

EPCA Report No 108

Parking Policy: Report on status of implementation of pilot projects on parking management as directed by the Hon'ble Supreme Court on September 2, 2019

January 14, 2020

1. Background

The Hon'ble Supreme Court in its order dated 8.7.2019 has directed Environment Pollution (Prevention and Control) Authority (EPCA) to submit opinion/proposal/report within two weeks on the pilot projects on parking management.

Following this direction from the Hon'ble Court, EPCA had convened a meeting on 19.07.2019 with the concerned stakeholders including Municipal corporations, DDA, Government of Delhi, Delhi Cantonment Board and Delhi Traffic Police to examine the way forward on addressing the matter of implementing a pilot project on parking area management plan in a residential colony. The primary interest of this exercise was to understand how parking area management plan as included in the rules could be implemented in residential colonies.

Based on the deliberations it was decided that pilot projects would be selected to demonstrate how parking area management plan in residential colonies can be operationalized. EPCA vide its report 98 to the Hon'ble Supreme Court dated 19.07.2019 reported that SDMC has apprised that it has initiated a pilot project in Lajpat Nagar that encompasses both commercial area of Central market and adjacent residential colonies of Lajpat Nagar I, II, III and IV. From this Lajpat Nagar III has been selected to demonstrate the plan.

Based on EPCA report 98 dated 19.07.2019, the Hon'ble Supreme Court in its order dated 2.09.2019 had directed

“EPCA to give a detailed report of the working of the pilot project in Lajpat Nagar by 30.12.2019. And directed EPCA to prepare pilot project(s) for Krishna Nagar and Kamla Nagar within two weeks immediately after which such pilot projects will be started there. With regard to the working of such pilot projects let the report be submitted by 30.12.2019”.

As directed by the Hon'ble Supreme Court, three representative pilot projects from the three municipal corporations that include Lajpat Nagar III (South Delhi Municipal Corporation), Kamla Nagar (North MCD) and Krishna Nagar under East Corporation have been selected for implementation by December 2019 in order to frame the roadmap for city-wide implementation. This report is being submitted in compliance with the directions of the Hon'ble Supreme Court of 2.9.2019.

2. Status of progress of pilot projects

EPCA has reviewed the three pilot projects to assess the progress and learning. The implementation of the pilot projects is ongoing. Detailed status of the projects as available from the three municipalities are annexed (Annexure I, 2 and 3). Parking area management plans have been prepared according to the guidance framework and guidelines prepared along with the Parking Rules, as notified by the Delhi government on the directions of the Hon'ble Court. The framework is a step-by-step guide that informs implementing agencies about the method to follow to prepare parking management plans.

The three plans, with some variance, have delineated the management area, evaluated ground situation to identify all kinds of street activities; created parking space inventory in terms of currently available on-street and off-street parking, multi-level or stack parking in the area, parking within buildings, under-utilized plots/building premises/vacant spots, vending zones etc. Also, the detailed plans have included essential street furniture and services including public toilets, public utilities and green areas within the neighborhood that need to be provided. In the plans the implementing agencies have demarcated legal parking areas and also identified new spaces on ground and installed signages and monitoring infrastructure.

The guidelines require that parked or moving vehicles should not block the access route of emergency vehicles (ambulance, fire trucks, police vans etc.) to any building in any area. Also, areas that has not been identified and notified and physically demarcated as a parking site/spot would automatically be considered a 'no-parking zone' and relevant penalties shall be applicable. Premium short-term parking will be provided for visitors on road. Some part of parking available

3. Tender for installation of bollards have been issued and are expected to be finalized very soon. These physical barriers will ensure enforcement of the plan.
4. Demarcation of pedestrian path and parking is complete - for Mandelia Road, Agrasen Road and Kolhapur Road. Kolhapur road has been cordoned off with help of spring posts and bollards. It is now a pedestrian street. Remaining spring posts bollards on Agrasen Road shall be fixed before January 14th.
5. Demarcation for street vendors will be done from 08.01.2020 and is expected to complete by 13.01.2020. Approximately 300 vending spots shall be created on all roads put together. The process of registry of vendors has been initiated with the help of Town Vending Committee (TVC).
6. Monitoring and Towing vehicles of violating on-street parking to start from Tuesday (14th). No Parking Signage has already been installed on all roads.
7. Fixing of charges for residential parking - night time and day time to be fixed in this week, in negotiation with the Spark Mall. A monthly rate which is agreeable to all shall be reached and will be enabled from 14.01.2020.
8. Along with above, some pedestrian-oriented events shall be created to celebrate the space. Night market concepts will be initiated and tested along with street fest of food and Art.
9. Parking pricing for commercial area will be introduced as soon as the proposal which is with the Minister Transport, Delhi Government since 09.10.2019 is approved.

Technology usage in PAMP: North MCD has scoped a comprehensive **Parking App for parking management**. The app tender is under review after which it shall be floated around third week of January 2020. The app will be implemented in Karol Bagh and Kamla Nagar respectively and is expected to be scaled up to include other PAMP areas within the jurisdiction. Details of the app and its working model are provided later in the report as Annexure 4.

Implementation challenges as stated by North MCD

- Drying of painting used for road marking has been a challenge in winter but will be completed as soon as the weather improves.
- The finalization of parking pricing has delayed the issue of parking stickers to be issued by RWA.

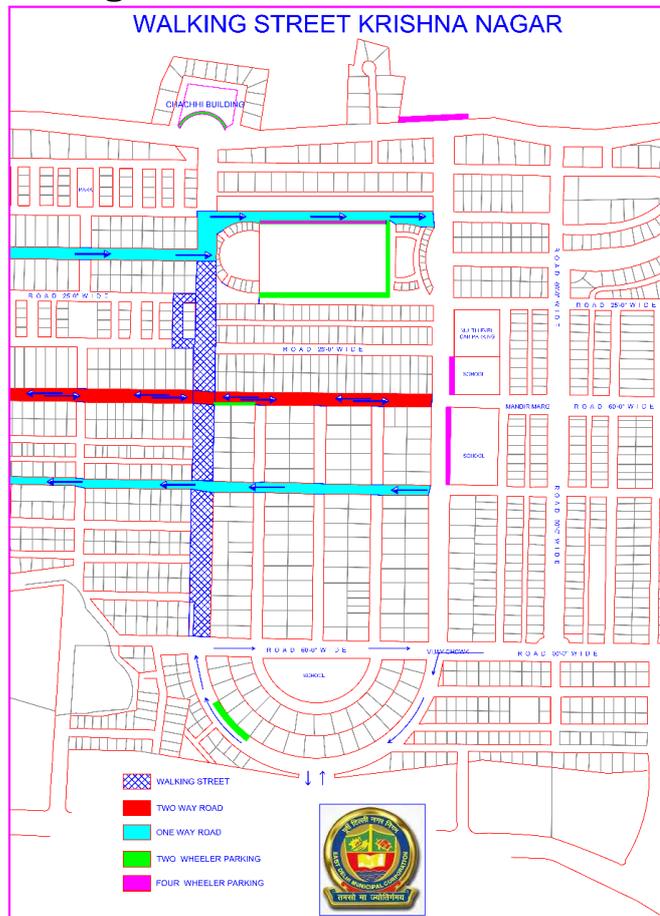
EPCA comments based on review and inspection on ground:

- a. The Kamla Nagar Parking Area Management Plan is being implemented satisfactorily and now the key will be enforcement to ensure continuity.

- b. The Parking App proposed by North MCD will be reviewed to see if it can be scalable across the city. EPCA's assessment is that instead of RFID it would be better to develop and scale up a parking Application for the entire city. In this way multiple parking apps in city can be avoided to remove any discrepancy and overlapping of interest. EPCA has noted the need for a comprehensive Parking App that provides information on parking to citizens of Delhi. Details of the App are attached as Annexure 4.

- c. Parking pricing for commercial areas should be approved in priority by the Delhi Transport Department at the earliest. Without this, enforcement of the parking management plan will become difficult and unsustainable.

2.2 Krishna Nagar: Implementation of pilot project on parking management



Review of progress with East MCD as of January 7, 2020

1. Signages have been installed and the parking plan has been implemented from January 6.
2. Pedestrian plaza on Lal Quarters road have been cordoned off from motorized access roads. Lal Quarters road(1.5km) is planned to be a pedestrian plaza on which ornamentation and public convenience like benches have been installed. Lal Quarters roads cuts across 3 motorized roads. To restrict motor vehicles, shackles and barricades are installed on access from these motorized roads to Lal quarter's road.
3. On-street parking for residents is kept to all the local residential roads. Parking is being prohibited from major roads. Spaces within the market are used as designated parking for two wheelers separately and four wheelers separately.

