Police Commissionerate

Raipur-Traffic Hackathon, 2026

Date: 09/10/2026

Theme: **Safety & Decongestion Solutions**

Submission by: **Ar. Karticke Pant**

Principal Architect: **Placemaker Studio**, Raipur

Website: www.placemakerstudio.in , Instagram: **The.Placemaker**

Qualification: **B.Arch** [B.V.P, Pune], **M.Arch (Urban Design)** [S.P.A, New Delhi],
M.Sc (Sustainable Design) [Architectural Association, London]

Ex-Visiting Faculty: NIT Raipur, Architecture & Planning Department (2025-26)

Placemaker Studio



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STUDIO

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Placemaker Studio is born from a simple yet powerful belief: **that great design can transform not just spaces, but entire communities**. Founded by **Ar. Karticke Pant**, our practice brings together years of global experience from **London, Delhi, Ahmedabad, Mumbai and Auroville**, to create **meaningful architecture and urban spaces** right here in the heart of Raipur.

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The Placemaker



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I am **The Placemaker**: Your friendly neighbourhood **Urban Designer**

My goal is to **make Raipur India's most liveable city.**

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Chapter 3: The site

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Source: Map by Author, Ar. Karticke Pant

Site Selection: The Junction



Why this location?

DENSITY

1. **Optimal Contextual Density:** Unlike the heavily congested intersections in the older parts of the city (such as Jaistambh Chowk) or the sprawling, low-density junctions in the suburbs (like Kachna or Purena), this site exists within a transitional, medium-density fabric.

TRANSIT HUB

2. **Emergence as an Informal Transit Hub:** Since this node connects established residential zones with newer developing outskirts, it naturally serves as a critical catchment area for IPT services (e-rickshaws, auto-rickshaws, and paratransit).

MIXED USE

3. **Mixed Use Activity Zone:** The concentration of mixed-use development, specifically the continuous ground-floor commercial edge, generates consistently high pedestrian footfall. This creates an intense daily overlap of localized residential activity and heavier commuter traffic.

LANDMARK

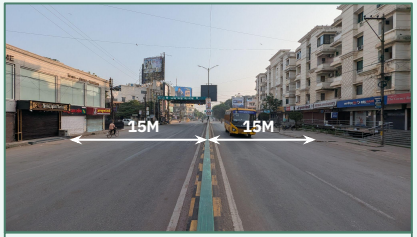
4. **Landmark:** As a widely recognized urban landmark, the junction possesses exceptional public visibility. A successful, visually engaging intervention here would be highly noticeable, serving as a powerful public showcase for traffic decongestion strategies.

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Source: Map by Author, Ar. Karticke Pant, Images by Google Street View

Junction: Overview





Shankar Nagar Rd: 30M Wide



Lodhi Para Rd: 24M Wide



TV Tower Rd: 19M Wide



Kachna Rd: 21M Wide

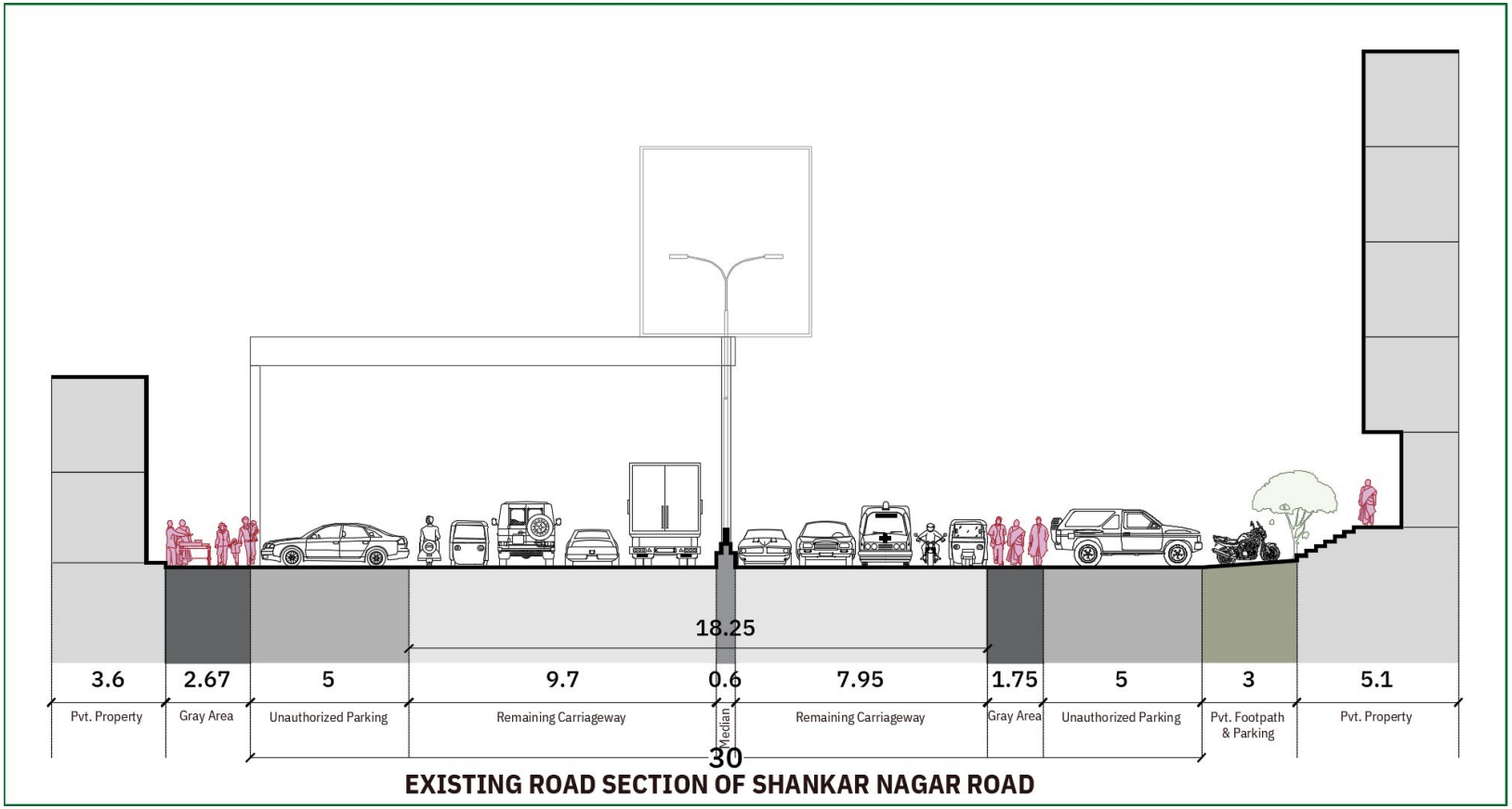
Immediate Context

- The junction is surrounded by Residential, Commercial and Mixed-Use development making it a **high traffic node**.
- **Road sizes** i.e. Right of Way (R.O.W) **are inconsistent** leading to bottleneck situations.
- **Visual Pollution** due lot of hoardings which may confuse the commuter on where to go.

