

**ToR for Technical Assessment for designing Green
Mobility Zone (GMZ) program proposed under Swiss
Agency for Development and Cooperation (SDC)
funded CapaCITIES II project in Udaipur**

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ToR for Technical Assessment for designing Green Mobility Zone (GMZ) program proposed under Swiss Agency for Development and Cooperation (SDC) funded CapaCITIES II project in Udaipur

Terms of Reference Summary:

Title	ToR for Technical assessment for designing Green Mobility Zone (GMZ) program proposed under Swiss Agency for Development and Cooperation (SDC) funded CapaCITIES II project in Udaipur.
Location	Udaipur city
Project Site	Walled City area, Udaipur, also selected for Area Based Development (ABD) under Smart City Mission Udaipur.
Time Period	<ol style="list-style-type: none"> 1. TOR published on ICLEI South Asia website - 8th November 2021 2. Last date for receiving queries on the ToR - 12th November 2021 3. Last date for replying to the queries - 17th November 2021 4. Last date for acceptance of proposals - 22nd November 2021 5. Identification of winning proposal and selection of consultant - 29th November 2021 6. Signing of contract - 6th December 2021 7. Inception Report along with detailed approach, methodology and work plan for executing the assignment - 20th December 2021 8. Review of existing plans, conducting of surveys and data analysis- 25th January 2022 9. Draft report on the technical feasibility of the GMZ - 15th February 2022 10. Presentation to Udaipur Municipal Corporation: 1st April 2022

11. Final report on the technical feasibility of the
GMZ: 7th April 2022

**The above dates may be changed by ICLEI SA if required.*

1. Background and Need of the Project:

Udaipur, also known as the "Venice of the East", is one of the most popular tourist destinations in Rajasthan. Famous for its lakes and rich culture, the city is endowed with abundant heritage resources. Tourism is one of the largest contributors to the economic growth of the city and in the last few years, Udaipur has outperformed other competitive destinations in the state in terms of tourist arrivals. With a vision to capitalize and sustain the tourism growth, it is essential that the city develops requisite infrastructure that is resilient and designed in line with its heritage. To this end, the city administration has undertaken various initiatives such as projects under the Smart Cities Mission of GoI, and is also developing a Low Carbon Comprehensive Mobility Plan (LCMP) for the city.

Swiss Agency for Development and Cooperation (SDC) is supporting the CapaCITIES II project in eight Indian cities, including Udaipur. The project aims to strengthen the capacities of Indian cities to identify, plan and implement measures for achieving lower greenhouse gas (GHG) emissions growth path and enhancing resilience to climate change in an integrated manner.

A comprehensive Climate Resilient City Action Plan (CRCAP) was developed for Udaipur under CapaCITIES Phase 1, which outlined key vulnerabilities and recommended specific adaptation and mitigation measures. One of the major contributors to GHG emissions in the city is the transport sector, led by tailpipe emissions from old internal combustion engine (ICE) vehicles. CapaCITIES project Phase 2 is offering to assist the city on developing a Green Mobility Zone, so that GHG emissions, air pollution and traffic congestion in its densely populated areas can be mitigated.

ICLEI Local Governments for Sustainability, South Asia (ICLEI - South Asia), on behalf of the project and the CapaCITIES implementation team, invites proposals from mobility experts for conducting a technical feasibility study for developing the Green Mobility Zone (GMZ) in the Walled City area of Udaipur (also known as ABD area, selected under the Smart City Mission Udaipur).

1.1. Udaipur - Towards development of resilient infrastructure

The popularity of Udaipur as a tourist destination creates demand for additional infrastructure. Under the CapaCITIES Phase 1 project, a comprehensive Climate Resilient City Action Plan (CRCAP) was developed for the city which outlined key vulnerabilities and recommended specific adaptation and mitigation measures.

1.2. Mobility Scenario in Udaipur

The city is characterized by highly dense and mixed land use development patterns. The average trip length in Udaipur is 5.09 km. Almost half of these trips are made on foot, followed by private two-wheelers that account for 38% of the total trips. With limited public transportation, intermediate public transport vehicles have emerged as the mainstream shared mobility mode that account for 11% of the total trips. Private cars, buses and cycles account for 3%, 2% and 2% shares, respectively.

With an objective to promote sustainable mobility, the LCMP report recommends development of adequate NMT infrastructure to retain walking trips, along with strategies to provide reliable, comfortable and affordable public transport options to enable a modal shift from private vehicles.

1.2.1. Mobility Options in Old City and Key Challenges

One of the major tourist hotspots in Udaipur is the Walled City area, which is spread across 800 acres (5.1% of the Udaipur Municipal Corporation or UMC area) and has 1,00,000 residents (20% of the city population). It also houses prominent heritage sites and supports a large portion of the city's economic activities and generation of the GDP. Area-based development under the Smart City Mission Udaipur has also focused on developing climate-resilient infrastructure in the Walled City.

The mobility pattern in the Walled City is largely similar to the rest of the city, wherein walking predominates, followed by travel on private two-wheelers and Intermediate Public Transport. However, due to limited infrastructure availability, congestion and air pollution have emerged as two major issues. The problems in the area are further amplified by unorganized parking on the roads, plying of old ICE vehicles and limited NMT infrastructure. All these issues impact the experience of tourists.

To deal with these problems, the UMC is implementing various projects under the Smart City Mission. In the past, ICLEI South Asia had formulated a pedestrianization plan, followed by a pilot, for the Walled City. Taking into consideration the key outcomes of the pilot and with a vision to develop seamless and reliable sustainable mobility options for tourists and visitors in the Walled City, it is envisaged to develop a GMZ that will provide access to world-class sustainable mobility options.

1.2.2. An opportunity for the tourism sector

With more than 900,000 tourists visiting the Walled City every year, the GMZ will be developed not only as an area offering mobility solutions to deal with the large number of visitors, but also as an "Experience GMZ" tourism product in itself.

