



# Vellore Smart City Proposal



**INDIA SMART CITY MISSION**  
MISSION TRANSFORM-NATION



**Smart City**  
MISSION TRANSFORM-NATION

**THE SMART CITY CHALLENGE**  
**STAGE 2**

**SMART CITY PROPOSAL**

**SMART CITY CODE:**

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सत्यमेव जयते  
Ministry of Urban Development  
Government of India

## CHECKLIST

All fields in the SCP format document have to be filled. The chart below will assist you in verifying that all questions have been answered and all fields have been filled.

Q. No	TICK		
<b>PART A: CITY PROFILE</b>			
1.		QUALITY OF LIFE	
2.		ADMINISTRATIVE EFFICIENCY	
3.		SWOT	
4.		STRATEGIC FOCUS AND BLUEPRINT	
5.		CITY VISION AND GOALS	
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36.		STAKEHOLDER ROLES			
<b>PART E: FINANCIAL PLAN</b>					
37.		ITEMISED COSTS			
38.		RESOURCES PLAN			
39.		COSTS			
40.		REVENUE AND PAY-BACK			
41.		RECOVERY OF O&M			
42.		FINANCIAL TIMELINE			
43.		FALL-BACK PLAN			
<b>ANNEXURE 1</b>		Smart City features			
<b>ANNEXURE 2</b>		A-3 sheets (self-assessment)			
<b>ANNEXURE 3</b>		max 20 sheets (A-4 and A-3)			
<b>ANNEXURE 4</b>		Documents for Question 33			

## INSTRUCTIONS

1. This document must be read along with the Smart City Mission Guidelines. An electronic version of the SCPformat is also available on the website <smartcities.gov.in> Follow: 'Downloads' > 'Memos'.
2. The responses must be within the word limits given. The font size must be 12 Arial, with 1.5 spacing, left aligned paragraphs with one inch margins. All additional information must be given in 20 nos. A-4 size pages in Annexure 3.
3. For the Area-Based Proposal, only one 'Area' should be selected. The Area selected can be a combination of one or more types of area-based developments. This can be retrofitting or redevelopment or greenfield alone or a combination of these, but the area delineated should be contiguous and not at separate locations in the city.
4. The Area-based Development must contain all the Essential Features as per para 6.2 of the Mission Guidelines. Please fill out the following checklist.

S. No	Essential Feature	Confirm if included (✓)	Para. No. in SCP
1.	Assured electricity supply with at least 10% of the Smart City's energy requirement coming from solar		
2.	Adequate water supply including waste water recycling and storm water reuse		
3.	Sanitation including solid waste management		
4.	Rain water harvesting		
5.	Smart metering		
6.	Robust IT connectivity and digitalization		
7.	Pedestrian friendly pathways		
8.	Encouragement to non-motorised transport (e.g. walking and cycling)		
9.	Intelligent traffic management		
10.	Non-vehicle streets/zones		
11.	Smart parking		
12.	Energy efficient street lighting		

13.	Innovative use of open spaces		
14.	Visible improvement in the Area		
15.	Safety of citizens especially children, women and elderly		
16.	At least 80% buildings (in redevelopment and green-field) should be energy efficient and green buildings		
17.	In green-field development, if housing is provided, at least 15% should be in 'affordable housing' category.		
18.	Additional 'smart' applications, if any		

5. The pan-city Smart Solution should be IT enabled and improve governance or public services. Cities may propose one or two such Smart Solution(s). If more than one solution is presented kindly use supplementary template 'Pan-City Proposal No 2'.

6. In order to make the proposal credible, all claims must be supported with government order, council resolutions, legal changes, etc and such supporting documents must be attached as Annexure 4.

7. The Questions can be answered directly in this editable PDF file and can be saved on local computer, before printing. Your submission in electronic form should contain:

1. The SCP in whole (92) pages
2. The Self Assessment Sheet (Annexure 2)
3. Additional 20 Sheets (Annexure 3)
4. Additional list of Documents (Annexure 4)

Electronic submission to be sent on DVD along with printed copies. 5 printed copies of the SCP document (complete in all respect) should be sent to MoUD along with the DVD containing the complete electronic copy. The printed copies should be spiral bound as separate volumes.

It is advised to use latest version of Acrobat Reader (Acrobat XI or higher) to fill the form.

Acrobat Reader XI can be downloaded from:

<https://www.adobe.com/support/downloads/thankyou.jsp?ftpID=5507&fileID=5519>

## SCORING DIVISION

<b><u>TOTAL 100 POINTS</u></b>	
<b>CITY-LEVEL:</b>	<b>30</b>
<b>AREA-BASED DEVELOPMENT:</b>	<b>55</b>
<b>PAN-CITY SOLUTION:</b>	<b>15</b>

### CITY LEVEL CRITERIA: 30%

S.No.	Criteria	%
1.	Vision and goals	5
2.	Strategic plan	10
3.	Citizen engagement	10
4.	Baseline, KPIs, self-assessment and potential for improvement	5

### AREA-BASED DEVELOPMENT (ABD): 55%

S.No.	Criteria	%
1.	'Smartness' of proposal	7
2.	Citizen engagement	5
3.	Results orientation	15
4.	Process followed	3
5.	Implementation framework, including feasibility and cost-effectiveness	25

### PAN-CITY SOLUTION: 15%

(If more than one solution is proposed, each proposed solution will be graded separately and the average of the two aggregate scores will be awarded to the city toward the 15% overall weightage)

S.No.	Criteria	%
1.	'Smartness' of solution	3
2.	Citizen engagement	1
3.	Results orientation	5
4.	Process followed	1
5.	Implementation framework, including feasibility and cost-effectiveness	5

# A. CITY PROFILE

## 1. QUALITY OF LIFE

In the last three years, what efforts have been made by the city to improve livability, sustainability and economic development? Give specific examples along with improvement with KPIs that are in the public domain and/ or can be validated. Your answer should cover, but not be restricted to (Describe in max. 50 words each, mentioning the source of the data):

### a. Transportation condition in the city

### b. Water availability in the city and reduction in water wastage/ NRW

### c. Solid waste management programs in the city

d. Safety/ security conditions in the city

e. Energy availability and reduction of outages in the city

f. Housing situation in the city, specifically role of municipality in expediting building plan approvals, enhancing property tax collection, etc

## 2. ADMINISTRATIVE EFFICIENCY

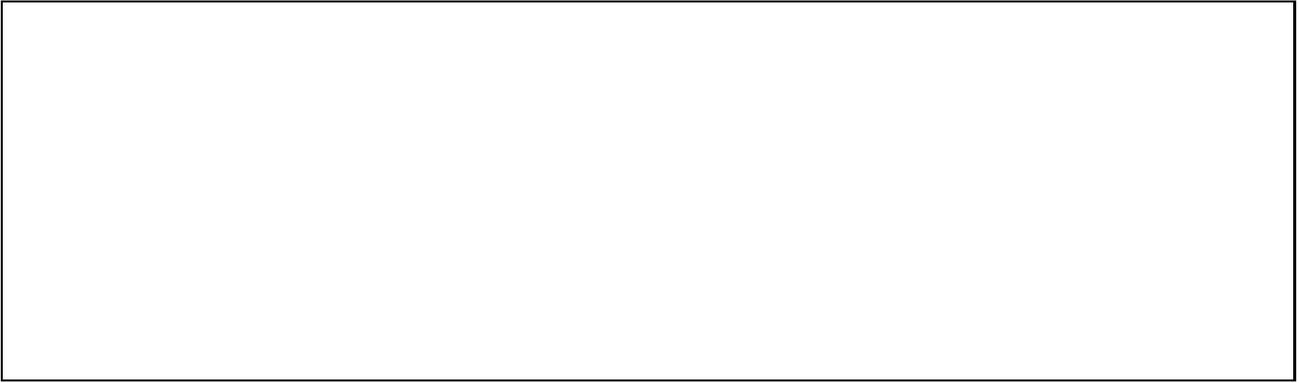
In the last three years, what have been the changes in Administrative Efficiency due to the use of Information and Communication Technology (ICT) (Describe in max. 50 words each, mentioning the source of the data):

a. Overall attendance of functionaries

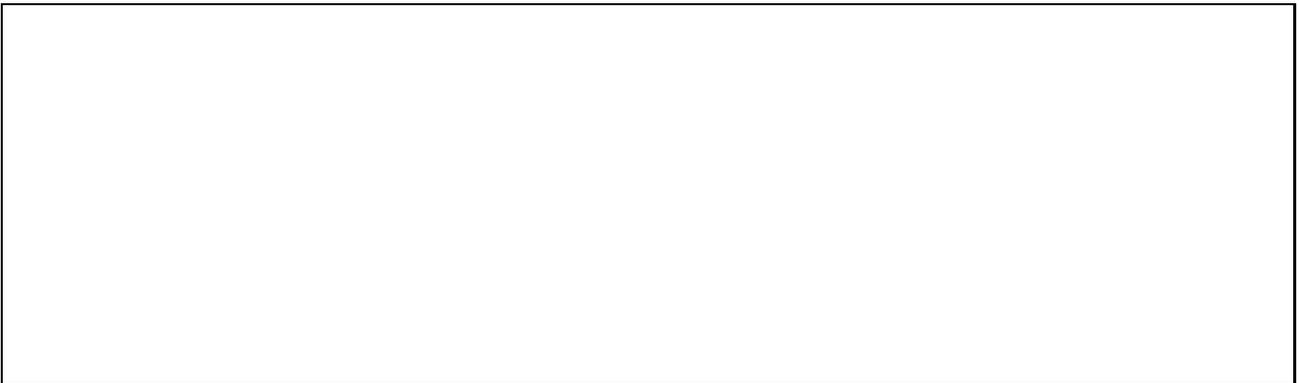
b. Two-way communication between citizens and administration

c. Use of e-Gov to enable hassle free access to statutory documents

d. Dashboards that integrate analytics and visualization of data



e. Availability of basic information relevant to citizens

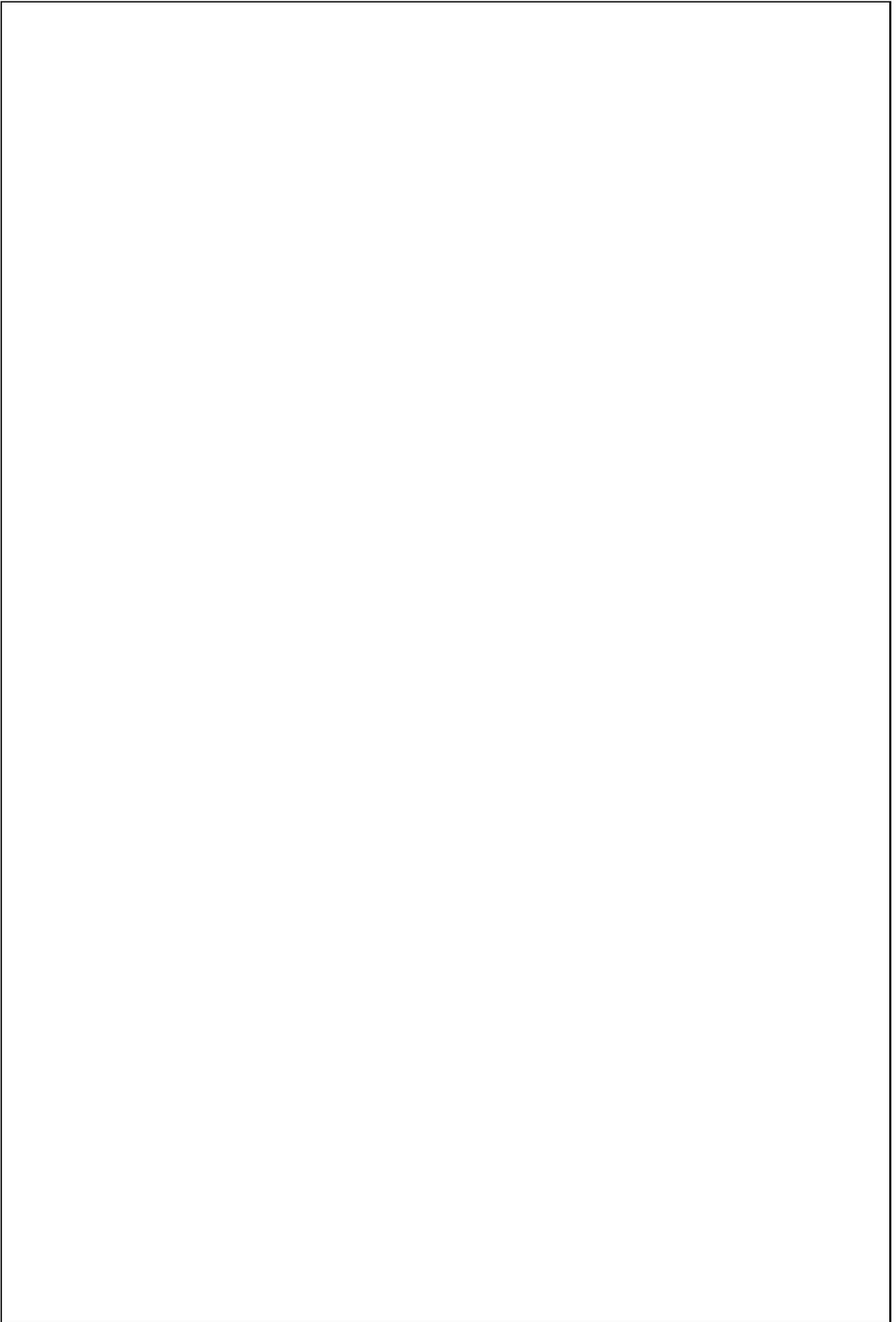


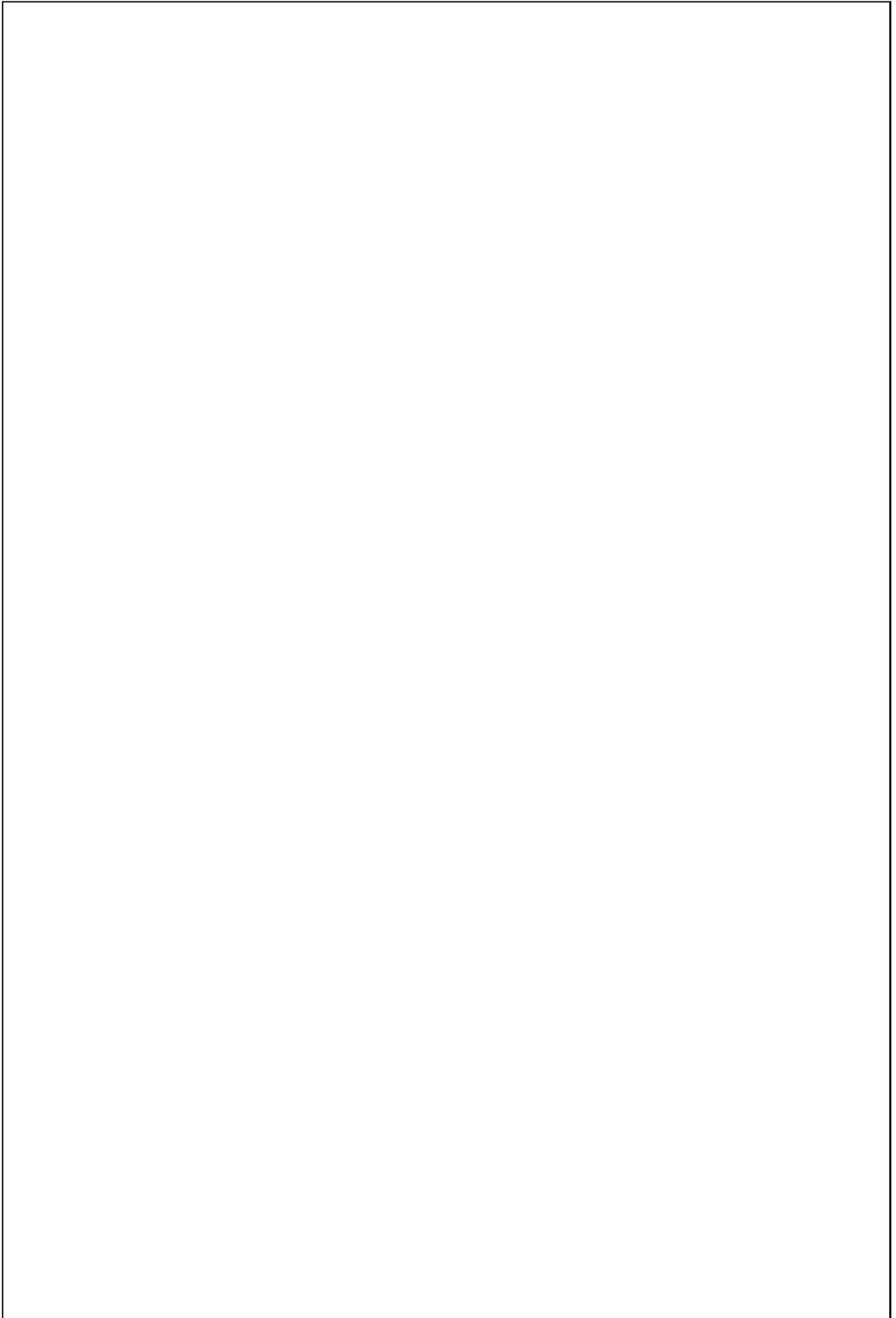
### 3. **SWOT**

Based on the detailed city profiling, what are the strengths and developmental areas of the city?

