be effectively implemented in the next 3-4 years. We are in the process of developing 3 key mechanisms for effective implementation of programs.

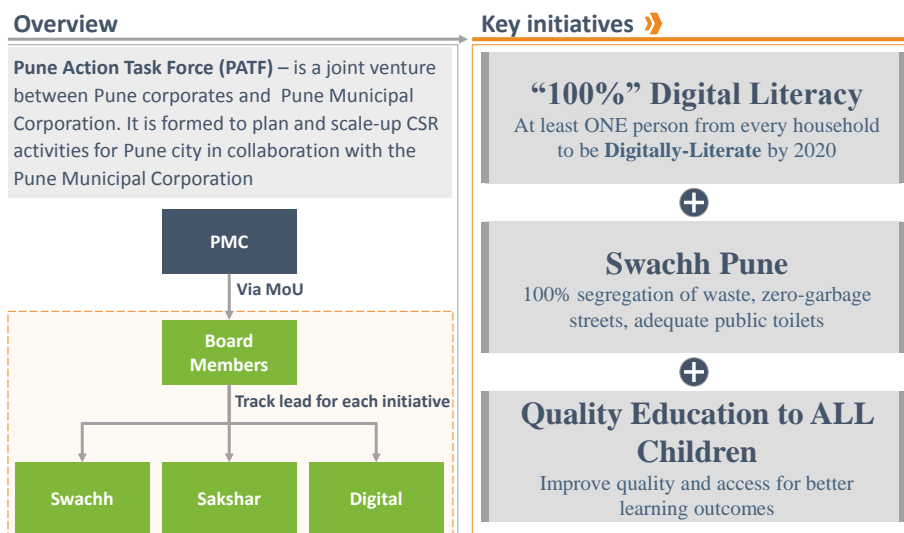## 3.1 "PUNE CITY CONNECT" (FORMERLY KNOWN AS PUNE ACTION TASK FORCE)

Taking inspiration from Mumbai (Mumbai First), London (London First), New York (New York First), we have formed a public-private partnership called Pune City Connect, consisting of eminent citizens, corporates, NGOs that will work closely with the Pune Municipal Corporation. It is formed to plan and scale up CSR activities for Pune city in collaboration and consultation with the Pune Municipal Corporation. Pune City Connect has picked up 3 core areas of – Literacy, Swachh and Digital Literacy – as its priority for the next 3-4 years, with annual targets and plan of action for each theme for the next 3 years.

- *Saakshar Pune* – learning outcomes in Pune's schools are not good. For e.g., 63% of grade 4 students cannot read simple Marathi text. 48% students in Classes 2 and 3 cannot identify letter names or connect English alphabets to sounds. These are fundamentally caused by inadequate infrastructure and ill trained and motivated teachers. Pune City Connect aims to improve these learning outcomes significantly over the next 3-4 years

  – Sahyogi DalFormation for teacher support & on-going development

  – Systematically empower the School HMs by taking quality initiatives in the schools that are aligned to improve quality of learning outcomes

  – Create a safe, clean and welcoming learning environment in the schools by investing in providing clean toilets, drinking Water, computer labs and Equipped Sports' grounds

- Increase access to Secondary Schools from 28 to at-least 50 over the next 3 years. This will significantly reduce the dropouts after 7th grade

- Create 33 model schools across the 33 clusters in Pune

■ *Digital Literacy* – Government of India has initiated National Digital Literacy Mission (NDLM) of ensuring that at least one person from each household is 'digitally literate'. Pune City Connect has raised its hand in ensuring that Pune reaches this target by 2020. Early estimates suggest that there would be ~4-5 lakh digitally illiterate people in Pune. Plan is to train 1-1.5 lakhs every year for the next 3 years, leveraging ~100 "Digital Literacy Centers" that are planned to be opened.

■ *Swachh Pune* –despite being an evolved city with reasonably high levels of sanitation and sewage coverage, Pune has distance to go before it can claim to be free of open defecation and garbage. A significant share of existing public restrooms need better upkeep and maintenance. Need more toilets in high density areas. Lack of waste bins in high footfall areas leading to littering of streets. Through this initiative, Pune City Connect aims to turn the city into zero open defecation where 100% of garbage is collected and segregated.