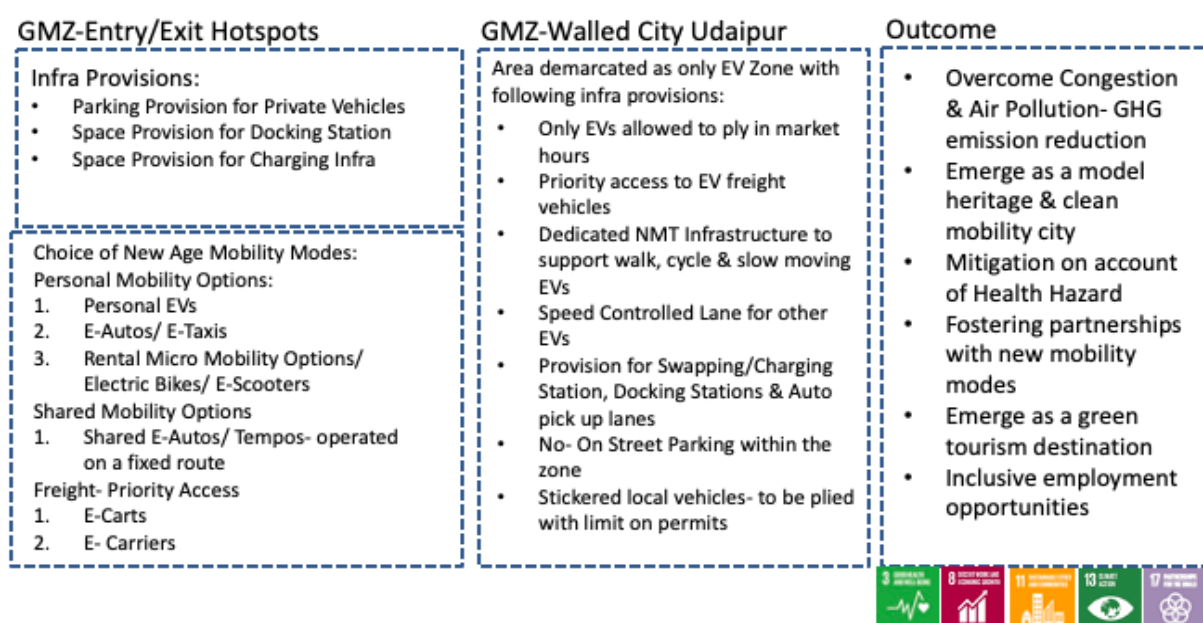
"Experience GMZ" will have a green Hop on Hop off (HoHo) service covering all major tourist destinations within the Walled City, and offering daily passes. The Tourism Department can be an anchor for the "Experience GMZ" products, and can also market the GMZ on national and international platforms. This would enable Udaipur to become a leading sustainable tourism destination.

2. Description of the Project - Development of Walled City as Green Mobility Zone:

2.1. Green Mobility Zone

The GMZ is proposed to be a designated area where only passenger electric vehicles (in addition to vehicles owned by local residents) would be allowed to ply during market/ designated hours (ideally a 14-hour period); electric freight vehicles would get priority access.

The GMZ would also provide pedestrian-friendly infrastructure, combined with new age clean micro-mobility and shared mobility options for visitors to the city, and would help to reduce traffic congestion and ambient pollution.



2.1.1. Proposed Infrastructure Provisions in GMZ

The GMZ would have all necessary infrastructure provisions to enable seamless mobility, which would include:

At Entry/ Exit Points -

- Parking provision for private vehicles and IPT vehicles (non-EV autos and rickshaws);
- Space provision for docking station;
- Space provision for charging infrastructure or swapping infrastructure for EVs as per the model of the private player;

In the GMZ -

- Space provision for installation of charging/ swapping infrastructure;
- Restrictions on street parking;
- Designated pick-up and drop-off points.

2.1.2. Solar/RE Based Charging Infra

With a view to achieve zero well-to-wheel emissions, the feasibility of solar powered charging would also be evaluated.

2.1.3. Implementation of GMZ program on an open partnership model

The GMZ would be implemented as a program in three phases, as described in the figure below:

Phase 1: Voluntary Transition of IPT: Three-wheelers

Phase 1 of the GMZ program would focus on creating an enabling environment towards achieving voluntary transition and adoption of e-autos/ e-freight vehicles to replace the current ICE-based three-wheelers. The program would aim to address the key barriers towards e-3w adoption and transition through an open partnership model, wherein the UMC would provide policy and infrastructure support and the private sector would bring in a host of ecosystem services to drive adoption. The UMC would draft a GMZ policy for Phase 1, based on the pre-design study conducted by the CapaCITIES team and in consultation with the private sector to develop an enabling ecosystem to drive adoption and transition of EVs for 3w that are being operated within the Walled City. It is envisaged under Phase 1, a target date would be set (say six months from the launch of GMZ Program) beyond which no new permits would be issued to ICE-based 3w. Also within six months of the launch of the GMZ program, a target date would be set to phase out existing ICE-based 3w in the GMZ area.

Phase 2: Augmentation of IPT and transition of two-wheelers

Phase 2 of the program would focus on creating an enabling environment for transition of private/ shared 2w to EVs and also augment the adoption of electric 3w. The program would aim to address the key barriers towards e-2w adoption (private, shared and last-mile delivery) and transition through an open partnership model, wherein the UMC would provide policy and infrastructure support and the private sector would bring in a host of ecosystem services to drive adoption. Under Phase 2 of the program, the transition of existing ICE-based 3w to e-vehicles would also be implemented. It is envisaged that after the transition period, the UMC would not allow entry of ICE-based 3w, 2w and 4w in the GMZ area. Residents of the GMZ area would be exempted from such regulations.

Phase 3: Powering EV-charging infrastructure through solar power

Phase 3 of the program would focus on the development of a policy framework to enable EV-charging infrastructure operators to draw power through RE sources. It is envisaged that under Phase 3 of the program with substantial EV adoption in the Walled City, a provision to power infrastructure with solar power would be feasible. Hence, the UMC aims to develop a rooftop rental policy, wherein private or public rooftops within the Walled City can be rented by charging infrastructure operator/ third party to supply RE to EV charging stations. This would help to further reduce the per unit cost of EV operations and the overall GHG emissions.