4. Road marking will be done as soon as weather improves as the paint is not working on the road. At present traffic infrastructure as cones and barricades are used for implementation

5. Turnout during trial run for 7 days during Oct 2019 was hugely successful. RWA and trader associations has been hugely cooperative in the implementation process.

6. Cost of ornamental road infrastructure, public convenience and area maintenance cost is being borne by RWA and trader association

6. Parking stickers are yet to be issued by RWA. RWA would also issue emergency pass to residents which can be only used during emergency where one would be allowed to bypass any traffic restrictions planned within the PAMP area

7. There has been some opposition from RWA on designating Mandir Marg as one way. It is the central road within the PAMP area and is comparatively wider(>10m) than the surrounding roads and provides access to major arterial road (Swami Dayanand Marg) and Raghunath temple where footfall is considerably higher. Based on their suggestions and discussions with RWA, the parking plan has been altered to make Mandir Marg two way and the two parallel roads along Mandir Marg are kept one way as planned. However, the one-way roads are yet to be implemented. EDMC has held public street fairs to encourage participation by residents and traders on the newly cordoned pedestrian stretch.

8. Parking management has been tendered out to third party for a contract of 3 years on a revenue sharing working model (75% revenue to EDMC, rest 25% on management including manpower).

Technology usage in PAMP: EDMC too plans to introduce a comprehensive App to manage PAMP. EPCA is asking EDMC to wait for the implementation of the North DMC App as this could be scaled up. In this way, duplication and cost will be avoided.

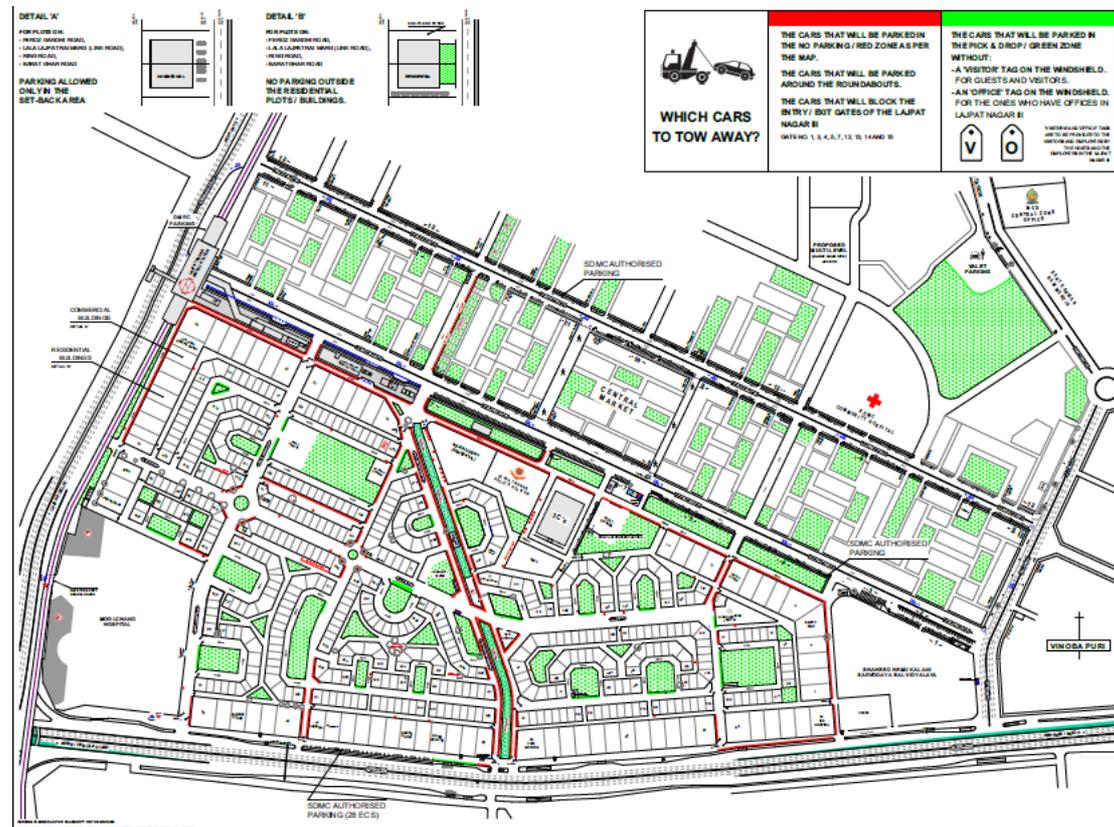
EPCA comments based on review and inspection on ground

a. The parking plan in Krishna Nagar is being implemented from 6.1.2020 and progress is satisfactory. The objective is now to ensure sustainability.

b. EPCA has also taken cognizance of the fact that EDMC has tendered the management of the area and developed a revenue sharing model that includes both on-street and off-street parking. This is important as it has been found that if there are different agencies for on-street and off-street parking it does not allow for effective management and does not ensure that the off-street is first optimized before on-street is used. The parking rules provide for differential parking rates for on-street and off-street to incentivize better parking as well.

c. As in the case of Kamla Nagar, here also, the parking pricing for commercial areas is crucial for implementation and should be approved urgently.

2.3 Lajpat Nagar III: Implementation of pilot project on parking management



Review of progress with South MCD as of January 7, 2020

1. Signage are being installed as per plan (Annexure 1). Bollards and 'Tow away zone' signage are put up in the Shaheed Mohan Dutta Marg to discourage parking and make it a pedestrian walking space, at the request of the RWA.
2. Residents will have free designated parking along streets within Lajpat III. RWA will issue resident and visitor stickers and will work closely with SDMC to implement the plan. SDMC has identified that the demand for vehicles is 2477; of which 905 vehicles will be accommodated inside houses and remaining 1572 will be parked outside. Of this 1572, on-street parking is available for 1414 vehicles and supply for another 806 vehicles has been identified.
3. SDMC has held discussions with RWA regarding the opening of 15 colony gates, which are required to implement the plan and to allow access for emergency vehicles. However, the RWA has said that it will require funds to manage the gates so that they can be 'manned' and

security ensured. SDMC lacks manpower & vehicles to tow cars and manpower.

4. At the request of RWA, SDMC has agreed to restrict traffic movement for three hours every Sunday on Shaheed Mohan Dutta Marg (Nallah road) to facilitate Rahagiri – residents can claim and use the streets in this time.

5. For enforcement, vehicles being parked in the No-Parking zone are being clamped/towed away; 44 dumped cars identified during the survey have been removed; illegal encroachments like iron gates, planters, porta cabins etc are being continuous removed.

Technology usage in Lajpat Nagar III

SDMC along with the Lajpat Nagar trader association have implemented a parking app for Lajpat II, which they plan to extend for Lajpat III as well. However, implementation of the app is subject to review and as of now the app is not available on the web platform as it was appraised by SDMC to EPCA.

Implementation challenges as stated by SDMC and discussed with EPCA on January 7, 2020

1. Lajpat III and Lajpat II are seamlessly connected where the areas share common arterial roads, public transport stops etc. The area needs a wholesome approach in terms of pricing strategy that would be crucial to implement PAMP. Users always tend to park in less priced or free parking areas. Residential areas should have a pricing strategy too that secures and aligns with the best interest of residents.

2. A user will tend to utilize lower or free parking locations on-street and on residential areas as there will be no incentive/dis-incentive for users to use the paid off-street parking facilities. The parking pricing strategy for residential should also be brought into consideration and a feasible base price fixing formula should be worked out.

3. The parking charges will also provide funds for management. As of now, RWA Lajpat Nagar III does not have fund to 'man' all 15 gates installed in the area for security purpose. Moreover, management of parking, manpower for security, parking infrastructure, stickers etc.

needs funds for management which should be borne by car owners directly. There should be daily/monthly parking fees for residents and in case of multiple ownership, the fees for second car should be in a ratio more as suggested in the “Delhi Maintenance and management of Parking Places Rules, 2019”.

3. EPCA recommendations for the consideration of the Hon’ble Supreme Court

Based on the review of the progress of the three pilot projects the following are the recommendations for necessary directions from the Hon’ble Supreme Court.

