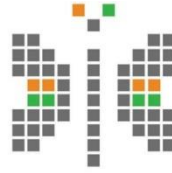


INDIA SMART CITY MISSION

MISSION TRANSFORM-NATION



Smart City
MISSION TRANSFORM-NATION

THE SMART CITY CHALLENGE

SMART CITY PROPOSAL

SMART CITY CODE:

ML-01-SLG

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ANNEXURES (1-4)		



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		
PART A: CITY PROFILE			
1.	<input checked="" type="checkbox"/>	QUALITY OF LIFE	
2.	<input checked="" type="checkbox"/>	ADMINISTRATIVE EFFICIENCY	
3.	<input checked="" type="checkbox"/>	SWOT	
4.	<input checked="" type="checkbox"/>	STRATEGIC FOCUS AND BLUEPRINT	
5.	<input checked="" type="checkbox"/>	CITY VISION AND GOALS	
6.	<input checked="" type="checkbox"/>	CITIZEN ENGAGEMENT	
7.	<input checked="" type="checkbox"/>	SELF-ASSESSMENT: BASELINE	
8.	<input checked="" type="checkbox"/>	SELF-ASSESSMENT: ASPIRATIONS & IMPERATIVES	
PART B: AREA BASED PROPOSAL			
9.	<input checked="" type="checkbox"/>	SUMMARY	
10.	<input checked="" type="checkbox"/>	APPROACH & METHODOLOGY	
11.	<input checked="" type="checkbox"/>	KEY COMPONENTS	
12.	<input checked="" type="checkbox"/>	SMART URBAN FORM	
13.	<input checked="" type="checkbox"/>	CONVERGENCE AGENDA	<input checked="" type="checkbox"/> Table 1
14.	<input checked="" type="checkbox"/>	CONVERGENCE IMPLEMENTATION	
15.	<input checked="" type="checkbox"/>	RISKS	<input checked="" type="checkbox"/> Table 2
16.	<input checked="" type="checkbox"/>	ESSENTIAL FEATURES ACHIEVEMENT PLAN	
17.	<input checked="" type="checkbox"/>	SUCCESS FACTORS	
18.	<input checked="" type="checkbox"/>	MEASURABLE IMPACT	
PART C: PAN-CITY PROPOSAL(S)			
19.	<input checked="" type="checkbox"/>	SUMMARY	
20.	<input checked="" type="checkbox"/>	COMPONENTS	
21.	<input checked="" type="checkbox"/>	APPROACH & METHODOLOGY	

22.	<input checked="" type="checkbox"/>	DEMAND ASSESSMENT			
23.	<input checked="" type="checkbox"/>	INCLUS ION			
24.	<input checked="" type="checkbox"/>	RISK MITIGATION	<input checked="" type="checkbox"/>	Table 3	
25.	<input checked="" type="checkbox"/>	FRUGAL INNOVATION			
26.	<input checked="" type="checkbox"/>	CONVERGE NCE AGENDA	<input checked="" type="checkbox"/>	Table 4	
27.	<input checked="" type="checkbox"/>	CONVERGE NCE IMPELE NTATION			
28.	<input checked="" type="checkbox"/>	SUCCESS FACTORS			
29.	<input checked="" type="checkbox"/>	BENEFITS DELIVERE D			
30.	<input checked="" type="checkbox"/>	MEASURABLE IMPACT			
PART D: IMPLEMENTATION PLAN					
31.	<input checked="" type="checkbox"/>	IMPELE NTATION PLAN	<input checked="" type="checkbox"/>	Table 5	
32.	<input checked="" type="checkbox"/>	SCENA RIOS			
33.	<input checked="" type="checkbox"/>	SPV	<input checked="" type="checkbox"/>	Table 6	<input type="checkbox"/> 7 DOCUME NTS
34.	<input checked="" type="checkbox"/>	CONVERGE NCE	<input checked="" type="checkbox"/>	Table 7	
35.	<input checked="" type="checkbox"/>	PPP	<input checked="" type="checkbox"/>	Table 8	
36.	<input checked="" type="checkbox"/>	STAKEHOLDER ROLES			
PART E: FINANCIAL PLAN					
37.	<input checked="" type="checkbox"/>	ITEMISED COS TS			
38.	<input checked="" type="checkbox"/>	RESOURCES PLAN			
39.	<input checked="" type="checkbox"/>	COSTS			
40.	<input checked="" type="checkbox"/>	REVENUE AND PAY-BACK			
41.	<input checked="" type="checkbox"/>	RECOVERY OF O&M			
42.	<input checked="" type="checkbox"/>	FINANCIAL TIMELINE			
43.	<input checked="" type="checkbox"/>	FALL-BACK PLAN			
ANNEXURE 1		Smart City features			
ANNEXURE 2		A-3 sheets (self-assessment)			
ANNEXURE 3		max 20 sheets (A-4 and A-3)			
ANNEXURE 4		Documents for Question 33			

INSTRUCTIONS

1. This document must be read along with the Smart City Mission Guidelines. An electronic version of the SCP format 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.

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	<input checked="" type="checkbox"/>	Refer Answer 11
2.	Adequate water supply including waste water recycling and storm water reuse	<input checked="" type="checkbox"/>	Refer Answer 11
3.	Sanitation including solid waste management	<input checked="" type="checkbox"/>	Refer Answer 11
4.	Rain water harvesting	<input checked="" type="checkbox"/>	Refer Answer 11
5.	Smart metering	<input checked="" type="checkbox"/>	Refer Answer 11
6.	Robust IT connectivity and digitalization	<input checked="" type="checkbox"/>	Refer Answer 20
7.	Pedestrian friendly pathways	<input checked="" type="checkbox"/>	Refer Answer 11
8.	Encouragement to non-motorised transport (e.g. walking and cycling)	<input checked="" type="checkbox"/>	Refer Answer 11
9.	Intelligent traffic management	<input checked="" type="checkbox"/>	Refer Answer 20
10.	Non-vehicle streets/zones	<input checked="" type="checkbox"/>	Refer Answer 11
11.	Smart parking	<input checked="" type="checkbox"/>	Refer Answer 11
12.	Energy efficient street lighting	<input checked="" type="checkbox"/>	Refer Answer 11

13.	Innovative use of open spaces	<input checked="" type="checkbox"/>	Refer Answer 11
14.	Visible improvement in the Area	<input checked="" type="checkbox"/>	Refer Answer 11
15.	Safety of citizens especially children, women and elderly	<input checked="" type="checkbox"/>	Refer Answer 11
16.	At least 80% buildings (in redevelopment and green-field) should be energy efficient and green buildings	<input type="checkbox"/>	
17.	In green-field development, if housing is provided, at least 15% should be in 'affordable housing' category.	<input type="checkbox"/>	
18.	Additional 'smart' applications, if any	<input checked="" type="checkbox"/>	Refer Answer 20

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

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

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

- Fleet size 46 MTC buses & 240 private buses
- NMT infrastructure for pedestrian movement
- For increase in roads having footpaths priority given to 18 km stretch
- Average traffic speed during the peak hour is 15 km/hr.
- Accidents 50 traffic fatalities every year, 250 injuries
- SMB maintains about 30 kms of road stretch in the municipal area.

Source: CMP Report, 2010

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

- Coverage of water supply connections 76.89%
- Per capita supply of water 78 LPCD
- Extent of non-revenue water 58%
- Cost recovery in water supply services 12%
- Efficiency in collection of water supply related charges (IN MUNICIPAL AREA) 71.3%
- Renovation of existing schemes to avoid 20.5% loss with UFW assessment and Leak reduction programme
- By 2021, production capacity is expected 60.26 MLD out of total requirement of 74.31 MLD

c. Solid waste management programs in the city

- SMB area 46% of the waste generated is collected.
- Only 43% households have facility of door to door collection or Community Bin facility rest of the 37% households utilize services of SMB Truck coming to the areas to collect waste. 9% households throw their waste into nearby Nala, stream or drain. 11% households do not have any option hence either throw their waste in nearby open land or use it for fire fuel.
- Garbage collection points and routes are already identified, needs efficient mechanism for collection and disposal of waste.
- Requirement of innovative approach for Bio-Medical Waste (plant established in 2007)

d. Safety/ security conditions in the city

- Shillong city falling under High Risk Zone –V & needs the following: Earthquake resistant Building regulations
Disaster management initiatives at district level
- Prevention and Rehabilitation of Soil erosion and landslides by construction of Retaining Walls and embankments.
- Crime statistics under IPC case registered are: in 2013: 1127, 2014: 1327, & 2015: 1446.
- No of Crimes against women suggests registered cases in 2014: 173, and 2015: 105
- No. of accidents 50 traffic fatalities, 250 injuries.

e. Energy availability and reduction of outages in the city

- Incentives done for roof top solar panel to meet at least 10% of total power requirement. (Projects in progress).
- 58 Watt solar street lights introduced in few areas
- Total number of 378 Solar street lights available under MECL No smart metering is introduced yet.
- T and D losses decreased from 34% to 27% in last three years.
- No power shortage in the city.
- Scheduled outages average 10 minutes a day.
- Unscheduled outages are average 6 hours in 3 months.

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

- RAY survey in 2015 addresses 13,120 number of Slum households, with 42% notified slums. SMB constitutes 5426 no. of slums.
- As per the demand survey under PMAY in 2016-17, Housing for all Plan Of Action for Shillong indicate 2296 housing demand from EWS & LIG category under BLIC, CLSS and AHP component.
- Construction of 16660 new EWS/LIG Housing Units in New Shillong Township
- Slums projects Within SMB is 5426 in the city core area and
- 304 HHs construction under BSUP Total properties = 10522 and collection from 7420 properties.

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

- Bio metric attendance system was placed in all division and sub division offices in May-June 2016. For few remaining office the work is under progress and will be implemented in all the offices by March 2017. Attendance of employees increased from 66% to 78% in last 6 months.
- Employee logins are provided to access the basic information at employee self-service portal (improvements going on).

Source: SMB and MUDA

b. Two-way communication between citizens and administration

- Online management portal: smb.gov.in/citizen.html
- Tracking system through SMS/Email is not available.
- To incorporate public views and suggestions Manual system is under practice. Serious complaints/ good suggestions to be assessed in the regular staff/board meetings. If applicable then incorporation will be done.
- No separate app or portals for register the complaints.
- Manual System is available at all the municipal offices
- Online complaint system is available at municipal website “smb.gov.in/citizen.html” Source; SMB

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

Not available. Working on it in proposal stage only.

Source: SMB

d. Dashboards that integrate analytics and visualization of data

Dashboards working separately for many government agencies. Integrated dashboard is not available yet. Proposal already made to create an integrated dashboard.

Source; SMB and MUDA

e. Availability of basic information relevant to citizens

All the computerized data is available till December 2016 regarding basic information of citizens living under municipal area but the data is for government internal records only. Public access to the data is not there.

Source: SMB

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):

STRENGTHS:

1. Strategic Location – Shillong is state capital, favorable climate being hill station (tourism interest), and main commercial centre.
2. Cultural Significance & Heritage City with natural scenic beauty and colonial history.
3. Significant education centre in the N.E. Region
4. Natural economic resources with extensive forest, mines and minerals, fisheries and animal husbandry.
5. Recreational facilities for emerging tourism market and meetings/ conferences.

WEAKNESSES:

1. Underutilized tourism potential – due to lack of tourism infrastructure and weak public transport system.
2. Congestion & Land use concern:
Requirement of renewal scheme for old core.
Scope of expansion is limited due to undulating terrain, new planned township required to balance population density.
There is lack of industrial development and needs support.
3. Irregular drainage and absence of scientific waste management practices.
4. Floating population is very high pressurizing the existing infrastructure provisions.
5. Lack of tertiary healthcare system
6. Frequent landslides and mud flows during the rainy season disrupting life and property.

OPPORTUNITIES

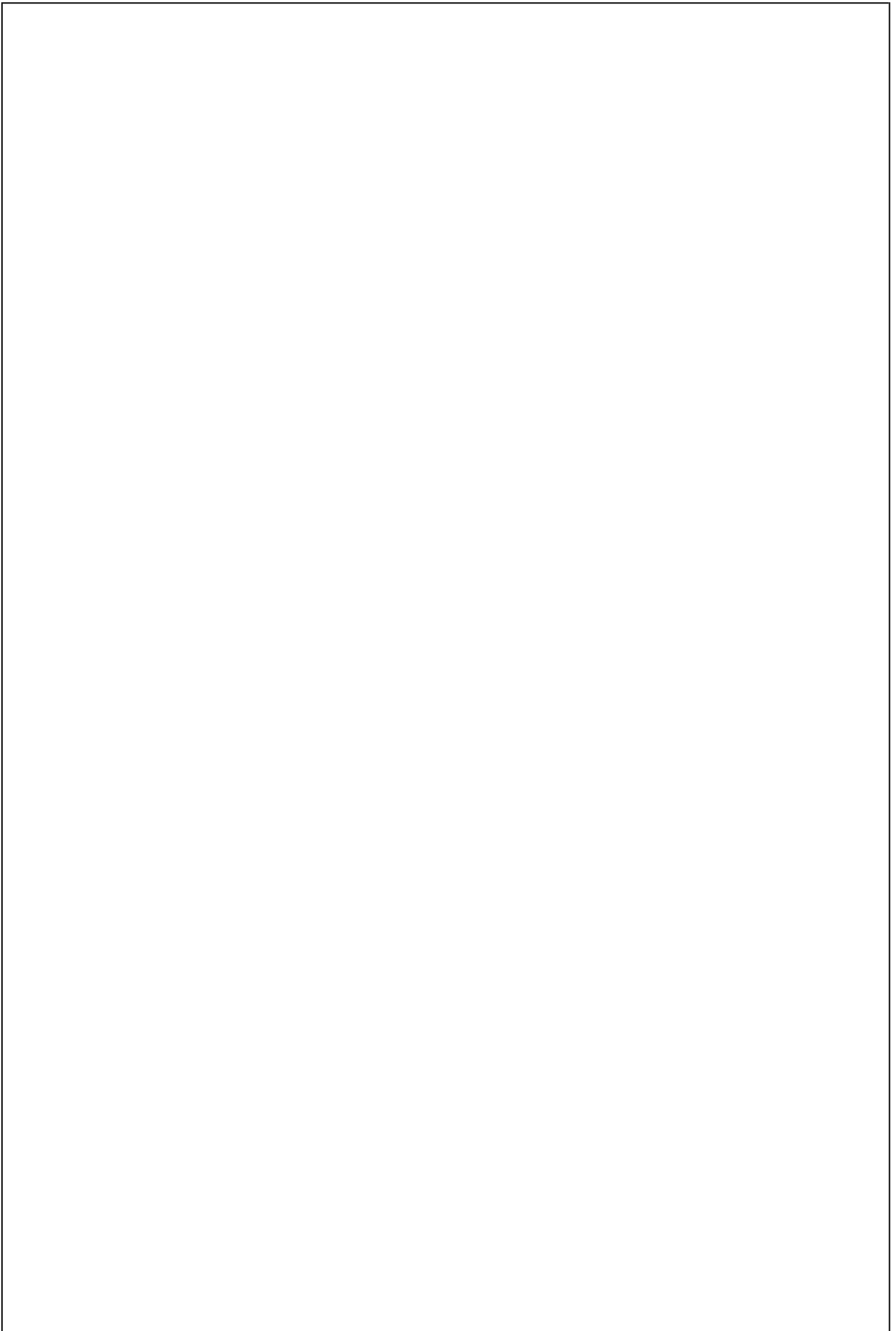
Tourism as major economic opportunity with provisions for home stay during summer peak season; tourism infrastructure development, and developing tourism circuit for the region.

