CITY LEVEL PROJECTS

MOVEMENT CORRIDORS

Vision for Delhi (South Zone)

(An ISO 9001 : 2008 Certified Organisation)

Delhi Urban Art Commission

The Delhi Urban Art Commission was set up by an Act of Parliament in 1973 to "advise the Government of India in the matter of preserving, developing and maintaining the aesthetic quality of urban and environmental design within Delhi and to provide advice and guidance to any local body in respect of any project of building operations or engineering operations or any development proposal which affects or is like to affect the skyline or the aesthetic quality of the surroundings or any public amenity provided therein".

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Organisations / Others

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East Delhi Municipal Corporation
South Delhi Municipal Corporation
New Delhi Municipal Council
Geospatial Delhi Limited
Delhi Metro Rail Corporation
Delhi Urban Shelter Improvement Board
BSES Rajdhani Power Limited
BSES Yamuna Power Limited
RWA's and Area Councillors
Google Earth

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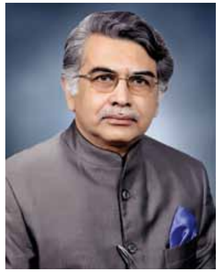
Preface



The city of Delhi, capital of this vast land of diversities, is a city laden with layers of history, a place where civilizations have lived, prospered and perished over centuries. The modern city today, built over and around a rich tapestry of heritage, presents an opportunity at every turn, to allow for coexistence of the past, present and the future. In order to understand this multidimensional urban spectrum and attempt to plan the future, various city level studies have been initiated by the DUAC. I hope that these studies will help the planners of modern day Delhi to carefully articulate urban space, structure, form and environment and sensitively address future requirements.

I convey my thanks to all the Consultants and Members of the Commission who have tirelessly worked on this research project to bring out this document. I also take this opportunity to place on record my sincere appreciation of the efforts of Secretary and other staff of DUAC for providing the necessary administrative support to make this happen.

I fondly hope that the authorities of the local, state and national government take these studies seriously and implement, in right earnest, the suggestions given herein.

September, 2017

Prof. Dr. P.S.N. Rao
Chairman, DUAC

Contents

Summary

The study on Movement Corridors illustrates strategies to make the city 'accessible' to its people. Improved accessibility within the city results in the enhancement of safety, security and health.

As a resource amenity, trails are connectors that traverse a variety of ownerships and environments, linking fragments of the city. These links recognize multiple values: Recreation, transportation, aesthetic, scenic, environmental and economic gain. Trails provide a platform for improving neighbourhoods and city-wide needs. Improved accessibility influences standards of social justice and equity. It also results in an increase in the city's land value. Trails provide a means to thread diverse city patterns together.

The city and its streets have been taken over by vehicles pushing aside the right of the people to walk. Due to traffic load, pedestrians suffer frequent road fatalities. Delhi pedestrians constituted 749 of the total 1,671 fatal road accidents (Indian Express, September 2015).

The project aims to support efforts to make the city accessible, create potential for pedestrians and cyclists to move without being compromised by vehicles in the road space. The study explores the city's layers to define alternate movement domains. It demonstrates how existing natural and manmade constructs can be organized together to create a 'movement corridor'.

'Movement Corridors' within the city have the potential to create interconnected zonal and local system trails that will make Delhi a pedestrian-friendly city. The plan includes the utilization of the city's green lungs (city greens), linking forests and parks to the city and spatial corridors around precincts to allow movement of people and non-motorized vehicles. This would provide safe and convenient connections to parks, natural systems and recreational facilities, and links with residential areas, civic institutions and businesses.

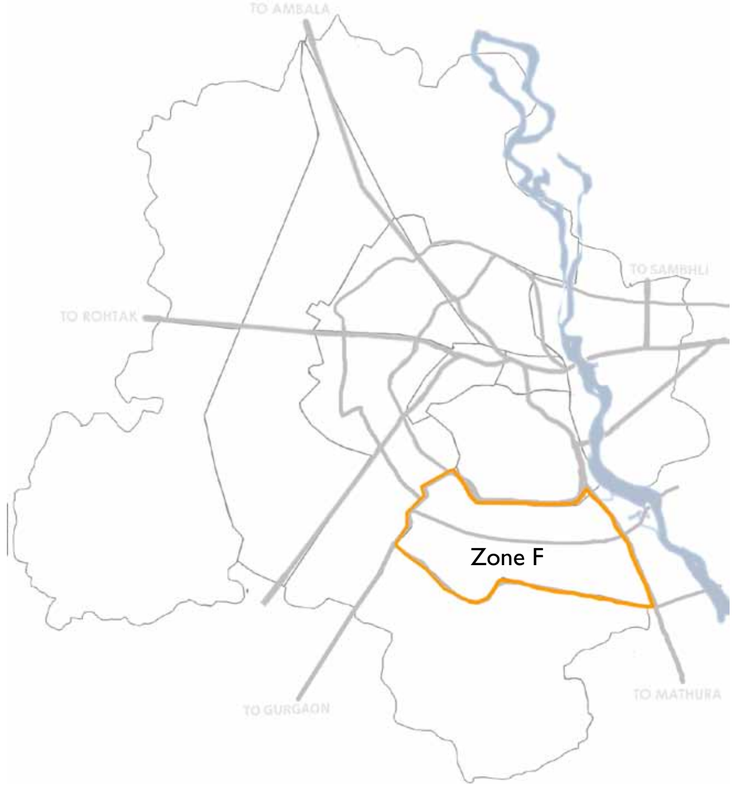
Chapter 1

Context within the City

The city provides many layers of opportunity to create a sheltered realm where pedestrians, cyclists and people using non-motorized vehicles can move in a safe manner. It also provides access to opportunities that are currently unavailable.

These urban realms can be linked utilizing nullahs, greens, parks, arterial roads and neighbourhoods.

The city is further divided into zones. To explore and define the potential of opportunities, the study has been designed to focus on a limited area: Zone F. The strategy illustrated can be applied across other zones as well.



1.1 Transport Network of Delhi

Road Map of Delhi

Metro Network of Delhi

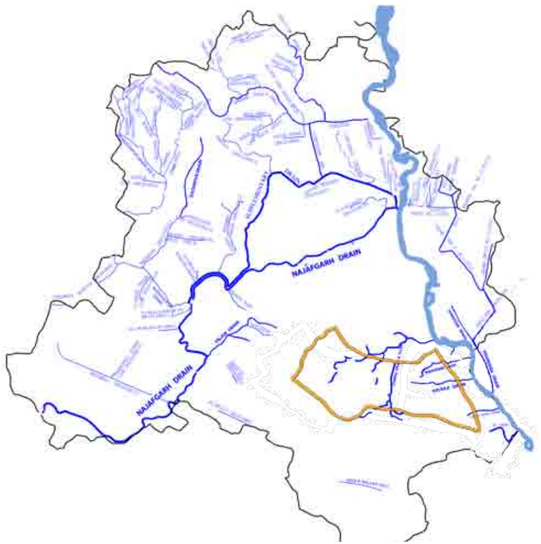
Zone F in Context to the City Road Network

- Zone F is linked to other parts of Delhi by major city roads. The Inner Ring Road located in the north, Mehrauli–Badarpur Road located in the south, Mathura Road in the east and the Delhi-Gurgaon Expressway in the west, form major connections with other parts of the city.
- The Outer Ring Road passing through Zone F is a major connector accommodating heavy traffic movement.

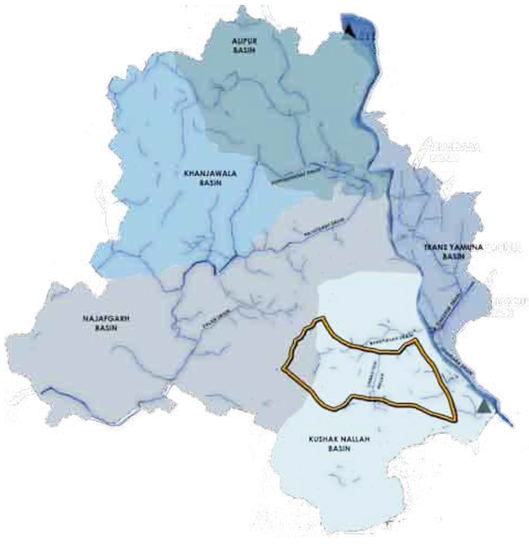
Zone F in Context to the City Metro Network

- Zone F is connected to various parts of Delhi through the Metro network.
- Within Zone F, the Yellow and Violent Lines provide connectivity.
- Accessibility to Zone F will improve with the construction of phase 3 and 4 of the Metro network. This will enable a more efficient movement of people.

1.2 Nullahs: The Natural Drainage Systems of Delhi



Nullah Systems of Delhi
(Source: Delhi Jal Board)



Drainage Basins of Delhi
(Source: SPA Studio, Urban Design Semester, Aug-Sep 2009)

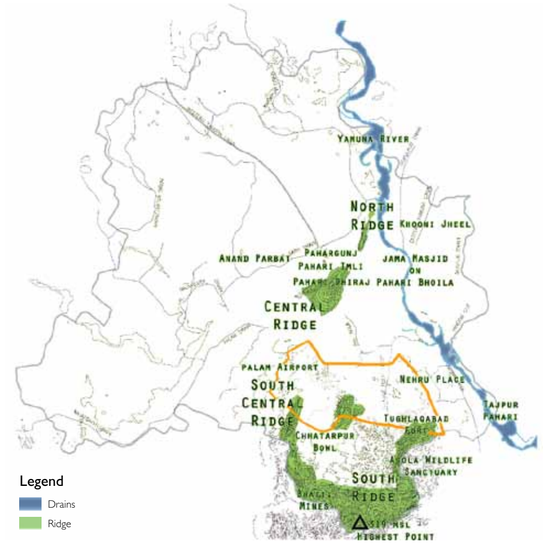
Zone F in Context to the City's Nullah System

- The system of nullahs distributed across the city follows its natural topographic features. In Zone F, it connects the Aravallis in the south to the Yamuna River Basin.

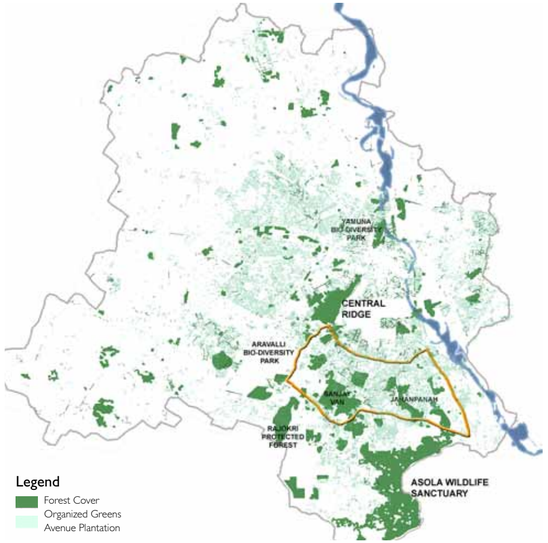
Zone F in Context to the City's Drainage Basin

- Zone F contains an important drainage basin, namely the Kushak Basin, which includes drains such as a part of the Barapullah Nullah, Kushak Drain and Palam Drain flowing into it.
- It also includes the Sarita Vihar Drain, Maharani Bagh Drain and Kalkaji Drain.

1.3 Green and Open Spaces of Delhi



Topography Structure
(Source: Delhi Development Authority)



The City's Green Cover
(Source: Geospatial Delhi Limited)

Zone F in Context to the Topography of the City

- Zone F forms a part of the South-central ridge.
- Its unique topography includes major ridges, troughs and basins.

Zone F in Context to the Greens of the City

- Zone F includes numerous city level forests such as Sanjay Van, Aravalli Bio-diversity Park, Jahanpanah Forest, etc.
- These form parts of metropolitan green expanses like forests, district parks, planned greens and avenue plantations.

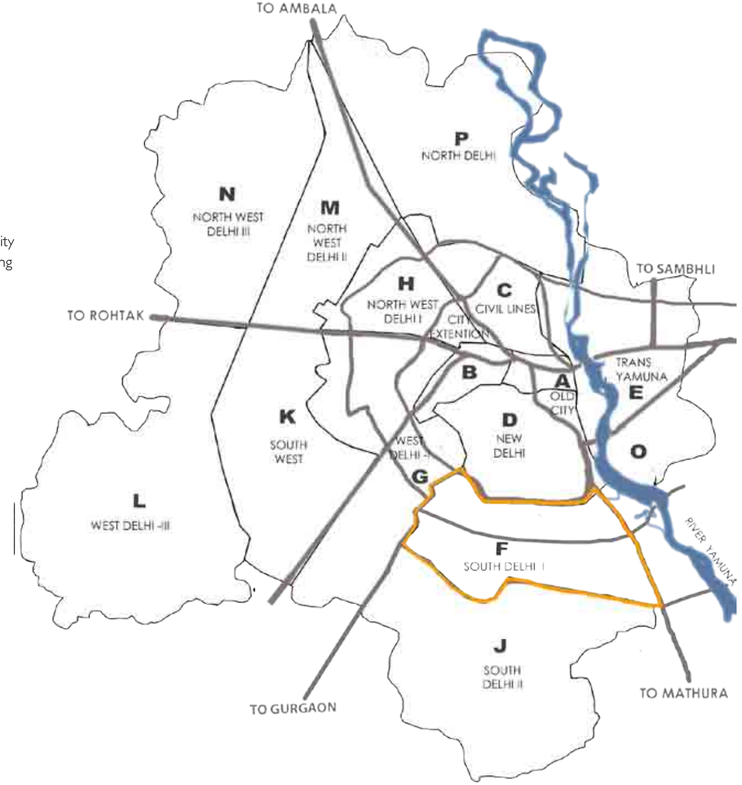
Chapter 2

Zone F

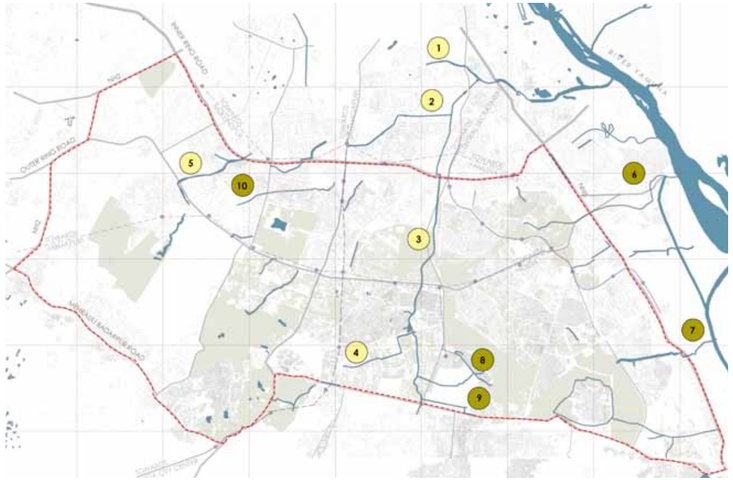
Zone F is located in South Delhi. It is bounded by the Inner Ring Road to the north, Mehrauli–Badarpur Road to the south, Mathura Road to the east and NH 8 to the west.

Movement Corridors aim to link tracts of scattered metropolitan greens along with the network of nullahs.

Other areas of opportunity within Zone F include links to city greens, nullah systems, arterial roads, connecting neighbouring precincts and amenities.



2.1 Nullahs



Map Showing Nullah Network in Zone F

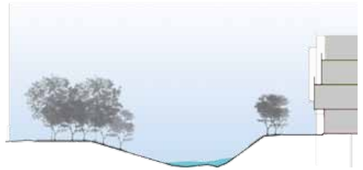
Key Plan

Prominent channels which can be considered for creating trails

1. Barahpullah Nullah
2. Kushak Nullah
3. Chirag Dilli Nullah
4. Pushp Vihar Drain
5. R.K. Puram Nullah

Other existing nullahs/drains in area of study

6. Kalkaji Nullah
7. Sarita Vihar Nullah
8. Dakshinpuri Drain
9. Khanpur Drain
10. Nauroji Nagar Drain



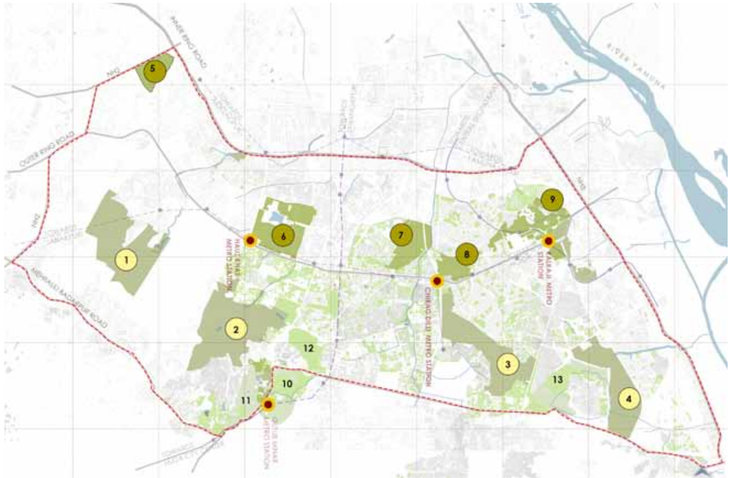
Section Showing Chirag Dillli Nullah Edge

- Zone F has a vast network of nullahs traversing through it i.e. Chirag Dilli Nullah, R.K. Puram Nullah and the Pushp Vihar Nullah which drain into the Barapullah Nullah located in Central Delhi.
- Thus, it forms a continuous network of nullahs and basins which can be utilized to form an uninterrupted network of trails within the zone and to other parts of Delhi.

Legend

- Zone Boundary
- Existing Roads
- Overhead Metro Line
- Underground Utilities
- Nullahs
- Nullahs
- Existing Green Pockets
- Exiting Built

2.2 Green/Open Pockets



Map Showing Green/Open Spaces in Zone F

Section Showing disconnected Sanjay Van due to roads dissecting

- Zone F contains large pockets of various levels of greens, which form a natural continuous organic pattern. These green/open pockets have the potential to be connected via internal trails and form a network for movement within the zone.

Key Plan

City Level Forests

1. Aravalli Bio-diversity Zone
2. Sanjay Van
3. Jahanpanah Forest
4. Tughlaqabad Forest

Local Level Greens

10. Butterfly Park
11. Mehrauli Greens
12. Lado Sarai Golf Club
13. Tughlaqabad Greens

District Level Greens

5. Jheel Park
6. Hauz Khas District Park
7. Siri Fort Park
8. Panchsheel Forest
9. Aastha Kunj

Legend

- Metro Stations in Proximity to Greens
- Existing Built
- Local Level Parks
- District Level Parks
- City Level Reserved Forests
- Roads
- Overhead Metro
- Underground Metro Routes
- Existing Nullahs

2.3 Neighbourhoods and Amenities

Key Plan

- Zone F has numerous neighbourhood amenities including community centres, mixed-use markets and informal areas which are disconnected.
- These facilities when connected would enable pedestrians and cyclists to walk or cycle continuously through or along them and use them to reach their destinations.

