Ganpati Bandobast 2025 — AI-Built Final Report (Draft v1)

Prepared by: Bandobast AI Unit
Date/Time (IST): 2025-08-27 11:00
Scope: Nashik City & Trimbakeshwar (PS-wise), festival period incl. Eid overlap
Status: Presentation-ready; field-ready after PS contact fills, QR inserts, and final KML locks

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1) Document Control

Version	Date (IST)	Owner	Change summary
v1.0	2025-08-27 11:00	Bandobast AI Unit	First consolidated AI-built draft

Distribution: CP Office, DCPs, ACPs, PIs/SPIs; Disaster Mgmt Cell; NMC; SRPF; Traffic Branch.
Confidentiality: Internal operational use.

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2) Executive Summary

This report consolidates all AI-assisted planning for Ganpati Bandobast 2025. It integrates PS-wise GIS layers (police stations, mandals, immersion routes, ghats, checkpoints, congestion nodes, sensitive areas), a prediction engine for crowd/congestion/risk, and station playbooks with QR-linked maps. Public-shareable links (NotebookLM, Earth maps, BandobastGPT) enable quick queries and visual verification. Next steps: fill PS contacts, insert QR codes per PS route, and attach SRPF/QRT surge tables for peak days.

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3) Forensic Back-Trace (What's built)

- **Data corpus (10 years):** consolidated briefs and incidents for training/validation.
- **City map layers:** PS boundaries, large/valuable mandals, checkpoints, congestion nodes, sensitive areas (Eid + peak visarjan), immersion routes, ghats.
- **PS playbooks:** one-page templates with counts, routes, QR placeholders, readiness checklist.
- **Prediction engine:** hourly load index, route congestion (Green/Amber/Red), incident risk, and manpower suggestion logic.
- **Leadership brief:** PPT visuals of timelines, peaks, triggers, and roadmap.

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4) Festival Scope & Dates (2025)

- **Operational window:** [Insert exact festival dates + Eid overlap].
- **Peak alerts:** [Insert peak-day windows].
- **Key ghats:** Ramkund cluster, downstream points, and [PS-wise minor ghats].

Note: Confirm final day-wise schedule from NMC/Police circulars and insert in Annex.

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5) GIS & Coordinate Mapping (Method)

Layers (read-only geometry; any derived lines labelled `derived_*`): 1. Police Station boundaries (citywide index).
2. Mandals: Large/valuable + medium + household points.
3. Immersion routes: Station→Mandal→Ghat (`derived_route_*`).
4. Ghats and holding areas; queue spill buffers (200–400m).
5. Checkpoints, barricade nodes, crane locations, first-aid/ambulance, fire points.
6. Congestion hotspots (historic + inferred from graph centrality).
7. Sensitive zones (Eid sites, narrow lanes, high-risk nodes).

Verification: Each PS validates its own layers; city cell approves conflicts.
Exports: KML/KMZ per PS; city roll-up master; QR links per PS.

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6) AI Stack — Tools & Modules (15)

This project is built with AI end-to-end. Confirmed public links are marked (✓). Remaining modules are internal pipeline components.

#	Component / Tool	Role in workflow	Where it appears	Status
1	**NotebookLM** (✓)	Q&A over 10-yr corpus; drafting briefs	Link library	Confirmed
2	**BandobastGPT (ChatGPT custom)** (✓)	Ops copilot; policy look-ups; PS formatting	Link library	Confirmed
3	**Google Earth – City Map** (✓)	Visual layers (PS, mandals, chokepoints, congestion)	Link library	Confirmed
4	**Google Earth – Sensitive Areas** (✓)	Eid + peak visarjan risk layer	Link library	Confirmed
5	LLM Summarizer	Auto-summaries of PS inputs & daily SITREPs	PS playbooks	Active
6	RAG Engine	Stationwise retrieval from structured docs	PS one-pagers	Active
7	Time-series Forecaster	Hourly crowd/footfall per PS/ ghat	Prediction section	Active
8	Graph Congestion Model	Segment risk (Green/Amber/ Red) from route graph	Diversions	Active
9	Incident Risk Scorer	Ensemble (logistic + rules) with trigger bumps	SOP triggers	Active

#	Component / Tool	Role in workflow	Where it appears	Status
10	Optimization Solver	Shift-wise manpower & SRPF/ QRT allocation	Manpower tables	Active
11	Vision Counter (CCTV)	Optional YOLO/ByteTrack for chokepoint counts	Annex (pilot)	Optional
12	Translation Engine	Marathi↔English briefings; SMS/notice texts	Annex templates	Active
13	Prompt QA Guard	LLM output checks (dates, PS names, routes)	All sections	Active
14	Geo-QR Generator	KML/KMZ → QR deep-links	PS QR panels	Active
15	Change-Log Bot	Annotates edits; compiles SITREP deltas	Changelog	Active

7) Prediction Engine — Method (Operational Summary)

Goal: Forecast crowd load, route congestion, and incident risk PS-wise & ghat-wise (hourly) to guide diversions and rosters.

Inputs: Festival day index (D1/D5/D10), hour bands, rain (24h mm), dam discharge (cusecs), weekend/ holiday flags, VIP moves, historic incidents, mandal tiers, graph features (chokepoint density, centrality), sensitive-zone proximity.

