

EPIC: Authority Operations Dashboard & Zone Management

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Executive Summary

A web operations console for Government Admins to manage the full lifecycle of issues within their jurisdiction, from map-based triage to worker assignment and resolution review.

Stakeholders & Value

User Personas

- **Primary Persona:** Govt Admin (manages a jurisdiction, assigns work, reviews fixes).
- **Stakeholders:** Field Workers, Citizens, System Admin.

User Value

Admins can see what is happening in their zone, prioritize by impact, assign efficiently, and enforce quality control.

Goal & Vision

Provide a clear, accountable command center that reduces time-to-fix while keeping jurisdiction boundaries explicit and immutable.

Scope

In Scope

- Geospatial operations map with jurisdiction overlay.
- Zone-of-interest filter using GHMC areas (Hyderabad only for now).
- Kanban workflow with bulk assignment and priority setting.
- Active load view (worker task counts).
- Worker onboarding, approval, and deactivation (no deletion).
- Resolution review with audit logging.
- Public audit log integrations.
- Invitation-based authority registration (via System Admin onboarding).
- Authority profile management.
- Email OTP login and Google OAuth only (no SMS/phone OTP).
- OpenStreetMap base tiles (Mapbox optional).
- Time estimates captured from workers and displayed to authorities.

Out of Scope

- Category management (System Admin only).
- Zone creation or editing (System Admin only).
- AI-based priority scoring.
- Push notifications.

Success Metrics

- Reduced time from REPORTED to ASSIGNED using bulk assignment.
- Fast review turnaround for RESOLVED tickets.
- Visible reasons for dismissed tickets.

Stories Under This Epic

1. [USER STORY 1: Geospatial Operations Map](#)
 2. [USER STORY 2: Kanban Dashboard & Bulk Assignment](#)
 3. [USER STORY 3: Worker Onboarding & Team Management](#)
 4. [USER STORY 4: Resolution Review & Quality Control](#)
 5. [USER STORY 5: Authority Settings & Profile Management](#)
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USER STORY 1: Geospatial Operations Map

Executive Summary

Render the Admin's jurisdiction as a read-only boundary, overlay active issues as pins, and allow focused viewing by GHMC sub-areas.

User Persona & Problem Statement

Who: As a Govt Admin... **Why:** I need to see where issues are relative to my official boundary and focus on specific sub-areas quickly.

Scope (In & Out)

In Scope

- Zone boundary overlay (read-only).
- GHMC zone-of-interest filter (dropdown).
- Color-coded pins with report_count and priority.
- Quick-view actions from map pins.

Out of Scope

- Drawing/editing zones.
- Heatmap density analysis (handled in analytics dashboard).
- Real-time worker tracking.

Features & Acceptance Criteria

Feature: Zone Context Overlay

User Story: As a Govt Admin, I want to see my zone clearly marked on the map so I know my operational limits.

Acceptance Criteria:

- Verify the map auto-zooms to the assigned zone boundary at login.
- Verify the zone is rendered as a read-only polygon (no edits).

- Verify the zone name is displayed in the header.
- Verify the zone boundary source is GHMC KML/GeoJSON for Hyderabad (no custom zones in Phase 1).

Feature: Zone-of-Interest Filter (GHMC)

User Story: As a Govt Admin, I want to filter the map to a GHMC area so I can focus on hotspots.

Acceptance Criteria:

- Verify a dropdown lists GHMC areas within the assigned jurisdiction.
- Verify selecting an area zooms the map to that boundary and filters pins to that area.
- Verify clearing the selection resets the view to the full zone.

Feature: Operational Issue Visualization

User Story: As a Govt Admin, I want to see all active issues as pins so I can identify clusters.

Acceptance Criteria:

- Verify pins show all active tickets for this zone.
- Verify pin colors reflect status (REPORTED, ASSIGNED/IN_PROGRESS, RESOLVED).
- Verify pins are not clustered and represent unique issue IDs.
- Verify each pin includes report_count and priority in its quick-view.
- Verify filters by category/status update the map pins.

Feature: Map-to-Action

User Story: As a Govt Admin, I want to click a pin to see details and take action.

Acceptance Criteria:

- Verify clicking a pin opens a quick-view with photo, status, report_count, priority, and assigned worker.
- Verify quick-view shows worker ETA and time since issue creation when available.
- Verify quick-view links to the full issue detail modal.
- Verify quick-view includes an "Open Ticket" action.

UI/UX Design & User Flow

Flow: Login -> Map loads -> Zone overlay -> Optional GHMC area filter -> Select pin -> Quick view -> Open issue.

Functional Requirements

Zone Data:

- GET /zones/{assigned_zone_id} returns GeoJSON derived from GHMC KML.
- Zone polygons are read-only in the UI.

Issue Data:

- GET /issues?zone_id={id}&status=active returns active issues for pins.