Exhibit 20

Pune Action Task Force: Coming together of corporates, citizens and the government to make a difference

Overview

Pune Action Task Force (PATF) – is a joint venture between Pune corporates and Pune Municipal Corporation. It is formed to plan and scale-up CSR activities for Pune city in collaboration with the Pune Municipal Corporation

PMC

Via MoU

Board Members

Track lead for each initiative

Swachh | Sakshar | Digital

Key initiatives ❱❱

"100%" Digital Literacy
At least ONE person from every household to be **Digitally-Literate** by 2020

✚

Swachh Pune
100% segregation of waste, zero-garbage streets, adequate public toilets

✚

Quality Education to ALL Children
Improve quality and access for better learning outcomes

SOURCE: Pune Action Task Force document

EXHIBIT 21

'London First' a non-profit organization funded by corporates and education institutions has helped improving business climate of the city

Mission and initiatives

- Its mission is making London the best city in the world to do business, by influencing government policies and investment decisions to support the city's global competitiveness

- **Teach First:** Improving the caliber of teachers in London schools

- **Skills London:** For businesses looking to inspire and recruit the next generation of students, trainees and employees

- **Leadership Exchange:** Pairing police and business leaders to exchange expertise on leadership and management issues

- Created the 'London First Fund' of £1 million which is being invested in innovative third party projects to deliver long-term benefit to London's economy, like international B2B events programme, an initiative in India to promote London's excellence in high education to Indian employees and potential students

SOURCE: London First Website

Success Stories

- Skills London 2015 – Attended by 30,000+ visitors and 180 exhibitors, had 30,000+ jobs on offer and provided quality career advice

- Teach First was voted number 4 in The Times Top 100 Graduate Employers

- Schools have benefited from the teaching skills of over 1,000 exceptional graduates, placed by Teach First

- Funding part of the £6 billion Thames link upgrade program, which when delivered in 2018 will double the capacity through central London for commuters beyond London's boundaries

3.2 "PUNE WAR ROOM" or "DELIVERY UNIT" FOR IMPLEMENTATION

Effective implementation will require close monitoring and debottlenecking of all key projects, not just with Pune but with also State and Central Government agencies. We plan to set up a visual Operations control centre (or war room) with weekly/monthly dash-boards and updates to the Chief Minister, Urban Development department, and various ministries/ agencies. The idea is to take stock of and communicate very crisply where we are on each project, bottlenecks (actual as well as anticipated) and decisions required debottlenecking project implementation. Online performance tracking tools can also be used to provide the leadership with weekly updates and progress reports, enabling them to connect with the leader accountable for each outcome at the click of a button. Also sharing feedback of findings from these reviews to citizens, to keep them engaged and well-informed throughout the implementation process can be done. Involvement of world-class capabilities outside of government (e.g., IT companies, project management specialists, consultants) to help set up this monitoring and debottlenecking capability, given its importance in getting the job done.

Responsibilities and deliverables of the war room may look like

- Design the IT system and infrastructure that will be used to monitor, review and evaluation projects of the War room

- Organize, prepare and run war room delivery sessions - weekly with Commissioner and quarterly with the Chief Minister

- Debottleneck critical issues on a daily basis

- Provide strategic advice on new themes and subject areas

- Build internal capabilities within the Municipal Office in delivery and strategic advisory, so the war room is sustainable in the long-term