	Status	Recommendations for the consideration of the Hon’ble Supreme Court
1	<p>Implementation of pilot projects in Lajpat Nagar III, Kamla Nagar and Krishna Nagar is ongoing and progress is satisfactory. However, now it will be important to ensure sustainability so that these pilot parking management projects remain operational and are successful.</p> <p>EPCA will continue to monitor the will bring any issue to the attention of the Hon’ble Court that requires its direction.</p>	<p>Direct South, East and North Municipal Corporations to ensure sustainability of the projects through enforcement and ensuring that any problem is sorted out.</p>
2.	<p>The sustainability of the parking plan depends on the approval of the parking rates for commercial areas, as stipulated in the Delhi Maintenance and Management of Parking Places Rules, 2019. The rules have been notified by the Delhi government, as directed by the Hon’ble Supreme Court.</p>	<p>May direct the Government of Delhi to urgently notify the parking rates for commercial areas, which are included in the notified in the parking rules 2019.</p>

	<p>However, EPCA has been informed that the file for notifying the parking rates for commercial areas is with the Hon'ble Minister Transport as of 9.10.2019. (Annexure 5)</p> <p>This delay to notify rates for commercial parking will jeopardize the successful implementation of the pilot projects</p>	
3.	<p>EPCA has reviewed the different technology options for effective parking management. It has found that RFID will not be easy to use/install as it would require huge investment in cameras and staff for enforcement. Across the world, the used technology is APP based.</p> <p>The North MCD has already put out tenders for development and use of APP based parking management, which is very promising (Annexure 4). Also, the South MCD has an APP, developed by traders of Lajpat Nagar, which is proposes to use to see applicability.</p> <p>Based on the operationalization of these APP based technologies for parking management, EPCA will work with the municipal corporations to evaluate scalability and effectiveness.</p> <p>EPCA will report to the Hon'ble Supreme Court on the road map</p>	

	for use of the technology for parking management, based on these experiences.	
4.	Upscaling the learning of the pilot projects to other colonies of the city and eventually to implement this across the city for effective parking management and enforcement	May direct the South, East and North Delhi Municipal Corporations to file a report on the timebound plan for upscaling the learning of the pilot projects to other colonies and to the entire city. The plan should include the learnings and identified problems in implementing the parking rules so that solutions can be found and the plan can be effectively implemented.

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KAMLA NAGAR MARKET UPGRADATION

North Delhi's Kamla Nagar Market, which dates back to 1960 and is a favourite hangout place for students of Delhi University's North campus will get a facelift. The Kamla Nagar market Upgradation's focal point is Bada Gol Chakkar (roundabout) at the centre of the market, on which stands Spark Mall underneath which the north corporation's fully automated under-ground parking is available.

The mall was built in 2013 and has seven levels and 828 slots for 4-wheeler parking. But it sees barely 40-45% occupancy on a daily basis. "the idea is to prevent traders and shoppers from parking their cars haphazardly in the surrounding area and instead getting them to use the parking lot and paid on-street parking spaces. This will ensure smooth traffic movement in the market and fetch us enough space to create alleys for utilities, greenery and pedestrian pathways".

One of the radial roads from the Bada Gol Chakkar – Kohlapur road will be made pedestrian only. On the other three major radial roads – Maharaja Agrasen Marg, Mandelia road and Gali No. 7 – the current two-way traffic system will be retained, but the carriageway for vehicles will be reduced to six-metres only. These three roads are 18m wide each.

Two Multi-Utility Zones – fitting in trees, benches, garden, lamps, food stalls and water kiosks – of 2m each will be developed on either side of the carriageway; and pedestrian paths of 4m each will be created on the roadsides.

To make the area more youth-oriented, 3D art works will be commissioned on the roads, set up open cafes on the road sides and seasonal shops on the Multi-Utility Zones on occasions like Holi, Diwali and Rakhi. "A majority of the shopping crowd visiting Kamla Nagar Market are students, especially young women. So it will be developed as a fun and safe space".

The Parking Area Management Plan for Kamla Nagar is a comprehensive street and market upgradation plan that includes parking management as well as improved walkability, pedestrianization of one street, paid on-street parking, optimizing use of parking lot, no parking areas, public amenities for sitting, waiting, tree shade, dustbins, signage and other such elements, so much so that it overall experience and environment of the area upgrades.

EPCA Report

Report on Draft Parking Policy in Kamla Nagar in compliance with directions of the Hon'ble Court on

September 19, 2019

In the context of the ongoing deliberation on Draft Parking Rules and Guidelines framed by the Delhi Government, the Hon'ble Supreme Court in its order dated [redacted] has directed Environment Pollution (Prevention and Control) Authority (EPCA) to "submit opinion/proposal/report within two weeks. A copy of the opinion/proposal/report be furnished to the counsel for the respective corporations, DDA, Government of Delhi, Delhi Cantonment Board and Delhi Traffic Police. Let objections, if any, with respect to the opinion/proposal/report be submitted."

As directed EPCA has convened meeting with the concerned stakeholders including corporations, DDA, Government of Delhi, Delhi Cantonment Board and Delhi Traffic Police to examine the way forward on how to implement a pilot project on parking area management plan in a Commercial area. The primary interest of this exercise is to understand how parking area management plan as included in the draft rules will be implemented in commercial and residential colonies.

Based on the deliberations it was decided that Kamla Nagar will demonstrate how parking area management plan in mixed use and residential colonies will be operationalized. EPCA was informed by North Delhi Municipal Corporation (NDMC) that it will initiate a pilot project in Kamla Nagar that encompasses mixed use as well as both commercial and residential area of the Market.

Steps to create and implement the parking area plan

It is important to note that for preparation of parking area management plans, detailed guidance framework and guidelines have been prepared along with the draft Parking Rules (See Annexure 1). This is a step by step guide that informs the implementing agencies of the process and the method to follow to prepare such plans.

Steps for finalizing parking management plan

Step 1: Delineation of the management area to identify the zone with different land-use, which is compact and contiguous. It is important that the management area includes both residential and commercial spaces so that spillover is handled.

Step 2: Carry out an assessment of the total demand for parking. This is calculated on ECS basis¹.

¹Equivalent Car Space – 2.5x5m as 1 car unit

Step 3: Create parking space inventory in terms of currently available on-street and off-street parking, multi-level or stack parking, parking within buildings and areas where parking can be provided like in under-utilized plots/building premises/vacant spots.

Step 4: Plot on map all the essential services and green areas and parks. This is to ensure space for all public services and to ensure that no green area or park is used for parking as stipulated in the Parking Management Guidelines.

Step 5: Identify the shared public parking area -- areas where parking is required during daytime but may be available for residential parking during night-time like commercial shopping areas etc.

Step 6: Map the vehicular and pedestrian circulation so as to ensure proper traffic dispersal including circulation for emergency vehicles. The guidelines require that under any circumstances, no vehicle should block the access route of emergency vehicles (ambulance, fire trucks, police vans etc) to any building in any area where road access exists.

Step 7: Put signage on areas which are no parking zones – these are those areas that has not been identified and notified and physically demarcated as a parking site/spot shall automatically be considered a ‘no-parking zone’ and relevant penalties shall be applicable.

Based on above, demarcate legal parking areas and estimate gap between demand and supply. It is also clear that no amount of additional parking can ever be enough as the number of cars will increase to fill the space. However, for effective implementation of the parking plan, it is essential to earmark areas and create additional parking so that there are alternatives available to people within easy access.

These steps have been followed to make the first draft plan in Kamla Nagar Market.

1. Parking area plan for Kamla Nagar

NDMC has shared with EPCA the concept plan for Kamla Nagar area. EPCA has been informed that for the preparation of the plans NDMC has coordinated with the local resident welfare association and shop-keepers association.

Based on the guidance framework NDMC has taken the following steps to prepare the parking plan for the area:

Delineation of the area: the parking area management plan has been identified and the boundary delineated. The delineated area includes North Delhi’s market at the core around the Spark Mall and the mixed-use areas in the surrounding zone.

This is dominant commercial area with mixed use. Currently, most of the parking of cars is organized in perpendicular to the road on both sides to

accommodate maximum cars possible. There is no space for walking even for the visitors who specially come to visit this area for the purpose of shopping as most of the streets are equipped with vehicular movement and a lot of chaos along the roads. Other infrastructure such as street furniture, water points, and footpaths are completely missing due to unorganized vending and haphazard parking in the Kamla Nagar market.