Conduct a detailed SWOT analysis of the city with all relevant metrics and data. (max 1000 words):

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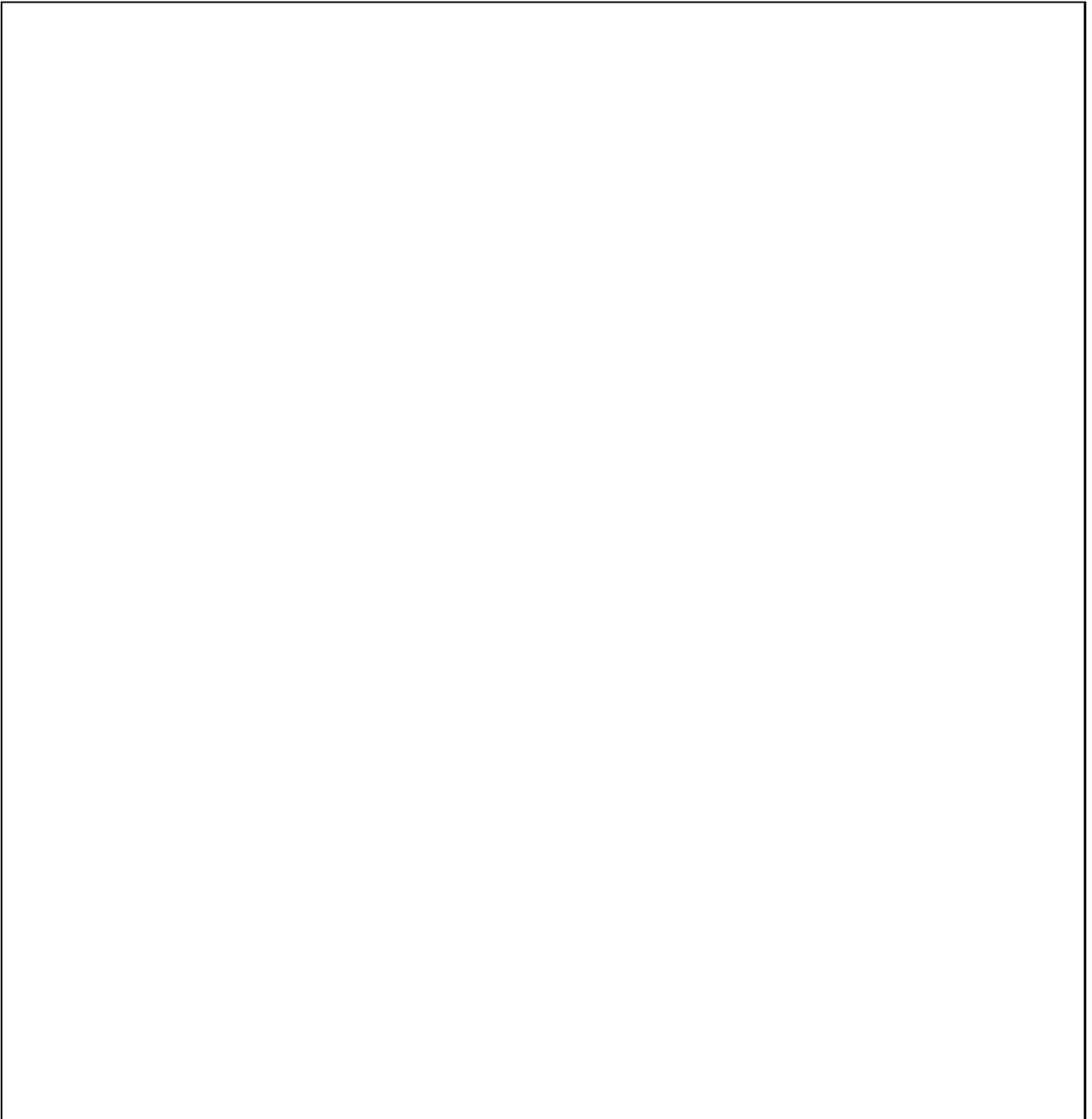




#### 4. STRATEGIC FOCUS AND BLUEPRINT

Based on the SWOT analysis, what should be the strategic focus of the city and the strategic blueprint for its development over next 5-10 years to make it more livable and sustainable? (max 500 words):

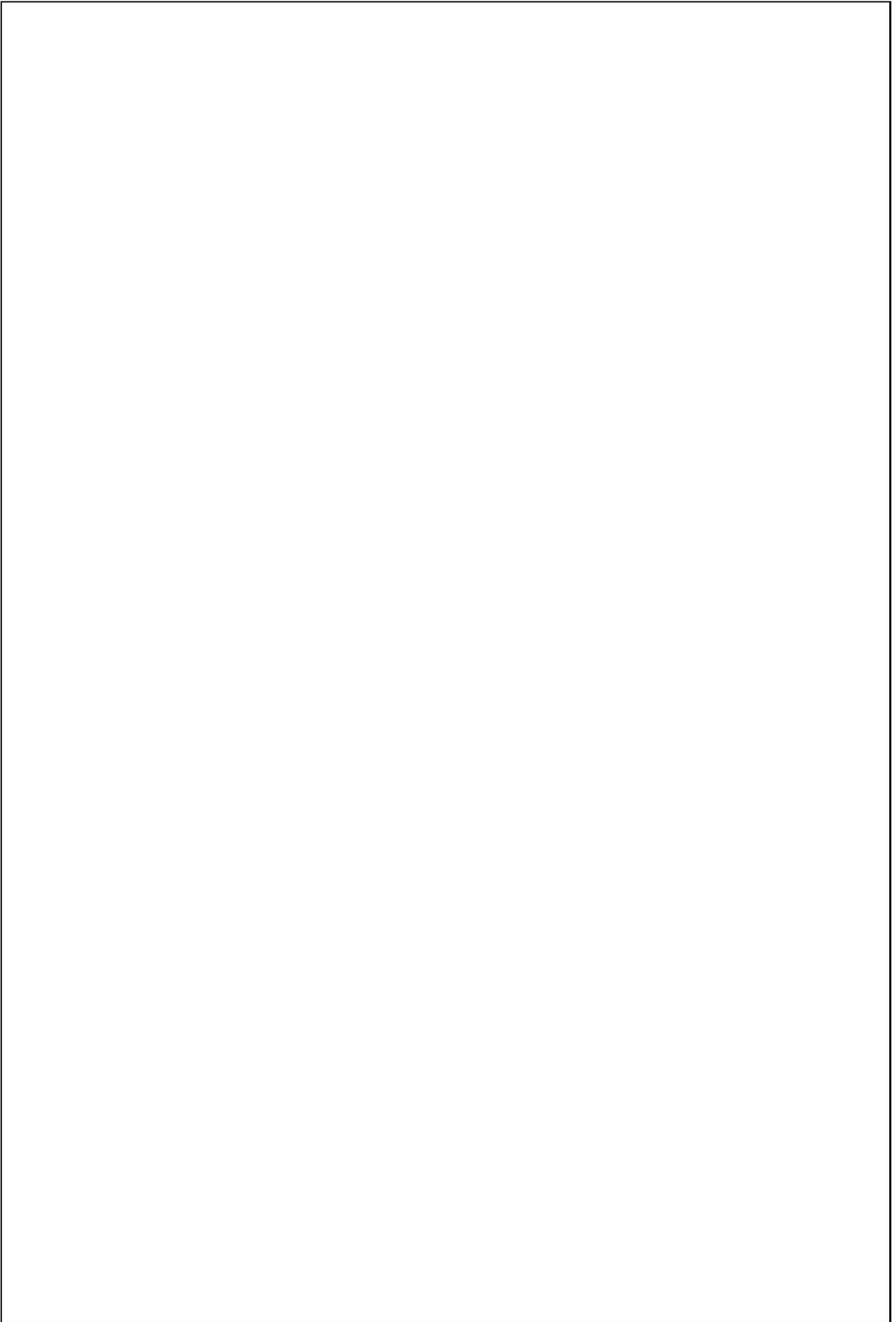
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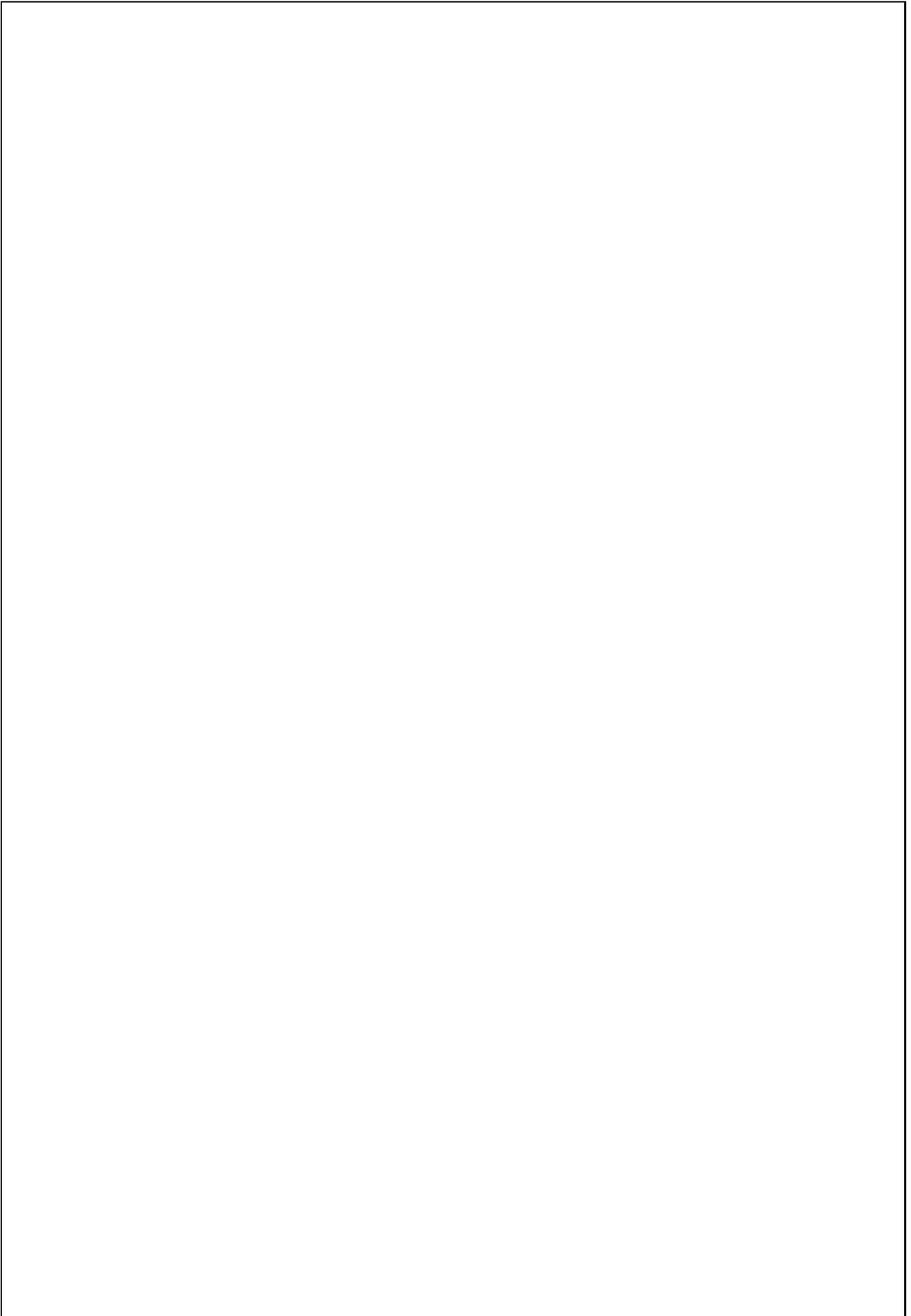
## 5. CITY VISION AND GOALS

What should be the vision of the city based on the strategic blueprint? How does the Vision Statement relate specifically to the city's profile and the unique challenges and opportunities present in your city? Define overall aspirations and goals for the city along with how you see key metrics of livability and sustainability improving over the next 5-10 years? (max 1000 words):

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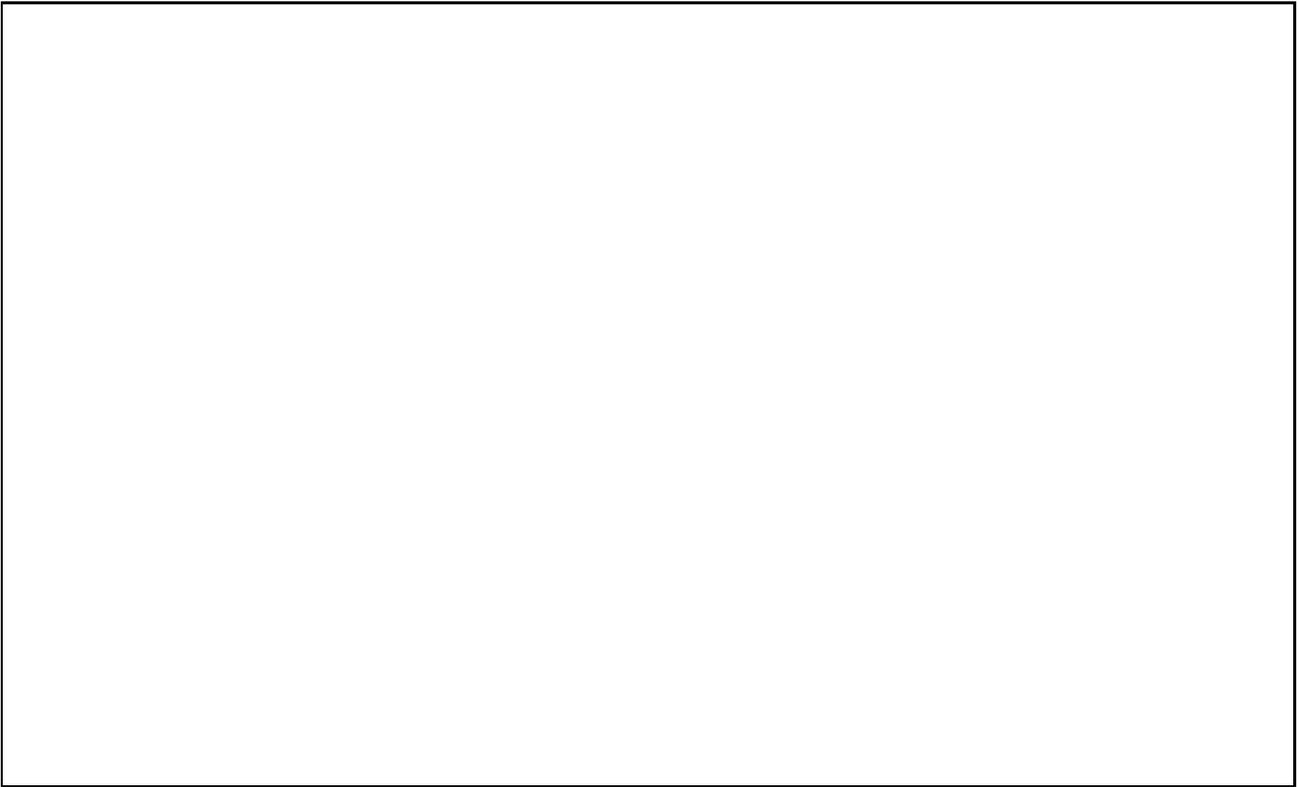
## 6. CITIZEN ENGAGEMENT

How has city leveraged citizen engagement as a tool to define its vision and goals? Specifically describe (max 150 words each):

a. Extent of citizens involved in shaping vision and goals

b. Engagement strategy to get best results from citizens

c. Different means of citizen engagement adopted

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d. Extent of coverage of citizen engagement in different media and channels

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e. Incorporation of citizen inputs in overall vision

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## 7. SELF-ASSESSMENT: BASELINE

Define the baseline for your city based on self-assessment criteria given in Annexure 2 (column 'H'). Marks will be awarded based on how well you know your city (Fill column 'I' in the self assessment sheet in Annexure 2 with as many KPIs and "hard metrics" as possible; max 50 words per cell)

Note: Attach Annexure 2

## 8. SELF-ASSESSMENT: ASPIRATIONS & IMPERATIVES

Emerging from the vision statement, assess the qualitative or quantifiable outcomes that need to be achieved for each of the Smart City Features described in Annexure 2 (column 'J'). In column 'K' describe the biggest single initiative/solution that would get each feature of the city to achieve 'advanced' characteristics (eg. increasing share of renewable energy generation in the city by X percent). Note that a single initiative/solution may impact a number of features (eg. improved management of public spaces may ease congestion on roads as well as improve public health). (Fill in Annexure 2; max 50 words per cell)

Note: Attach Annexure 2

## B. AREA-BASED PROPOSAL

The area-based proposal is the key element of the proposal. An area-based proposal will identify an area of the city that has been selected through desk research, analysis, meetings with public representatives, prominent citizens, and citizen engagement, as the appropriate site for either of three types of development: retrofitting (approx. 500 acres), redevelopment (approx. 50 acres) or Greenfield development (approx. 250 acres). This area will be developed into a 'smart' area, which incorporates all the Essential Features/Elements prescribed in the Mission Guidelines and any additional features that are deemed to be necessary and appropriate.

Mapping of information and data is a key part of your Smart City Proposal. Create a suitable Base Map of your city with all the relevant systems and networks as they exist today, showing its physical, administrative and other characteristics, such as natural features, heritage areas, areas prone to flooding, slums, etc. The base map should show the regional context in which your city is located and should contain the spatial and physical layout/morphology of your city, the street network, the open and green spaces, the geographical features and landmarks and the infrastructure, including for transportation, water supply, sewerage, electricity distribution and generation, and so on.