Exhibit 22

Progressive governments have opted for performance management units

Salient features of the set-up

Bhutan	▪ Performance Facilitation Unit (PFU) set-up to ensure momentum across all prioritized initiatives with regular follow-ups, performance dialogue with PM and review ▪ Mechanism established for getting **quick resolutions** for key bottlenecks ▪ Specific plan and strategy developed for **external stakeholder management esp. media**
U.K.	▪ 3 special departments set-up under the cabinet with PMDU (~30 people) managing development and execution of Prime Minister's main reform priorities ▪ Tracks initiatives required to **deliver targets and flags off any delays in achieving targets** ▪ **PM spends 3-4 hours per week**
Malaysia	▪ Performance Management and Delivery Unit (PEMANDU) to track progress of projects along **6 national priorities** ▪ Created a war-room in PMO to improve access ▪ Built rapid capability by **attracting top public and private talent**
New Zealand	▪ New Zealand Policy Advisory Group (comprising of 15 people) constituted as a high caliber, small team that supports the Prime Minister by **developing and driving change programs across government**
US	▪ Barack Obama recently appointed Chief Performance Officer reporting into the president and responsible for **budgeting, monitoring and performance management** for the defined set of priorities called 'Presidents management agenda'

SOURCE: Web-sites; interviews

3.3   PARTICIPATORY GOVERNANCE

Giving 'voice' to citizens' acts as a pivotal tool for effective implementation of civic services. As already highlighted, Pune has been a pioneer in promoting this idea through introduction of participatory budgeting since 2007, online grievance redressal system & open direct forums to lodge complaints, use of social media and citizen surveys, etc. The city is also introducing the concept of 'Pune Samvad' with a special cell being setup to

connect the citizens and the local government twith and to each other, through dialogues, vichar vimarsh, vichar manthan, polls, abhyas gats, workshops etc, to discuss sectoral &ward level issues and smart solutions to solve them.

Hence a comprehensive governance program combining crowd sourcing & app contests to determine local priorities; central online 'real time' platforms to observe any changes in satisfaction levels, identify pain points, and gather citizen reaction to proposed improvements and cloud based open data system to get real time access to all government current and upcoming projects can go a long way in ensuring efficient delivery of services to people and bring more accountability in the system.

3.4 PUBLIC FEEDBACK SESSIONS AND A PUBLIC ROADMAP SHARED WITH CITIZENS:

A roadmap on Smart City Vision for Pune can be published for public dissemination to transparently communicate the various components of the plan. The idea is to communicate the vision and plan to citizens and gain their input and support, not just for deciding which projects to pick (which we will accomplish as part of the design phase) but also in the implementation phase, which invariably leads to some dislocation, inconvenience and impatience amongst citizens. For this media, the web, radio and TV to broadcast these to all can be leverage.

3.5 E – GOVERNANCE:

E-governance refers to the delivery of national or local government information and services via the Internet or other digital means to citizens or businesses or other governmental agencies. PMC intents to implement various E – governance functions to provide information's to the citizens in a timely manner; better service delivery to citizens; empowerment of the people through access to information without the bureaucracy; improved productivity and cost savings in doing business with suppliers and customers of government; and participation in public policy decision-making.

3.5.1 Key Strategic Thrust areas identified to meet the Vision

1. Revamping the PMC portal by making it more citizen-centric

- PMC portal shall be revamped to make it interactive and act as a single-stop for any information that a citizen/business/employee would seek.

- Attention would be given to create enhanced User Interface, so users would find it very easy to navigate and interact with PMC.

- The dashboard view within the portal will enable users (citizens/businesses/employees) to view the status of all their pending activities and updated information on the matters concerns with each type of user.

- Timeline: 6 months

2. Embracing m Governance for convenience of service delivery and interaction.

- Focused interventions would be undertaken to make Mobile device an Alternate Service Delivery Channel.

- Creation of PMC App Store, to provide PMC related apps.

- Co-creation of apps through citizens /businesses (Crowd Sourcing).

- Timeline: 6 months

3. Completing the in-progress ERP implementation in a time bound manner

- Identification of priority modules (to cover at least 95% of PMC services) and target their implementation in time bound manner

- Identification of Departmental Champions and Module Leads

- Weekly review meetings at Commissioner level

- Timeline: 12 months

4. Bringing forth the concept of unified access through creation of a citizen ID

- Citizens / Residents wish to engage with the government in unified way. A Digital Identity shall be created within PMC database to

provide seamless integration of the information of that Digital Identity with PMC related matters and enable one authentication system to access all PMC e-services.