This haphazard nature of the parking also restricts the emergency vehicles (like ambulance and fire tenders etc.) to enter. As cars are also parked very close to the intersections, the turning radius at the intersections become very narrow that makes taking turns very difficult.

This area is well served by bus services. Also due to close proximity to the market there is ample availability of para transit or intermediate public transport (E-rickshaws, autos, Graminseva) services.

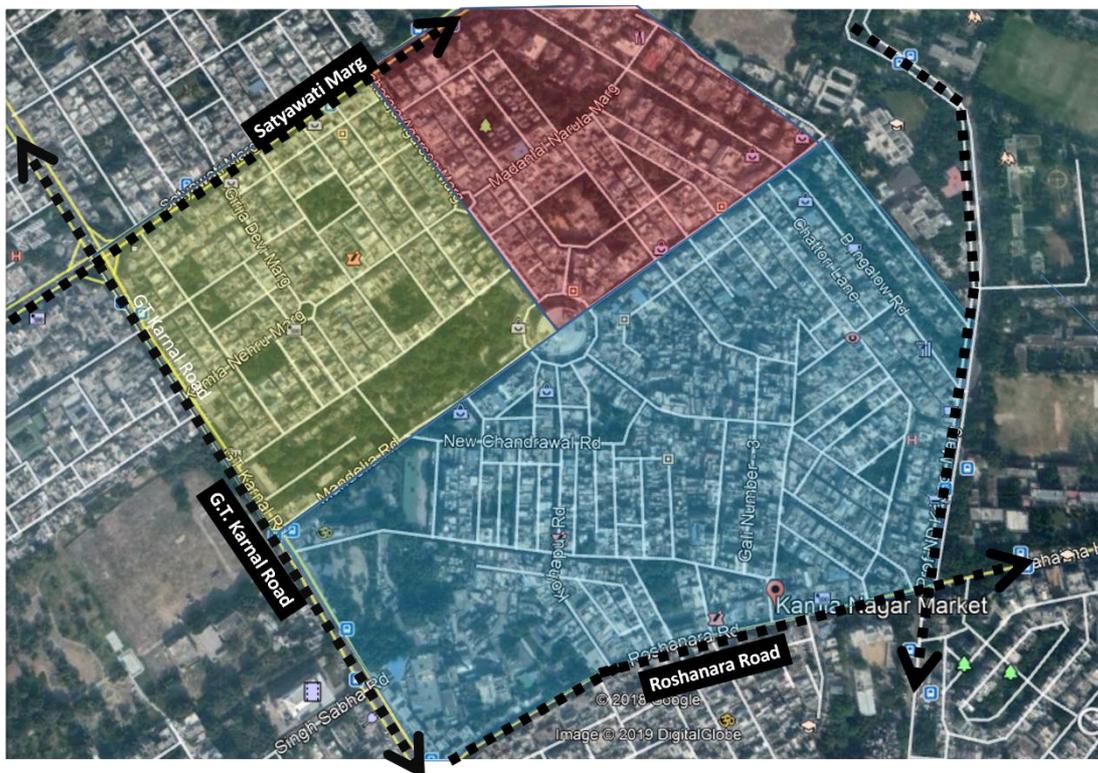
Parking demand in the area: NDMC carried out survey of the Kamla Nagar market area to estimate the demand for parking in terms of actual number of cars that are currently being parked in the area. The survey included manual counting of parked cars on street for seven days. The survey was carried out during day timings, at evening timings and as well as at night. The required equivalent data was gathered from the office of the NDMC regarding the details of the Kamla Nagar area. All the roads have been considered for calculating the parking demand in the area and major roads which are identified are as follows Kamla Nehru road, Mharaja Agrasen Marg, Mandelia road and the Kohlapur road (see Table 1: Road wise cars in Kamla Nagar (including parking in Spark Mall).

The existing ECS calculation was carried out in the following way:

1. Quick surveying technique

- This involved surveying the entire Kamla Nagar Market area at different times during the day. Special focus was given on the night surveys because that provided true data in terms of existing on-street car parking in the entire area.
- The entire study area was divided into 3 parts for the ease of carrying out the survey (Refer Map1).
- The number of on-street parked cars was counted for the roads of ROW 18m, 12m, 9m, and 4.5m in the Kamla Nagar Market.
- It was also estimated that 70% of the total cars that are parked on-street in the market area on wider roads (18m and 12m) during the day-time were of visitors, while that number reduced to 20% on 9m and 4.5m roads.
- The Spark Mall parking is under-utilized. On an average daytime occupancy is 45% rising to 55% on weekends. And in

night-time it is 55% on an average through the week.



MAP 1

- Overall in Kamla Nagar there are total of **1144** ECS (560 2-wheelers and 864 cars) during night-time and 1376 ECS (876 2-wheelers and 938 cars) during day-time that are parked on-street on the basis of quick surveying technique. All plots do not have garages or stilt parking. Nearly all cars are parked on street.

Table 1: Existing Parking scenario in Kamla Nagar

S.No	RoW (Metres)	Length (km)	Existing ECS
1	18	2.2	324
2	12	2.4	190
3	9	3.8	280
4	4.5	2	350
		Sub-Total	1144
5	Spark Mall parking lot	828 (existing)	450 (utilized)
	TOTAL	10.4	1594

2. Approach to parking management plan in Kamla Nagar Market area

While preparing the parking plan following criteria have been adopted.

- 1. Improving walkability** was the main criteria/ aspect of the parking area management plan. The plan ensures that when the parking is managed, walking space is appropriately provided so that the experience of the area improves.
- 2.Improving public amenities along with providing parking accommodation** is an extremely important aspect of Kamla Nagar parking Plan. With greater walkability, improved parking access, charged parking, the entire area demands to have a higher level of pedestrian comfort and therefore, adding public amenities like benches, trees for shade, dustbins, public art, cycle parking, public toilets, etc. are also provided in the plan to be executed along with parking management.
- 3.Space for emergency vehicles** was the other priority for parking area management plan. In the new plan, parking on the streets has been organized after leaving enough space for emergency vehicles to move and access houses. Legal parking area has been allowed on either one side of the street or both sides depending on the width of the road and space available. Only parallel parking has been allowed for demarcation as that takes comparatively less space. Provision of visitors parking has been made at the Spark Mall.

3. Management of excess cars in the new plan:

The total demand for cars is **1594**.

After accounting for emergency vehicle movement, green spaces and need of proper circulation of vehicles and persons, demarcated legal parking and off-street lot can accommodate 1598 cars (Refer Table 2). This is along with making Kolhapur street fully pedestrianized and Mandelia road as a No-Parking zone. Kolhapur road, Agrasen road and Mandelia road are vibrant commercial streets which require more pedestrian footfall. Therefore, these streets are kept free of parking.

The parking accommodation is mainly possible due to under-utilized Spark Mall Multi-level automated parking lot. It is important to mention that Spark Mall, at the time of conceptualization, was decided to have the adjoining streets as No-Parking zone, but was never implemented such. With rampant on-street un-managed parking, Spark Mall parking could not be utilized. The new Parking Management Plan for Kamla Market proposes to revert to the original idea, thereby increasing the parking supply. The un-utilized parking spaces -up to 350 ECS, shall account for the lost spaces on-street due to No-Parking, Pedestrianization and organizing parking on all the streets of Kamla Nagar. **For this very reason, the Kamla Nagar Parking plan is a “comprehensive plan” and caters to the needs to public by easing walking and managing parking through parking fees.** Apart from the current accommodation, there are plans to redevelop certain plots to have basement parking to cater to any future demand.

TABLE 2

Kamla Nagar Parking				
S.No	RoW (Metres)	Length (km)	Existing ECS	Proposed ECS
1	18	2.2	324	201
2	12	2.4	190	51
3	9	3.8	280	168
4	4.5	2	350	350
5	Spark Mall parking lot (total 828 parking slots)		450	828
	TOTAL	10.4	1594	1598

The parking is optimally provided and can be catered for in the entire area. Any excess parking demand, if comes suddenly as a one-off event shall be catered by increasing parking charges and/ or providing para-transit services. Not just that, two main roads are “no-parking” and one shopping road shall be “pedestrianized” along with parking management.

4. Implementation of the plan

Parking has been seen as a *component* of overall street design and therefore resolution of the entire street design was given equal priority along with the Parking Area Management Plan. Therefore, the following components has been estimated for a complete implementation of the Parking Area Management Plan.