- Pin payload includes: `issue_id`, `lat`, `long`, `status`, `category_icon`, `report_count`, `priority`, `created_at`, `assigned_worker`, `estimated_minutes`.

Map Provider:

- Use OpenStreetMap tiles by default; Mapbox optional.

Viewport Logic:

- Fit map to zone bounding box on load.

Deduplication Assumption:

- Backend aggregates duplicates within 5m and increments `report_count`.

Filtering:

- Map responds to global category/status filters from the dashboard.

RBAC & Permissions

Role	Can View Map	Can See Zone	Can Edit Zone
Govt Admin	Yes	Yes	No
System Admin	Yes	Yes	Yes

Dependencies

- System Admin zone data must exist before map loads.

Non-Functional Requirements (Minimal)

- Map interaction should remain responsive at expected pin volumes.

Edge Cases

- Zone missing returns a "No Zone Configured" message.
- Issues outside the polygon are shown with a warning icon.

USER STORY 2: Kanban Dashboard & Bulk Assignment

Executive Summary

A Kanban board for high-volume triage with bulk assignment, priority management, and visibility into worker estimates.

User Persona & Problem Statement

Who: As a Govt Admin... **Why:** I need to assign many issues quickly and prioritize the most reported ones.

Scope (In & Out)

In Scope

- Kanban board with drag-and-drop.
- Bulk select and assignment.
- Priority setting per issue.
- Sorting by report_count, priority, and created_at.
- Worker ETA visibility.

Out of Scope

- AI-based sorting.
- Push notifications.

Features & Acceptance Criteria

Feature: Kanban Board

User Story: As a Govt Admin, I want a column view of issue status.

Acceptance Criteria:

- Verify cards display issue_id, category, photo thumbnail, report_count, priority, and days open.
- Verify columns support sorting by report_count (default), priority, or created_at.
- Verify drag-and-drop from REPORTED to ASSIGNED triggers assignment modal.

Feature: Smart Assignment (Single & Bulk)

User Story: As a Govt Admin, I want to assign multiple issues to a worker efficiently.

Acceptance Criteria:

- Verify bulk selection of multiple REPORTED cards.
- Verify assignment modal lists workers with active task counts.
- Verify assignment updates cards to ASSIGNED and stores assigned worker.
- Verify re-assignment is possible even when a task is IN_PROGRESS.

Feature: Priority Management

User Story: As a Govt Admin, I want to set priority per issue so crews focus on critical work.

Acceptance Criteria:

- Verify each card has a priority selector (P1-Critical to P4-Low).
- Verify priority changes are saved immediately and visible on map and Kanban.
- Verify priority sorting is available in the Kanban header.

Feature: Time Estimate Visibility

User Story: As a Govt Admin, I want to see worker-provided estimates so I can track timelines.

Acceptance Criteria:

- Verify cards show estimated completion time when provided by worker.

- Verify the UI shows time since issue creation and time remaining vs estimate.

UI/UX Design & User Flow

Flow: Load board -> Select cards -> Assign -> Monitor priority and ETA fields.

Workflow & Entity State Lifecycle

Lifecycle: REPORTED -> ASSIGNED -> IN_PROGRESS -> RESOLVED -> CLOSED.

Functional Requirements

Data Fetching:

- `GET /issues?zone_id={id}&status=active` for board data.

Card Fields:

- `issue_id`, `category_icon`, `created_at`, `report_count`, `priority`, `thumbnail_url`.
- `accepted_at`, `estimated_minutes`, `assigned_worker` (if available).

Sorting Logic:

- Default sort by `report_count desc`.
- Toggle to `priority` or `created_at` as needed.

Priority Updates:

- `PATCH /issues/{id}/priority` with payload `{ priority: P1|P2|P3|P4 }`.

Bulk Assignment:

- `POST /assignments/bulk` accepts `issue_ids[]` and `worker_id`, transactional.

Worker Load Tracking:

- Assignment modal displays active task counts per worker.

Validation:

- Prevent assignment for RESOLVED/CLOSED issues.

Audit Logging:

- Log assignment and priority changes with actor, timestamp.
- Track `previous_worker` and `new_worker` for re-assignments.

RBAC & Permissions

Role	Can Assign	Can Re-Assign	Can View Board
Govt Admin	Yes	Yes	Yes (own zone only)
Field Worker	No	No	No

Dependencies

- Worker list from Story 3.

Non-Functional Requirements (Minimal)

- Kanban interactions remain responsive for expected ticket volumes.

Edge Cases

- Deactivated workers are hidden from assignment list.
- Concurrent updates may cause conflicts and require refresh.

USER STORY 3: Worker Onboarding & Team Management

Executive Summary

Invite, manage, and deactivate workers while preserving historical work records.

User Persona & Problem Statement

Who: As a Govt Admin... **Why:** I must control who can access tasks and ensure workers who quit are disabled without losing history.