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Source: Section by Author, Ar. Karticke Pant

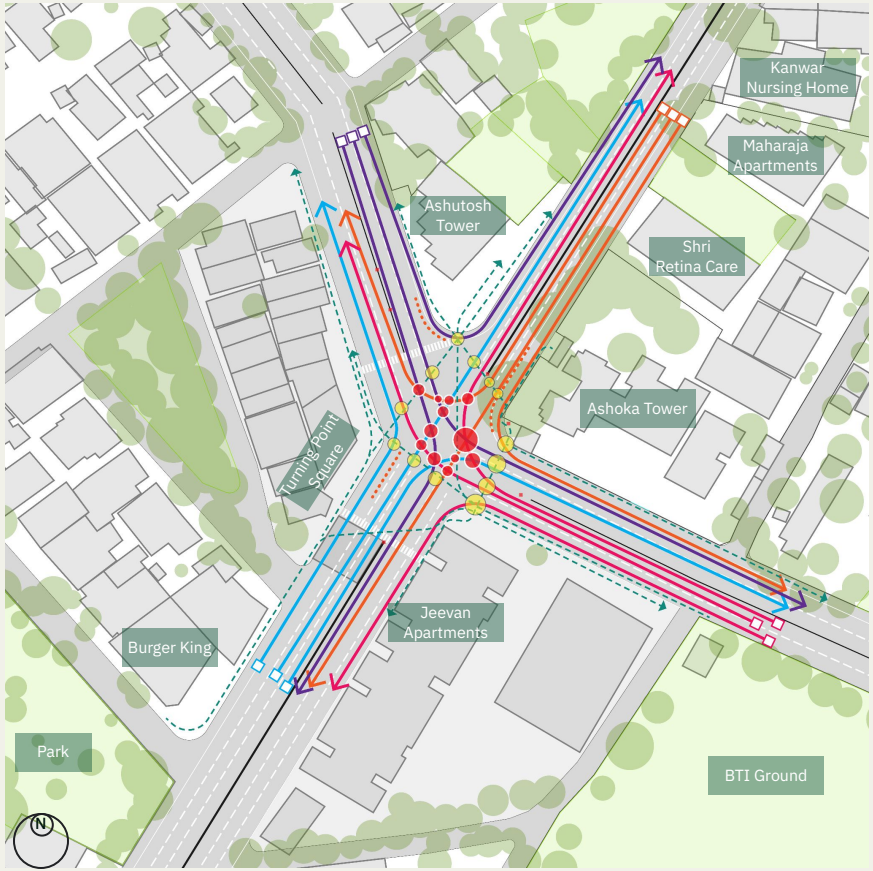
Existing Section: Shankar Nagar Rd: 30 Meter



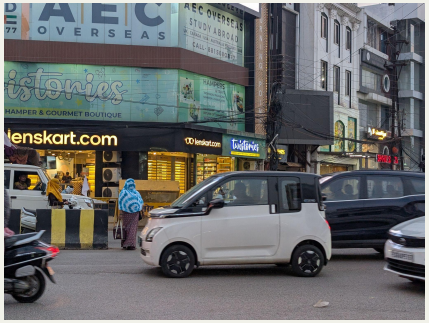
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Source: Map & Images by Author, Ar. Karticke Pant

Junction: Mapping Conflict Points









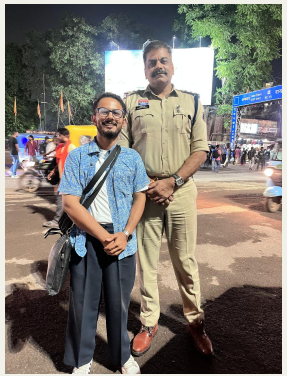


Legend

- Traffic from N
- Traffic from S
- Traffic from E
- Traffic from W
- Pedestrian Movement
- Conflict Point: Vehicular
- Conflict Point: Pedestrian

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Junction: Engaging with stakeholders