3. Objectives of the Project:

The main objective of the GMZ project is to convert/ transform conventional fossil fuel-based mobility in the Walled City into EV-based mobility in a phased manner, along with the provision of necessary infrastructure to support seamless transition to EVs. The target is to promote

sustainable transport systems and modes to reduce the GHG emissions caused by this specific sector.

3.1. Objective and Outputs of the Technical Feasibility Assessment:

The objective of this technical assessment for the GMZ area is to ascertain the design elements of the overall program. To achieve this purpose, the following key objectives and outputs are presented:

1. **Travel and Freight Demand Assessment** of the GMZ area for assessing the existing travel patterns, routes, trip lengths, freight volumes, operating conditions and ownerships, and for drawing a 15-year transport demand model based on scenarios for implementation of the GMZ restriction, based on socio-economic characteristics. This would also include primary consultation with key stakeholders and auto/ freight operators, among others.
2. **Infrastructure Assessment:** This is in line with the travel and freight demand model and restriction assessment of infrastructure (NMT Infra, Parking, Rolling Stock such as e-autos, e-rickshaws, e-scooters, e-freight vehicles among others, EV Charging/ Swapping areas) required to support seamless movement within GMZ restrictions. This is to be done on the basis of secondary information provided by the city, as well as primary surveys based on data gaps in secondary information.

4. Study area:

Udaipur city is considered to be one of the oldest cities in India. The foundation of the present-day Udaipur was laid in 1559 by Maharaja Udai Singh of Mewar. It was the kingdom's capital city till it became a princely state of British India in 1818. When India became independent in 1947, the Maharaja of Udaipur handed over the city to the Government of India. Udaipur was constituted as a municipality in 1922 by the Mewar dynasty, and got the status of a Municipal Corporation in April 2013.

The city is famous not only for its beautiful lakes and gardens, but also for having one of the most beautiful and largest palace complexes in the state, along with several other historic monuments (such as Srinathji or Nathdwara, Chittorgarh, Kumbhalgarh and Haldi Gati). Known for its flamboyant cultural heritage and as one of the most beautiful cities in the world, Udaipur attracts more than a million tourists annually from across the globe¹.

¹ Rajasthan Tourism Development Corporation (RTDC), Surajpole, Udaipur

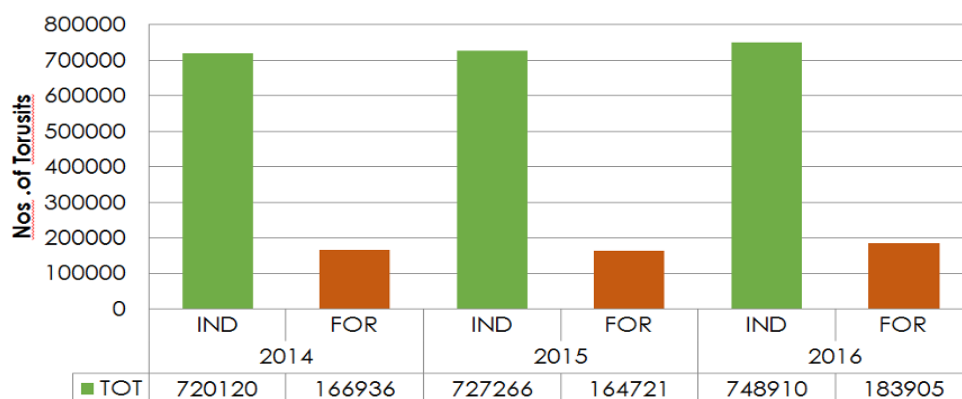


Figure 1 Number of Tourists in Udaipur on yearly basis, Domestic & International (Source- RTDC, Udaipur)

The Walled City Area of Udaipur, which is also a part of the ABD area under the Smart City Project, is the study area for this project. Spread over 3.5 sqkm, it lies in the core area of the city and is an amalgamation of heritage structures (such as the City Palace, Jagdish Mandir, Bagore ki Haveli and Gangaur ghat), main markets (Bada Bazaar, Maldas Street, Mandi Ki Naal and Dhan Mandi), hotels and mixed developed residential areas. This attracts an interesting mix of local residents and tourists who share the common space within the Walled City.

The overlapping of tourist activities and local markets brings its own problems caused by narrow roads, and lack of traffic management and parking space, and adds to the congestion and overcrowding. The narrow roads and bylanes (the width of 85% of the roads in the Walled City is less than 5m²) had been built for primarily slow-moving traffic (pedestrians, horses, bullock carts etc.), but now cater to all kinds of modern vehicles such as cars, motorbikes, autos, and tempos etc., because of the kind of economic activities happening there.

The core area, especially the streets leading to Jagdish Chowk, is severely impacted by the frequent traffic congestion and heavy traffic throughout the day. As a result, air pollution is reaching hazardous levels. The traffic congestion and air pollution problems escalate in peak tourist season (from October- December³), as the majority of important tourist destinations are located in the inner city's core (including the City Palace Complex and Pichola lake), besides

² Road Network- Total Station Survey by the PMC for Udaipur Smart City Ltd.

³ The average tourist influx during the peak season is 0.085 million (highest at 0.1 million), compared to an average of 0.045 in off-season, Source- Rajasthan Tourism Development Corporation (RTDC), Surajpole, Udaipur

numerous hotels⁴. In the absence of effective traffic management or restrictions, tourists end up driving straight into the core area, and add to the congestion.

The study area for this exercise will include the Walled City and its buffer area, as the latter will also have an impact on the GMZ project.