Using the base map, represent, with the most effective method available, as much information and data about the 'Area' selected for area-based development. **Only one 'Area' should be selected and attached in the form of a map containing the spatial and physical layout/morphology of the Area, the street network, the open and green spaces, the geographical features and landmarks and the infrastructure, including for transportation, water supply, sewerage, electricity distribution and generation, and so on.** The Essential Elements and additional features that are proposed to be part of the area-based development should be included. Describe, using mainly graphic means (maps, diagrams, pictures, etc.) the proposed area-based development, including the project boundaries, connectivity, significant relationships, etc.

(max. 2 nos. of A-3 size sheets)

## 9. SUMMARY

Summarize your idea for an area-based development. (max. 100 words)

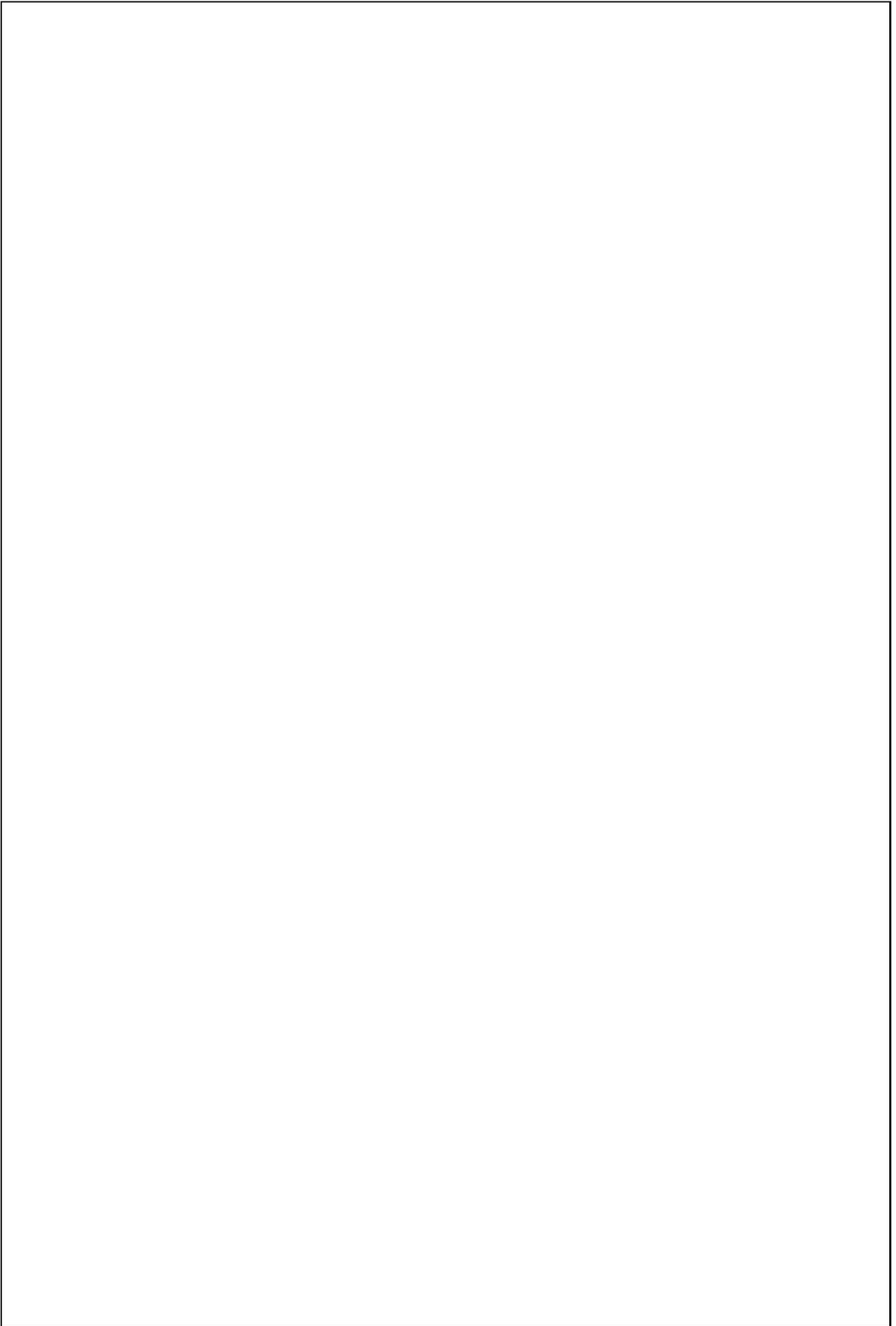
## 10. APPROACH & METHODOLOGY

What is the approach and methodology followed in selecting/identifying the area-based development?

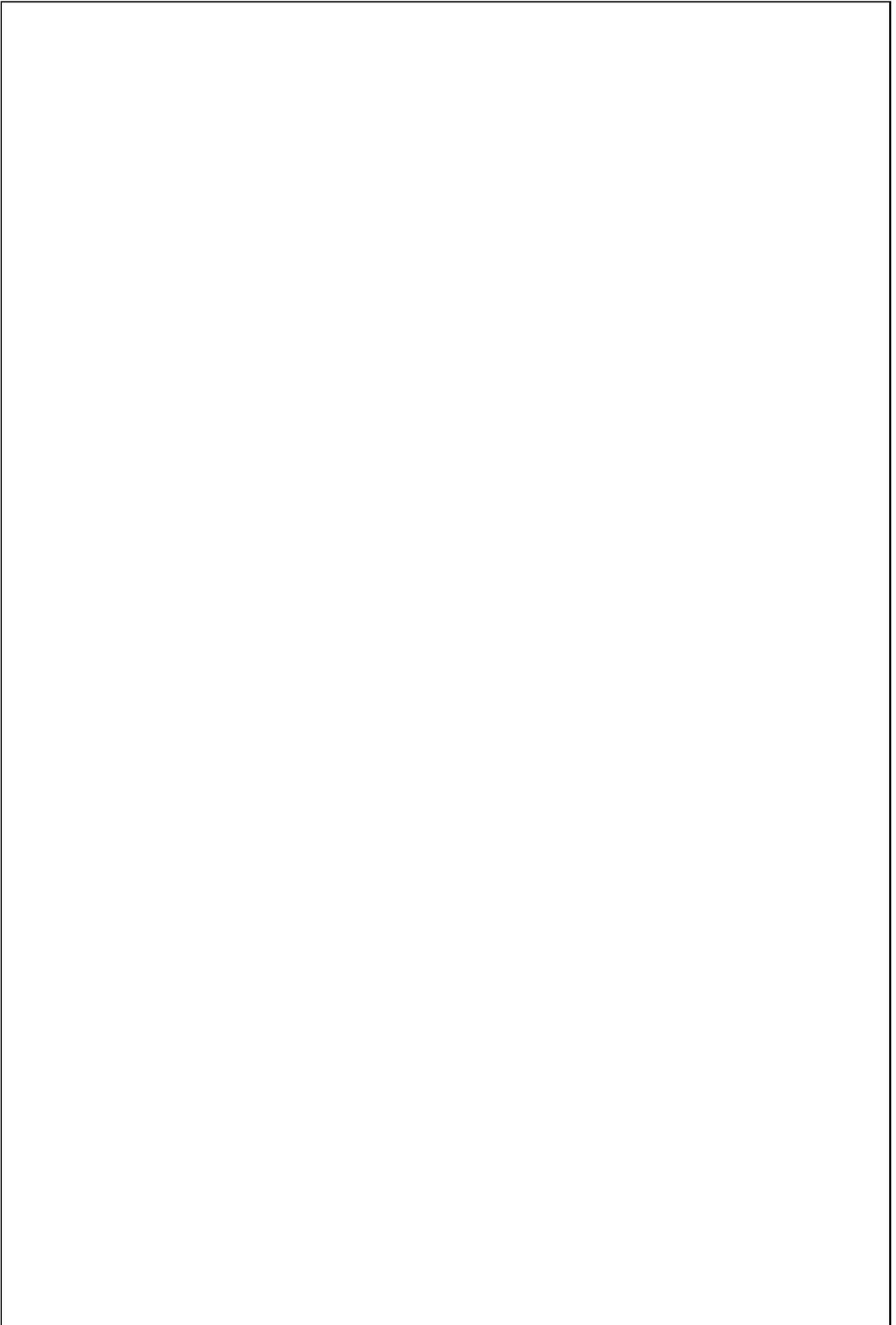
Describe the reasons for your choice based on the following (max. 1000 words):

- a. The city profile
- b. Citizen opinion and engagement
- c. Opinion of the elected representatives
- d. Discussion with urban planners and sector experts
- e. Discussion with suppliers/ partners

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## 11. KEY COMPONENTS

List the key components of your area-based development proposal (eg. buildings, landscaping, on-site infrastructure, water recycling, dual piping for water supply, etc.)? (max. 250 words)

## 12. SMART URBAN FORM

Describe the 'smart' characteristics of the proposed development that relate to urban form (eg. uncluttered public places, mixed-use, open spaces, walkability) and how these will be incorporated. (max. 250 words)

### 13. CONVERGENCE AGENDA

In Table 1, list the Missions/Programmes/Schemes of the Government of India (eg. AMRUT, HRIDAY, SBM, IPDS, Shelter for All, Digital India, Make in India, Skill India) and relevant external projects and describe how your proposal will achieve convergence with these, in terms of human and financial resources, common activities and goals. (max. 50 words per cell)

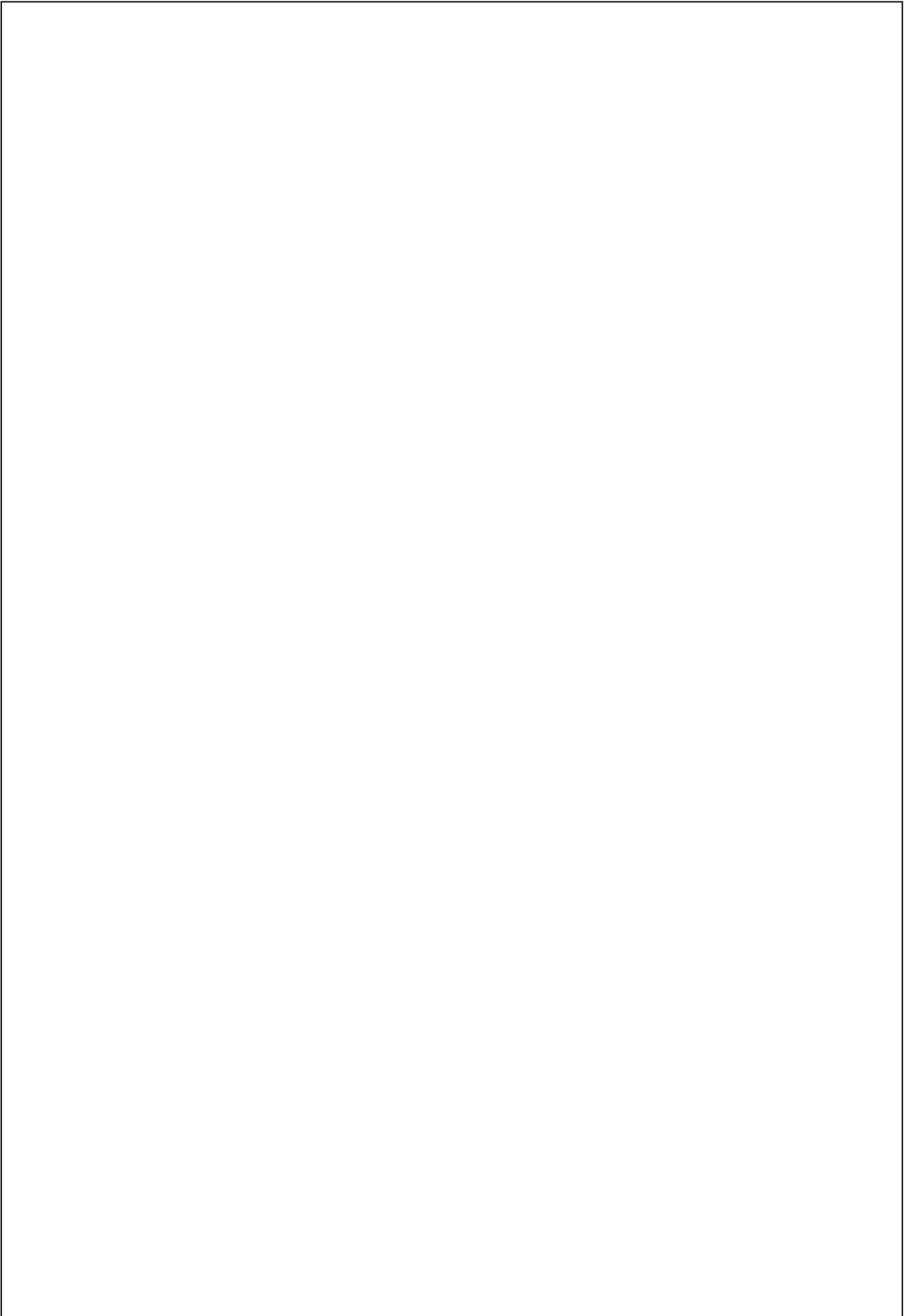
TABLE 1		
S.No	Mission/Programme/ Scheme/Project	How to achieve convergence
1.	G.O. (Ms) No. 171 of MA&WS (WS1) Department, dated 05.11.2013	The city has been sanctioned a term loan for INR 390.41 crore to improve water service delivery in the proposed area. In addition to the hard infrastructure to improve the quantum of water supply, smart city features will be implemented to ensure improved management.
2.	AMRUT Sanctioned project for improvements in Water supply distribution systems	The city has an existing AMRUT approved water supply distribution improvement project of INR 50 crore (adjusted to the proposed ABP). The smart city components will be applied in convergence with the proposed infrastructure. The city also has an approved sanction of INR 1.26 crore for park development
3.	Integrated Housing and Slum Development Programme (Administrative Sanctioned)	As part of the Integrated Slum Development Programme, about 513 houses have been identified for development (INR 1093 lakhs), till March 2015. About 60 houses (INR 1.27 crore) are planned to be developed in Ward 16. Also, as a part of convergence, the housing will follow new ENERGY EFFICIENCY policy.

4.	Providing Supply and Erection of Existing Energy Saver LED Fitting (Existing Contract)	The vellore city municipal corporation has an existing contract to convert all of its street lights to LED lights with an O&M contract at 3.75 Crore. Approximately <b><u>INR 0.68 crore</u></b> of the benefits from the proposed contract will accrue to the proposed area
5.	Skill India	The proposed integration of entrepreneurship education in universities and promotion of a new ecosystem for entrepreneur led job-creation aligns well with the Central Government's mandate of skill development and job creation, particularly in high-end R&D sectors
6.	Tamil Nadu Urban Livelihood Mission (TNULM)	Extensive skill Development is proposed to promote Septage management and the concept of septage management for masons and real estate developers. An extensive skill development can be carried out for recent graduates to setup integrated service center for all kinds of ICT systems
7.	Highways Department	State highway department has an existing DPR approved project to construct road over bridges The estimated cost of the project is INR 65 crore. Also there is an existing Administrative sanctioned project to develop road over bridge The overall cost of the project is estimated to be INR 45 Crore.
8.	Swachh Bharat Mission Urban	Under the SBM urban scheme, <b><u>INR 1.33 crore</u></b> of project has been approved to develop community toilets in the area.
9.	Directorate of Municipal Administration – GoTN	VCMC has been given AS to acquire land worth <b><u>INR 10 crore</u></b> and <b><u>INR 10.72 crore</u></b> for treatment of solid waste in 42 decentralized locations in the city.
10.	Department of Tourism	The Department of Tourism has administrative sanction to install signage boards in key locations of

		the city. The overall project budget is <b><u>INR 2.5 crore</u></b>
11.	The World Bank	As part of the smart city model, the World Bank has sanctioned <b><u>INR 120 crore</u></b> to VCMC to develop the city as a MODEL CITY in TAMIL NADU. The key sectors of focus are E-Governance, nethaji market re-development, development of hi-tech bus stand, pedestrian & cycling path and water augmentation.
12.	National Urban Health Mission	The National Urban Health Mission is investing <b><u>INR 1.11 crore</u></b> in the delineated area to setup health centre units to improve access to health services in the city
TOTAL CONVERGENCE THROUGH Govt. SCHEME		<b>INR 347.38 Crore</b>

## 14. CONVERGENCE IMPLEMENTATION

Describe how the convergence will be implemented? For example, convergence with IPDS will be credible if 'smart' city elements (e.g. smart metering, underground cabling, shifting of transformers) are included in the DPR being prepared for IPDS. If, a DPR has already been prepared, then the 'smart' elements should be included in the form of a supplementary DPR. Furthermore, according to the IPDS Guidelines the DPR has to be approved by the State Government and sent to the Ministry of Power, Government of India. All these have to be completed before submitting the proposal. (max. 350 words)



## 15. RISKS

What are the three greatest risks that could prevent the success of the area-based proposal? In Table 2, describe each risk, its likelihood, the likely impact and the mitigation you propose. (max. 50 words per cell)