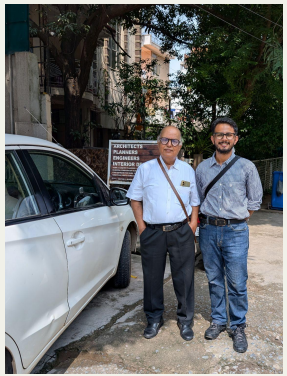
Traffic Police



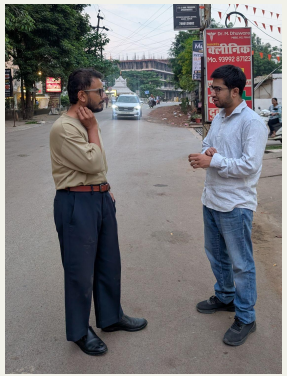
Shop Owners



Residents



Vehicle Owners



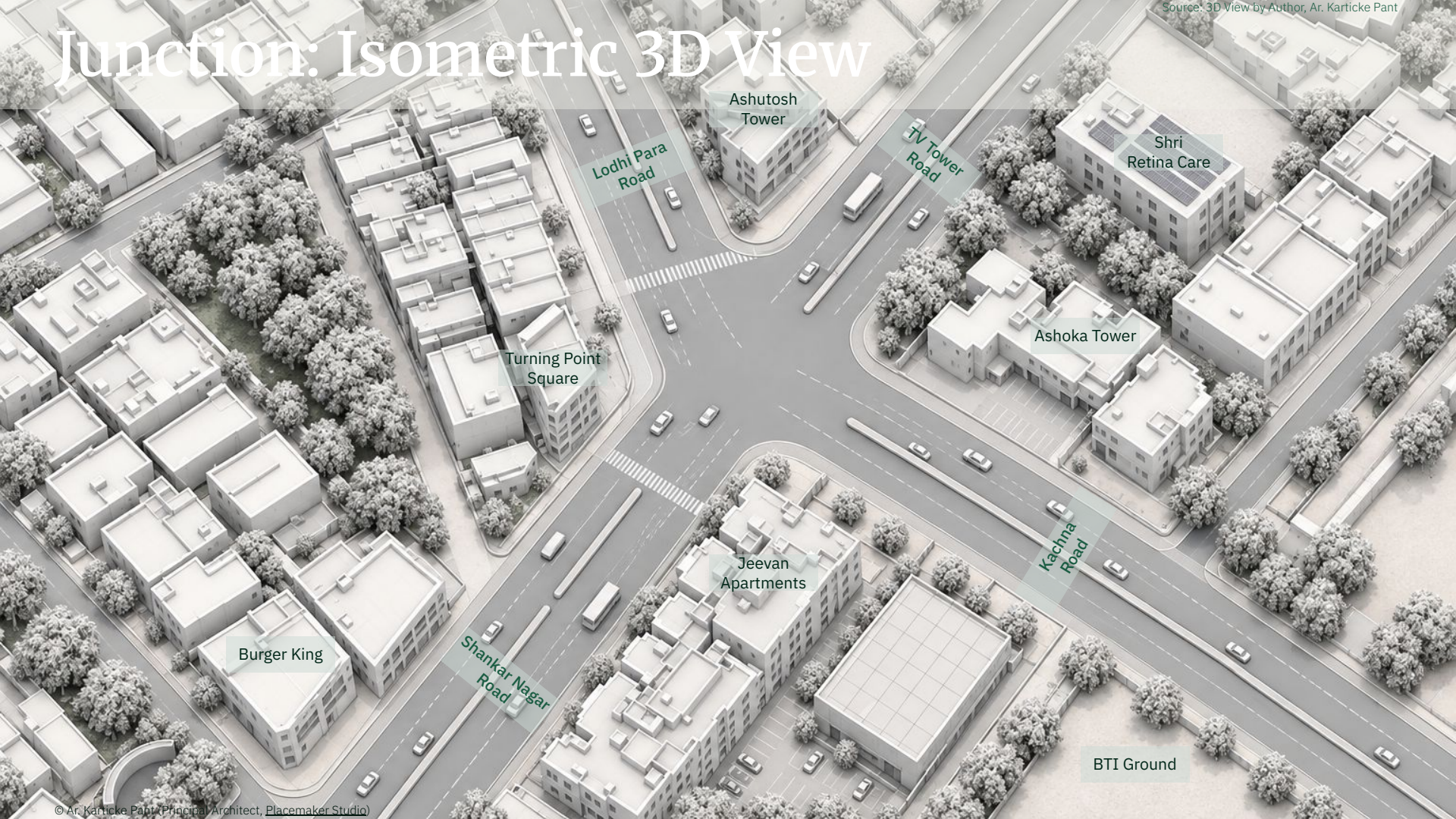
Pedestrians



Vendors

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Junction: Isometric 3D View



Source: 3D View by Author, Ar. Karticke Pant

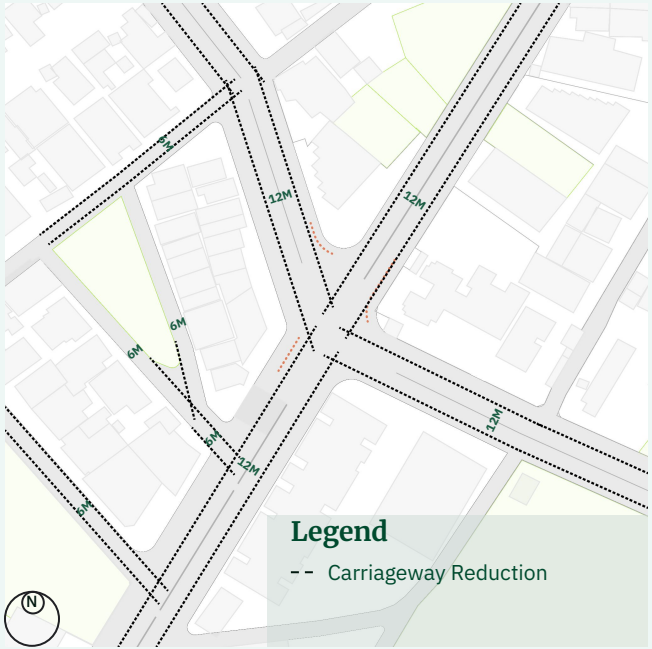
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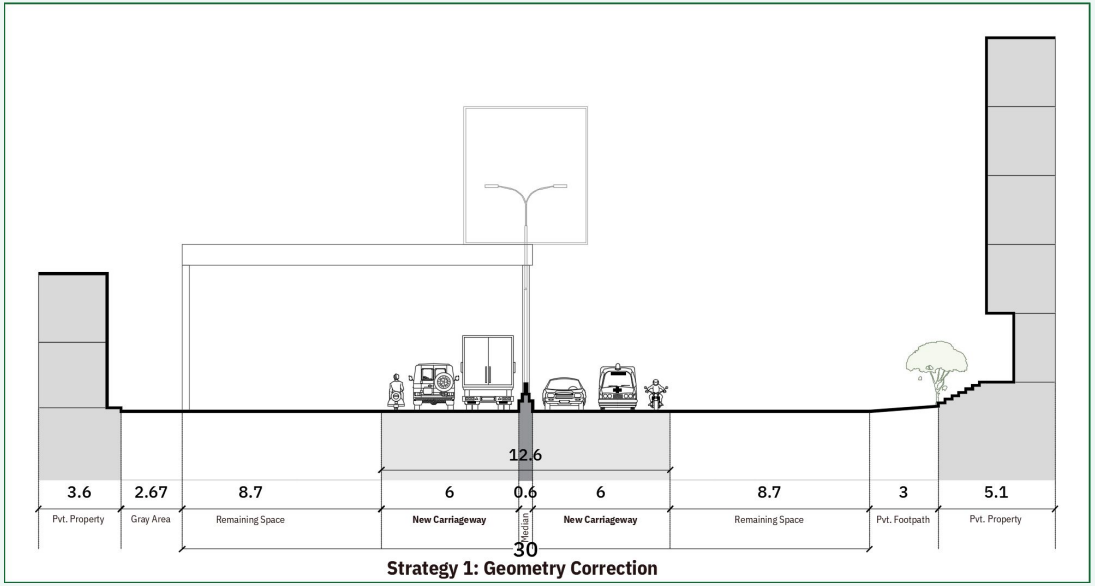
Chapter 4: The design solution

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Source: Map by Author, Ar. Karticke Pant | Images by SAVELife Foundation & ITDP Guidebook

Strategy 1: Geometry correction





Strategy 1: Geometry Correction

Design moves

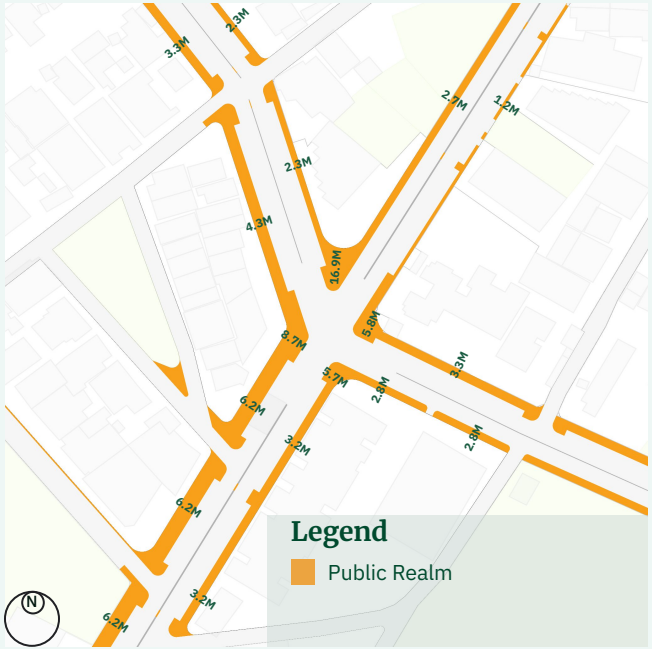
- The primary purpose of a carriageway is vehicle mobility. A **Carriageway should have uniform width**, thereby ensuring smooth flow of vehicles.
- A **12 Meter (approx 40 Feet)** wide carriageway has been defined for all the 4 roads.
- This will allows **equal amount of traffic** to move between Shankar Nagar road to TV Tower road and Kachna road

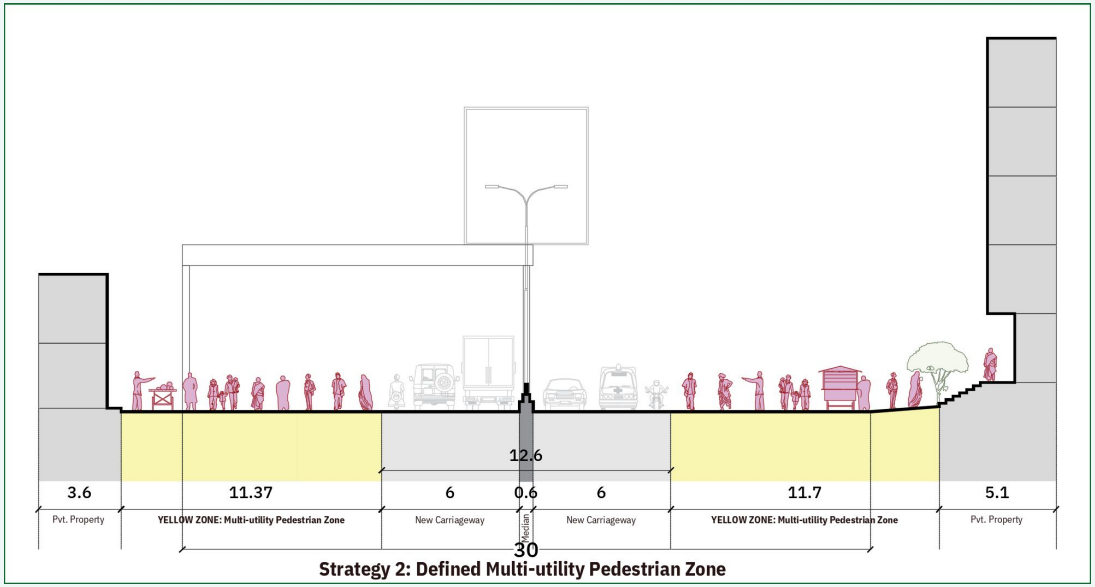


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Strategy 2: Multi-utility zone - Yellow zone





Strategy 2: Defined Multi-utility Pedestrian Zone

Design moves

- Good pedestrian zones promote **safe and comfortable pedestrian mobility**. The space left over after creating the carriageway and parking is usually designated as PZ.
- A **min 1.2 M (approx 4 F.T) to a max 8.7 M (approx 29 F.T) wide** Pedestrian Zone has been carved out from the existing road.
- This PZ can also accommodate **multi-utility activities** like sitting, eating, and vending.