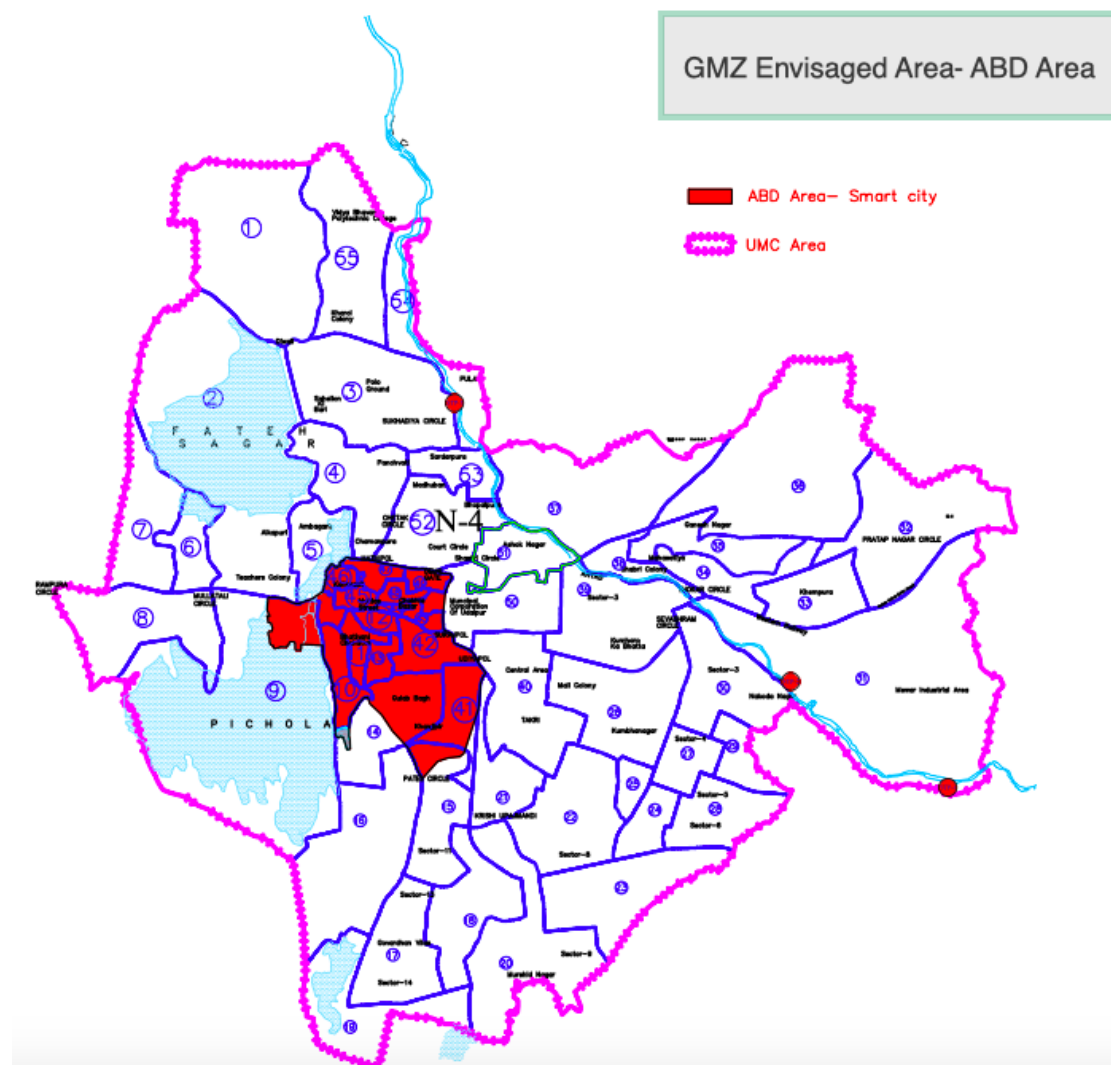


Figure 2 Udaipur Ward Map 2019

Table 1 Revised Ward No. in Year 2020

Ward No. till 2019	5	9	10	11	12	13	14	41	42	43	44	45	46	47	48	49	50	22
Ward No. as revised in 2020	5	12	52	53	58	51	13	34	50	59	59	54	55	56	57	60	42	

⁴ 300 of a total 420-450 hotels (approx. 70%) are located within the Walled City, Source- Rajasthan Tourism Development Corporation (RTDC), Surajpole, Udaipur

Table 2 Road Width and Length inside Walled City

No	Approximate Width of Roads (Mt)	Approximate Length (Km)
1	0.5< RW<2	43
2	2<RW<3	22
3	3<RW<5	22
4	5<RW<8	5.34
5	8<RW<12	2.36
6	12<RW<15	4.88

Note: Maps are attached in annexures for roads, major and minor intersections and ward map 2020.

5. Scope of Work:

In line with the objectives of the study, the scope of work includes the following, but is not limited to:

1. Collection and review of secondary information (including existing plans, PR etc.) to analyze the existing transport ecosystem relevant for GMZ in the study area;
2. Primary surveys to fill the data gaps in order to assess the travel demand in GMZ.
3. Assess the existing infrastructure in the study area and suggest the infrastructure requirement/ potential locations for successful implementation of the GMZ project.
4. Prepare the pre-assessment report for implementation of Phase 1 and Phase 2 of GMZ and support the CapaCITIES team in stakeholder consultation;

6. Detailed description of activities:

6.1. Define Project Scope

The consultant will begin by preparing an Inception Report with the following contents.

6.1.1. Study Area

As mentioned in point no. 4, the Walled City/ABD area (including buffer area) will be the study area for the project. The consultant will need to demarcate the buffer area logically and map out the overall geographical boundary of the study area, which will be analyzed for the technical feasibility of the project. The boundary of the study area should be coded by using GIS.

6.1.2. Survey Plan

The consultant must prepare a clear description of the relevant surveys required to assess the technical feasibility study of the GMZ area. The plan should describe the locations, schedule, sampling approach, and staffing plan (the consultant can hire a local survey team or agency for the surveys) for each survey. The inception report should also include all survey forms that the consultant plans to use. It is to be noted that the consultant shall be responsible for conducting the relevant surveys.

