CASE STUDY #3 — WHY DOES CONSTRUCTION NEVER END? — FULL REPORT

ANEJA RESEARCH FOUNDATION
Bareilly, Uttar Pradesh | Est. 2026

CASE STUDY #3

Why Does Construction Never End?

A Systemic & Field-Evidence Analysis of Prolonged Road Construction Failure

Focus Corridor: Prem Nagar–Model Town Road, Bareilly

Report Type	City	Researcher	Field Date
Hybrid (Macro + Micro)	**Bareilly, U.P.**	**Chanpreet Singh Aneja**	**7 June 2026**

KEY FIELD FINDINGS — PREM NAGAR–MODEL TOWN ROAD

66.7%	7.3	2–3 yrs	6.5	NONE
CCR (Completion)	Public Impact Score	Construction Duration	Safety Risk Index	Safety Barriers

"Problems are symptoms. Systems are the disease. Fix the system, cure the problem."
— ARF Research Philosophy

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1. Executive Summary

Based on field observations conducted on the Prem Nagar–Model Town Road corridor, Bareilly, on 7 June 2026, ARF identifies a 125–175 metre mixed-utility road reconstruction project that has remained in an incomplete state for an estimated 2–3 years. The corridor connects the Prem Nagar Chauraha junction — studied in CS1 — with the Model Town residential colony — studied in CS2 — making it the physical link between ARF's two prior documented failure zones. This case study completes the geographic trilogy.

Field observations document a Construction Completion Ratio (CCR) of 66.7%, a Safety Risk Index of 6.5/10, a Public Impact Score of 7.3/10, and a Mobility Disruption Score of 7/10. Four utility types — electricity, water supply, sewer, and telecom — are simultaneously visible and incomplete along the corridor. Zero safety barriers are present despite active school frontages at two points. Resident interviews confirm 2–3 years of continuous disruption with no visible completion timeline.

These micro-level findings are the ground-level expression of a city-wide systemic failure: the absence of a single coordinating agency responsible for corridor completion. When four utility departments excavate the same road without a shared completion mandate, no individual department bears accountability for the finished state. The road remains permanently semi-constructed — not because the work is technically complex, but because the governance structure makes completion nobody's specific responsibility.

> *"This road has not been under construction for three years. It has been under abandonment for three years. Construction implies a completion date."*
>
> *— ARF Case Study #3 Headline Finding*

ARF's recommendations are structured at two levels: corridor-specific interventions that can begin immediately, and city-wide systemic reforms that address the root cause of prolonged construction across Bareilly's road network. Both levels are required.

2. Key Findings at a Glance

#	Finding	Severity	Category
F1	CCR of 66.7% — one-third of corridor incomplete after 2–3 years of construction	CRITICAL	Execution
F2	Zero safety barriers present on entire corridor — school frontages unprotected	CRITICAL	Safety
F3	Four utility types simultaneously incomplete — no coordinated completion mandate	HIGH	Governance
F4	Open excavations and displaced manhole covers adjacent to school entrances	HIGH	Safety
F5	Resident-confirmed 2–3 year duration — no visible completion timeline communicated	HIGH	Accountability
F6	Solid waste accumulation blocking drain inlets — connects to CS2 drainage failure	HIGH	Drainage
F7	Carriageway effective width reduced to ~40–50% by debris and excavation	MEDIUM	Mobility

3. Methodology — The ARF Research Framework

ARF operates on a single foundational belief: that urban problems are not random events. They are the predictable outputs of systems. To study them rigorously, ARF uses a structured methodology that combines macro-level systemic analysis with micro-level field evidence. This report is the third application of that methodology.

