

PEDESTRIANISATION OF COMMERCIAL AREA: A Case Study of Aminabad, Lucknow

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Abstract - The core of any Bazaar (Market) is its spontaneity and the reason why a Bazaar anywhere in India is so special. Pedestrianisation provides better accessibility and mobility for pedestrians, beautifying the extent of purchasing and other commercial enterprise activity in the region. The significance of pedestrianisation in developing countries is increasing continuously because the presence of vehicles is overcoming in cities as a result the attendance of pedestrian in urban areas becomes less and much less. Aminabad is a large bazaar located in the heart of Old Lucknow City of Uttar Pradesh. The Bazaar being operated since the time of the Nawabs is a colorful, vibrant and a lively market to shop, famous for jewelry, ornaments, chicken embroidered cloths, fancy sarees, Lucknawi paan (betel leaves) & bakeries. Pedestrianisation of Nazirabad Road is a way towards the revitalization of Aminabad market one of the oldest & popular market of Lucknow. It is the central part of Old Lucknow City which caters the maximum flow of visitors compared to the other markets of the city. But, from the last few years the market which meant to be an attractive public space has lost its charm and purpose due to heavy traffic congestion of vehicles and pedestrians, illegal encroachment of hawkers and vendors, on street parking. Thus, Pedestrianization is found to be an effective way to make the market attractive again. So, the objective of the study is to retain its purpose of being a public space for the pedestrians/ shoppers boosting its economic, environmental and social benefits.

Key Words: Pedestrianisation, Traffic Management, Public Spaces, and Bazaar, Walkability, Urban Design, Built Environment, Redevelopment, Footfall Analysis.

1. INTRODUCTION

1.1 Background

Pedestrianization is a step towards Soft Mode of Transportation is first "pedestrianisation" of a present street appears to have taken area "around 1929" in Essen, Germany. Celebration of car free day every year on "2nd September" is known to provide an effective way encourage car free streets and pedestrian 'malls' across the globe. Pedestrianization is seen as an effective approach towards the Revival of the Commercial area, thus gaining its charm and lost life.

1.2 Study Area

Lucknow is the capital city of most populous state of India i.e. Uttar Pradesh. Fastest growing metropolitan city traditionally known for its rich cultural heritage.

Current Scheme/Mission: Smart city Mission & HRIDAY
City Population: 3.3 MN (2017) (Primary Survey, 2017)
Zone - 4 Ward Population-15,832 persons (2017)

Aminabad is a large bazaar located in the heart of Lucknow, in the Indian state of Uttar Pradesh. It is famous for chicken embroidered garments. This Bazaar of Lucknow has operated since the time of the Nawabs and is the biggest retail market of Lucknow. Since the time of Nawabs, the market boasts of its unequalled fashion, and being one of the oldest markets, it's far nonetheless surrounded by using homes and architectures of nawabi technology. A unique appeal is Thursday's footpath market.



Source: - Primary Survey, 2017

Fig- 1: Aminabad 1990



Source: - Primary Survey, 2017

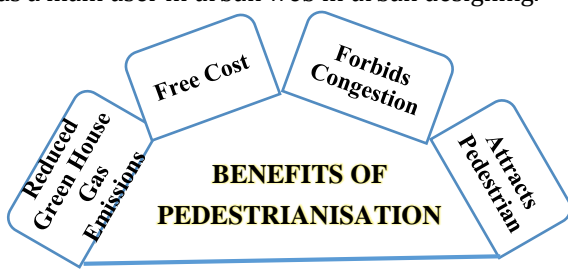
Fig- 2: Aminabad 2017

2. LITERATURE REVIEW

2.1 Need for Pedestrianisation

According to 44th ISOCARP (International Society of City and Regional Planners) Congress 2008 [1] held in Iran the need of Pedestrianization in commercial areas of developing countries is increasing continuously because-

- For the Revival of the Commercial area since it has the maximum flow of pedestrians thus gaining its charm and lost life as they have become dead.
- For Cars/For People - vehicular access are overcoming in urban communities, in result the participation of passerby in urban spaces is ending up plainly less and less. Cities are for people but trends of development in transportation infrastructure within the city have prioritized vehicles over pedestrian. Even due to road tax policies vehicles edge out pedestrian from road space.
- Pedestrianization an extraordinary need in urban outlining to make a manageable city in creating nations. Instead of creating an unsafe, unpleasant and dangerous environment we would be enabled to respect pedestrian as a main user in urban web in urban designing.