Map Showing Neighbourhood Amenities in Zone F

Edge near Guru Ravi Dass Marg with informal activities taking place on the pedestrian pathway causing conflict with pedestrian movement

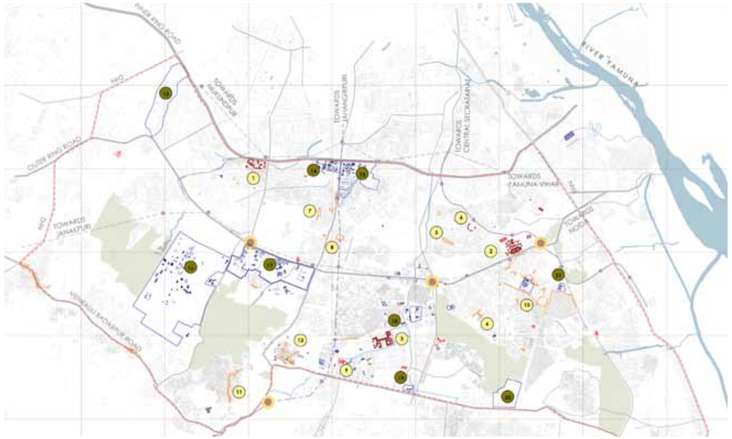
Commercial/District Centres
1. Bhikaji Cama Place
2. Nehru Place District Centre
3. Saket District Centre
4. Kailash Colony Market
5. GK-1Block Market
6. GK-II Block Market
7. Green Park Market
8. Safdarjung Development Area Market
9. PVR, Saket

Mixed-use Markets
10. Kalkaji Market
11. Mehrauli Market
12. Lado Sarai Market

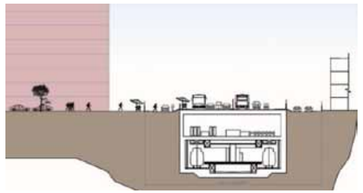
Institutions
13. Delhi University (South Delhi)
14. Safdarjung Hospital
15. AIIMS
16. Jawaharlal Nehru University (JNU)
17. Indian Institute of Technology (IIT)
18. Shaheed Bhagat Singh College
19. Jamia Hamdard University
20. Acharya Narendra Dev College

Legend
- Institutional
- Commercial
- City Level Greens
- Mixed-use Markets
- Neighbourhood Boundaries

2.4 Institutional and Commercial Areas



Key Plan



Commercial Edge, disconnected and difficult to Access

Map Showing Institutional and Commercial Network in Zone F

- **Institutional:** Institutions such as IIT, JNU, AIIMS etc., form a large part of Zone F. A part of these large institutional areas can form continuous trails either along their edges, or through them depending on their location and accessibility to green belts.
- **Commercial:** Zone F contains major CBD's (Central Business Districts) of Delhi such as Nehru Place, Saket District Centre and Bhikaji Cama Place. Movement in and around these commercial centres is very intense and requires more connectivity by alternate modes of travel including walking, cycling etc. to make them more accessible.

Commercial/District Centres
1. Bhikaji Cama Place
2. Nehru Place District Centre
3. Saket District Centre
4. Kailash Colony Market
5. GK 1– Block Market
6. GK II – Block Market
7. Green Park Market
8. Safdarjung Development Area Market
9. PVR, Saket

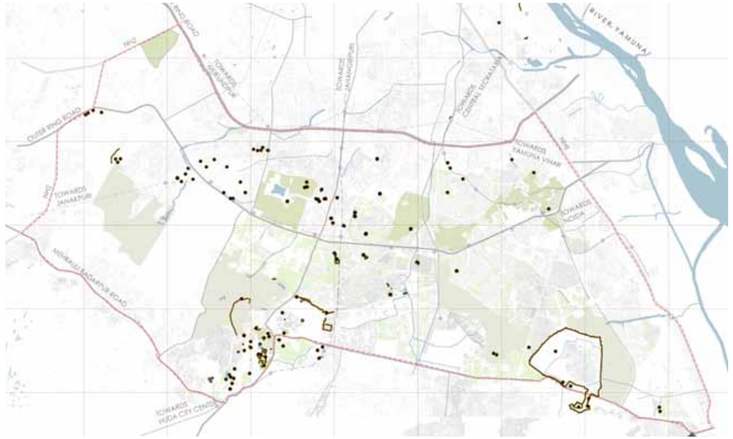
Mixed-use Markets
10. Kalkaji Market
11. Mehrauli Market
12. Lado Sarai Market

Institutions
13. Delhi University (South Delhi)
14. Safdarjung Hospital
15. AIIMS
16. Jawaharlal Nehru University (JNU)
17. Indian Institute of Technology (IIT)
18. Shaheed Bhagat Singh College
19. Delhi Institute of Pharmaceutical and Research
20. Jamia Hamdard University
21. Acharya Narendra Dev College

Legend
- Institutional
- Commercial
- City Level Greens
- Mixed-use Markets

ZONE F

2.5 Monument Zones



Map Showing Monuments in Zone F

Monument edge near Panchsheel Park, disconnected from adjoining edges

- Zone F includes numerous monuments scattered through the Zone. These have immense cultural and historic value and have the potential to revive the city's value.
- These have immense cultural and historic significance and have not been explored to the optimum as they have been engulfed by dense settlements.

Key Plan

Monuments

1. Qutub Complex
2. Qila Rai Pithora Wall and Bastions
3. Chirag Dilli Dargah
4. Tughlaqabad Fortress and ruins of wall
5. Tomb of Lala Lajpat Rai
6. Ashokan Edict
7. Teen Burji Tomb
8. Temples, Gateways
9. Qasai Wala Gumbad, Shahi Masjid
10. Vasant Vihar Mosque, Baradari Tomb
11. Garhi
12. Kala Gumbad
13. Khirki Masjid
14. Chishti Auliya

Legend

- Monuments
- Metro Station in Proximity to Green Project
- City Level Greens
- Main Roads
- Overhead Metro
- Underground Metro
- Zonal Boundary
- Nullahs

Chapter 3

Inferences and Conclusion

3.1 Inferences and Conclusion

1. Nullah Systems

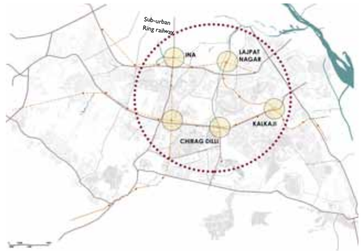
1. The Chirag Dilli Nullah Basin, Kushak Nullah Basin and the R.K Puram Nullah Basin are large nullah systems that transverse Zone F.
2. These nullahs form continuous patterns that exist as a drainage system throughout the city and eventually drain into the river. Hence, they can be explored to develop pedestrian connections.

Nullahs in Zone F, create a north–south linkage within the city. Access to the nullahs encourage local links to the city's wide green belts.

2. Green Systems

1. Continuous stretches of green and vacant pockets could be transformed into unobstructed and alternative movement paths between important destinations in Zone F
2. Green pockets are distributed evenly across Zone F (a green stretch seems to be available every 2 km across the linear axis and every 1 km across the perpendicular axis).

Greens and nullahs co-exist as a part of a larger environmental system. Connections between them have the potential to link large tracts across Zone F to the city's wide green belts.



3. Transport Network: Roads and Metro

1. With the advent of Phase 3 and 4 the Metro, Zone F will have four interchange stations at INA Market, Lajpat Nagar, Chirag Dilli and Kalkaji. There will be a quantum increase in traffic.
2. In addition to existing movement systems which are already saturated, it is envisaged to consider alternate networks.

There is potential to create linkages that provide ease of access to transit node exists. These will support 'last mile' connectivity to areas within neighbourhoods.

4. Amenities

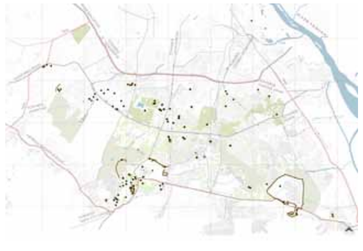
The walking paths/linkages will aim to connect and provide easy access to commercial, recreational, socio-cultural amenities, sports complexes, work centres, schools and colleges.

Opportunities to create movement corridors that link with existing amenities are feasible.

5. Neighbourhood Opportunities

The walking paths/linkages would aim to provide ease of access/connectivity between neighbouring places.

It is envisaged that these linkages will ensure last mile connectivity within neighbourhoods.



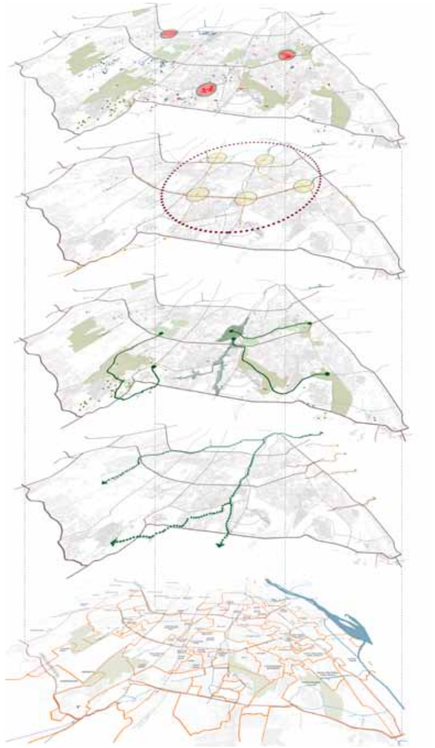
6. Built Heritage Pattern

The linkages propose to connect the numerous monuments scattered within the zone.

Potential to create seamless access that allows exploration of the heritage potential of the zone.

INFERENCES AND CONCLUSION

3.2 Overlapping Systems: Creating Potential Alternate Movement Connections



Connections to District Centres

Links Metro Interchange Stations

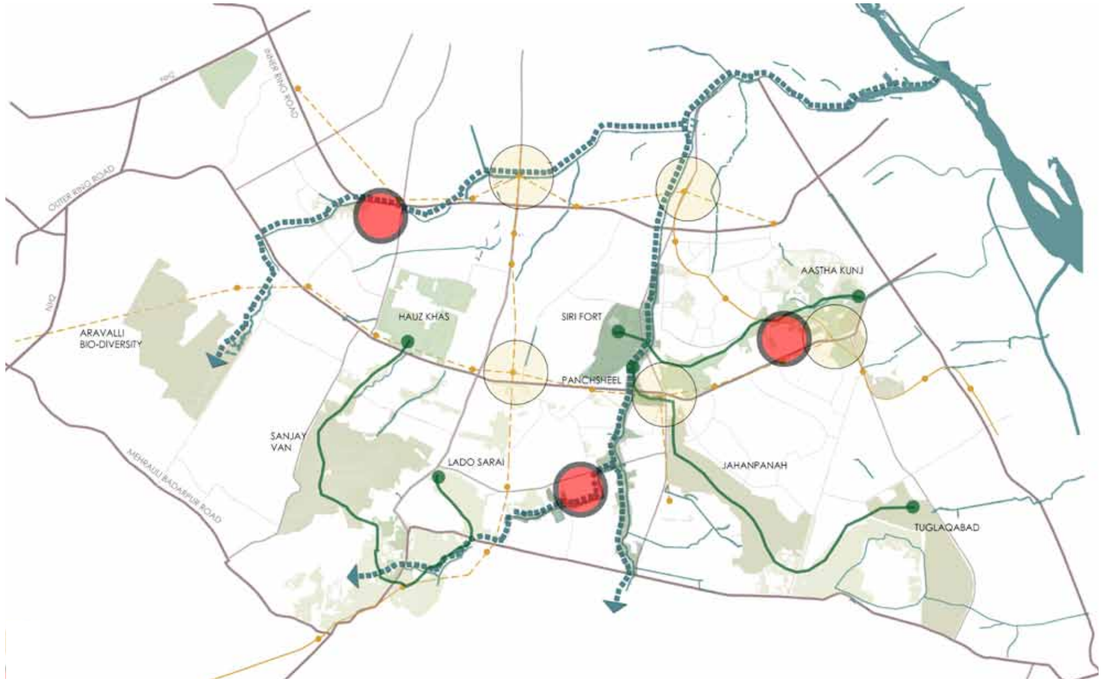
Uninterrupted Links to Green Corridors

Continuous Movement along Nullah Networks

Ease of Access between Adjacent Neighborhoods and within a 'Neighbourhood Colony'

Overlapping Systems; *Creating potential alternate movement connections*

Systems co-exist, amenities have been planned to conform with movement corridors.



Composite Drawing with Superimposed City Systems

Legend

Existing
- Nullahs
- Roads
- Metro Interchange Stations
- Metro Line
- Major District Centres
- Local Level Parks
- District Level Parks
- City Level Reserved Forests

Proposed
- Linkages along Nullahs
- Linkages through Greens

INFERENCES AND CONCLUSION

Chapter 4

Proposal

Proposal

The proposal aims to establish a continuous link across the natural systems, i.e. the Chirag Dilli Nullah, R.K. Puram Nullah and the Barapullah Nullah. Connecting them across to large green areas, such as Jahapanah Forest, Hauz Khas Forest, Aravalli Bio-diversity Park, Sanjay Van and other prominent green pockets such as Aastha Kunj, Siri Fort Greens, Panchsheel Forest and the Qutab Greens.

4.1 Aims of the study

AIM 1: Creating north–south linkages along existing nullah systems

AIM 2: Creating an east–west linkage connecting existing greens and connecting the missing links

AIM 3: Creating pedestrian and NMV trail connections to transit hubs which enable movement to work centres.

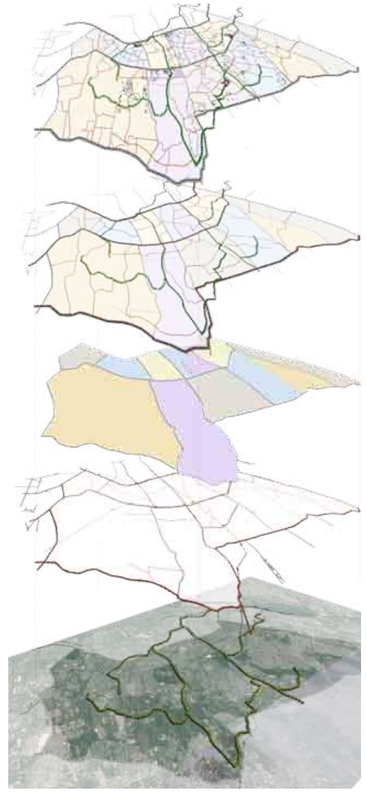
AIM 4: Creating last mile connectivity between adjacent neighbourhoods and within colonies.

AIM 5: Connecting neighbourhoods

AIM 6 : Easy access to monuments.

4.2 Linkage Hierarchy

A hierarchy of trails has been established to create connections at different levels.



Map showing Hierarchy of Trails

Linkage 5
(Linkage to Specific Amenities)
Providing last mile connectivity (within neighbourhoods)

Linkage 4
Internal Linkages (within precinct)
Along colony roads
Along greens (local parks)

Precinct Level

Linkage 3
(Connections between City Precincts)
Commercial areas
Social, cultural, institutional and amenities
Heritage sites
Transport hubs

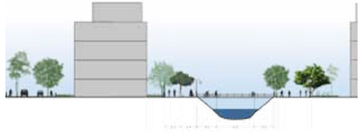
City precincts formed by road networks

Linkage 2
(Along City Arterials and Major Roads)
Connecting precincts
Intermediate connections between neighbourhoods

Linkage 1
(Citywide Linkages)
Nullah
Greens

Linkage I (L1) Citywide Linkages

Defining the Network – Creating a Continuous Pedestrian System



Typical Section across Linkage I (Along the Nullah)
(Section at Nauroji Nagar Nullah)

- A continuous linkage has been established along nullah basins, various city level greens and road networks. Connected lengths of trails make longer trips possible, increasing usefulness for commuting and recreation.
- This linkage connects various amenities like CBD's, monuments and heritage sites, waterbodies etc., which can be accessed by pedestrian pathways and cycle tracks.
- Linkage I is a connecting linkage providing a bicycle and pedestrian network through the city and all the subsequent scales connect to it.

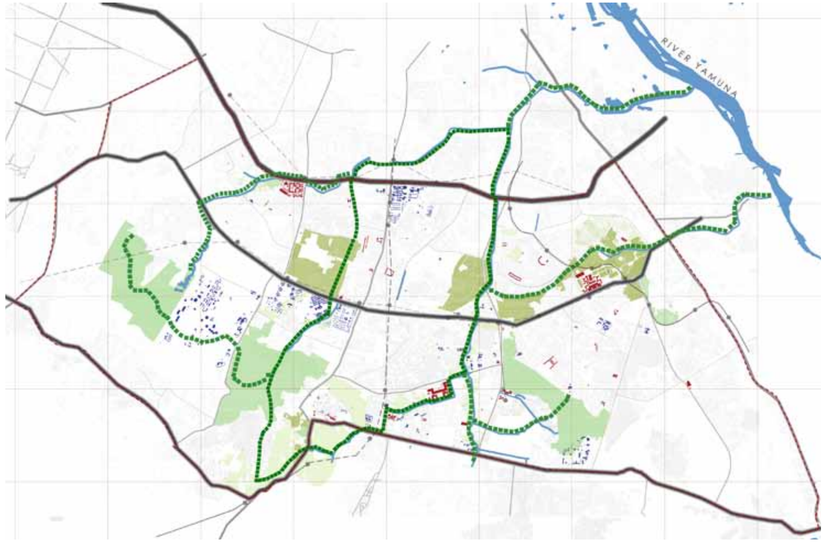
Existing Nullah Network

Existing Greens Network

Proposed Linkage I

Legend
Existing
- City Forests
- District Forests
- Local Park
- Scrubland
- Barren Land
- District Centres

Proposed
- Main Linkage along Nullahs and Greens
- Linkage along Major Roads



Facilities along the Network

Typical section along Linkage I (Along forest)
(Section along Ring Road at Jahanpanah Forest)

- Linkage I creates a continuous track, free from motorized movement corridors traversing along Zone F, creating access to amenities distributed along it.
- It connects major work places (CBDs) such as Nehru Place, Saket District Centre, Bhikaji Cama Place and numerous colleges and schools that are areas of major movement.