- Digital Identity / Pass shall be integrated with Aadhar Number (UID) to enable further integration of this identity with other Government initiatives.

- Integration with Government of Maharashtra's Digital Locker, to enable use of online repository of citizen information while availing services at PMC.

- Timeline: 12 months

5. **Establishing PMC's presence on social media to enable greater connectedness with people**
   - Social media like Facebook & Twitter shall be used to improve the quality and efficiency of PMC's interactions with all the stakeholders.

   - Social Media shall be innovatively used to improve participation of PMC tax payers in its Governance

   - Timeline: 6 months

6. **Managing grievance redressal through a sound citizen interface management system**
   - PMC would allow residents to raise their grievances through multiple channels such as IVR, Portal, Social Media, Mobile Apps, Calla Center, Portal, etc.

   - An auto routing mechanism and a monitoring framework for the same will be created in order to ensure the grievances are addressed on a timely basis.

   - Creation of separate Grievance Redressal Cell, to ensure due attention is given to all the grievances

   - Feedback mechanism would be built-in, to ensure that grievances are not redressal to the satisfaction of citizens.

- Visitor Management to be automated to create seamless integration with Grievance Management System

- Timeline: 9 months

3.5.2 Enablers to achieve Smart Governance Vision

In order to undertake the above mentioned Strategic thrust areas and achieve the Smart Governance Vision of PMC, following key enablers are identified:

- ❖ **Data Center Augmentation** (& DR Implementation)

- ❖ **Capacity building** of IT Department

- ❖ Decision Support System through effective use of **GIS**

- ❖ Overall improvement in PMC functioning through Process Improvements (**BPRs**)

1. Data Center Augmentation (& DR Implementation)

- Data Center Infrastructure augmentation and location in Commercial Data Center / NIC Data Center

- Use of Virtualisation / Cloud Model to reduce cost of ownership, yet have improved performance

- Preparation of the DR Strategy and it's implementation

- Timeline: 6 months for Data Center Augmentation, 12 months for DR Implementation

2. Capacity Building of the IT Department

- Selection of IT Consultant to support PMC in the further journey to achieve its vision

- Recruitment of manpower to strengthen the PMC in-house team.

- Regular trainings to the IT Department staff to prepare them to leverage latest technology

- Timeline: 6 months

3. Decision Support System through effective use of GIS

- GIS to be designed to provide decision support to the Management

- Property tax collection efforts to be focused through GIS reports

- Timeline: 18 months

4. Business Process Re-engineering to improve organizational efficiency

- BPRs to be undertaken while implementing ERP System

- Focus while considering BPRs would be to improve Citizen Experiences

- Timeline: 12 months

3.5.3 Proposed Timelines

Structured approach will be adopted by PMC in order to ensure that all the Smart Governance initiatives are well planned so that benefits planned are accrued on time and to the maximum possible extent. The overall program is proposed to be segregated into three phases:

- **4 – 8 months** : To achieve quick wins that have maximum citizen impact

- **8 – 12 months** : To create a robust IT ecosystem on which, futuristic applications and services can be built**12 – 18 months** : To achieve the complete vision of Smart Governance defined herewith
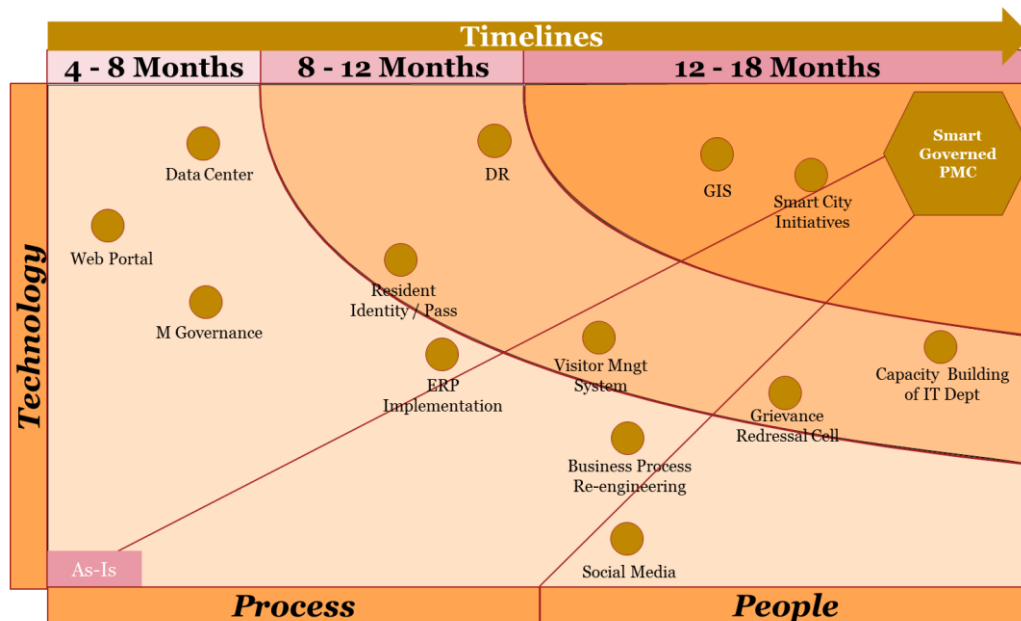
EXHIBIT 23

Various countries have used e-governance mechanisms to communicate progress and commitment

Estonia

- Make available online every cabinet decision within 15 minutes of it being made
- Respond to every citizen's suggestion posted on government's "*Today I Decide*" portal. Users can see the progress of the government's response to every suggestion; government must give sound reasons for any proposal rejected – **Approximately 5% of all ideas are used as amendments to bills**
- Government and private sector announced a project in 2001 (Look @ the World project) which focused on improving access to Internet in Estonia, for which started a computer and internet skill training project – **102,697 people, i.e., 10 % of the adult population had passed the training**

USA

- Launched **NYC 311**, a non-emergency central number now receiving **>1.2 million calls per month** where citizens go to report street repairs and illegally parked vehicles, request tax information, and much more
  - Launched **Citywide Performance Reporting Online** (leveraging 311 and other agency data)

- **Georgia** created a universal toll-free number to connect citizens seeking government services with the correct agency
  - Satisfaction with the toll free service was 98%, and it contributed to a satisfaction score of 76% for statewide customer service

Canada

- **Canada's Government Online (GOL) in 1999**
  - Launched to enable 130 most commonly used federal government services (available by 2005)
  - Services can be accessed in both official languages: French and English
  - Provisions of approximately CAN$ 2.7 bn over 6 years to build e-government
  - Conducted multiple end-user surveys, to drive optimization of proposition
  - Created an online citizen's focus group to constantly improve e-government

Impact
- Online transactions account for 30% of all government service transactions
- 71% of Internet users visited a Canadian government web site from 2005-06
- 94% of online users are satisfied with the service

SOURCE: Press search, web search

3.6 INTENSIVE TEAM-BASED SESSIONS TO BUILD AGREEMENT ON TARGETS, BUDGETS AND IMPLEMENTATION PLANS AT A SPECIFIC AND DETAILED LEVEL:

For each of the initiatives PMC intends to implement for the Smart City Vision, a team can be formed comprising participants from government, private sector and citizen organisations who will be involved in implementing the initiatives. This team will jointly conduct in-depth stakeholder consultations, develop plans, budgets and implementation schedules, and identify decisions that need to be taken and key milestones that need to be monitored. At the end of this intensive session, some prerequisites can be in place, with alignment of all stakeholders. To name few: ambitious targets, detailed action plans, budget approval, who implements what, and sign-off from stakeholders etc. All these are important for good project conceptualization and implementation, in particular the funding plan and budget approval element is vital, as well as the detailed implementation plan, and these will be the focus of the team.