TABLE 2			
Risk	Likelihood	Impact	Mitigation

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TABLE 2

Risk	Likelihood	Impact	Mitigation

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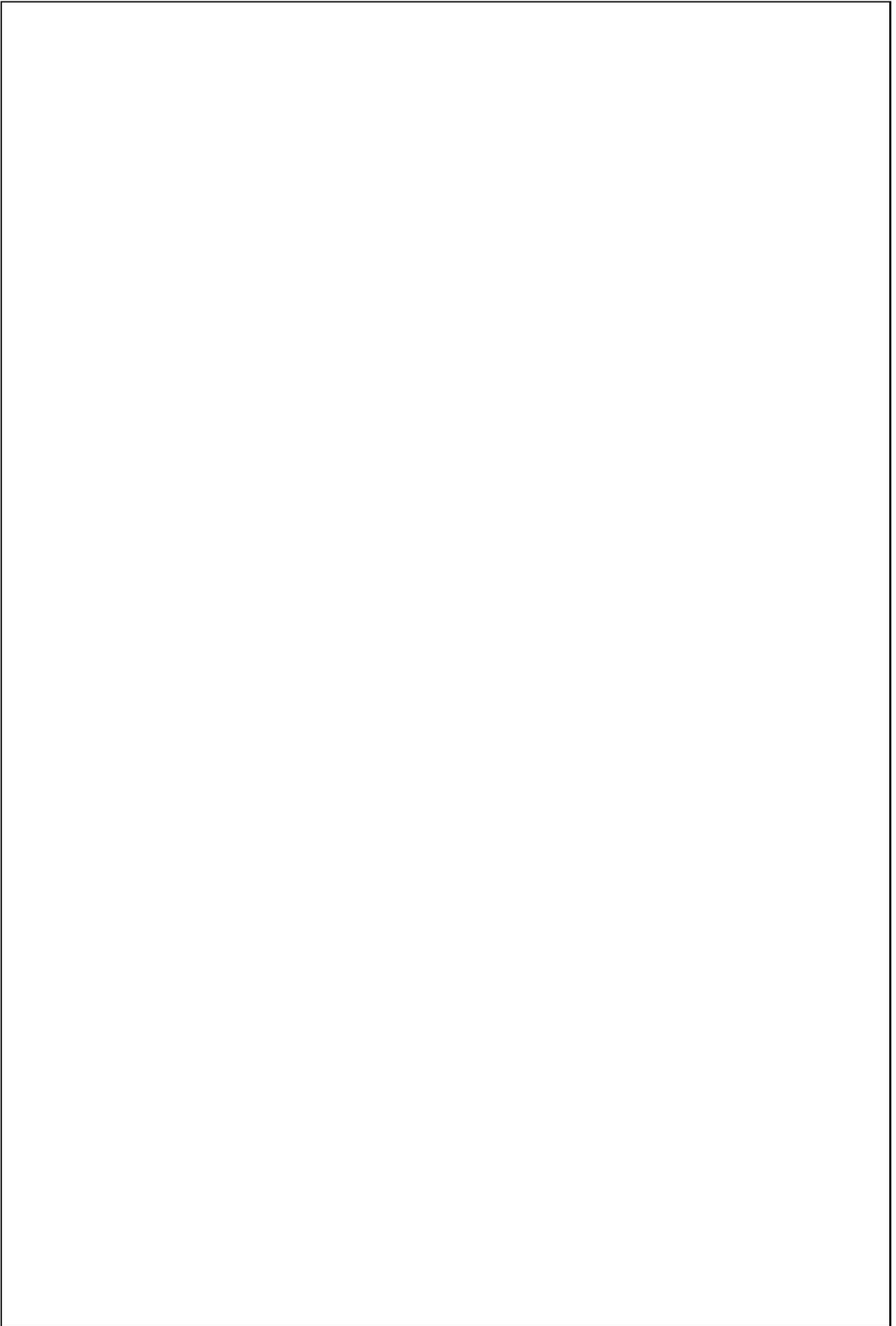
TABLE 2

Risk	Likelihood	Impact	Mitigation

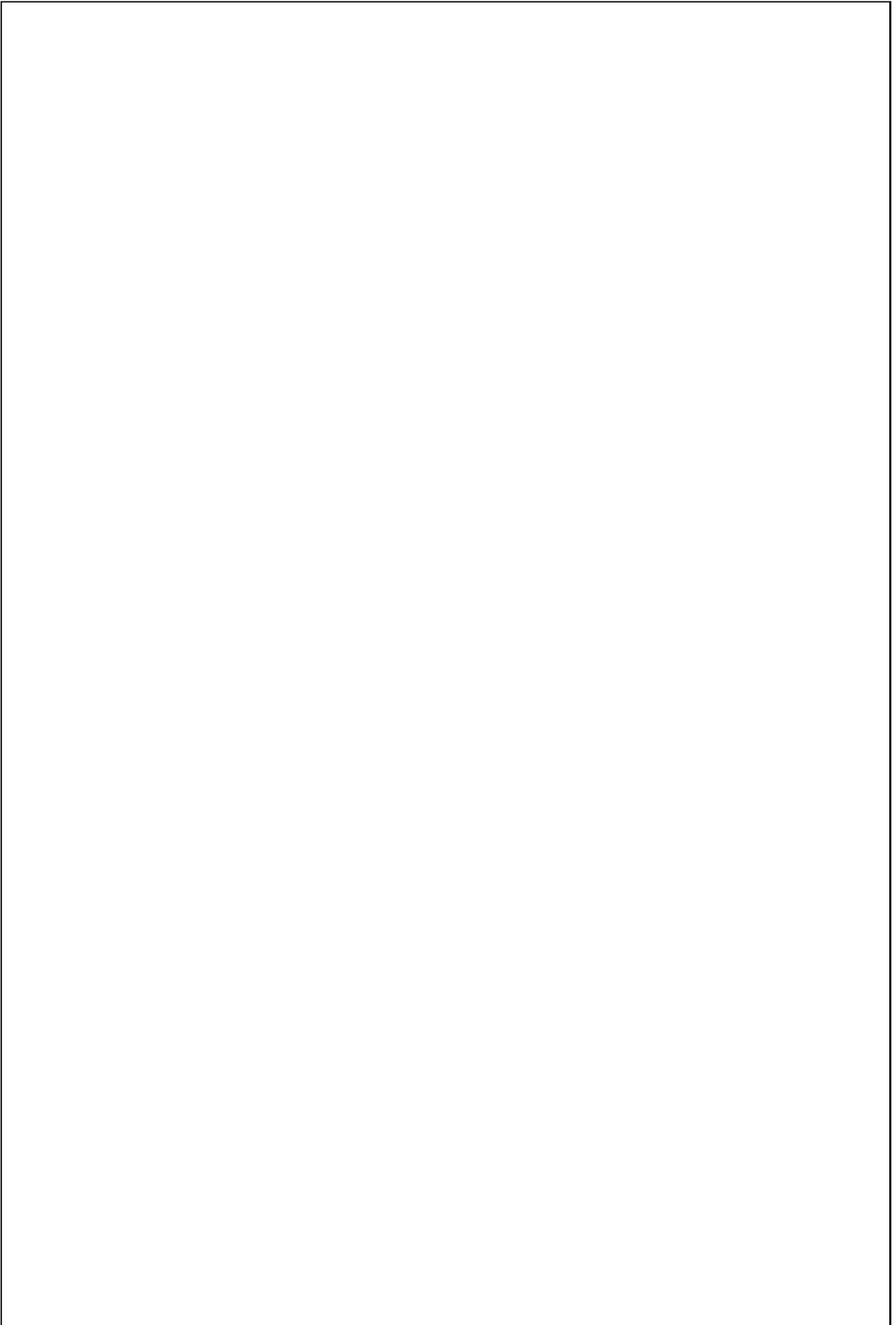
## 16. ESSENTIAL FEATURES ACHIEVEMENT PLAN

Describe a plan for achieving the Essential Features in your area-based proposal. Importantly, accessible infrastructure for the differently-abled should be included. List the inputs (eg. resources) that will be required for the activities that you will conduct, leading to the outputs. Please note that all Essential Elements, item-wise, have to be included in the area-based proposal. (max. 2000 words)

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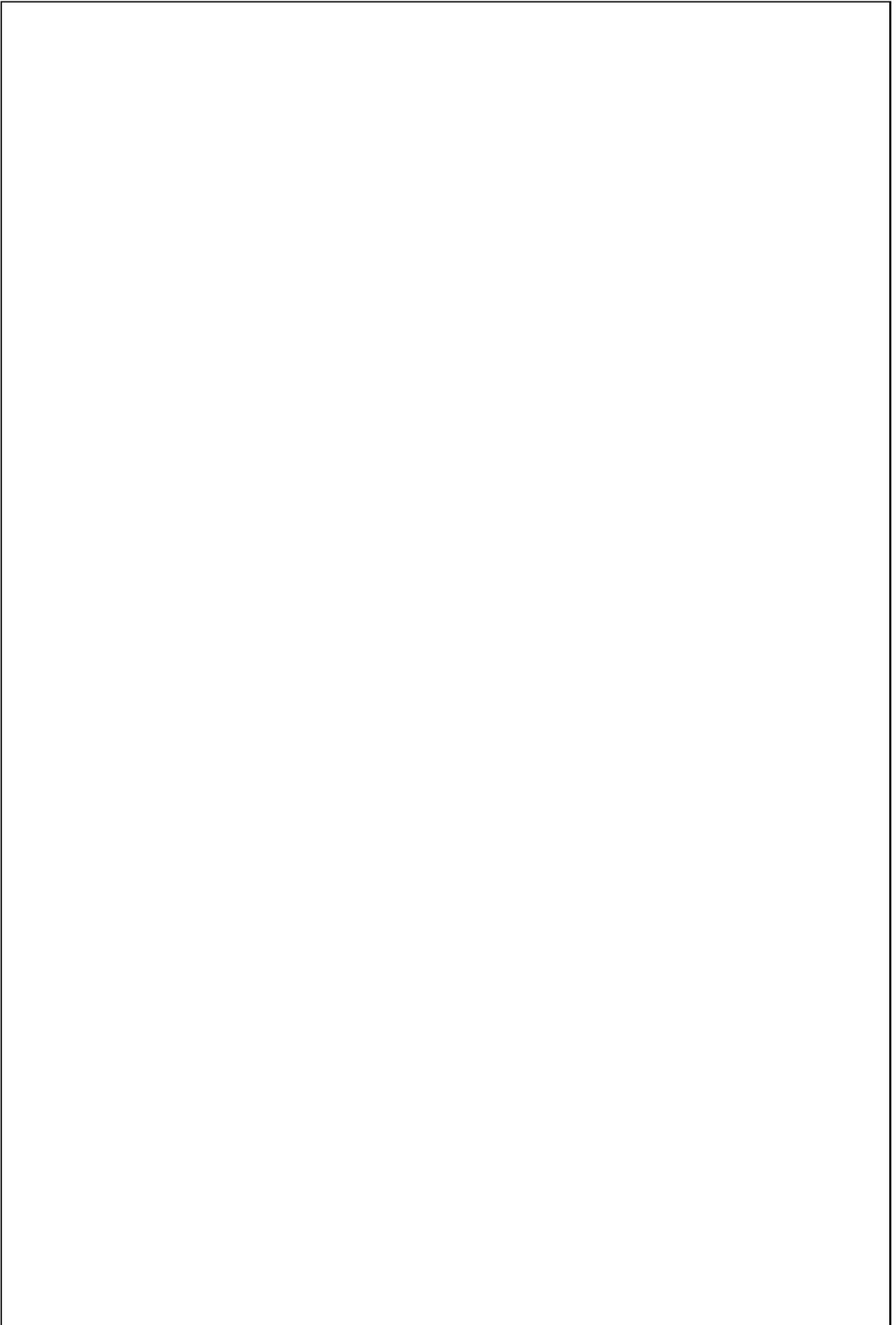




## 17. SUCCESS FACTORS

Describe the three most significant factors for ensuring the success of the area-based development proposal. What will your city do if these factors turn out to be different from what you have assumed?  
(max. 500 words)

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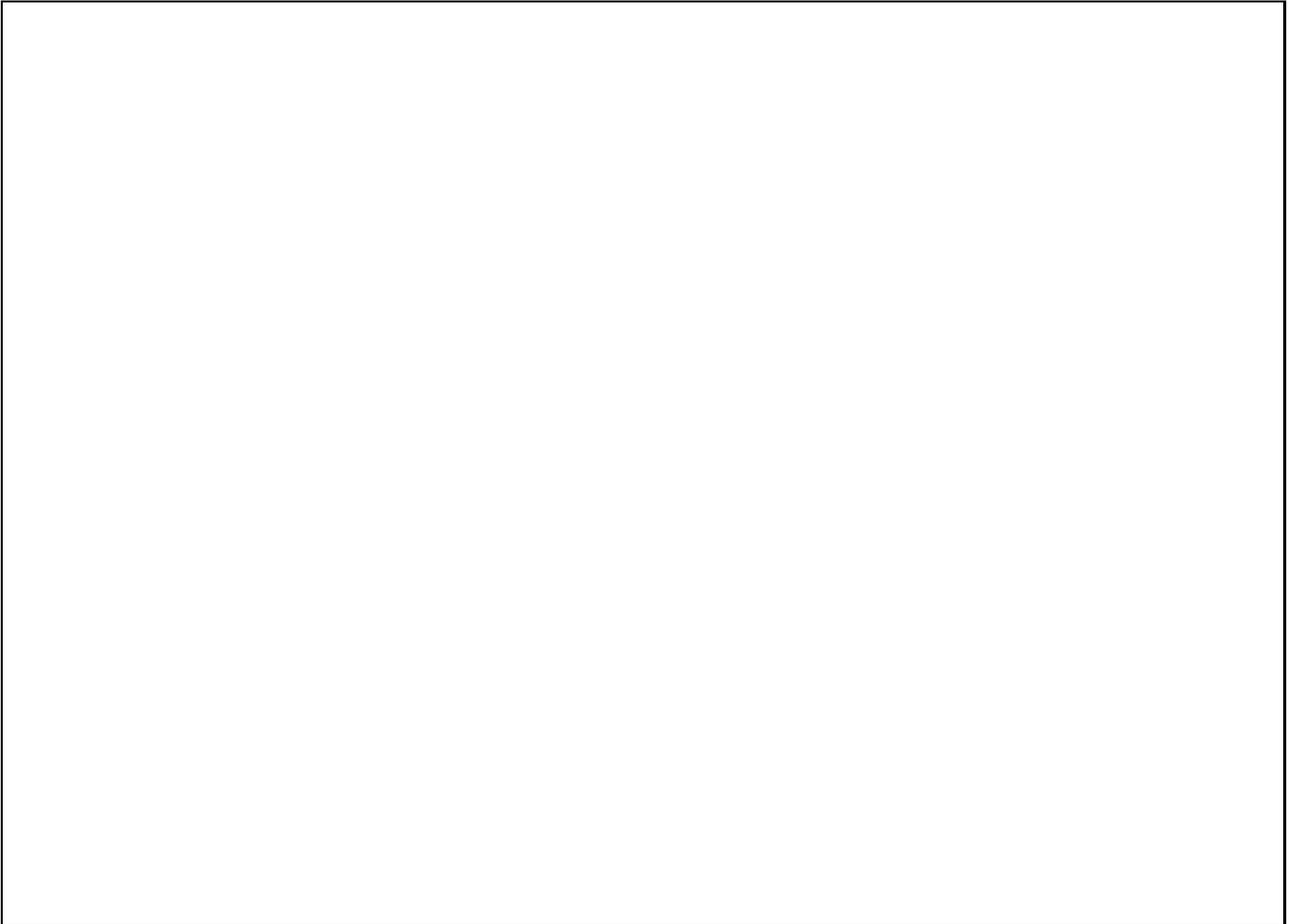
## 18. MEASURABLE IMPACT

What will be the measurable impact of the area-based development proposal, on the area and the wider city, through scale-up and replication? Please describe with respect to the five types below, as relevant to your city and proposals (max. 150 words each):

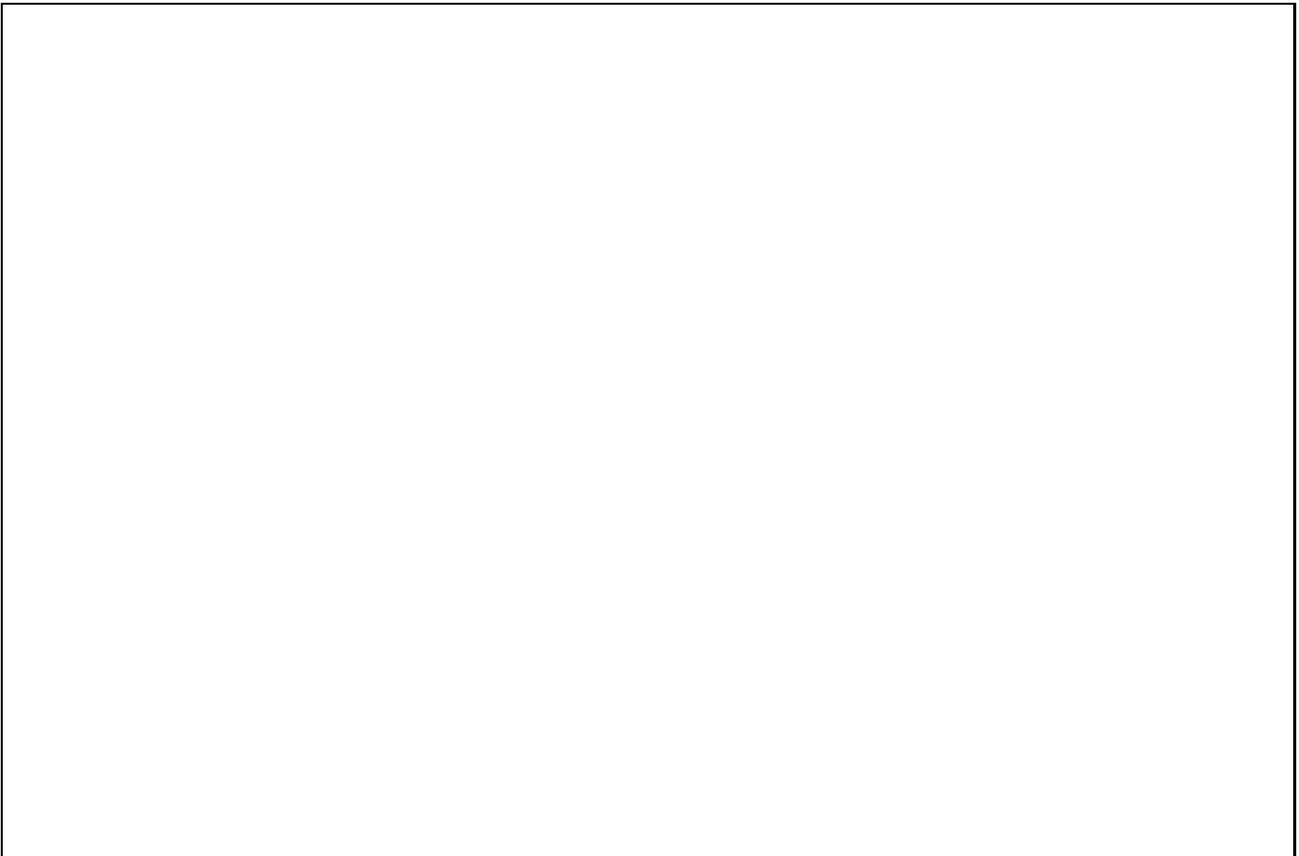
- a. Governance Impact (eg. improvement in service provision and recovery of charges due to establishment of SPV)

- b. Spatial Impact (eg. built form changed to incorporate more density or more public space)

c. Economic Impact (eg. new commercial space created for organized economic activity)

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d. Social Impact (eg. accessible features included in the Proposal)

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- e. Sustainability, including environmental impact (eg. intensive 24X7 use of public spaces results in reduced traffic and reduced pollution)



## C. PAN-CITY PROPOSAL (S)

A pan-city smart solution should benefit the entire city through application of ICT and resulting improvement in local governance and delivery of public services. The SCP should contain one or two such Smart Solutions. Generally, 'smartness' refers to doing more with less, building upon existing infrastructural assets and resources and proposing resource efficient initiatives.