Source: - Primary Survey, 2017

Fig- 3: Benefits of Pedestrianisation

- Since the ongoing Smart City Mission also includes for the creation of Walkable Communities.

2.2 Rationale for Selection of Lucknow City

Lucknow is soon going to receive MRTS (Mass fast Transit System). That is not just going to facilitate the activity development on streets additionally increment the person on foot development at MRTS hubs. All workers utilizing it at a specific piece of their excursions would carry on as people on foot. Therefore, we can expect mass increase in pedestrian flow at nodes. Thus we need to know pedestrian behavior within Lucknow and that city has basic pedestrian infrastructure and walkability conditions.

Walkability-Walkability is a measure of how friendly an area is to walking. Factors influencing walkability-

- The presence or absence of quality of footpaths
- Pedestrian rights-of-way
- Traffic and road Conditions
- Land use patterns
- Safety

- Length of Stretch
- Disability infrastructure

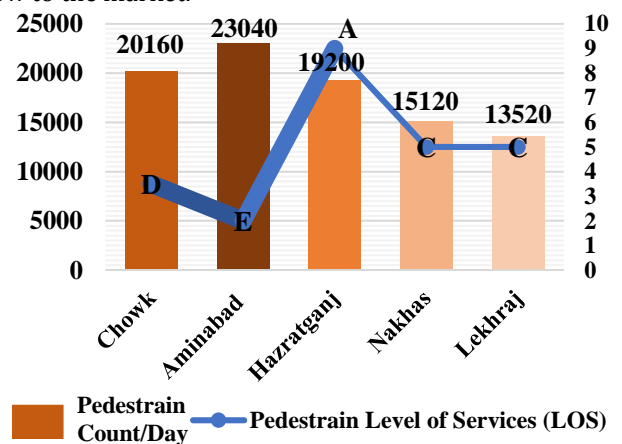
Table- 1: Comparison of Walkability Index of Indian and International Cities [2]

Sr no.	City	Walkability index score	Average walkability index
1.	Lucknow	31(Poor)	50
2.	Mumbai	52	50
3.	Chandigarh	86	50
4.	Venice	99	50
5.	Copenhagen	97	50
6.	New York	91	50

Source: - WWF, Natures Report, 2014

2.3 Rationale for Selection of Aminabad

In the below chart, the bar depicts the pedestrian count/day. Color shades in the bar depicts the value of pedestrian count in the day. Aminabad has the darkest bar which means it has highest flow of pedestrians and so goes for the other areas. Similarly the Line Width indicates the range of the pedestrian level of services as Width increases level of services decreases the maximum width is at Aminabad which means it has it is ranked least in the level of services. Aminabad being an old public space is designed on pattern of narrow streets as a result of which majority of people prefer to use walk as a mode to visit the market which makes the highest pedestrian flow to the market.



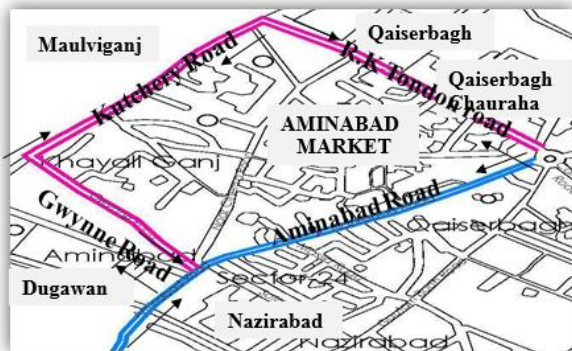
Source: - Primary Survey, 2017

Chart- 1: Comparative Analysis of Commercial Areas of Lucknow

2.4 Rationale for Selection of Nazirabad Road

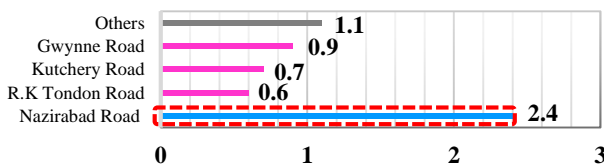
- Under Smart City Mission for Lucknow Area based development is recommended for Aminabad market under which is recommended to make Nazirabad Road as the only-pedestrian zone. [3]

- There are four major Pedestrian/Humanitarian routes which are used by pedestrian to visit the market.
- Given below is the volume/capacity ratio of all the major roads of Aminabad to find out which road has maximum congestion/exceeds it capacity and needs to be pedestrianized.



