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# Traffic Guardian AWS User Manual

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# 1. Introduction

## Welcome to Traffic Guardian

Traffic Guardian represents a revolutionary advancement in traffic management technology, specifically designed for the challenging highways of Gauteng Province. This intelligent system combines cutting-edge artificial intelligence with real-time video analysis to transform how traffic incidents are detected, reported, and managed.

## System Overview

Traditional traffic monitoring relies heavily on manual observation and citizen reports, often resulting in critical 5-15 minute delays between incident occurrence and emergency response. Traffic Guardian eliminates these delays by:

- **Automatically detecting incidents** within seconds using computer vision
- **Intelligently classifying events** by type and severity
- **Instantly alerting operators** with precise location data
- **Providing comprehensive analytics** for operational improvement

## Document Purpose

This manual serves as your complete guide to using the Traffic Guardian system effectively. Whether you're a traffic operator monitoring live feeds, an emergency coordinator dispatching resources, or a supervisor analysing performance data, this manual will help you master every aspect of the system.

## How to Use This Manual

- **New Users:** Start with "Getting Started" and "Account Management"
- **Operators:** Focus on "Dashboard Overview" and "Incident Management"
- **Supervisors:** Emphasise "Analytics and Reporting" sections
- **Quick Reference:** Use the troubleshooting section for immediate help

Each section includes step-by-step instructions, tips for optimal use, and relevant screenshots to guide you through the process.

## 2. Getting Started

### What is Traffic Guardian?

**Traffic Guardian** is an intelligent traffic monitoring system that uses advanced AI algorithms to analyse live video feeds from traffic cameras across Gauteng's highway network. The system can identify various types of incidents, including vehicle accidents, breakdowns, congestion, road debris, and weather hazards in real-time.

### Key Benefits

- **Faster Response Times:** Reduce incident detection time from minutes to seconds
- **Improved Accuracy:** AI-powered classification reduces false alarms
- **Enhanced Safety:** Earlier detection prevents secondary accidents
- **Better Resource Allocation:** Intelligent severity assessment guides response decisions
- **Comprehensive Monitoring:** 24/7 automated surveillance across multiple highways

### **3. User Roles and Responsibilities**

The Traffic Guardian system supports different user types, each with specific access levels and responsibilities:

#### **Traffic Control Operators**

- **Primary Role:** Real-time monitoring and incident response
- **Key Responsibilities:**
  - Monitor live camera feeds continuously
  - Acknowledge and verify AI-detected incidents
  - Coordinate with emergency response teams
  - Update incident status throughout the resolution process
  - Document incident details and response actions

#### **Emergency Response Coordinators**

- **Primary Role:** Resource allocation and emergency dispatch
- **Key Responsibilities:**
  - Receive prioritised incident alerts
  - Determine appropriate response resources
  - Dispatch ambulance, fire, police, or tow services
  - Monitor response progress and escalate as needed
  - Brief response teams on the scene conditions

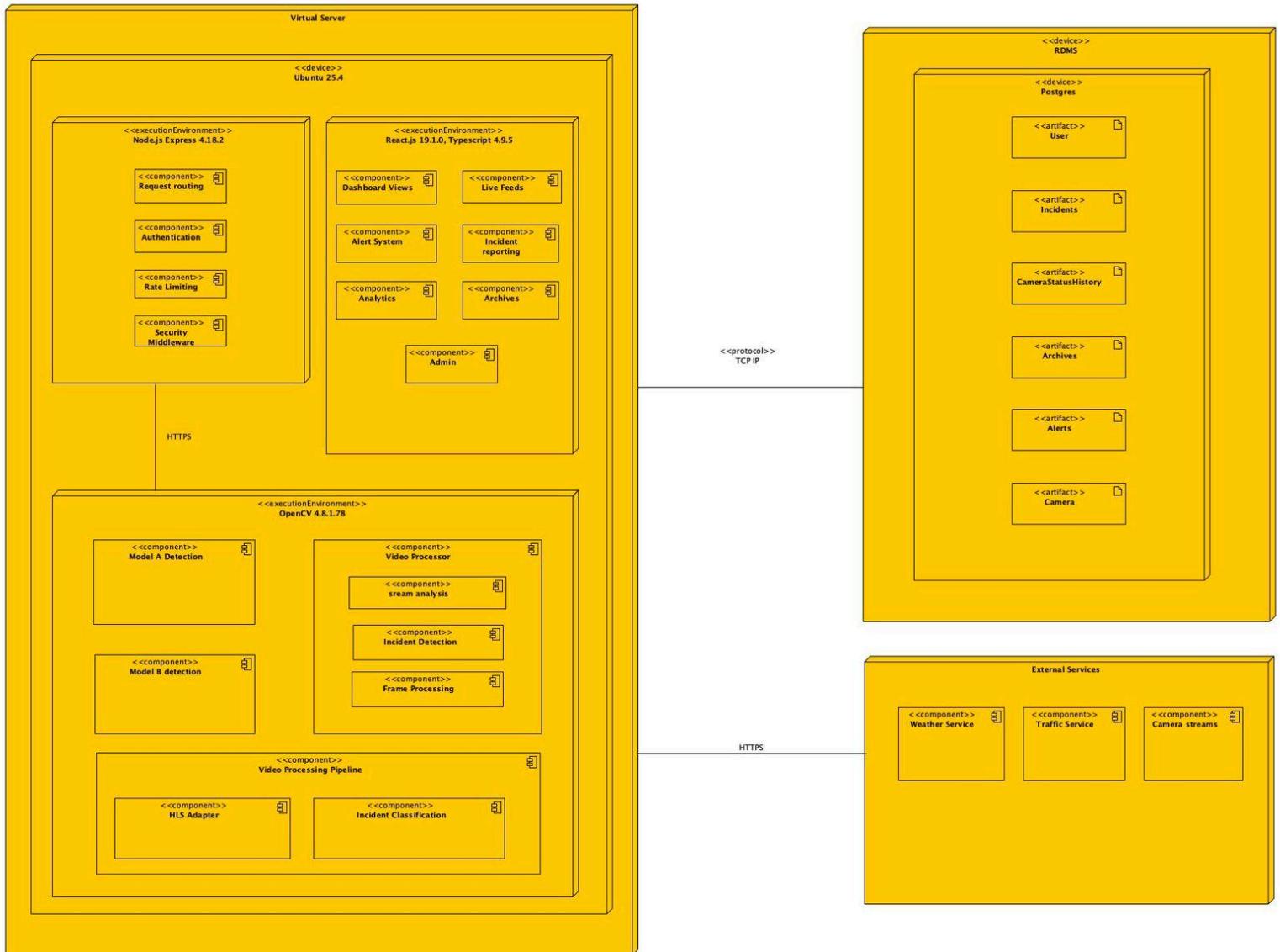
#### **Traffic Management Supervisors**

- **Primary Role:** Operational oversight and performance analysis
- **Key Responsibilities:**
  - Monitor system performance metrics
  - Analyse incident patterns and trends
  - Configure alert thresholds and detection parameters
  - Generate reports for management
  - Identify training needs and process improvements

#### **System Administrators**

- **Primary Role:** Technical management and system maintenance
- **Key Responsibilities:**
  - Manage user accounts and permissions
  - Configure camera feeds and system settings
  - Monitor system health and performance
  - Maintain security and compliance standards
  - Perform system backups and updates

## 4. Deployment Model



**Traffic Guardian** is hosted on Amazon's cloud platform (AWS). It uses the no-cost plan to control expenses while maintaining robust, reliable performance and room for growth. This cloud based deployment enables automatic adjustment to demand, consistent availability, and seamless use of Amazon's built-in services, removing the need to purchase or maintain on-site equipment.