OBSERVE	Identify a real-world urban problem through direct experience. At the macro level, this means identifying city-wide patterns of infrastructure governance failure. At the micro level, it means visiting a specific road corridor and systematically documenting its construction state, safety conditions, and public impact.
TRACE	Map the system behind the problem. Which agencies are responsible? What are the contractual and governance structures? Where does accountability break down? The goal is to understand why prolonged construction is the predictable output of a specific governance arrangement — not a random failure.
ANALYSE	Apply data to the traced system. At the macro level, this includes urban governance literature and project management frameworks. At the micro level, this means original field measurement using the ARF Infrastructure Delivery Diagnostic Module (IDDM v1.0): CCR, MDS, PIS, SRI, IQS, and stakeholder interviews.
PRESCRIBE	Write clear, realistic, implementable recommendations. ARF prescriptions are always layered — from low-cost immediate fixes to medium-term interventions to long-term structural reforms. Recommendations must be politically feasible, not merely theoretically optimal.

ARF Infrastructure Delivery Diagnostic Module (IDDM v1.0)

CS3 introduces a new ARF observation instrument specifically designed for road construction and infrastructure delivery failures. Unlike the Junction Observation Sheet (CS1) or Drain Observation Sheet (CS2), the IDDM captures construction status, multi-stakeholder impact, and quantified performance metrics across five dimensions.

Metric	Formula / Basis	CS3 Result
Construction Completion Ratio (CCR)	Completed Length / Total Length × 100	**66.7%**
Mobility Disruption Score (MDS)	4 of 5 disruption factors confirmed (traffic delay, detours, congestion, access restrictions)	**7 / 10**
Public Impact Score (PIS)	Sum of stakeholder severity ratings / N (Dust 7 + Traffic 6 + Access 8 + Safety 7.5 + Waterlogging 8) / 5	**7.3 / 10**
Safety Risk Index (SRI)	5 high-risk factors confirmed: open excavation, poor lighting, missing barriers, uneven surface, pedestrian risk	**6.5 / 10**
Infrastructure Quality Score (IQS)	Composite: surface condition, drainage integration, safety, usability	**5.5 / 10**

4. Part A — Macro Analysis — Bareilly City Level

This section establishes the city-wide systemic context within which the Prem Nagar–Model Town Road findings are situated. The three failure domains identified here — infrastructure delivery governance, multi-agency coordination failure, and absent construction management standards — are not independent. They form an interlocking system where each failure reinforces the others.

M1 — Infrastructure Delivery Governance Failure

Pattern: No single agency owns the corridor — so no single agency completes it

Bareilly's road construction and utility work operates under a fragmented departmental model. Road surfaces fall under PWD (Public Works Department) and Nagar Nigam. Water supply pipelines are the responsibility of Jal Nigam. Sewer infrastructure is managed by Nagar Nigam's drainage wing. Electricity cabling is coordinated by PVVNL (Pashchimanchal Vidyut Vitran Nigam Limited). Telecom conduit installation is typically contracted separately by BSNL or private providers.

When a road reconstruction project requires all four utility types — as the Prem Nagar–Model Town Road does — each department excavates, installs its component, and exits. No department is responsible for road surface restoration, for ensuring other departments complete before the surface is laid, or for communicating a completion date to the public. The result is a corridor that is perpetually 'under construction' because construction, in the absence of a single owner, has no defined end state.

Data Snapshot — City-Wide Infrastructure Delivery Failures

- No single-window clearance: each utility department operates on its own excavation timeline without mandatory inter-agency sequencing
- No corridor completion standard: road surface restoration is not contractually linked to utility completion milestones
- No public communication mandate: no requirement to display project start date, completion date, or responsible agency on site
- No safety standard enforcement: IRC site safety guidelines are not monitored for compliance at urban residential corridors
- No post-construction road quality audit: once a road is nominally 'complete', no systematic inspection verifies drainage integration, surface quality, or safety

M2 — Multi-Agency Coordination Failure

Pattern: Each agency optimises for its own task; the citizen absorbs the cost of their combined disorder

This failure was documented at the policy level in CS1 (traffic management: Traffic Police vs Nagar Nigam vs PWD) and CS2 (drainage: PWD road-levelling vs Nagar Nigam drain maintenance). CS3 documents the same inter-agency fragmentation at the construction execution level — where it is most physically visible and most immediately harmful.

