Urban Infrastructure Up-gradation of Old City Core:
Hazira, Gwalior City

Ar. Akanksha Dandotia[1], Dr. Sanjay S. Jadon[2]

[1]Student, MUP, Madhav Institute of Technology and Science, Gwalior, (M.P.)
[2]Professor, Dept. of Architecture, M.I.T.S., Gwalior, (M.P.)

---***---

Abstract - *When we think about the word "Old City Core" it seems that this is the place from where the city originates. Every place in the core area has their own history. The process of development of a city begins from the core where people congregate to give a special character to the city. As the city grows, this core transforms itself into an inner city. Such inner cities, with time to come, become misfit old city because of increased population or changing scale or functions and are unable to provide modern standards of living befitting healthy urban environment. So, this paper aims to find out the reasons due to which the area has lost their clean image & historical importance. Also analyze the existing living conditions of the core area and provide new Proposals, guidelines and strategies to upgrade the infrastructure of Old City Core Hazira.*

Key Words: **Area decongestion, Pedestrianisation, Vendors, Hawkers, Parking, Rejuvenation, Infrastructure.**

1. INTRODUCTION:

Whenever the city expands and spreads to the surroundings adding to the intermediary and peripheral zones that are supported by faster means of communication, than after the inner city becomes more overcrowded because of its centrality and has a tendency to slide back economically and physically because of overuse and obsolescent economic activities. Old cores of Gwalior city is one of the example.
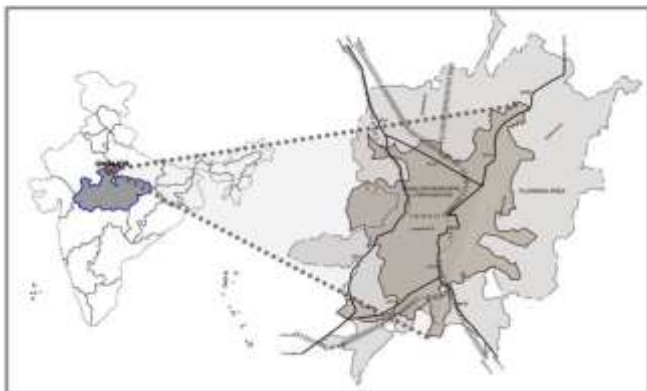

Fig-1: Location of whole Gwalior city in India.
(Source: Gwalior Municipal Corporation)

Gwalior is the 4th largest city of Madhya Pradesh, India. It has had a glorious past of nearly 700 years. Gwalior today is a fast growing urban area and it is well known for educational facilities, manufacturing industry etc. as a result lot of peoples is migrating to the city for better educational facilities and job opportunities. Therefore the city is undergoing vast changes in term of physical, social, economical and spatial aspects.

Gwalior district is one of the 51 districts of Madhya Pradesh state in the central India. The historic city of Gwalior has its administrative headquarters. The district has total 66 wards , Planning area of 42652 Hectare Planning and special area is 73279 Hectare Area of Municipal corporation is 173.68 sq.km., Municipality area is 18985 Hectare., Total no. of Household 202066, and total population 2,032,036 (2011 census), a 25% increase from the 2001 census. And Present population in 2018 is around 1400000. Literacy rate is 77%, Sex ratio is 864.

(Source: Gwalior census 2011)

2. DELINEATION OF OLD CORE HAZIRA AS STUDY AREA:

Hazira is the inner old core of Gwalior city. The city which developed and flourished over centuries today faces same problems regarding its central area. The central area of Gwalior from the early stage of growth developed into a nucleus of all major commercial activities. The old core of study area is thus multi-functional in character. Even today, the core continues to act as primary local business centre for entire Hazira zone. This urban agglomeration forms a strong base for retail. It is rich in heritage and culture with many of its existing old structure. But, today it is dealing with very poor physical infrastructure like traffic circulation.