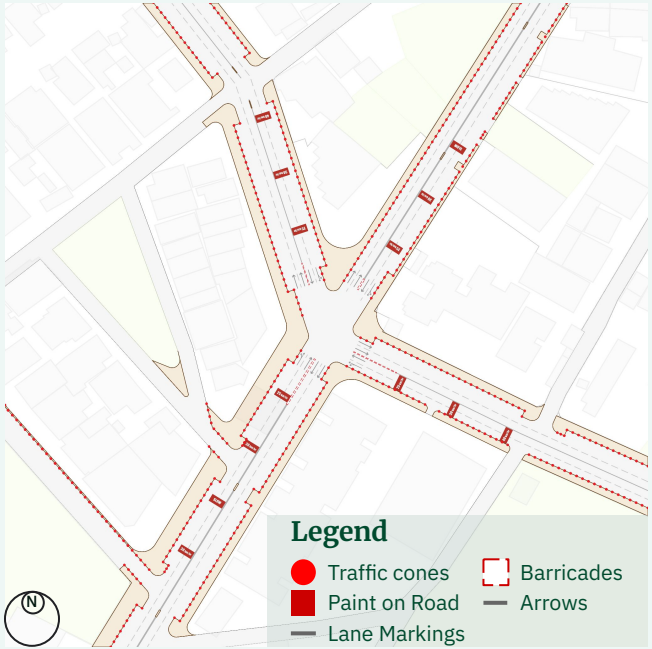


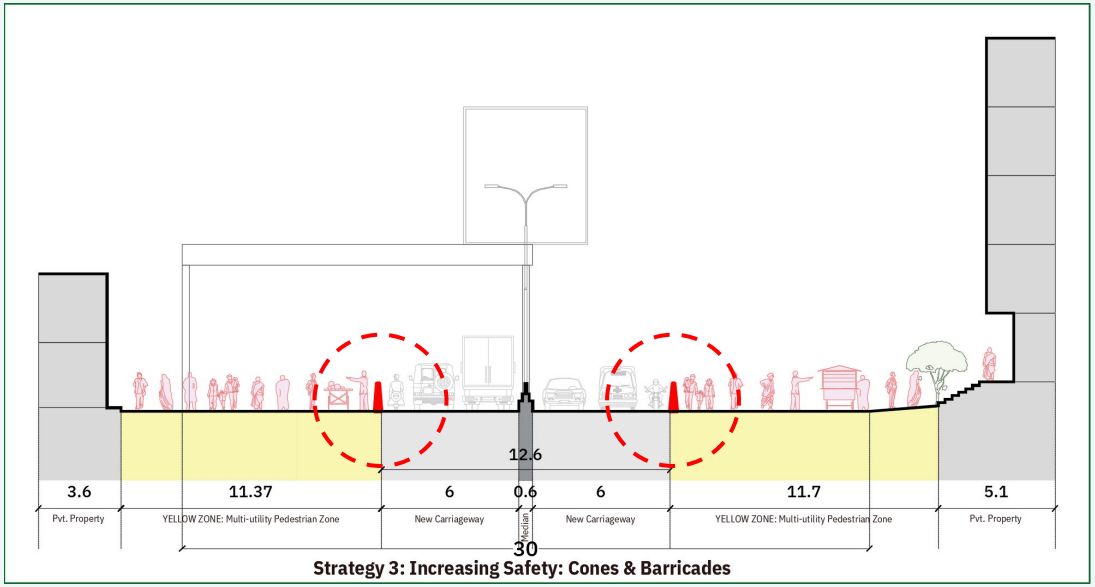


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Strategy 3: Increasing safety





Strategy 3: Increasing Safety: Cones & Barricades

Design moves

- To enhance pedestrian safety, **readily available and easily installed** traffic-calming measures, including **traffic cones, plastic barricades, horizontal signage, and lane markings**, are implemented.
- These interventions **effectively delineate the carriageway** and channelize movement, fostering a **smooth and orderly traffic flow** while prioritizing the **complete safety of pedestrians**.

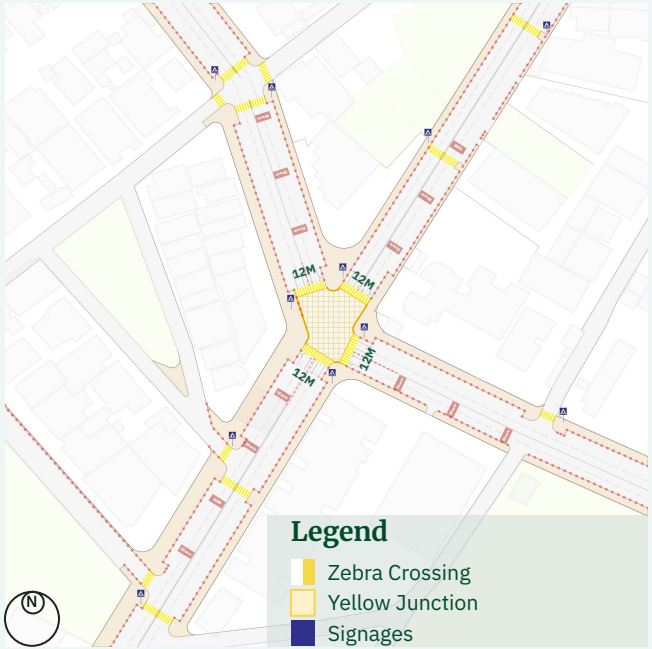


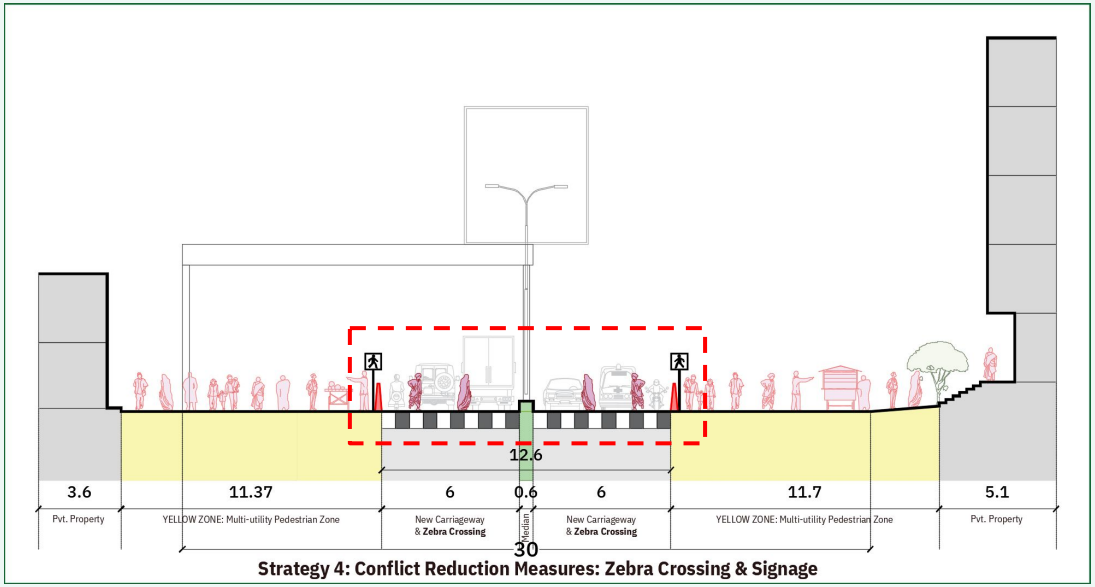


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Strategy 4: Conflict reduction measures