Agency	Responsibility	Coordination Required With	Exists?
PWD / Nagar Nigam	Road surface	All utility agencies	**NO**
Jal Nigam	Water supply pipeline	Sewer, road, telecom	**NO**
Nagar Nigam (Sewer)	Sewer infrastructure	Water supply, road	**NO**
PVVNL / Telecom	Electricity / telecom conduit	All other agencies	**NO**

M3 — Absent Construction Site Management Standards

Pattern: IRC safety standards exist; ground-level enforcement is absent

The Indian Roads Congress (IRC) publishes detailed guidelines for construction site safety on urban roads, including mandatory barricading, warning signage, lighting, and traffic management during works. These guidelines apply to all urban road works regardless of scale. At the Prem Nagar–Model Town Road corridor, zero compliance with any of these requirements was observed during the 7 June 2026 field visit.

The Policy Gap — Construction Site Standards

- No barricading requirement enforced: IRC SP:55 mandates physical barriers around active excavations — none present
- No signage requirement enforced: mandatory 'Road Work Ahead' and contractor contact boards — none present
- No night lighting: excavations and loose debris present in darkness — confirmed hazard condition
- No traffic management plan: no diversions, no flagmen, no speed reduction measures implemented
- School-proximity protocol absent: no heightened safety measures despite two school entrances within corridor boundary
- No contractor accountability display: no board identifying responsible contractor, project value, or completion date

The ARF Trilogy — How CS3 Connects to CS1 and CS2

This is the first ARF case study deliberately selected to complete a geographic and systemic trilogy. The Prem Nagar–Model Town Road is the physical corridor that connects the junction studied in CS1 (Prem Nagar Chauraha) with the colony studied in CS2 (Model Town). The three case studies are not three separate problems — they are one problem at three points on the same urban system.

CS	Location	Primary Failure	Root Cause
CS1 — Traffic	Prem Nagar Chauraha	Junction over capacity, zero enforcement	Inter-agency fragmentation; no single junction owner
CS2 — Drainage	Model Town Colony	Chronic flooding; 30-year maintenance failure	PWD–Nagar Nigam coordination absent; reactive governance
CS3 — Road Infrastructure	Prem Nagar–Model Town Road	2–3 year incomplete construction; zero safety	No single completion owner across 4 utility agencies

> *"All three case studies share one root cause: no single agency owns the full citizen experience. Ownership without accountability produces the junction that chokes, the drain that floods, and the road that never finishes."*
>
> *— ARF Trilogy Synthesis*

5. Part B — Micro Analysis — Prem Nagar–Model Town Road Field Study

This section presents original primary field observations collected on the Prem Nagar–Model Town Road corridor on 7 June 2026 at 19:15 hrs. All data is first-hand, collected using the ARF Infrastructure Delivery Diagnostic Module (IDDM v1.0).

B1 — Corridor Context & Project Identification

Observation ID	ARFCS301
Road Name	Prem Nagar–Model Town Road
Start Point	Model Town Gate
End Point	DD Puram Starting Point
Approximate Total Length	125–175 metres
Approximate Width	15–25 metres
Project Type	Mixed (Road Reconstruction + Drainage + Utility Work)
Date of Observation	7 June 2026
Time	19:15 hrs
Observer	Chanpreet Singh Aneja
GPS Coordinates	28.37661° N, 79.42855° E
Weather	Clear

B2 — Construction Status Audit

ARF measured the corridor in three segments using visual estimation consistent with the IDDM v1.0 protocol.

Segment	Length	Status	Observation
Completed	100 m	Paved and usable	Road surface laid; footpath paving partially complete on this section
Partially Complete	25–50 m	Active works / debris	Excavations open, utility pipes exposed, construction material scattered
Not Started	0 m	—	No untouched section observed
TOTAL / CCR	**~150 m**	**66.7% COMPLETE**	**One-third of corridor incomplete after 2–3 years of construction**

Critical Finding B2-1 — A CCR of 66.7% after an estimated 2–3 years on a sub-200 metre corridor is not a construction delay. It is a governance failure. A 150-metre road in any functional urban system should complete within 3–6 months. 2–3 years at 66.7% completion indicates the project has no completion mechanism, not that the work is technically complex.