The components are as follows:

1. Footpath
2. On-street parking
3. Carriageway
4. Lighting
5. Street furniture
6. Dustbin
7. Bollards
8. Trees
9. Ramps
10. Tactile paving

The following table describes the estimate of the above-mentioned components in detail (refer Table 3).

TABLE 3

ABSTRACT OF COST		
S. No.	Description of item	Amount (In Lakh)
1	Construction of road by providing RMC on:	
A	4.50 Mtr Road	250.00
B	9.00 Mtr Road	343.20
C	12.00 mtr Road	275.63
D	18.00 mtr Roads	317.02
	Total	1,185.85
2	Construction of Footpath	
A	9.00 Mtr Road	411.43
B	12.00 mtr Road	698.88
C	18.00 mtr Roads	642.08
D	Pedestrian Plaza on Kolhapur Road	49.27
	Total	1,801.66
3	Construction of Multi Utility Zone	
A	12.00 mtr Road	54.71
B	18.00 mtr Roads	706.23
	Total	760.94
	Total: 1+2+3	3,748.45
4	Road sign boards (LS)	100.00
5	Street lighting (LS)	100.00
6	Horticulture (LS)	200.00
7	Road Furniture including Bollards, Benches, Fountains etc.	300.00
	Grand Total	4,448.45
	Say Rs.	44.48 Crore

The total estimated cost of the Parking Area Management plan is 44.48 Crore

5. EPCA's observation for the consideration of the Hon'ble Supreme Court

This pilot shows how the Parking Management Area Plan will need to be developed and then implemented in different zones/colonies of the city.

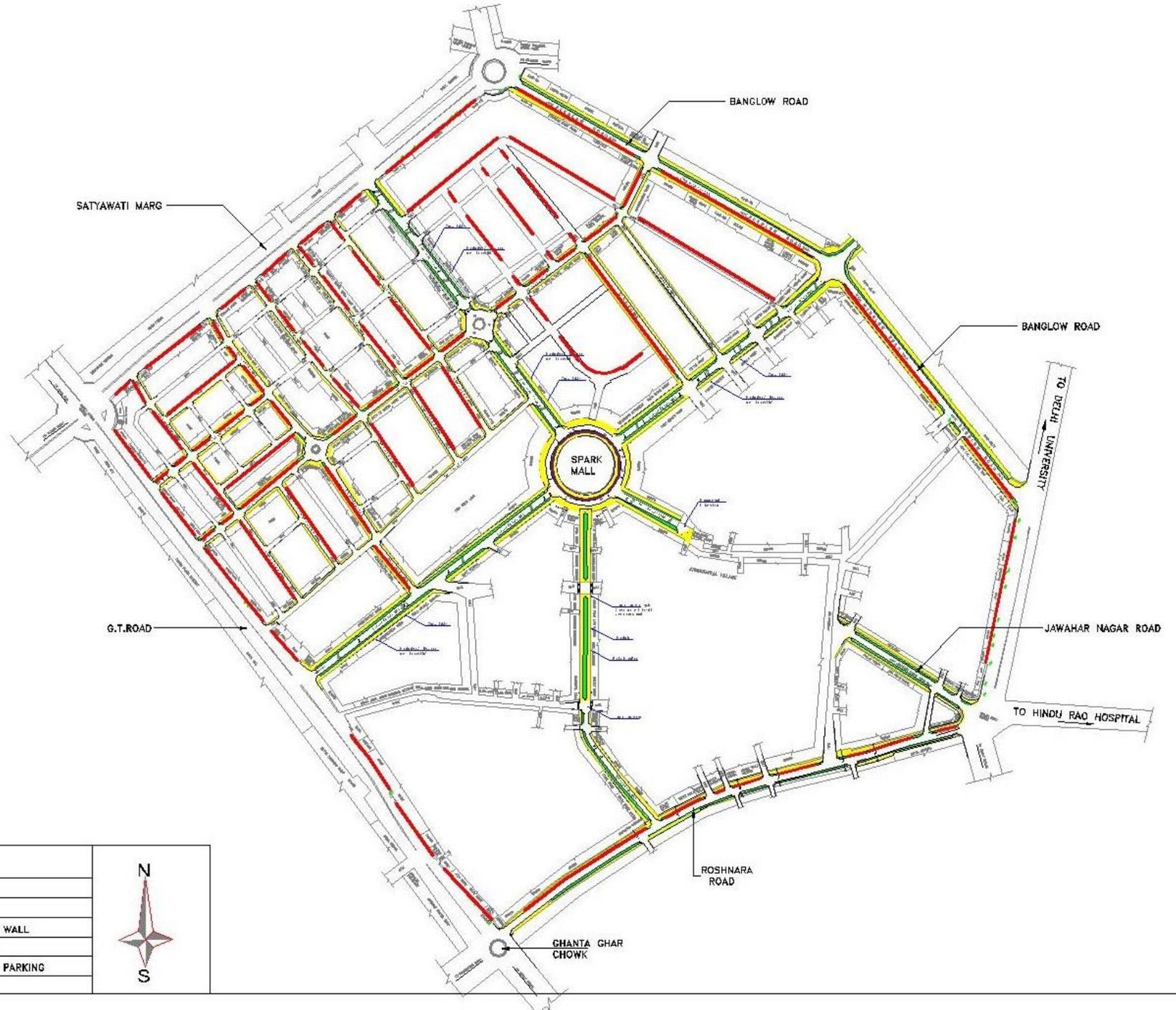
What is clear from the above exercise is the following:

1. Currently, the colonies are over-saturated with cars and badly organized for parking of commercial and residential vehicles. There is no easy access for emergency services of ambulance, fire tenders and police vans during night.
2. There is a huge gap between the parking demand and supply,

which will grow without restraints and regulations on legal and illegal parking.

3. However, it is also clear that if careful planning is done, then spaces for car parking can be identified and provided for. This will require shared parking so that night-daytime parking is shared between commercial and residential areas. It will also require creation of additional parking areas but within limits.
4. With this plan, the resident welfare association can self-organize to decide allocation of legal parking slots to each plot as needed and plan which cars need to go to alternative sites to decongest the area – in most cases, this will be based on the number of cars that a household owns.
5. In addition, parking permits can be issued to the resident based on a monthly lump sum to be decided in consultation with the resident welfare association. These stickers will help to distinguish resident's cars from the cars coming to commercial market. The permits can also be used to restrict the numbers of vehicles by charging more or by not allowing residents to park additional cars in front of their houses but instead in the alternative sites.
6. The objective of this parking area management plan is also to encourage better usage of public transport. For instance, in Kamla Nagar, there is good connectivity with metro, bus and other intermediate public transport facilities. The vehicle restraints/management through the plan would incentivize the use of public transport in the long run and also discourage the owners from purchasing vehicles where there is no space for parking.
7. However, the plan can only be enforced if there is a legal framework which provides for deterrence against illegal parking and penalties for not adhering to the plan.

PROPOSED PARKING MANAGEMENT PLAN FOR KAMLA NAGAR



LEGEND

	TREE
	GATE
	BOUNDARY WALL
	FOOTPATH
	PROPOSED PARKING





East Delhi Municipal

Corporation (EDMC)

Project: Pedestrianisation of Krishna Nagar and its Parking management plan

Timeline for final implementation : **01 Jan 2020**

Parking area plan for residential colony and Commercial market of Krishna Nagar

EDMC has coordinated with the local resident welfare association and shop-keepers association, while formulating subject plan.

Background

There is a market namely Lal Quarter, near Chachi Building in Krishna Nagar colony, near main road namely road no. 57(Swami Dayanand Road), on North side and Patparganj road, on its southern side. This market is very popular and customers from across East Delhi, visit this market.

The length of this stretch is 1.25 km, and width is 9 ft.

Major Challenge: Lal-Quarter being major a market hub, in the region, the place is common site for choked & congested roads, road-rages, and accidents. The subject market is surrounded with equally congested residential colonies.

Project Objective:

(a) **Development of Walking Street:** The project plan pedestrianisation of Lal Quarter commercial market area. The subject street shall be development as Non-vehicular road. This road shall be used only by the Pedestrians.

Pedestrinisation Stretch: The internal road, viz. From Chachi Building (from Block S/D) to Ghondly Chowk Area(till Block C)

Benefits: The initiate plans to facilitate the pedestrians for free and safe movement, and decongest the busy market area.

(b) Parking Management Plan: The objectives is to cater to the Parking demand of the area, and provide public convince.