## **5. System Requirements**

Before using Traffic Guardian, ensure your workstation meets these minimum requirements:

### **Hardware Requirements:**

- A modern computer with at least 4GB of RAM
- Stable internet connection (minimum 10 Mbps recommended)

### **Software Requirements:**

- **Supported Browsers:**
  - Google Chrome (version 90 or later) - **Recommended**
  - Mozilla Firefox (version 88 or later)
  - Microsoft Edge (version 90 or later)
  - Safari (version 14 or later)
  - Brave Browser(version 1.79)
- JavaScript enabled
- Pop-up blockers are configured to allow Traffic Guardian notifications

## 6. Account Management

### 6.1 Initial Setup

#### **Creating Your Account**

Your system administrator will typically create your account, but if self-registration is enabled, follow these steps:

##### **1. Navigate to Registration**

- Open your web browser
- Go to the Traffic Guardian website
- Click "Sign Up" on the landing page



2. **Complete Registration Form** Fill in all required information carefully:

The screenshot shows the 'Create Account' page of the Traffic Guardian application. At the top, there is a navigation bar with links for Dashboard, Live Feed, Incidents, Archives, Analytics, Account, and a user icon. The main content area has a dark background with a light-colored card. The card title is 'Create Account' and includes a sub-instruction: 'Welcome to Traffic Guardian - Let's create your account!'. It contains four input fields: 'Username', 'Email', 'Password', and 'Confirm Password', each with a placeholder text. Below these fields is a large orange 'Create Account' button. At the bottom of the card, there is a link 'Already have an account? [Sign In](#)'.

- **Username:**
  - Must be 3-30 characters long
  - Can include letters, numbers, and underscores
  - Must be unique across the system
  - Choose something professional and memorable
- **Email Address:**
  - Use your official work email
  - This will be your primary login identifier
  - Ensure you have access to this email for verification
- **Password:**
  - Minimum 6 characters (8+ recommended)
  - Include uppercase, lowercase, and numbers for security
  - Avoid common words or personal information
- **Confirm Password:**
  - Must match your password exactly
  - Double-check for typing errors

3. **Submit and Verify**

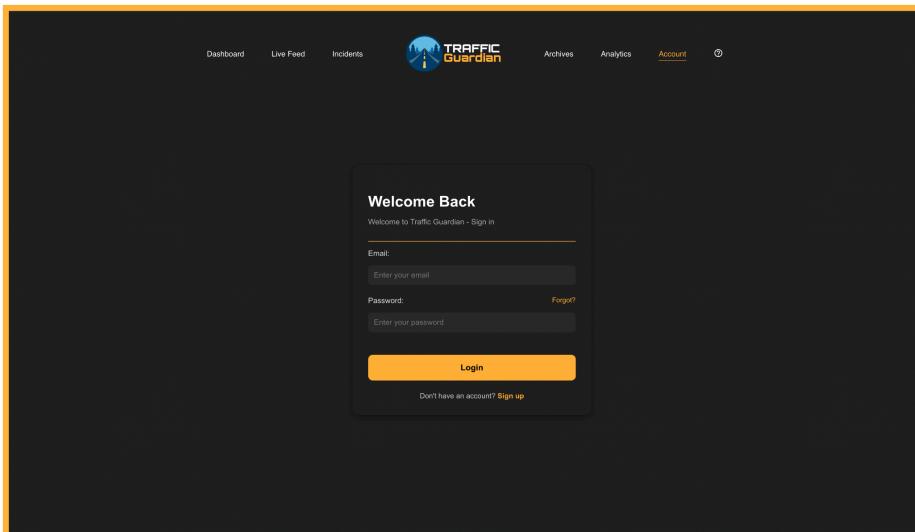
- Click "Create Account"
- Your account will be activated and ready for use

## 6.2 Logging Into the System

### Standard Login Process

#### 1. Access the Login Page

- Navigate to the Traffic Guardian login page
- Bookmark this page for quick access

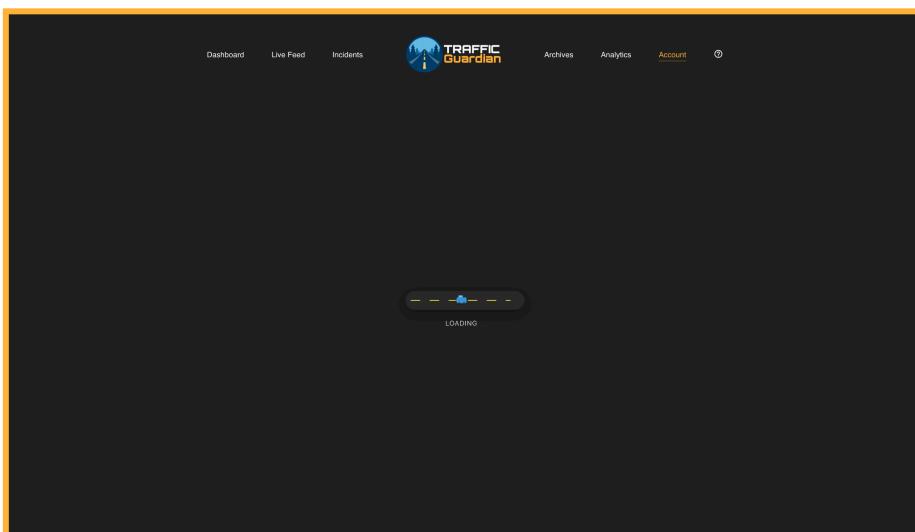


#### 2. Enter Your Credentials

- **Email:** Type your registered email address
- **Password:** Enter your password (note: it's case-sensitive)
- Ensure Caps Lock is off
- Check for any typing errors

#### 3. Submit Login

- Click the "Login" button
- Wait for the system to authenticate your credentials
- You'll be redirected to the profile page upon successful login



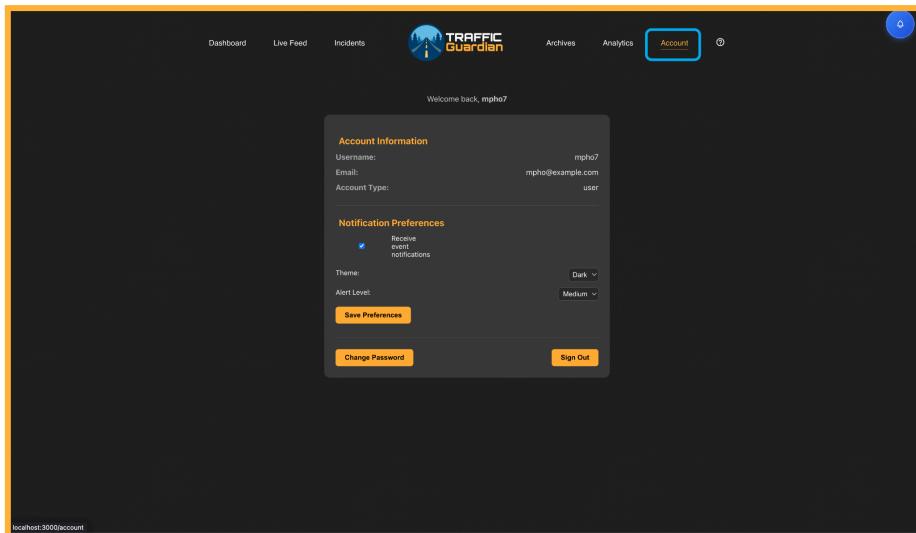
## 6.3 Profile Management

### Accessing Your Profile

Once logged in, you can manage your account settings:

#### 1. Navigate to Profile

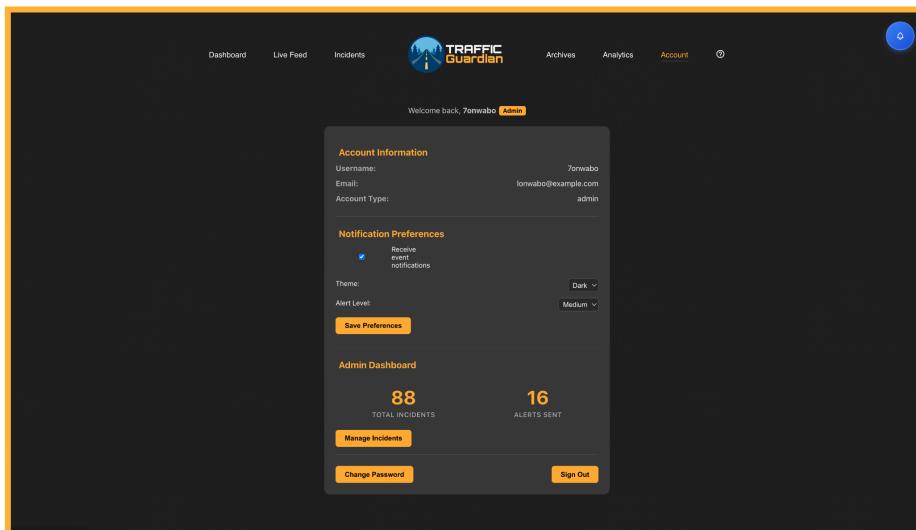
- Look for "Account" in the navigation menu
- Click to access your profile page



#### 2. Profile Overview

Your profile page displays:

- Personal account information
- System preferences and settings
- Admin options (if applicable)

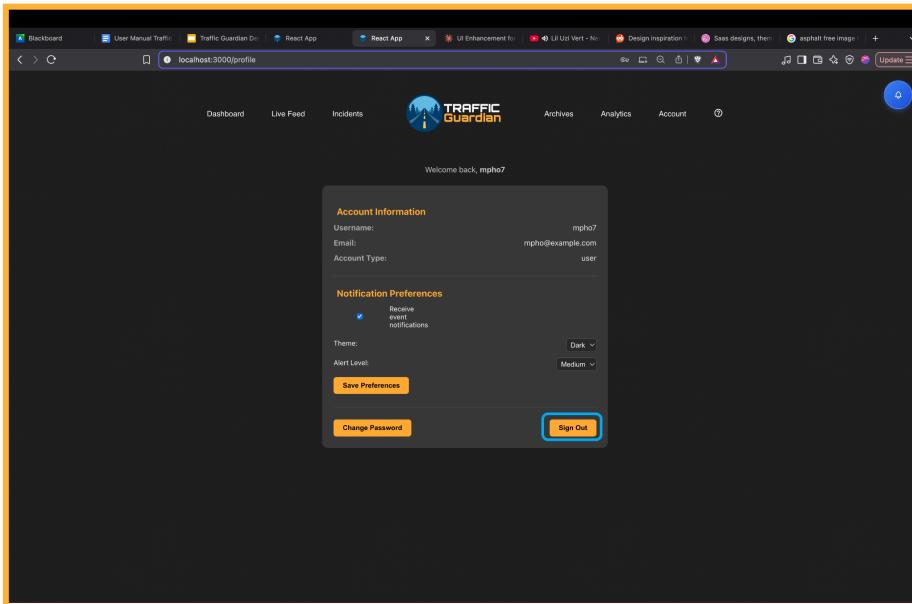


## 6.4 Logging Out Safely

When you finish using the system:

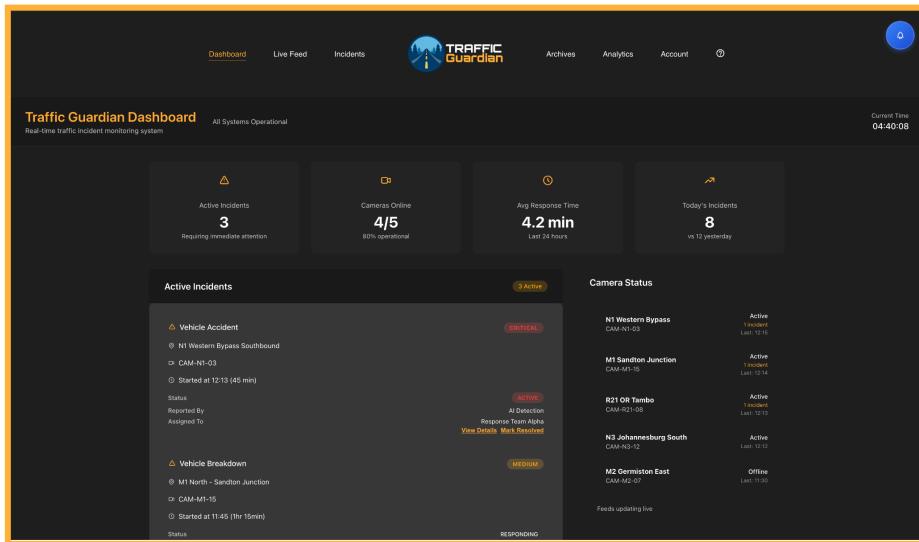
### 1. Use the Sign Out Button

- Located in the profile area
- Click "Sign Out" to properly end your session

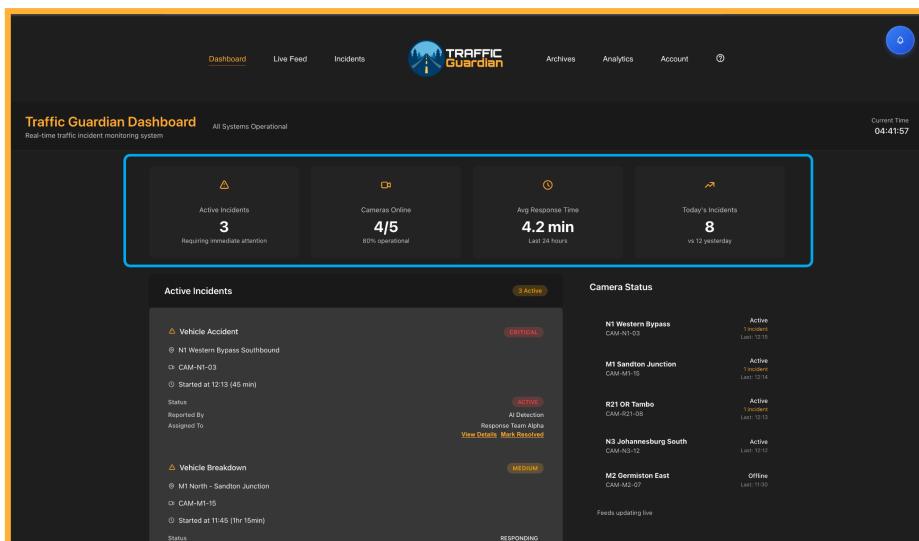


## 7. Dashboard Overview

The Dashboard is your main control center, showing real-time system status and providing quick access to all features.