Proposed eGovernance Blueprint for Pune Municipal Corporation
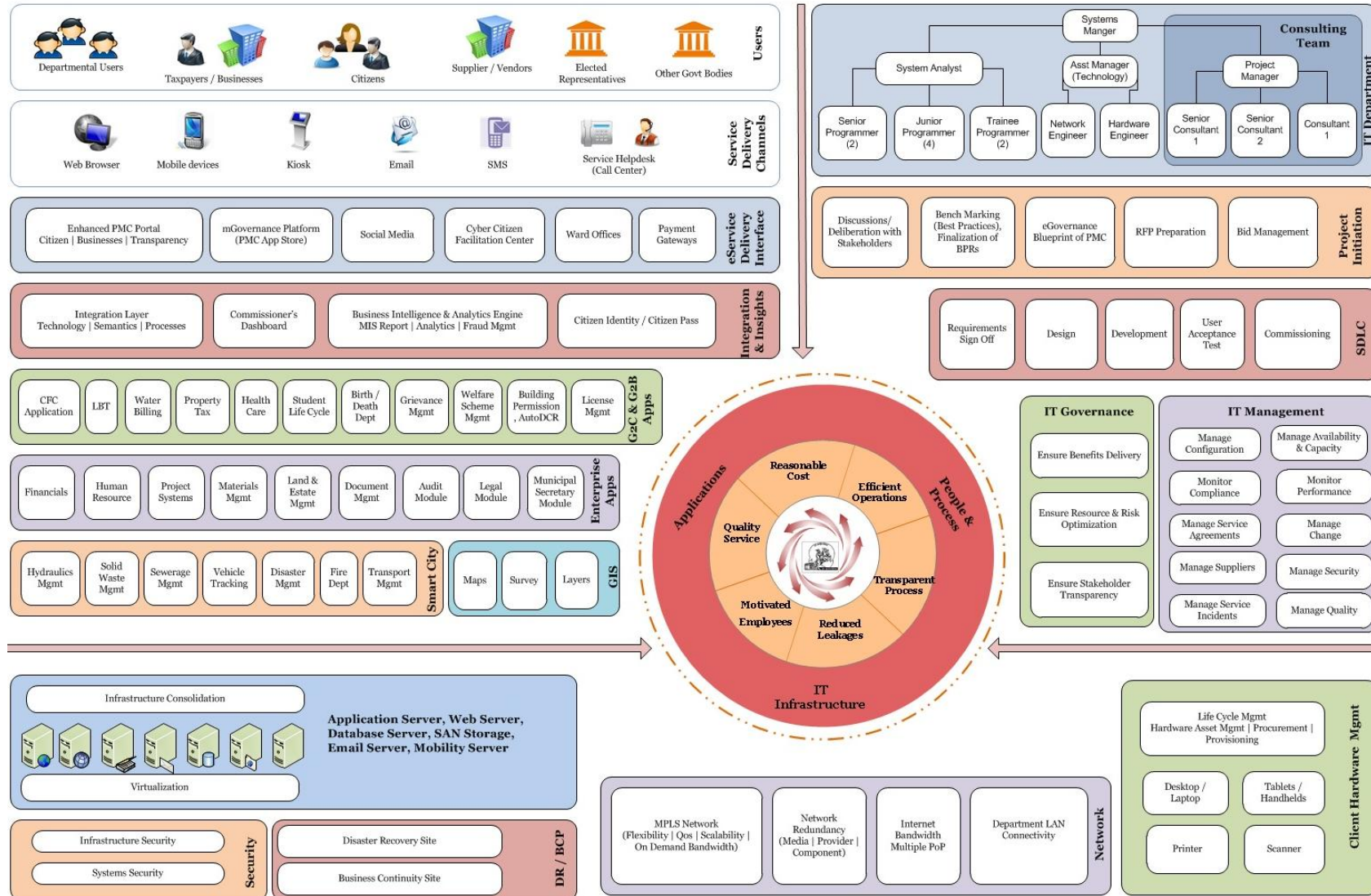
Blueprint given above is a multi-dimensional representation of the Smart Governance Vision. In addition to the components explained in the present document, this blue-print also shows some additional components of the Smart Governance initiatives to be undertaken by PMC.

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Pune Municipal Corporation
e-Governance, to serve citizens better.

Smart City
MISSION TRANSFORMATION