Based on the guidance framework, by EPCA, EDMC has taken the following steps to prepare the subject area plan:

Delineation of the area: The parking area management plan has been identified and the boundary delineated. The delineated area includes the Central market at the core (Lal Quarter Market Area) and the residential areas in its the surrounding zone.

Commercial Block: Central Market area viz. Lal Quarter Market is the prime commercial area in the stretch.

The Mandir Marg and its surrounding area are residential cum commercial blocks. It is submitted that Commercial area has been demarked in the Ground floor of these areas, while Housing is plotted and built mostly to maximum floor area ratio available from the First Floor onwards. The average size of the housing plots is 100 sqm. Majorly the area is a purely a residential area with some small shops. Currently, most of the parking of cars is organized in perpendicular to the road on both sides to accommodate maximum cars possible. There is no space for emergency vehicles (like ambulance and fire tenders etc) to enter. As cars are also parked very closed to the intersections, the turning radius at the intersections become very narrow that makes taking turns very difficult. There is a metro station of the Blue line in this area.

This area is well served by metro and bus services. Also due to close proximity to the central market there is ample availability of para transit including autos and aggregator services.

Assessment of Parking demand in the area: EDMC along with the local resident welfare association, and Trader Welfare Associations have carried out survey of the area to estimate the demand for parking in terms of actual number of cars that are currently parked in the area. The survey has included counting number of housing plots, floors and total cars in the area.

- **The total of 441 cars are parked on streets.** Very few plotted houses have garage inside the building. Most plots do not have garage or stilt parking. Average size of the plots is 100 sqm. Nearly all cars are parked on street. Overall there are total number 191 housing plots in and around identified zones viz. 1-3, and approx 240 plots around Lal Quarter area, and Mandir Marg road.

Table: Block-wise housing plots, floors and cars in Krishna Nagar

Block	Total Plots	Total Cars
Lal Quarter	--	131
Mandir Marg	--	119
Zone 1	122	122
Zone 2	28	28
Zone 3	41	41
Total Demand		441

Approach to parking management plan in this area

While preparing the parking plan following criteria have been adopted.

Space for emergency vehicle for planning on street parking: As per the Parking Area Guideline, it is important to work out the plan for emergency vehicles and also demarcate the legal parking zones. In the new plan, parking on the streets has been organized after leaving enough space for emergency vehicles to move and access houses.

Legal parking area through proper tendering shall be allowed in either one side of the street or both sides depending on the width of the road and space available. Mostly parallel parking has been allowed for demarcation as that takes comparatively less space. Perpendicular parking is allowed in areas where there is more space. This is being planned in accordance with considering provision of visitors parking in the area.

08 On-street Parking Point: **300**

Mult-Level Car Parking (ECS: 200): EDMC has constructed an multi-level car parking in the area. The same shall cater to the parking issues of the area, and enable smooth execution of the proposed parking management plan.

Pedestrianisation of Lal-Quarter Market (Development of Walking Street): The proposed plan, not only provides parking solution in the Krishna Nagar, but also enable

Based on these provisions the site map has been prepared, and the same indicates the areas where parking is allowed and where it is not allowed (Annexure 1: Site map of parking plan)

Management of cars in the new plan:

The total demand for cars is **441**.

Henceforth, we must provide parking facility for **441** cars.

The plan has identified **alternative places where these cars can be accommodated (see table)**. For this the principle of shared public parking has been adopted, creating parking facilities and its sharing between users to optimize and unlock potential of the assets for maximum utilization.

The entire gap have been accommodated but clearly, without future restraints, this will not be adequate.

Table: Management of parking demand within the colony of Krishna Nagar and alternative sites.

Total Demand for Parking	441 cars
Total supply available	Nil
Total Gap in the supply	441 cars
To accommodate the cars, three areas and MLCP shall be utilized, with the following capacities.	
1. 08 Parking points	300
2. Multi-level car Parking	200-250
Total:	550 Cars

Project Developments

EDMC Works:

Item Description	EDMC Department	Status
Procurement of Benches	Engg. Depart.	Ready for installation
Road Marking		
Procurement of Dustbins		
Procurement of Ornamental Lights	Electrical Depart.	Ready for installation
Plantation	Horticulture	Ready for installation

NoC from UTTIPEC has been received.

Detailed report submitted to EPCA on Sept. 10, 2019

Project Requirements

EDMC

Item Description	Department
1. Development of Utilities identified. 2. Road Markings	Engg. Depart.
1. Development of Park.	Horticulture Department
1. Provide Signages	Advertisement Department

Other Agencies

Item Description	Agency
1. Provide Signages 2. Ground support for managing traffic circulation plan (Man-ing assistance). 3. Issue Public notification	Delhi Traffic Police
1. Support for implementation of plan	Delhi Police

Project Timelines

S. No.	Time Frame	Description of Work
1.	September	NoC from all concerned Department
2.	October	Trial Run (14 Oct 19, Monday)
3.	November/Dec	Final work on project modalities, and Final Trial Run. Issue of Public Notices
4.	06 Jan 2020	Implementation of Project



SOUTH DELHI MUNICIPAL CORPORATION

PROJECT: PARKING MANAGEMENT AREA PLAN FOR LAJPAT NAGAR-III

The *Parking Management Area Plan* for Lajpat Nagar III is first of its kind that is being implemented in Residential Area of Delhi.

About Lajpat Nagar III:

Lajpat Nagar III is located on the southern side of Lajpat Nagar II and above the Lajpat Nagar IV. The Northern side of the area has Feroz Gandhi Marg which also faces the Central Market, the southern side has Ring Road, and the western side has Lala Lajpat Rai Marg. The Area is well connected by the Public Transport. Delhi Metro's Lajpat Nagar Interchange (Violet and Pink line) station is in Lajpat Nagar III itself. On the Ring Road, there are five bus stops at various locations for Lajpat Nagar III. The area has a total of 13 residential blocks named from A to M.

The reason for selecting Lajpat Nagar III for implementation of PMAP is that the colony faces a huge problem of the parking spill-over both from the Central Market visitors and the shoppers visiting the commercial areas on the Ring Road and Link Road (service road of Lala Lajpat Rai Marg), due to which the internal colony roads get chocked.

About the Project and its Implementation:

- For preparation of Parking Management Area Plan (PMAP), meetings were held on 12.09.2019 and 26.09.2019 with representatives of Resident Welfare Association (RWA) of Lajpat Nagar-III, Traffic Police and Delhi Police.
- At the time of preparation of PMAP, Landuse of the area (please refer sheet no. 1) was studied thoroughly, and due care has been taken for - Parking Zones, No Parking Zones, Visitors' Parking Zones, movement of emergency vehicle (fire truck and ambulance), congestion areas in the area.
- While doing the parking surveys (please refer sheet no. 2) in the area, it was found that there are a total of 2,477 cars (approx.) in the area of Lajpat Nagar III.

Block	No. of Plots	Plots with Stilts	Plots without Parking	No. of Cars	Cars Accommodating Inside	Gap
A	22	3	6	117	39	78
B	32	7	6	174	115	59
C	42	5	16	229	59	170
D	20	7	1	144	65	79
E	49	9	17	279	92	187
F	26	7	13	145	40	105
G	62	15	18	351	135	216
H	22	6	7	137	57	80
I	45 – 1 ^A	9	14	267	93	174
J	60 – 1 ^B	10	24	295	93	202
K	24	8	10	118	63	55
L	20	3	5	117	34	83
M	24	1	11	104	20	84
	446	88	148	2,477	905	1,572

A: Gurudwara

B: Temple

1,572 cars (approx.) are getting parked on the streets which were to be managed.

- The total supply was studied for the parking management in the entire area as well as the feasibility for adjoining areas were studied too.