### Key Metrics Cards



- 1. Active Incidents:** Current incidents requiring attention
- 2. Cameras Online:** Operational camera percentage (4/5 = 80%)
- 3. Avg Response Time:** Performance metric (target: under 5 minutes)
- 4. Today's Incidents:** Daily count with comparison to yesterday

## Quick Action Cards

The screenshot shows a dashboard titled "Active Incidents" with three cards:

- Vehicle Accident:** N1 Western Bypass Southbound, CAM-N1-03, Started at 12:13 (45 min). Status: Active. Reported By: [redacted]. Assigned To: [redacted]. Severity: CRITICAL. Actions: View Details, Mark Resolved.
- Vehicle Breakdown:** M1 North - Sandton Junction, CAM-M1-15, Started at 11:45 (1hr 15min). Status: Active. Reported By: [redacted]. Assigned To: [redacted]. Severity: ACTIVE. Actions: View Details, Mark Resolved.
- Traffic Congestion:** R21 - OR Tambo Approach, CAM-R21-08, Started at 11:20 (1hr 40min). Status: Responding. Reported By: [redacted]. Assigned To: [redacted]. Severity: LOW. Actions: View Details, Mark Resolved.

Below the cards is a "Quick Actions" section with four buttons: Live Feed, Report Incident, Analytics, and Archive.

- **Live Feed:** View real-time camera streams
- **Report Incident:** Manually report new incidents
- **Analytics:** Access performance data and trends
- **Archive:** View historical incident records

## Active Incidents Section

The screenshot shows a dashboard with summary statistics and a detailed view of the three incidents:

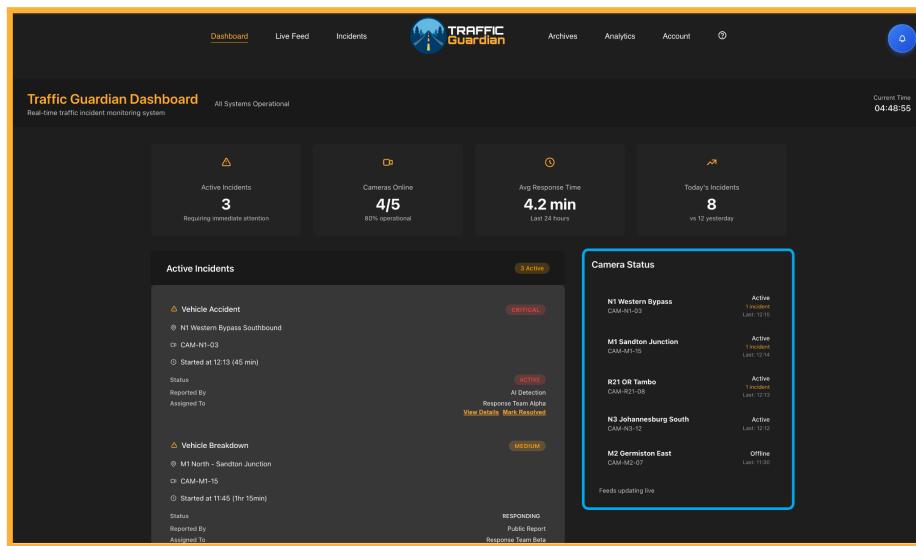
- Active Incidents:** 3 (Requiring immediate attention)
- Cameras Online:** 4/5 (80% operational)
- Avg Response Time:** 4.2 min (Last 24 hours)
- Today's Incidents:** 8 (vs 12 yesterday)

Below these stats is a "Active Incidents" card, which is identical to the one shown in the Quick Action Cards section above.

Each incident displays:

- **Type and Severity:** Category and priority level
- **Location:** Highway and a specific area
- **Duration:** Time since detection
- **Status:** Active, Ongoing, or Resolved
- **Actions:** View details or mark resolved

## Camera Status



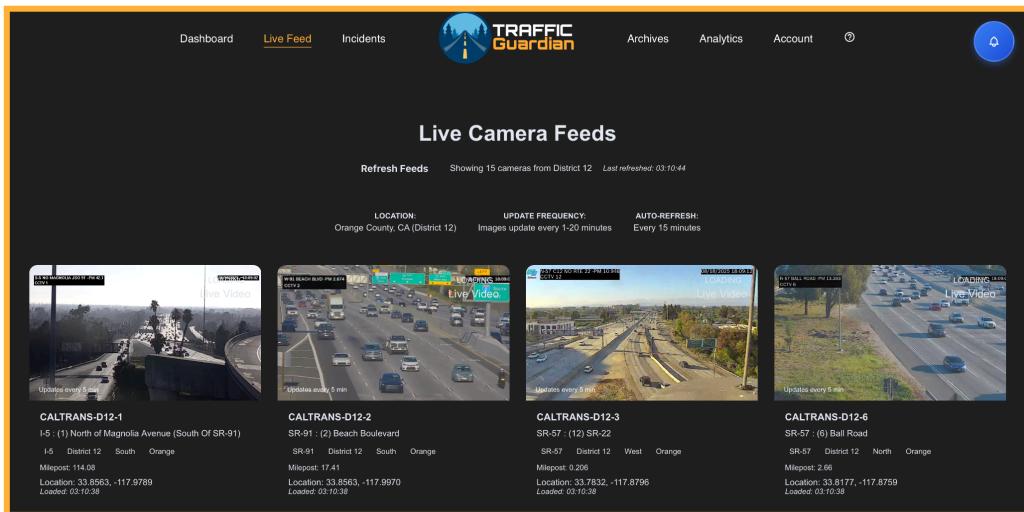
Monitor camera health:

- **Green:** Camera online and functioning
- **Red:** Camera offline, needs attention
- Shows incident count per camera

## 8. Live Camera Feeds

### Accessing Live Feeds

Navigate to the Live Feed section to view real-time traffic cameras.



### Camera Grid Layout

#### Standard Display:

- 15 simultaneous camera feeds
- 4 rows arrangement
- Each feed shows the camera ID and location

Each camera displays:

- **Camera ID:** Unique identifier (e.g., CALTRANS-D12-1)
- **Location:** Highway, area name milepost and latitude and longitude coordinates
- **Status:** Online (Green) or Offline (Red)
- **Loaded:** Most recent feed timestamp

### Monitoring Techniques

#### Visual Indicators to Watch For:

- Stopped or slow-moving traffic
- Vehicles in unusual positions
- Debris on the roadway
- Emergency vehicles with flashing lights

## **AI Detection Assistance:**

- Red boxes highlight detected incidents
- Text labels identify incident types
- The system generates automatic alerts

# 9. Incident Management

## Viewing Active Incidents

The screenshot shows the 'Incident Management' section of the Traffic Guardian software. At the top, there are navigation links: Dashboard, Live Feed, Incidents (which is highlighted in yellow), Archives, Analytics, Account, and a help icon. Below the navigation is a search bar with dropdowns for Search, Status, Severity, Type, Date From, and Date To. A message indicates 'Real-time alerts disconnected'. On the right, there are buttons for 'Alerts', 'Clear Filters', and '+ Report Incident'. The main area displays a table titled 'Incidents' with 88 total entries. The columns are ID, DATE, TYPE, LOCATION, CAMERA, SEVERITY, STATUS, and ACTIONS. Each row contains incident details such as ID (#79, #80, #81, etc.), date (e.g., 2025/06/25, 17:32), type (Unknown or Reported Incident), location (Not Available), camera status (N/A), severity (CRITICAL or MINOR), status (ACTIVE, ONGOING, or RESOLVED), and actions (dropdown menus and checkmarks). The table has a dark background with light-colored rows.