Strategy 4: Conflict Reduction Measures: Zebra Crossing & Signage

Design moves

- To minimize conflicts between vehicles and pedestrians, **key crossing locations were identified** and equipped with targeted **conflict reduction measures**.
- These improvements include dedicated **3-meter-wide zebra crossings, clear directional signage, and yellow box markings** to prevent vehicles from blocking the path. Additionally, **bollards** and **tabletop crossings** have been installed where necessary, creating a **seamless and pedestrian-friendly junction**.



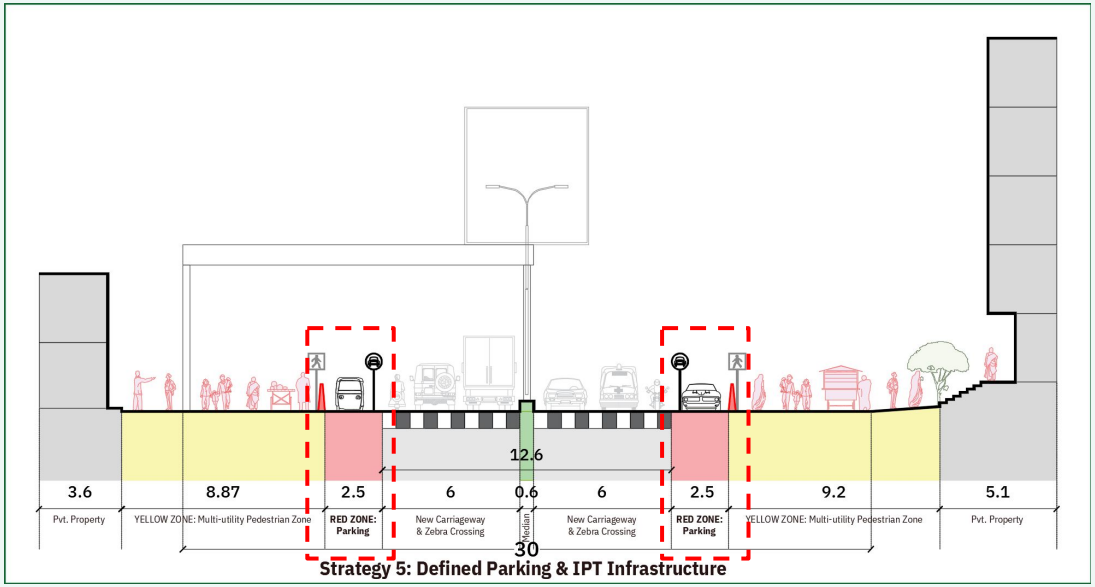


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Strategy 5: Defined parking/auto – Red zone





Strategy 5: Defined Parking & IPT Infrastructure

Design moves

- To ensure smooth traffic flow and pedestrian safety, **on-street parking is systematically designated, managed, priced, and volume-restricted**, allowing convenient access to adjacent properties.
- Additionally, the design incorporates **2.5 M wide dedicated parallel parking spaces for cars and bikes** along with **strategically placed auto-rickshaw and e-rickshaw stands** near junctions to **enhance** intermediate public transport **(IPT) mobility**.



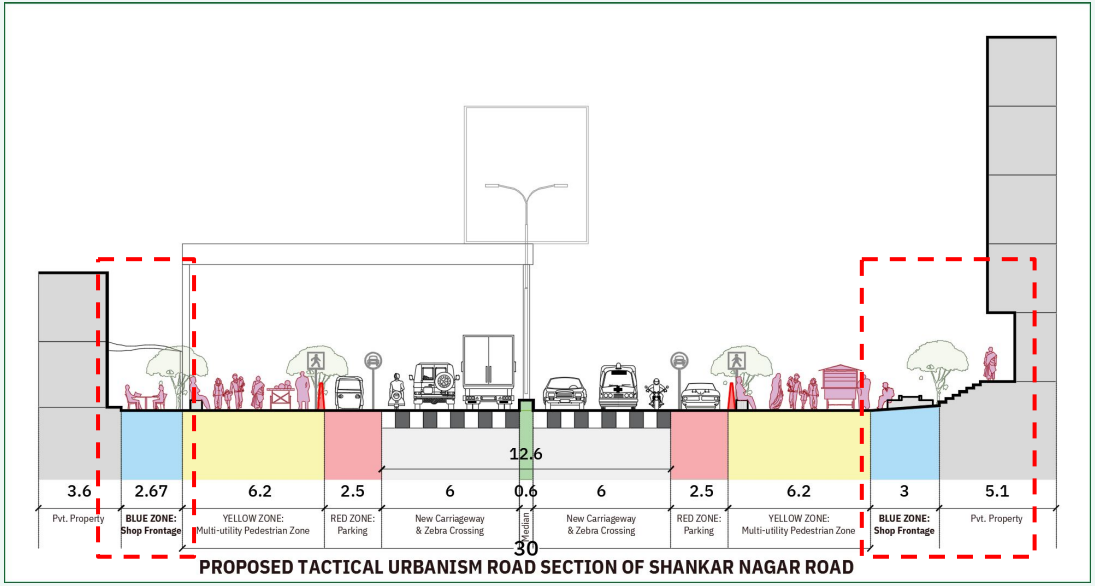


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Strategy 6: Active Edges – Blue zone





Design moves

- To improve the **Urban Life** and vibrancy of the space, transforming it from a **space to a place.**