DEMAND	
Total demand in Lajpat Nagar III	2,477
Cars accommodating inside the houses	905
Cars getting parked outside / Capacity to Manage	1,572

SUPPLY	
On-street parking in planned manner	1,414
OTHER SUPPLY	
Service lanes (behind the houses)	300
Upcoming automated stack parking **	246
Stretch no. 4, 5, 6, & 7 of Auth. Parking on Feroz Gandhi Marg **	220
SDMC School **	40
Total	806

** Available only during the night time.

- A total of 97 cars for the visitors are planned and earmarked for Lajpat Nagar III area (please refer sheet no. 6).
- Parking Stickers have been made mandatory both for the residents and the visitors (please refer sheet no. 3). Therefore, the design of the stickers has been finalized.
- For faster approach of emergency vehicles (please refer sheet no. 5) in the area of Lajpat Nagar III, it was felt necessary to open 6 gates – gate nos. 1, 3, 7, 13, 14 and 15. Out of these, gate no. 1, 3 and 15 are to be manned at night.
- On the request of the RWA, Shaheed Mohan Dutta Marg (Nallah Road) - connecting Ring Road to Feroz Gandhi Marg, walkway for pedestrians is being provided for which work order has been issued by the office of EE(M)-I/CNZ and the work is being executed at the site by the said division. 70% work has been completed and rest of the work including fixing of bollards is expected to be completed by 15.01.2020.

- The entire area is earmarked with the 'Parking Zones', 'No Parking Zones', 'Visitors' Parking Zones' (please refer sheet no. 6).
- Signages are planned (please refer sheet no. 7) for the entire Lajpat Nagar III area that will give better idea of the – One Way streets, No Entry Streets, No Parking / Tow Away Zones, Visitors' Parking and hazards etc. A total of 86 Signages are being installed by the office of EE(M)-I/CNZ; more than 75% of the work has been completed and rest of the work is expected to finish within a week.
- As requested by the RWA, traffic movement is to be restricted for three hours every Sunday evening on Shaheed Mohan Dutta Marg (Nallah Road) between Gate No.3 and Gate No.13 (please refer sheet no. 4) with fixed timings (April to October: 17:00 to 20:00 and November to March: 16:00 to 19:00) is expected to be implemented by 15.1.2020 to facilitate '**Rahagiri**'.
- The vehicles being parked in the 'No Parking Zones' are being clamped / towed away.
- During the surveys, 44 dumped cars (locations indicated in the maps) were found, and all those cars have been removed by the concerned department of Central Zone.
- Many illegal encroachments like – iron gates installed, planters, temporary structures, porta-cabins, hawkers, poles with chains – have been removed both from front and back lanes, and this requires continuous action.

Challenges being faced by RWA:

- RWA conveyed that for manning the gates, they need funds to deploy guards at the gates.
- For issuing the stickers to all the vehicles (2,477 approx.), they need funds.

Challenges being faced by SDMC:

- Lack of manpower and machinery for regular towing of vehicles parked in the no parking zones.
- Continuous monitoring.

SDMC is making all efforts for successful implementation of Parking Management Area Plan in Lajpat Nagar-III.

Request for proposals to install, operate, and maintain the vehicle parking management system in NorthDMC

North Delhi Municipal Corporation

1. Disclaimer	4
2. Introduction.....	5
2.1. Management structure	5
2.2. Definition of parking areas	5
2.3. Parking fee payment	5
2.4. Enforcement.....	6
2.5. Customer information.....	6
2.6. Scope and timeline.....	6
3. Notice of tender invitation	8
4. Definitions.....	9
5. Instructions to bidders.....	13
5.1. Due Diligence	13
5.2. Cost of Bidding.....	13
5.3. Clarification to RFP Documents.....	13
5.4. Amendment of Bidding Documents	13
5.5. Pre-Bid Meeting	14
5.6. Documents Constituting Bid	14
5.7. Preparation of Bids	14
5.8. Period of Validity of Bids.....	16
5.9. Deadline for Submission for Bids	17
5.10. Modification and Withdrawal of Bids	18
5.11. Bid Process – Steps & Evaluation	18
5.12. Discharge of Bid Security of unsuccessful Bidder(s).....	<u>2220</u>
5.13. Discharge of Bid Security of successful Bidder	<u>2220</u>
5.14. Forfeiture of Bid Security	<u>2221</u>
5.15. NorthDMC 's right to accept or reject any and/or all Bids.....	<u>2221</u>
5.16. Signing of Provider Agreement.....	<u>2321</u>
5.17. Expenses for the Provider Agreement	<u>2321</u>
5.18. Annulment of Award	<u>2321</u>
5.19. Failure to abide by the Provider Agreement.....	<u>2321</u>
6. General conditions of contract.....	<u>2422</u>
6.1. Application	<u>2422</u>
6.2. Standard of Performance	<u>2422</u>
6.3. Use of Provider Agreement & Information	<u>2422</u>

6.4.	Indemnity.....	2822
6.5.	Performance Guarantee	2822
6.6.	Representations and Warranties	2823
6.7.	Assignment	2823
6.8.	Delay in providing the Manpower for the system	2923
6.9.	Liquidated Damages	2924
6.10.	Right to Inspect Operations, Support Facilities and Documents	2924
6.11.	Ownership & Protection of Property/Data	3024
6.12.	Confidentiality Obligations of Service Provider	3025
6.13.	Force Majeure.....	3126
6.14.	Termination due to Force Majeure Event.....	3227
6.15.	Events of Default and Termination.....	3227
6.16.	Termination for NorthDMC Event of Default.....	3428
6.17.	Termination for Insolvency, Dissolution, etc.	3428
6.18.	Suspension.....	3428
6.19.	Arbitration	3529
6.20.	Jurisdiction	3529
6.21.	No Waiver of Rights and Claims.....	3529
7.	Scope of work	3630
7.1.	Terms of contract.....	3630
7.2.	Contract Period	4132
7.3.	Training and testing period.....	4132
7.4.	Determination of parking areas	4232
7.5.	Determination of parking fees and fines.....	4233
7.6.	Fine and fee collection.....	4333
7.7.	Payment to the Service Provider.....	4333
7.8.	Revision of Service Charge	<u>Error! Bookmark not defined.</u> 35
7.9.	Incentives.....	4435
7.10.	Timeline.....	4737
8.	Annex A. System specifications	4939
8.1.	Parking Operating Manual.....	4939
8.2.	Parking Management Plans	4939
8.3.	Road markings and signage.....	4939
8.4.	User Accounts.....	5040
8.5.	Coupon distribution network.....	5040
8.6.	Fee payment system.....	5040
8.7.	Entry control system for off-street lots.....	5141
8.8.	Third party integration.....	5141
8.9.	Enforcement system	5141
8.10.	IT system and Control Centre.....	5242
8.11.	Website	5242
8.12.	Smartphone application	5343
8.13.	Customer information & marketing.....	5343

9. Annex B. Format for letter of application.....	5444
10. Annex C. Format for general information	5646
11. Annex D. Format for eligibility	5848
11.1. Technical eligibility	5848
11.2. Financial eligibility.....	6151
12. Annex E. Format for financial bid	6252
13. Annex F. Formats for Power of Attorney and Memorandum of Understanding for consortium.....	6353
13.1. Power of Attorney	6353
13.2. Memorandum of Understanding.....	6454
13.3. Notes.....	6454
14. Annex G. Format for undertaking.....	6656
15. Annex H. Format for Performance Guarantee	6757
16. Annex I. Parking Zones and Paid Parking Block Faces.....	6959

1. Disclaimer

The North Delhi Municipal Corporation (NorthDMC) has prepared this Request for Proposals (RFP) to manage on-street and off-street parking. The RFP has been prepared with an intention to invite prospective bidders and to assist them in making their decision of whether or not to submit a proposal. The RFP is a detailed document with specific terms and conditions on which the bidder is expected to work. These terms and conditions are designed keeping in view the overall aim and objectives of the system. NorthDMC has taken due care in preparation of information contained herein and believes it to be accurate. However, neither NorthDMC or any of its authorities or agencies nor any of their respective officers employees, agents, or advisors gives any warranty or make any representations, express, or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

The information provided in this document is to assist the bidder(s) for preparing their proposals. However this information is not intended to be exhaustive. Interested parties are required to make their own inquiries and respondents will be required to confirm in writing that they have done so and they do not rely on the information in submitting a Proposal. The information is provided on the basis that it is non-binding on NorthDMC, any of its authorities or agencies, or any of their respective officers, employees, agents, or advisors. Each bidder is advised to consider the RFP as per its understanding and capacity. The bidders are also advised to do appropriate examination, enquiry and scrutiny of all aspects mentioned in the RFP before bidding. Bidders are encouraged to take professional help of experts on financial, legal, technical, taxation, and any other matters / sectors appearing in the document or specified work. We would also request the bidders to go through the RFP in detail and bring to notice (of NorthDMC) any kind of error, misprint, inaccuracies, or omission in the document.