### 19. SUMMARY

Summarize your idea(s) for the pan-city proposal(s). (max. 100 words)

## 20. COMPONENTS

List the key components of your pan-city proposal(s). (max. 250 words)

## 21. APPROACH & METHODOLOGY

What is the approach and methodology followed in selecting/identifying the pan-city proposal(s)?

Describe the reasons for your choice based on the following (max. 1000 words):

- a. The city profile and self assessment;
- b. Citizen opinion and engagement
- c. Opinion of the elected representatives
- d. Discussion with urban planners and sector experts
- e. Discussion with suppliers/ partners

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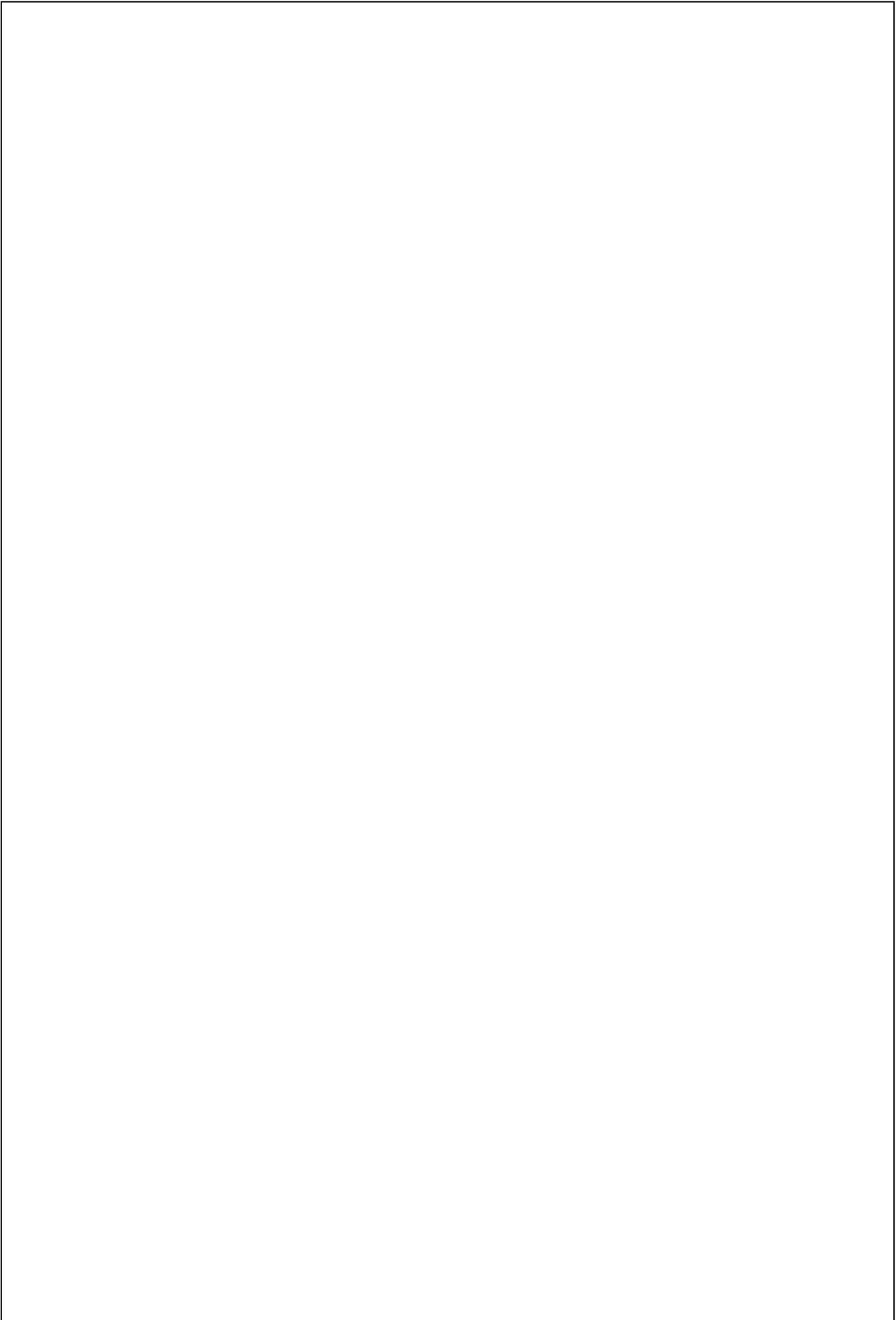
## 22. DEMAND ASSESSMENT

What are the specific issues related to governance and public services that you have identified during city profiling and citizen engagement that you would like to address through your pan city proposal(s)?

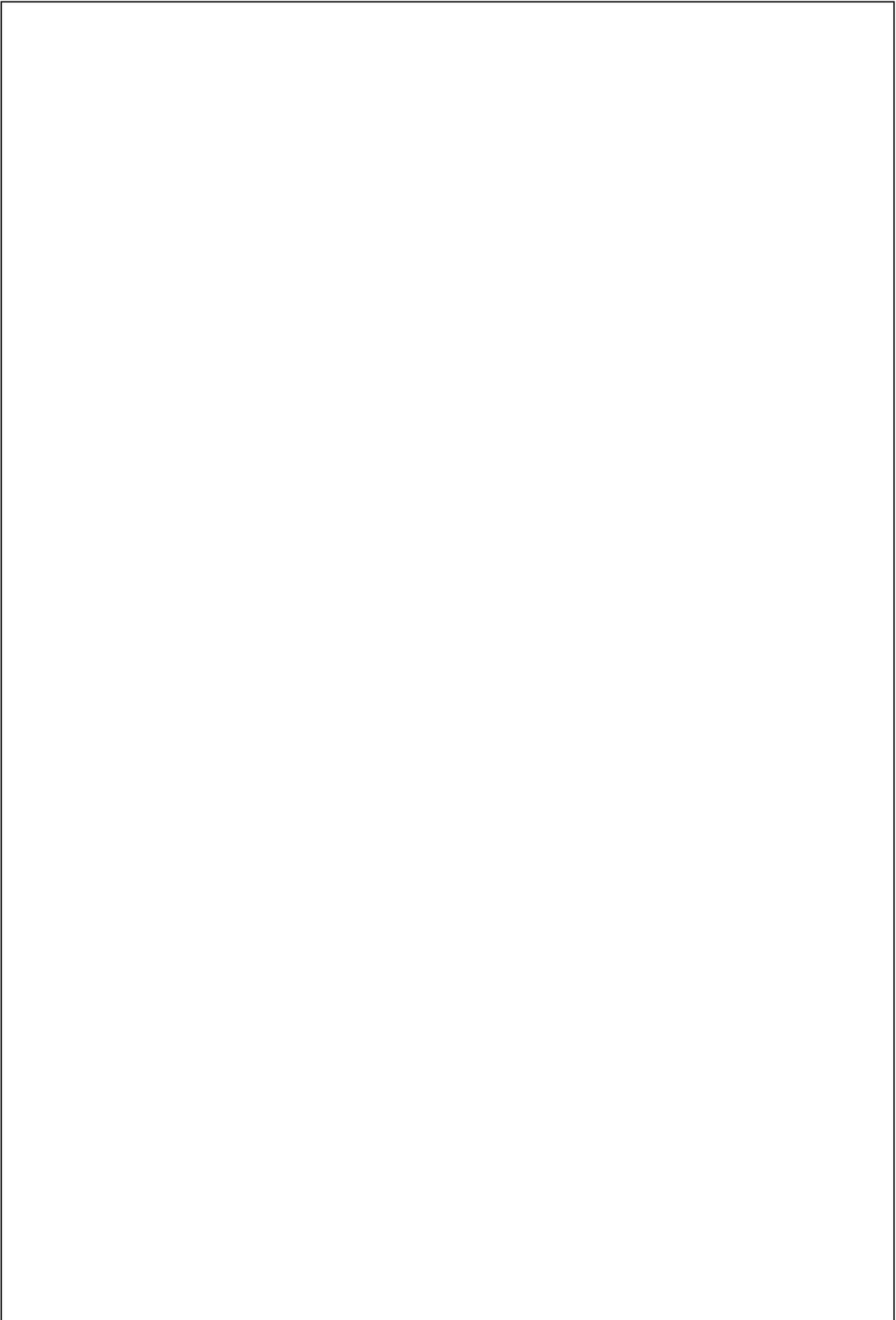
How do you think these solution(s) would solve the specific issues and goals you have identified?

(max.1000 words)

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## 23. INCLUSION

How inclusive is/are your pan-city proposal(s)? What makes it so? (max. 150 words)

## 24. RISK MITIGATION

What are the three greatest risks that could prevent the success of the pan-city proposal(s)? In table 3, describe each risk, its likelihood, the likely impact and the mitigation you propose. (max. 50 words per cell)

TABLE 3			
Risk	Likelihood	Impact	Mitigation

Continue on next page

TABLE 3

Risk	Likelihood	Impact	Mitigation

Continue on next page

TABLE 3

Risk	Likelihood	Impact	Mitigation

Continue on next page

## 25. FRUGAL INNOVATION

Which is the model or 'best practice' from another city that you are adopting or adapting in your proposal(s)? How are you innovating and ensuring best use of resources? Is there an aspect of 'frugal innovation' in your proposal(s)? (max. 500 words)

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## 26. CONVERGENCE AGENDA

In Table 4, list the Missions/Programmes/Schemes of the Government of India (eg. SBM, AMRUT, HRIDAY, Shelter for All, Digital India, Make in India, Skill India) and relevant external projects and describe how your proposal(s) will achieve convergence with these, in terms of human and financial resources, common activities and goals. (max. 50 words per cell)

TABLE 4		
S.No	Missions/Programmes/Schemes/Projects	How to achieve convergence
1		

Continue on next page

TABLE 4

S.No	Missions/Programmes/Schemes/Projects	How to achieve convergence
2		
3		
4		

Continue on next page

TABLE 4		
S.No	Missions/Programmes/Schemes/Projects	How to achieve convergence
5		
6		
7		

## 27. CONVERGENCE IMPLEMENTATION

Describe how the convergence will be implemented? (max. 350 words)

## 28. SUCCESS FACTORS

Describe the three most significant factors for ensuring the success of the pan-city proposal(s). What will your city do if these factors turn out to be different from what you have assumed? (max. 250 words)

Continue on next page

## 29. **BENEFITS DELIVERED**

How will you measure the success of your pan-city proposal(s) and when will the public be able to 'see' or 'feel' benefits: immediately, within Year 1, or in the medium or long term, 3-5 years? (max. 150 words)

### 30. MEASURABLE IMPACT

What will be the measurable impact of your pan-city proposal(s)? Please describe with respect to the following types given below, as relevant to your city and proposals (max. 150 words)

- a. Governance Impact (eg. government response time to citizen complaints halved, creating faster service delivery overall)

- b. Impact on public services (eg. real-time monitoring of mosquito density in the atmosphere reduces morbidity)

# D. IMPLEMENTATION PLAN

## 31. IMPLEMENTATION PLAN

In Table 5, describe the activities/components, targets, resources and timelines required to complete the implementation of your area-based development and pan-city solution/s. This should include the items mentioned as Essential Features in Q. No. 16 plus other 'smart' solutions, including accessible infrastructure for differently-abled. (max. 50 words per cell)

Table 5						
S . N o	Activity / Compon ent	Indicator	Baseline (As on )	Target	Resources required	Likely date of comp letion
			Dec 2015			
Area Based Development						
1	Establish ment of a Cultural and Public Informati on Centre	- Number of footfalls at information centre  - Number of events conducted in theatre hall	The city witnesses traffic of over 1 lakh people from other states. However there is no public information centre to guide tourists  The city currently lacks a	A platform to enable the citizens to participate and further their cultural interests  Promoting the city's tourism identity	Land Required: 2.06 Acre (90,000 sq.ft)  Theatre Hall: 12,000 sq.ft  Information centre: 3,000 sq.ft  Parking lot: 75,000 sq.ft  Finance:	Q3, FY17 -18

			platform for cultural expression in the form of music, dance and art.		INR 11.8 Cr.	
2	Creation of a Heritage Trail and Development of the fort	<ul style="list-style-type: none"> <li>- Number of viewers for the Vellore heritage Audio-Visuals</li> <li>- Number of users accessing boating facilities</li> <li>- Number of events conducted in fort lawn</li> <li>- Number of users accessing mobile water dispensaries and mobile e-toilet facilities around the heritage sites</li> </ul>	<p>Though the fort museum has several artefacts the visitor experience remains limited owing to the absence of guided tours</p> <p>Absence of easy access to water and toilet facilities in fort is another concern</p>	<p>Tourists visiting fort museum can use the city's heritage app to view audio visuals of artefacts.</p> <p>Boating &amp; fort lighting will be available round the year</p> <p>Easy access to mobile water dispensaries and mobile e-toilet facilities</p>	<p>HR:</p> <ul style="list-style-type: none"> <li>- Fort moat desilting expert</li> <li>- Heritage &amp; architectural experts</li> <li>- Audio-visual content developers</li> <li>- Illumination design expert</li> </ul> <p>Finance: 52.65 Cr.</p>	Q3, FY17 -18
3	Sky Observatory along with	<ul style="list-style-type: none"> <li>- Number of users accessing walking and cycling trails in the</li> </ul>	Encroachments and open defecation and waste dumping	Dedicated walking, cycling and disabled friendly trails	Land required for sky observatory: 15,000 sq.ft	Q3, FY17 -18

	hiking trail	<p>sathuvachari hills</p> <ul style="list-style-type: none"> <li>- Number of users accessing sky view observatory</li> <li>- Number of meetings conducted in sky-view amphitheatre</li> <li>- Number of users accessing toilets</li> </ul>	practices are reported along the mountain ridge	<p>and DCRs on foothills of sathuvachari</p> <p>Construction / retrofitting of public toilets as smart E-toilets in the foothills</p> <p>Provision of walking and hiking trails on sathuvachari hills and creation of Sky-view observatory on top of the hill</p>	<p>HR:</p> <ul style="list-style-type: none"> <li>- Space Research Expert</li> <li>- Amphitheatre design expert</li> <li>- Mountain trail developers</li> </ul> <p>INR 6.4 Cr.</p>	
4	Centres of Immersive learning	<ul style="list-style-type: none"> <li>- Number of users accessing Science Park</li> <li>- Number of rooftop gardening units sold</li> <li>- Total revenue generated from spot zoning</li> </ul>	The city is already is renowned for hosting 2 premiere educational institutions and seeks to strengthen its image as a	Development of science park to create a centre for immersive learning for the student community.	<p>HR:</p> <ul style="list-style-type: none"> <li>- Science &amp; technology Researchers</li> <li>- Horticulture experts</li> <li>- Riverfront development specialists</li> </ul> <p>Finance:</p>	Q3, FY17-18

		hawking zone within parks	'learning hub'.		INR 20.60 Cr.	
5	Make-In-India Incubation Centre	- Number of student ideas incubated  -Number of new ventures hosted	Despite possessing premiere technical institutions like VIT and CMC there is a clear absence of launch pads to incubate key projects beyond the completion of their formal schooling system.	Vellore will evolve as a hub for 'innovation and entrepreneurship' in technology,	Land: 12,000 sq.ft  To be implemented as a PPP, where the corporation only provides land	Q1, FY17-18
6	Redevelopment of the Garage Centre	- FSI/FAR - Mixed use - Change in property tax assessments	Old bypass road at the heart of the city hosts about 100 garage workshops catering to heavy vehicle service. This is seen to cause congestion	It has been proposed to relocate the garage centres outside the city. A clear set of DCRs will be developed and enforced to demonstrate	Land: Provision of land for garage centre near the National Highway outside the city  - Clear DCR guidelines on future	Q1, FY18-19