Due to heavy urbanization, the city core faces the threat of negligence. The multilevel issues of preservation and redevelopment make the situation even more difficult to handle & understand. The present city core Hazira in turn lacks definite order and spatial consistency and if not properly accounted for may turn into an urban blight. It is quite evident, that the change is inevitable in the urban scenario. The city and its components must change it according to the changing aspirations of the citizens and need of contemporary urban mixed community through a constant layering and integration process.

The old core can be identified and differentiated from the rest of the city because of its typical characters. The major characteristics are its high intensity of dencity, development,

High historical value concentrating of retail trade and heavy traffic volumes at the rate Central area of gwalior bada area also shows similar characteristics.

Within a limitation has the first step towards his study is defining the level of the study area. Delineating the study area itself is a task which need systematic study about various factors and an entirely independent study framework. Hence the study area is delineated according to the selected ward division of the city. The entire old gwalior (hazira) covered in old core but study area comprises of four wards , ward   number 9th, 11th, 12th & 13th.

2.1 HISTORY OF HAZIRA:

At Starting phase, Hazira was the main market place of Gwalior. Nowadays it is congested because of its irregular and unplanned structure made by old merchants in the 15th century. The old town of Gwalior, commonly called Kila Gate is around 1 kilometre from Hazira, the largest area in old town, which is of considerable size but irregularly built. It lies at the eastern base of the rock (fort) and contains the tomb of the Sufi saints, Khwaja Khanoon and Muhammad Ghaus, erected during the early part of Mughal emperor when Akbar be in power, and the tomb of Mian Tansen, a great singer and one of the 'Nine Jewels' of Akbar's court. Old town called by his name Ghauspura situated near the tomb of Mohaommed Ghaus. The old town consisted of some streets and mohallas which are presumed to be 700 to 800 yrs old areas in gwalior which are still backward areas in gwalior due to improper management of new town.

Other places of Historical importance around this area includes Koteshwar Temple, Baba Kapoor ki dargah, Kashi Naresh ki gali, Kila etc.
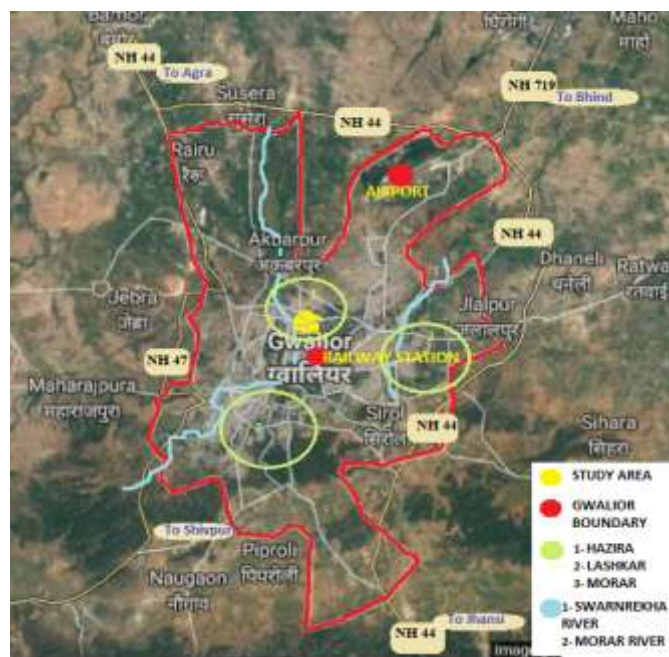

Fig-2: The Study Zone Location In Gwalior City.

Fig-3: The Selected Wards of an Old City Core "HAZIRA" of Gwalior city
(Source: Google Earth)
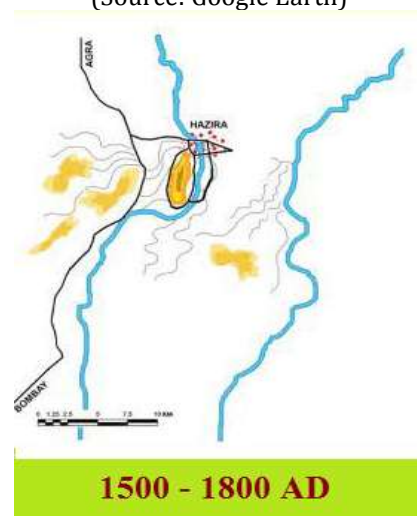

1500 - 1800 AD

Fig-4: "Origin of the city as the 1st name as Gwalior, then after its new name was old Gwalior and at present scenario it's called HAZIRA as old city of Gwalior."