Scope (In & Out)

In Scope

- Invite workers by email.
- Auto-activation when invited email registers.
- Active staff list.
- Deactivate worker access (no deletion).

Out of Scope

- Bulk user import.
- Push notifications.

Features & Acceptance Criteria

Feature: Invite-Only Worker Onboarding

User Story: As a Govt Admin, I want to add worker emails so only approved staff can join my org.

Acceptance Criteria:

- Verify Admin can add worker emails from the dashboard.
- Verify the system sends an invite email with registration link.
- Verify workers can only register with an invited email.
- Verify first login auto-links the worker to the org and sets status ACTIVE.
- Verify invite revocation blocks registration.

Feature: Worker Deactivation (No Deletion)

User Story: As a Govt Admin, I want to disable workers who leave without deleting their ID.

Acceptance Criteria:

- Verify each active worker has a "Deactivate" action.
- Verify deactivation revokes login access immediately.
- Verify the worker record is retained (no hard delete).
- Verify historical tasks remain linked to the worker_id.
- Verify tasks assigned to a deactivated worker are unassigned and reset to REPORTED.

Functional Requirements

- GET /workers?org_id={id}&status=ACTIVE for active list.
- POST /workers/invite adds invited emails for the org.
- DELETE /workers/invite/{id} revokes an invite.
- On first login, invited email auto-links org_id and sets status ACTIVE.
- PATCH /workers/{id}/deactivate sets status INACTIVE and deactivated_at .
- Hard deletes are disallowed for workers.
- A worker cannot be in INVITED state for multiple organizations simultaneously.
- Invite lifecycle: INVITED -> ACTIVE -> INACTIVE.
- Invites expire after a configured window (default 7 days) and can be re-sent.
- Optional allowed-domain restriction can be enforced per authority (e.g., *@ghmc.gov.in).

Workflow & Entity State Lifecycle

Lifecycle: INVITED -> ACTIVE -> INACTIVE.

Success Metrics

- High verification rate for active workers.

Edge Cases

- Deactivation during an active upload results in an "Unauthorized" error.

USER STORY 4: Resolution Review & Quality Control

Executive Summary

Require before/after photo review before closure and enforce transparent rejection reasons.

User Persona & Problem Statement

Who: As a Govt Admin... **Why:** I need to verify fix quality and document reasons for rejection.

Scope (In & Out)

In Scope

- Side-by-side photo comparison.
- Reject fix with reason.
- Close ticket.
- Dismiss issue with reason.

Out of Scope

- Automated image quality detection.

Features & Acceptance Criteria

Feature: Resolution Review

User Story: As a Govt Admin, I want to compare before/after photos before closing.

Acceptance Criteria:

- Verify before and after photos are shown side-by-side.
- Verify reject requires a reason and returns status to IN_PROGRESS.
- Verify close sets status to CLOSED and finalizes analytics.

Feature: Dismissal Transparency

User Story: As a Govt Admin, I want to dismiss spam with a reason visible to citizens.

Acceptance Criteria:

- Verify dismissal requires a reason code or custom note.
- Verify dismissed tickets are removed from active board but preserved in DB.
- Verify rejection reason is exposed to the citizen app.

Feature: Citizen Feedback Visibility

User Story: As a Govt Admin, I want to see citizen like/dislike counts for closed issues.

Acceptance Criteria:

- Verify the issue detail view displays aggregated like/dislike counts.

Functional Requirements

- POST /issues/{id}/reject_fix requires reason.
- POST /issues/{id}/dismiss requires reason_code.
- public_status_message stores citizen-visible rejection reason.
- Closing a ticket triggers analytics update jobs.
- Dismissal reason_code enum includes: DUPLICATE, SPAM, OUT_OF_ZONE.
- Audit logs capture ISSUE_CLOSED and FIX_REJECTED with timestamps and reasons.

Dependencies

- Citizen app must display rejection reasons and collect feedback votes.

Non-Functional Requirements (Minimal)

- Once CLOSED, photos are immutable.

Edge Cases

- Corrupted "After" photo requires rejection with reason.
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USER STORY 5: Authority Settings & Profile Management

Executive Summary

Allow admins to manage profile details with email/Google login only.

User Persona & Problem Statement

Who: As a Govt Admin... **Why:** I need to keep my contact details updated without breaking login access.

Scope (In & Out)

In Scope

- Edit name and phone (contact only).
- Email OTP login or Google OAuth for authentication.

Out of Scope

- Zone editing.
- Category management.

Features & Acceptance Criteria

Feature: Profile Management

User Story: As a Govt Admin, I want to update profile details safely.

Acceptance Criteria:

- Verify email (login ID) is read-only.
- Verify restricted fields (zone_id, role) cannot be updated.
- Verify profile edits require a recent authenticated session.

Functional Requirements

- PATCH /admin/me updates profile fields.
- Profile changes require a recent authenticated session (email OTP or Google OAuth).

Edge Cases

- Stale sessions require re-authentication before profile updates.