			and also is seen to impair the city's infrastructure	the principles of TOD	development - No financial investment will be made into the area by the SPV as the land is privately owned.	
7	Smart Parking	<ul style="list-style-type: none"> <li>- Number of bikes accessing parking services</li> <li>- Number of Cars accessing parking services</li> <li>- Overall occupancy of the parking lot</li> </ul>	No dedicated parking spaces near prime commercial zones, leading to infringement into public streets	A dedicated (timed) parking space with smart features such as online booking and availability tracking, cash less payment will be created	Land: 2 Acre (near New Bus Terminus)  1 Acre (near CMC Hospital)  ICT service providers  Finance: INR 58.53 Cr.	Q4, FY17-18
8	NMT and Pedestrian network	<ul style="list-style-type: none"> <li>- Length of bicycle track &amp; pedestrian path</li> <li>- Number of benches per km of pedestrian path</li> <li>- Number of water</li> </ul>	Less than 2% of the city is pedestrian zed and most locations lack dedicated cycling tracks to encourage non	The proposed area is expected to host 16km of pedestrian pathways and NMT pathways, 0.7km of no-	HR: - Experts on sustainable transport management - ICT service	Q2, FY17-18

		dispensary units available per km of pedestrian path - % of street length converted as no-parking Zone, No-Vehicle Zone & Timed Parking Zone	motorized transport in the city	vehicle zone, 1.6km of no-parking zone and 0.7km of Timed-parking zone. The proposal also focuses on creation of water dispensaries and benches along the NMT pathways	providers  Finance: INR 12.95 Cr.	
9	Sensor Based Accident Prevention System	- % reduction in incidence of accidents near junctions	The city is presently split into 4 quadrants by the National Highways NH 234 & NH 46 and these highways act as a primary corridor for intra-city commute and key junctions intersecting with the highway is	Motion sensor based alarm systems to prevent the incidence of accidents at key junction proposed	HR: - Road safety expert  - Capacity Building Expert  Finance: INR 5.55 Cr.	Q1, FY17-18

			prone to accidents			
10	Emergency Response Systems	<ul style="list-style-type: none"> <li>- Number of accidents</li> <li>- average response time</li> <li>- Utilization rates of the system</li> </ul>	No single window emergency response service system	The express emergency response is a mobile app and telephone based system aimed at notifying the central room and the nearest emergency response system automatically with precise location.	HR: <ul style="list-style-type: none"> <li>- Safety Expert</li> <li>- ICT service providers (hardware and software)</li> <li>- Capacity Building Expert</li> </ul> Finance: INR 7 Cr.	Q4, FY16-17
11	Low cost overflow prediction of underground sewer lines	<ul style="list-style-type: none"> <li>- Number of overflow events registeres</li> </ul>	24/60 wards have been covered with UGSS systems and is going to be operationalized from FY2016-17. However there are no monitoring system to	The proposed plan seeks to put in place sensors to ensure that sewage overflow on roads is prevented pro-actively	HR: <ul style="list-style-type: none"> <li>Sewer Network Modelling Expert</li> </ul> Finance: INR 0.48 Cr.	Q4, FY16-17

			prevent overflow of sewage in the city			
11	Septage Management MIS and Sanitation Infrastructure	-average number of tanks desludged - average number of users of the septage mobile app - % increase in the number of septic tanks compliant with CPHEEO norms	Out of the 12 proposed wards for ABD, 4 wards are uncovered by UGSS. The existing sanitation solution is only through household septic tanks or community toilets connected to septic tanks	The city has proposed to move towards 100% septage management and as a pilot study, is trying to develop this in the delineated area.	HR: - Septage Management Expert - ICT service providers - Empanelled Desludging vehicle operators Septage Management Database, ICT service providers  Finance: INR 4.61 Cr.	Q2, FY17-18
12	Real-time Water Supply & quality monitoring systems and	- Number of users accessing missed call based water supply distribution timing identification systems	Presently water supply is unmetered in the city. Also, there is no city based water quality monitoring systems.	It is proposed to monitor water quality in every sump before distribution in the proposed area.	HR: - Water management expert - Online payment gateway and related ICT	Q3, FY16-17

	smart metering	<p>-Increase in cost recovery owing to metering</p> <p>- Reduction in water losses owing to better measurement and management</p>	There is no clear notification on distribution of water supply in the network	<p>Water meters are proposed to be installed in all households (except LIGs) and commercial establishments to impose differential pricing.</p> <p>Users can get notifications on water supply distribution timing through Missed call based messaging systems</p>	<p>service providers</p> <p>Finance: INR 18.94 Cr.</p>	
13	Improved SWWD and Flood prediction DSS for Storm	<p>-% reduction in incidence of overflow</p> <p>-% of closed drain network to the total road network in the proposed area</p>	Only 2% of the existing storm water drain network is closed. City faces a potential threat of Water	100% closure of drain network in the proposed area and sensor based monitoring system for rate of water	<p>HR:</p> <ul style="list-style-type: none"> <li>- Storm water drain flow modelling expert</li> <li>- ICT service providers</li> <li>- Data scientist</li> </ul>	Q3, FY16-17

	Water Drains		<p>flooding during rains.</p> <p>Also, there is no scientific planning on the rate of water outflow to be planned</p>	flow in the network	Finance: INR 81.10 Cr.	
14	Smart Toilets	<ul style="list-style-type: none"> <li>- Number of toilet seats available per capita</li> <li>- % utilization of power from Solar to the total power utilization per toilet</li> <li>- Number of complaints reported per toilet</li> <li>- Average response time for refilling water from the time of alert</li> </ul>	<p>Public Toilets are available across the city however they are inaccessible due to physical damage / poor maintenance. Water is poorly distributed to these facilities.</p>	<p>Existing toilets will be retrofitted and new toilets in every bus stand will be constructed as E-Toilets. Facilities such as automatic pour flushing, automatic reporting of poor water levels &amp; citizen feedback from every toilet on cleanliness levels will be added smart</p>	<p>HR: - ICT expert - E toilet vendors/specialists</p> <p>Finance: INR 8.13 Cr.</p>	Q4, FY16 -17

				features to the toilets		
15	Energy Efficiency measures and Underground Cabling	<p>- Presence of energy efficiency policy</p> <p>- % of commercial establishments with solar panels</p> <p>% reduction in O&amp;M costs associated with repairs and maintenance by Tangedco in the area</p>	<p>Poor quality energy monitor meters, incapable of recognizing accurate power consumption.</p> <p>About 5% of overall energy consumption goes unrecorded</p> <p>All electricity distribution systems are overhead and about 60% of TNEB's O&amp;M is owing to wear &amp; tear</p>	<p>Quality energy meters will be installed (except LIGs) in all households and commercial establishments</p> <p>The area will have 100% Underground cabling, kiosk &amp; online payments</p>	<p>HR:</p> <ul style="list-style-type: none"> <li>- Energy Expert</li> <li>- Private investor for solar panels</li> </ul> <p>Finance: INR 152.94 Cr.</p>	Q4, FY16 -17
16	Energy efficient Street lights	- % of energy efficient lighting systems (LED, Solar & Biogas based)	Presently about 66% of city's street lights are LED lights and there is	100% of street lights will be converted as LED lights.	<p>HR:</p> <ul style="list-style-type: none"> <li>- ICT expert</li> <li>- Energy efficiency experts</li> </ul>	Q4, FY16 -17

		<p>- % of burning lights in the last three months</p> <p>- % reduction in cc charges for street lights</p>	<p>an existing contract to convert 100% of street lights with LED lights with 10 year O&amp;M contract.</p>	<p>Web based monitoring systems will also be developed to monitor the street light operating efficiency</p>	<p>Finance: INR 5.18 Cr.</p>	
17	Signage Boards	<p>- % of signage boards to the total number of junctions</p> <p>- % of pedestrian signage boards with local maps to total number of junctions</p>	<p>There are no clear signage boards on roads to enable easy navigation</p>	<p>It is proposed to have more pedestrian friendly roads with signage in every junction of the city to explain the nearby locality</p> <p>Also, key nodes in the city are proposed to have directional signages with road names and neighbourhood maps</p>	<p>Finance: INR 0.88 Cr.</p>	<p>Q4, FY16 -17</p>

18	SWM collection, recycling and recovery facilities	<p>- % waste recycled against collection</p> <p>- Total revenue generation by resale of recovered waste</p>	The inorganic waste is manually separated by operators and the recyclable waste is sold and the non-recyclable waste is sent to landfill	The collected inorganic waste will be automatically segregated and bailed for easy transportation to sellers. The non-recyclable inorganic waste will be utilized in pyrolysis plant. The inert waste from roads will be automatically collected using machines and sent to landfill	84.81 Cr	Q4, FY16 -17
19	Tertiary treatment plant and distribution	- % Utilization of recycled wastewater	Presently secondary level treated wastewater is sent to eri for groundwater recharge	The proposed tertiary treatment plant will improve the recycled wastewater quality and	46.58	Q4, FY16 -17

				be distributed to fort moat, firestation recharge units, dual plumbing in government buildings		
20	Connectivity Plan	<ul style="list-style-type: none"> <li>- % of the proposed area covered with wi-fi connectivity</li> <li>- % of users per wi-fi hot spot</li> </ul>	No comprehensive plan to expand broadband connectivity in the city	ISP will offer free internet access for 30 minutes in any part of the area	HR: <ul style="list-style-type: none"> <li>- Network design expert</li> <li>- Internet Service Providers (ISPs)</li> </ul> Finance: INR 5 Cr.	Q1, FY17-18
21	Integrated Open Data Portal	<ul style="list-style-type: none"> <li>- Terabytes of data collected from ICT system facilities per year</li> <li>- % of data analyzed to overall data collected</li> <li>- Number of advisory support meetings conducted by</li> </ul>	Presently VCMC and all the line departments under District Collectorate do not monitor the service delivery levels on a real-time basis. Often mid-course	Creating a culture of data based decision making in the corporation and strengthening tie-ups between academia and the ULB	HR: Data Scientists ICT service providers	Q3, FY16-17

		SPV with line departments - Improvement in Service delivery in Sectors invested by “Smart City SPV” over years	correction of critical projects are rather expensive and cumbersome across line-departments			
Pan-City Solution						
22	Decongestion of traffic & Improvement in last mile connectivity in the city	Presence of traffic regulations & real estate policy  Reduction in number of external commercial vehicles and buses in the city  %of total intra-city buses to the total number of buses in the city  Average number of	The city is currently congested with external buses and commercial vehicles. The timing of public transportation remains unpredictable.  Close 35% of the city is unconnected by the bus network.	City plans to divert all commercial vehicles and external buses from 6A.M – 10P.M.  This traffic diversion is likely to improve real estate in underdeveloped areas. The city has envisaged the need for DCR and Real Estate Policy for the City	HR: Private player involvement for buses and feeder system procurement and operations	Q3, FY16 -17

		<p>passengers using public transport per day</p> <p>Ratio of number of feeder vehicles per intra-city bus</p>		<p>The city also plans to</p> <p>a. improve the number of intra-city buses from 80 to 200 buses</p> <p>b. Introduce auto rickshaw based feeder system to help connect people to arterial roads easily</p>		
23	Intelligent Public Transport Systems & Traffic modelling systems	<p>- % of intra-city buses and feeder system with GPS tracking capabilities</p> <p>- % of bus stops and feeder point spots with</p>	No efforts to pro-actively create, analyse and use traffic data to de-congest the city	The city proposes to create an ICT layer over the integrated system of feeders (400 tata magic vehicles) and buses (200 buses) to	<p>HR</p> <p>- ICT expert</p> <p>Finance:</p> <p>INR 1.11 Cr.</p>	Q3, FY16 -17

		<p>electronic digital boards</p> <p>- % of intra-city buses with electronic display units, multi-lingual capabilities and with electronic ticketing system</p> <p>- % of vehicles tracked by traffic modelling systems</p>		effectively monitor , manage and enhance the proposed service		
24	ICT enabled Integrated Waste Management systems	<p>% of GIS enabled refuse collection vehicles</p> <p>% of households &amp; commercial establishments evaluated for waste segregation efficiency</p>	<p>The city government has moved towards decentralized waste management systems recently but does not have the required supporting infrastructure to monitor and regulate</p>	<p>The city proposes to establish end-end ICT enabled waste monitoring solution</p>	<p>HR: Solid Waste Management Expert ICT Expert</p> <p>M&amp;E framework for waste segregation efficiency; City cleanliness monitoring framework</p>	<p>Q3, FY16 -17</p>

		<p>% of refuse collectors evaluated by M&amp;E team in decentralized waste collection centers</p> <p>% of nodal officers evaluating city cleanliness per day</p> <p>Number of complaints received through mobile app regarding citizen cleanliness</p>	household behaviour		INR 1.37 Cr.	
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## 32. SCENARIOS

Using information from Table 5, describe the critical milestones, realistic timelines and sequencing of efforts and events that you are projecting as the short -, medium- and long-term scenarios for your smart city. If necessary, include PERT and CPM charts in Annexure 3. (max. 500 words)

Sl. No.	Milestone	Scenario	Timeline	Remarks
1.	Inception Meeting with all the concerned Stakeholders (DMA, MC, DC, State Representative, Mayor, others)	Immediate	Month 0 to 1 <sup>st</sup>	<ul style="list-style-type: none"> <li>For agreement on detailed work plan with assignment of roles and responsibilities to different agencies / department</li> </ul>
2.	Formation of Internal Committee for overall supervision and coordination	Immediate	Month 0 to 1 <sup>st</sup>	<ul style="list-style-type: none"> <li>The Committee would act as Interim Committee till the formation of the SPV, Inter-Departmental Task Force, Smart City Advisory Forum,</li> </ul>
3.	Formation of Vellore Smart City Advisor Forum	Short Term	Months 1 <sup>st</sup> to 2 <sup>nd</sup>	-
4.	Formation of the City level SPV	Short Term	By end of 3 <sup>rd</sup> Month	<ul style="list-style-type: none"> <li>To be constituted in parallel to #2</li> </ul>
5.	Formation of Inter Departmental Task Force	Short Term	By end of 3 <sup>rd</sup> Month	<ul style="list-style-type: none"> <li>To be constituted in parallel to #2</li> </ul>
6.	Receipt of MoUD Grants to the SPV	Medium Term	Month 3 <sup>rd</sup> to 4 <sup>th</sup>	<ul style="list-style-type: none"> <li>Sequential to #4</li> </ul>

7.	Preparation of Terms of Reference for Engagement of Consultants for undertaking detailed feasibility studies for the projects identified under Area based and Pan City Initiative	Medium Term	Month 1 <sup>st</sup> to 2 <sup>nd</sup>	<ul style="list-style-type: none"> <li>▪ Parallel to #4</li> </ul>
8.	Appointment of Consultants for Feasibility Study and Transaction Advisory (wherever required)	Medium Term	Month 2 <sup>nd</sup> to 4 <sup>th</sup>	<ul style="list-style-type: none"> <li>▪ Sequential to #6</li> </ul>
9.	Finalisation of Project Feasibility Study and Tender Documents for selection of developers	Medium Term	End of 9 <sup>th</sup> Month	<ul style="list-style-type: none"> <li>▪ Sequential to #8</li> </ul>
10.	Operationalisation of City level SPV (Appointment of CEO and Core Team)	Medium Term	End of 6 <sup>th</sup> Month	<ul style="list-style-type: none"> <li>▪ To be undertaken in parallel to #6, #7 &amp; #8.</li> </ul>
11.	Formulation and Passing of relevant Regulatory Bye-laws and Acts	Medium Term	Month 6 <sup>th</sup> to 12 <sup>th</sup> onwards	<ul style="list-style-type: none"> <li>▪ To be undertaken in parallel to</li> </ul>
12.	Enforcement of Regulatory Bye-laws and Acts	Medium Term	Post Month 12 <sup>th</sup>	<ul style="list-style-type: none"> <li>▪ To be undertaken in parallel to #12</li> </ul>
13.	Appointment of Project Management Consultants	Medium Term	Month 6 <sup>th</sup> to 9 <sup>th</sup>	<ul style="list-style-type: none"> <li>▪ Sequential to #4</li> </ul>
14.	Selection of Project Developers (EPC Contractors / PPP Partners / Vendors)	Long Term	Month 6 <sup>th</sup> to 9 <sup>th</sup>	<ul style="list-style-type: none"> <li>▪ Sequential to #13</li> </ul>
15.	Financial Closure of Projects (Area Based and Pan City Initiatives)	Long Term	Month 15 <sup>th</sup> to 18 <sup>th</sup>	<ul style="list-style-type: none"> <li>▪ Sequential to #14</li> </ul>

16.	Project Construction/Procurement	Long Term	Month 18 <sup>th</sup> to 48 <sup>th</sup> Month	▪ Sequential to #15
17.	CoD of Projects	Long Term	24 <sup>th</sup> Month onwards	▪ Sequential to #16
18.	Operation and Maintenance of Projects	Long Term	24 <sup>th</sup> Month onwards	▪ Sequential to #17
19.	Project Monitoring	Long Term	24 <sup>th</sup> Month onwards	▪ Sequential to #18

### 33. SPV

The SPV is a critical institution for the implementation of the Proposal. Describe the SPV you propose to create in your city, with details of its composition and structure, leadership and governance, and holding pattern. Based on your responses in Table 6 describe how you envision the SPV to fulfill the role set out in the Mission Guidelines. (max. 500 words)

<b>Table 6</b>		
<b>(CHECKLIST: supporting documents for 1-7 must be submitted in Annexure 4)</b>		
<b>S. No.</b>	<b>Activity</b>	<b>Yes/No</b>
1.	Resolution of the Corporation/Council approving Smart City Plan including Financial Plan.	Yes
2.	Resolution of the Corporation/Council for setting up Special Purpose Vehicle.	Yes
3.	Agreement/s with Para Statal Bodies, Boards existing in the City for implementing the full scope of the SCP and sustaining the pan-city and area based Developments.	Yes
4.	Preliminary human resource plan for the SPV.	Yes
5.	Institutional arrangement for operationalisation of the SPV	Yes
6.	If any other SPV is operational in the City, the institutional arrangement with the existing SPV	No
7.	Additional document/s as appropriate	Yes

Given the large number of projects proposed for the city with several likely to be implemented in PPP mode, a two tier SPV structure would be amenable for efficient implementation, governance and ring-fencing of projects. The two tier SPV structure would involve a 'City level SPV' and 'Project specific SPVs.' The City level SPV will be a limited liability company incorporated under the Indian Companies Act 2013 with the City Corporation and GoTN having 50% equity stake each. The SPV would identify and liaison with appropriate financial institutions including those promoted by the Government of Tamil Nadu for equity participation in the City level SPV at a later stage. The City level SPV would function as a Project Development and Investment Company that would undertake preparatory studies for the identified projects, invest in the project specific SPVs for PPP projects and fund other EPC projects directly.