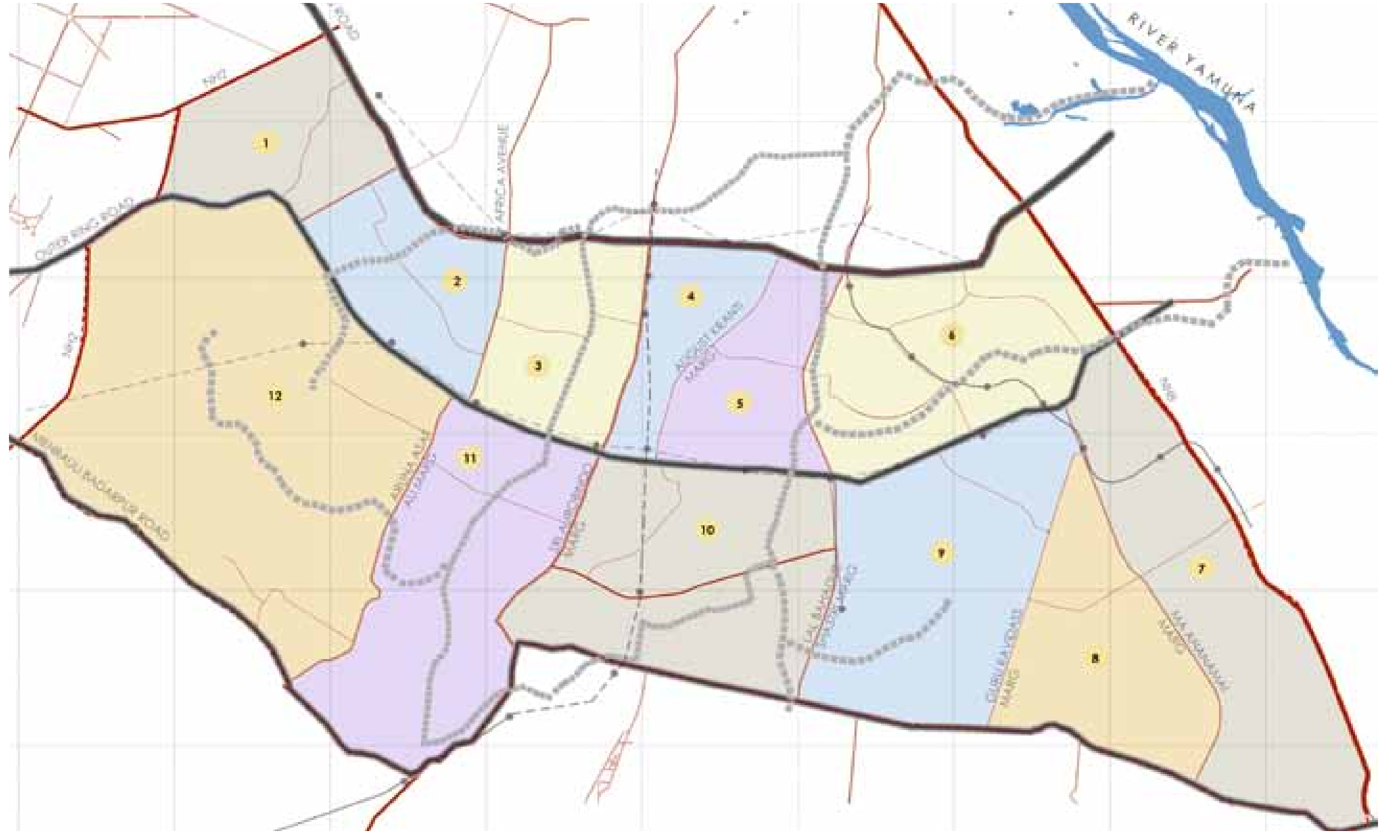
Existing Nullah Network

Existing Greens Network

Proposed Linkage I

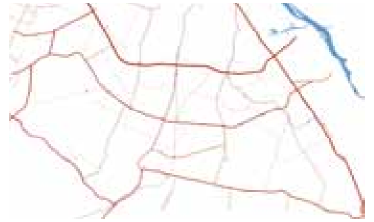
Legend
- City Forests
- District Forests
- Local Parks
- District Centres/ Commercial Areas
- Institutional Areas

Linkage 2 (L2) Along Arterials and Major Roads



Identifying the Precincts Defined by Roads

Existing Main Road Network



Existing Arterial Road Network

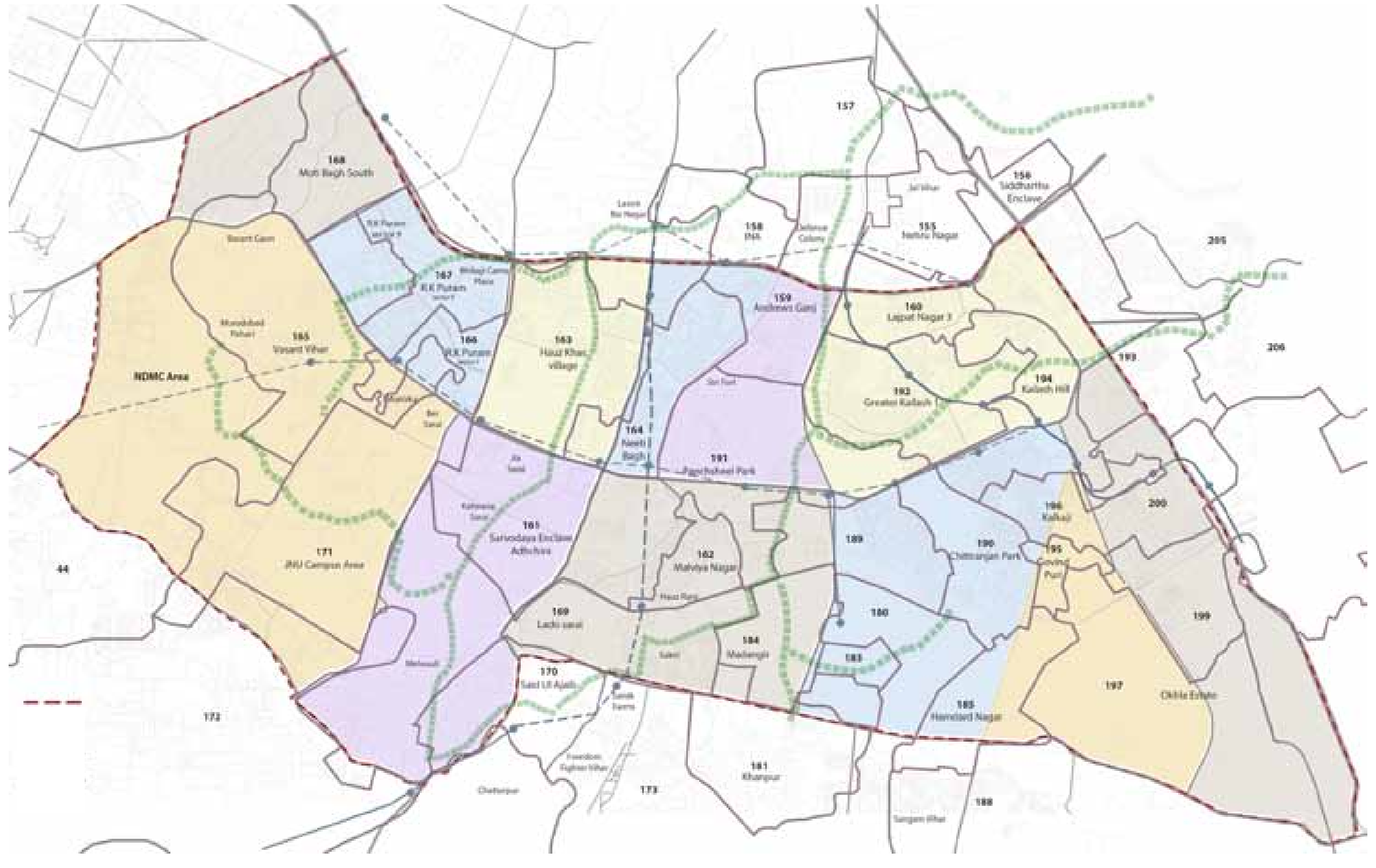
Proposed Linkage 1

Typical Section along Linkage 2 (along Roads)
(Section along Ring Road at IIT)

- The zone is further defined by the structure of existing road patterns to distribute it into workable sub-zones in order to develop walkable networks along this pattern of roads.
- Linkage 2 aims to equip streets with bicycle and pedestrian-friendly facilities, street furniture and signage.

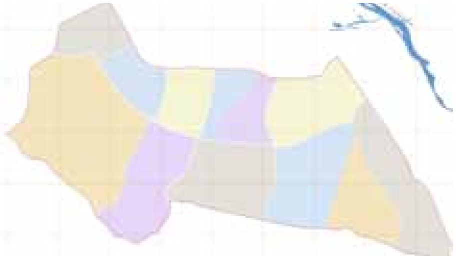
Commercial/District Centres

1. Delhi University, South Campus
2. R.K. Puram, Mohammadpur
3. Hauz Khas, Green Park
4. Andrews Ganj
5. Shahpur Jat, Siri Fort Complex
6. GK1, Kailash Colony, Lajpat Nagar Part IV
7. Okhla Industrial Area Phase 1, 2 and 3
8. Govindpuri, Tughlaqabad Village and Forest
9. GK II, C.R. Park, Kalkaji, Jahapanah Forest
10. Malviya , Chirag Dilli, Panchsheel Park, Lado Sarai
11. IIT, Sanjay Van, Mehrauli
12. JNU, Aravalli Bio-diversity Park, Vasant Kunj, Vasant Vihar

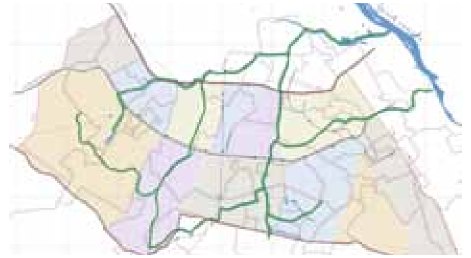


Overlapping Ward Boundaries with Precincts

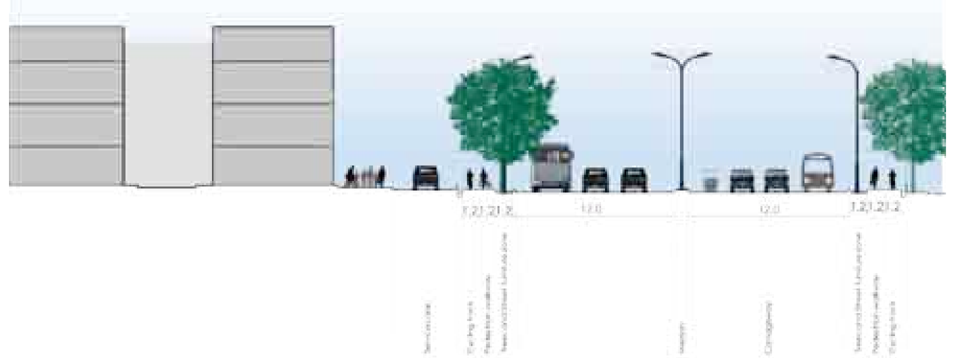
Boundary of Zone F



Precinct Boundary: Zone F



Ward Boundaries in Zone F



Typical Section along Linkage 2 (along Roads) (Section along Ring Road at IIT)

- The Ward boundaries are further overlapped on the precinct map as consideration for implementation at later stages.
- These ward boundaries (Source: MCD) have been overlaid on zonal maps and the proposed linkage plan, so that at a later stage of implementation, ward representatives can be identified and approached accordingly.

Legend

Ward Boundaries

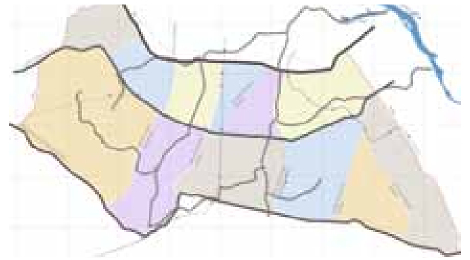
Linkage 1 along Nullahs and Greens

Linkage 3 (L3) Linkage between City Precincts

Linkage 3 Connecting Precincts (with nomenclature)

Existing Arterial Road Network

Proposed Linkage I



Precincts Formed by the Network of Roads

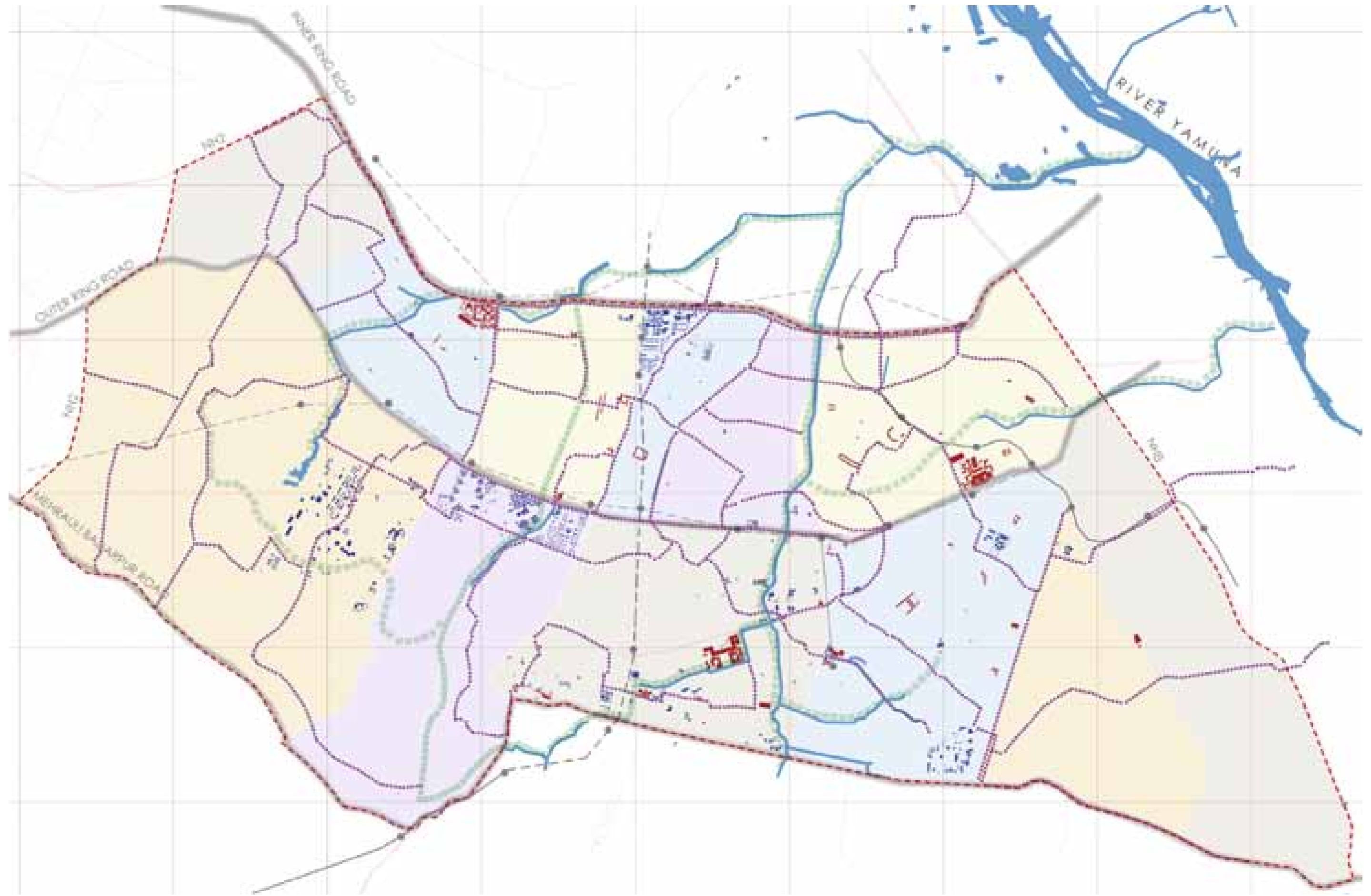
Commercial Edge

- The adjacent precincts are connected by linkages along the various roads (i.e. secondary and collector roads).
- These linkages connect precincts with each another and enable ease of movement from one precinct to another.

Typical section across Linkage 3 (connecting precincts along periphery)
(Section along street connecting Aurobindo Marg to Safdarjung Enclave Market)

Proposed

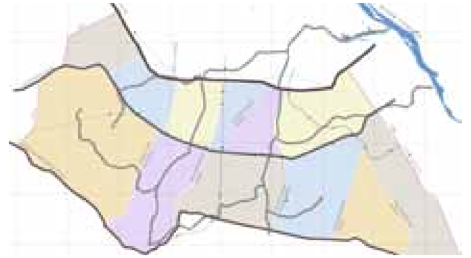
- Linkage I along Nullahs and Greens
- Linkages across Precincts



Distribution of Institutional and Commercial Facilities w.r.t. Linkage I

Existing Arterial Road Network

Proposed Linkage I



Precincts Formed by the Network of Roads

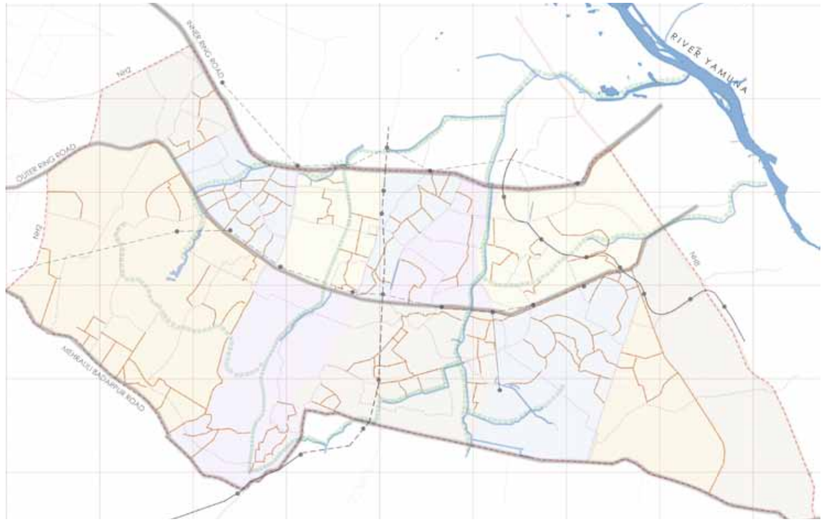
- Precinct map showing the connections created by Linkage 3 to workplaces, institutions i.e schools, colleges and major commercial areas – the major destinations that are accessed within the zone.

Typical section along Linkage 3 (along internal roads)
(Section along street connecting Delhi Police Public School to Safdarjung Market)

Proposed

- Linkage I along Nullahs and Greens
- Linkages across Precincts
- District Centres/Commercial Areas
- Institutional Areas

Linkage 4 (L4) Connecting Neighbourhoods located within Precincts



Identifying the Network between Neighbouring Precincts

Typical Section along Linkage 4 (along neighbourhoods)

- The proposed network creates sub-networks within each precinct that allows pedestrian access to all amenities enclosed within – such as commercial areas (major marketplaces and neighbourhood level shopping areas), schools and colleges.

Proposed Main Linkage along Nullahs and Greens

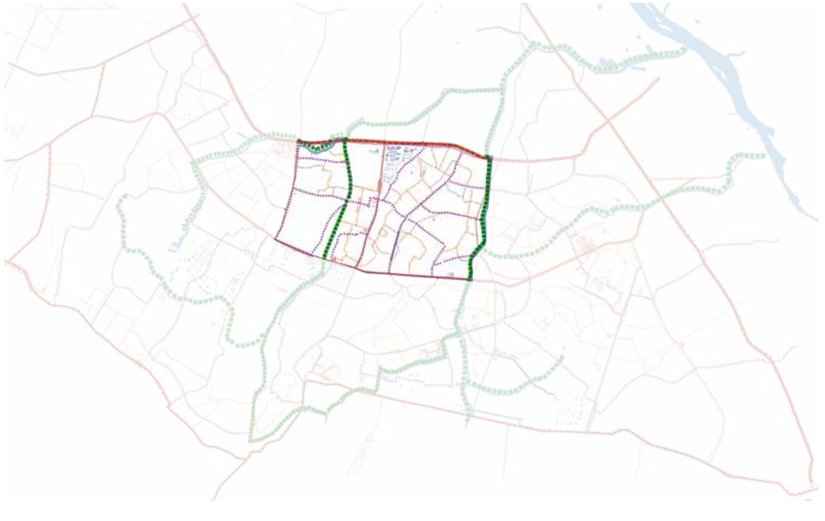
Proposed Links across Adjacent Precincts via Walkable Connections (Linkage 3)

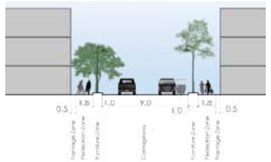
Walkable Routes within Precincts

Proposed

- Linkage 1 along Nullahs and Greens
- Linkages along Major Roads
- Linkages across Precincts
- Linkage within Precinct(s)

Linkage 5 (L5) Last Mile Connectivity (With detail of Illustration Area)





Typical Section along Linkage 4 (along neighbourhoods)

- Linkage 5 provides last mile-connectivity.
- It creates access to amenities or connectivity to specific neighbourhoods, enabling walking instead of vehicular modes of travel. This would discourage the use of motorbikes or cars for a distance of 1–2 km, which adds to pollution and congestion on the road.