Source: - Primary Survey, 2017

Map-1: Humanitarian Routes -Aminabad



Source: - Primary Survey, 2017

Chart- 2: Volume-Capacity Ratio (V/C)

The above chart depicts that the highest V/C factor is for Nazirabad Road which gives the rationale and need for the stretch to be pedestrianized.

2.5 Case Study- Commercial Street, Bangalore [4]

2.5.1 Year -2012

2.5.2 Stretch: 0.48 km

Commercial Street is a street in Bangalore, the state capital of Karnataka, India. One of the most seasoned and busiest shopping territories of the city, the road is acclaimed for its exchange garments, footwear, gem specialist, gadgets; and nourishment joints.

The pedestrianisation of commercial street study was commissioned as part of The Livable Cities Project Phase II _ being implemented by ESAF.

2.5.3 Need for Pedestrianisation

- In recent years, Commercial Street transitioned from a mixed-use area to a business centre.
- In the process, and furthered by rapid motorization, the street lost its charm while paving the way for automobile-dependent customers.
- Sales are low....the economic downturn is not making things better.

2.5.4 Outcome

- 70 % of the shoppers in Commercial St. want it to be pedestrian-only, say vehicles are a nuisance.
- School children did this survey, prompted by their own bad experience on the street.
- Remember, children are one of the key drivers of Mall traffic, and therefore one of the key reasons for people not coming to Commercial St.

2.5.5 Proposal

Commercial St. an open air mall:

Shopping + Entertainment + Food + Safety from traffic + fresh air. Trees, flow

2.5.6 Result

It became a Successful Full Pedestrianisation.

2.5.7 Rationale for Success

- Effective Public Participation through awareness.
- Planning initiatives for Children and Elders.



Source: - Primary Survey, 2017

Fig- 4: Commercial St. After Pedestrianisation, 2013

3. MAJOR ISSUE OF AMINABAD

- Traffic Conditions: Mostly Pedestrian Traffic and auto rickshaws yet congested because of street shopping.
- Major issue: Uncontrolled Encroachments by peddlers and sellers causing Heavy blockage due to on-street stopping.

4. PARAMETERS OF PEDESTRIANISATION

Table -2: Ideal Parameters of Pedestrianisation

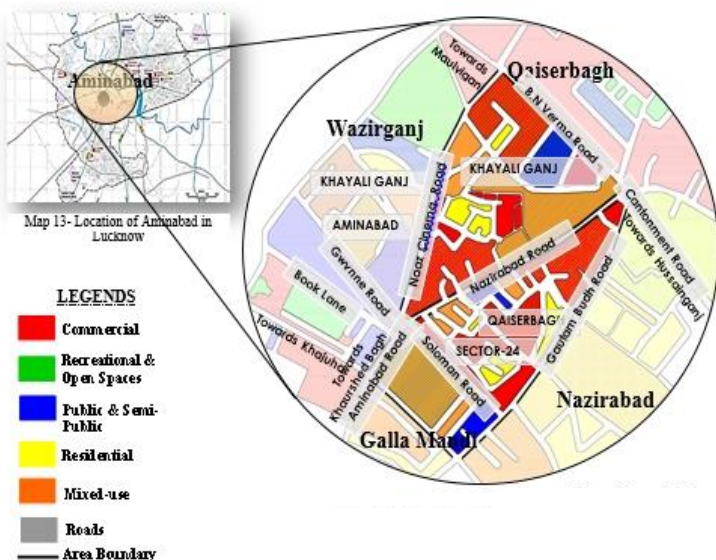
PARAMETERS	MODE
Pedestrian Flow	7
Traffic Volume count	7
Streetlights	7
Benches	7
Sidewalk	6
Public Participation	6
Para- Transit Node	6
Landscaping	5
Resurfaced Pavements	5
Artwork	5

Eateries	5
Entertainment	5
Landuse	4
Public Space	4
Parking	4
Narrow Streets(<12m)	3
Signage	2
Trash Bins	2
Vendors and Hawkers	2
Route for Emergency Services	1
Public Toilet	1
Planning for Disabilities	1
Subway	1
Foot over Bridge	1
PCO	1
Police Chowki	1

Source: - Primary Survey, 2017

Note: I have assigned weightage to each parameter as 1 and the value shown as mode is equal to its repetition showing its importance. The above parameters enlisted are those which are considered in the pedestrianisation related National as well as International Case studies reviewed for the study including the Commercial Street case study as explained above.