ID	DATE	TYPE	LOCATION	CAMERA	SEVERITY	STATUS	ACTIONS
#79	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#80	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#81	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#25	2025/06/23, 07:45	⚠️ Reported Incident	Lat: -26.0911, Lng: 28.0847	⌚ N/A	CRITICAL	RESOLVED	⌚ ⚠️ Resolved ✓
#78	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	RESOLVED	⌚ ⚠️ Resolved ✓
#99	2025/06/26, 18:31	⚠️ Reported Incident	Lat: -26.0789, Lng: 28.1234	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#100	2025/06/26, 18:15	⚠️ Reported Incident	Lat: -25.7558, Lng: 28.2324	⌚ N/A	CRITICAL	ONGOING	⌚ ⚠️ Ongoing ✓
#103	2025/06/26, 22:48	⚠️ Reported Incident	Lat: -25.7557, Lng: 28.2326	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#101	2025/06/26, 18:46	⚠️ Reported Incident	Lat: -26.8988, Lng: 28.1212	⌚ N/A	MINOR	ACTIVE	⌚ ⚠️ Active ✓

The Incidents page shows all current traffic incidents in a detailed table format.

## Incident Table Columns

This screenshot shows the same 'Incident Management' page as the previous one, but with a different set of incident data. The table now lists incidents from June 25th, 2025, to June 26th, 2025. The columns remain the same: ID, DATE, TYPE, LOCATION, CAMERA, SEVERITY, STATUS, and ACTIONS. The incidents listed are: #79, #80, #81, #25, #76, #99, #100, #103, and #101. The data includes specific coordinates for some incidents and a 'MINOR' severity level for one entry. The overall layout and design are identical to the first screenshot.

ID	DATE	TYPE	LOCATION	CAMERA	SEVERITY	STATUS	ACTIONS
#79	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#80	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#81	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#25	2025/06/23, 07:45	⚠️ Reported Incident	Lat: -26.0911, Lng: 28.0847	⌚ N/A	CRITICAL	RESOLVED	⌚ ⚠️ Resolved ✓
#76	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	RESOLVED	⌚ ⚠️ Resolved ✓
#99	2025/06/26, 18:31	⚠️ Reported Incident	Lat: -26.0789, Lng: 28.1234	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#100	2025/06/26, 18:15	⚠️ Reported Incident	Lat: -25.7558, Lng: 28.2324	⌚ N/A	CRITICAL	ONGOING	⌚ ⚠️ Ongoing ✓
#103	2025/06/26, 22:48	⚠️ Reported Incident	Lat: -25.7557, Lng: 28.2326	⌚ N/A	CRITICAL	ACTIVE	⌚ ⚠️ Active ✓
#101	2025/06/26, 18:46	⚠️ Reported Incident	Lat: -26.8988, Lng: 28.1212	⌚ N/A	MINOR	ACTIVE	⌚ ⚠️ Active ✓

- **ID:** Unique incident number
- **Date:** When the incident occurred
- **Type:** Category (accident, breakdown, congestion, etc.)
- **Location:** Highway and a specific area
- **Camera:** Source camera ID
- **Severity:** Critical (Red), Moderate (Orange), Minor (Yellow)
- **Status:** Active, Ongoing, Resolved
- **Actions:** View, edit, or update status

## Search and Filtering

The screenshot shows the 'Incident Management' section of the Traffic Guardian platform. At the top, there's a navigation bar with links for Dashboard, Live Feed, Incidents (which is underlined in blue), Archives, Analytics, and Account. Below the navigation is a search bar with dropdowns for Search, Status, Severity, Type, Date From, and Date To. A message indicates 'Monitor and manage traffic incidents across Gauteng' and 'Real-time alerts disconnected'. The main area displays a table titled 'Incidents' with columns: ID, DATE, TYPE, LOCATION, CAMERA, SEVERITY, STATUS, and ACTIONS. The table lists 11 incidents, each with a unique ID, date, type (Unknown or Reported Incident), location (Not Available), camera (N/A), severity (CRITICAL or MEDIUM), status (ACTIVE, ONGOING, or RESOLVED), and actions (Edit, Delete, and a dropdown menu). The first incident (#79) is marked as 'RESOLVED'.

ID	DATE	TYPE	LOCATION	CAMERA	SEVERITY	STATUS	ACTIONS
#79	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Active
#80	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Active
#81	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	ACTIVE	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Active
#25	2025/06/23, 07:45	⚠️ Reported Incident	Lat: -26.0911, Lng: 28.0847	⌚ N/A	CRITICAL	RESOLVED	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Resolved
#78	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	CRITICAL	RESOLVED	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Resolved
#99	2025/06/25, 18:31	⚠️ Reported Incident	Lat: -26.0789, Lng: 28.1234	⌚ N/A	CRITICAL	ACTIVE	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Active
#100	2025/06/25, 18:15	⚠️ Reported Incident	Lat: -25.7558, Lng: 28.2324	⌚ N/A	CRITICAL	ONGOING	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Ongoing
#103	2025/06/25, 22:48	⚠️ Reported Incident	Lat: -25.7557, Lng: 28.2326	⌚ N/A	CRITICAL	ACTIVE	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Active
#101	2025/06/25, 18:48	⚠️ Reported Incident	Lat: -26.0888, Lng: 28.1212	⌚ N/A	MEDIUM	ACTIVE	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Active

### Search Options:

- Search by incident ID, location, or type
- Filter by status, severity, or incident type
- Date range filtering (From/To dates)
- Clear all filters button

## Managing Incidents

### Updating Status:

- Use the dropdown to change the status
- Click the checkmark (✓) to confirm the change
- Status progression: Active → Ongoing → Resolved

The screenshot shows the TrafficGuardian Incident Management interface. At the top, there are navigation links: Dashboard, Live Feed, Incidents (which is the active tab), Archives, Analytics, Account, and a user icon. Below the header is a search bar with dropdowns for Search by ID/location, Status (All Statuses), Severity (All Severities), Type (All Types), Date From (yyyy/mm/dd), and Date To (yyyy/mm/dd). A blue box highlights the 'Status' dropdown menu, which includes Active, Ongoing, Resolved, and Closed. The main area displays a table of incidents with columns: ID, DATE, TYPE, LOCATION, CAMERA, SEVERITY, STATUS, and ACTIONS. The table contains 11 rows of incident data.