Strategic transportation plan at regional as well as local levels.

Setting up units w.r.t. IT and ITES

THREATS

- Undulating terrain
- Under seismic Zone V, makes the region highly vulnerable; building bylaws to address earthquake resistant developments.
- Long rainfall period, makes life and activities difficult
- Requires integrated infrastructure planning
- Implementation of slum improvement scheme
- Formation of an informal market zone to avoid encroachments in road sides.



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):

Based on the SWOT analysis, the strategic focus (SF) of Shillong City and its strategic blue-print (SBP) for development in the next 5-10 years is as follows:

STRATEGIC FOCUS AND BLUEPRINTS

SF 1: ENSURING CLEAN GREEN AND LIVEABLE CITY

The city will focus on transforming the city into a clean and green city. It will implement harnessing of solar energy, establishment of rainwater harvesting structures, cleaning of lakes and water bodies, implementation of waste to energy and creation of open spaces.

SBP 1: Core Urban Services to Residential Neighborhoods – city will provide all core urban services to residential neighborhoods to make the environment clean and green.

SBP 2: Green Urbanism and Solar mission – It will focus on implementation of solar mission through solar roof tops on all government and institutional buildings in the city and waste to energy system.

SBP 3: Retrofitting of Residential area – City will focus on Retrofitting of residential area with basic infrastructure, clean roads, safe environment.

SBP 4: Environmental Watch– It will include cleaning of lakes and water bodies, implementation of rain water harvesting system in all government and institutional buildings in the city, development of a number of open spaces.

SF 2: BUILDING SMART TRANSPORTATION SYSTEM

The city will focus on improving and developing transportation system. It will include public transit system, retrofitting road networks ensuring efficient NMT, pedestrian friendly road networks and Multi level parking buildings.

SBP 5: Public Transportation Improvement – The city will address on improving efficiency of all major roads. It will also focus on improvements of all public transportation corridors and redevelop the existing parking blocks into a modern multi storey parking blocks.

SBP 6: Provision of NMT, Pedestrian Friendly environment, Parking and Roads – The city will focus on redesigning and developing all key roads with provision for NMT and foot paths for safe pedestrianization. It will also work to provide efficient parking including multi-level parking. .

SBP 7: Smart Mobility Management- It will focus on establishment of an Integrated City Mobility management system for the city including transit services, traffic services, parking services, fiber optic based city network and safe city infrastructure.

SF 3: ENSURING SAFE AND SECURE CITY

The city will focus on implementing safe and assured electricity supply, surveillance and city services monitoring system etc.

SBP 8: Safe and assured electricity- It will implement laying of underground electricity cables, shifting of all DTRs and smart energy metering system.

SBP 9: Smart safety, surveillance monitoring – It will include implementation of security and surveillance system throughout the city.

SF 4: CREATING ENHANCED TOURISM AND RECREATION AS ECONOMIC BASE

it will focus on diversification its economic base in to value-added industrial base, knowledge industries, business and general tourism activities etc

SBP 10: Development of Tourism Facilities- City has a lakes and wooded area. It will focus on improving lake front development. The city will also explore other avenues such as green walk and nature trails etc.

SBP 11: Development of New Recreational Riverfront Development- City will improve the riverfront area for nature trails and providing an open space for its citizens.

SBP 12: Renewal of Laitumkhrah Bazar- City will renew the heritage property i.e. Laitumkhrah Bazar which is one of the important markets within the city. Besides, city will provide/build infrastructure facilities as retrofitting by creating open spaces in congested areas within its premises and around, which can be tourists friendly also.

(Refer Annexure 3.4)

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 as privations 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):

Shillong aspires to be the centre of cultural and economic vibrancy, which Meghalaya people proudly identify.

The vision for the city would therefore be “to transform Shillong into a cultural and economic hub in Meghalaya with a focus on tourism and culture and to make it a livable, clean, green, inclusive, modern, safe and citizen friendly and well governed city”.

The key elements of the Vision Statement are derived from city profile, citizen's views, SWOT analysis and strategic focus and blue prints. The Goals to achieve such strategic blue prints are as follows:

SBP 1: Core Urban Services to Residential Neighborhoods

Goal 1: Provision of core urban services to all households in the city. It includes adequate water supply, sewerage and sanitation, solid waste management etc.

SBP 2: Green Urbanism and Solar mission

Goal 2: Promote solar mission through implementation of solar PV roof tops on all government and institutional buildings in the city'

Goal 3: Promote waste recycling through conversion of waste to energy.

SBP 3: Retrofitting of Residential area

Goal 4: Retrofitting and Provision of core urban services to all households in the city. It includes adequate water supply, sewerage and sanitation, solid waste management etc.

Goal 5: Retrofitting of roads with pedestrian friendly environment.

SBP 4: Environmental Watch

Goal 6: Cleaning of key lakes in the city by removal of green algae, untreated waste water entering into them.

Goal 7: Implementation of rain water harvesting system in all government and institutional buildings in the city.

Goal 8: Development of a number of open spaces within the city.

SBP 5: Public Transportation Improvement

Goal 9: Ensure efficient urban mobility through implementation of better bus-based transit system. Shillong at present lack efficient public transportation system and share of personalized mode of transport and IPT is increasing many folds. Therefore, improving an efficient public transportation system would ensure achieving sustainable urban mobility in Shillong. It will include organized smart parking provision, and traffic management through use of ITS.

SBP 6: Provision of NMT, Pedestrian Friendly environment, Parking and Roads

Goal 10: Improvement of efficiency of all major roads. Currently the roads are servicing nearly 80% of the intra city and inter-city traffic of the city. The corridors, though wide enough for one way movement, faced with several inadequacies including proper geometry, land marking, foot path, underground utilities, bus-bays, parking areas, poor geometry at intersections, signals, and pedestrian crossing. Improving the major corridors will help achieving efficiency in transportation system within Shillong city.

Goal 11: Implement smart parking system to manage on-street/ off street parking slots identified along all major roads within the city. Besides, building of multi-level parking would help long way to solve parking issues significantly.

SBP 7: Smart Mobility Management

Goal 12: Implement a traffic management system with Adaptive Traffic Control System (ATCS) to manage network of road intersections and additionally provide camera based traffic violation detection system to improve speeds, availability of road to motorists and safe operation condition. The resultant of this implementation would be higher travel speeds (20-25 km/hr) which would be currently in the range of 15-17 km/hr.

SBP 8: Safe and assured electricity

Goal 13: Implementation on lying of underground electricity cables, shifting of all DTRs and smart energy metering system.

SBP 9: Smart safety, surveillance monitoring

Goal 14: Implementation of security and surveillance system throughout the city.

SBP 10: Development of Tourism Facilities

Goal 15: Improvement of Ward's Lake and Umkhrah Riverfront development in the city including premonade development, watling trails, viewing desks, kiosks etc.

Goal 16: Identification and development of natural trails around ecological resources in the city, to enhance additional interest areas for tourists visiting the city.

SBP 11: Development of New Recreational Riverfront Development

Goal 17: Development of Umkhrah Riverfront development in the city including promenade development, walking trails, viewing desks, kiosks etc.

SBP 12: Renewal of Laitumkhrah Bazaar.

(Refer Annexure 3.4)

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

During Round 1, Shillong Citizen outreach campaign was designed to reach maximum number of citizens of different society which includes slum areas, residential areas, commercial areas, educational institutions, street vendors, intellectual community, NGOs, business organizations, Government Organizations, public representatives, etc.

Extent of Citizen Participation

(a) Offline & Face to Face: 1. Household Survey

2. Face to Face Interview: About 50 interviews. 3. Ward level meetings: ward level meetings. 4. Self Help Groups: 13. 5. Letters –

(b) My Gov and SMB websites

1. My Gov: 2. Voting in My Gov. 3. Voting in SMB website 4. Priority Area. 5.

Smart Solutions

(c) Social Media:

1. Face book 2. Twitter 3. Email 4. Whatsapp

(d) Mass media:

1. bulk SMS

2. prerecorded IVRS calls

(e) Events: 1. Poster Design Competition . 2. Essay Writing competition 3. Essay competition through My Gov 4. Offline essay (Refer Annexure 3.2 to 3.3)

b. Engagement strategy to get best results from citizens

During Round 1, Shillong adopted following three sequential strategy to get best results from citizens: (a) Strategy 1: Dissemination and Awareness - SMB adopted various tools to reach out the citizens. It includes 1. Announcement through local FM channels for one week; 2. briefing through daily newspaper; 3. Scrolling in local TV channels; 4.

Distribution of pamphlets; 5. displays at local movie halls; 6. Sending out SMS;

7. creating exclusive tab in SMB web-site on "Shillong smart city" and uploading mission guidelines, SCM Challenge 2 and so forth; 8

(b) Strategy 2: Making them involved in discussion- Thereafter, as explained in 6a,

citizen engagement was implemented. In all, a brief power point presentation was made

about SCM and how important is their inputs in preparing SCP. Thereafter, all of them

were encouraged to voice their opinion, which were audio/video recorded. Further, a

short questionnaire was distributed requesting them to complete, which were analyzed to extract their opinions.

(c) Strategy 3: Persuasion through IVRS- Subsequent to strategy 2, voice calls have

been made through IVRS to further ascertain their priorities and vision towards

making Shillong a smart city (Refer Annexure 3.2 to 3.3)

c. Different means of citizen engagement adopted

During Round 1, Citizen Engagement was made through following means:

1. Face to face: (a) Door to door visits by SMB employees and Self Help groups to get filled forms ; (b) Meetings with Citizens – Ward meetings; (c) Meeting with Self Help Group ; (d) Select group meetings – special interviews covering all the profession / sections of the city ; (e) Consultations with Public Representatives- Chieftain and Darbaars; (f) Consultations with Key Stakeholder Groups (Refer Annexure 3.2 to 3.4)
2. Online: (a) Exclusive web portal for Smart City Shillong; (b) Discussions, polling on priority areas, vision, smart solutions, essay writing competition, digital poster competition and draft smart city proposal in My Gov.in and SMB website; (c) Bulk SMS and prerecorded IVRS calls; (d) Videos in YouTube
3. Publicity and Advertising: (a) fliers are distributed. (b) Displayed big size hoardings at important locations of the City (c) Through Print media- Advertisements are published in all leading newspapers including Smart City related competition / challenge details.(d) Advertisements in Radio, local cable channels; 4. Competition: (a) Essay writing competition in all the Government and Private Schools

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

1. Print Media:

- a). Local newspapers – advts; b). Regular coverage of Smart Cities Updates; c). Media Campaign on Citizen priorities; d). News items on competition and polling; e). Special News Item on Smart Cities

2. Online

- a). Face book; b). Twitter ; c). Whatsapp : Messages through dedicated numbers; d). Youtube : Meeting videos

3. Mass Media

- a). Regular coverage in Local Cable TV; b). Regular advertisements in Local Cable TV; c).

4. Others:

- a) Erection of big size hoardings at important junctions of the city; b) Digital poster competition for Engineering colleges in the City; (c) Essay competition in all private and government schools ; (d) Prerecorded IVRS calls ; (e) Bulk SMS (Refer Annexure 3.2 to 3.3)

e. Incorporation of citizen inputs in overall vision

During Round 1, specific inputs were received from citizens on priority areas, vision, smart solutions and choice of the areas for ABD.

Feedback received from the citizens has been summarized under major sectors. Based on the analysis the top priority vision statements are:

- (a) 27% chose to develop Shillong as “clean and green city”
- (b) 15% chose to develop Shillong as “Industrial City” with adequate employment opportunities
- (c) 14% chose to develop Shillong as “Heritage and Tourism city” with better infrastructure facilities
- (d) 8% chose to develop Shillong as “Institutional city”

Proposed vision statement reflects the above priorities of the citizens in envisioning “transforming Shillong into a cultural and economic hub in Meghalaya with a focus on knowledge and tourism and to make it a livable, clean, green, inclusive, modern, safe and citizen friendly and well governed city”

The shared vision of the citizens to build world class amenities and to achieve the same is set into the goals.

(Refer Annexure 3.2 to 3.3)

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)

Area Based Development (ABD) in Shillong focuses on retrofitting of City Centre and Secretariat Hill having an Area of 402 acres, to improve market precincts (Bazaars), transit corridors, public spaces, and neighborhoods livability.

The above objectives are to be met through six themes in ABD.

1. Smart Urban Mobility with focus on pedestrian priority and public transit corridors.
2. Clean and Green Livable Neighborhoods to improve quality life of 17494 people.
3. Environmental Monitoring by cleaning Umkhrah river, plantation in public spaces and parks.
4. Smart Solutions to manage traffic and parking, public safety, and other urban infrastructure.
5. Tourism and Recreational Space Development by expansion of tourism facilities and development of potential opportunities for recreational space.
6. Renewal of Laitumkhrah Bazaar) to improve its shopping, safety and hygiene, and parking facilities.

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

In selection of ABD in Shillong following process was followed.

STAGE 1: Potential Options for ABD

Two areas were initially considered for choice of ABD viz. City Centre along with Secretariat Hill and New Shillong Township Area in Mawdiangdiang. In reference to city profile following issues in choice of ABD was considered.

1. City Centre- which is the CBD of Shillong city, along with Secretariat Hill-a government offices node, is hub of retail and whole commercial with maximum footfall for employment, business, and shopping activities in the city. City Centre and Secretariat Hill also represent the essence and urban issues of many of the hill towns established in British Colonial Period in India.
2. While New Township in Mawdiangdiang is being developed for govt. offices, capital functions and other institutions. But it is located on periphery of the city hence not very accessible to citizens as a whole, although there are significant Greenfield development potential here.
3. City Centre and Secretariat Hill area is pedestrians dominated commercial, institutional, recreational space of the city but it is currently marred by traffic, parking, and

lack of basic infrastructure hence urgently need retrofitting to improve its functioning and urban image.

STAGE 2: SWOT Analysis of Options for ABD

The two areas considered for ABD were critically assessed through SWOT analysis for choice of ABD under SCM.

STRENGTHS:

City Centre and Secretariat Hill is the CBD of the city, having maximum employment, footfall for shopping, recreational, and tourism activities.

New Township in Mawdiangdiang is an upcoming new township with substantial Greenfield development potential to showcase capital and institutional functions of Govt. of Meghalaya.

WEAKNESSES:

City Centre and Secretariat Hill is high density commercial cum mixed use area, which is congested with traffic and on-street parking and having narrow streets/roads along with lack of quality basic and urban infrastructure of a city centre/CBD.

New Township in Mawdiang Diang is located on periphery of the city, hence not very accessible currently to city as a whole. It is considered not very safe area on the outskirts of the city.

OPPURTUNITIES:

City Centre and Secretariat Hill carries potential of becoming a high quality city centre/CBD of Shillong. It carries further expansion potential for tourism and recreational facilities to provide high quality pedestrians led work centre cum public space for the city. Addressing current traffic congestion, safety, and basic infrastructure issues are central to achieve above objectives.

New Township in Mawdiang Diang has substantial green field development opportunities for government functions, institutions, and housing.

THREATS:

City Centre and Secretariat Hill is a densely built up area with limited expansion possibilities for new and modern city centre economic and urban functions. Chances of traffic and parking issues not getting addressed can be a major setback for the area.