5. LANDUSE MAP –AMINABAD



Source: - Primary Survey, 2017

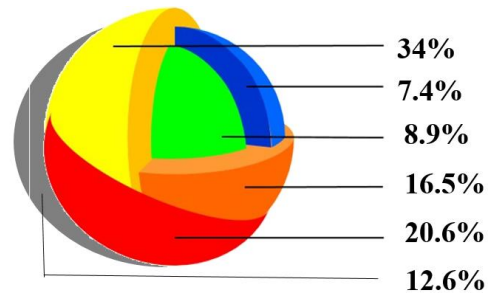
Map-2: Landuse Map of Aminabad, 2017

Line of Influence = 500m

As the maximum distance a Pedestrian walks to avail the services/ facilities of any area is approx. 250m – 500m. So the Landuse of the influence area is only being focused.

Above is the Landuse map for Aminabad, the background color of the blocks shows the dominant Landuse of the respective blocks and the predominant other land uses are shown through hatching over it of the respective Landuse color.

Landuse for the area is relevant in pedestrianising a stretch to know whether the stretch has a dominant commercial Landuse use in the façade and in the influence area. The fact that the stretch is commercial is supportive for pedestrianising because other Landuse cannot be pedestrianised because human residences. The area has dominant commercial land use including majorly retail shopping hence the pedestrian movement will be maximum there.



Source: - Primary Survey, 2017

Chart-3: Existing Landuse Distribution (in %) -2017, Aminabad

Above chart depicts that the percentage of commercial would increase from 20.6 % to 22.34 % as proposed in 2031 which means it would be still developing as commercial hub fetching more pedestrian flow.

6. SURVEYS CONDUCTED

All the surveys are conducted on 0.54km stretch of road i.e. Qaiserbagh Circle to Nazirabad crossing.

6.1 Merchant Count

Merchant Count Survey is done to find out that how many merchants will be affected on pedestrianising the street.



6.2 Speed & Delay

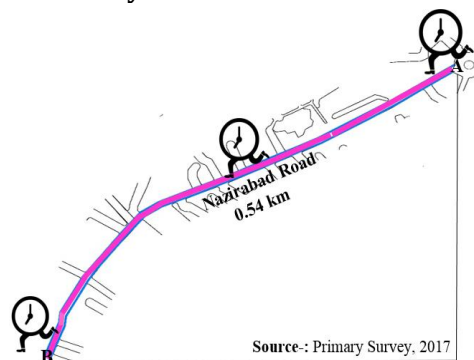


Fig- 5: Speed and Delay – Nazirabad Road

- From A to B & B to A: Average time to walk 1km for a person speed of 6kms/ hr: 8.5-9mins/km

- From A to B & B to A: Actual time taken to walk 1km at 6kms/hr in Peak hour (17:00-18:00) pm: 13.5-14mins/km
- Delay: 4.5-5mins

Reasons for Delay:

- Traffic congestion
- Public transport halts
- Obstruction due to On-Street Parking
- Less Road width and presence of Pathholes
- Heavy Encroachment by Hawkers & Vendors

6.3 Pedestrian Volume Count/Footfall Analysis

The pedestrian count is a way to measure the volume and direction of pedestrian traffic in the Aminabad through time & location. To see whether the pedestrian flow is uniform on all the days the survey is done on a randomly selected weekday and a weekend.