ID	DATE	TYPE	LOCATION	CAMERA	SEVERITY	STATUS	ACTIONS
#79	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	Critical	Active	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#80	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	Critical	Active	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#81	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	Critical	Active	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#25	2025/06/23, 07:45	⚠️ Reported Incident	Lat: -26.0911, Lng: 28.0847	⌚ N/A	Critical	Resolved	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#78	2025/06/25, 17:32	⚠️ Unknown	Not Available	⌚ N/A	Critical	Resolved	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#99	2025/06/25, 18:31	⚠️ Reported Incident	Lat: -26.0789, Lng: 28.1234	⌚ N/A	Critical	Active	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#100	2025/06/25, 18:15	⚠️ Reported Incident	Lat: -25.7058, Lng: 28.2324	⌚ N/A	Critical	Ongoing	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#103	2025/06/25, 22:48	⚠️ Reported Incident	Lat: -25.7557, Lng: 28.2326	⌚ N/A	Critical	Active	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed
#101	2025/06/25, 18:46	⚠️ Reported Incident	Lat: -26.0988, Lng: 28.1212	⌚ N/A	Minor	Active	<input checked="" type="checkbox"/> Active <input checked="" type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Resolved <input checked="" type="checkbox"/> Closed

## Manual Incident Reporting

The screenshot shows the 'Report New Incident' modal window. The modal has an orange header 'Report New Incident'. Inside, there's a section titled 'Incident Details' with instructions: 'Report a new traffic incident. All required fields must be completed.' It includes fields for 'Date and Time' (set to 2025/06/27, 02:54), 'Reporter Name' (placeholder 'Enter your name or identification'), 'Severity Level' (dropdown set to 'Medium - Moderate impact'), and 'Initial Status' (dropdown set to 'Open - Newly reported'). Below these are sections for 'Location Information' with fields for 'Latitude' (e.g., -25.7479) and 'Longitude' (e.g., 28.2293). The background of the modal shows a list of incidents identical to the one in the previous screenshot.

Click "Report Incident" to open the reporting form.

### Required Fields:

- **Incident Date:** When the incident occurred
- **Longitude and Latitude:** Detailed location description
- **Severity:** Minor, Moderate, or Critical
- **Status:** Usually "Active" for new reports
- **Reporter Name:** Your username

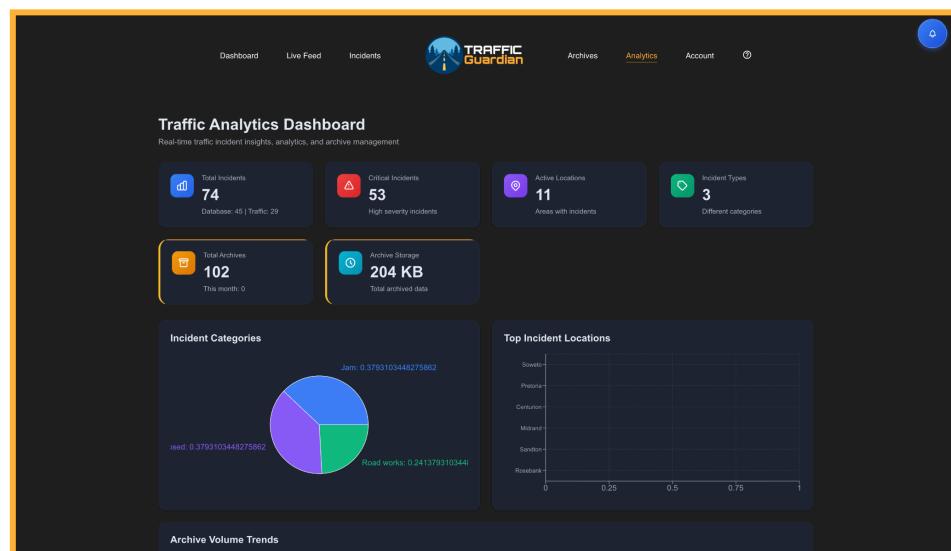
### Submitting Reports:

- Review all information
- Click "Submit Incident"
- The incident appears in the active list immediately

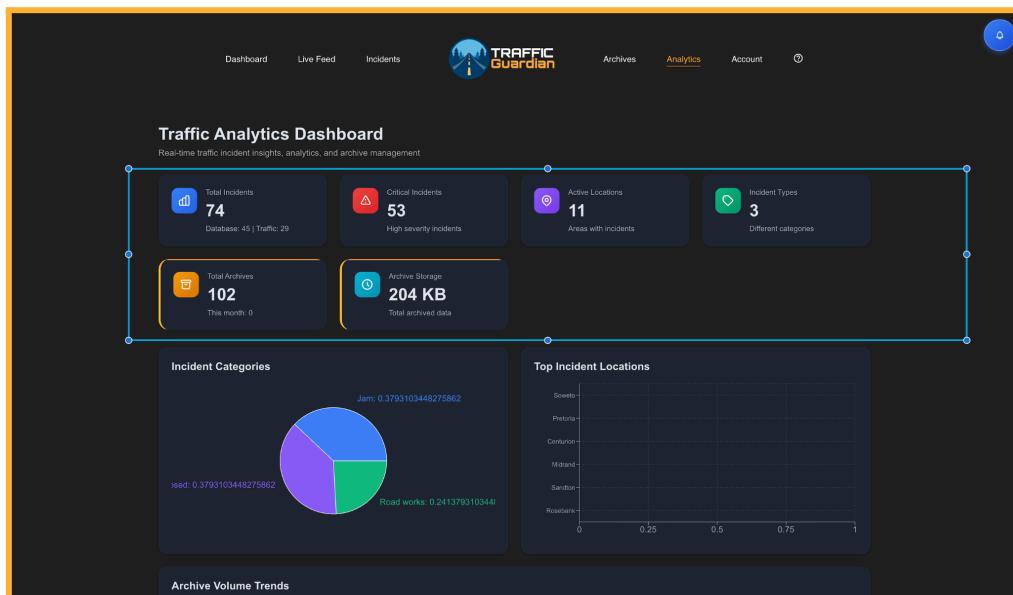
# 10. Analytics and Reporting

## Accessing Analytics

Navigate to Analytics to view incident, location and archive data and trends.