B3 — Surface Quality & Defect Audit

Defect Type	Count	Severity
Potholes	7–10	High
Uneven / broken surface	3–4	High
Open excavations	4–5	**Critical**
Loose debris / scattered material	Multiple	High
Waterlogging spots	Multiple	High
Safety barriers	**NONE**	**Critical**
Construction warning signage	**NONE**	**Critical**

Finding B3-1 — Overall road surface condition is rated FAIR — but this is the average across the entire corridor. The 25–50m active work zone is effectively impassable for pedestrians and dangerous for two-wheelers, with open excavations, exposed pipe work, and loose gravel occupying the carriageway.

B4 — Mobility Impact Assessment

The corridor serves as a connector road for 3–4 residential colonies and links to Bareilly's most trafficked junctions and commercial zones. Disruption to this corridor propagates outward.

Mobility Parameter	Recorded Detail
Traffic movement affected?	YES — moderate effect across full corridor
Average delay experienced	1–5 minutes per transit
Traffic bottlenecks	YES — school bus parking at corridor entry creates congestion point
Detour required?	Partial — estimated 250m additional distance for full detour
Pedestrian accessibility	MODERATE impact — footpath under construction; pedestrians on carriageway
Mobility Disruption Score (MDS)	**7 / 10**

B5 — Drainage & Utility Integration Assessment

A critical finding of CS3 is the connection between this corridor's construction failure and the drainage failure documented in CS2. The same drainage channels that feed Model Town's waterlogging problem run adjacent to this road.

Finding B5-1 — Drain inlets along the corridor boundary are blocked by solid waste and construction debris — confirming that the road construction has actively worsened the drainage failure documented in CS2. This is not a coincidence. It is the predictable result of construction without a drainage-integration protocol.

Finding B5-2 — All four utility types (electricity, water supply, sewer, telecom) are simultaneously visible and incomplete. This is definitive evidence of unsequenced multi-agency excavation — the root cause of the prolonged construction state.

B6 — Public Impact Survey

Three stakeholder groups were interviewed during the 7 June 2026 field observation.

Inconvenience Factor	Resident Severity (1–10)	Impact Classification
Dust	7.0	Significant — daily respiratory exposure
Traffic disruption	6.0	Moderate — peak hour congestion increase
Access problems	8.0	Severe — colony entry/exit compromised
Safety risk	7.5	Severe — open excavations, no barriers
Waterlogging	8.0	Severe — connects to CS2 drainage failure zone
PUBLIC IMPACT SCORE (PIS)	**7.3 / 10**	**HIGH — sustained multi-domain public impact**

B7 — Field Photographic Evidence

Captured: 7 June 2026 | 19:15 hrs | Prem Nagar–Model Town Road Corridor

Fig 1

Utility pipe installation mid-footpath at Kirti Nagar colony gate. Paving blocks and concrete drain covers scattered with zero safety barriers. A school admission signboard is visible directly adjacent.

Proves: Active construction immediately adjacent to a school entrance with zero safety barriers — child safety hazard not classified as requiring special protection under current site management.

Fig 2

Active work zone mid-corridor: construction debris pile occupying approximately 50% of carriageway width. Token green safety net present but provides no physical barrier. Open excavation visible mid-road.

Proves: Effective carriageway width reduced to 40–50% of designed width by debris and excavation — direct evidence of mobility disruption and safety risk without any formal traffic management.

Fig 3

Displaced manhole cover adjacent to Little Millennium school frontage. Exposed pipes, loose rubble, gravel scatter, and an open drain access point — all immediately adjacent to a school entrance with zero barriers.

Proves: This is the most critical safety finding of CS3. An open drain/manhole access point with displaced cover and exposed sub-surface infrastructure, directly at a school entrance, with no barrier, no warning sign, and no lighting. This is not a construction site risk — it is a daily child safety emergency.

Fig 4

Solid waste accumulation at colony lane entry point. Drain inlet visible but completely obstructed by debris. Broken concrete and rubble blocking the paved/unpaved transition.

Proves: Drain inlet blockage by construction debris directly connects CS3's road failure to CS2's drainage failure. The same system failure — absent maintenance governance — expresses itself as a flooded colony in CS2 and a blocked drain in CS3.