Models: - Gradient-boost regression for hourly load (fallback to rolling quantiles if sparse). - Segment classifier for congestion (GAR colors + reason codes). - Risk ensemble (logistic + trigger rules). Triggers (examples): Rain>100mm/24h; Dam>25k cusecs. - Small integer program for surge deployment per shift (travel-time aware).

Outputs: PS Hourly Load Index (0–100), ghat queue-time band, route GAR map with reason, manpower table (base/surge/reserve).

Validation: Backtests on 2015–2024 patterns; PI/SPI face-checks on 10 heavy corridors; confusion matrix for Red segments.

Guardrails: Human confirmation for Reds; all triggers/assumptions logged; reversible diversions.

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8) Traffic Diversion — City Logic (Ramkund Example)

- **Objective:** Keep through-traffic off immersion corridors; prioritize ambulance & fire lanes; minimize residential lock-ins.
- **Instruments:** Timed one-ways, barricade nodes, U-turn pockets, staggered mandal slots, parking buffers with shuttle loops.

- **GAR Triggers:** Amber=pre-emptive soft diversions; Red=hard closure with fallback route opened; reason codes attached.
- **PS Tasking:** Traffic PI to deploy signages at QR-tagged nodes; patrols to enforce diversions; WhatsApp SITREP every 30–60 mins.

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9) Station One-Pager Template (Duplicate for 14 PS)

1) Police Station Details
- Station Name: [_***]***
- In-Charge (PI/SPI): [_]
- Contact: [____]

2) Mandal Data | Category | Count | |---|---| | Large Mandals | [ ] | | Medium Mandals | [ ] | | Small/Household | [ ] | | **Total** | [ ] |

3) Routes → Ghats (QR-linked) | Mandal/Route | Derived Path ID | Ghat | QR Box | |---|---|---|---| | [ ] | derived_route_### | [ ] | ☐ Insert |

4) Sensitive/Chokepoints | Node | Type | Risk | Notes | |---|---|---|---| | [ ] | [ ] | [ ] | [ ] |

5) Manpower (Shift-wise) | Shift | Base | Surge | Reserve | Notes | |---|---:|---:|---:|---| | Morning | [ ] | [ ] | [ ] | [ ] | | Evening | [ ] | [ ] | [ ] | [ ] | | Night | [ ] | [ ] | [ ] | [ ] |

✅**Station Readiness Checklist**
☐ PI/SPI filled • ☐ QR attached • ☐ Manpower signed • ☐ Routes verified • ☐ Sensitive nodes briefed • ☐ Trigger cards attached

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10) Sensitive Areas — Strategy

- **Eid overlap:** stagger flows; outer cordon + inner escort; coordination with community liaisons.
- **Narrow lanes:** foot-only stretches; no heavy mandal entries; posted marshals.
- **Waterfront pinch points:** pre-lay rope lanes; announce queue rules; emergency ladders & lifebuoys.

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11) Roles & Command Chain

- **City Control:** CP/DCP (Ops), DMC (disaster), NMC (infra), SRPF (surge), Fire, Health.
- **PS Control:** PI/SPI → Beat Officers → Traffic PI.
- **Comms:** 24x7 Control Room; escalation tree; SITREP cadence (hourly peak days).

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12) Logistics & Manpower

- **Assets:** barricades, cranes, boats, ambulances, first-aid, water tankers, lighting towers, gensets.

- **Deployment:** base roster + surge per peak window; QRT near Red segments; SRPF reserve mapped to hotspots.

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13) Triggers & SOP Cards

- **Rain > [X] mm/24h:** elevate riverbank watch, extend barricades, slow procession speed.
- **Dam > [Y] cusecs:** restrict waterfront waiting; shift immersion to alternate ghats if needed.
- **Crowd Index > [Z]:** open bypass route; add shuttle loop; call SRPF surge.

Attach laminated SOP cards to each PS bundle.

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14) QA & Validation

- **Data QA:** name spellings, PS assignments, route continuity, kml geometry locks.
- **Face-checks:** PI/SPI walk-throughs on the top 3 corridors each.
- **Backtests:** compare 2015–2024 peaks against forecasts.

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15) Link Library (Public-Shareable)

- NotebookLM (10-yr corpus): https://notebooklm.google.com/notebook/a4c612ec-d732-4b12-8db8-ebbc05d3d90f
- City Map (PS, mandals, checkpoints, congestion): https://earth.google.com/earth/d/1bn0HzlPOAdUo7Ua5S9nxWeEA2RTGAtOy?usp=sharing
- Sensitive Areas (Eid + peak visarjan): https://earth.google.com/earth/d/1lKWvUr_K7XdeafnZKadEf-ZFUglPVjFs?usp=sharing
- BandobastGPT (ops copilot): https://chatgpt.com/g/g-68ac299e7c588191b2edecda5a018df3-bandobastgpt

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Annex A — QR Insert Panels (per PS)

PS	Route/Ghat	QR Box
[ ]	[ ]	☐

Annex B — Data Dictionary (Selected)

- **derived_route_***: Auto-computed PS→Mandal→Ghat line used for QR navigation.
- **GAR:** Green/Amber/Red congestion state with reason code.
- **Load Index:** 0–100 scaled hourly crowd metric.

Annex C — Change Log (auto-compiled by bot)

Date/time (IST)	Section	Change
[ ]	[ ]	[ ]