6.1.3. Work Plan

The consultant is required to prepare a detailed timeline (tentative time to complete the overall task is four months) for the assessment of technical feasibility of the GMZ in the proposed area. The timeline should indicate key dependencies and should identify contingencies to account for the possibility that certain types of data might not be available.

6.2. Collect Transport Data:

Accurate identification of the existing conditions in the transport system of the study area will provide an effective base from which to define the direction for transport improvements required for the GMZ, and to evaluate the GMZ as a concept of transport development. The consultant shall undertake relevant surveys that will help to identify the mobility needs of users (residents, local visitors and tourists).

6.2.1. Review of existing plans and demographic data

The consultant should obtain and review the secondary information related to the transport system (as available):

- Low-carbon Comprehensive Mobility Plan for Udaipur (LCMP);
- Low-carbon IPT action plan for Udaipur;
- Report on Integrated infrastructure package for ABD area in Udaipur;
- Transport-related Detailed Project Reports;
- Master Plan, Development Plan, or other land use planning documents;
- Walled City Road Network Plan, including transport-related infrastructure.

In addition to the above, the consultant shall collect the following items:

- Available maps of the Walled City, existing and proposed in the ABD area;
- Satellite images;
- Socio-economic data.

Data on socioeconomic characteristics, vehicle ownership, the transport network, transport policies, and other available information relevant to the study shall be compiled from these documents. Any inconsistency or deficiency in the information shall be noted. The consultant should compile a list and maps of existing transport projects for which budget allocations have been made or construction has already commenced.

6.2.2. Land use mapping

The consultant should use existing satellite imagery, validated through site visits, to create a detailed land use map. The consultant will prepare a GIS map of the land use information, collected along with the secondary and primary information in task 6.2.1.

6.2.3. User Survey

The consultant will carry out a detailed user survey to assess the demographic characteristics, travel behavior, and other information. The user⁵ survey should cover customized information related to local residents, shopkeepers, tourists and visitors. The survey will help to assess the transport demand characteristics.

The user survey should include a travel diary. The travel behavior of all users should be included (in person or by proxy), including the trips taken by all age and gender groups. Trips of all lengths should be included. Specifically, the consultant must not exclude short trips, especially those performed by walking (i.e. trips that are shorter than 500 m).

6.2.4. Street inventory

The consultant will prepare a detailed inventory of public streets in the study area, with a right-of-way (ROW) of 3 m and above. The consultant will prepare a GIS map of the street centre lines, recording the following data for each segment:

- Width of the public ROW, as designated in the ABD project;
- Slope of roads. (as study area is having uphill and downhill slopes so identification of the roads where e-vehicles can climb is very important);
 - Pavement quality;
 - Effective width for vehicle movement;
 - Width of the ROW occupied by on-street parking;
- Intermediate Public Transport:
 - Name and location of auto/taxi stop and stand;
- Utilities:
 - As per the ABD area project;

6.2.5. Classified cordon counts

The classified traffic volume and occupancy counts of all motorized vehicles, non-motorized vehicles, and pedestrians should be carried out. The proposed traffic survey locations should be identified during task 6.1 and be listed in the Inception Report.

For intermediate public transport (IPT) modes, the consultant should conduct a frequency-occupancy survey (described below). For personal vehicles, an average occupancy rate, determined from a representative sample in the study area, is acceptable. The consultant should also cover the light freight vehicles as a part of the survey.

The data must be compiled by using a spreadsheet or database software, and the results should be presented in tabular and graphical form. The location for each survey must be cross-referenced in the street network layer in the GIS database. Daily and weekly variations in traffic volumes should be presented. Charts should also be created to compare the passenger mode split at each location and the proportion of street space occupied by each mode. Volumes

⁵ Users can be anyone who is using or living inside the study area, and can be local residents, tenants, shopkeepers, tourists and local visitors.

and mode shares should be mapped to show traffic patterns along each corridor. The results also will be used to calibrate the transport model.

6.2.6. IPT frequency-occupancy

The consultant will use the results of the traffic counts to identify IPT corridors in the study area. At each of these locations, a detailed frequency- occupancy survey will be conducted to aid the assessment of the supply and quality of IPT services. The survey should be conducted at enough locations to ensure that 95 per cent of IPT routes pass through at least one survey location. At each location, the following data should be noted for each IPT vehicle that passes the cordon line:

- Type of service (e.g. auto rickshaw, shared rickshaw, taxi, two-wheeler, taxi etc).
- Vehicle size and type (e.g. three or two-seater rickshaw, diesel/ petrol/ LPG/ CNG rickshaw, motorcycle etc—to be determined based on the local fleet composition).
- Route numbers are not given in the study area for the IPT vehicles, so the consultant should devise an alternate methodology to determine the relative frequency of each service on the corridor.
- Number of passengers in the vehicle.
- The time when the vehicle passes the cordon line.

The data must be compiled by using a spreadsheet or database software, and the location for each survey must be cross-referenced in the street network layer in the GIS database.

6.2.7. Light freight vehicle frequency-occupancy

The consultant will use the results of the traffic counts conducted above to identify freight corridors in the study area. At each of these locations, a detailed frequency- occupancy survey will be conducted to aid the assessment of the supply and quality of freight service. The survey should be conducted at enough points to ensure that 95 per cent of the freight routes pass through at least one survey location. At each location, the following data should be noted for each freight vehicle that passes the cordon line:

- Type of service (e.g. 3W loading auto rickshaw, small 4W loading vehicle, hand/push cart etc).
- Loading/ unloading spaces
- Vehicle tonnage capacity and type (diesel/ petrol/ LPG/ CNG rickshaw)
- Freight route
- The time when the vehicle passes the cordon line.

The data must be compiled by using a spreadsheet or database software, and the location for each survey must be cross-referenced in the street network layer in the GIS database.

6.2.8. IPT operating statistics and route definitions

The consultant should collect the following system-wide data through driver and passenger interviews for the study area:

- Fare schedule (i.e. fares vs. travel distance);

- Total daily ridership;
- Average daily/ monthly revenue;
- Daily/ monthly vehicle-km operated.
- Operating cost per vehicle-km.