6. Part C — Synthesis — The System at Work

The Prem Nagar–Model Town Road field data is not a standalone finding. It is the ground-level expression of every macro-level failure identified in Part A — and the physical connector between the systemic failures documented in CS1 and CS2.

> *"Every problem visible in one evening on Prem Nagar–Model Town Road was created upstream — by contracts not coordinated, safety standards not enforced, and agencies not held jointly accountable for the citizens they share."*
> *— ARF Case Study #3*

Macro Failure (Part A)	Field Evidence at Corridor (Part B)	Finding Ref.
Infrastructure delivery governance failure	CCR of 66.7% after 2–3 years on a 150m corridor — no single completion owner identified	*B2-1, M1*
Multi-agency coordination failure	4 utility types simultaneously visible and incomplete — unsequenced excavation confirmed	*B5-2, M2*
Absent construction safety standards	Zero barriers, zero signage, zero lighting on full corridor — SRI 6.5/10	*B3-1, M3*
Child safety policy gap	Open excavations and displaced manhole covers at two school frontages — no heightened protocol	*B7 (Fig 1, 3)*
Reactive drainage governance (CS2 link)	Construction debris blocking drain inlets — road failure actively worsening drainage failure	*B5-1, B7 (Fig 4)*
Inter-agency enforcement gap (CS1 link)	Encroachment and carriageway compression mirrors junction-level encroachment in CS1	*B7 (Fig 2), M2*
Absent public accountability	No project board, no completion date, no responsible agency displayed — residents uninformed for 2–3 years	*B6, M1*

The ARF Trilogy — Unified Systems Diagnosis

Across three case studies, ARF has documented the same root cause expressed at three different points on the same urban corridor. The junction chokes because no agency owns the full intersection experience. The colony floods because no agency coordinates road levels with drain depths. The road never finishes because no agency owns the corridor's completion. These are not three failures. They are one failure — inter-agency fragmentation — with three physical addresses.

THE ARF TRILOGY — ONE ROOT CAUSE, THREE LOCATIONS

No single agency owns the full citizen experience

CS1: Junction managed by Traffic Police + Nagar Nigam + PWD separately → junction chokes
CS2: Roads raised by PWD without drain coordination by Nagar Nigam → colony floods
CS3: Four utility agencies excavate without sequencing or completion mandate → road never finishes

The fix: A Unified Infrastructure Coordination Cell with joint accountability

7. Part D — Recommendations — Corridor-Level & City-Level

ARF recommendations are structured at two geographic scales and three implementation levels. Scale 1 covers the Prem Nagar–Model Town Road corridor — specific interventions actionable by Nagar Nigam, PWD, and Traffic Police without large capital expenditure. Scale 2 covers Bareilly city — systemic reforms that address the root cause of prolonged construction across all urban corridors. Both scales are necessary. Neither alone is sufficient.

D1 — Corridor-Level Recommendations: Prem Nagar–Model Town Road

Actioning body: Nagar Nigam Bareilly + PWD Bareilly + Traffic Police

Level	Timeframe	Recommendation	Expected Impact
Level 1	0–2 weeks	Install physical safety barriers (iron barricades or wooden horses) around all open excavations. Priority: school frontage points at Kirti Nagar gate and Little Millennium school. Cost: near zero.	*Immediate elimination of child safety hazard; IRC compliance on critical sites*
Level 1	0–2 weeks	Erect mandatory project information board at each end of the corridor: project name, responsible contractor, ward officer contact, and target completion date.	*Enables public accountability; creates pressure point for completion*
Level 1	0–3 months	Emergency drain inlet clearing: remove all construction debris blocking drain inlets along the corridor boundary before monsoon season.	*Prevents CS3 construction failure from compounding CS2 drainage failure during monsoon*
Level 2	3–9 months	Issue a unified completion mandate: single nominated Nagar Nigam officer designated as Corridor Completion Owner with authority to direct all four utility agencies and a published completion date.	*Creates accountability structure currently absent; forces sequencing*
Level 2	3–9 months	Surface restoration protocol: road surface to be laid only after all four utility agencies confirm sub-surface work complete. No partial surfacing that will be re-excavated.	*Eliminates the cycle of repeated excavation and partial repair*
Level 3	9 months+	Full corridor restoration: footpath completion, carriageway marking, drain integration, and final surface treatment to designed standard. Post-completion quality audit by independent ward-level inspector.	*Returns corridor to designed capacity; proof of completion for public record*