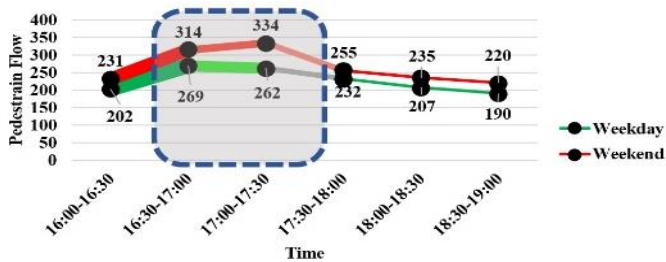
NOTE-: According to Car track survey done Indian Market Research Bureau (IMRB) in 2010 [5] mainly at Aminabad, the peak duration/rush hour for the market is 16:00-19:00 pm. Therefore, the footfall analysis and traffic surveys for the market is done in these three hours only, which would help in calculating the peak flow and the peak hour of the market.

WEEKDAY

Total Pedestrian flow on a Weekday at (16:00-19:00) pm
Location 1 - **787 persons** Location 2- **575 persons**

WEEKEND

Total Pedestrian flow on a Weekday at (16:00-19:00) pm
Location 1 - **925 persons** Location 2- **664 persons**
Peak Hour of Pedestrian Flow



Source: - Primary Survey, 2017

Chart-4: Peak Hour of Pedestrian Flow on Nazirabad

6.4 Traffic volume Count

Traffic Volume Count (TVC) is required to prove that there is a need for pedestrianisation in any area, Checking the efficiency/saturation of the road network by comparing current traffic volume with the calculated capacity or by identifying level of service. To see whether the vehicular flow is uniform on all the days the survey is done on a random weekday and a weekend.

WEEKDAY

Total Pedestrian flow on a Weekday at (16:00-19:00) pm
Location 1 - **582 PCU** Location 2- **388 PCU**

WEEKEND

Total Pedestrian flow on a Weekday at (16:00-19:00) pm
Location 1 - **688 PCU** Location 2- **531 PCU**

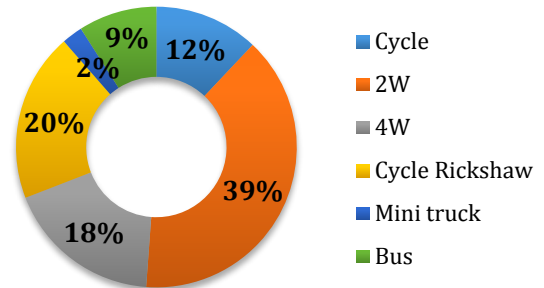


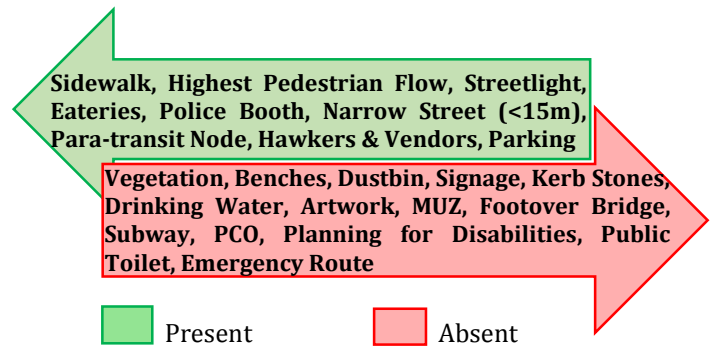
Chart-5: Traffic Composition of Nazirabad Road

Source: - Primary Survey, 2017

Therefore, vehicular flow is more on a weekend than on a weekday making the street unsafe and congested on weekend. Pedestrian flow is also more on the weekend so the stretch Nazirabad road becomes more congested on a weekend making it unsafe for pedestrians and increasing the chances of man-vehicular conflicts.

6.5 Road Inventory

Given below is the Existing Scenario of facilities which should have been present as per norms in Aminabad.



Source: - Primary Survey, 2017

Fig- 6: Existing Scenario of Aminabad in terms of facilities

6.6 Merchant Opinion

10% of the total no. of Merchants available on the stretch are surveyed which includes Hawkers, Vendors & Shopkeepers.



Source: - Primary Survey, 2017

Fig-7: Major Stakeholders of Aminabad

About 80% of visitors in Aminabad are immediate and distant locals with 40% coming for shopping purpose. Since the closing time of market is 10:00pm so roads can be pedestrianised from 6:00am to 10:00pm. Aminabad is majorly a mixed retail shopping place with about 69% of the merchants saying that they would be in loss after pedestrianisation.