## Summary Statistics

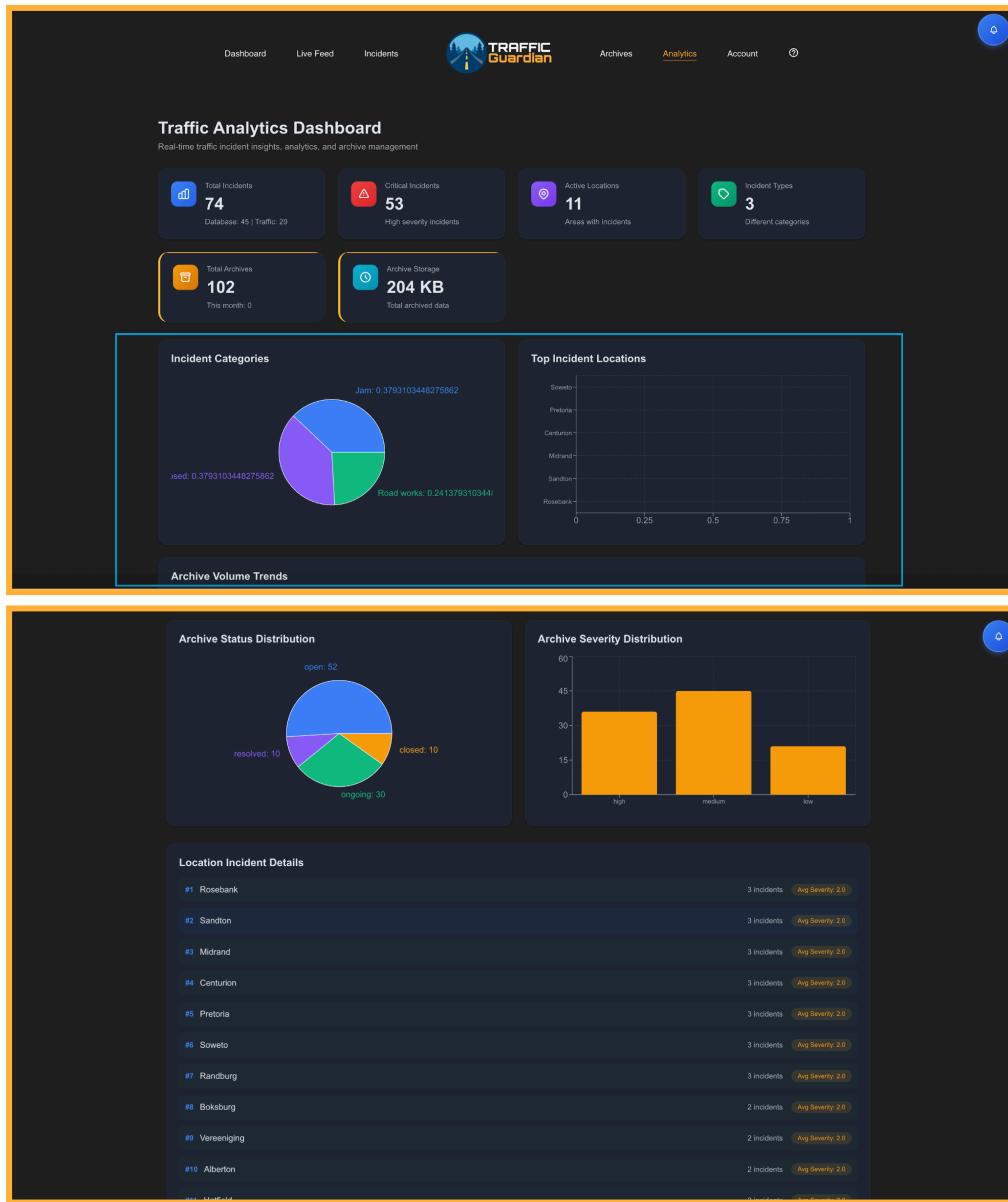


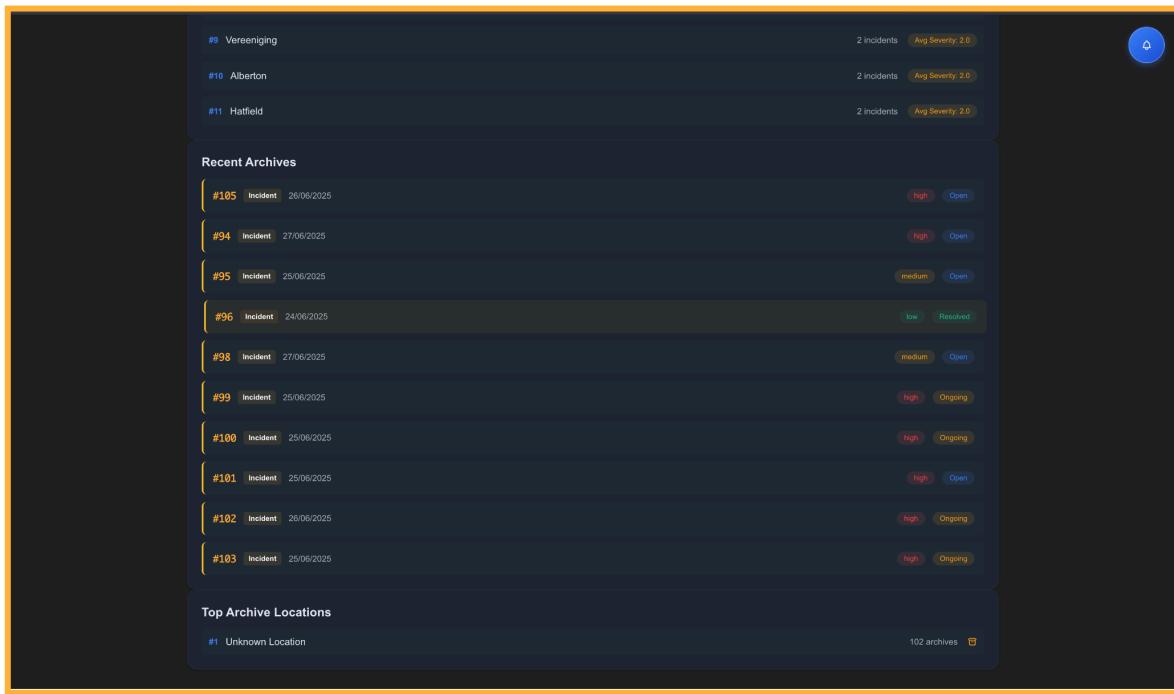
### Key Metrics:

- **Total Incidents:** Complete count for selected period
- **Avg Response Time:** System performance indicator
- **Resolution Rate:** Percentage successfully resolved
- **Critical Incidents:** High-priority incidents requiring immediate attention

- **Total Archives:** Number of archives
- **Archive Storage:** The amount of storage the archives occupy

## Charts and Analysis





## Available Charts and Tables:

1. Incident Categories
2. Top Incident Locations
3. Archive Volume Trends
4. Archive Status Distribution
5. Archive Severity Distribution
6. Location Incident Details
7. Recent Archives
8. Top Archive Locations

## Using Analytics

### Performance Insights:

- Identify peak incident times for staffing
- Monitor response time improvements
- Track incident patterns by location
- Assess system detection accuracy
- Capacity planning (Archive Volume Trends): Forecast storage needs, spot abnormal spikes, and plan lifecycle policies.
- Review workflow health (Archive Status Distribution): Surface backlogs and ageing items and assign ownership to meet review SLA's.
- Risk triage (Archive Severity Distribution): Prioritise high severity artefacts for expedited review; track ageing critical items.
- Site optimisation (Top Archive Locations): Identify hotspots generating the most data; tune device settings and bandwidth; allocate budgets accordingly.
- Data freshness (Recent Archives): Verify timely ingestion; alert on gaps or pipeline failures; validate time-to-archive.

- Coverage validation (Location Incident Details): Confirm that high incident areas are consistently archived; check uptime and data completeness.
- Compliance & retention: Monitor records nearing expiry, manage legal holds and produce audit ready reports on deletions and retention adherence.
- Cost optimisation: Track cost/GB by site, shift cold data to lower-cost tiers, and quantify savings from lifecycle transitions.

#### **Report Generation:**

- Generate reports for management
- Compare performance across time periods

# 11. Archives

## Introduction to Archives

The Archives section contains historical incident data automatically moved from active incidents after 24 hours of resolution.

The screenshot shows the Traffic Guardian software interface with the 'Archives' tab selected in the top navigation bar. The main area is titled 'Incident Archives' and displays three historical incident records as cards:

- Testing Report**: ID #58, HIGH severity. Status: open • 2025/06/26, 22:48. Location: -25.7557, 28.2326. Tags: incident, high, procedure\_archived. Description: high open incident. Archived: 2025/08/17, 17:40. View Data.
- AI Syst Report**: ID #61, HIGH severity. Status: ongoing • 2025/06/26, 13:56. Location: -25.7556, 28.2325. Tags: incident, high, procedure\_archived. Description: high ongoing incident. Archived: 2025/08/17, 17:40. View Data.
- cam Report**: ID #55, MEDIUM severity. Status: open • 2025/06/27, 00:00. Location: -25.7556, 28.2325. Tags: incident, medium, procedure\_archived. Description: medium open incident. Archived: 2025/08/17, 17:40. View Data.