New Township in Mawdiang Diang located in periphery of the city is comparatively unsafe and environmentally sensitive area due to presence of natural Himalayan ecology for urban development.

STAGE 3: CITIZENS AND ELECTED/PEOPLES REPRESENTATIVES OPINION

Due process was followed for engaging citizens by use of social media, My Gov, and conducting workshops on smart city Shillong and choice of area for ABD.

Choice of City Centre and Secretariat Hill for ABD was unanimous opinion of the citizens and elected representatives along with opinion of the local Chieftan who represents of interests of the local tribal population in Shillong. Refer Citizen Engagement responses in Annexure 3.2 to 3.3.

STAGE 4: DISCUSSION WITH URBAN PLANNERS AND SECTOR EXPERTS/GOVT. OFFICIALS.

Workshops were conducted during the SCM till date to engage various departments of Govt. of Meghalaya including PWD, Shillong Municipal Board, Power Dept., NIC, Traffic Police of Meghalaya, Meghalaya Urban Development Authority (MUDA), Urban Affairs Dept. and other senior experts previously engaged/working in Govt. of Meghalaya.

Choice of City Centre and Secretariat Hill for ABD was unanimous opinion of the various departments including opinion of planners from MUDA.

STAGE 5: DISCUSSION WITH SUPPLIERS AND PARTNERS

Choice of ABD and related proposals were discussed in detail with representatives of potential partners and suppliers such as BSNL, Airtel, IBM, HITACHI, L&T, Shapporji & Pallonji etc for their expert advice, opinion and cooperation. The choice of City Centre and Secretariat Hill as ABD unanimous. Number of proposals for ABD are molded after due consideration of their suggestions and guidance

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)

Six themes and 24 projects are chosen to transform City Centre and Secretariat Hill into smart urban form with focus on pedestrian priority in Bazaar streets, public transport corridors, off street parking, tourism and recreational facilities development in the ABD. Key components under the six themes are:

SM: SMART URBAN MOBILITY

SM-1: Pedestrianization and Retrofitting of Bazaar Streets, which includes pedestrianization/pedestrian priority in 4 popular Bazaar Streets in ABD having total 2.5 km length with restricted/one way public transport.

SM-2: Retrofitting of 17.6 km City Roads with priority on Public Transport which includes provision of sidewalks, public transport infrastructure, underground utilities below sidewalks, street furniture, improvement of carriageways' surfaces and drainage quality.

SM-3: Retrofitting of 18.5 Km Access Streets with underground utilities, surface treatment and street furniture in neighborhoods and other areas in ABD.

SM-4: 12 Nos. Traffic Junctions Improvement, to achieve efficient and safe movement of pedestrians and vehicles with smart traffic management systems.

SM-5: 1.2 Km New Public Transit Corridor to improve one way public transport and traffic movement in ABD Area with two lanes carriageway and sidewalks.

SM-6: Multilevel Smart Parking, for 1465 ECS in 4 locations in ABD, to shift on street Parking to off Street multilevel parking (MLP) structures.

CG: CLEAN AND GREEN LIVABLE NEIGHBORHOODS

CG-1: Adequate Clean Water Supply with 100% connection in ABD and retrofitting of existing water supply network for 7099 HHs and commercial connections.

CG-2: Wastewater Collection, in ABD with 100% sewerage connections (8099 Connections)

CG-3: Smart Solid Waste Management, with 200 Sensor bins, 8099 kit for segregation at source for SWM, and installation of 15 tones capacity waste to energy plant.

CG-4: Storm Water Drainage, retrofitting 21.8 km of drains in ABD.

CG-5: Solar Mission, 7.8 ha area Solar PV on rooftops of Public Buildings.

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, walk ability) and how these will be incorporated. (max. 250 words)

Delineated ABD area (City Centre and Secretariat Hill) is 402 acres in size in Shillong, comprises of 2.5 km Bazaar streets, Police Bazaar, 17.37km city roads passing through ABD, 8.5 ha Lake cum Park, Polo Grounds (Football fields), lewduh (Bada Bazaar), Laitumkhras Bazar, educational Institution and administrative hub which are most imaginable elements/precincts of the ABD.

Idea of intervening in these precincts of city importance is to turn ABD into smart city centre, by making it pedestrian friendly, public transport led, clean and green, visitor/tourists friendly shopping area, wire free and Smart Technology led, improved tourism and recreational destination. The above urban form would be achieved through following themes and components.

1. PEDESTRIANIZATION OF BAZAARS AND POLICE BAZAAR.

- (a) Pedestrianization/Pedestrian priority of 2.5 km Bazaar streets with paver blocks and having underground utilities.
- (b) Provide restricted public transit with one way movement,
- (c) Provide street furniture, tree plantation to improve aesthetic and public space quality.
- (d) Retrofitting of Laitumkharh Bazaar with commuters friendly logistic and parking facilities.

2. MAKING ABD PUBLIC TRANSPORT LED.

- (a) Treat 17.37km of city roads passing through ABD as public transport priority with well designed bus stops and passenger facilities.
- (b) Provide sidewalks along the city roads with underground utilities.
- (c) Provision of smart off street parking's in the form of MLPs.
- (d) Tree Plantation and street furniture and solar street lights.
- (e) Enable streets with WIFI and smart infrastructure to provide safety to all users.

3. CLEAN AND GREEN LIVABLE NEIGHBORHOODS.

- (a) Improve basic infrastructure with 100% connectivity for water supply, sewerage connections, and improved drainage. 100% collection of Solid Wastes with source segregation and smart bins in streets.
- (b) Improve 18.5 km of access roads to neighborhoods with UG utilities, street furniture and solar lights.
- (c) Making neighborhoods pedestrian friendly.

4. ENVIRONMENTAL CLEANINESS AND MONITORING.

- (a) Clean Umkhras river bed which is highly polluted and river as of now becomes an urban backyard.
- (b) Improve water quality of the river through provision of STP and 100% coverage of Sewerage Connections and SWM in ABD.

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	<p>AMRUT – Mission Components (to start w.e.f 2017-18)</p> <ul style="list-style-type: none"> - Water Supply - Sewerage - Septage - Storm Water Drainage - Urban Transport - Green Space and Parks - Reforms management & support - Capacity building 	<p>1. Adequate Water Supply : Achieving 100% Water Supply Connections, Installation of Smart Water Meters, Leak Detection & Real Time Monitoring, Retrofitting Water Supply network - Rs. 21.8 Crores</p> <p>2. Sewerage: Underground Drainage System, Achieving 100% Sewerage Connection Residential, commercial, and PSP Areas – Rs. 40.5 Crores. Underground Sewerage System (Relaying/Retrofitting Sewerage Pipe underground in middle of the Street or as per design) -- Rs. 29.8 Crores</p>
2	<p>Pradhan Mantri Awas Yojana : Housing for All- Mission Components</p> <ul style="list-style-type: none"> - Slum rehabilitation - <p>Promotion of affordable housing for weaker section through credit linked subsidy</p> <ul style="list-style-type: none"> - Affordable housing in partnership with Public & Private sectors <ul style="list-style-type: none"> - Subsidy for beneficiary 	
3	<p>Integrated Power Development Scheme (IPDS)</p>	<p>To ensure safe and assured electricity supply, Component of underground electric wiring, Smart Metering and shifting and beautification of DTRs are proposed to converge with IPDS. Following is the split</p> <ol style="list-style-type: none"> 1. Underground Electric Cabling : Rs. 30.8 Crores 2. Shifting and Beautification of Transformers : Rs. 7.0 Crores 3. Smart Electric Meters : Rs. 17.7 Crores.

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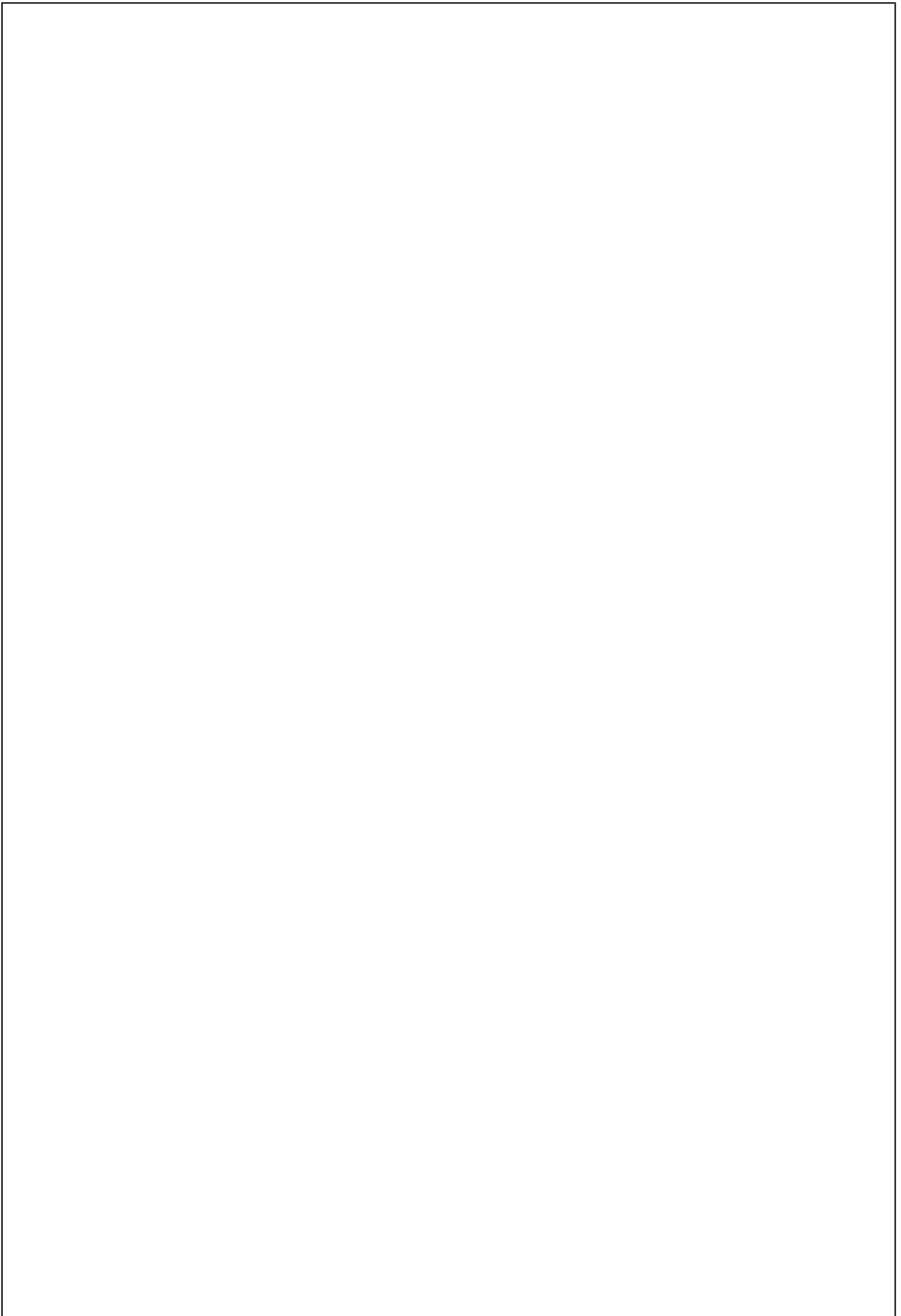
TABLE 1

S.No	Mission/Programme/ Scheme/Project	How to achieve convergence
4	Swachh Bharat Mission (SBM)	<p>To ensure smart Solid Waste Management in ABD (SWM)</p> <ol style="list-style-type: none"> 1. To provide Smart Sensor Bins: Rs. 1.0 Crores 2. Provision of SWM Collection Bins (Providing 3 kit SWM Bins for every household for Solid Waste Segregation at Source) and Collection tricycle and community storage bins: Rs. 4.86 Crores 3. Waste to energy plant from Municipal solid waste (Capacity 15 Tonn) (Biometheannation Plant plus Inciniration Plant)-Rs. 5.0 Crore
5		
6		
7		

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)

1. AMRUT (Water Supply): Service Level Improvement Plan (SLIP) of water supply has been sanctioned by Government of India with total estimated cost of Rs. 61.67 crores.
2. AMRUT (Sewerage): Currently there is no underground sewerage network in the City. Service Level Improvement Plan (SLIP) of sewerage has been prepared with the total estimation of Rs.107.43 crores.
3. INTEGRATED POWER DEVELOPMENT SCHEME (IPDS): Supplementary DPR detailing the proposed projects under Smart City Proposal has been prepared by Govt. of Meghalaya. The same has been submitted to Ministry of Power, Government of India. Rs.50 Crores allocated to ensure safe and assured electricity supply, Component of underground electric wiring, Smart Metering and shifting and beautification of DTRs are proposed to converge with IPDS. Following is the split
4. SWACHH BHARAT MISSION (SBM): Under this programme, a total Rs.26.16 crores has been sanctioned to construct sanitary latrines which cover the partial financing of individual and public toilets in ABD.



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)

Risk	Likelihood	Impact	Mitigation
Removal of On-Street Parking, as on-street parking is one of the major cause of traffic congestion in ABD.	High	Will impact stream lining of traffic movement, safety of pedestrians in ABD Area and Retrofitting of Streets and city roads with Pedestrian Priority, Public Transit Priority, and Sidewalks. This can result due to non or low response for developing off-street smart multilevel parking sites through PPP.	In such situation, Govt. of Meghalaya to come to rescue of local body in Shillong to provide funds to develop parking through local body or viability gap funding for development of smart parking in ABD.
Shop owners and other Stakeholders refusing to go for Renewal of Laitumkrah Bazaar to make it safe, clean, and consumer friendly for shoppers.	Medium	Laitumkrah Municipal Bazaar is an important retail market in ABD is congested and earthquake vulnerable.. Its condition will continue as it exists today which is prone to the high risks and unhygienic environment.	To promote contiguous consultative process with shop owners and other stakeholders of Laitumkrah Bazaar, to highlight the benefit of redeveloping it.

TABLE 2

Risk	Likelihood	Impact	Mitigation
Administrative and lack of skilled human resource	Medium	<p>This may affect the project completion time as per schedule leading to increase in project cost hence affective viability of the project components such streets and roads retrofitting.</p> <p>Lack of trained/skilled human resource in local body may impact quality implementation of the smart city program in ABD.</p>	<p>The concern departments of Govt. of Meghalaya located in ABD, MUDA, SMB, PWD, State Electricity Board, PHE, and the local heads need to be regular/advisor members of the SPV to ensure inter department jurisdiction issues and conflicts are amicably resolved within the SPV. SPV ideally need to conduct regular meetings by involving all stakeholders of trade and commerce bodies, neighborhoods, govt. institutions of ABD to ensure conflict issues are well understood and resolved.</p>

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)

6 Themes are proposed with 24 projects to transform ABD into a pedestrian priority, public transport led, with 100% access to basic infrastructure having enhanced experience for shopping, work, livability, tourism and recreational facilities.

The ABD proposal contains all essential features to make City Centre and Secretariat Hill into a smart urban environment.

Essential Feature 1: Assured Electricity Supply with at least 10% input from of the smart city's energy from solar power.

- Input: Rs. 30.8 Crore investment for underground cabling.
- Activity: Additional 70 number electricity transformers will be relocated for better safety in ABD with Input of 0.5 Crores.
- Solar PV installation on rooftops of institutional and govt. owned complexes in ABD to meet peak power demand.
- Output: 12.5 MWh of solar power, which is more than 10% of peak demand. Uninterrupted 24X7 Electricity Supply in ABD.