About 84% of merchants are ready for pedestrianisation from 6:00am to 10:00pm. caters to old traditional business with about 39% of shops 50 years old. There is a lack of basic pedestrian facilities in the area. Most required facilities as per merchant's are:- Parking Space, Multi Utility zone, Signage Streetlights, Drinking Water, and Benches. This would make the street attractive.

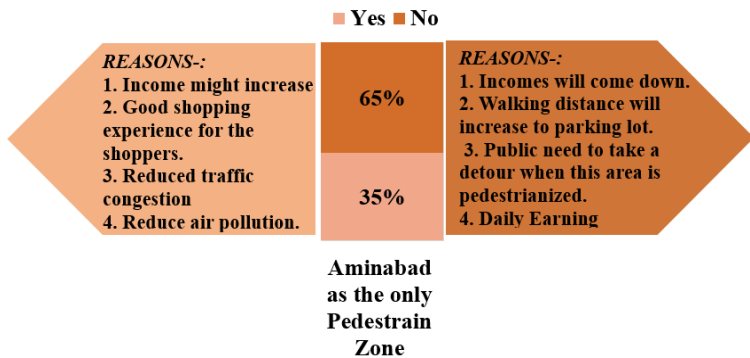


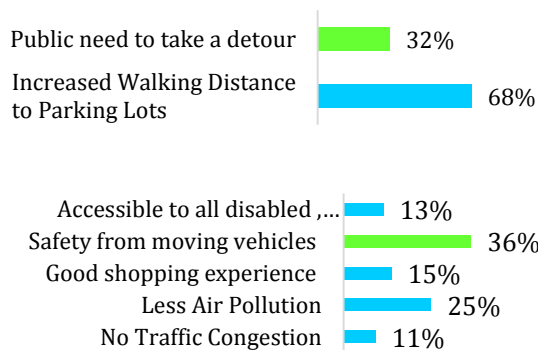
Chart-6: Opinion for Pedestrianisation
 Source: - Primary Survey, 2017

6.7 Pedestrian Opinion

3% of total visitors coming to Aminabad on a weekday and on weekend are surveyed out of which 50% of the surveys were taken in Peak Hour (16:30-17:30) pm and rest in Non-Peak Hours (18:00-19:00)pm.

WEEKDAY

Survey found that out of 1362 persons on a weekday 31% come as pedestrians. 65% of people coming to Aminabad are female, so the facilities should like PCO, Streetlights etc. should have been provided there for safety concern which is lacking at present. Most required facilities on a weekday as per visitor's are:- Benches, Footpath, Vegetation Shade, and Parking Space. This would make the street attractive. Nearly 57% of pedestrians say that Aminabad is not safe for them.



Source: - Primary Survey, 2017

Chart 7: Opinion for Pedestrianisation (Pedestrians)

WEEKEND

Survey found that out of 1589 persons on a weekday 45% come as pedestrians.

Aminabad can be made safe and attractive for pedestrians on a weekend by providing Footpath, Streetlights, Vegetation, and Benches at first. Nearly 68% of pedestrians say that Aminabad is not safe for them.

6.8 Parking Demand Analysis

Present Capacity of off street Parking- 2W-300 4W-180

Table-3: Parking Demand. Aminabad, 2017

Day	2W	4W	Demand -2W	Demand-4W
Weekday	18% - 505	11% - 308	205	128
Weekend	25% - 533	13% - 277	233	97

Source: - Primary Survey, 2017

Average Parking Duration:- 1-1.5 hrs

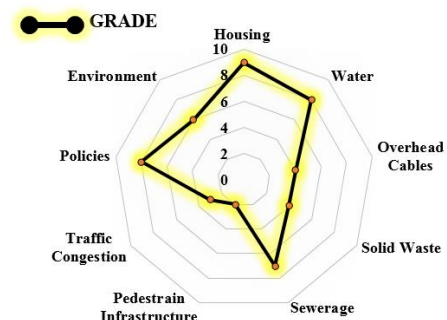
Fulfilling the above parking demand with pedestrianisation will encourage more and more people to use off-street parking facility rather than on-street and will attract more people towards the market.

7 ISSUES

7.1 Pedestrian Infrastructure- No provision of basic pedestrian infrastructure benches, streetlights, public toilets, signage's, Kerbstones, trees, universal design etc.