D2 — City-Level Recommendations: Bareilly

Actioning body: Nagar Nigam + PWD + PVVNL + Jal Nigam + State Government

Level	Timeframe	Recommendation	Domain Addressed
Level 1	0–6 months	Mandatory project boards on all active road construction sites city-wide: contractor name, project value, start date, target completion date, and ward officer contact.	*Governance, Accountability*
Level 1	0–6 months	IRC SP:55 enforcement: Traffic Police to cite contractors for missing barricading, signage, and lighting on all active urban construction sites. School-proximity sites to be priority.	*Safety, Compliance*
Level 2	6–18 months	Establish a Unified Corridor Completion Protocol: before any multi-utility road project begins, all involved agencies sign a sequenced completion agreement with penalty clauses for delay.	*Delivery Governance*
Level 2	6–18 months	Create a Construction-Drainage Integration Checklist: mandatory pre-monsoon inspection of all active construction sites to clear drain inlets before June 1 annually.	*Drainage, CS2 Connection*
Level 2	6–18 months	Publish a City Construction Dashboard: all active road projects in Bareilly mapped with status, responsible agency, and completion percentage — updated monthly and publicly accessible.	*Transparency, Accountability*
Level 3	18 months+	Establish a Bareilly Urban Infrastructure Coordination Cell (BICC): permanent multi-agency body with Nagar Nigam, PWD, PVVNL, Jal Nigam, and Traffic Police. Shared dashboard, monthly KPI reporting, and public accountability publication.	*Governance — All Domains*

8. Conclusion

The Prem Nagar–Model Town Road is not a uniquely dysfunctional corridor. It is a textbook example of what happens when a city's infrastructure delivery system — its procurement, coordination, safety enforcement, and public accountability mechanisms — fail simultaneously at a single location. Every problem observed in one evening of field observation has a traceable systemic cause. Every systemic cause has a known, implementable fix.

The road that has not finished in three years is not a complex engineering challenge — it is a 150-metre connector road. It has not finished because no single person or agency has been given both the responsibility and the authority to finish it. The open manhole at the school entrance is not a random oversight — it is the predictable output of a construction management system that has no school-proximity protocol and no daily site inspection requirement. The drain inlet blocked by construction debris is not a separate problem from the flooding documented in CS2 — it is the same problem with a different physical address.

For the general reader:	For the municipal official:	For the researcher:
This corridor is fixable in weeks, not years. Safety barriers at school frontages, a project board with a named officer, and pre-monsoon drain clearing cost almost nothing and can happen before this report is printed.	The construction is not the problem — the coordination structure around it is. A single nominated Corridor Completion Owner would produce a finished road within months.	This is the third application of the ARF hybrid methodology. The same root cause — inter-agency fragmentation — has appeared in all three case studies, at all three locations. This is not a coincidence. It is a system.

> *"Fix the system. The road will follow."*
> *— ARF Research Philosophy*

About Aneja Research Foundation

ARF is a student-led, faculty-advised research foundation based in Bareilly, Uttar Pradesh, dedicated to studying systemic failures in urban infrastructure and producing evidence-based policy recommendations. ARF operates on the belief that the problems citizens face are created by systems, and that fixing systems — not symptoms — is the only lasting path to better cities.

Focus Areas: Urban Policy | City Infrastructure | Public Behaviour | Tier-2 Indian Cities | Computer Science & Automation

Case Study #1: Why Does Bareilly Choke? — Traffic Failure at Prem Nagar Chauraha (March 2026)

Case Study #2: Why Does Bareilly Flood? — Drainage Failure at Model Town (April 2026)

Case Study #3: Why Does Construction Never End? — Road Infrastructure Failure, Prem Nagar–Model Town Road (June 2026)