Proposed Main Linkage along Nullahs and Greens

Proposed Links across Adjacent Precincts via Walkable Connections (Linkage 3)

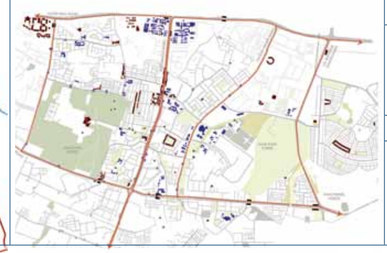
Walkable Routes within Precincts

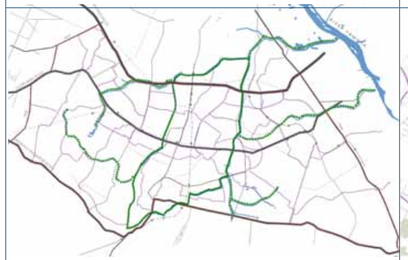
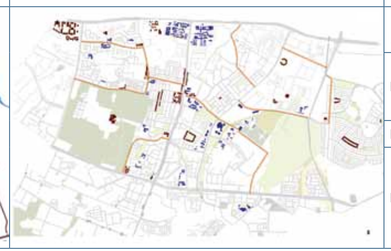
Proposed

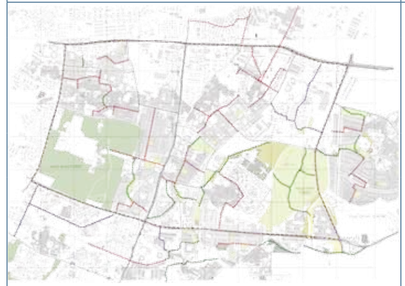
- Linkage 1 along Nullahs and Greens
- Linkage 2 along Major Roads
- Linkage 3 across Precincts
- Linkage 4 within Precinct(s)
- Linkage 5

Chapter 5

Hierarchy of Linkages: Comparative Scales

Zonal Level	Precinct Level	Description	
		**Linkage 1: Along Geographical Elements/Features**	
		Feature	• Connecting Zone F to the rest of Delhi • Connecting nullahs and city level green pockets
		Road Width	1.5–5 m (varies as per site conditions)
		Facilities	Segregated tracks for walking and cycling 
		**Linkage 2: Along Arterial Roads**	
		Feature	• Identification of arterial roads • Upgradation and creation of sidewalks along roads • Equipped with basic amenities and signage
		Road Width	45–60 m
		Facilities	Combined pedestrian pathways and cycling tracks 

Zonal Level	Precinct Level	Description	
		**Linkage 3: Along Internal Roads**	
		Feature	• Connects different precincts within the city zones • Designed only along roads • Connecting various amenities like commercial, institutional, heritage and garden parks
		Road Width	6–18 m (varying)
		Facilities	 Combined pedestrian pathways and cycling tracks
		**Linkage 4: Linkage Connecting Neighbourhoods**	
		Feature	Identification of collector roads Upgrading and creating sidewalks along roads wherever required
		Road Width	24–30 m
		Facilities	 Combined pedestrian pathways and cycling tracks

Zonal Level	Precinct Level	Description	
	 Trails through green pockets  Trails along internal roads  Connections through plots	**Linkage 5: Linkage within Neighbourhoods**	
		Feature	These roads will create access to neighbourhood level facilities Will be created by upgrading sidewalks and creating alternate movement trails
		Road Width	6–12 m
		Facilities	 Pedestrian pathways included in ROW

Chapter 6

Illustration Area

Illustration Area: w.r.t. Nullah Systems for Zone F

Illustration Area: w.r.t. Transport Network for Zone F

Illustration Area: w.r.t. Green Systems for Zone F

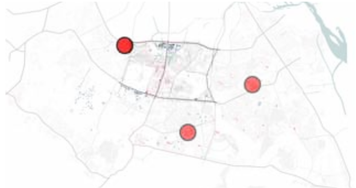


Illustration Area: w.r.t. Amenities for Zone F

Illustration Area: w.r.t. Composite Map for Zone F

Illustration Area: w.r.t. Heritage Monuments in Zone F

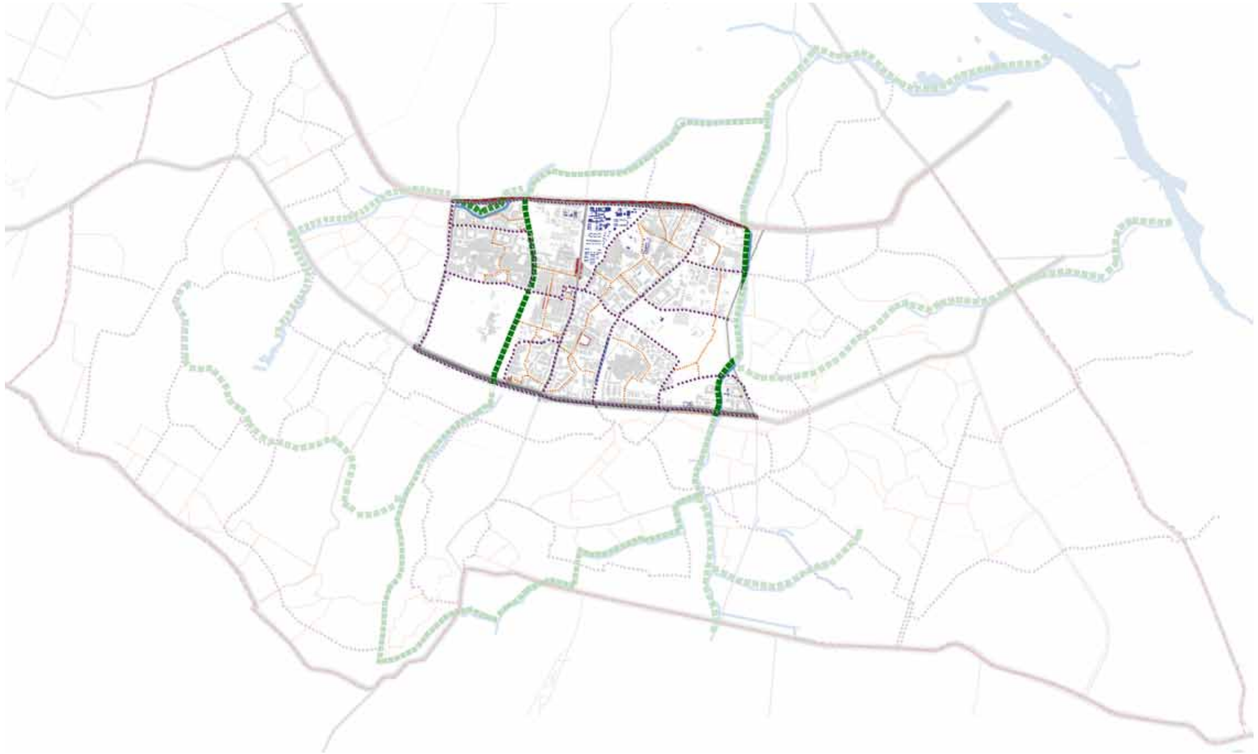


Illustration Area in Zone F

The Illustration Area is located in the north-central part of Zone F. It is defined by the Inner Ring Road to the north, Outer Ring Road to the south, Africa Avenue to the west and Joseph Broz Tito Marg to the east.

Various typology of areas included in the study area are:

- Planned areas: Nauroji Nagar, Safdarjung Enclave, Green Park, Hauz Khas, Gulmohar park, Neeti Bagh, etc.
- Unplanned areas: Yusuf Sarai, Gautam Nagar etc.
- Urban villages: Humayunpur and Shahpur Jat.

The study area has large chunks of city level greens like the Deer Park and Siri Forest.

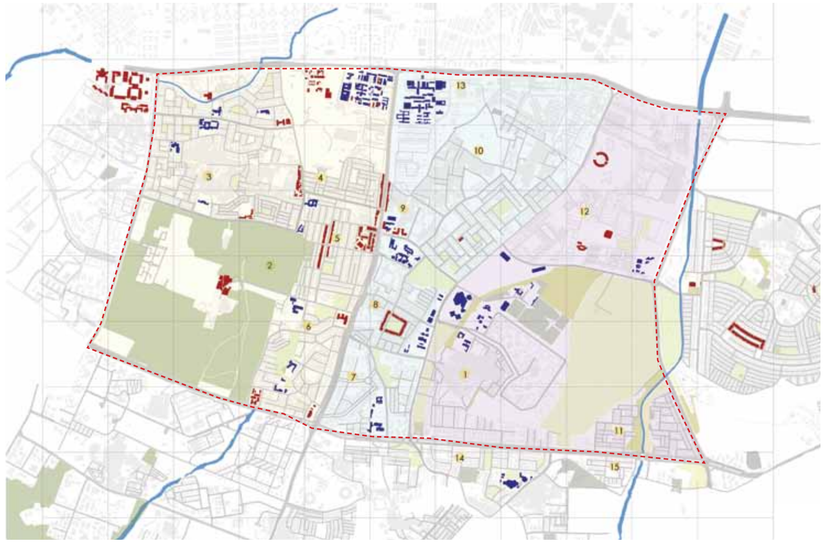
Representation of Linkages 1–5

The proposal illustrates the design demonstration for linkages L1–L5 at a precinct level.

Proposed

- Linkage 1 along Nullahs and Greens
- Linkage 2 along Major Roads
- Linkage 3 across Precincts
- Linkage 4 within Precinct(s)
- Linkage 5 within Precinct(s)

6.1 Context



Existing facilities in Illustration Area

- The area selected for Illustration Area of linkages (LI–L5) includes a mix of uses e.g. city greens (Hauz Khas Forest, Rose Garden, Siri Fort Greens), commercial areas (community centres, local shopping areas) and institutional areas (colleges and schools, hospitals and office complexes).

Nomenclature of Colonies Enclosed in Precinct A

1. Shahpur Jat
2. Hauz Khas Forest
3. Safdarjung Enclave
4. Ansari Nagar West
5. Green Park Extension
6. Safdarjung Development Area
7. Hauz Khas
8. Hauz Khas Market
9. NIFT
10. Gulmohar Park
11. Panchsheel Enclave
12. Anand Lok
13. AIIMS
14. Panchsheel Park
15. Saomi Nagar

Key Map (Zone F)

Greens Occurring in Illustration Area

Commercial and Institutional Areas in Illustration Area

Legend

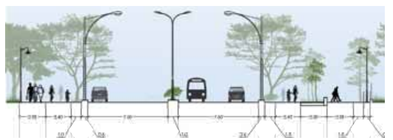
- City Forests
- District Forests
- Local Parks
- District Centres/Commercial Areas
- Institutional Areas

6.2 Linkage 1-5

Linkage 1: Citywide Linkages

Proposed Linkages along Existing Greens and Nullahs

AA'– Typical Section across Linkage 1 (along greens)



BB'–Typical Section across Linkage 3 (connecting precincts along road)

- **Linkage 1:** This linkage creates a continuous north–south connection along Zone F, mainly passing through city greens and along the nullah banks. It aims to provide alternate access to vehicular connections.

Key Map (Zone F)

Greens Occurring in Illustration Area

Linkage 1 in Illustration Area

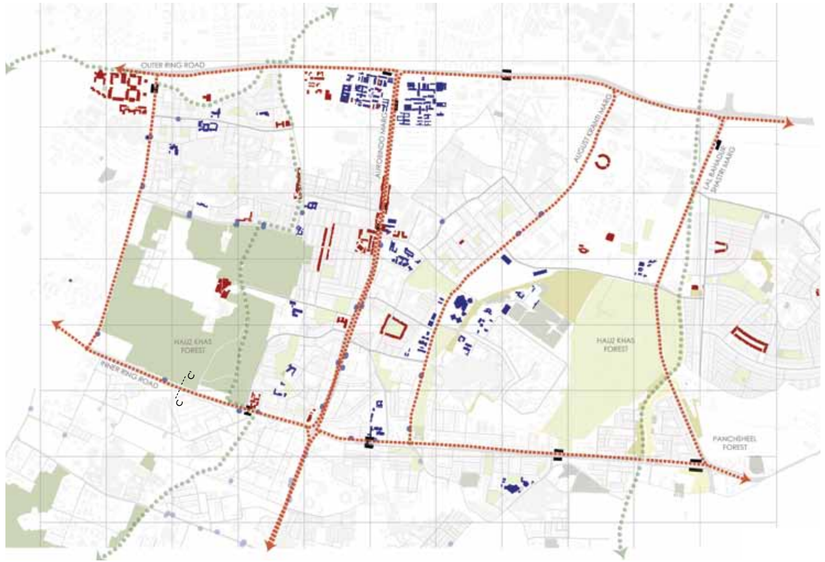
Legend

Proposed

- Linkage 1 along Nullahs and Greens
- District Centres/Commercial Areas
- Institutional Areas

ILLUSTRATION AREA

Linkage 2: Along Arterials and Major Roads



Proposed Linkages along Arterial Roads

CC' –Typical Section Across Linkage 2 (Arterial Road)

- **Linkage 2 (provides easy access to multi-modal trips)**: These pathways are proposed along the peripheral roads, providing legible routes for commuters to access public transit (bus stops, Metro stations, feeder networks). They facilitate access to public transport.

Key Map (Zone F)

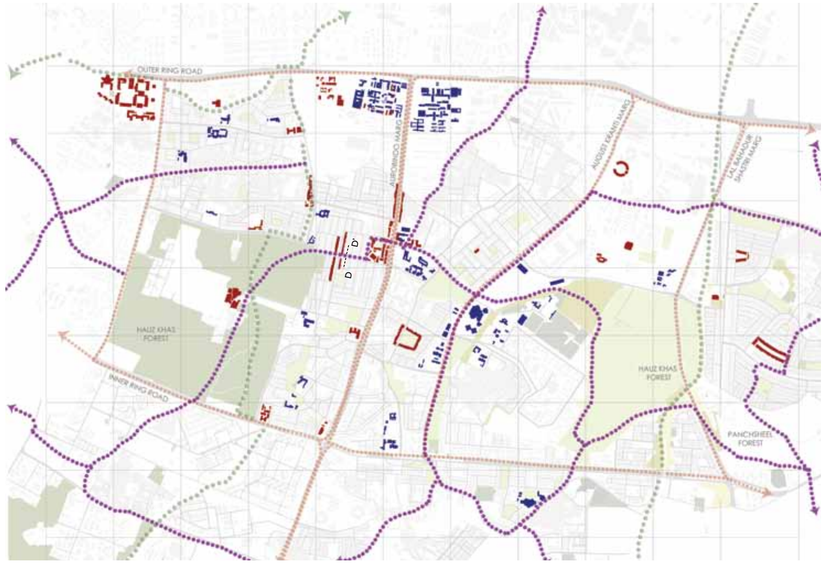
Linkage 1 through Greens and Nullah Basins

Linkage 2: Trails across Region

Legend
Proposed
- Linkage 1 along Nullahs and Greens
- Linkage 2 along Arterial Roads

Existing
- Institutional
- Commercial
- Bus Stops
- Metro Entry/Exits

Linkage 3: Linkage between City Precincts



DD'- Typical Section Across Linkage 3 (Neighbourhoods)

An approach to road safety through design:

- **Linkage 3:** These linkages provide access along existing roads connecting adjacent precincts with a walkable loop. They connect all the amenities within the precincts.

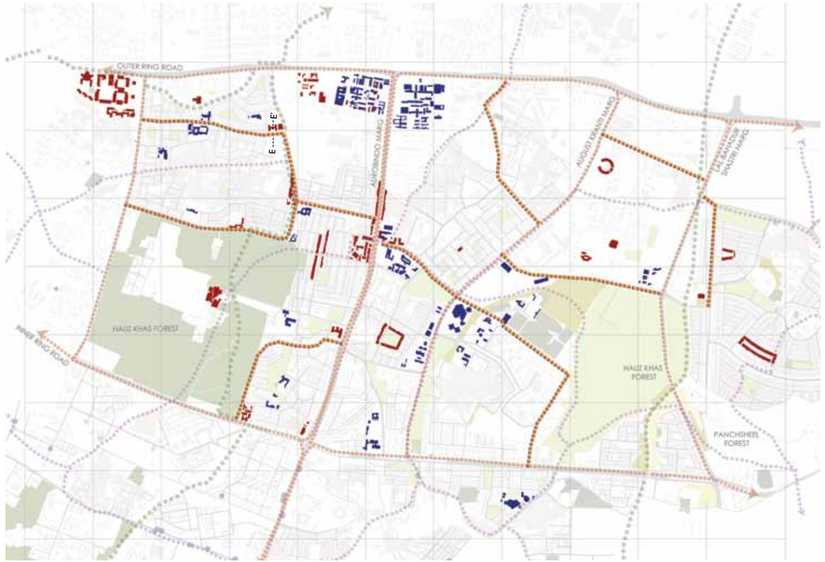
Key Map (Zone F)

Linkage 1: Passes through Greens and Nullah Basins

Linkage 2: Moves along Arterial Roads

Legend
Proposed
- Linkage 1 along Nullahs and Greens
- Linkage 2 along Arterial Roads
- Linkage 3 Connect Adjacent Precincts

Linkage 4: Connecting Neighbourhoods Located within Precincts



Linkage 4 Connecting Amenities within the Precincts

EE'– Typical Section across Linkage 4 (neighbourhoods)

- **Linkage 4** (along internal roads): These pathways provide a continuous system of pedestrian connections within neighbourhoods to be upgraded with basic facilities such as street lights , signage, benches etc. to enable safe and comfortable movement.