7.2 Governance- Lack in implementation of National Level schemes like National Policy for urban street vendors & provision of dustbins, designated hawkers space, shelter for hawkers which should have been provided as per the national policy for urban street vendors-2009 Footpaths present in the area are fully encroached by the shopkeepers which is not fulfilling its actual purpose. Hence all this is not been even monitored by the local level authority of the area.

7.3 Parking- Insufficient parking capacity to cater the flow of the market which is expected to increase after pedestrianisation. As About 80% of the people park their vehicles on-street as per their convenience encroaching the carriage way.



Source: - Primary Survey, 2017

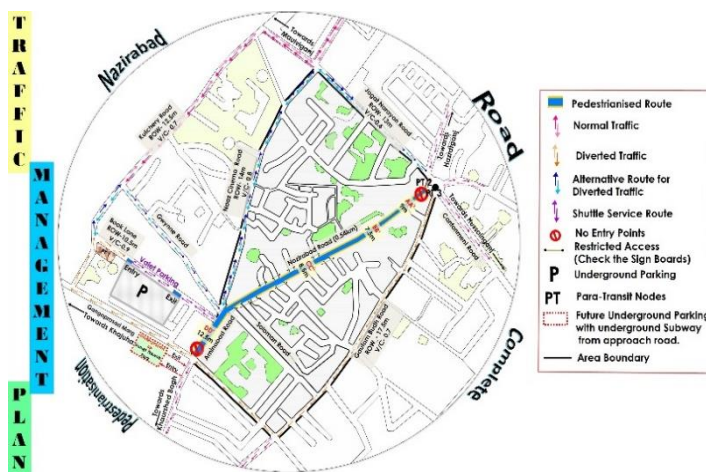
Chart-8: Existing Scenario, Aminabad

8. RECOMMENDATIONS

- **Strategies-** Start this as a Pilot Project which would give people time for acceptance of the initiative.
- If required in future, Underground parking can be provided below Hanuman Mandir and recommended facilities can be replicated to other stretches in the area too.
- Municipal Corporation should revise its architectural controls mainly for the renovation and building size.
- Overhanging cables should be cast underground.
- Zoning of spaces should be done like all food vendors in one zone etc.
- Restriction of vehicular traffic from 6am-10pm can be done by placing Automatic Bollards.
- Municipal Service should be given in the pedestrianised street which are distributed as per ward basis- Sweeping, Washing of Street, Drinking Water, and Electricity.
- It is recommended to put shed all over the footpath stretch if possible for pedestrians.
- Valet Parking all the people who come to the market & park their vehicles in off-street parking
- Free Parking Permits Issued to the residents and priced parking for rest all of the people to get parking self-financed.
- Other facilities that should be provided at the stretch Resurfaced Pavements, Sensors, CCTV Camera, Landscaping, Artwork, Dustbins, Vegetation, Public Toilet, Benches, MUZ, Universal Design, Shelter.

9. PROPOSALS

- The Traffic of the Nazirabad Road has been diverted on Temporary basis i.e. on all the days between 6:00am to 10:00pm & The Traffic Signs at the route must be placed in accordance with IRC 65>(*IRC- Indian Road Congress).
- Redevelopment Schemes for Aminabad must be made to enhance the Quality of life of the area.



Source: - Primary Survey, 2017

Map-3: Traffic Management Plan, Aminabad

10. CONCLUSION

Aminabad is found congested during evening peak hours, festival seasons, when lots of users visit the area to shop for different items. The Nazirabad road is a main road and carries high volumes of traffic. At present, the rate of hawking activity is growing at a high pace leading to encroachment of footpath by uncontrolled activity because of absence of MUZ. For the same, an attempt has been made to critically examine the existing problems at Nazirabad Road i.e. Primary surveys conducted brought out the views of the public who use the area, including, the hawkers, shop keepers and the visiting people. The available ROW for the road has been mapped and found to range between 9m-12m along the 540m study corridor. From the study, it was found out however that designated and designed place for hawkers would make it convenient for the hawkers, shop keepers and the pedestrians. So zoning as per hawking activities is recommended. An awareness program for the hawkers is necessary. With the formation of a welfare association of shopkeepers and Hawkers –ASHA|| for their general maintenance and regulation.

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BIOGRAPHIES



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