Essential Feature 2: Adequate water supply with 100% water connections.

- Input: Rs. 21.9 Crore needed for retrofitting water supply distribution in existing areas and achieving 100% connectivity in the ABD.
- Activity: 7,099 existing connections will be provided smart meters, along with retrofitting of water supply network of 33 km in ABD to cut down NRW to 15%.
- Output: 100% water connections and assured water supply in the ABD.

Essential Feature 7: Smart Metering for water and power supply.

- Input: Rs.17.7 Crore for installation of smart water meters. Rs.4 Crore for smart electricity meters.
- Activity: Installation of 7099 smart water meters and 7099-electricity meters
- Output: Both water supply and electricity coverage with smart meters. Reduction in NRW and power losses.

Essential Feature 8: Robust IT Connectivity and Digitization.

- Input: Rs10.7Crore investment in ABD.
- Activity: Laying of 15 km fiber optic network, creation of WiFi hotspots, installation of CCTV Cameras in 10 traffic junctions, cameras on street lights for surveillance and incidence detection, 2 number air pollution monitoring, water quality monitoring at 2 locations for lake and river, and obtaining weather information. Provision of 1 digital kiosks to overcome digital divide.
- Output: Transforming ABD into Smart City Centre and Secretariat Hill with better traffic management, connected community, surveillance of parks and public space, and effective O&M of municipal services and to overcome digital divide.

Essential Feature 9: Pedestrian Friendly Pathways and Sidewalks.

. Rs.12.92 Crore for Umkhrah riverfront promenade. Rs.3.9 Crore for retrofitting of Ward's Lake cum Park.

- Activity: 2.5 km of Bazaars streets pedestrianization and 12.6 km of city roads retrofitting with sidewalks for pedestrians. 1.25 km of riverfront precinct development, Output: Turning Bazaars into pedestrian priority zones and city roads with sidewalks to make them pedestrian friendly.

Essential Feature 10: Intelligent Transport System (ITS)

- Input: Total investment of Rs.7 Crores required.
- Activity: Provision of CCTV cameras in 10 plus traffic junctions in ABD and rest in Shillong city. Provision of CCTV cameras on street lights for parking and traffic violations. GPS installation on public transport buses, App for public transport, Intelligent parking at multilevel parking nodes for 1,465 ECS.
- Output: Well organized traffic management, safe streets and ABD, public convenience for use of public transport, information on parking availability etc.

Essential Feature 11: Non Vehicle Streets and Zones.

- Input: Rs.10.55 Crore investment proposed for pedestrianization/pedestrian priority of Bazaars with restricted one way public transit.
- Activity: 2.5 km pedestrian friendly bazaars. 1.25 km of Riverfront precinct, 8.5 ha of park retrofitting
- Output: 2.5 km of exclusive pedestrian friendly streets. 8.5 acres park and 1.25 km riverfront as car free zone.

Essential Feature 12: Smart Parking

- Input: Rs.138.5 Crore proposed for Multilevel Parking at 4 locations to promote off street parking.
- Activity: Development of Multilevel Smart Car Parking for 1,465 ECS at 4 locations through PPP.
- Output: Off Street Smart parking in ABD at 4 locations and improvement in traffic congestion in roads and streets.

Essential Feature 13: Energy Efficient Street Lighting

- Input: Rs. 14.5 Crore investment proposed.
- Activity: Installation of smart solar streets lights on 15.1 km roads/streets in ABD. 1450 street lights with solar panel and LED lamps. As a part of Energy Conservation and Efficiency measure in ULBs, MA &UD, GoM will replace existing street lights with LED lights with intelligent control
- Output: Energy efficiency up to 70% from street and park lighting will be achieved. O&M cost will be reduced.

Essential Feature 14: Innovative Use of Open Spaces.

- Input: Rs.11.75 Crores proposed for development of open spaces and parks in the form of riverfront and Ward's lake Park.
- Activity: Creation of 1.25 km long riverfront and 8.5 ha park area retrofitting for public and tourism purpose. Smart lighting in the parks. Rainwater harvesting to recharge ground water. Development of riverfront from what is currently an urban backyard of the city.
- Output: People friendly and smart parks and opens spaces, riverfront promenade to experience the river. City Centre of Shillong become pedestrian friendly open and public

space based activity hub.

Essential Feature 15: Wire Free Streets and Open Spaces.

- Input: Rs.189 Crores proposed for making streets and open spaces wire free through retrofitting of streets and roads and providing UG cabling.
- Activity: Laying of 41.4 km of underground cabling in ABD and also 8.5 ha parks wiring to be underground.
- Output: Wire Free City Centre Shillong will be aesthetically appealing with pedestrianized streets, riverfront, parks, smart streets, with completely wire free as its important features.

Essential Feature 16: Encroachment Free Public Areas and Streets.

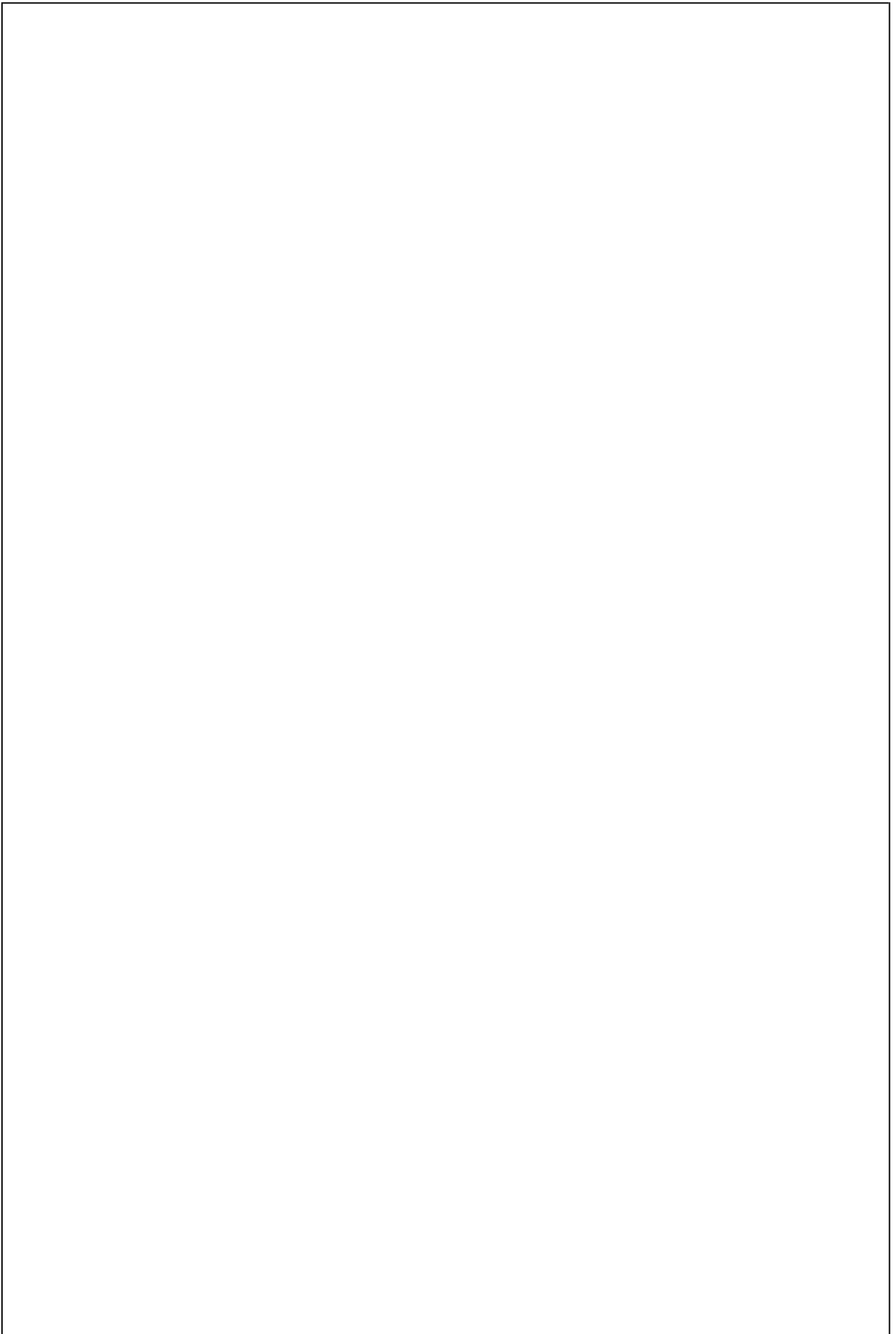
10 Crore allocated for vendor rehabilitation for in and around polo junction. The vendors around polo junction, creating traffic congestion will be shifted to the proposed re development of Polo Market.

- Activity: Redevelopment of Polo market and 33.6 km of retrofitting of streets/roads.
- Output: Encroachment free and clean streets and parks. Open and unused lands to parks, which are currently being encroached in ABD.

Essential Feature 17: Citizen Safety and Universal Access.

- Input: Rs.18 Crore proposed for this component.
- Activity: 12 traffic junction CCTV cameras, surveillance and incidence detection cameras on street lights, WiFi access in ABD, digital kiosk to overcome digital divide, provision of ramps, differently abled friendly pavements, and signal for universal access along with 15 Crores for introduction of fire hydrants in ABD for safety.
- Output: Safe City Centre of Shillong from fire and traffic related accidents to provide universal access to all.

(Refer Annexure 3.2 to 3.5.



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)

1) SPV's ability to bring all stakeholders' and commercial establishments located in ABD together on common cause of retrofitting the ABD area: Although ABD is a compact area but stakeholders related to retrofitting ABD area are numerous within the state government and also in business establishments in ABD. It is likely that all stakeholders having commercial establishment and residences will benefit from retrofitting ABD as a whole hence unlikely to cause any disruptions or project implementation delays etc.

In case there are unresolved issues on jurisdictions and commercial interests in retrofitting project components, it is recommended while preparing DPR for the ABD, more interacting workshops/meetings be conducted with all stakeholders within the government and users of the ABD area and incorporate constructive suggestions for implementation of the project components.

2) Development of Off-Street Parking through PPP. As a whole business environment in cities in NE India are different from major metros in other parts of India. In NE India, most projects or funding pattern is generally of 90:10 pattern so far hence little burden on the state to raise project financing. Ideally people who own cars should not have problem in paying nominal car parking charges hence the PPP for smart car parking is conceived.

In case no PPP response comes forth to develop the Smart Parking Complexes on PPP mode, Govt. of Meghalaya can provide viability gap funding for parking complexes to get it going through PPP or carryout these project components through institutional financing via the SPV and recover project cost through revenues stream.

Retrofitting parking complexes owned by MUDA and approach roads to Bada Bazaar. Finally moving into improvement of inner pedestrian streets in Bada Bazaar in a sensitive manner can be more implementable approach in Bada Bazaar. Redevelopment of Polo Market and renewal of Laitumkhrah market are the important markets

Continue on next page

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)

1. SCP for ABD is to achieve 100% connections and adequate provision for water and sewerage connectivity. Currently there is no sewerage system in the city, which will be segregated for SWM at source. Aim is to achieve assured 24X7 Power Supply.
2. Reduction in NRW from 45% to 15% due use of SCADA and Smart Meters.
3. Traffic movement efficiency and safety due to focus on retrofitting of streets for NMT, Public transit, and provision of off street parking along with use of ITS and 12 traffic junctions monitoring through CCTVs in ABD.
4. 70% saving in energy from street lighting through solar PV and led lights.
5. Faster O&M response due to use of smart technology for municipal services, due to installation of SCADA, Smart Meters, ITS, One City App, and surveillance CCTV cameras on streets and junctions.
6. SPV will be one point contact on projects implementation in an integrated manner in ABD area and related grievance addressal.

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

1. Pedestrianization/Pedestrian Priority in Bazaar Streets and City Roads:
 - (a) 2.5 km of pedestrian priority Bazaar Streets with one way public transit movement.
 - (b) 12.6 km of sidewalks development along with public transit priority on city roads.
 - (c) Provision of 33.6 km UG cabling making streets in City Centre and Secretariat Hill Wire Free and aesthetically appealing.
 - (d) 12 number traffic junction improvement for safety of pedestrians and traffic movement.
 - (e) 1465 ECS off street smart parking to get rid of on street parking causing congestion in ABD.
2. Public Space and Tourism Activity Expansion in ABD:
 - (a) 1.25 km riverfront creation for pedestrians and recreational activities which is currently an urban backyard.
 - (b) Retrofitting of 8.5 ha of Ward's lake cum park for improved water quality of the lake, park furniture, lighting, and maintenance system.
 - (c) Creation of 1.5 ha Shillong Haat for traditional crafts based shopping with fully pedestrianized environment.
3. Retrofitting of 3 existing parking complex near Bara Bazar:
 - (a) Retrofitting of 3 parking complexes into smart parking for commercial and private vehicles servicing Bara Bazaar.
4. Redevelopment of Polo market will facilitate rehabilitation of road side vendors and ease traffic mobility along with improvement of the aesthetic of the area.
5. Renewal of Laithumkrah market with basic infrastructure will uplift the present slum like condition.

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

1. Retrofitting of the existing three parkings around Bara Bazar wholesale market will facilitate the loading/ unloading and ease the movement along the busy section. It is expected that there will be increase in footfall by 50% in ABD leading to proportionate increase in economic and shopping activities.
2. Renewal of Laitmukhrah market will provide facility for new establishments and it will generate revenue for the local body.
3. Due to expansion of Tourism and Recreational Facilities in the form of riverfront, City cum Cultural Centre, and Shillong Haat, tourism and recreational led economic activities in ABD is likely to double (daily tourists to ABD is likely to double from current 2500 to 5000 per day), which is currently only focused around 6-7 hotels and Ward's Lake and visiting peripheral areas of the city.
4. Introduction of Shillong Haat, City cum Cultural Centre, riverfront development, and commercial complex near polo bazaar would be increase 1000-1200 direct employment for traditional craftsmen, artists, and for trade and commerce.

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

1. Due to installation of CCTV cameras in 12 Traffic Junctions and in roads/streets, there will be increased sense of security in the ABD area.
2. To overcome Digital Divide 1 digital kiosk is proposed in ABD area.
3. ABD area will have improved neighborhoods (17494 population) with safe access, and basic services leading to improved quality of life.
4. It is proposed to re develop the municipal market which is at present un safe and devoid of basic infrastructure. The construction of a new market with increased closed space area with necessary infrastructure will not only de congest and aesthetically improve the area but also consumer friendly and improve the livelihood of the people.
5. Improved public space for social and recreational activities for residents as 12.25 ha of public space cum parks will be improved/created in the ABD.

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

1. Cleaner Umkhrah river due to installation of 5 MLD STP and sewerage system in ABD, and turning 15 tons of municipal wastes into 6,000 CM/Day gas per day through installation of waste to energy plant.

2. Rainwater harvesting in 46 acres government owned office complexes and public spaces.

3. Reduction in GHG due to Clean Energy from Alternative Sources and waste to energy project.

- 12.5 MWh of Solar power from Rooftops of Govt. owned complexes in ABD area.
- 6000 CM of Biogas from 15 tons of biodegradable wastes based biogas plant from ABD area.
- Increased pedestrian infrastructure in the area will lead to lesser use of motorized transport in ABD area.
- 12.25 ha of open spaces and parks in ABD area will lead to carbon sinks and cleaner air quality.
- 1344 Solar street lights
- 1400 trees plantation along streets and in 2.0 ha city park.