Legend
Proposed
- Linkage I along Nullahs and Greens
- Linkage 2 along Arterial Roads
- Linkage 3 connect Adjacent Precincts
- Linkage 4 connects along Internal Roads

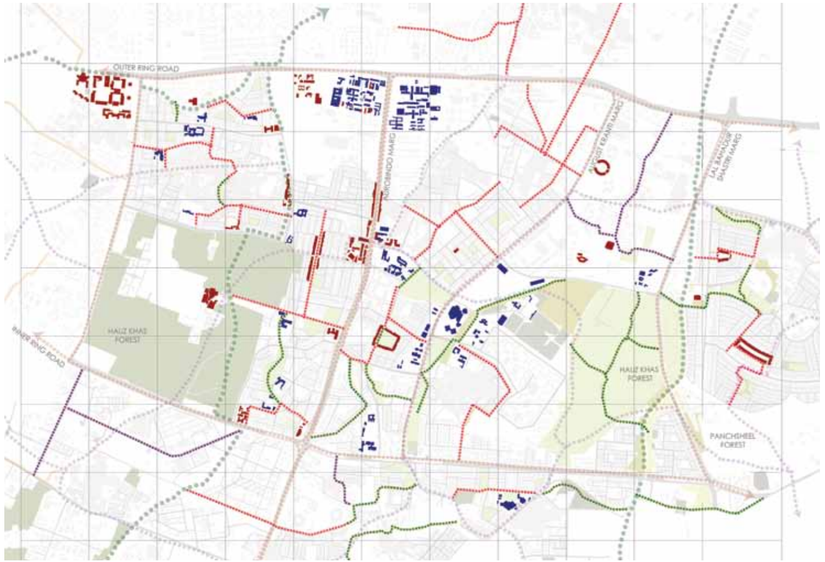
Key Map (Zone F)

Linkage I Passes through Greens and Nullah Basins

Linkage 2 moves along Arterial Roads

Linkage 3 Connects Amenities within a Precinct

Linkage 5: Last Mile Connectivity



Composite Map showing all Layers of Linkage Hierarchy

DD'– Typical Section across Linkage 4 (Neighbourhoods)

- **Scale V (Missing links):** These pathways are proposed to provide last mile connectivity. At present these are the missing links, proposed through:
- Green Pockets
- Internal Roads
- Plotted Development/Undeveloped plots

Linkage 5 (i): Along Green Pockets

Linkage 5 (ii): Along Internal Roads

Linkage 5(iii): Connections through Plots

Legend
- Linkage 5 i: Linkages through Green pockets
- Linkage 5 ii: Linkages through Internal Roads
- Linkage 5 iii: Linkages through Plots

6.3 Composite Map

Linkages 1–5: Illustration Area

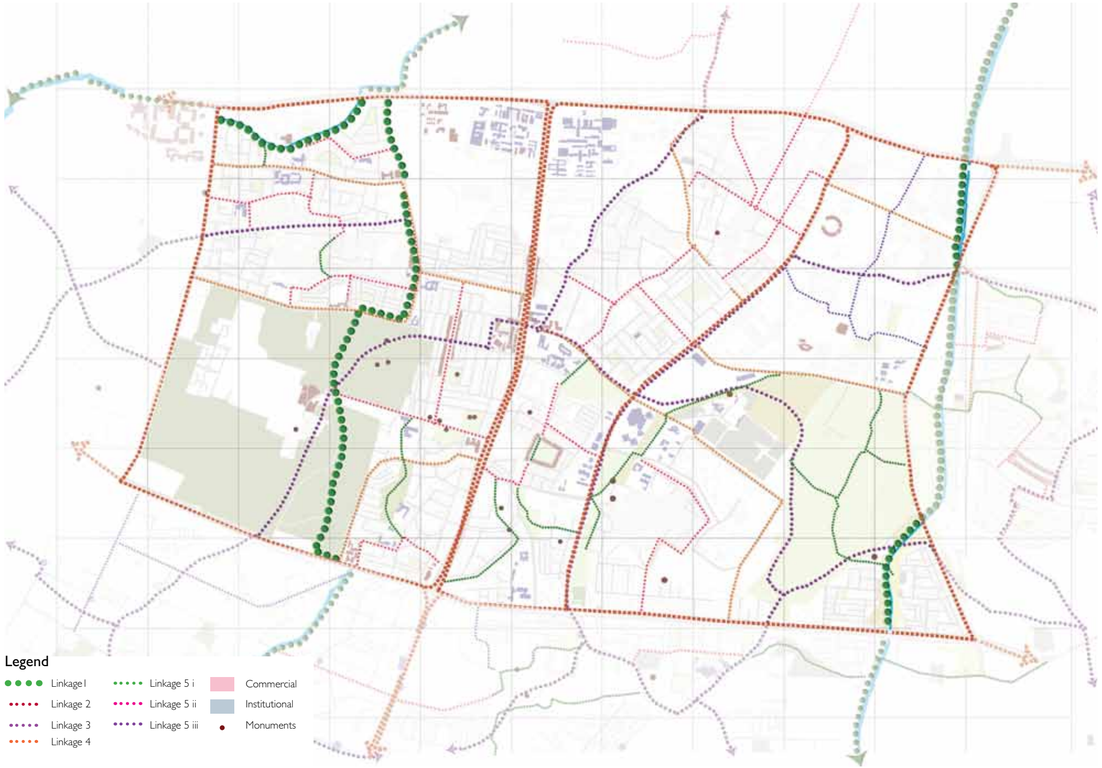
Linkage 1: Connections across Zone

Linkage 2: Connections along Arterial Roads

Linkage 3: Connecting Adjacent Precincts

Linkage 4: Connecting Amenities within Precincts

Linkage 5: Connecting Missing Links in the Precincts

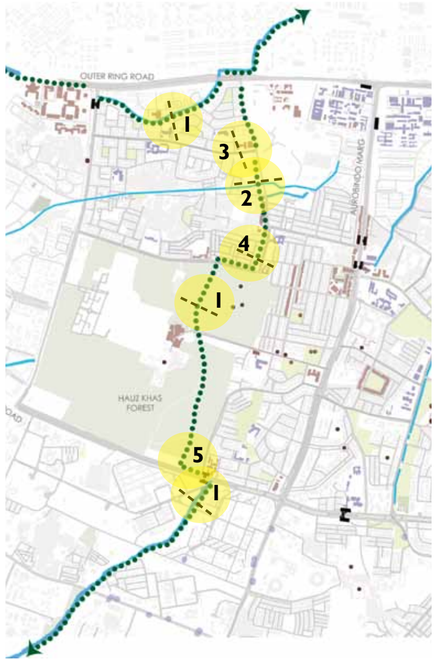


Composite Map showing all Layers of Linkage Hierarchy

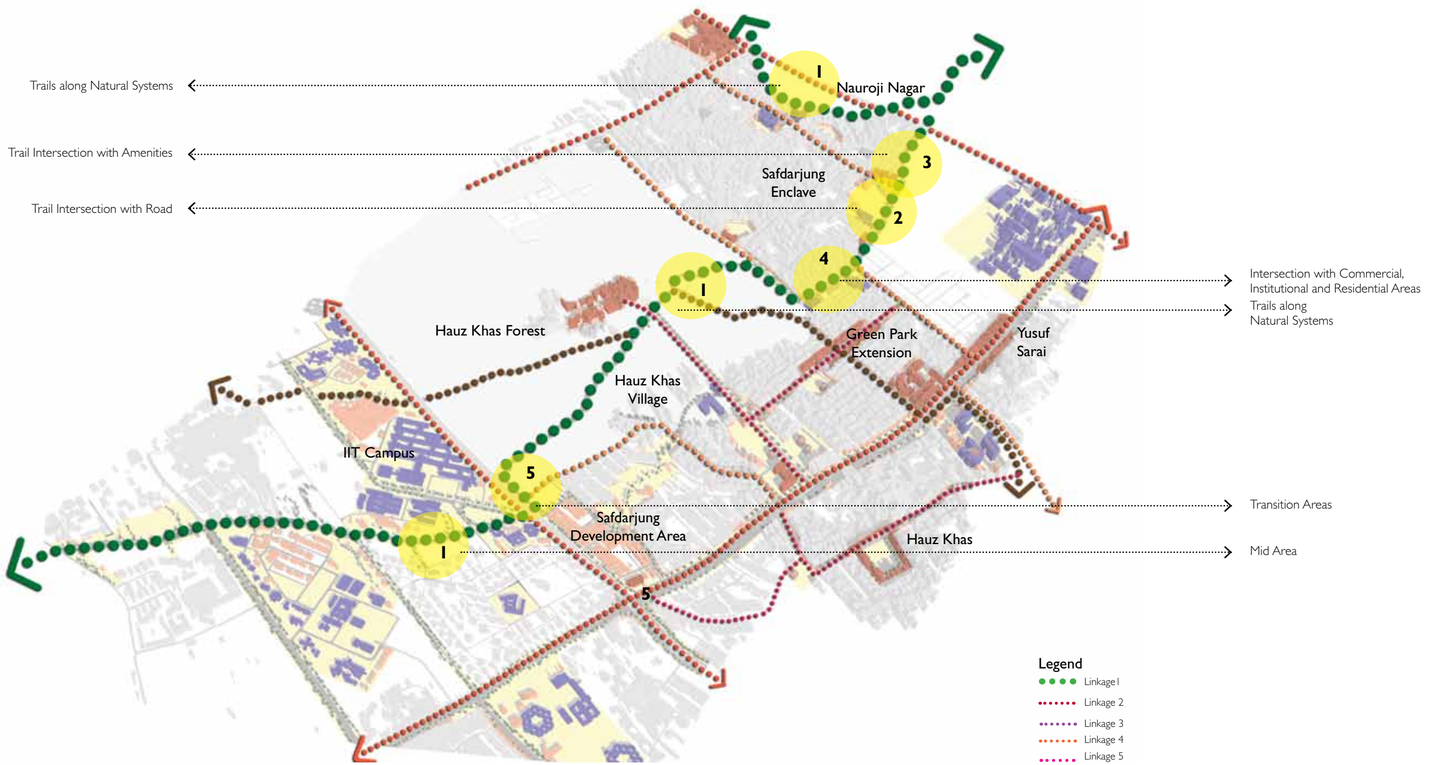
ILLUSTRATION AREA

Chapter 7

Illustration Area Conditions



Key Plan



1. Trails along Natural Systems

- Large continuous stretches of green and nullahs provide an opportunity to explore linkages through, and along them respectively.
- These linkages which are unmarked, overgrown or encroached, can be explored by proposing pedestrian and cycling tracks.

2. Trail Intersection with Road

- Linkages along the road enable large volumes of pedestrian traffic to move at its own pace.
- Features such as segregated cycle tracks and traffic-calming elements contribute to a safer movement corridor.
- These dedicated corridors make streets more active, safe and vibrant.

3. Trail Intersection with Amenities

- Wider sidewalks along amenities (such as commercial street fronts) provide room for seating, landscaping and large volume pedestrian movement.
- These sidewalks enable pedestrians to walk at their chosen pace, socialize or just stand around and enjoy the surroundings.

4. Trail Intersection with Commercial, Institutional and Residential Areas: Localized Connections

- For a residential street to be adapted for a wider variety of uses, it may require traffic-calming elements which can be combined with other elements like shade trees, street furniture etc. to make the walking experience safe and pleasant.
- These linkages also offer the last mile connectivity to users.

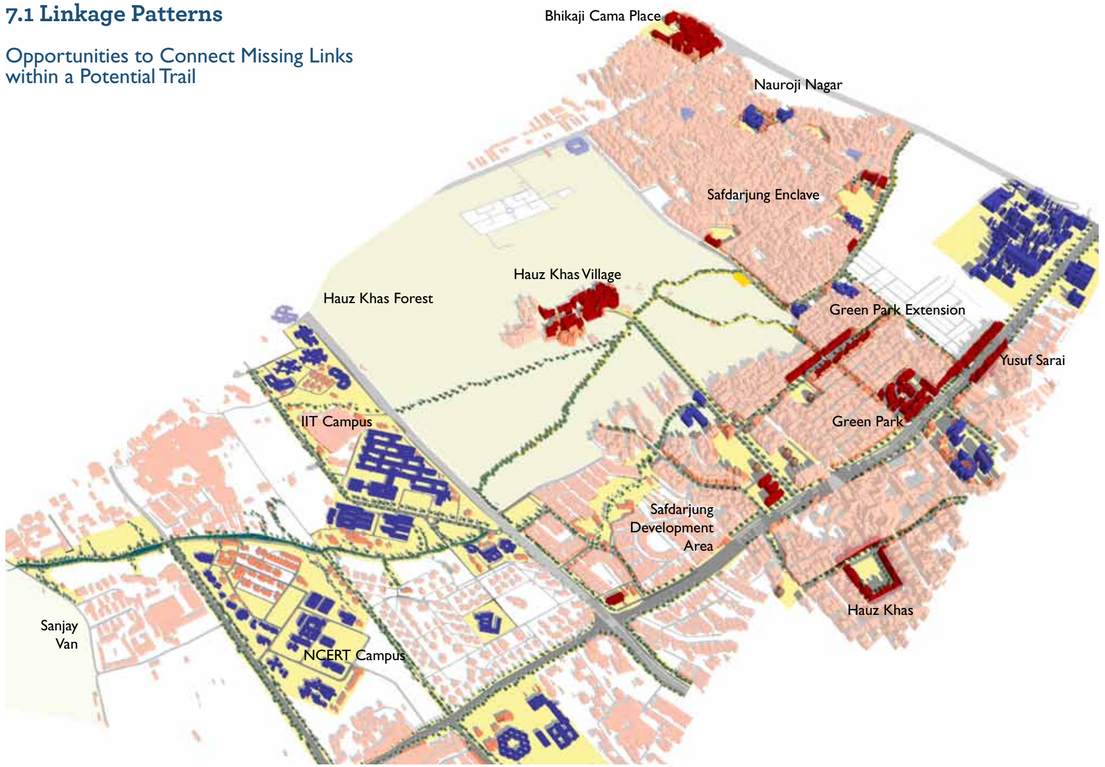
5. Transition Areas

- The edges are transition areas i.e. the areas where the linkage changes its character due to location, topography and street widths.
- These are potential areas where various features like traffic-calming, change in surface treatment or change in the character of the street need to be adapted for a variety of uses and users.

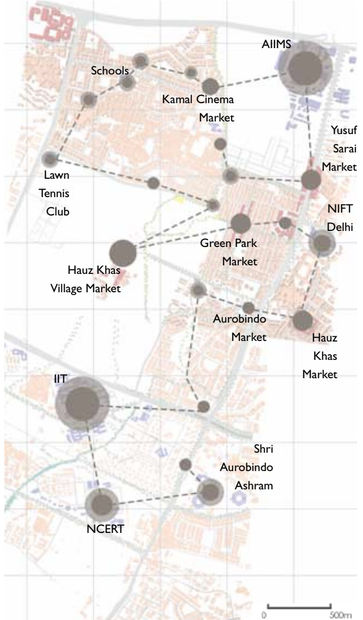
ILLUSTRATION AREA CONDITIONS

7.1 Linkage Patterns

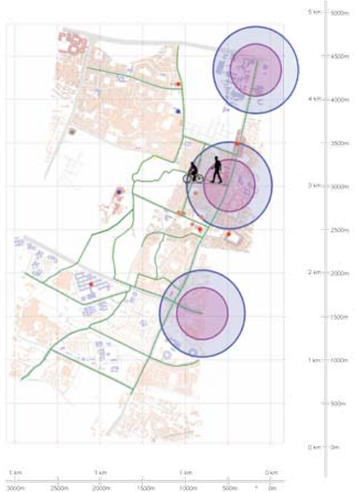
Opportunities to Connect Missing Links within a Potential Trail



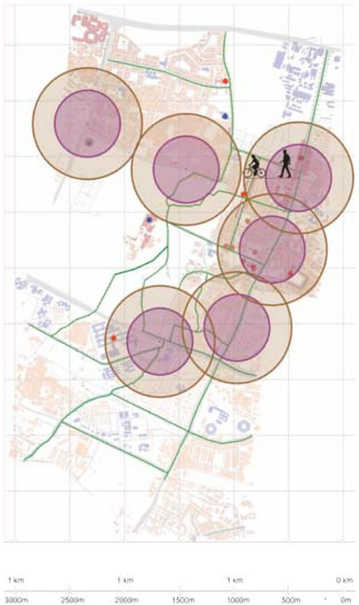
View showing the Connected Pattern of Spaces within the Illustration Area



Networks formed between destinations, varying from 500 m–1000 m



Map showing walking and cycling distances w.r.t. Metro stations

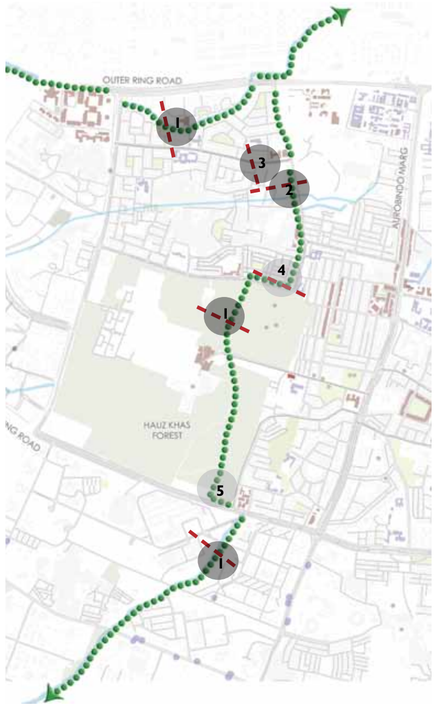


Map Showing Walking and Cycling Distances w.r.t. Bus Stops

Legend

- 500 m from Bus Stop
- 300 m from Bus Stop
- Commercial Centre
- Institutional
- Monuments
- 500 m from Metro Station
- 300 m from Metro Station

7.2 Linkage Design Standards



Key Plan

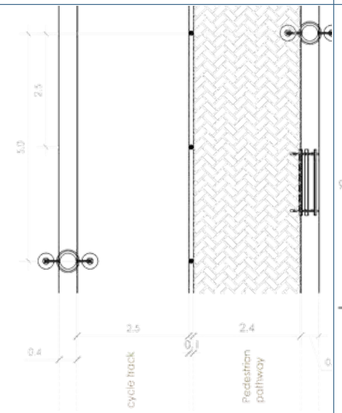
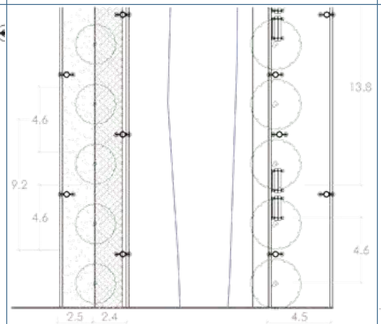
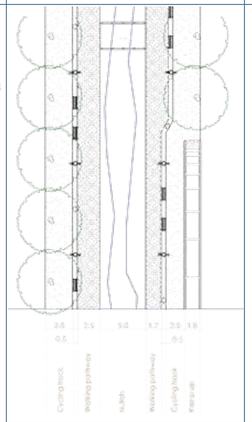
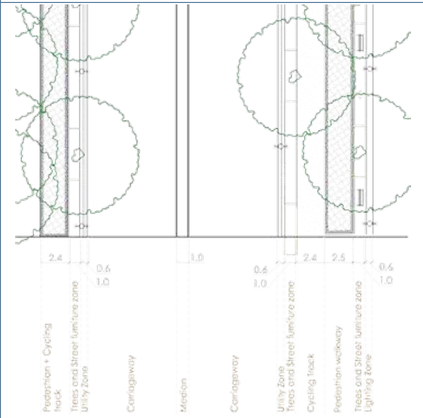
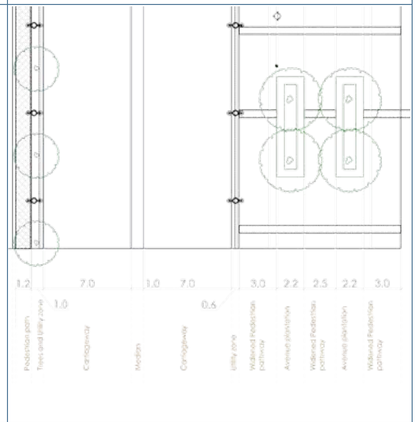
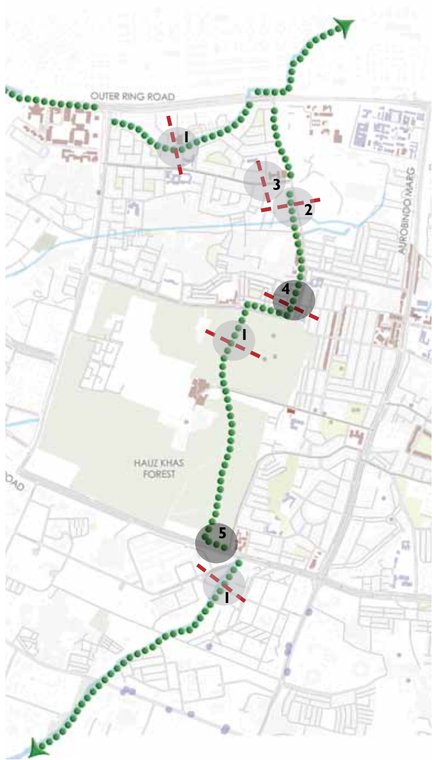
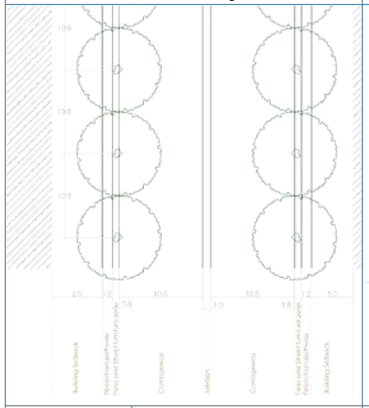
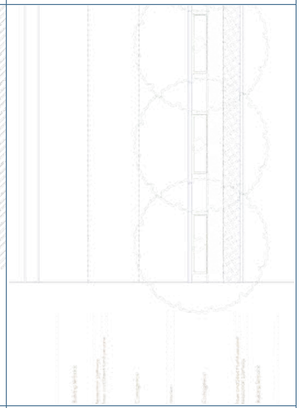
Area of Intervention	Linkage through Forest	Linkage along Nullah (at road level)	Linkage along Nullah (at -2.5 m lvl.)	Linkage along Institutional Edge	Linkage along Commercial Edge
Design Standards					
Purpose	Recreational and commuter cyclists, walkers, joggers/ runners and pedestrians	Barrier-free linkage to be used over long distances along nullahs for leisure walks or uninterrupted walking.	Barrier-free linkage to be used over long distances along nullahs for leisure walks or uninterrupted walking.	To be used along green/institutional edges, where a part of the stretch can be claimed to (form part of the public space) be used as pedestrian and cycling trails.	To be used along commercial stretches where widened sidewalks are proposed to enable walking and shopping along shop fronts. Street furniture such as dust bins, signage, benches, drinking water to be provided at regular intervals
Potential Uses	Commuters, cyclists, pedestrians	Joggers/runners, walkers, cyclists	Joggers/runners, walkers, cyclists	Commuter cyclists, walking	Walking (shopping and leisure)
Width	• Cyclable trails: 2.5 m width • Pedestrian linkage • Dustbins to be provided at every 50 m. • Lighting is provided at 5 m c/c.	Varies according to the width of the nullah	Varies according to the width of the nullah	4–6 m	Varies depending on the availability of space
Material	Cobblestone/ Murram/ Limestone dust (graded material 0-3 mm and 30 mm in depth)	Layer of stone chippings covered with bitumen layer	Layer of stone chippings covered with bitumen layer		Layer of stone chippings covered with bitumen layer