3. NEED OF STUDY:

With Rapid urbanization and high pace of development, the core areas are facing different issues today. The primary issue is the uncontrolled and haphazard growth taking place leading to increased pressure on existing infrastructure and services, traffic problems and negligence of urban planning/design guidelines. The core reflects a patchy collage of incongruous landscape of built environment. There is a need to the re-evaluate the characteristic of the core. This paper attempts to address the core city issues and problems which are largely because of organically developed and unplanned growth and absence of proper direction for future development. Also it analyzes various issues and identifies existing as well as anticipates upcoming problems. The study area provides numerous opportunities in terms of it's centrally and accessibility to rest of the city. The adjoining Swarn Rekha River is an opportunity which has never been explored from last many decades.

Fig-.5: Captured existing Physical daily routine condition of old core Hazira.

With its typical characters and potential for future development, it is worth exploring hoe to review and redefine the identity of the core and in turn the image of Gwalior city.

Fig-6: Todays condition of Swarnrekha river (which was Played role as jeevan dayani)

4. ANALYSISED SURVEY DATA OF STUDY   AREA:

A questionnaires is prepared and filled by 50 peoples approximately. After analyzing the questionnaires the following inferences is listed:

1.   Aspects of Household Survey:

Type of Household, Ownership, Duration of stay, Previous Stay, Housing Typology, Age of Buildings, Buildings under or exceeded F.A.R, Existing Conditions of houses, Parking Facilities, People's willingness to relocate, Environmental condition, service quality & Community facilities & neighborhood conditions.

Problems identification- High pace of development

a. Haphazard and uncontrolled growth

b. Increasing pressure on existing infrastructure
c. Neglect of urban design guidelines.
d. Lack of open spaces and other public spaces and parks gardens is creating dissatisfaction among peoples.
e. There is still a considerable proportion structure in dilapidated and average condition in need of redevelopment.

2.   Aspects of Commercial Survey:

Age of the shop, Type of Trade, Consumer types, Parking Availability, Willingness to relocate.

Problems identification-

a. More than 80% of shop keepers don't want to relocate to any new place & the main reason behind this is the centrality of core area. Along that they suffering from same congestion's problem due to vehicles parked outside their shop for the whole day. They suggest providing a paid parking in nearer open land.

b. Shop keepers extends there shops on footpaths. so, the pedestrians walking on road along running vehicles.

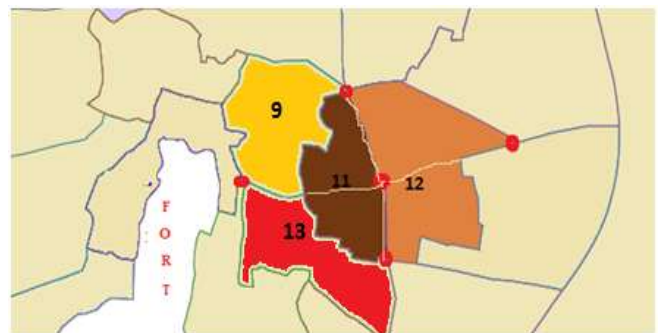### 3. Demography Survey Data of Study Area:

Fig-7: Selected Ward Area

Table-1: Demography

WardColor wise	Population	Area in Hectare
w. no.9	16159	24.8
w.no.11	15534	31.9
w. no.12	15616	55.3
w. no.13	14921	37.2

Problems identification- Ward no. 9 & 11 are more congested and having less open spaces.