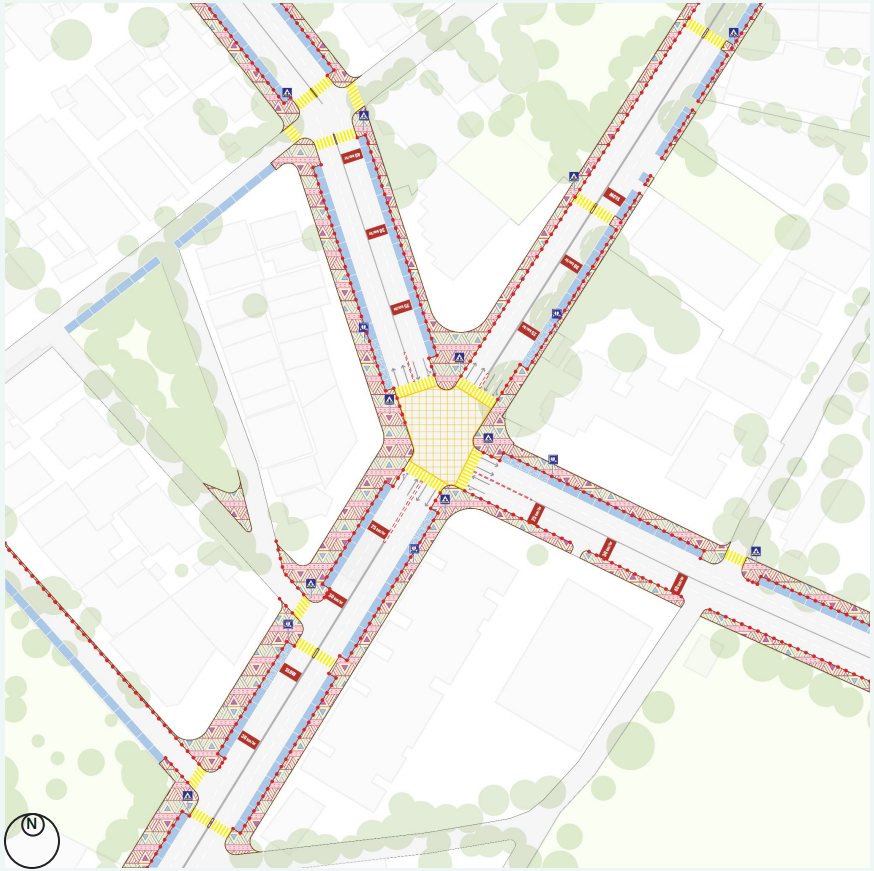




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Source: Map by Author, Ar. Karticke Pant

Final Master Plan



How the MP Achieves Safety & Decongestion

1. **Geometry Correction (Traffic Calming & Decongestion):**
   By altering road geometry to mandate deliberate 90-degree turns, drivers are naturally compelled to decelerate, thereby enhancing safety. Simultaneously, a uniform carriageway channels multi-directional traffic into distinct, predictable lanes, preventing chaotic merging & easing congestion.

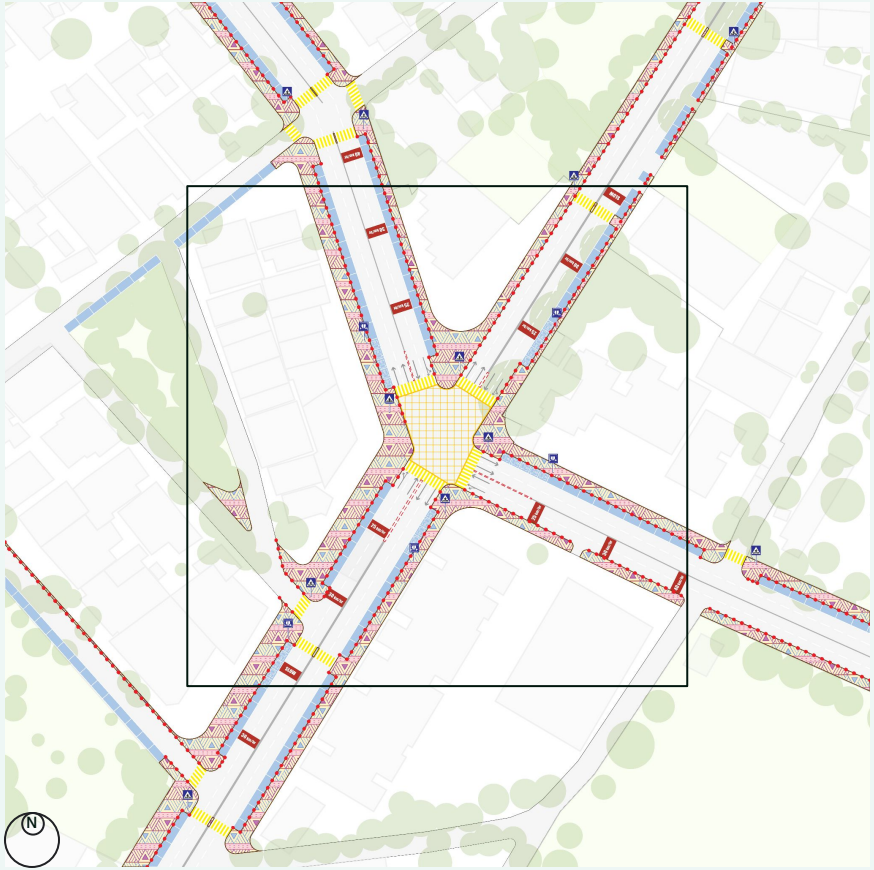
2. **Reclaiming Roads (Safety):**
   The introduction of continuous pedestrian pathways & strategic mid-crossing refuge islands allows individuals to cross safely in short, manageable, and highly visible segments.

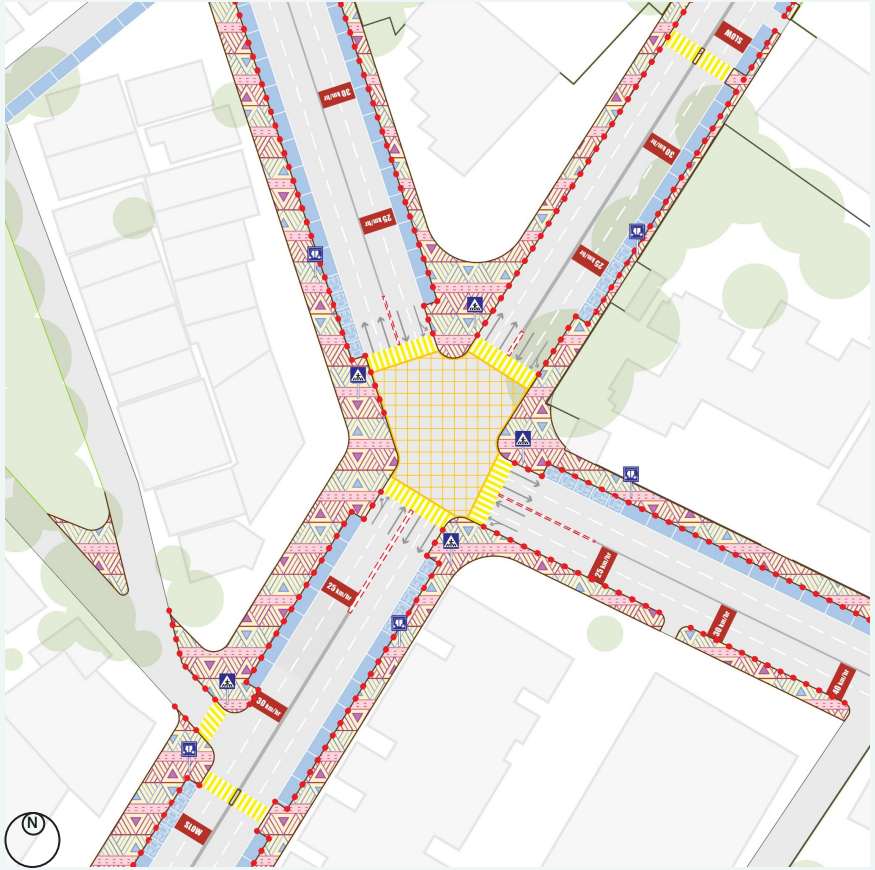
3. **Edge Friction Management (Decongestion):**
   Formalizing & shielding street edges from oncoming traffic establishes dedicated, safe zones for IPT & street vendors, preventing encroachment onto the active carriageway and eliminating bottlenecks to ensure smooth through-traffic.

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Source: Map by Author, Ar. Karticke Pant

Final Master Plan - Zoomed in view





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Source: Map by Author, Ar. Karticke Pant

Final Master Plan: Drone View



Impact of implementing this Master Plan

1. **Broad Community Value:**
   Commuters enjoy smooth, well-defined travel lanes, businesses benefit from safer pedestrian paths that boost foot traffic, and street vendors are accommodated with specific, clutter-free spaces.