Surveyors should also gather information on socio-economic characteristics of the operators, including the locations where the autos/ vehicles are parked during the non-operating hours.

6.2.9. Origin-destination surveys

Origin destination surveys should also be completed on the IPT routes through user and driver interviews (e.g. the routes with the highest loads, as observed in the frequency-occupancy survey, accounting for at least 90 per cent of the total passengers observed). The surveys shall be conducted on a representative sample of trips for each route.

6.2.10. Speed and delay surveys for IPT

The IPT speed and delay surveys will be conducted on major corridors. The surveyors should make qualitative observations about the cause of delay along each segment. The IPT speed per segment should be mapped by using the GIS platform.

6.2.11. Vehicle fleet data

IPT and freight vehicle ownership and vehicle age data for those plying in the study area should be collected through surveys. The data can be gathered through auto/ taxi unions or other sources. The size of the personal motor vehicle fleet can be measured through household surveys.

6.2.12. Pedestrian count survey

The consultant needs to do a pedestrian count survey at the main intersections, market areas, tourist spots and main corridors of the study area.

6.2.13. Parking Survey

Tourist attractions, shopping streets and work and business centers are major generators of travel demand with regard to the Walled City area. The demand for parking should be established by counting each vehicle type in areas where significant on- street parking occurs. The survey should cover both on-street parking areas as well as off-street public or semi-public parking or parking lots. The consultant should also conduct a parking duration survey in order to estimate the turnover rates. Finally, the parking fees in the respective zone should be noted. All parking data should be recorded by using the GIS platform.

6.2.14. Outer cordon survey

Origin-destination (OD) surveys shall be conducted through roadside interviews on the outer cordon (to be defined by the consultant along the periphery of the GMZ area) to supplement the OD information gathered in the user survey. The survey should be conducted at all major entry/exit points and on corridors where important activities take place. The consultant shall take prior approval on the sample size and locations of such surveys. The survey should include: type of vehicle, make, type of commodity carried, origin and destination, trip purpose, place

of residence and employment of the road user and the frequency of travel (i.e. the same information that is collected in the user survey travel diary).

6.2.15. Non-Motorized Transport (NMT) opinion survey

These surveys are to be done via interviews to gauge the target subject's opinions and preferences in using the NMT as an option. This will help in taking key decisions for proposing the NMT in the study area. The surveyor needs to conduct representative sample surveys/ interviews of the users.

6.3. Analysis of the Data

The analysis of the data is the main task of the consultant. As he needs to give a detailed analysis on the travel demand assessment, infrastructure gap assessment, the requirement of infrastructure for e-mobility and the identification of phases, he needs to develop and calibrate a transport model that will be used in the strategy and implementation plans of the GMZ.

6.4. Travel Demand Assessment of the study area

The consultant needs to develop a scientific travel demand model for this assessment using the collected data and the results of various surveys done in task 6.2. The model should allow the consultant and the client to analyze the impact of different parameters and other features that can influence travel demand. It should also have the capability to measure the impact of the GMZ on the overall transport network of the study area. The consultant will also undertake a market assessment of the improved earnings of the existing IPT/ freight operators through adoption of e-mobility alternatives, and also enlist various models that support the requirement of the city from the perspective of load, charging infrastructure and topography.

6.4.1. Infrastructure gap assessment of the study area

The consultant needs to do an infrastructure gap assessment to identify the present status and future needs of infrastructure for enforcing the GMZ restrictions. Based on the analysis of the data and demand assessment, the consultant needs to develop a detailed inventory of the infrastructure needs for GMZ (NMT Infrastructure, Parking, Rolling Stock such as e-autos, e-rick and e-scooters, among others, EV Charging/ Swapping areas, Micro Mobility Options) to support seamless movement with the GMZ restrictions.

6.5. Preparation of technical assessment report for design of GMZ program

The final report should cover all aspects mentioned in the above tasks. Before submitting the final report, the consultant needs to prepare a draft report and presentation to get internal approval from the CapaCITIES team on all the pointers. The consultant needs to revise the draft report on the basis of the comments received on the draft report and internal presentation. After getting these revisions done, the consultant needs to present it in front of the UMC, in the presence of other stakeholders and the CapaCITIES team to get their approval before submitting the final report.

7. Proposal submission:

Consultants are welcome to apply for the role of technical expert.

8. Documents to be submitted by applicants:

8.1. Technical Proposal:

The Technical Proposal should provide the following information/ documents

1. The consultant's profile and detailed CV.
2. The consultant's experience in assignments of a similar nature. The outline should indicate, inter alia, the profiles, duration of the assignment, contract amount and the firms involved.
3. Detailed approach and methodology for undertaking the current assignment, project schedule with activities and duration to accomplish the task within the scheduled project duration, along with a detailed work plan; also mentioned in task 6.1 for reference.
4. List of proposed staff, and details of tasks assigned to each staff as per his/ her experience shall influence the evaluation.
5. All relevant CVs shall be provided in full detail. If the CV of a proposed staff is found incorrect, the award of the consultancy to the applicant may be liable to cancellation.

8.2. Financial Proposal:

1. A financial proposal, including information about all manpower, travel, equipment, surveys and costs, may be required.
2. The proposal shall be inclusive of all costs, including taxes associated with the assignment.
3. It is clarified that for the purpose of evaluation, the financial proposal should be prepared in INR.
4. The total amount indicated in the financial proposal shall be without any conditions attached or subject to any assumption, and shall be final and binding. In case any assumption or condition is indicated in the financial proposal, it shall be considered non-responsive and liable to be rejected.
5. The final amount should be quoted in both figures and word.
6. A copy of a valid PAN card, registration with GST, last three financial years' balance sheet (or as applicable), audited by a certified Chartered Accountant, need to be submitted.