3.1. Male/Female Ratio:

According to survey analysis male population is 4% higher than female population mostly people know Hindi, Urdu and English languages.
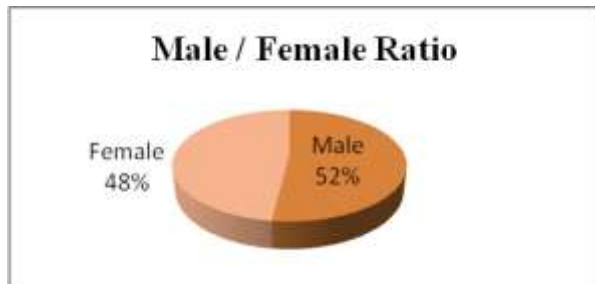

Fig- 8

3.2. Social facilities within the study area:

- Collage (adequate)
- Schools (Primary, Higher Secondary, Play groups) (adequate)
- Civil Hospital (adequate)
- Police station/ booths (adequate)
- ATM & Bank (adequate)
- Post office (adequate)
- Recreational Areas (Inadequate)
- Religious places (adequate)
- Socio cultural Spaces (adequate)
- Milk booth (adequate)

4. Aspects of traffic & transportation Survey:

Road Inventory Survey, Traffic Volume Count survey, Origin Destination survey, Speed & Delay survey, Parking survey, Pedestrian survey.

Problems identification-

- Peoples can't follow the traffic rules due to the inventory is not in the front of road lane's dividers.
- Narrow roads (bottleneck).
- Lack of Parking.
- On street parking along shops.
- Stray animals on roads.
- Unauthorized road cutting/digging
- Encroachment can be seen on footpath of almost all the main roads. As a result pedestrians are forced to walk on roads. Similarly many times encroachments can be found along road side parking creating nuisance to the traffic movement.

5. SWOT Analysis:

Table –2:

STRENGTH	WEAKNESS	OPPORTUNITIES	THREATS
1. Unique architecture 2. Varieties of shopping 3.Heritage core 4. Culture 5.Prime location and easy accessibility	1. Congestion 2. Organically & Unplanned Housing 3.No consideration for pedestrians 4.Narrow roads arounds heritage monuments 5.Lack of parking 6. Unmanaged traffic.	1.Better transport network 2.Conserve as a heritage zone and increase tourism 3. Renew as cultural hub	1.Less Maintenance of old structure 2.Increase shop fronts 3. Total transformations & modification 4.Encroachment

6. RECOMMENDATION FOR FUTURE DEVELOPMENT AND PROPOSALS:

The purpose of upgradation programmes is to aid in the development of concentrated urban centre and preserve it as heart of the community. The objective is not only to solve the existing problems but to have an insight into the future, foresee changes and anticipate the problems. Improving the living condition of the city without disturbing the historic fabric is a complex issue and requires multifaceted approach. Strategies are formulated so as to achieve the desired pattern of development and prevent the core from deteriorating in future.

6.1 Strategies / Recommendation describe in this section are chategorized according to various aspects are :

A. Land use proposal:

1. The pure residential areas will be maintained as residential and commercial growth in these areas will be restricted.
2. Commercial development is proposed in areas having predominant commercial activities.
3. River is going to rejuvenate under smart city proposal. So, more land should be allocated for open spaces the area along the river banks should be developed and made accessible to people. Similarly when dilapidated areas are redeveloped some percentage of that area should be preserved as Open Spaces.

4. Land used for public and semi public activity will be continue to remain the same.

B. Proposals for parking:

There are only one type of parking way used by peoples that is, they park their vehicles in front of shops, there are no facility available road side visitors parking, paid parking lots and any multi or single storey parking in old core study area.

The future available parking space should be properly circulated so that it can be used by more and more people. Therefore parking should be used by widely and effectively. This can be achieved by the following:

1. Provision to control number of vehicle coming inside the old core area.

2 .To discourage long term parking of vehicles on busy roads.