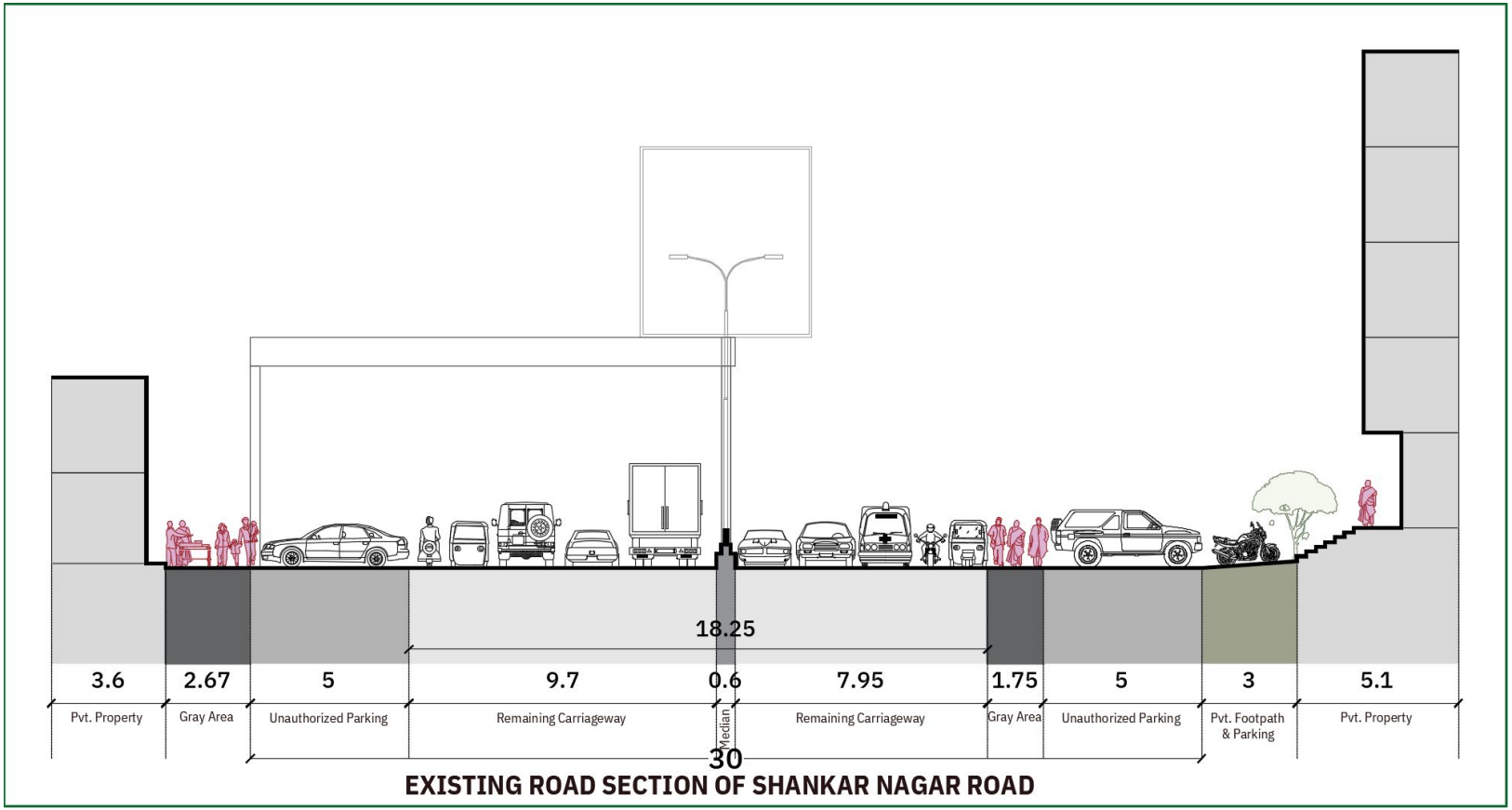
2. **Maximum Impact, Low Cost:**
   Achieves significant urban improvements on a modest budget of only ₹2–3 Lakhs, drastically more affordable than heavy concrete construction.

3. **Replicable Blueprint:**
   Serves as an active testing site, establishing a successful & easily adaptable model that the administration can expand throughout Raipur.

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Source: Section by Author, Ar. Karticke Pant

Existing Section: Shankar Nagar Rd: 30 Meter

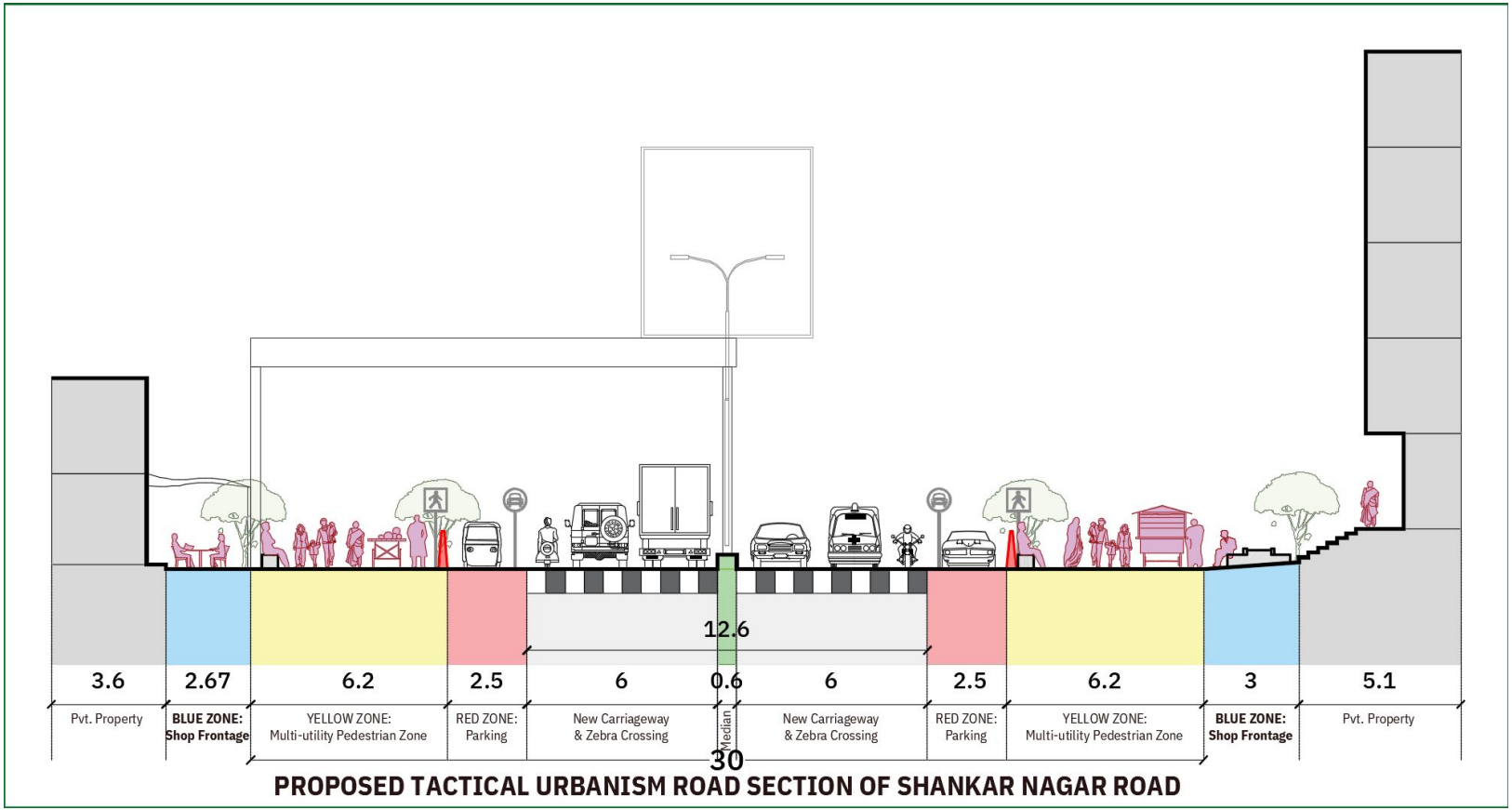


EXISTING ROAD SECTION OF SHANKAR NAGAR ROAD

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Source: Section by Author, Ar. Karticke Pant