ILLUSTRATION AREA CONDITIONS



Key Plan

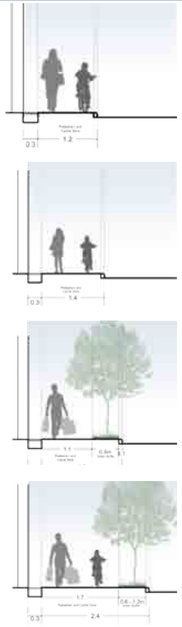
	Residential edge	Transition areas
		
Purpose	To be used along residential streets to enable safe and comfortable walking along neighbourhoods up to destination.	To be used along edges/membrane which are linkages connecting two edges. These are transformation edges which enable crossing over.
Potential Uses	Walking (shopping and leisure)	Commuter cyclists, pedestrians
Width	Varies depending on the availability of space	4–6 m
Treatment	Layer of stone chippings covered with bitumen layer	

Chapter 8

Design Elements

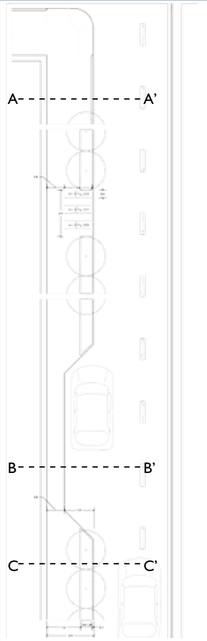
Ground Plane

Varying Sidewalks Widths



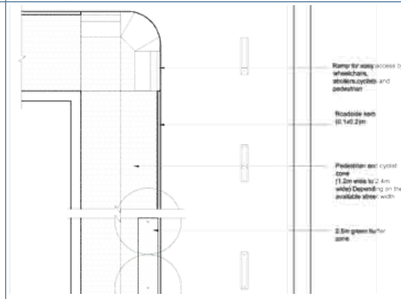
Sidewalk width varying at various conditions between 1.2,1.4,1.8 and 2.4 m

Typical Sidewalk Layout

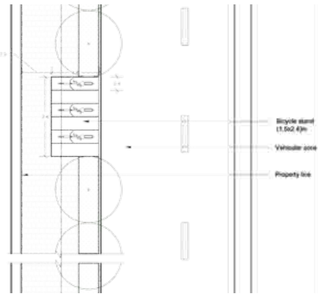


Key plan depicting the various ideal street sections

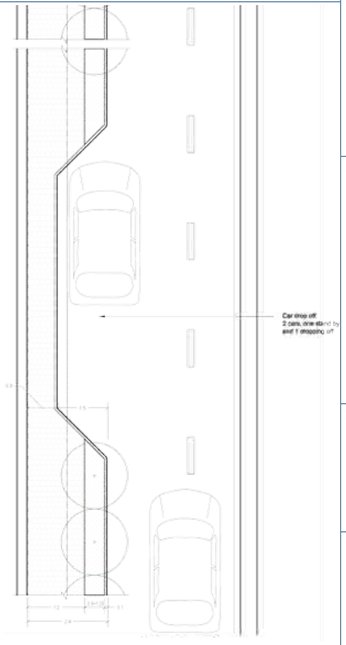
Typical Edge Detail



Plan showing access ramp at junctions/intersections



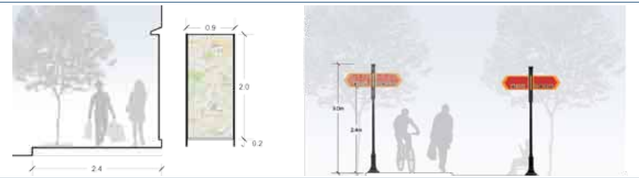
Plan showing elements like a continuous green buffer and bicycle stands accommodated in the street section



Plan showing on-street parking with reduced pedestrian zone widths

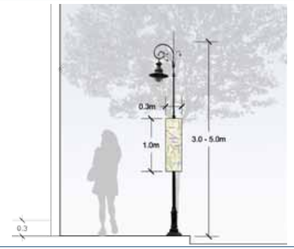
Vertical Plane

1. Signage



Provide orientation and information at key junctions and transit nodes .
Quickly orient users when they arrive at nodes.
Provide icons that broadly highlight the amenities.

2. Lighting



- Entire sidewalk to be optimally illuminated to enable safe movement.
- Lighting supplemented with uniform and recognizable structures for providing basic orientation information.

3.Artwork

In order to break the monotonous view along the sidewalk and public areas, artworks to be installed on vertical surfaces where the width permits.

4. Seating

Suggesting minimum design standards to enable comfort of users. Specific design is not prescribed (this could be site specific).

Infrastructure and Amenities

1. Kiosks
Designated kiosks to be allowed on sidewalks, to make the streets livelier safe and avoid encroachment.

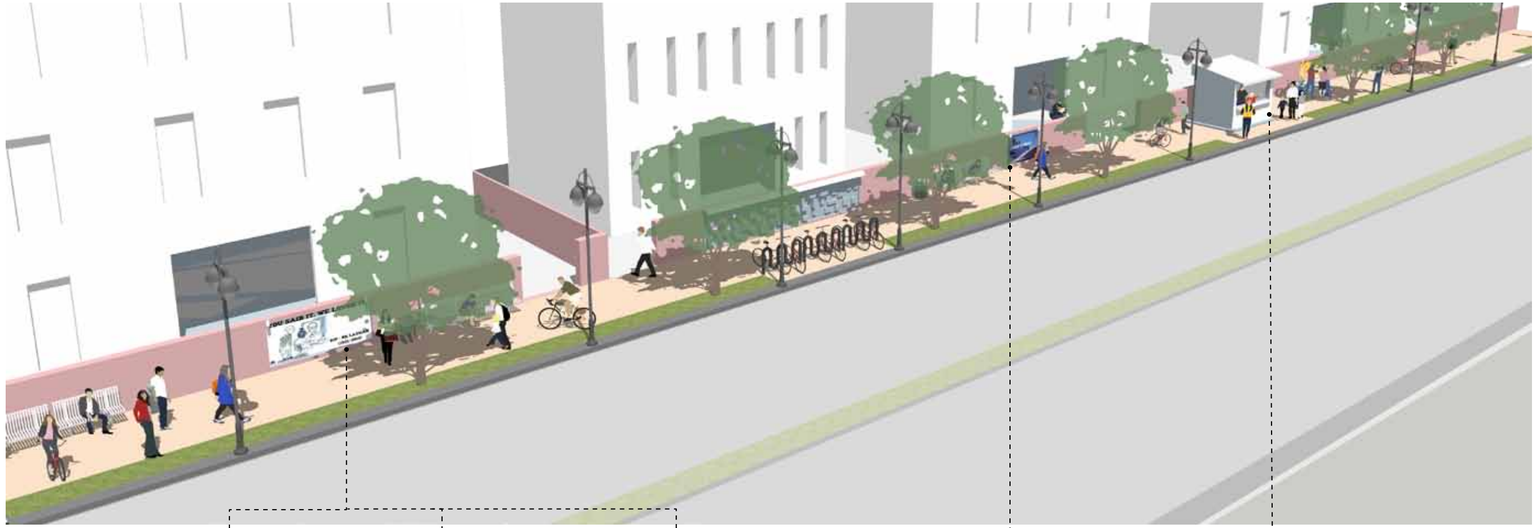
2. Public toilets
Public conveniences to be provided at every 1 km, with a minimum of 2 toilets.

3. Drinking water facilities
Drinking water facilities to be provided on sidewalks at every 500 m.

4. Sidewalk lighting
For illuminating artwork, various types of lighting maybe suggested:
Concealed, focus lighting, diffused lighting, foot lights

DESIGN ELEMENTS

View Showing Typical Sidewalk Condition

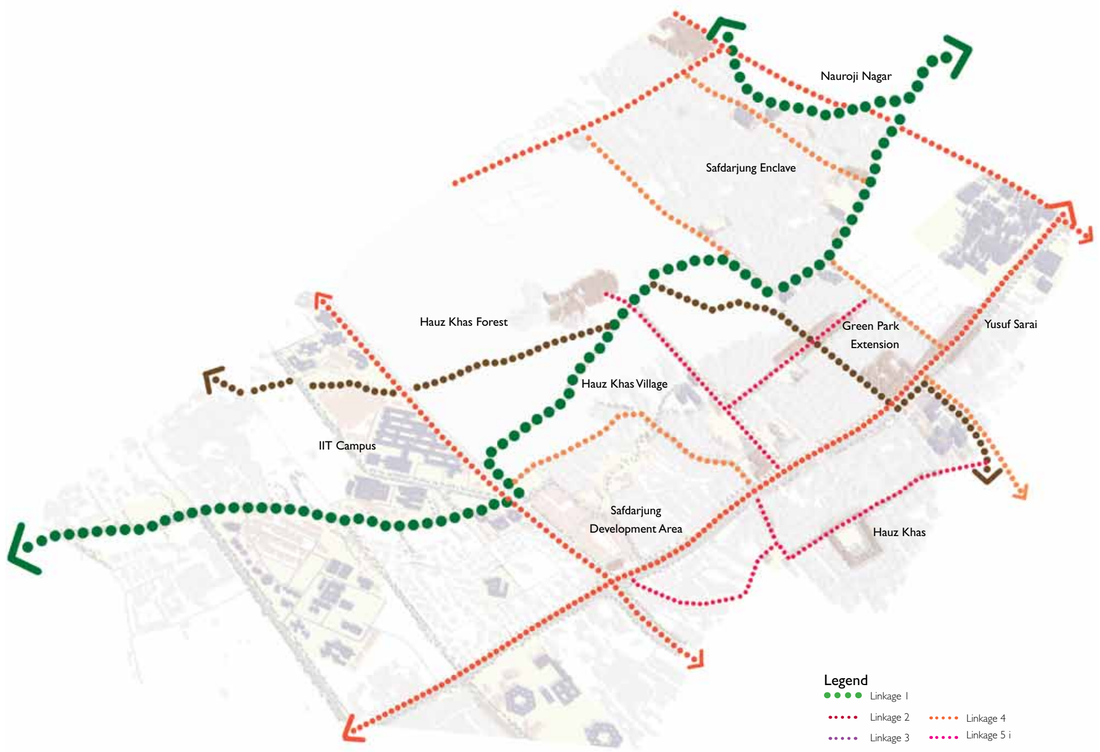


Vertical Plane: Made Interactive with Display of Art/Installations, Murals, Sculpture, etc. and Informative Displays, Advertisements,etc.

Sidewalks will be equipped with infrastructure and amenities

Proposed Typical Sidewalk

DESIGN ELEMENTS



Chapter 9

Proposals for Linkages 1-5

Areas including Safdarjung Enclave, Green Park, Green Park Extension, Hauz Khas, Hauz Khas Village and Gulmohar Park

Linkage 1
- Through the Forest
- Along Nullahs
  - Ground Level
  - Level -2.5 m
- Along Institutional, Commercial, Residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Linkages 1-5

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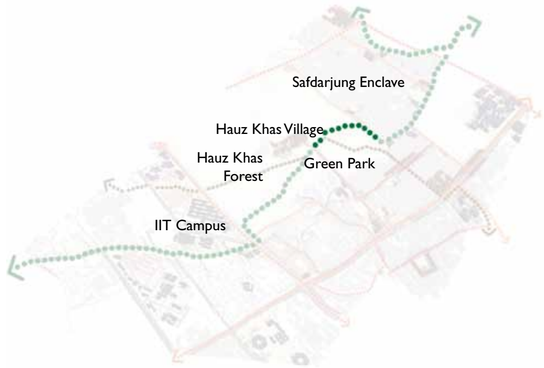


PROPOSALS FOR LINKAGES

Through Forest

Existing conditions

Map Showing Existing Site Conditions and Nodes of Potential Interventions

Edge condition towards Safdarjung

Edge condition towards Safdarjung

Edge of forest towards Outer Ring Road

Entrance to forest from Green Park neighbourhood

Proposed Interventions

Proposed Plan: Linkage I through Hauz Khas Forest

Issues

- On-street parking all along Safdarjung creates a dead edge. Lack of visual contact with the inhabited area makes it highly unsafe, thus it is rarely used by pedestrians.
- Lack of prominent forest entrances, signage and any parking facility.

Potential Interventions

- Create legibility at entrances by proposing plazas equipped with basic amenities
- Creation of a forest trail with signage, street furniture and adequate lighting with a dedicated track for cyclists.
- Creation of amenity nodes.
- Creation of independent small food stalls and restaurants at forest entrances.

Key Plan (Precinct Level)

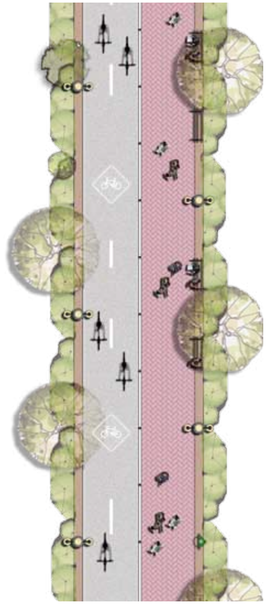
Facilities along Linkages through Forests

- Entrance plazas equipped with basic facilities are provided at entry points
- Dustbins to be provided at every 50 m. Lighting is provided at 5 m c/c
- Cycling trails:
  - 2.5 m width
  - Minimum 2.5 m turning radius

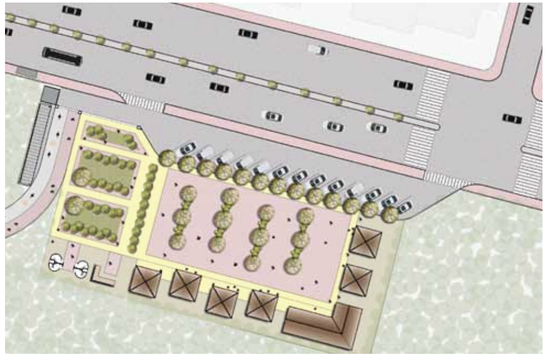
Typical Section: Linakge I

Before Adaptation

After Adaptation: Proposed Linkage through Hauz Khas Forest



Proposed Plan of Linakge 1
Detail at A-A'



Facilities to be provided at the Entrance Plaza
Detail at B-B'

Key Considerations

- Car parking
- Bicycle stand
- Toilets
- Drinking water facility
- Kiosks
- Restaurant

Proposed Linkage through Hauz Khas Forest

Key Plan (Precinct Level)

Linkages 1-5

Linkage 1

- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2

Creating pedestrian access along major roads

Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3

Creating pedestrian access along major roads

Case: Aurobindo Marg to Green Park Market

Linkage 4

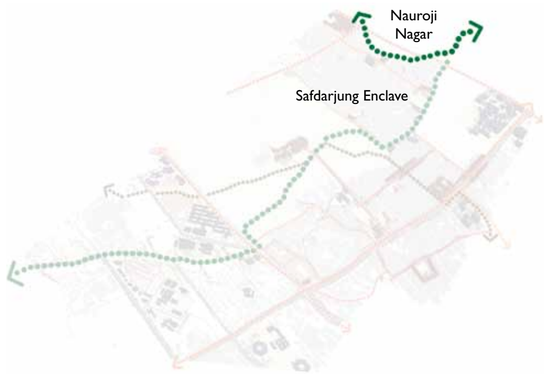
Along internal roads

Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5

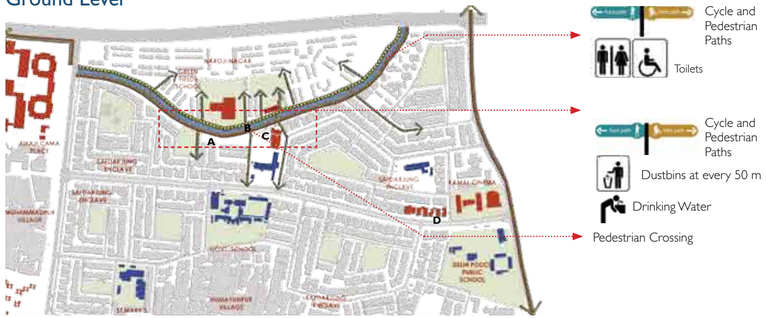
Linkage to specific amenities

Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station



Along Nullahs

Ground Level



Proposed Connectivity at Nauroji Nagar

Existing Site Conditions

A. Existing Nullah Condition

B. Bridge connecting Nauroji Nagar to Safdarjung

C. Community Market near the Nauroji Nagar Nullah

D. Insufficient pedestrian walkway due to commercial activity, subsequent parking near SDA market

Issues

- The Nauroiji Nagar Nullah forms a continuous drainage channel from Bhikaji Cama Place till the Ring Road near Safdarjung Hospital; presently being used as a garbage dump.
- Due to its continuity and width, it has the potential to provide linear connectivity along its length to walk or cycle, as an alternative, along the Ring Road which carries high speed traffic.