NorthDMC reserves the right not to proceed with the project, to alter the timetable reflected in this document, or to change the process or procedure to be applied. It also reserves the right to decline to discuss the Project further with any party submitting a proposal. No reimbursement of cost of any type will be paid to persons, entities, or consortiums submitting a Proposal.

Interested parties, after careful review of all the clauses of this RFP, are encouraged to send their suggestions in writing to NorthDMC. Such suggestions, after review by NorthDMC, may be incorporated into this RFP as an addendum which shall be uploaded onto the NorthDMC tender website. Interested parties should check the website to download the final terms and conditions before submitting Proposals.

2. Introduction

Effective parking management is an essential tool to facilitate the efficient use of road space and to ensure free passage for pedestrians, cyclists, public transport, and motorists. In addition, appropriate parking fees can ensure that personal motor vehicle users compensate the city for the use of valuable land on which they park their vehicles. The North Delhi Municipal Corporation (NorthDMC) seeks to implement a modern Parking Management System (PMS) to improve parking operations, optimise usage of the available parking supply, and enhance the overall functioning of streets in the city. The new PMS will employ an information technology (IT) backbone to facilitate greater transparency and efficiency in the collection of parking fees and enforcement operations. This introduction outlines the primary components of the NorthDMC PMS.

2.1. *Management structure*

The Service Provider will establish, operate, and maintain the PMS. The Service Provider carries out parking operations, including fee collection and enforcement on designated streets (comprised of “Block Faces”) and Parking Lots. The Service Provider will create direct data links so that NorthDMC can monitor the status of the PMS. The Service Provider will receive a service payment for the parking operation activities carried out, as outlined in this document.

2.2. *Definition of parking areas*

NorthDMC will assign specific city Zones to the Service Provider. Within each Zone, NorthDMC will designate some Block Faces and Parking Lots as Paid Block Faces and Paid Parking Lots. In the Paid Block Faces and Paid Parking Lots, the Service Provider will be responsible for defining parking and no-parking areas through clear signage and road markings. The signage will also display the applicable Parking Fee, if any.

2.3. *Parking fee payment*

The PMS will enable quick and hassle-free payment of parking fees through a mobile phone-based payment system. Payments are tied to a vehicle’s license plate number, which is in turn used in the enforcement process to check whether the vehicle is paid or unpaid.

A regular user will have the option of signing up for a User Account connected to a registered vehicle and mobile number(s) that can be used for Parking Fee payment anywhere in the city. The User will use an SMS text message or Smartphone app to notify the PMS that s/he has begun parking in a Paid Parking Block or Parking Lot. The notification will indicate the parking facility ID in which the registered vehicle has been parked. The System will record the vehicle’s presence until the User sends another message when s/he leaves the parking spot. Parking accounts can be recharged /paid online with credit cards, net banking or other means.

One-time users also will be able to access the PMS by obtaining prepaid Parking Coupons or cashless payment to PoS machines with Parking attendents. Parking Coupons shall be made available widely through general stores, kiosks, newsstands and other outlets in the Zones assigned to the Service Provider. If using a Coupon, the user will send an SMS text message to the PMS with the vehicle’s license number and the parking facility ID along with a unique number printed under a scratch-off portion or scanned barcode/QR Code on the parking coupon. The user will be enabled to park for the duration corresponding

to the coupon's value. The parking duration can be extended with another message providing a new coupon number or barcode/QR Code. Coupons should be reusable for multiple instances of parking in case they have value remaining. While paying to the PoS machine, the user can pay through e-Wallets or through NFC-based payment system, or contactless card integrated with PoS machine.

All payments will be carried out through User Accounts, PoS and Parking Coupons; the Service Provider will not collect direct payments on the street, cash or otherwise.

2.4. Enforcement

2.4.1. Paid Parking Lots and Block faces

Service Provider enforcement officers will carry out enforcement through random spot checks. In Paid Parking Block Faces and Parking Lots, officers will scan licence plate numbers using handheld devices. In the event that a vehicle user has not paid the Parking Fee, the enforcement officer will take a photo of the vehicle, notify the PMS and Traffic Police, and immobilise the vehicle. A user must pay the applicable parking fine through the system website, using a Smartphone app, or a Parking Coupon to have a vehicle unclamped. Enforcement officers will not collect fines directly. To aid in enforcement activities, the Service Provider will also provide vehicle detection sensors or any other technology for all car Parking Slots along Paid Parking Block Faces and Parking Lots to track and monitor the arrival and departure of every vehicle that parks in a designated Parking Slot.

2.4.2. No Parking Area

In the event that a vehicle user is parking or has parked in a No-Parking Area, the Service Provider shall take a photo of the vehicle, notify the PMS and the Traffic Police, and immobilise the vehicle. As per Section 177 in Motor Vehicles Act 1988, a user must pay the applicable parking fine to the Traffic Police as well as to the Service Provider as per applicable law. Payments will be made through the system website, using a Smartphone app, or a Parking Coupon to have a vehicle unclamped. Enforcement officers will not collect fines directly. The Traffic Police shall be at liberty to decide either to tow the vehicle away, in which case the User may have to pay additional towing charges, or may immobilize the vehicle.

2.5. Customer information

The PMS will provide information to customers through various media including the Internet, smart phone applications, and on-street signage. Users will be able to view real-time on- and off-street parking occupancies and applicable parking fee, enabling them to identify streets or lots with open spaces and applicable rates before planning their trips. The system will also provide maps indicating where parking fees are applicable. The system will make use of social media to keep city residents apprised of new regulations and system features.

2.6. Scope and timeline

Phase 1 of the NorthDMC PMS will cover all Parking sites in Karol Bagh and Keshavpuram Zones of NorthDMC and is expected to launch in [REDACTED]. The initial coverage area will include key destinations in NorthDMC, including the commercial areas of [REDACTED]. Existing paid parking locations in NorthDMC comprise approximately [REDACTED] equivalent car spaces (ECS). The System will be expanded in subsequent phases.

NorthDMC hereby requests interested Parties to respond to this call for Requests for Proposal (RFP) to develop and operate the PMS in NorthDMC.

Rationalization of Parking Fee

1. Base Parking Fee committee have considered the following multipliers for various types of parking:
 - i. **Public Transit Factor:** This factor promotes the use of off-street parking and public transport including the NMT by pricing the on-street parking twice as that of off-street parking.
2.00, for on-street parking within 500 m of multi-level parking.
1.00, for off-street parking.
 - ii. **Congestion Factor** (for on-street parking only): To discourage more cars on the roads during the peak hours. This factor will be applicable if vehicle is getting entry or exit during peak hours.
2.0, during the peak hours.
1.0, during the non-peak hours.
 - iii. **Duration of Parking** (for on-street parking only):

S. No.	Duration (in hrs.)	Multiplying Factor
1.	0 to 1	1
2.	1 to 3	1.5
3.	3 to 5	1.75
4.	5 to 10	2

On-street parking cannot be utilized for more than 10 hours.

- iv. **Location Factor:** For heavily crowded areas like Lajpat Nagar, Karol Bagh, South Ex. etc. location factor will be high.
Maximum 3
Minimum 1

2. Parking Fee / Hour = Base Parking Fee x Transit Factor x Congestion Factor x Location Factor

3. Total Parking Fee for on-street parking for the duration of 10 hours (considering location factor as 3):

- i. $10 \times 2 \times 1 \times 3 \times 1 = ₹ 60$ (for the first hour)
- ii. $10 \times 2 \times 1 \times 3 \times 1.5 = ₹ 90$ per hour
= ₹ 180 (for 1 to 3 hours)
- iii. $10 \times 2 \times 1 \times 3 \times 1.75 = ₹ 105$ per hour
= ₹ 210 (for 3 to 5 hours)
- iv. $10 \times 2 \times 1 \times 3 \times 2 = ₹ 120$ per hour
= ₹ 600 (for 5 to 10 hours)

Total Parking Fee = i. + ii. + iii. + iv. = ₹ 1,050

4. Total Parking Fee for off-street parking for the duration of 10 hours:

$$10 \times 1 \times 1 \times 3 \times 1 = ₹ 30 / \text{hour.}$$

$$\text{For 10 hours, } 30 \times 10 = ₹ 300.$$

The above calculations have been done to calculate the rate of the monthly passes for 25 working days.

$$\text{Total Parking Fee} = 25 \times 300 = ₹ 7,500$$

For monthly passes, 50 % concession should be given.

$$\text{Rate for monthly passes for off-street parking} = ₹ 3,750.$$