9. Essential Qualifications and Experience:

1. The candidate should have a minimum 10 years of experience in urban transport planning and research and preferably, a good understanding of EV-based mobility.
2. Experience in planning, transportation studies, inclusive of network analysis, demand analysis, public transport and NMT studies, operations and management of transport systems is essential;
3. The candidate shall be conversant with EV-based mobility along with NMT developments across the world, and should have good communication and writing skills;
4. The candidate should be a good coordinator and would be responsible for quality of the outputs;
5. The candidate should have knowledge and experience in providing proposals for attractive, coherent, safe and comfortable infrastructure for EV-based mobility.
6. The candidate should have experience in designing EV-based transport mobility zones as well as NMT infrastructure.
7. The candidate should have experience in conducting traffic surveys, analysis and preparing circulation plans.
8. The candidate should have in-depth knowledge of the EV sector value chain, including charging components, battery technologies and solar-based charging.

10. Proposal Submission:

1. The Terms of Reference (ToR) can be downloaded from the ICLEI South Asia, CapaCITIES and UMC's websites.
2. The financial and technical proposals should be submitted as separate documents.
3. The bids should be submitted with the title "Technical assessment for designing Green Mobility Zone (GMZ) program proposed under Swiss Agency for Development and Cooperation (SDC) funded CapaCITIES II project in Udaipur".
4. The proposal can be submitted by the applicant by email to ashish-rao.ghorpade@iclei.org and cc to avantika.arjuna@iclei.org on or before 22nd November 2021.
5. The proposal shall be submitted in two parts, viz.
 - Part I: Technical Proposal;
 - Part II: Financial Proposal

11. Project duration

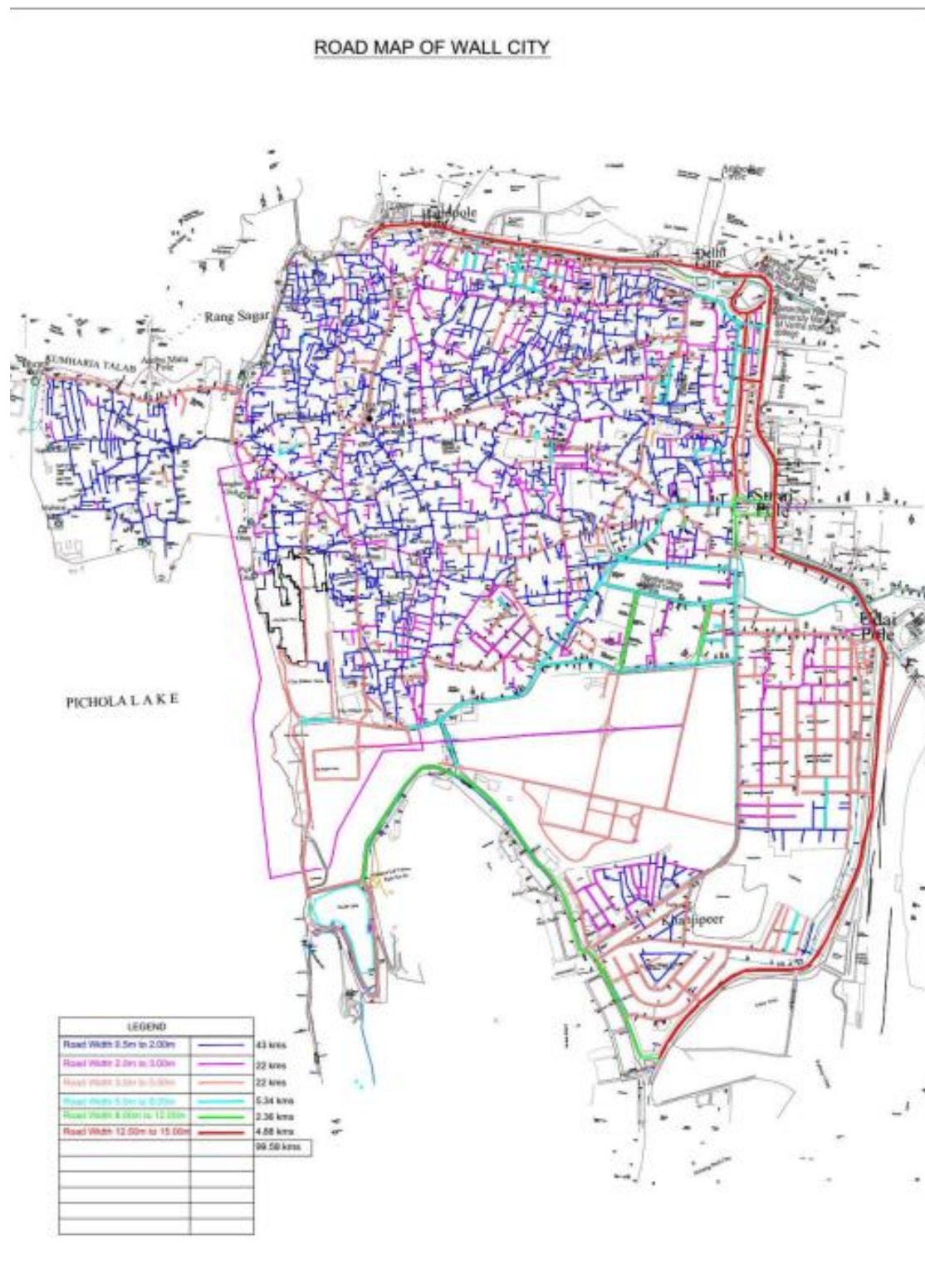
It is expected that the assignment will start from 6th December 2021 and will take around four months, starting from the date of the signing the contract with ICLEI South Asia. However, ICLEI South Asia will encourage the services to be carried out in a more intensive manner to achieve a shorter time-frame, provided the quality of the performance is not impacted negatively.