A three tier structure is proposed for the City level SPV for smooth operations. At the helm of affairs, the SPV would have a strong Board chaired by the Director of Municipal Administration, DMA. The Board would be responsible for strategic decision making and overseeing the targeted achievements of the Smart City Mission Guidelines. The Board would have representative from the Finance Department, Government of Tamil Nadu, Representative from MOUD, Commissioner, Vellore City Municipal Corporation, Chief Executive Officer as Directors. In addition, there would be two Independent Directors. The Board will be assisted by a panel of Eminent Experts from Economic, Finance, Planning, Policy, Sectoral and Technology for advise on critical matters.

The City level SPV would be managed by an able and experienced Chief Executive Officer who would be selected and appointed through a competitive process from the industry. The CEO would be support by a core team and support staff spread across four verticals – Planning, Finance, Projects and General Administration. The Planning division will be led by Chief Planner and will have a Smart City Planner, Citizen Engagement Expert, Technology Expert, Relief & Rehabilitation Officer, Senior Economists and a Scientist. The Finance division will be headed by the Chief Financial Officer who would be supported by Senior Manager (Finance), Legal Officer, Compliance Officer and an Accounts Officer. The Projects Division will be led by Head, Project and supported by a Procurement Officer and two teams – Project Finance Team and Project Appraisal Team. The Project Finance team would be responsible

for identification of potential sources and instruments for raising funds from the market and liaising with the financial institutions. The Project Appraisal would be review and scrutinize the project documents from feasibility, policy, structuring and other perspectives. The key qualifications of the CEO and other personnel are presented in the preliminary human resource plan section of the proposal. For overall administration of the SPV, there would be Chief Administrative Officer supported by a pool of administrative Staff.

In order to ensure internal checks and monitoring of corrupt practices, a full time Chief Vigilance Officer would be appointed as per Government Guidelines who would report directly to the SPV Board. Further, it is proposed that three distinct committees – Audit Committee, Tender Committee and Nomination & Remuneration Committee could be established to augment and strengthen transparency in operations.

It is understood that different institutional arrangements may be suggested by the 12 City Governments in the State under the SCP and the State Government may take steps to propose a Modal SPV Structure to reap in administrative and operational efficiencies. Therefore the proposed SPV structure may undergo changes based on progress in terms of implementation.

## **34. CONVERGENCE**

In Table 7, give details of the government (Central, state/ULB) departments, parastatal organizations and public agencies who will be involved with the time-bound execution of each of the project activities/components (both area-based and pan-city) you have identified. (In Annexure 3, include a flowchart showing the network/relationships that the SPV will form with government and nongovernment agencies, and indicating the nature of connection with each entity.) (max. 50 words per cell)

Table 5			
S. No	Activity / Component	Department / Agency / Organization	Role/Responsibility
Area Based Development			
1	Establishment of a Cultural Centre	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> <li>- Archaeological Survey of India (ASI)</li> <li>- Leasee (Private)</li> </ul>	<ul style="list-style-type: none"> <li>- Administrative approval – use of land, Project design</li> <li>- Procurement, Inspection and Monitoring</li> <li>- Administrative approval – Delhi</li> <li>- Operations &amp; maintenance</li> </ul> <p>(Refer Annexure 4 for letter of intent)</p>
2	Creation of a Heritage Trail and Development of the fort	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> <li>- Archaeological Survey of India (ASI) &amp; District Collectorate of Vellore</li> </ul>	<ul style="list-style-type: none"> <li>- Project design</li> <li>- Procurement, Monitoring</li> <li>- Administrative approval – Fort development, Monitoring, Operations &amp; maintenance, Inspection and Monitoring</li> </ul>

			(Refer Annexure 4 for letter of intent)
3	Sky Observatory along with hiking trail	<ul style="list-style-type: none"> <li>- Forest Department &amp; District Collectorate of Vellore</li> <li>- Forest Department</li> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> </ul>	<ul style="list-style-type: none"> <li>- Administrative approval</li> <li>- Operations &amp; maintenance (partial – maintenance of green cover), Inspection and Monitoring (Protection of green cover)</li> <li>Policy and regulatory frameworks, Project design</li> <li>Procurement, Operations &amp; maintenance (partial – cleanliness, water, sanitation, maintenance of trails), IEC, Capacity building, Inspection and Monitoring (features)</li> <li>(Refer Annexure 4 for letter of intent)</li> </ul>
4	Engineering Park and Science Centre	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> </ul>	<ul style="list-style-type: none"> <li>- Administrative approval – use of land, Project design</li> <li>- Procurement (Technology), Monitoring construction,</li> </ul>

		<ul style="list-style-type: none"> <li>- Forest Department, Rotary Club</li> </ul>	<p>Operations &amp; maintenance (Partial – walking &amp; cycling trail, features of science park - Technology), Inspection and Monitoring</p> <ul style="list-style-type: none"> <li>- Procurement (Afforestation drive), Operations &amp; maintenance (green cover)</li> </ul> <p>(Refer Annexure 4 for letter of intent)</p>
5	Make-In-India Incubation Center	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC)</li> <li>- VCMC &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> <li>- Concessionaire (Vellore Institute of Technology)</li> </ul>	<ul style="list-style-type: none"> <li>- Administrative approval – use of land</li> <li>- Project Design (Partial)</li> <li>- Procurement (Partial - Single window basic amenities support from all line departments such as Water, Sewerage, Electricity, BSNL, etc.)</li> <li>- Project Design (Partial), Procurement (Partial – Physical construction), Operations &amp; maintenance, Inspection and Monitoring</li> </ul> <p>(Refer Annexure 4 for letter of intent)</p>

6	Redevelopment of the Garage Centre	<ul style="list-style-type: none"> <li>- VCMC &amp; District Collectorate of Vellore</li> <li>- Joint Redevelopment partners (Garage center land owners &amp; Real estate developers)</li> </ul>	<ul style="list-style-type: none"> <li>- Policy and regulatory frameworks, Project design (Partial)</li> <li>- Project Design (Partial), Procurement (Partial - JV), Operations &amp; maintenance, Inspection and Monitoring</li> </ul> <p>(Refer Annexure 4 for letter of intent)</p>
7	Smart Parking Lot	<ul style="list-style-type: none"> <li>- Lessor (CMC hospital &amp; individual)</li> <li>- VCMC &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> </ul>	<ul style="list-style-type: none"> <li>- Procurement (Lease of Land)</li> <li>- Administrative approval, Policy and regulatory frameworks, Project design</li> <li>- Procurement, Operations &amp; maintenance, IEC, Inspection and Monitoring</li> </ul> <p>(Refer Annexure 4 for letter of intent)</p>
8	Smart Mobility Plan	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> </ul>	<ul style="list-style-type: none"> <li>- Administrative approval (Partial), Policy and regulatory frameworks (Partial), Project design (Partial)</li> <li>- Procurement, Operations &amp; maintenance, IEC, Capacity</li> </ul>

		<p>- Highways Department, Public Works Department</p>	<p>building, Inspection and Monitoring</p> <p>- Administrative approval (Partial), Policy and regulatory frameworks (Partial), Project design (Partial)</p> <p>(Refer Annexure 4 for letter of intent)</p>
9	Sensor Based Accident Prevention System	<p>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</p> <p>- Smart City SPV</p>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</p> <p>(Refer Annexure 4 for letter of intent)</p>
10	Emergency Response Systems	<p>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</p> <p>- Smart City SPV</p>	<p>- Administrative approval (Partial), Policy and regulatory frameworks, Project design</p> <p>- Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</p>

		<ul style="list-style-type: none"> <li>- Department of Police, Traffic police department, Department of Health, Department of Fire and Rescue Services</li> </ul>	<ul style="list-style-type: none"> <li>- Administrative approval (Partial), Policy and regulatory frameworks</li> <li>(Refer Annexure 4 for letter of intent)</li> </ul>
11	Low cost overflow prediction of underground sewer lines	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC)</li> <li>- Smart City SPV</li> </ul>	<ul style="list-style-type: none"> <li>Administrative approval, Policy and regulatory frameworks, Project design</li> <li>Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</li> <li>(Refer Annexure 4 for letter of intent)</li> </ul>
11	Septage Management MIS and Sanitation Infrastructure	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC)</li> <li>- Smart City SPV</li> </ul>	<ul style="list-style-type: none"> <li>Administrative approval, Policy and regulatory frameworks, Project design</li> <li>Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</li> <li>(Refer Annexure 4 for letter of intent)</li> </ul>
12	Decision support System	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC)</li> </ul>	<ul style="list-style-type: none"> <li>Administrative approval, Policy and regulatory frameworks, Project design</li> </ul>

	(DSS) for Water Supply	- Smart City SPV	Procurement, Operations & maintenance, IEC, Capacity building, Inspection and Monitoring  (Refer Annexure 4 for letter of intent)
13	Flood prediction DSS for Storm Water Drains	- Vellore City Municipal Corporation (VCMC) & District Collectorate of Vellore  - Smart City SPV	Administrative approval, Policy and regulatory frameworks, Project design  Procurement, Operations & maintenance, IEC, Capacity building, Inspection and Monitoring  (Refer Annexure 4 for letter of intent)
14	Smart Toilets	- Vellore City Municipal Corporation (VCMC)  - Smart City SPV	Administrative approval, Policy and regulatory frameworks, Project design  Procurement, Operations & maintenance, IEC, Capacity building, Inspection and Monitoring  (Refer Annexure 4 for letter of intent)

15	Energy Efficiency measures and Underground Cabling	<p>- Vellore City Municipal Corporation (VCMC), Tamil Nadu Electricity Board, &amp; District Collectorate of Vellore</p> <p>- Smart City SPV</p>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</p> <p>(Refer Annexure 4 for letter of intent)</p>
16	Energy efficient Street lights	<p>- Vellore City Municipal Corporation (VCMC)</p> <p>- Smart City SPV</p>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</p> <p>(Refer Annexure 4 for letter of intent)</p>
17	Signage Boards	<p>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</p> <p>- Smart City SPV</p>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</p>

			(Refer Annexure 4 for letter of intent)
18	SWM collection, recycling and recovery facilities	- Vellore City Municipal Corporation (VCMC) & District Collectorate of Vellore  - Smart City SPV	Administrative approval, Policy and regulatory frameworks, Project design  Procurement, Operations & maintenance, IEC, Capacity building, Inspection and Monitoring
19	Tertiary treatment plant and distribution	- Vellore City Municipal Corporation (VCMC) & District Collectorate of Vellore  - Smart City SPV	Administrative approval, Policy and regulatory frameworks, Project design  Procurement, Operations & maintenance, IEC, Capacity building, Inspection and Monitoring
20	Connectivity Plan	- Vellore City Municipal Corporation (VCMC) & District Collectorate of Vellore  - Smart City SPV	Administrative approval, Policy and regulatory frameworks, Project design  Procurement, Operations & maintenance, IEC, Capacity building, Inspection and Monitoring  (Refer Annexure 4 for letter of intent)

21	Integrated Open Data Portal	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- Smart City SPV (Data Scientists)</li> </ul>	<p>Administrative approval, Policy and regulatory frameworks, Project design, Inspection and Monitoring</p> <p>Procurement, Operations &amp; maintenance, IEC, Capacity building,</p> <p>(Refer Annexure 4 for letter of intent)</p>
22	Decongestion of traffic & Improvement in last mile connectivity in the city	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- JV partner</li> <li>- Smart City SPV</li> </ul>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement, Operations &amp; maintenance</p> <p>IEC, Capacity building, Inspection and Monitoring</p> <p>(Refer Annexure 4 for letter of intent)</p>
23	Intelligent Public Transport Systems & Traffic modelling systems	<ul style="list-style-type: none"> <li>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</li> <li>- Smart City SPV</li> <li>- JV partner</li> </ul>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement, IEC, Capacity building</p>

			<p>Operations &amp; maintenance, Inspection and Monitoring</p> <p>(Refer Annexure 4 for letter of intent)</p>
24	Public Information Systems	<p>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</p> <p>- Smart City SPV</p>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement, Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</p> <p>(Refer Annexure 4 for letter of intent)</p>
25	ICT enabled Integrated Waste Management systems	<p>- Vellore City Municipal Corporation (VCMC) &amp; District Collectorate of Vellore</p> <p>- JV partner</p> <p>- Smart City SPV</p>	<p>Administrative approval, Policy and regulatory frameworks, Project design</p> <p>Procurement (Partial – vehicles), Operations &amp; maintenance</p> <p>Procurement (Partial – ICT), Operations &amp; maintenance, IEC, Capacity building, Inspection and Monitoring</p> <p>(Refer Annexure 4 for letter of intent)</p>

### 35. PPP

In Table 8, give details of all the private companies/corporations/organizations that need to be engaged with the execution and operations & maintenance of the various activities and components envisaged in this proposal, along with a description of their roles and responsibilities as basic TORs. Use appropriate terms such as ‘vendor’, ‘concessionaire’, ‘JV partner’, etc. (max. 50 words per cell)

Table 8			
S. No	Activity / Component	Private Company / Corporation / Organization	Role/Responsibility (Basic TOR)
Area Based Development			
1	Establishment of a Cultural Centre	- Leasee (Private)	Information desk - Privatized to travel agents capable of conducting guided tours  Theatre hall - Privatized to event organizers subject to conducting at least 6 events per year to showcase city’s innate culture  Culinary Center – Privatized to event organizers subject to conducting at least 4 national/international food festivals per year
5	Make-In-India Incubation Center	- Concessionaire (Vellore Institute of Technology)	The concessionaire builds, operates and maintains Make-in-India Incubation center subject to  Assured operations for 20 years  Provision of 100% free office and lab space (specific sectors) during the 1 <sup>st</sup>

			<p>year of incubation and 2 year extension on performance basis</p> <p>Conduct national competitions for start-ups yearly in Vellore to attract innovative ideas</p>
6	Redevelopment of the Garage Centre	- Joint Redevelopment partners (Garage center land owners & Real estate developers)	<p>The redevelopment of garage old bypass road will be facilitated by VCMC and District Collectorate subject to</p> <p>The land will predominantly used as mixed land use and promote compactness in the city</p> <p>The overall mixed use zone will be rented and the revenue will be shared proportionately</p> <p>Soft loans should be provided by Smart city SPV to protect the existing economy to reconstruct express garage centers in district collectorate's earmarked land</p>
7	Smart Parking Lot	- Lessor (CMC hospital & individual)	<p>The land will be procured for lease subject to</p> <ol style="list-style-type: none"> <li>Provision of land for a minimum period of 20 years</li> <li>There is an open provision for the lessor to execute the contract based on a fixed lease / revenue sharing basis</li> </ol>
22	Decongestion of traffic &	- JV partner	The government is willing to execute a JV partnership subjected to

	Improvement in last mile connectivity in the city		<p>Upfront investment, 100% ownership and O&amp;M of vehicles over its lifetime</p> <p>O&amp;M of smart equipments procured by Smart City SPV over its lifetime</p> <p>100% physical support for helping physically challenged board the bus over the lifetime of the contract</p>
23	Intelligent Public Transport Systems & Traffic modelling systems	- JV partner	<p>The government is willing to execute a JV partnership subjected to</p> <p>100% O&amp;M of smart equipments procured by Smart City SPV over its lifetime</p>
24	ICT enabled Integrated Waste Management systems	- JV partner	<p>The government is willing to execute a JV partnership subjected to</p> <p>Upfront investment, 100% ownership and O&amp;M of vehicles over its lifetime</p> <p>O&amp;M of smart equipments procured by Smart City SPV over its lifetime</p>

## 36. STAKEHOLDER ROLES

Attach one A-4 sheet (part of 'Annexure 3'), containing an organogram showing the relationships:

- a) MPs, MLAs, MLCs.
- b) Mayors, Councilors, other elected representatives.
- c) Divisional Commissioner
- d) Collector
- e) Municipal Commissioner
- f) Chief Executive of the Urban Development Authority/ Parastatal
- g) Consultant (Select from empanelled list)
- h) Handholding Organisation (Select from following list: World Bank, ADB, JICA, USTDA, AFD, KfW, DFID, UN Habitat, UNIDO, Other)
- i) Vendors, PPP Partners, Financiers
- j) Others, (eg. community representatives) as appropriate to your city

**Refer Annexure**

## E. FINANCIAL PLAN

The development of bankable proposals will be a key success factor in the Smart City Mission. In order to arrange appropriate amounts and types of funding and financing for your SCP, you must keep financial considerations always in mind while preparing your overall strategy and the pan-city and area-based proposals. It is anticipated that innovative means of funding and financing the projects will be necessary. For this purpose, you must evaluate the capacity of the ULB and the SPV to undertake self-funded development projects, the availability of funds from other government schemes that will converge in your SCP (refer Questions 13 and 26), and the finance that can be raised from the financial market.