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)

Cloud based e-municipality and Integrated Operations Control Centre (IOCC) will facilitate integrated services for the urban region of Shillong leading to cohesive service delivery platform. IOCC will deliver ability to centrally manage following pan city initiatives:

1. Integrated City Mobility management function for the city including transit services, traffic services, parking services, fibre optic based city network and safe city infrastructure.
2. Common city payments and services processing platform, which will deliver mobile based electronic services for payments and service consumption over mobile platform and deliver 50+ physical service delivery points across city to cater to non-smart phone users.

Above system will result in drastic reduction in service spend for citizens, significantly lower road infrastructure usage, lower GHG, higher human resource bandwidth with ULB because of lower user interaction and significantly higher citizen interaction.
(Refer Annexure 3.5)

20. COMPONENTS

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

e-Municipal Platform & IOCC as central management infrastructure shall act as city cloud infrastructure to offer application & communication management services to diverse set of stakeholders as part of smart service delivery initiative.

1. **INTEGRATED MOBILITY MANAGEMENT SYSTEM:** This component shall deliver common vehicle tracking for vehicles operated within SMB like public & private transit system, engineering, emergency(Police, Fire, Ambulance), solid waste etc. to deliver common platform of service delivery. The system shall also include transit management applications like AVL, passenger information system and electronic ticketing system. Vehicles shall be scheduled and dispatched for services using a common tool ensuring integrated mobility service planning.

2. **TRAFFIC MANAGEMENT SYSTEM:** This component shall deliver traffic management capability using junction controllers connected to central traffic management system. TMS shall be implemented across 8 identified junctions across the city to take advantage of network management capability leading to smooth traffic flow along all the major road segments within city. This system will ensure higher travel speeds leading to higher capacity utilization and decongested roads.

3. **PARKING SYSTEMS:** This system will be implemented to manage off-street & on-street parking slots identified along all major road within the city. Parking system shall be integrated with transit management system to deliver integrated travel experience like park & ride facilities.

4. **COMMON CITY PAYMENTS AND SERVICES PROCESSING PLATFORM:** This system shall be implemented to bring digital convergence platform for payment like all common household payments, civic payments etc. on to a common mobility platform and also deliver service deliver points across the city at approximately walkable distance of 500mts. This system entail use of open loop pre-paid smartcard (NCCMC) as common city card integrated with mobile wallet. This system will position itself as inclusive infrastructure for citizens irrespective of socio-economic considerations.

5. **FIBRE OPTIC NETWORK** shall be implemented across the city (approximately 100 km). This will ensure high speed bandwidth and reliability of communication system. This will also ensure accessibility and availability of digital services across all the citizens.

6. **SMART WATER METERING AND SOLID WASTE MANAGEMENT** shall be implemented to connect all household water connections through smart meters. Solid waste management shall be implemented using smart bins and vehicle tracking.

(Refer Annexure 3.6 to 3.12)

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

Following process was followed for identifying pan-city proposal in Shillong.

STAGE 1: OPTION IDENTIFICATION

As an initial step, a host of pan city solutions was listed from the literature that could bring efficiency levels in infrastructure service delivery and in turn would help improving quality of life. Pan city proposals were also listed in the area of efficient governance system in the city as well.

Following areas were listed based on review of city assessment, review of plans, results of SWOT analysis, discussions with key stakeholders and consultations with citizen groups.

1. Waste management system- recycling of waste water and solid waste,
2. Water management system - smart water metering, leakage identification, preventive maintenance,
3. Energy management system - usage of solar power and other renewable energy
4. Green technologies - rainwater harvesting /conservation of lakes
5. Safety and Security system - video crime monitoring
6. Intelligent transit/transportation system - usage of public transportation, underground utility corridors, smart parking and traffic control

STAGE 2: PRIORITIZATION

Prioritization was carried out based on citizen consultation both through on-line and face to face interviews. Over 35% of the citizens voted for having a system which would improve “city mobility management”, including transportation system, traffic management system and parking system. Another 20% desired to implement a system which would help improving governance system in the city.

STAGE 3: ASSESSMENT AND FINALIZATION

Further deliberations were held to consolidate and select a package of system which would benefit most population of the city. As a result the following was finalized.

An Integrated Operations Control Centre (IOCC) & e-Municipal System will be set up in Shillong, which will facilitate city based operations management and shall provide multi-agency based control and management functions leading to cohesive service delivery platform.

IOCC will deliver ability to centrally manage following pan city initiatives:

1. Integrated City Mobility management function for the city including transit services, traffic services, parking services, fibre optic based city network and safe city infrastructure
2. Common city payments and services processing platform, which will deliver mobile based electronic services for payments and service consumption over mobile platform and deliver 50+ physical service delivery points across city to cater to non-smart phone users.

The above mentioned system will result in drastic reduction in service spend for citizens, significantly lower road infrastructure usage, lower GHG, higher human resource bandwidth with ULB because of lower user interaction and significantly higher citizen interaction.

STAGE 4: CITIZEN OPINION AND ENGAGEMENT

Based on above assessment, SMB sought opinion of citizens in many ways. The results were:

1. ITS
2. smart information systems, good governance, mobile governance,
3. availability of smart traffic control systems, waste management systems

STAGE 5: DISCUSSION WITH KEY STAKEHOLDERS, URBAN PLANNERS AND SECTOR EXPERTS: General opinion was in the direction of implementing hassle free online services available to the citizens in a big way. They have also expressed their opinion to extend the municipal services to the citizens for efficiency and effectiveness. Discussion was also held with urban planners and traffic managers (Police) who have emphasized the need for improving the traffic and travel conditions in the city. Thus the pan city proposal is identified with the confidence that this can generate and distribute the benefits across all sections of people over the entire space of Shillong city.

The citizen engagement and consultation with stakeholder's findings clearly suggest that the improving efficiency through ITS, e-governance and citizen services and bringing the governance more closer to citizen with increased interaction, is emphasized.

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)

Integrated Operations Control Centre (IOCC) along with Integrated City Mobility management platform and Common city payments and services processing platform identified as solution to address issues and citizen aspirations as identified during stakeholder consultation process

1. TRANSIT MANAGEMENT SYSTEM: At present 240 buses are operated for the purpose of public transportation and the supply is further going to be augmented to total of buses. The current PT system operated largely in traditional manner with minimal information to commuters and internal automation. There is inadequacy in terms of reliability, schedule adherence and public facing information leading to lower ridership. Therefore, elevating user experience, efficient management processes and delivering consumer oriented approach would need introduction of automated tools and services.

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This intervention addresses requirement of transit management system which would help in delivering efficient City PT service”.

2. **TRAFFIC MANAGEMENT SYSTEM:** Shillong city witnesses lower travel speeds (15 KMPH) and poor road usage due to high heterogeneity in vehicle composition, poor lane discipline and parking issues along the main road corridors. In-order to regulate traffic and also increase compliance levels, Traffic Control System shall be implemented to manage network of junctions and additionally provide camera based traffic violation detection system to improve speeds, availability of road to motorists and safe operation condition. The resultant of this implementation would be higher travel speeds.

3. **ON-STREET PARKING MANAGEMENT SYSTEM:** Parking system is largely unregulated in Shillong city and contributes to lower road availability for motorists and traffic problems. The city has identified off-street parking slots to be regulated and introduce consistent parking charges throughout the city, and make it easier to find parking slots with the aid of mobile app that has updated information in real-time. Camera based violation detection system shall assist in identifying parking violations and improved street-side parking capacity and usage

4. **COMMON CITY PAYMENTS AND SERVICES PROCESSING PLATFORM:** Currently SMB offers common services to its citizens through wards and few services are made available over web based infrastructure. The current system lacks ability to deliver services seamlessly to all socio-economic groups within the city and also is not able to address the lack of electronic payment capability of a large population within the city. Common city payments and services platform shall offer an integrated payments and services platform to all the citizens by enabling access to electronic payments system via pre-paid open loop cards and enabling payment and services infrastructure by way of mobile apps and physical services delivery points across the city at an average walkable distance of 500 mts. This system will eradicate the digital services accessibility gap and allow SMB to deliver services seamlessly to all the citizens. This system will result in substantial saving to citizens and government. The system will result substantially lower travel requirement for services and increase HR bandwidth within SMB because of reduced consumer interaction needs.

5. **OPTICAL FIBRE NETWORK.** In-order to address high speed and reliable communication issues within the city to drive digital initiative, SMB will implement 100 Kms fibre optic network to connect all the service points within the city and make the network available for service delivery across the city.

Integrated Operations control Centre will act as the central management centre for multi-agency coordination. The system will deliver capability of integrating all proposed solutions within common platform to enable delivery of seamless services as part of smart Service objective. The system will enable connected experience to ensure that all individual services interact using a common service delivery framework to deliver seamless service and common incident management capabilities. The integrated incident management capability shall be exposed to citizens for the purpose of interaction with government over common communication platform. This will also lead to availability of

data in interoperable formats and hence can be used by third party agencies to build innovative services leading to citizen participatory and innovation framework.

The holistic approach of city mobility management including all civic government mobile assets like public transport, emergency vehicles, engineering and solid waste etc. on common platform allows the city to have access to its assets in real-time and manage higher service deliver uptime and lower time to reaction leading to higher citizen satisfaction and higher internal efficiency. The citizens will largely benefit from this holistic approach because of quick and efficient services and government at the same time shall be able to better utilize its service assets. IOCC will enable rules based service delivery framework and enable automated workflows and management tools to automate service management process.

(Refer Annexure 3.6 to 3.12)

23. INCLUSION

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

The solutions proposed as part of pan city implementation are inherently designed to be citizen inclusive and hence shall deliver same level of service to all socio-economic groups within the city.

Transit management system implementation leads to significantly higher availability and accessibility of travel infrastructure including traffic, parking and safety infrastructure. Integrated delivery of such services lead to safety and universal access to all.

Common city payments and services platform eradicates the digital divide in service consumption and makes itself available to all citizens within the city to have universal and electronic access to service infrastructure. This largely looks at making civic government services available to all the citizens irrespective of digital and economic enablement in current state.

The services are hence designed to be delivered at equitable basis to all the citizens and are inherently inclusive in nature.

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
Weak Communication Infrastructure & Slower adoption by citizens – The premise of proposed services bringing far reaching benefits is based on the fact that robust communication infrastructure and electronic payments capability will be available to ensure service delivery and consumption. In absence of such infrastructure the planned services may not deliver desired results and the benefits.	The likelihood of such an occurrence is medium basis of the fact that 3G services are available in the city and broadband roll-out and current availability is fair.	Slow adoption of services and longer gestation period to ensure higher participation in the smart framework	Fibre Optic Network is proposed to ensure that in absence of commercial network penetration, the services can be rendered in all the service areas proposed and with required enablement. Additionally to cater to non-smart users, service delivery point will ensure electronic service availability at walkable distances and hence will aid faster adoption

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TABLE 3

Risk	Likelihood	Impact	Mitigation
Lack of enthusiasm among the Citizens – too complex or the unwanted / compulsive / or partial service delivery model may result into the loss of enthusiasm which will result into non-participation among the citizens.	The likelihood of this risk is medium because of mobile technology penetration	Expected stakeholder participation and revenue objective may not realize in the time frame as planned	We shall include the change management and capacity building initiatives in order to educate the citizens about the services, the coverage and also the long time benefits.
Slow progress in volume and variety of information and service providers. Minimum critical mass in-terms of services and information is necessary to ensure user pull.	Highly likely	In an event that minimum critical mass of services is not available on the platform; it may discourage and disinterest the users to adopt the platform.	To mitigate such risk, the city management will ensure that the platform is thrown open to public at a stage that critical applications and information is available is enables users to adopt and realize real benefits easily and faster.

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)? (m ax. 500 words)

The proposed solutions are a mix of adaptation and innovation. The adaptation of integrated transport system is based on some of the best practices across cities in Singapore, London etc., common city payments and services platforms are also being implemented in other cities of India.

Integrated City Mobility Platform

Singapore has implemented integrated transit, traffic and parking systems implemented to ensure seamless travel experience which is safe and allows common control of transport services for faster travel, safer roads and optimal use of mobility infrastructure. Much like system in Singapore, the proposed ITS systems for mobility management shall be operated in an integrated manner to offer transit, traffic, parking and other associated services in a highly coordinated manner which delivers seamless and safe travel experience to the commuters. The system shall extend much needed commuter facing accessibility and availability functions like automated information and payment systems to ensure informed and integrated travel services. Additionally, all other mobile assets of city government benefit from common management services and deliver drastically increased service efficacy.

Common City Payments and Services Platform (CCPSP)

CCPSP offers uniqueness in service delivery, revenue generation opportunity, co-creation, analytics and decision support capability leveraging a common service platform. The proposed system will offer a unique opportunity of offering city service API which enables service delivery like common civic services, complaint redressal, common household payments, city social platforms, retail services, transport services etc. with a common interface to management and payments systems integration.

The platform offers a unique opportunity to enable citizens, government and businesses to co-create economic and service opportunities, collaborate to manage city in a more inclusive manner and create sustainable economic and social tie-ups to sustain the platform for mutual benefits.

The platform offers opportunity to create city benchmarking and KPI management and tracking for the purpose of ensure better management of city services and offer an environment of citizen centric growth objectives. This would enable a critical link of trust and mutual benefits based relationship which accountability, transparency and ownership between public service infrastructure and citizens.

Integrated Operations Control Center(IOCC):

IOCC infrastructure offers shared computing and management infrastructure which would lead to drastic cost reduction for all stakeholders while delivering high quality and high availability computing infrastructure to the smallest of the stakeholder and hence bring to surface drastically reduced cost of service, centralized service delivery mechanism and high opportunities availability.

IOCC will be able to truly represent collaborative computing environment which presents itself as city cloud and stakeholders can avail of its services without having to go for capital spend and accelerate revenue and service opportunities creation. IOCC will also deliver city big data opportunity to better understand city characteristics and aid policy decision to ensure policies that are formed by city authorities are based on the scientifically validated data and such policies deliver intended results.

The key differentiators are:

City-wide Service Delivery Framework
 Integrated Mobility Platform
 Integrated financial Transaction platform
 Enable City API for easier integration
 Common pool of computing resources to reduce service cost
 Big Data and Analytic as policy aid

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	Digital India Mission	<p>The proposed pan city solutions converge with "Digital India Mission" by way of creating digital service convergence benefiting all citizens at parity.</p> <p>Common payments and services platform creates opportunity for a significantly large population in Shillong city to get initiated into electronic payments ability and the same shall be achieved by making open loop prepaid common city card available to all the citizens for availing digital services either using smart devices or at physical service delivery points established within the city.</p> <p>Automation of electronic fare management system in mobility infrastructure within city also presents opportunity to digitally initiated citizens to use such services at parity.</p>

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TABLE 4

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

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)

The proposed pan city solutions converge with “Digital India Mission” by way of creating digital service convergence benefiting all citizens at parity.

Common payments and services platform creates opportunity for a significantly large population in Shillong city to get initiated into electronic payments ability and the same shall be achieved by making open loop prepaid common city card available to all the citizens for availing digital services either using smart devices or at physical service delivery points established within the city.

Automation of electronic fare management system in mobility infrastructure within city also presents opportunity to digitally initiated citizens to use such services at parity.