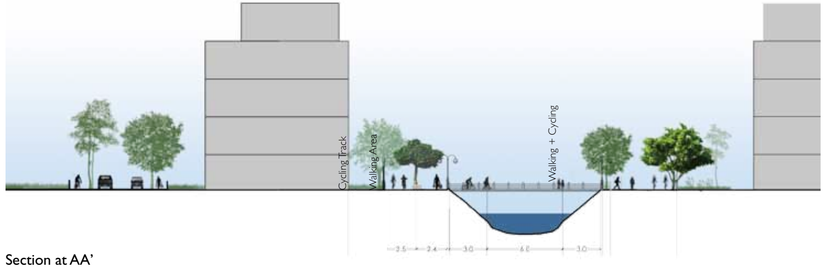
Potential Interventions

- Creation of a trail along the nullah equipped with signage, street furniture and adequate lighting; dedicated track for pedestrians and cyclists with basic amenities.
- Creation of a network system that allows users to connect to this trail along the nullah from the adjoining areas.

Key Plan (Precinct Level)

Key Considerations

- Linkages to public amenities
- Providing access to pedestrians and cyclists
- Signage to locate and direct movement.



Section at AA'

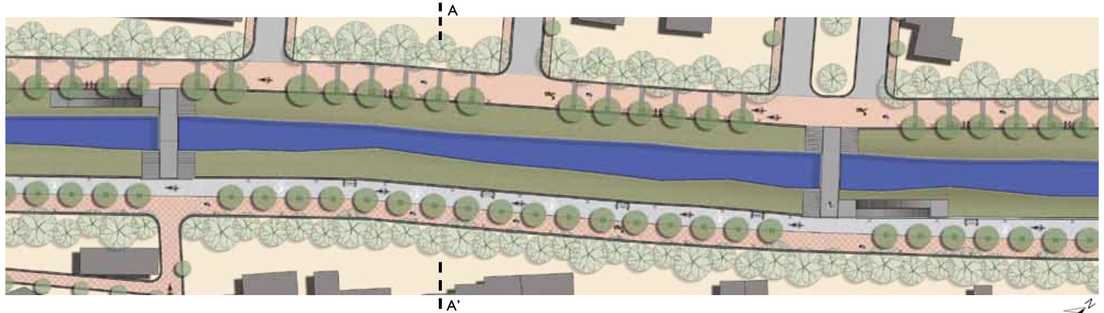
Adopted Strategies

- Proposing an active nullah edge with continuous movement network
- Segregated pedestrian and bicycle access.
- Street furniture for comfort, safety and security of users.

Before Adaptation

After Adaptation: Proposed Linkage along Nullah Edge

PROPOSALS FOR LINKAGES



Proposed Plan
Linkage 1: Along Nauroji Nagar Nullah

Design

- A pedestrian pathway and bicycle tracks have been proposed along the nullah at the road level.
- These pathways are uninterrupted trails which will connect neighbouring amenities like schools, cultural centres, local markets etc.

Proposed Linkage1 along Nauroji Nagar Nullah Edge

Linkages 1-5

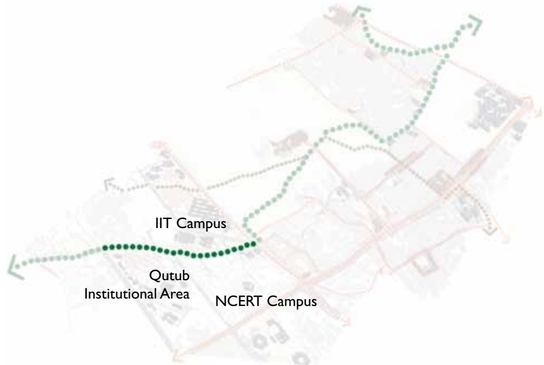
Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

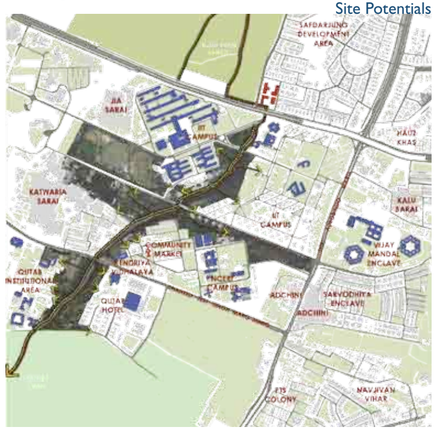
Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station



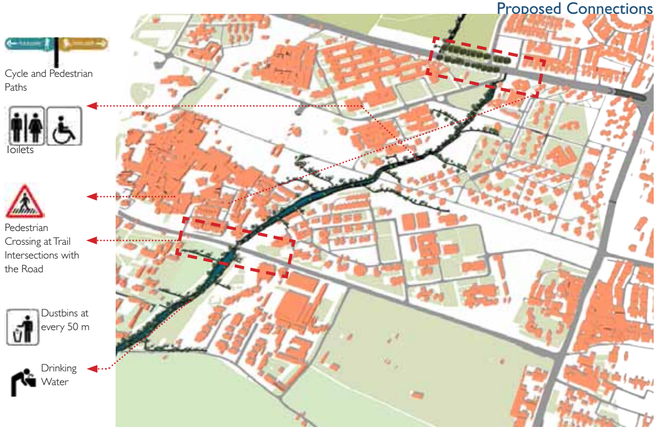
Along Nullahs Level – 2.5 m

Site Potentials



Map showing Missing Connections along IIT Nullah Edge

Proposed Connections



Map Showing walking Pathways and Cycling Tracks with the Connecting Surroundings

Issues

- The potential green precincts are currently isolated regions and are not accessible.

Potential Interventions

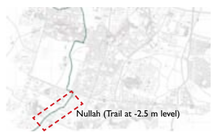
- The stringed green spaces provide an opportunity to create a continuous vehicle free route.
- Proposal for a cyclable, pedestrian network connecting Deer Park. Creation of legibility, amenities, street signage along the entire length of the linkage; it also provides access to destinations within precinct.

View of Existing Nullah at IIT

Disrupted sidewalks at Shaheed J. S. Marg

Nullah Crossing at Shaheed J. S. Marg

Ring Road at IIT



Key Plan (Precinct Level)

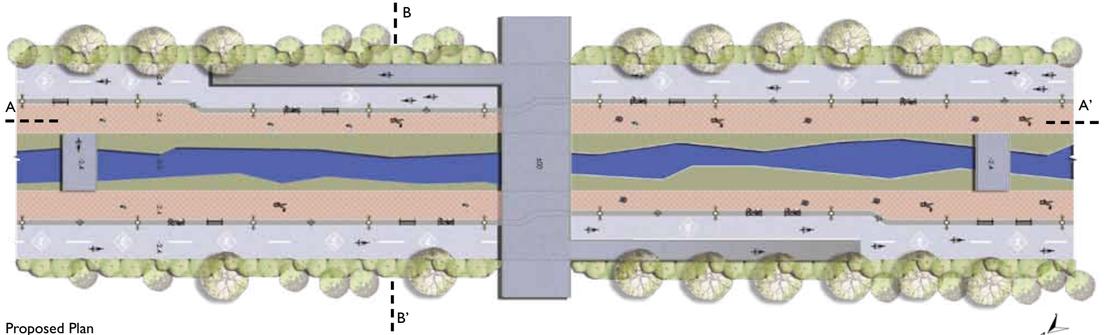
Facilities along Roads

- Dedicated pedestrian trail, 1.2 m
- Cycling trails:
  - 1.4 m width
- Dustbins to be provided at every 50 m. Lighting is provided at 5 m c/c

Proposed Section across the Ring Road at IIT

Before

Image Showing Proposed Sidewalk and Cycling Track near IIT Campus



Proposed Plan
Linkage I through IIT Nullah

Proposed Nullah Edge

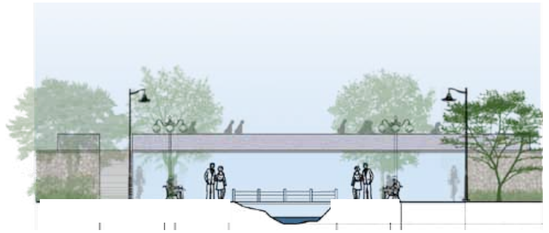
- The proposed linkage along the nullah is an attempt to connect various amenities such as campus housing, community centres , recreational areas and various other institutional areas inside and around the IIT campus with an uninterrupted network of pedestrian pathways and bicycle tracks.
- These linkages are a way of connecting people with nature and the outdoors, where the impact on the landscape and heritage is minimized.
- These linkages are walking and cycling trails (shared in some parts due to space constraints) proposed along the banks of the nullahs which continue underneath the existing roads to provide a continuous access to users.
- To access the road level, ramps have been provided to connect the nullah bank level to road level.
- Street furniture like lighting , benches, dustbins and signage are proposed at regular intervals for the purpose of comfort, safety and security of users.

Before

View of Proposed Linkage along IIT Nullah

Section at BB'

PROPOSALS FOR LINKAGES



Aerial view of the IIT Nullah edge showing connections along and to the nullah edge to enable continuous and uninterrupted movement

View of proposed linkage along the IIT Nullah depicting the connectivity from the road edge to the nullah and at the level of the nullah, to enable continuous and uninterrupted movement

Linkages 1-5

Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

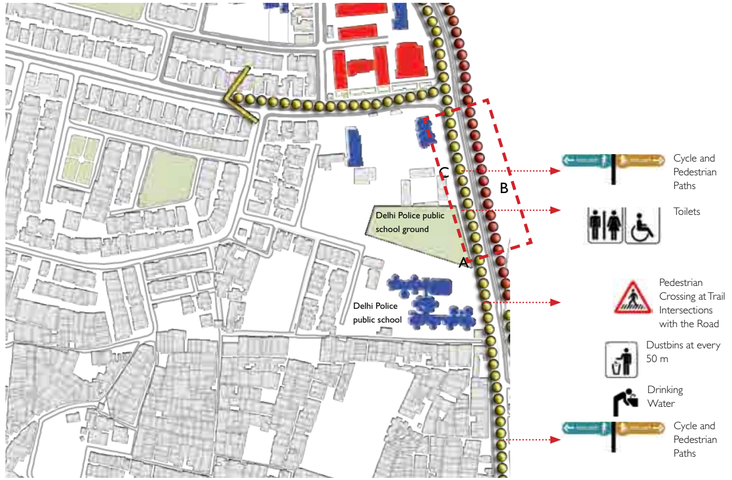
Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Along Institutional Edge (Linkage 1)



Proposed Amenities along Delhi Police Public School

Issues

- Narrow, discontinuous pedestrian pathways often without proper street lighting for pedestrians.
- The boundary walls are very high and make the street edge dull and unsafe for pedestrians.
- There are no segregated paths for cyclists making them vulnerable to fast moving traffic.

Potential Interventions

- A continuous, uninterrupted linkage is proposed to enable easy movement along institutional edges which are often spaces of intense interaction and movement.
- Addition of segregated bicycle lanes (where space allows) to improve connectivity.
- Improving the quality of streets with the addition of improved street furniture such as benches, proper street lights, signage and shade trees.

Key Plan (Precinct level)

A: Edge along institutional complex with narrow and discontinuous pedestrian pathways

B: Edge along open Green with high walls and on-street parking making walking unsafe

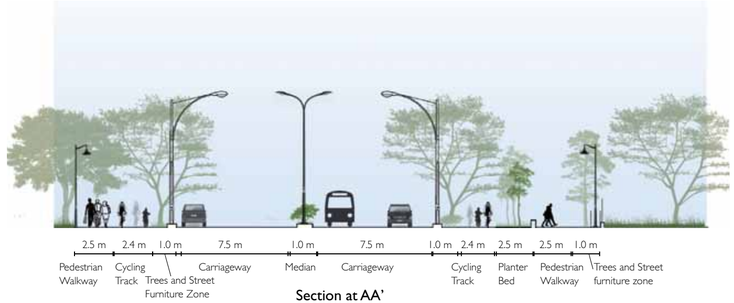
C: Pedestrian Pathways without proper lighting and signage making it unsafe and uncomfortable to walk

Key Considerations

- These pathways enable users to reach public spaces by maintaining a visual connectivity and direct natural pedestrian flow in a particular direction.

Adopted Strategies

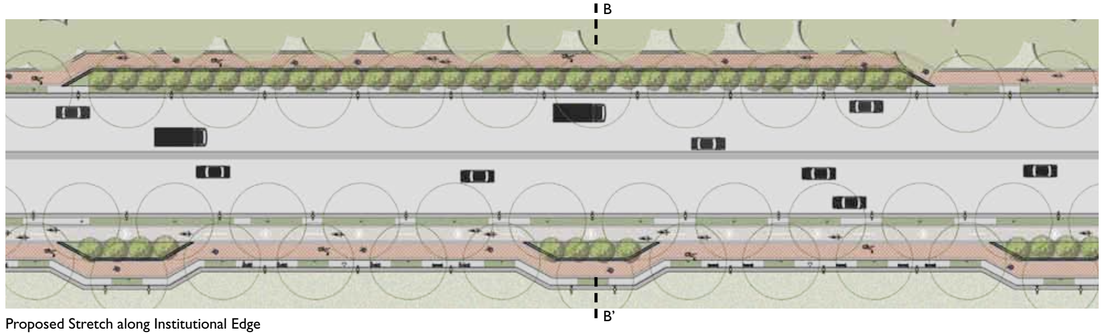
- Pedestrian pathways and cycling tracks are proposed along existing roads
- These pathways are continuous, shaded pathways (shared at places in cases where the road width becomes too narrow) to provide safe and comfortable access to users along roads.
- It is proposed to de-clutter existing sidewalks of unregulated vendors and poorly placed/planned furniture to accommodate all the activities within the provided widths. The same has been achieved by segregating these activities by materials and levels.
- These streets enable people to sit and rest, or watch the streets and thereby become 'eyes on the street' which adds to the safety of users.



Section at AA'

Before Adaptation

Proposed Linkage along Institutional Edge



Proposed Stretch along Institutional Edge

View showing Proposed Linkage along Institutional Edge

View showing Proposed Linkage along Institutional Edge

Linkages 1-5

Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Along Commercial Edge

Linkage I

Proposed Amenities along the Kamal Cinema Stretch

Issues

- Narrow pedestrian pathways
- Intense commercial zone, with heavy traffic movement
- Unorganized and encroached parking
- Lack of safe pedestrian crossings
- No bicycle network
- Lack of public amenities
- Lack of signage

Potential interventions

- Re-arranging street activities and road alignment to accommodate more pedestrian and recreational activities.
- Proposing street elements like street furniture, signage, landscaping and café seating to ensure a comfortable pedestrian experience.
- These elements also make the streetscape more useful and attractive. They act as a buffer between traffic and pedestrians.

A : Existing image showing congestion around the Safdarjung Enclave Community Centre

B : Existing image showing narrow sidewalks with encroachment

C : Existing image showing narrow sidewalks with encroachment

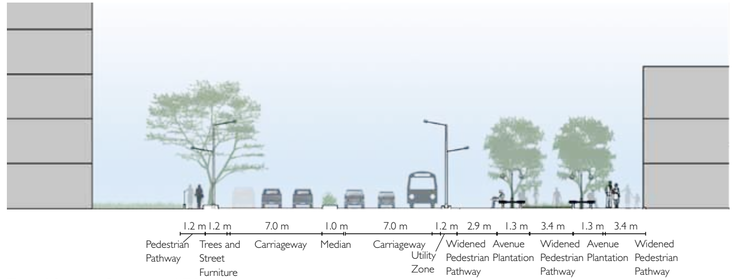
Key Plan (Precinct Level)

Key Considerations

- Pedestrian pathways along commercial edges provide an opportunity to interact with the indoor environment that a building edge provides.

Adopted Strategies

- Landscaping and distinctive street furniture along the corridor enables more footfall as walking is encouraged.
- Different materials have been proposed to create a visually appealing and uniform look.
- Rearranging the geometry of the street is proposed in order to accommodate a variety of uses like walking, seating, street furniture etc.
- It is proposed to promote greener streets with more trees and vegetation along the roads.



Typical Section Commercial Edge

Before Adaptation showing an unorganized street front

After Adaptation: View showing widened sidewalks along the street fronts making space for movement and recreation

Proposed layout along commercial street front showing widened sidewalks

View showing proposed seating areas along the commercial edge

View showing widened pedestrian pathway for easy movement

Linkages 1-5

Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Along Residential Edge

Linkage I

Proposed amenities on residential edge of Safdarjung Enclave

Issues

- Narrow, unorganized and encroached pedestrian pathways
- Lack of safe pedestrian crossings
- Lack of public amenities like dustbins, street lights etc.
- Lack of signage

Potential Interventions

- Pedestrian pathways along the residential edge for last mile connectivity, enabling continuous and safe movement for users.
- Providing basic amenities like street lighting, dustbins and trees for a comfortable and safe walking experience.

Key Plan (Precinct Level)

A & B: Images showing encroachment by on-street parking along residential edges

C & D: Green Park residential edge showing encroachments on pedestrian pathways

Section at AA'

Key Considerations

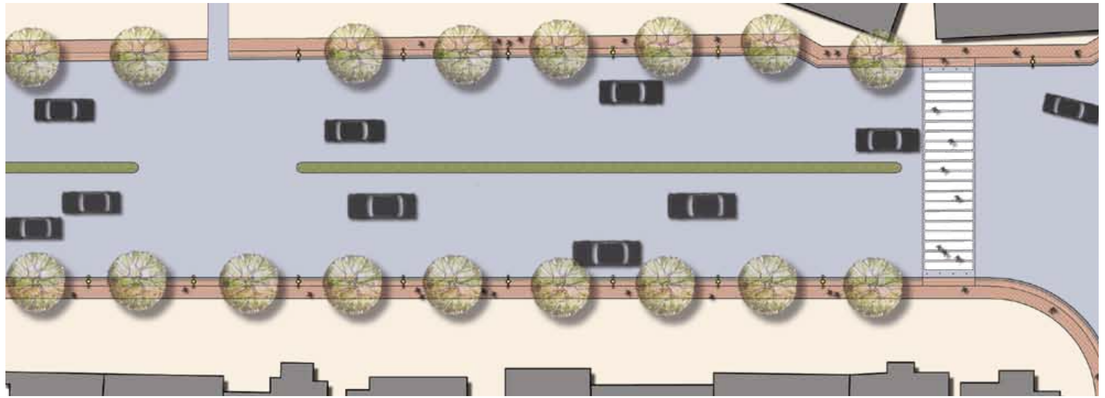
- Pedestrian pathways along the residential edge provide last mile connectivity and make the streets active and safe.

Adopted Strategies

- These are shaded pathways with a minimum width of 1.2 m to accommodate two persons side by side.
- Pedestrian crossings and table tops are proposed to reduce the speed of vehicles and make way for pedestrians.
- Public amenities like seating, plants etc. are included in design, as they create pause points and allow interaction on the street.