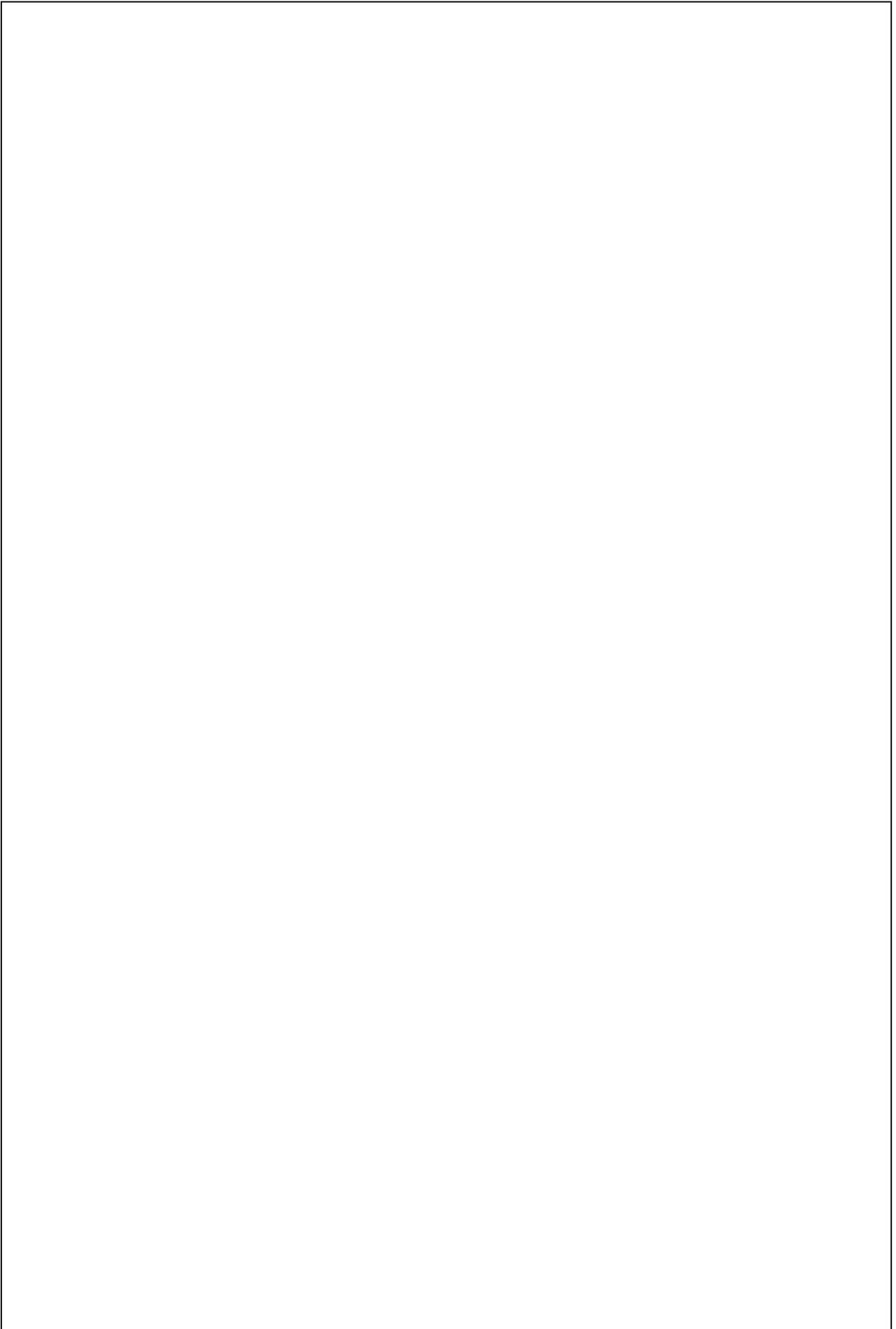
### 37. ITEMISED COSTS

What is the total project cost of your Smart City Proposal (SCP)? Describe in detail the costs for each of the activities/components identified in Questions 31. (Describe in Max. 300 words)

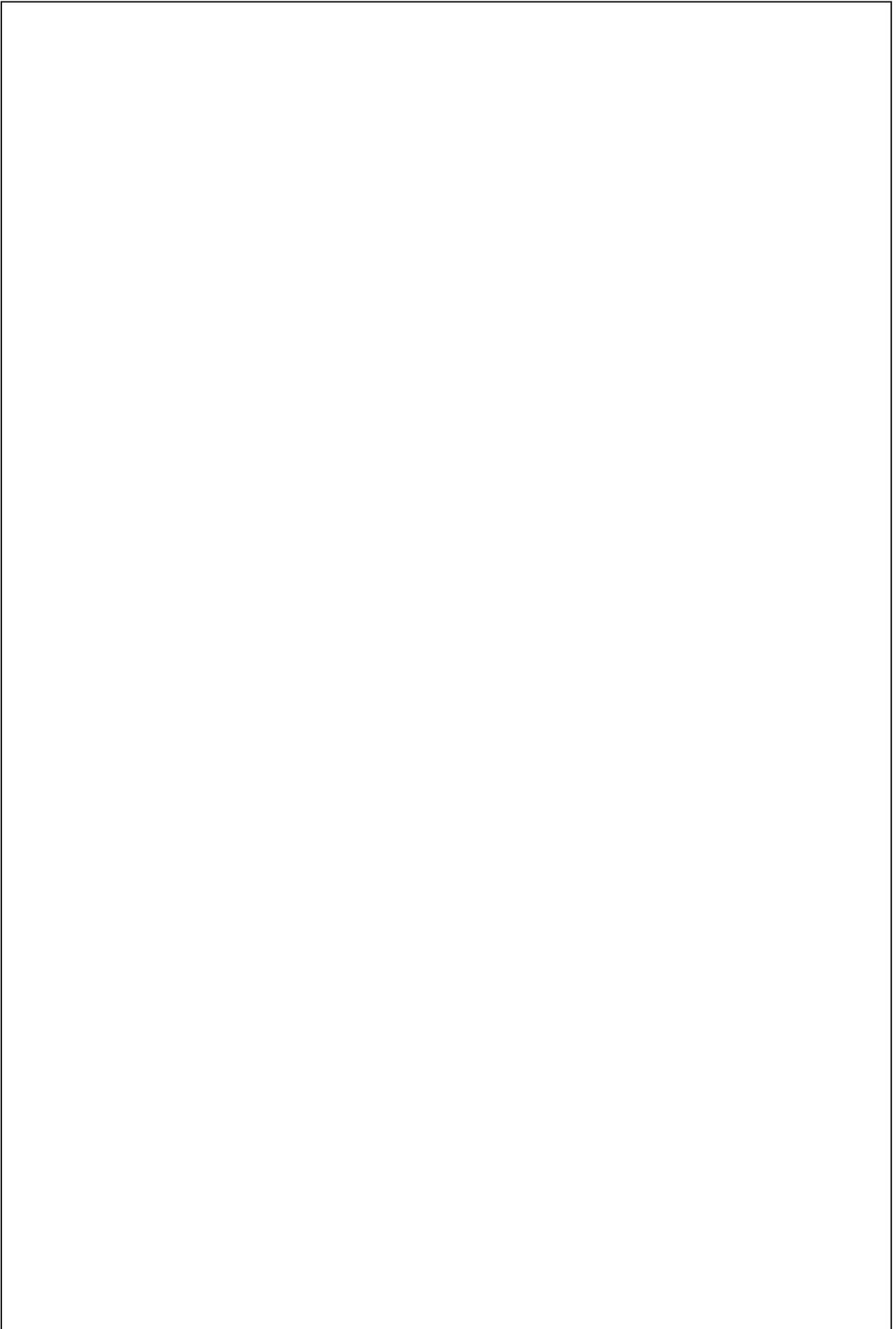
### 38. RESOURCES PLAN

Describe the financing sources, the own-sources of income, the financial schemes of the Central or State governments for which your city/SPV is eligible, which can be used to fund the SCP proposals and pay back loans. Briefly describe an action-plan for resource improvement to make the ULB financially self-sustaining. (max. 1500 words)

Continue on next page



Continue on next page



### 39. COSTS

What is the lifetime cost estimated for your area-based development and your pan-city solution/s? Add O&M costs wherever applicable. (max 500 words)

Continue on next page

#### 40. REVENUE AND PAY-BACK

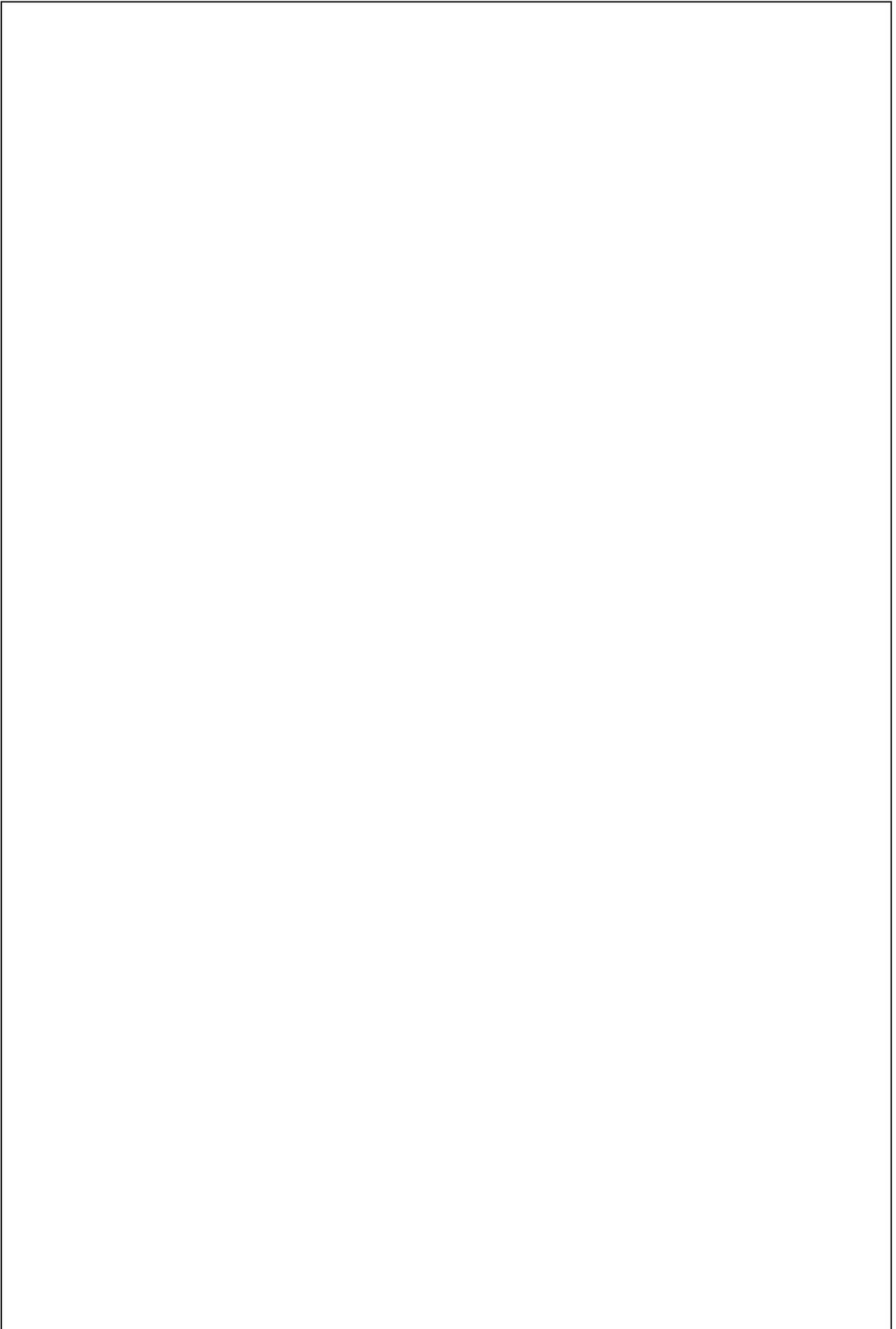
How will the area based development and the pan-city smart solutions(s) of your city be financed? If you plan to seek loans or issue bonds, what revenue sources will be used to pay back the loans?

(max. 250 words)

## 41. RECOVERY OF O&M

What is your plan for covering the Operations & Maintenance costs for each of the activities/components identified in Questions 31? (max. 1000 words)

Continue on next page



## 42. FINANCIAL TIMELINE

What is the financial timeline for your smart city agenda? Describe the milestones and target dates related to fund flows, payback commitments, etc. that must be adhered to for the proposal to achieve the vision set out in Table 5 (question 31)? (max. 1 page: A4 size)


### 43. FALL-BACK PLAN

What is your plan for mitigating financial risk? Do you have any alternatives or fall-back plans if the financial assumptions do not hold? (max. 250 words)

## ANNEXURE 1

S. No	Feature	Definition
1.	Citizen participation	A smart city constantly adapts its strategies incorporating views of its citizens to bring maximum benefit for all. (Guideline 3.1.6)
2.	Identity and culture	A Smart City has a unique identity, which distinguishes it from all other cities, based on some key aspect: its location or climate; its leading industry, its cultural heritage, its local culture or cuisine, or other factors. This identity allows an easy answer to the question "Why in this city and not somewhere else?" A Smart City celebrates and promotes its unique identity and culture. (Guideline 3.1.7)
3.	Economy and employment	A smart city has a robust and resilient economic base and growth strategy that creates large-scale employment and increases opportunities for the majority of its citizens. (Guideline 2.6 & 3.1.7 & 6.2)
4.	Health	A Smart City provides access to healthcare for all its citizens. (Guideline 2.5.10)
5.	Education	A Smart City offers schooling and educational opportunities for all children in the city (Guideline 2.5.10)
6.	Mixed use	A Smart City has different kinds of land uses in the same places; such as offices, housing, and shops, clustered together. (Guidelines 3.1.2 and 3.1.2)
7.	Compactness	A Smart City encourages development to be compact and dense, where buildings are ideally within a 10-minute walk of public transportation and are located close together to form concentrated neighborhoods and centers of activity around commerce and services. (Guidelines 2.3 and 5.2)
8.	Open spaces	A Smart City has sufficient and usable public open spaces, many of which are green, that promote exercise and outdoor recreation for all age groups. Public open spaces of a range of sizes are dispersed throughout the City so all citizens can have access. (Guidelines 3.1.4 & 6.2)
9.	Housing and inclusiveness	A Smart City has sufficient housing for all income groups and promotes integration among social groups. (Guidelines 3.1.2)
10.	Transportation & Mobility	A Smart City does not require an automobile to get around; distances are short, buildings are accessible from the sidewalk, and transit options are plentiful and attractive to people of all income levels. (Guidelines 3.1.5 & 6.2)
11.	Walkable	A Smart City's roads are designed equally for pedestrians, cyclists and vehicles; and road safety and sidewalks are paramount to street design. Traffic signals are sufficient and traffic rules are enforced. Shops, restaurants, building entrances and trees line the sidewalk to encourage walking and there is ample lighting so the pedestrian feels safe day and night. (Guidelines 3.1.3 & 6.2)
12.	IT connectivity	A Smart City has a robust internet network allowing high-speed connections to all offices and dwellings as desired. (Guideline 6.2)

13.	Intelligent government services	A Smart City enables easy interaction (including through online and telephone services) with its citizens, eliminating delays and frustrations in interactions with government. (Guidelines 2.4.7 & 3.1.6 & 5.1.4 & 6.2)
14.	Energy supply	A Smart City has reliable, 24/7 electricity supply with no delays in requested hookups. (Guideline 2.4)
15.	Energy source	A Smart City has at least 10% of its electricity generated by renewables. (Guideline 6.2)
16.	Water supply	A Smart City has a reliable, 24/7 supply of water that meets national and global health standards. (Guidelines 2.4 & 6.2)
17.	Waste water management	A Smart City has advanced water management programs, including wastewater recycling, smart meters, rainwater harvesting, and green infrastructure to manage storm water runoff. (Guideline 6.2)
18.	Water quality	A Smart City treats all of its sewage to prevent the polluting of water bodies and aquifers. (Guideline 2.4)
19.	Air quality	A Smart City has air quality that always meets international safety standards. (Guideline 2.4.8)
20.	Energy efficiency	A Smart City promotes state-of-the-art energy efficiency practices in buildings, street lights, and transit systems. (Guideline 6.2)
21.	Underground electric wiring	A Smart City has an underground electric wiring system to reduce blackouts due to storms and eliminate unsightliness. (Guideline 6.2)
22.	Sanitation	A Smart City has no open defecation, and a full supply of toilets based on the population. (Guidelines 2.4.3 & 6.2)
23.	Waste management	A Smart City has a waste management system that removes household and commercial garbage, and disposes of it in an environmentally and economically sound manner. (Guidelines 2.4.3 & 6.2)
24.	Safety	A Smart City has high levels of public safety, especially focused on women, children and the elderly; men and women of all ages feel safe on the streets at all hours. (Guideline 6.2)

## **ANNEXURE 2**

### **Self-Assessment Form**

**Attach self-assessment format given in supplementary template (Excel sheet),  
with columns I-L duly filled**

**ANNEXURE 3**

Twenty sheets ( A-4 and A-3) of annexures, including  
annexures mentioned in questions 32, 34, 36

S. No	Particulars	✓
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**ANNEXURE 4**

(Supporting documents, such as government orders, council resolutions, response to Question 33 may be annexed here)

S. No	Particulars	✓
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