Proposed Section: Shankar Nagar Rd: 30 M



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Source: Images by Author, Ar. Karticke Pant

Before & After



BEFORE: Haphazard parking reduces carriageway



AFTER: Defined carriageway, parking & walkway

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Source: Images by Author, Ar. Karticke Pant

Before & After



BEFORE: Maximizing Road



AFTER: Maximizing Life

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Source: Images by Author, Ar. Karticke Pant

Before & After



BEFORE: No dedicated IPT Space



AFTER: Dedicated IPT space with signage

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Source: Images by Author, Ar. Karticke Pant

Before & After



BEFORE: Parking at critical spots



AFTER: Vibrant public space

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Source: Images by Author, Ar. Karticke Pant

Before & After



BEFORE: No clear delineation of vendor space



AFTER: Clear space for walking & vending

© Ar. Karticke Pant (Principal Architect, Placemaker Studio)

Source: 3D by Author, Ar. Karticke Pant

Before & After: 3D View



© Ar. Karticke Pant (Principal Architect, Placemaker Studio)

Source: Author, Ar. Karticke Pant

Estimated Costing

Component	Specification / Material	Total Cost (₹)
PAINT (Geometric Surface Paint) Item 8.20 (i)	Demarcation of reclaimed asphalt. • Pedestrian Zone: 3,992 Sq.m (100% painted) • Parking Zone: 1,854 Sq.m (10% painted = 185 Sq.m)	5,34,656
THERMOPLASTIC COMPOUND + GLASS BEAD (Traffic Channelization) Item 8.22	Durable retroreflective markings. • Zebra Crossing: 467 Sq.m (50% painted = 234 Sq.m) • Horizontal Signages: 234 Sq.m (30% painted = 70 Sq.m) • Yellow Box: 497 Sq.m (20% painted = 99 Sq.m)	2,14,799
TRAFFIC CONES (Primary Edge Delineators) Item 8.45	Visual separation of pedestrian space and traffic lanes.	3,55,980
MS DELINEATORS (Anchored Corner & Refuge Buffers) Item 8.29	Semi-permanent buffers for tight turning radii and pedestrian refuge islands.	39,520
BARRICADES (Physical Safety) Item 8.46	Heavy-duty protection for exposed pedestrian edges.	1,79,465
SIGNAGES (Pedestrian & IPT Signage) Item 8.4 (I)(C)(b)(i)	Regulatory signage (Speed Limits, Auto Stand, Pedestrian Crossing).	38,640
PLANTS (Green Buffers & Planters) Item 12.8	Soft landscaping elements for pedestrian zones.	17,750
STREET FURNITURE (Seating & Lighting) Item 8.51	Upcycled painted empty maxphalt drums filled with earth for tactical seating.	11,960
MISCELLANEOUS (Implementation Kit)	Chalk/marble powder, yarn, custom stencils, masking tape, worker jackets/helmets, and on-site alignment adjustments.	5,000
Total Estimated Cost*	***Excludes Contingency, GST & Cost of Consultant***	**₹ 13,97,770**

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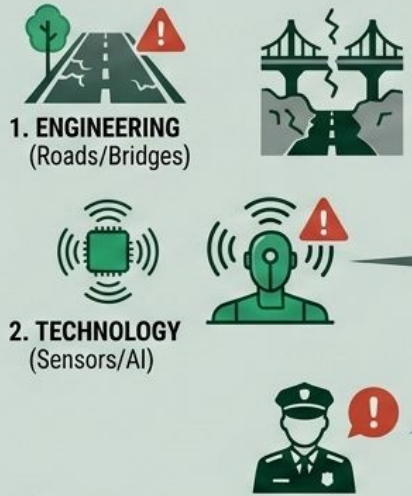
Chapter 5: Conclusion

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Source: Author, Ar. Karticke Pant

“India’s urban traffic crisis is as much a failure of design as it is of engineering, technology, and civic discipline. Until we embrace a truly holistic vision, any proposed solution will remain incomplete.”

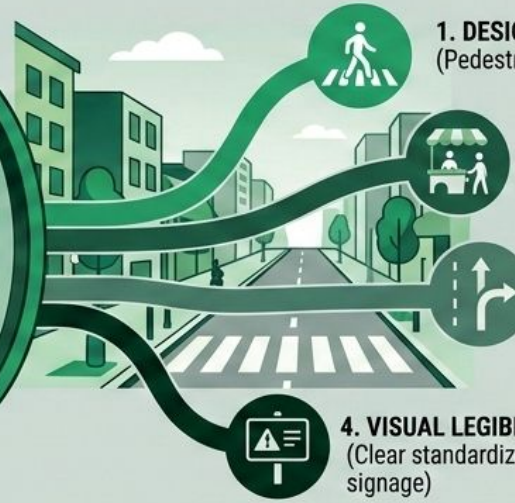
BEFORE: THE INCOMPLETE, FAILED SOLUTION



INCOMPLETE SOLUTIONS

HOLISTIC DESIGN LENS

AFTER: THE HOLISTIC REDESIGN (HEALING CITIES)



THE CATALYST:
HOLISTIC, HUMAN-CENTRIC DESIGN.

REIMAGINING STREETS: THE ONLY WAY TO HEAL OUR CITIES.

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Source: Author, Ar. Karticke Pant

Tactical Urbanism proves that the **smartest way to decongest our streets** is to design for the most chaotic intersections into **safe, legible spaces for everyone.**

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Source: Author, Ar. Karticke Pant







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Source: Author, Ar. Karticke Pant

CITY DESIGN CELL (C.D.C)

for Raipur Police Commissionerate

Solving Traffic Issues & Enhancing Public Spaces



Key Inclusion: Urban Designer

Not just Urban Planner or Transport Engineer, but an Urban Designer

Rationale



- Cities prioritize engineering/ regulatory compliance over aesthetics/experiential quality
- Urban Designer focuses on look, feel, liveability—ensuring infrastructure works & inspires

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// CDC



URBAN PLANNER



TRANSPORT ENGINEER

TRADITIONAL APPROACH: Prioritised **ENGINEERING & REGULATORY COMPLIANCE.**



THE URBAN DESIGNER

A CITY DESIGN CELL

... Includes post of an Urban Designer,
... ensures that infrastructure projects don't just **WORK**, but also **INSPIRE**.



PROPOSED ROLE: Focuses on **LOOK, FEEL, and LIVEABILITY.**

THANK YOU

For your time

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Date: 09/10/2026
Theme: **Safety & Decongestion Solutions**
Submission by: **Ar. Karticke Pant**
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Qualification: **B.Arch** [B.V.P, Pune], **M.Arch (Urban Design)** [S.P.A, New Delhi],
M.Sc (Sustainable Design) [Architectural Association, London]
Ex-Visiting Faculty: NIT Raipur, Architecture & Planning Department (2025-26)