Proposed view showing widened sidewalks along the residential edges with amenities and pedestrian crossings

Existing image showing encroachments on the residential edge



Proposed layout along the residential edge showing shaded walkways with uninterrupted pathways and pedestrian crossings

Proposed view along residential edge

Linkages 1-5

Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

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Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Creating Pedestrian Access Along Major Roads

Linkage 2

Study Area: From Aurobindo Marg to Green Park Market

Issues

- Discontinuous pedestrian pathways along the main road and Green Park Market frontage.
- On-street parking (due to market) leads to congestion and chaos for local residents.
- Absence of amenities and facilities for pedestrians like wide pedestrian pathways, proper pedestrian crossings and lack of traffic calming features.
- Amenities like dustbins, proper street lights, benches for seating, kiosks etc. are insufficient for a neighbourhood level market and its surroundings

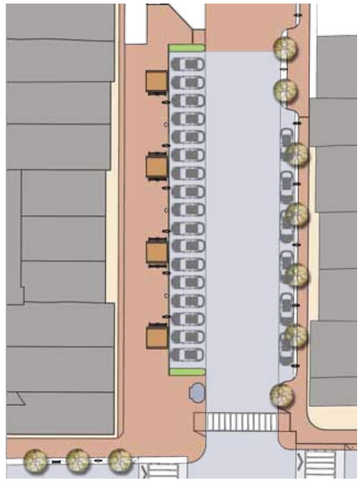
Potential Interventions

- Creating a pedestrian edge for Green Park Market with wider sidewalks to accommodate the intense footfall; creating places to sit, stand and socialize; provide space for street furniture and dead width for shop fronts.
- Providing designated on-street parking to avoid haphazard parking.

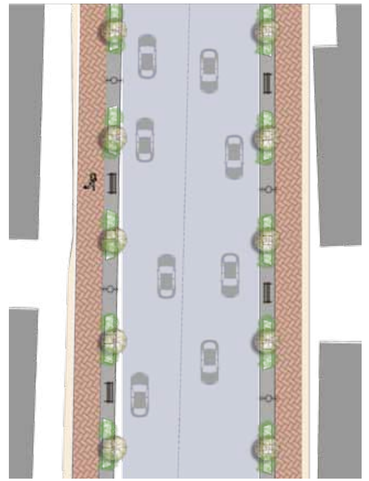
A & B: Images showing a street that has both commercial and residential use

Road from Aurobindo Marg leading to Green Park

Key Plan (Stretch Depicting Linkage 2)



Typical Plan (Stretch 1): Proposed Plan of Linkage 2

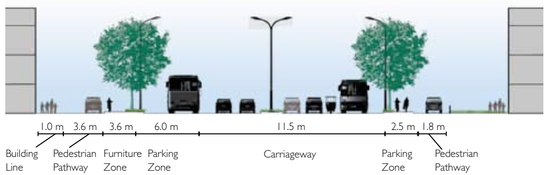


(Stretch 2) Proposed Trail at Precinct Level

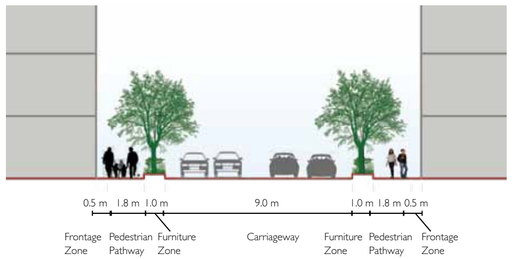
Amenities along Linkage 2

- Segregated paths provided for pedestrians and cyclists; dedicated furniture zone that avoids encroachment and makes walking a pleasant activity.
- Designated on-street parking for cars to avoid haphazard and encroached parking
- Street furniture like street lights, dustbins, benches etc. incorporated at regular intervals.

Key Plan



Section at AA'



Section at BB'

Linkages 1-5

Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Creating Pedestrian Access along Major Roads

Linkage 3

Site Issues – Along Aurobindo Marg: From AIIMS to Yusuf Sarai Junction


Parking along Yusuf Sarai Market

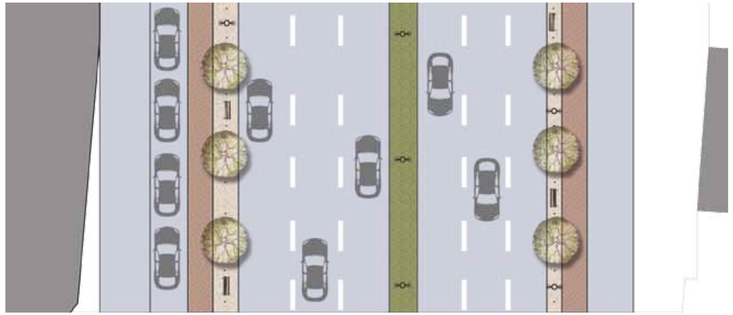

Edge condition around Yusuf Sarai Market


Edge condition around Green Park Metro Station


Key Plan at Precinct Level

Issues
- Absence of footpaths along the road discourages walking despite the fact that this area is an intensive pedestrian movement area.
- Lack of designated on-street parking bays leads to haphazard parking on the road.
- Lack of proper street furniture (including benches, street lighting, dustbins etc.).

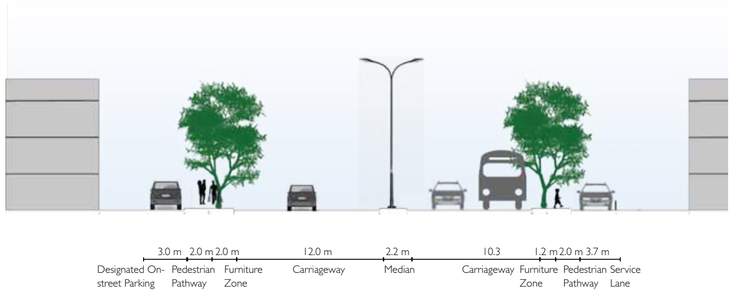
Potential Interventions
- Continuous and uniform pedestrian paths along roads to encourage walking.
- Parking bays in service lanes to avoid on-street parking which adds to the chaos.



Typical Plan (Stretch 1): Proposed Plan of Scale 2 Trail

Amenities along Linkage 3:

- Segregated paths provided for pedestrians and cyclists; dedicated furniture zone that avoid encroachment and make walking a pleasant activity.
- Designated on–street parking for cars to avoid haphazard and encroached parking
- Street furniture like street lights, dustbins, benches etc. incorporated at regular intervals.



Sectional Elevation

Key Plan

Linkages 1-5

Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

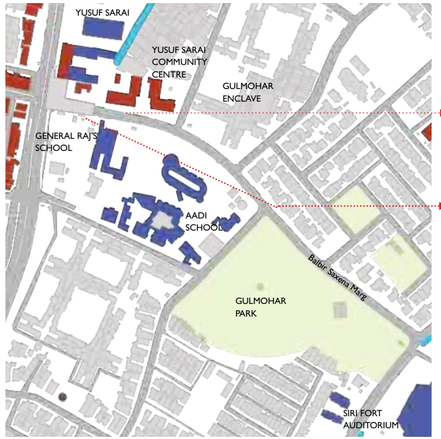
Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Along Internal Roads

Linkage 4

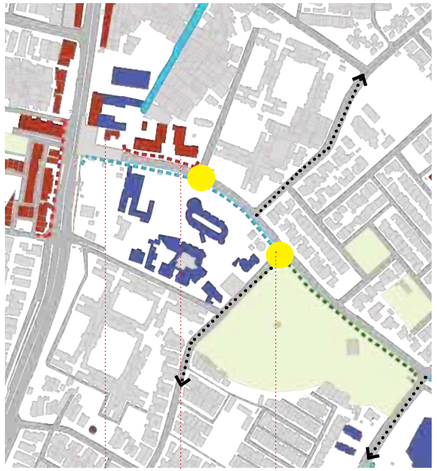


Existing road conditions along Balbir Saxena Marg

On-street parking around Yusuf Sarai Market

Parking lot near Yusuf Sarai Community Centre adjoining the Indian Oil Building

On-street parking and two-wheeler parking on the footpath



Proposed Linkages and Amenities along the Stretch

Car Parking

These nodes have a combination of one or more activities

Legend

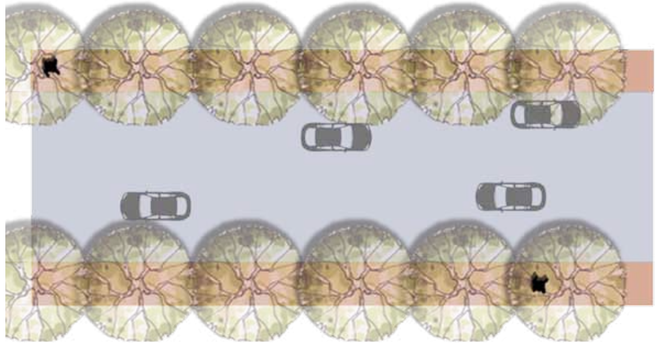
- Commercial Edge
- Institutional Edge
- Green Edge
- Potential nodes which can be enhanced

Issues of Walkability on Site

- Discontinuous pedestrian pathways along the main road and Green Park Market frontage.
- On–street parking (due to market) leading to congestion and chaos.
- Absence of amenities and facilities for pedestrians.

Potential Interventions

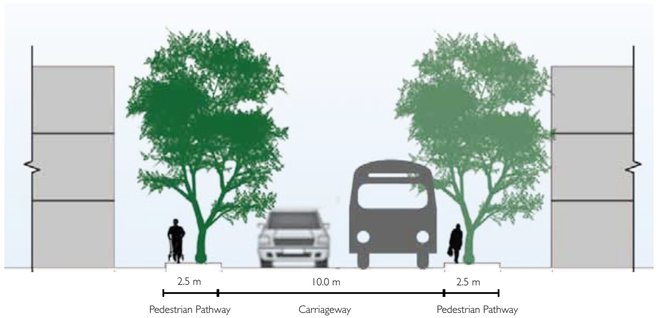
- Create a continuous pedestrian edge from Green Park Metro Station to Siri Fort to connect various edges like institutional , commercial and green edges.
- Provide designated on–street parking to avoid haphazard parking.



Typical Proposed Plan of Linkage 4

Amenities along Linkage 4

- Segregated paths provided for pedestrians & cyclist, dedicated furniture zone to avoid encroachment and making walking a pleasant activity.
- Street furniture like street lights, dustbins, benches etc. incorporated at regular intervals.



Typical Section

Key Plan at Precinct Level

PROPOSALS FOR LINKAGES

Linkages 1-5

Linkage 1
- Through the forest
- Along nullahs
  - Ground Level
  - Level -2.5 m
- Along institutional, commercial, residential areas

Linkage 2
Creating pedestrian access along major roads
Case: Aurobindo Marg; From AIIMS to Yusuf Sarai Junction

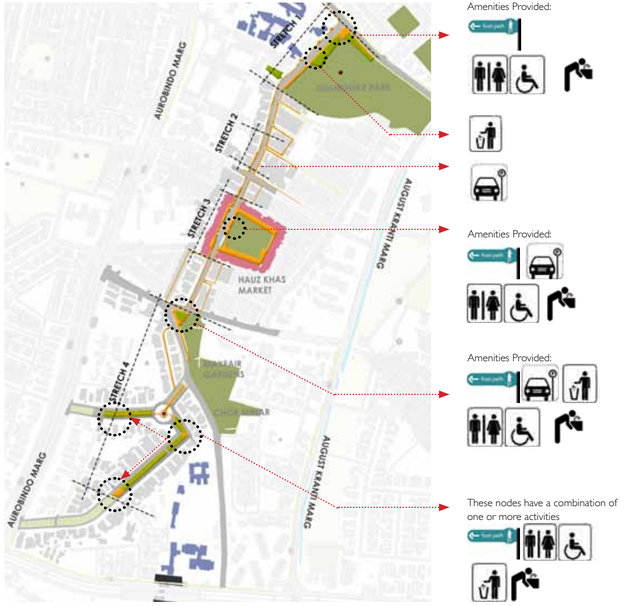
Linkage 3
Creating pedestrian access along major roads
Case: Aurobindo Marg to Green Park Market

Linkage 4
Along internal roads
Case: Balbir Saxena Marg, Gulmohar Park

Linkage 5
Linkage to specific amenities
Case: Connection between Green Park Metro Station, Hauz Khas Market, Hauz Khas Metro Station

Linkage to Specific Amenities

Linkage 5



Proposed amenities along the linkage to provide a continuous and safe walking experience

Legend
- Existing Road
- Proposed shaded footpaths along the residential edge
- Proposed amenity nodes for pedestrians

Facilities along Linkage 5

- Entrance plazas are provided at entry points, equipped with basic facilities like seating, water points, kiosks.
- Dustbins to be provided at every 50 m.
- Lighting is provided at 5 m c/c.
- Toilets have been provided at every 500–800 m

Key Plan – Proposed Linkage 5 at Precinct Level

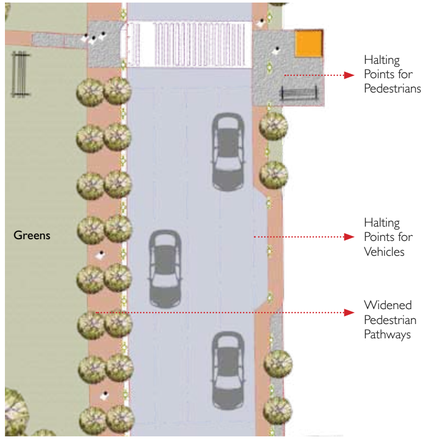
Issues of Walkability on Site

- Discontinuous pathways and absence of shaded paths along the road obstructs continuous movement between amenities.
- Roads not designed for designated surface parking. This results in unorganized traffic movement and unnecessary obstruction in moving traffic.
- Absence of amenities and facilities for pedestrians.

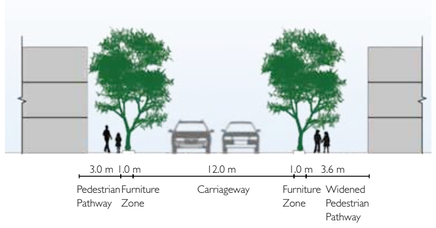
Potential Interventions

- Creating a pedestrian edge for Gulmohar Park
- Creating a pedestrian zone in front of the institutional zone
- Improving connectivity of parking in Hauz Khas Market with pedestrian connectivity around.
- Creating a pedestrian edge for Mayfair Garden.
- Creating an alternative walking trail connecting Chor Minar to Aurobindo Marg.
- Introducing organized surface parking and shaded walkways wherever possible.
- Introducing pedestrian amenity nodes.

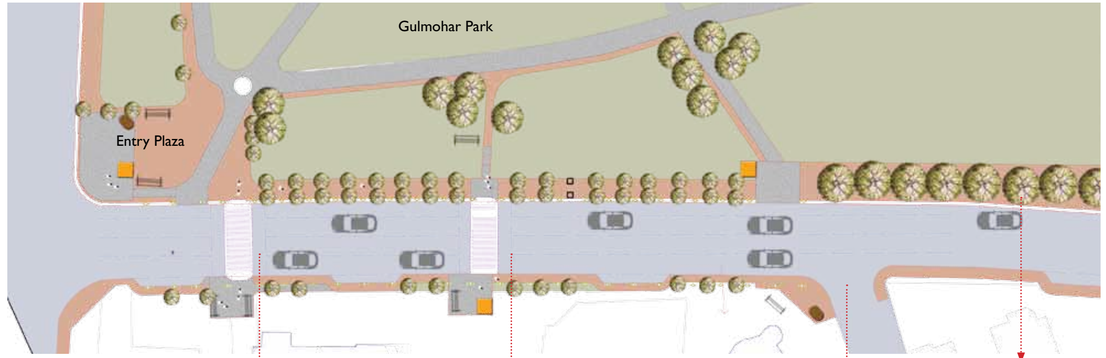
Diagrams showing possible linkages with commercial and green facilities respectively



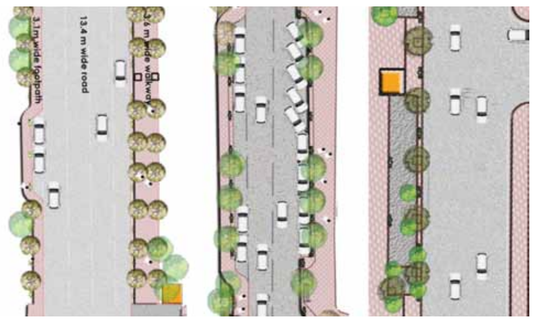
Typical Plan showing widened pedestrian pathways to access various amenities



Typical Section Linkage 5 showing the accommodation of a pedestrian pathway in the ROW



Typical Plan showing widened pedestrian pathways to access various amenities



A B C

Various Options for Creating Sidewalks:

A

Park edges could have wider sidewalks to enable transition and allow for a leisurely pace for pedestrians.

1. Squares at regular intervals could help create pause spaces (which integrate amenities) for pedestrians

B

1. Sidewalks in residential areas could be designed for organized surface parking with narrow widths
2. Turning around streets could be designed with benches for pedestrians

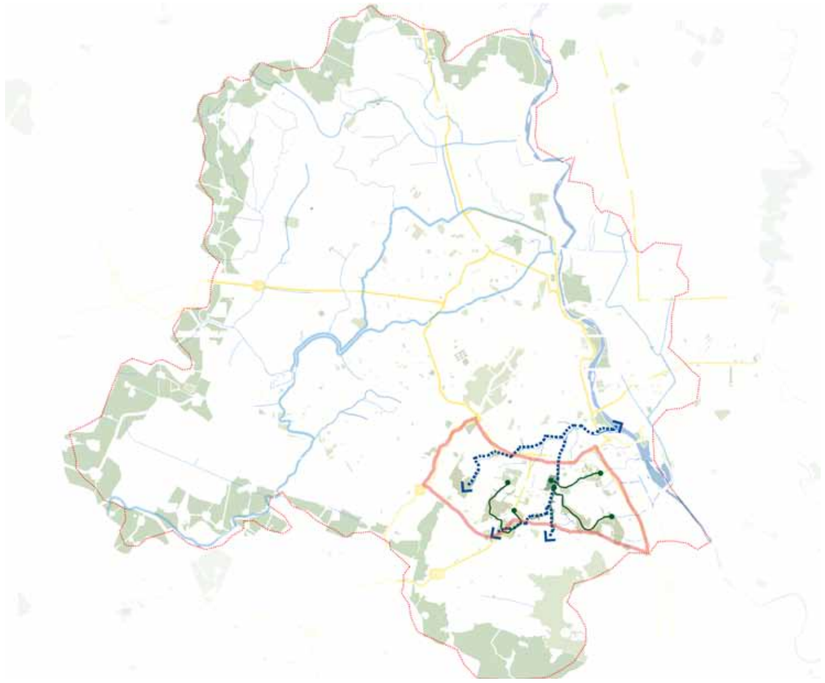
C

1. At places, widths and road's right of way allow pedestrian plazas to be accommodated.

Concluding Notes

- As demonstrated earlier in the study we can link different parts of the city via natural features such as natural drains (nullahs) and large greens to provide a continuous and seamless connection. This linkage would enable north–south and east–west movement and also ensure last mile connectivity.

- A similar approach can be applied to the entire city of Delhi where the potential of natural features can be utilized to create 'Alternate Movement Corridors' for pedestrians and cyclists which would essentially decongest our road network and help establish new connections. These can later be explored and made interesting by including facilities (social, recreational etc.) to make movement along these corridors more comfortable, safe and interesting.



Map of Delhi showing the continuity of greens and the nullah pattern in the city, depicting the potential of Movement Corridors as applied to Zone F

Reference list

- Express news service, 15 September , 2015,'*With 1,671 road deaths in 2014, Delhi tops fatality list among big cities*' [online], *Indian Express*, , Available at: http://indianexpress.com/article/cities/delhi/with-1671-road-deaths-in-2014-delhi-tops-fatality-list-among-big-cities/

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