12. Terms and conditions:

1. In case of any doubt/query regarding any portion of the ToR, the applicant should send it by email to the contact person mentioned in the ToR.
2. ICLEI South Asia reserves the right to reject any proposal, and to annul the selection process and reject all proposals at any time, without thereby incurring any liability to the affected applicant or any obligation to inform the affected applicants of the grounds for such decision.
3. It should be noted that the project is being implemented in the above-mentioned area and hence, instructions to applicants will be given by ICLEI South Asia in consultation with city officials. ICLEI South Asia will be the overall in-charge for all the work that would be executed under the present scope of work.
4. The applicant shall also obtain permission from the concerned government departments related to the work/ data collection, if deemed necessary, and in coordination with city officials and ICLEI South Asia.
5. The decision of ICLEI South Asia will be final.
6. The proposals received will be scrutinized and evaluated by ICLEI South Asia in consultation with senior city officials involved in the execution of the CapaCITIES project. The winning applicant will be informed about the decision.
7. A detailed work order will be issued to the winning applicant within 14 days of the announcement of the result.
8. The selected applicant shall forward the signed and sealed work order to ICLEI South Asia at the earliest or not more than 7 (seven) days after the issue of the work order.

Annexure:

Road map of Walled City



List of Intersections and its Approximate Area:

Sr. no.	Intersection	Type	Classification	App. Area (sq m)	Recommended improvement	Remarks
1	Gayatri kirana	Y	Major	370	Signalization	3-legged
2	No name	T	Minor	70	Minor intersection	
3	Perna play way school	4legged (Y & T)	Minor	450	intersection Minor	
4	Hathipole gate	Multy legged	Major	2850	Signalization	
5	Pyau	T	Minor	100	Minor intersection	
6	Raja chowk	4 legged	Minor	80	Minor intersection	
7	Police chowk	Staggered	Minor	150	Minor intersection	
8	Chhatrio ko chowk	T	Minor	220	Minor intersection	
9	Jodhpur misthan	+	Minor	550	Minor intersection	
10	Delhi gate	Multy legged	Major	2600	Rotary	
11	Bapubazar1	Y	Minor	300	Minor intersection	
12	Bapubazar2	4 legged	Major	800	Signalization	4-legged
13	Bapubazar3	Y	Minor	500	Minor intersection	
14	Bapubazar4	4 legged	Major	1400	Signalization	4-legged
15	Chokhala bazaar	Multy legged	Minor	65	Minor intersection	
16	Nalwayachowk	Multy legged	Minor	150	Minor intersection	
17	Bhram pole	+	Minor	180	Minor intersection	
18	Ishwarniwas	Y	Minor	100	Minor intersection	
19	Jagnathmarg	4 legged	Minor	180	Minor intersection	
20	Ganesh ghati	+	Minor	50	Minor intersection	
21	Clock tower	Staggered	Major	550	Signalization	4-legged
22	Nichlamochiwara	4legged intersection (Y&T)	Minor	160	Minor intersection	
23	Lakharachowk	Staggered	Minor	50	intersection Minor	
24	Bapubazar5	Multy legged	Major	1600	Rotary	
25	Queen café restaurant	+	Minor	30	intersection Minor	

Sr. no.	Intersection	Type	Classification	App. Area (sq m)	Recommended improvement	Remarks
26	Panduvara	X	Minor	120	Minor intersection	
27	Mukharji chowk	+	Minor	220	Minor intersection	
28	Jagadish chowk	Multy legged	Minor	90	Minor intersection	
29	Jagadish temple intersection	Multy legged	Major	360	Signalization	5-legged
30	Ziniret chowk	+	Major	100	Signalization	4-legged
31	Shreeji remedies	Multy legged	Minor	765	Minor intersection	
32	Suraj pole	Multy legged	Major	4200	Rotary	
33	Hotel new jyoti	T	Major	950	Signalization	3-legged
34	Gulabbagh road chawrastha	Staggered	Major	675	Signalization	3-legged
35	Police station suraj pole chawarstha	Multy legged	Major	1000	Signalization	5-legged
36	Pichhori mohalla	Staggered	Minor	260	Minor intersection	
37	Hotel motimahahal	+	Minor	180	Minor intersection	
38	Udaipur bus station chawrasta	Multy legged	Major	5000	Rotary	
39	Vishwakarma travels	Multy legged	Minor	200	Minor intersection	
40	Kalajigoraji temple	X	Major	750	Signalization	4-legged
41	Hotalgulabbag	+	Minor	1300	intersection Minor	
42	Gold leaf hotel	T	Minor	250	Minor intersection	
43	City palace area	Y	Minor	250	Minor intersection	
44	Hotel pannadhay palace	Multy legged	Minor	370	intersection Minor	
45	Ranganiwas palace hotel	T	Major	240	Signalization	3-legged
46	Bhairuji temple	4 legged	Major	260	Signalization	4-legged
47	Roshanlal Sharma public sec. School	+	Major	80	Signalization	4-legged
48	Khanaji peer chawrasta 2	Staggered	Minor	225	intersection Minor	
49	Doodhtalai	T	Minor	170	Minor intersection	

Sr. no.	Intersection	Type	Classification	App. Area (sq m)	Recommended improvement	Remarks
50	khanaji peer chawrasta 1	T	Major	960	Signalization	3-legged
51	Rajjachowk (Patel circle)	Y	Major	5000	Signalization	3-legged
52	Ahriantfoma center	4 legged	Minor	180	intersection Minor	
53	Bulaki ka chowk	Multy legged	Minor	110	Minor intersection	
54	Vyas bhawan	Staggered	Minor	225	intersection Minor	
55	Nathi ghat chowk	Staggered	Minor	40	intersection Minor	
56	Madhanmohanmath u radhish temple	Y	Minor	70	intersection Minor	
57	Mathonkisahri	T	Minor	70	Minor intersection	
58	Khairwada hanuman chowk	X	Minor	80	intersection Minor	
59	Mahaveer bhavan chowk	T	Minor	100	intersection Minor	
60	Naiyonkitalai	Y	Minor	600	Minor intersection	
61	Gopalbhavan	X	Minor	120	Minor intersection	

Summary of Intersections

Minor intersections	41
3-legged signalized intersections	6
4-legged signalized intersections	7
5-legged signalized intersections	3
Rotary	4
Total number of intersections	61

Map of Intersections in Walled City