National Urban transportation policies has suggested grade system of parking which can be used to evolve parking charges for pay and Park lots. These parking charges should be less for first few hours but later the charges will increase for every hour as per the importance of that area market and the level of traffic and congestion. Following parking charges are suggested for private and commercial vehicle.

a. Private vehicle

Table-3: Grade system

Sr. no	Duration		4 Wheeler		2 Wheeler	
Telescopic rates of Parking			Multistorey	Open	Multistorey	Open
1	1st hour	for 1 hour	5	10	2	5
2	2nd hour	for 1 hour	5	10	2	5
3	3rd hour	for 1 hour	10	15	5	10
4	4th hour	for 1 hour	15	20	10	15

b. Commercial vehicles

- 3 or 5 wheeler Rickshaw. Tempos etc. should not be allowed in old core area for loading and unloading of goods from 9 a.m. to 2 p.m. and 4 p.m. to 9 p.m. they should be allowed in following timings:
- Before 9:00 a.m., 2pm - 4 p.m. in afternoon, after 9 p.m.
- But parking requirement is more in 2 p.m. to 4 p.m. slot. Therefore parking charges should be applied and they should be increased after every 15 minutes.

c. Use of modern techniques:

a. Use of modern techniques in pay and Park policy will automatically reduce cheating and unauthorized parking. The workers should be given a hand held GDA- smart device to collect the money and keep record of parked vehicles for electronic parking machines should be installed at strategic locations it will state the following information:

Vehicle number, date, in time, out time, type of vehicle 2/4 w, parking lot number.

b. Sticker should be provided for all the residents and parking facilities should be provided to them for free or with very less charges for a monthly pass.

c. There should not be free parking on the roads of old core area for any visitor 2/4 wheeler.

d. Visitors parking should be given top priority. Shopkeepers, salesman and workers should Park their vehicles in multi storey parking or they should be encouraged to use public transport for travelling.

e. The Parking spaces of schools, colleges, institutional building and offices which are empty after their working hours should be taken on rent on contract basis with some rules and agreement with the owner. GMC should encourage such use of underutilized parking areas.

f. The parking charges of multi storey parking should be less than that or road side parking to encourage citizen to park in multi storey parking. This will reduce the obstacle on road for free traffic movement.

g. Parking for bicycle should be provided free. Even bicycle sharing concept is also good for it.

h. Signage's and markings for parking and no parking should be properly marked on road by white and yellow color to avoid confusion.

C. Redevelopment zone:

An area is old core of Gwalior city has been identified where there are mentioned numbers of dilapidated structures and which needs to be reconstructed immediately all incoming few years. Does the entire area should be declared as early development zone which should have different set of development control rules.
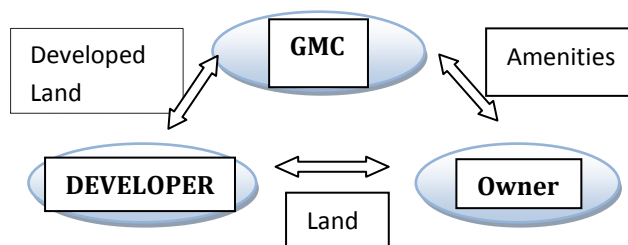

Fig-9: Important Players in Land Pooling

The foremost restrictions in the development of the old city are the lack of availability of land. As there is no vacant land available in these congested parts the land should be recycled for various uses. The authority needs land for developing public amenities at the rate has for the betterment of living condition in Old City the authority the owner and Developers should work in collaboration with each other. There needs to be a land pooling mechanism in which all the three players are benefited.

1. For plot with area more than 400 square metre site setback will be compulsory
2. Plot with area more than 1200 square metre open space will be compulsory
3. Is the authority is acquires some part of the plot to be developed additional FSI will be granted.

Advantages:

All the three players are benefited. As the property holder as well as the developer gain in this system they will willingly participate and land acquisition and development will no more remain as the sole responsibility of the authority. Once the system is set into function it will be in momentum and will be self sustaining

The development needs to be controlled and the developers should not be given an upper hand in the process. Hence there is a need to frame area specific development control rules.

Development control rules need to be framed to regulate the construction activity with an aim to preserve the historic fabrics conserve the Heritage and to properly arranged for public amenities.