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)

Internal capacity and capability planning to ensure on-boarding of core technical resources to manage and sustain implementation of complex project

Project team to ensure inter-department coordination and policy decisions are taken centrally

Ensuring interoperable and open standards are implemented to ensure seamless

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integration capability

Expose city data and API's to implementation agencies and application developers for them to ensure common use of resources and delivery channels

The availability and application spread to ensure wider participation of users.

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)

YEAR 1

(a) Smooth traffic flow, lower journey time and reduced traffic congestion.

(b) All 12 Junctions to be put on TCS network

(c) parking system (2320 ECS)

(d) E-ticketing System on PT Buses

(e) Initial basic services on common payment platform

(f) Mobility Solution for PT system

(g) Implement fiber optic network along transit corridor YEAR 2-3

(a) Full implementation of common payments and services platform

(b) City Payments API exposed to public for application and payments integration

(c) PIS through multiple communication channels

(d) City Mobility Platform for all moving assets

(e) Complete implementation of fiber optic network YEAR 5

(a) All Payments and services through Common city payments and services platform

(b) Integration of Formal and in-formal transit system to compliment for last-mile / first mile, share mobility platform

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)

1. Seamless travel experience to the commuters - higher travel speeds, lesser halts and lower junction delays (% reduction in delays can be calculated given the present data).
2. Lesser fuel consumption means fewer emissions and cleaner environment.
3. By enhancing public transport with the ITS infrastructure and modern technology, the public transport can be monitored and can be made more reliable, which can directly lead to the modal shift of the commuters i.e. from private to public transport, thus decreasing the overall number of vehicles on road at any given time.
4. Moves governance from subjective to objective state, focusing on citizen centric delivery environment, citizen centric delivery environment.
5. Move from reactive to proactive governance - Highly accountable & transparent transaction environment, tectonic shift in social behavior (citizens at the core), city Intelligence from collaborative data sets to aid policy decisions.

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

1. Higher travel speeds (20-22KMPH)
2. Lower Junction Delays
3. Fuel saving
4. Lesser fuel consumption means fewer emissions and cleaner environment,
5. Increase in the share of public transportation.
6. Real-time responses to service requests
7. Citizen co-creating and socially responsive
8. Predictable quality and response agility in service rendering
9. Digital and financial enablement for all citizens
10. Economic benefits to citizens in terms of significantly less or no travel requirement for availing payments services
11. Aware Citizens
12. Citizens play a significant in city policy decisions
13. Aids highest quality of service in least cost
14. Enables higher citizen trust and collaboration

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/component	Indicator	Baseline (as on)	Target	Resources required	Likely date of completion
			2017			
AREA-BASED DEVELOPMENT						
1	SM: SMART URBAN MOBILITY SM-1: Pedestrianization and Retrofitting of Bazaar Streets 2.5 km. SM-2: Retrofitting of 12.6 km City Roads with priority on Public Transport. SM-3: Retrofitting of 18.5 Km Access Streets SM-4: 12 Nos. Traffic Junctions Improvement, SM-5: 1.2 Km New Public Transit Corridor SM-6: Multilevel Smart Parking, for 1465 ECS	Km of Pedestrianized Streets % of roads having foot path facilities % of Major roads having underground utility duct % of Major roads having Wifi Facilities No. of Public Transport Corridors % of roads having smart lighting system % of roads monitoring with CCTVs % of junctions monitors with CCTV	0.45 km 20% 0% 0% 2 Nos 10% 20% 20% 4 Nos	2.5 Km 100% 100% 100% 5 Nos 100% 90% 100% 3Nos Smart Parking Location	SM: 281 Crores SM-1: 10.55 Crores SM-2: 46.38 Crores SM-3: 55.44 Crores SM-4: 18 Crores SM-5: 12 Crores SM-6: 138.56	SM: SM-1 by 2020 SM-2 by 2021 SM-3 by 2021 SM-4 by 2021 SM-5 by 2020 SM-6 by 2021
2	CG: CLEAN AND GREEN LIVABLE NEIGHBORHOODS CG-1: Adequate Clean Water Supply with 100% connection. CG-2: Wastewater Collection CG-3: Smart Solid Waste Management CG-4: Storm Water Drainage CG-5: Solar Mission	No. of HHs connected with water supply % of Smart Water Meters Reduction of NRW % of Sewerage Water Treated % of Smart Bins % of Storm Water Drains covered % of solar street lights MWh Solar Water Harvesting in ABD in govt. owned Areas	90% 0% 45% 0% 0% 0% 0% 10% 0.5 MWh	100% 100% 15% 100% 100% 80% 100% 12.5 MWh	CG: 177.98 Crores CG-1: 21.88 Crores CG-2: 70.31 Crores CG-3: 11.86 Crores CG-4: 16.34 Crores CG-5: 57.60 Crores	CG: CG-1 by 2020 CG-2 by 2021 CG-3 by 2019 CG-4 by 2021 CG-5 by 2022

Table 5						
S · N o	Activity/component	Indicator	Baseline (as on)	Target	Resources required	Likely date of completion
3	EM: ENVIRONMENTAL MONITORING EM-1: Umkhrach River Cleaning EM-2: Rainwater Harvesting EM-3: Tree Plantation	Water quality in Umkhrach River Area covered under rain water harvesting Increase in open areas and Tree Plantation	Highly Polluted with city wastewater and solid wastes Nil 8.5 ha	Bring it to bathing water quality 46 Acres 12.25 ha and 1400 Tree Plantation	EM: 57.93 Crores EM-1: 5.08 Crores EM-2: 52.69 Crores EM-3: 0.16 Crores	EM: EM-1 by 2020 EM-2 by 2020 EM-3 by 2021
4	SCS: SMART CITY CENTRE, SHILLONG SCS-1: Intelligent City Safety, Transit services, Basic City Services SCS-2: Safe and Assured Electricity Supply, SCS-3: Fire Safety SCS-4: Smart Meters	% of Roads having underground Cabling % of Major roads covered with fibre optic network % of roads monitored with CCTV Number of Fire station and Hydrants % of HH covered with Smart Meters	0% 0% 10% 1 Fire Station and Nil Hydrants 0%	100% (33.6 Km) 50% 100% (33.6 Km network) 1 Fire Station and 100 Hydrants 100%	SCS: 81.26 Crores SCS-1: 10.7 Crores SCS-2: 70.56 Crores SCS-3: 15 Crores SCS-4: 17.7 Crores	SCS: SCS-1 by 2020 SCS-2 by 2021 SCS-3 by 2021 SCS-4 by 2021
5	TR: TOURISM AND RECREATIONAL FACILITIES DEVELOPMENT TR-1: Tourism cum Cultural Centre TR-2: Umkhrach Riverfront Development TR-3: Shillong Haat Development TR-4: Retrofitting of Park cum Ward's Lake	No. of exclusive areas for Tourism Activities Associated Public Space to River Exclusive Tourist Place for traditional Crafts Parks Area for Public Use	1 No. (Ward's Lake 8.5 ha) 125 km River in ABD is urban backyard Nil 8.5 ha	3 Nos (13.25 ha) 1.25 Riverfront public space Shillong Haat in 1.5 Ha 13.25 ha	TR: 88.86 Crores TR-1: 58.14 Crores TR-2: 7.85 Crores TR-3: 18.98 Crores TR-4: 3.90 Crores	TR: TR-1 by 2021 TR-2 by 2022 TR-3 by 2022 TR-4 by 2020

Table 5

S · N o	Activity/component	Indicator	Baseline (as on)	Target	Resources required	Likely date of completion
6	RI: Renewal of Laitumkhrah market RI-2: Retrofitting and Expansion of Existing 3 Parking Complexes	Shoppings Environment No. of Smart Parking	7.5 km congested Pedestrian Streets 300 ECS chaotic Parking	7.5 km of pedestrian improved streets 855 ECS Organized Smart Parking	RI: 146.23 Crores RI-1: 91.38 Crores RI-2: 54.85 Crores	RI: RI-1 by 2022 RI-2 by 2021
7						
8						

Table 5						
S · N o	Activity/component	Indicator	Baseline (as on)	Target	Resources required	Likely date of completion
PAN-CITY SOLUTION						
1	PAN 1 and PAN 2: E Municipality and ITMS	Integrated Dashboard and Online systems	0%	100%	PAN 1- 12 Cr PAN 2-10 Cr	PAN 1 by 2019 and PAN 2 by 2019
2	PAN 3 and PAN 4:- Traffic Management and Parking Management	Multi storey Car parks for commercial vehicle and other vehicles use	300 ECS chaotic Parking	855 ECS Organized Smart Parking	PAN 3- 7 Cr PAN 4- 2 Cr	PAN 3 by 2021 and PAN 4 by 2020
3	PAN 5 and PAN 6:- Solid Waste Management and City Payment Systems	Smart Solutions, Awareness, Segregation at Source and Smart metering	20%	90%	PAN 5- 5 Cr PAN 6- 10 cr	PAN 5 by 2020 and PAN 6 by 2020

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Table 5						
S · N o	Activity/component	Indicator	Baseline (as on)	Target	Resources required	Likely date of completion
4	PAN 7 and PAN 8: Operational Control Centre and City Fiber Network	Govt and Private Service Providers and integration between various public departments	10-15% through online and manual grievance systems	100% through Shillong One App and online systems	PAN 7- 10 Cr PAN 8- 10 Cr	PAN 7 by 2020 and PAN 8 by 2020
5						
6						

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. (m ax. 500 words)

SCP comprises Six Themes structured into 24 projects. The Projects under SCP will be implemented over five years starting 2017-18 financial year for setting up of SPV and Preparation of DPR for the implementation of the SCP.

Critical milestones for ABD are creation of off street parking, pedestrianization of Bazaars, and retrofitting of city roads with sidewalks, and of course 100% provision to basic infrastructure in ABD.

Year 1: (FY 2017-18)

Critical milestones are:

1. Setting up of SPV.
2. Preparation of Comprehensive and integrated DPR for Smart Shillong.
3. Establishment of Citizen stakeholders' groups
4. Detailed Reconnaissance Surveys and Physical Surveys of ABD.

Year 2: (FY 2018-19)

Critical milestones are:

1. SM-1: Pedestrianization and Retrofitting of Bazaar Streets
2. SM-2: Retrofitting of City Roads.
3. SM-4: Retrofitting of Traffic Junctions.
4. SM-6: Development of Multilevel Parks
5. CG-1: Retrofitting of Water Supply Network
6. CG-2: Underground Sewerage Network
7. CG-3 Smart Solid Waste Management
8. EM-1: Umkhrah River Cleaning

Year 3: (FY 2019-20)

Critical milestones are:

1. SM-1: Pedestrianization and Retrofitting of Bazaar Street
2. SM-2: Retrofitting of City Roads.
3. SM-4: Retrofitting of Traffic Junctions.
4. SM-5: New Public Transit Corridor
5. SM-6: Development of Multilevel Parks
6. CG-2: Underground Sewerage Network
7. CG-3 Smart Solid Waste Management
8. CG-4: Storm Water Drainage
9. CG-5: Solar Mission
10. EM-2: Rainwater Harvesting
11. EM-3: Tree Plantation
12. SCS-1: Intelligent Infrastructure in ABD
13. SCS-2: Assured Electricity
14. SCS-3: Fire Safety
5. SCS-4: Smart Water Meters
16. TR-1: Tourism cum Cultural Centre

17. TR-2: Umkhrah Riverfront Development
18. TR-4: Retrofitting of Ward's Lake and Park
19. RI-1: Renewal of Laitumkhrah market.
20. RI-2: Retrofitting of Parking Complexes

Year 4: (FY 2020-21)

Critical milestones are:

1. SM-3: Retrofitting of Local Streets
2. CG-2: Underground Sewerage Network
3. CG-5: Solar Mission
4. EM-3: Tree Plantation
5. SCS-1: Intelligent Infrastructure
6. SCS-2: Assured Electricity
7. SCS-3: Fire Safety
8. SCS-4: Smart Water Meters
9. TR-1: Tourism cum Cultural Centre
10. TR-2: Umkhrah Riverfront Development
12. RI-1: Renewal of Laitumkhrah market.
13. RI-2: Retrofitting of Parking Complexes

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)

Table 6 (CHECKLIST: supporting documents for 1-7 must be submitted in Annexure 4)		
S. No.	Activity	Yes/No
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

ESTABLISHMENT OF SPV:

The Shillong Smart City SPV would be a Government Company established under the Companies, Act 2013. The SPV would be formed as a Joint Venture between Shillong Municipal Board (SMB) and Government of Meghalaya (GOM). Both SMB and GOM would have equal equity participation in the SPV. At all times together SMB and GOM would hold at least 51% of the paid up share capital of the SPV. The Memorandum of Association (MOA) and the Articles of Association (AOA) will be structured as per model guidelines shared by the Smart City Mission.

CONSTITUTION OF BOARD:

The SPV will be a Government Company and the Board of Directors will be nominated by the Government in consultation with the SMB . For efficient functioning of the Board it is proposed to have a maximum of 15 Board Members/Directors including the Chairman.

The Chairperson of the Board will be an officer of the Government of the rank of Secretary to the Government. The CEO will be a Senior IAS Officer. The other directors would be the District Collector, Director, Urban Affairs, CEO SMB , Managing Director , Meghalaya Power Distribution Corporation Limited, Superintendent of Police, Regional Manager- MSRTC, Chief Engineer (CE) PWD, CE PHED, North Eastern Council and other independent directors.

The operations of the SPV would be headed by the Chief Executive Officer. The CEO would be responsible for implementing the Smart city program in Shillong, including planning, execution, and management of the various projects of the SPV.

The CEO would be assisted other senior executives like GM (Projects), GM (O&M), GM (IT), GM (F), etc. The SPV would also appoint a Project Management Consultant (PMC) for assisting the SPV in implementing the project. The necessary resolutions have been passed by the SMB.

DELEGATION OF POWERS

With a view to have functional and financial autonomy the GOM and SMB shall delegate all the rights & obligation of the SMB to SPV for implementation of the projects as per guidelines. The SPV shall also be responsible for placing subject that requires approval of the State Government or the State Level High Powered Steering Committee (HPSC) through the State level Nodal Agency.

SMB has approved the formation of the SPV vide its resolution No -----dated ----- . The SPV would be registered as a public limited company under the Companies Act, 2013. SMB has delegated the area development plan and pan city plan implementation to the SPV.

The SPV would also invite bids from private agencies for implementing the multi level parking systems, Tourism and Cultural system, Shillong haat on a PPP basis and would monitor the implementation of the same.

The handholding organisations for the SPV's functioning are SMB, MUDA, Community representatives, etc.