The authority needs to play role of facilitator. The involvement of authority is crucial to avoid the developer's monopoly.

D. Proposals for thorough traffic issue:

Congestion charges should be applied in old core area to reduce the number of unwanted vehicles coming in core area and to discourage the through traffic. This can also generates revenue which can be used to provide better facilities of transport in old core area.

The level of commercialization is more in some areas which attracts more number of vehicles that leads to congestion. Therefore on these congested roads and lens, entry to the vehicle should be banned. **Ring Road should be proposed.**

If these proposals are implemented then following improvements can be seen

- Use of private vehicles is expected to reduce and use of non motorised vehicles is expected to increase
- Use of public transport is anticipated to increase
- Importance and usability of parking will be realised hands free parking will no longer be provided
- Discipline in traffic movements and parking is expected to increase
- Misuse of parking is expected to reduce due to Telescopic parking charges
- Tendency of breaking rules will be reduced
- Due to easy availability of parking more people will be attracted to market areas which will improve the economy

- Traffic is expected to move faster due to less obstacles of parking and so congestion will reduce.

E. Proposed multistory parking lots:

Mansingh road, Kila Gate road, Tansen Nagar road are the major roads in old core area of Hazira Gwalior city.

These Roots have the maximum number of traffic flowing throughout the day. Mansingh road and Kila Gate road is a commercial street which attracts large number of pedestrian traffic and similarly parking requirement in this area is also very high. The existing parking lot are inadequate or temporary.. Hence location of multi storey parking lots are proposed considering vehicle traffic movement, pedestrian movement and building conditions of the proposed location, slum pockets.

F. Proposal for pedestrianisation:

Old Core retail area has found to be sustainable or pedestrianization considering the existing pedestrian movement and activity patterns. The area has been identified analyzing the existing shopping activity and traffic pattern. Vegetable market (Hazira Mandi) & the shops in front of mandi are the only main old markets along which footpath exist but, always covered with extended good stuff. There are no structured parking lots hands on street parking in this zone.

Fig10: Showing encroachment on footpath

The pedestrian precinct should be aesthetically enhanced by incorporating urban design element like paving, Street lighting, Street furniture. Billboard advertisement board erected haphazardly in this area bearing the view of Heritage structure. Therefore there should be restrictions controlling the position and height of hoardings.

Once the area is pedestrian emergence of informal activity is inevitable therefore there should be designated Hawking

zone incorporating the informal activities. The pedestrian pressing shall be free from any kind of encroachment.

Parking shall be prohibited on these roads and width of Footpath should be increased for convenience of pedestrians.

Not only Footpath but also on Crossings appropriate measures shall be taken for safety and convenience of pedestrians at period if such goods facilities are provided then people will tend to walk and use public transport to travel instead of using their own vehicles.

Fig-11: Hazira Square & Commercial area(showing vendors along the road and shops)

7. CONCLUSION:

Today's improvement of congestion in study area is a big task for city municipality. The Local Peoples should aware for traffic and social rules first and cooperate with visitors through left some open easy flowing spaces. Mainly the vendors, hawkers whose placed there thelas along with the road in all four side of Hazira square (chaoraha) . In the whole study area there is some vacant land which should used as an extension part of daily movable market like fruit or some other goods.

Government should propose for Heritage precinct, Improvements of Identified Critical nodes, Relocation of activities, Rehabilitation of Slums, Amendments in Existing Development control rules, proposed multi-storey parking lots, Improvements of critical nodes, Proposal for river or riverfront issues should provide a clear spacious pedestrian walkway that provides way to the walkers who can't walk on main road. Also to provide space full clear road to tomb or a famous fort of Gwalior so, the visitors can easily visit without any harm.

8. REFERENCES:

1) Government of Madhya Pradesh, Gwalior Development Plan 2021(2008),

2) Cencus of India.

3) http://censusindia.gov.in/2011-common/census data2011.html.

4) https://www.jagranjosh.com/general-knowledge/archaeological-sites-in-india-gwalior-fort-1361013977-1