(Refer Annexure 3.22)

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 non-government agencies, and indicating the nature of connection with each entity.) (m ax. 50 words per cell)

TABLE 7			
S.No	Activity/ Component	Department/agency/ organization	Role/responsibility
1	<p>Smart Urban Mobility</p> <p>a. Pedestrianization and Retrofitting of Bazaar Streets</p> <p>b. Retrofitting of City Roads with Public Transport</p> <p>c. Retrofitting/Improvement of Access Roads/Local Streets</p> <p>d. All Major Junctions Improvement</p> <p>e. New Public Transit Corridors</p> <p>f. Multi Level Park (MLP) at secretariat Hill</p> <p>g. MLP near Motphran Junction</p> <p>h. MLP and Commercial Complex cum Art Gallery near Polo Junction</p> <p>i. MLP near Police Bazaar</p>	<p>SPV</p> <p>SMB</p> <p>MSRTC</p> <p>R&B- PWD NH Division and Central PPP</p>	<p>SPV: (a) Preparation of DPRs ,tendering and implementation (b) Contractual agreement between Army &MSRTC on transfer of Cantonment land on long lease for new public transit corridor and Private Entrepreneurs</p> <p>SMB:(a) Transfer of land, wherever possible, Private Entrepreneurs (b) Development of Multilevel parking by BOOT Operator for 20 years who will bear the entire cost of implementing this project and recover its investments.</p>
2	<p>Clean and Green Liveable Neighborhoods</p> <p>a. Adequate Clean Water Supply</p> <p>b. Wastewater Collection</p> <p>c. Smart SWM</p> <p>d. Storm Water Drainage</p>	<p>MA&UD, GoM</p> <p>SMB</p> <p>MOUD, GoI</p> <p>SPV</p> <p>R&B- PWD NH</p> <p>North Eastern Council</p>	<p>SPV:(a) Laying of sewerage connections(b) Convergence of funds under PWD NH (c) Preparation of DPRs, tendering the works (e) Implementation of infrastructure projects; (g) Contractual arrangements with SMB: (a)Transfer of land and consent of eligibility for STP, and other infrastructure projects (b) O&M, user charge collection&convergence</p>
3	<p>Clean and Green Liveable Neighborhoods</p> <p>e. Solar Mission</p>	<p>Meghalaya Energy Corporation limited (MECL)</p> <p>SMB</p> <p>SPV</p>	<p>MECL: (a) Preparation of plan for smart grid and implementation of net metering; (b) Installation of solar panels on all Government buildings and public spaces; (c) Net metering</p> <p>SMB: (a) Maintenance of solar street lights</p> <p>SPV: (a) Contractual agreements with MECL and SMB</p>

Continue on nextpage

TABLE 7			
S.No	Activity/ Component	Department/agency/ organization	Role/responsibility
4	<p>Environmental Monitoring</p> <p>a. Umkhrah River Cleaning</p> <p>b. Rainwater Harvesting</p> <p>c. Tree Plantation</p>	<p>SMB</p> <p>MUDA</p> <p>SPV</p> <p>Irrigation & CAD department , GOM</p> <p>State Pollution Control Board</p>	<p>Irrigation & CAD, GOM: (a) Con- tractual arrangement with SPV for river cleaning ; (b) Technical support in preparation of DPRs and procurement</p> <p>Pollution Control Board:(a) O&M of river cleaning and trees</p> <p>SPV: (a) Contractual agreeme nts with departments (b) Instal- lation of rain water harvesting;</p>
5	<p>Smart City Centre, Shillong</p> <p>a. Intelligent City Safety, Transit services,</p> <p>b. Basic City Services</p> <p>c. Safe and Assured Electricity</p> <p>d. Fire Safety</p> <p>e. Smart Water Meters</p>	<p>MECL</p> <p>SMB</p> <p>R &B</p> <p>Police</p> <p>BSNL</p>	<p>MECL: (a) Preparation and implementation of smart grid,underground cabling and net metering; SMB & R &B: (a) RoW for laying the underground cables and optical fibre: Police: (a) Monitoring the CCTV network; BSNL:(a) Laying fibre network and creation of wi-fi hot spots (b) Maintenance of wi-fi hot spots: SPV: (a) Contractual agreements,(b) Installation of wifi hot spots & surveillance system</p>
6	<p>Tourism and Recreational Facilities Development (TR)</p> <p>a. Tourism cum Cultural Centre</p> <p>b. Umkhrah Riverfront Development and Lakefront Green</p> <p>c. Shillong Haat with Green Area/ Park</p> <p>d. Organized Green in 3rd Secretariat Area</p>	<p>Department of Tourism (DOT)</p> <p>SMB</p> <p>SPV</p> <p>PPP</p>	<p>SPV:(a) Preparation of DPRs, tendering the works (b) Implementation of infrastructure projects; (c) Contractual arrangements with SMB and DOT: (a)Transfer of land if any other infrastructure projects (b) O&M, user charge collection(c) Two projects- Tourism and Shillong Haat bidded out in PPP.The BOOT Operator will bear the entire cost of implementing this project and recover its investment over 20yr period.</p>
7	<p>Renewal of Laitumkhrah Market and retrofitting of exsisting 3 multi level parking</p> <p>a. Renewal of Laitumkhrah market</p> <p>b. Multilevel Parking</p>	<p>SMB</p> <p>SPV</p> <p>PPP</p>	<p>SPV:(a) Preparation of DPRs, tendering the works (b) Implementation of infrastructure projects; (c) Contractual arrangements with SMB (d) Provide compensation to affected properties (e) User charge collection -cold storage , (f) Multilevel parking projects bidded out in PPP. The BOOT Operator will bear the entire cost of implementing this project and recover its investment over 20yr period.</p>

Continue on nextpage

TABLE 7

S.No	Activity/ Component	Department/agency/ organization	Role/responsibility
8	PAN City i) E Municipality ii) ITMS iii) Traffic Management iv) Parking Management System v) Solid waste Management vi) City Payment System vii) Operational Control Centre viii) City Fibre Network	SPV SMB Traffic Police MSRTC City Police	SPV: (a) Procurement of hardware and software requirements; (b) Procurement and Implementation of the project; Traffic police: (a) Monitoring the parking management and surveillance system; SMB: (a) Providing RoW for laying fibre; (b) Integrating the municipal services to common payments
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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	Company/corporation/ organization	Role/responsibility (basic TOR)
1	Smart Urban Mobility involves Pedestrianization and Retrofitting of Bazaar Streets, Retrofitting of City Roads with Public Transport, Retrofitting/Improvement of Access Roads/Local Streets, All Major Junctions Improvement, New Public Transit Corridors, Multi level parking - Developed on PPP	SPV will enter into a contract with a Vendor who will develop the infrastructure for this entire area and maintain the same for a period of 10 years. The vendor would implement the project as per the specification given by the SPV within the allotted time and within cost estimates. 4 Multi level parking developed by BOOT Operator over 20 year period on PPP	The vendor would be responsible for (i) Construction of all infrastructure facilities (ii) Manage the stakeholders, sub-contractors, vendors etc. (iii) Commissioning of various facilities as per scope of work and (iv) Maintenance of the facility for 10 years from the date of commissioning. BOOT Operator will maintain and recover their investment by charging user charges/rent of commercial space over period 20 years and transfer the same to the SPV.
2	Clean and Green Liveable Neighborhoods involving Retrofitting of Water Distribution Network main and distribution (Relocating Water Supply Network with New Pipes), Achieving 100% Sewerage Connection Residential Area, Commercial area, PSP Area, Underground Sewerage System, Smart Sensor Bins, Retrofitting of Major Drains	With regard to water and sewerage projects, SPV will enter into a contract with a Vendor for execution of works and providing household connection, installation of meters and maintenance of the same as also toilets and solid waste. W.r.t Waste water recycling plant, the SPV would enter into contract with a Vendor for construction and maintenance as also sale of recycled water to customers.	Two vendors would be responsible for (i) (a) Supply, and construction of water and sewerage components, construction of toilets and solid waste management and (b) Waste water recycling (ii) Manage the stakeholders, sub-contractors, vendors etc. (iii) Commissioning of various facilities as per scope of work and (iv) Maintenance of the facility for 10 years from the date of commissioning.
3	Clean and Green Liveable Neighborhoods also includes Solar PV on rooftops of Public buildings (Installation of Solar PV on rooftop in all Govt and Institutional buildings), Solar System For Street Lights, Solar Lights in Parks and Green Areas	SPV will enter into a contract with a Vendor who will install the solar panels on roof tops and provide connectivity to Discom for sale of power and also maintain the facilities for 10 years. The vendor would also install the waste to energy plant. The vendor would implement the project as per the specification given by the SPV within the allotted time and within cost estimates	The vendor would be responsible for (i) Construction, maintain and operation of each of the solar project as also the waste to energy project (ii) Manage the stakeholders, sub-contractors, vendors etc. (iii) Commissioning of various facilities as per scope of work and (iv) Maintain the facilities for 10 years from date of commissioning.

Continue on next page

TABLE 8

S. No	Activity/ Component	Company/corporation/ organization	Role/responsibility (basic TOR)
4	Environmental Monitoring includes Umkhrah River Cleaning , Rainwater Harvesting and Tree Plantation	SPV will enter into a contract with a Vendor who will provide the environmental monitoring facilities. The vendor would implement the project as per the specification given by the SPV within the allotted time and within cost estimates.	The vendor would be responsible for (i) Construction of the required rain water harvesting, river cleaning and tree plantation (ii) Manage the stakeholders, sub-contractors, vendors etc. (iii) Commissioning of various facilities as per scope of work
5	Smart City Shillong includes Intelligent City Safety, Transit services, Basic City Services ,Safe and Assured Electricity ,Fire Safety,Smart Water Meters	SPV will enter into a contract with a Vendor for executing the works and also maintain the facilities for 10 years. The vendor would implement the project as per the specification given by the SPV within the allotted time and within cost estimates. This project would be implemented in close cooperation with the Discom	The vendor would be responsible for (i) Construction of the projects (ii) Manage the stakeholders, sub-contractors, vendors etc. (iii) Commissioning of various facilities as per scope of work.
6	Tourism and Recreational Facilities Development includes 0.75 Ha of Tourism cum Cultural Centre (provision of parking, seminar halls, auditorium) , 2.5 Ha of Umkhrah Riverfront Development and Lakefront Green, 1.5 Ha Shillong Haat with Green Area/ Park (hard and soft landscaping, kiosks and restaurants), 0.82 Ha of retrofitting of park and Ward's Lake area.	SPV will enter into a contract with a Vendor who will develop this entire area and maintain it as a tourism hub. The vendor would implement the project as per the specification given by the SPV within the allotted time and within cost estimate Shillong Haat and Tourism Centre developed by BOOT Operator over 20 year period on PPP	The vendor would be responsible for (i) Supply, erection and construction of all facilities developments.(ii) Manage the stakeholders, sub-contractors, vendors etc. (iii) Commission of various facilities and (iv) Maintenance of the facility for 10 years from the date of commissioning -BOOT Operator will maintain and recover their investment by charging user charges/rent of commercial space over period 20 years and transfer the same

TABLE 8

S. No	Activity/ Component	Company/corporation/ organization	Role/responsibility (basic TOR)
8	Implementation of Pan City Project includes E Municipality , ITMS, Traffic Management , Parking Management System,Solid waste Management, City Payment System, Operational Control Centre , City Fibre Network	SPV will enter into a contract with a Vendor for executing the various projects and also maintain the facilities for 10 years. The vendor would implement the project as per the specification given by the SPV within the allotted time and within cost estimates.	The vendor would be responsible for (i) Implementing the projects (ii) Manage the stakeholders, sub-contractors, vendors etc. (iii) commission the various facilities as per scope of work, (iv) operate the various systems for a period 10 years. The vendor would also work with the SPV in building the payment platform and manage the same.
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36. STAKEHOLDER ROLES

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

- 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 (S elect from empanelled list)
- h) Handholding Organization (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

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)

The total project cost of the project is estimated at Rs 1,039 crores including Rs 966 crores for Area Based Development project (includes 3 PPP projects costing Rs148crores) and Rs 73 crores for Pan City Development project. The proposed capital expenditure, apart from creating various sustainable assets capable of generating revenue, also aims at providing basic services through creation of infrastructure.

Area Based Development Projects has 6 major themes, each of which has several sub projects. The details are as follows:

(a) Smart Mobility projects at a total cost of Rs 339.45 crores

- i. Pedestrianization and Retrofitting of Bazaar Streets - Rs 11 crores
- ii. Retrofitting of City Roads with Public Transport - Rs 50 crores
- iii. Retrofitting/Improvement of Access Roads/Local Streets - Rs 63 crores
- iv. All Major Junctions Improvement - Rs 20 crores
- v. New Public Transit Corridors - Rs 13 crores

vi. 4 Multilevel parking projects (Rs 183crores) - Rs 48 crores (at secretariat Hill) ,Rs 21crores(near Matphran Junction),Rs 75 crores (near Polo Junction),Rs 39 crores (nearBarik Junction)

(b) Clean and Green Liveable Neighborhoods costing Rs 194 crores, plans to develop Sewerage system,solar mission,storm water drain, adequate water supply, smart sensor bins etc.

(c) Environmental Monitoring at a total cost of Rs 62 crores

(d) Smart City Centre Shillong at a total cost of Rs 89 crores provides Intelligent City Safety, Transit services, Basic City Services , safe and assured electricity

(e) Tourism and Recreational Facilities Development at a total cost of Rs 126 crores as-
i. Two projects are on PPP- Tourism cum Cultural Centre (City Center) - Rs 90crores and Shillong Haat with Green Area/ Park - Rs 23 crores ii. Umkhrah Riverfront Development and Lakefront and Green (Rs 9 crores) and Organized Green in 3rd Secretariat (Rs 4 cr)

(f) Renewal of laitumkhrah Bazar at a cost of Rs 50 Crores and retrofitting of existing Multilevel parking on PPP with cost of Rs 63 crores in Bara bazaar area With an overall DPR preparation cost of Rs 43 crores

PAN CITY: Pan city projects at a cost of Rs 73 crores, consisting of:(a)E Municipality , (b) ITMS,(c)Traffic Management,(d)Parking Management,(e)Solid waste Management,(f) City Payment System,(g) Operational Control Centre(h) City Fibre Network .

(Refer Annexure 3.16 to 3.19)

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)

The Shillong SPV will fund the identified projects (the total cost of which is Rs 1039 crores) through the following sources of finance:

A1. GRANT FROM THE PROMOTERS

Total funds of Rs. 700 crores will be raised by the SPV through the following sources:

1. Government of Meghalaya will provide Rs 323 crores (45%) for the Smart City Mission through the SPV for financing the projects.
2. Shillong Municipal Board will provide a sum of Rs 27 crores (5%) to the SPV for funding the projects. Apart from this contribution, it will also utilize a part of the funds received from Government of India under the Smart city program as its own contribution towards the equity of the SPV as provided in the Smart City guidelines.
3. Government of India would provide a grant of Rs 350crores (50%)

B1. CONVERGENCE WITH OTHER SCHEMES / MISSION / PROGRAM OF GOVERNMENT OF INDIA (GOI)

A total of Rs. 191 Crore will be generated through execution of various projects which have convergence with other schemes of the Government of India and State Government Schemes.

The details of Government of India by different schemes are given below (Total of Rs 133 crores):

1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT). - Rs. 71 crores
Under this scheme , funds will be generated for waste water collection the projects relating to Provision of 100% Sewerage collection, Achieving 100% Sewerage Connection Residential Area, Commercial area, PSP Area, Underground Sewerage System)
2. Integrated Power Development Scheme (IPDS) - Rs. 50 crores
Safe and Assured Electricity and Smart water meter projects is being funded by the IPDS scheme.
3. Swachh Bharat Mission (SBM) – Rs. 12 crores. The construction of Smart solid waste management would be funded under this scheme.

B2. CONVERGENCE WITH OTHER SCHEMES / MISSION / PROGRAM OF GOVERNMENT OF MEGHALAYA (GOM)/AGENCIES.

It is also proposed to access GOM and its associated agencies for funds to execute projects under this scheme. The details of State Government of Meghalaya by different schemes is given below (Total of Rs 58 crores):

1. North East Council - 15 crores. Adequate clean water supply would be funded under this scheme.
2. Information Technology - 1.4 crore. Construction and Installation of Intelligent City Safety, Transit services, Basic City Services is funded by State IT Department.
3. PWD Central - 9 crore. All Major Junctions Improvement will be funded by this scheme.
4. PWD National Highway - 33 crore. Schemes will fund Retrofitting/Improvement of Access Roads/Local Streets, Storm Water Drainage.

C. PUBLIC PRIVATE PARTNERSHIP

In addition to mobilizing funds through Smart city mission funds, convergence funds of GOI schemes and GOM schemes, it is also proposed to mobilise funds through Public Private Partnership (Total of Rs. 148crores). The SPV would invite PPP bids for three projects which are found to be fit for PPP implementation. The projects are :

1. Tourism cum Cultural Centre under Tourism and Recreational Facilities Development Theme – Rs90 crores.

It is proposed to implement the project through a Concession agreement. The project would be given on BOOT (Build Own Operate Transfer) mode to a private party, who will bear around 70% of the cost i.e Rs 65 Crore whereas 30% of the cost i.e Rs 25 Crore(non remunerative component) from SCM for implementation of the project . The party would also operate the facility for the Concession period and recover its investment through car parking charges, rentals from seminar hall and auditorium, commercial shops and restaurants , visitors entry fee, advertisement charges, etc.

2. Shillong Haat with Green Area/ Park under Tourism and Recreational Facilities Development Theme – Rs 23 crores.

It is proposed to implement the project through a Concession agreement. The project would be given on BOOT (Build Own Operate Transfer) mode to a private party, who will bear the entire cost of implementing this project. The party would also operate the facility for the Concession period and recover its investment through rentals from commercial shops and restaurants, advertisement charges, user fee for public toilets etc.

3. Improvement of wholesale and retail centre:

I. Renewal of Laitumkhrah Market-It is proposed to re develop the municipal market which is at present un safe and devoid of basic infrastructure. The construction of a new market with increased closed space area with necessary infrastructure will not only de congest and aesthetically improve the area but also a source of additional revenue for the local body. The total cost of Rs 50 crores will be borne from SCM.

II. Retrofitting of existing 3 multi level parking around Bara Bazar:

It is proposed to implement the project through a Concession agreement. The project would be given on BOOT (Build Own Operate Transfer) mode to a private party, who will bear the entire cost of implementing this project. The party would also operate the facility for the Concession period and recover its investment through car parking charges and commercial parking charges, advertisement charges, advertisement charges etc.

(Refer Annexure 3.20)

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. (m ax 500 words)

The SPV would implement 24 projects and 57 sub projects in Area Development and 8 projects in Pan City solutions at a total cost of Rs 891 crores. 3sub projects would be implemented in PPP mode at a total cost of Rs 148crores.

Life time costs include capital costs and O&M costs.

The various components of the project get completed from 2nd year onwards to 5th year of construction. The life cycle costs have been computed upto 12th year of commencement of the project.

AREA BASED DEVELOPMENT

a) SMART URBAN MOBILITY – Capital cost Rs 339 crores (including PPP and non PPP projects) consisting of following sub projects:

i. Pedestrianization and Retrofitting of Bazaar Streets and Retrofitting of City Roads with Public Transport (Rs 60.78 crores)- The cost of maintenance of the infrastructure is Rs 3.03 crores in the first year of completion, the life cycle maintenance cost is Rs 33.4 crores.

ii. Retrofitting/Improvement of Access Roads/Local Streets and All Major Junctions Improvement (Rs 83 crores)- The cost of maintenance of the infrastructure is Rs 4.34 crores in the first year of completion, The life cycle maintenance cost is Rs 41.5 crores.

iii. New Public Transit corridors(Rs 13cr)-Cost of maintenance of the infrastructure is Rs 0.32 crores in the first year of completion, life cycle maintenance cost is Rs 3.5 crores.

iv. PPP projects of Rs148crores - The cost of maintenance of the infrastructure is Rs 3.77 crores in the first year of completion, The life cycle maintenance cost is Rs 40.1 crores.

b) CLEAN AND GREEN LIVEABLE NEIGHBORHOODS - capital cost of Rs 193 crores consisting of following sub projects:

i. Adequate Clean Water Supply - Rs 1.7 crores in the first year of completion, The life cycle maintenance cost is Rs 18.8 crores.

ii. Wastewater Collection-Rs 5.9 crores in the first year of completion, with life cycle maintenance cost is Rs 57 crores.

iii. Smart SWM- Rs 0.9 crores in the first year of completion, The life cycle maintenance cost is Rs 11 crores.

iv. Storm Water Drainage -Rs 0.4 crores in the first year of completion, The life cycle maintenance cost is Rs 4.8 crores.

v. Solar Mission -Rs 2.91crores in the first year of completion, The life cycle maintenance cost is Rs 32.09 crores.

(c) ENVIRONMENTAL MONITORING- The total capital cost is Rs 62 crores, consisting of the following sub projects

i. Umkhrah River Cleaning Rs 0.43 crores in the first year of completion, with life cycle maintenance cost is Rs 6.2 crores.

ii. Rainwater Harvesting Rs 1.13 crores in the first year of completion, with life cycle maintenance cost is Rs 15.2 crores.

iii. Tree Plantation Rs 0.01 crores in the first year of completion, with life cycle maintenance cost is Rs 0.17 crores.

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(d) SMART CITY CENTRE SHILLONG- The total capital cost is Rs 89 crores, consisting of the following sub projects Intelligent City Safety, Transit services, Basic City Services ,Safe and Assured Electricity ,Fire Safety, Smart Water Meters- Rs 1.11 crores in the first year of completion, with life cycle maintenance cost is Rs 87.4 crores.

(e) TOURISM AND RECREATIONAL FACILITIES DEVELOPMENT- The total capital cost is Rs 126 crores, consisting of the following sub projects development of tourism centre and shillong haat and Umkhrah Riverfront Development on - Rs 5.68 crores in the first year of completion, with life cycle maintenance cost is Rs 52.44crores.

(f) Renewal of Laitumkhrah market- The total capital cost is Rs 50crores, - a Rs 1.22 crores in the first year of completion, with life cycle cost is Rs 13.40 .Retrofitting of exsisting multi level parking near Bara Bazar with capital cost of Rs 62.89 crores, and O&M of Rs 0.80 in the first year of completion, with life cycle cost is Rs 14.53 Crore

PAN CITY: Capital cost of Pan city projects at a cost of Rs 73 crores, first year O&M cost of Rs 5.83 crores and lifecycle O&M cost of Rs consisting of 60.94 crores. (Refer Annexure 3.16 to 3.19)

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)

The SPV plans to finance the ABD projects and Pan city projects through a mix of Smart City grant, Government of India convergence schemes, Government of Meghalaya convergence schemes for financing the projects.

The total project cost is Rs 1,039 crores, comprising ABD cost of Rs 966 crores and Pan city development cost of Rs 73 crores.

The detailed means of financing of the capital expenditure is given below:

1. SCM financing (GOI – Rs 350 crores, GOM – Rs315crores, and SMB – Rs 35 crores) – Total – Rs700 crores
2. Government of India Convergence schemes (Total Rs 133 cr): i. AMRUT – Rs 71 cr, ii. IPDS – Rs 50 cr iii. Swachh Bharat : Rs 12 cr.
3. Government of Meghalaya convergence (Rs 58 cr)- i. PWD NH : Rs 33 crores. ii. PWD Central: Rs 9cr. iii IT: Rs 1 cr. iv. North East Council : Rs 15 cr.
4. PPP financing: Rs 148cr.

The various sources of revenue collection for the SPV is as follows:

SPV total life cycle Revenue collection from the from water charge , sewerage charge , new sewerage connections to 8099 households (one time) and Solar mission is Rs 63.02 and Rs 0.15 cr for development of public transit corridor. The SPV is also expected to benefit from the incremental property tax earnings and development charges (of Rs 290 crores over life cycle) which are likely to be levied by SMB and this would enable the SPV to meet its commitments.

As far as PPP projects are concerned, the BOOT Operator would recover its investment and return by levying parking charges on cars, commercial vehicles, commercial development, rentals from advertisement, seminar hall, auditorium, visitors entry fee, use of public toilets etc., (Refer Annexure 3.16 to 3.19)

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)

The SPV would implement 24 projects and 57 sub projects in Area Development and 8 projects in Pan City solutions. 3 sub projects would be implemented in PPP mode. While some of the projects are not revenue generating, many of them do contribute to the revenue of the SPV.

There are several areas from which the SPV would earn revenue relating to the project. The details of the areas which would generate revenue for the SPV are as follows:

(a) Smart Urban Mobility : (i) Public transit corridor would generate income from advertisements at bus stops and hoardings(25 bus stops, with 10 sq mt of advertisement area. 250 sq mt of advertisement). The project would generate a revenue of Rs. 0.014 crores in first year of operation and over Rs 0.15 crore over project life cycle of 12 years.

(b) Clean and Green Livable Neighborhoods :

(i) Adequate Clean Water Supply: A volumetric water charges at Rs 10 per KL generate a revenue of Rs 21.4 crores over the life cycle period.

(ii) Waste Water connection: A sewerage connection charge of Rs 10,000 for 8,099 new connection and sewerage charges @ 75% of water charge generates (at Rs 7 per KL) and sale of recycled water at Rs 6 per KL generate a revenue of Rs 27.64 crores over the life cycle period.

(iii) Smart SWM and Storm water drainage: No income is expected from these activities.

(iv) Solar Mission: Sale of surplus power is another revenue generating component for the SPV. The Power generated in 1 Ha area will be 1.12 Million units/Year which can be sold to Grid for Rs. 0.67 Crore/Year. So Total Revenue from Solar Plants will be 6.2 Crore/Year. Revenue of Rs 83.1 crores over the life cycle period.

(Refer Annexure 3.19)

Overall, during the period of 12 years from commencement of construction, against a O&M expenditure of Rs 402 crores. The SPV is expected to earn revenue of Rs 132 crores. The SPV is also expected to earn an additional income of Rs. 290 CR from incremental revenue from taxes and development charges. This enables the SPV to earn a surplus of Rs 20 cr at end of 12 years.

(Refer Annexure 3.19)

PUBLIC PRIVATE PARTNERSHIP PROJECTS: (a) Multi level car parking development. With an investment of Rs 148 crores, the PPP Developer would be awarded a Concession for a period of 20 years. The Concessionaire's revenue from parking charges (car parking, commercial vehicle parking, advertisement revenue etc.) i. Parking at Secretariat Hill (Project cost Rs 48 crores) - Income from parking charges (@ Rs 20 per hour (average) for car parks and Rs 70 per hour (average) for commercial vehicles) and advertisement is expected to aggregate to Rs 249 crores over the Concession period of 20 years. The project is expected to provide a Project IRR of 19% pa.

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ii. Parking at Motphran (Project cost Rs 13 crores)- Income from parking charges @ Rs 20 per hour (average) for car parks and Rs 70 per hour (average) for commercial vehicles and advertisement revenue is expected to aggregate to Rs 54 crores over the Concession period of 20 years. The project is expected to provide a Project IRR of 15% pa.

iii. Parking near Polo Junction (Project cost Rs 53 crores)- Income from parking charges (@ Rs 20 per hour (average) for car parks and Rs 70 per hour (average) for commercial vehicles) and advertisement is expected to aggregate to Rs 264 crores over the Concession period of 20 years. The project is expected to provide a Project IRR of 20% pa.

iv. Parking near Police Bazar(Project cost Rs 39 crores) - Income from parking charges (@ Rs 20 per hour (average) for car parks and Rs 70 per hour (average) for commercial vehicles) and advertisement is expected to aggregate to Rs 236 crores over the Concession period of 20 years. The project is expected to provide a Project IRR of 27% pa.

(b) Tourism cum cultural centre (Through Adaptive Reuse of Old MTC workshop) : With an investment of Rs90 crores(Rs 25 Crore SCM equity and Rs 65 Crore private investor) the PPP Developer would be awarded a Concession for a period of 20 years. The Concessionaire's revenue will be from rentals from performing arts, crafts museum , open air theatre @ Rs 35 per sqft per month (average), advertisement revenue @ Rs 4 per sqft per month (average) , visitors entry fee of 11,000 visitors per day @ Rs 25 per visitor , rentals from seminar hall and auditorium etc . A total Income from project is expected to aggregate to Rs 293 crores over the Concession period of 20 years. The project is expected to provide a Project IRR of 15% pa.

(c) Shillong Haat: With an investment of Rs 23 crores, the PPP Developer would be awarded a Concession for a period of 20 years. The Concessionaire's revenue from commercial area (@ Rs 35 per sqft per month (average))and advertisement revenue @ Rs 4 per sqft per month (average), visitors entry fee of 10,000 visitors per day @ Rs 20 per visitor , use of public toilets @ Rs 3 per person etc an Income is expected to aggregate to Rs 273 crores over the Concession period of 20 years. The project is expected to provide a Project IRR of 47% pa.

(d) Multi level car parking development near Bara bazar. With an investment of Rs 63 crores, the PPP Developer would be awarded a Concession for a period of 20 years. The Concessionaire's revenue from parking charges @ Rs 20 per hour (average) for 359 car parks and Rs 70 per hour (average) for 496 commercial vehicles and advertisement revenue @ Rs 4 per sqft per month (average) etc. An Income from parking charges and advertisement is expected to aggregate to Rs 586 crores over the Concession period of 20 years. The project is expected to provide a Project IRR of 35% pa.

(Refer Annexure 3.16 to 3.19)

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)

	Please Refer Annexure 3.16 to 3.19	

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)

The financing plan needs to address the following risks:

1. Risk of failure to mobilise full resources
2. Escalation in project costs
3. Failure to attract private investors for implementing PPP projects
4. Reduced revenue generation

Each of the above is discussed below:

1. RISK OF FAILURE TO MOBILISE FULL RESOURCES.

In this instant case, a substantial portion of the resources required by the SPV have been tied up. The Smart city financing is based on GOI/GOM/SMB commitments to contribute funds. Convergence funds are based on either ongoing programs or on the basis of commitments provided by government agencies.

2. ESCALATION OF PROJECT COSTS.

The total project cost for financing already includes inflation adjustment for capital costs @5% pa. Consequently, inflation upto 5% pa is already factored in the financing requirement. Based on past experience, a provision of 5% pa for escalation is considered to be adequate.

3. FAILURE TO ATTRACT PRIVATE INVESTORS FOR IMPLEMENTING PPP

PROJECTS: This risk is substantially mitigated by project selection. Shillong does not have any parking area and consequently it is essential to develop adequate parking space for vehicles. Consequently, all the PPP projects display a proven need, adequate demand, and therefore marketability of both these projects as PPP projects is not seen as an issue. However, in the event these projects do not evince any interest from private sector, SMB would implement these project by mobilizing funds on its own from banks/bonds, etc. for implementing these essential projects

4. REDUCED REVENUE GENERATION: This is huge risk in infrastructure projects, with willing to pay/charge user charge, inadequacy of demand, etc. being major issues.

However, in this project, a number of projects have revenue generation potential and consequently, even if some projects take time to generate revenue, other projects would compensate for such shortfall. Also, many of the projects fulfill an existing need and consequently, any major shortfall in generation of revenue is not envisaged.

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 renewable. (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)

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