Filtering options at the top include a search bar, dropdowns for 'All Types', 'All Severities', 'All Statuses', and an 'Advanced' filter. A progress bar at the top right indicates '50 / 50 Records'. An 'Export' button is also present.

## Accessing Archives

Click "Archive" from the dashboard or main navigation menu.

## Archive Features

### Search and Filter:

- Same functionality as active incidents
- Search by ID, location, type, or date range
- Filter by severity, status, or category

The screenshot shows the 'Incident Archives' section of the Traffic Guardian platform. At the top, there's a search bar and filter dropdowns for 'All Types', 'All Severities', and 'All Statuses'. Below this, there are three incident cards:

- Incident #58 (HIGH): Testing Report**  
Status: open • 2025/06/26, 22:48  
-25.7557, 28.2326  
incident, high, procedure\_archived  
high open incident  
Archived: 2025/08/17, 17:40
- Incident #61 (HIGH): AI Syst Report**  
Status: ongoing • 2025/06/26, 13:56  
-25.7556, 28.2325  
incident, high, procedure\_archived  
high ongoing incident  
Archived: 2025/08/17, 17:40
- Incident #55 (MEDIUM): cam Report**  
Status: open • 2025/06/27, 00:00  
-25.7556, 28.2325  
incident, medium, procedure\_archived  
medium open incident  
Archived: 2025/08/17, 17:40

### Display Options:

- Card view for detailed information
- Table view for compact display
- Detailed view for the most thorough information
- Pagination for large datasets

This screenshot shows the same 'Incident Archives' section, but the cards have been converted into a table view. The layout is identical to the card view, displaying the three incidents (#58, #61, and #55) with their respective details, status, and archival information.

The screenshot shows the 'Incident Archives' section of the Traffic Guardian platform. At the top, there are navigation links: Dashboard, Live Feed, Incidents, Archives (which is highlighted in orange), Analytics, Account, and a user icon. Below the header is a search bar with placeholder text 'Search archives (ID, type, reporter, description)...' and dropdown filters for Type (All Types), Severity (All Severities), Status (All Statuses), and Advanced search. The main content area displays a single incident entry for 'Archive #58 - incident'. The entry includes a timestamp 'Archived: 2025/08/17, 17:40' and a status 'open'. It contains three sections: 'Core Data' (Original Incident ID: 103, Camera ID: N/A, Reporter: Testing, Incident Date: 2025/06/26, 22:48), 'Location' (Coordinates: Lat: -25.7557, Lng: 28.2326, Camera Found: No), and 'Tags & Search' (Search Text: high open incident, tags: incident, high, procedure\_archived). A 'Detailed' tab is selected at the bottom.

## Archive Data

The screenshot shows the 'Incident Archives' section of the Traffic Guardian platform. The layout is identical to the previous screenshot, with the same navigation, search, and filter options. The main content area now displays a table of multiple incident entries. Each entry includes columns for ID (#58, #61, #55, #57, #59, #60, #52), Type (incident), Severity (High, High, Medium, High, Low, Medium, Low), Status (open, ongoing, open, open, ongoing, open, closed), Reporter (Testing, AI Syst, cam, AI System, TESING, AI System, AI System), Camera (N/A, N/A, N/A, N/A, N/A, N/A, N/A), Date (2025/06/26, 22:48, 2025/06/26, 13:56, 2025/06/27, 00:00, 2025/06/24, 06:30, 2025/06/26, 14:21, 2025/06/24, 07:45, 2025/06/25, 18:05), and Actions (three small icons per row). The 'Table' tab is selected at the bottom.

### Preserved Information:

- Complete original incident data
- Archive date and timestamp
- Resolution details and duration
- Complete status history

### Uses for Archive Data:

- Historical trend analysis
- Compliance reporting
- Performance tracking over time
- Research and pattern identification

## Data Export

The screenshot shows the 'Incident Archives' section of the Traffic Guardian software. At the top, there are navigation links: Dashboard, Live Feed, Incidents, Archives (which is highlighted in orange), Analytics, Account, and a user icon. Below the navigation is a search bar with placeholder text 'Search archives (ID, type, reporter, description)...'. To the right of the search bar are dropdown menus for 'All Types', 'All Severities', 'All Statuses', and 'Advanced' filtering. A blue button labeled 'Export' is located in the top right corner of the header. The main area displays a table of incident records. The table has columns: ID, TYPE, SEVERITY, STATUS, REPORTER, CAMERA, DATE, and ACTIONS. The data in the table is as follows:

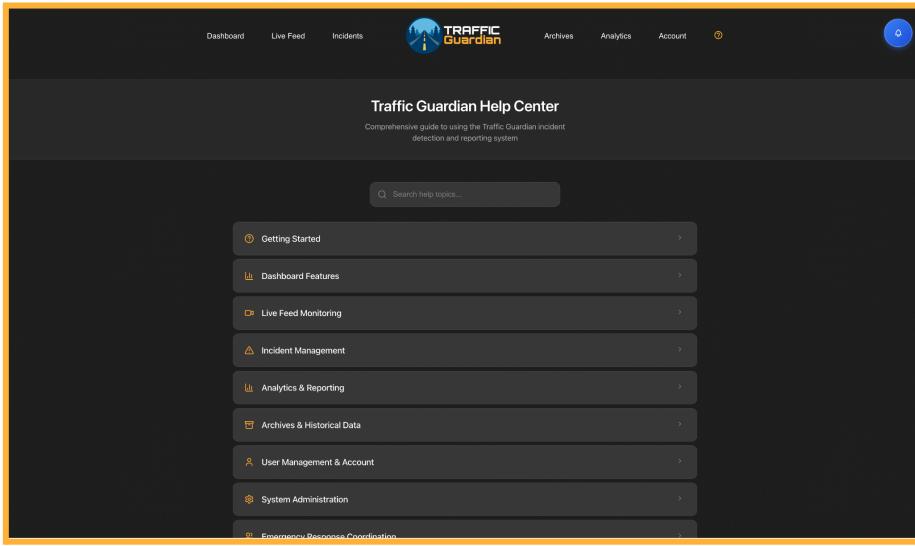
ID	TYPE	SEVERITY	STATUS	REPORTER	CAMERA	DATE	ACTIONS
#58	⚠️ Incident	HIGH	open	Testing	N/A	2025/06/26, 22:48	🔗
#61	⚠️ Incident	HIGH	ongoing	AI Syst	N/A	2025/06/26, 13:56	🔗
#55	⚠️ Incident	MEDIUM	open	cam	N/A	2025/06/27, 00:00	🔗
#57	⚠️ Incident	HIGH	open	AI System	N/A	2025/06/24, 06:30	🔗
#59	⚠️ Incident	LOW	ongoing	TESING	N/A	2025/06/26, 14:21	🔗
#60	⚠️ Incident	MEDIUM	open	AI System	N/A	2025/06/24, 07:45	🔗
#52	⚠️ Incident	LOW	closed	AI System	N/A	2025/06/25, 16:05	🔗

At the bottom right of the table, it says 'Showing 1-12 of 50'.

- Export filtered data in JSON format
- Download for external analysis
- Compliance and audit documentation

## 12. Help and Support

### Built-in Help System



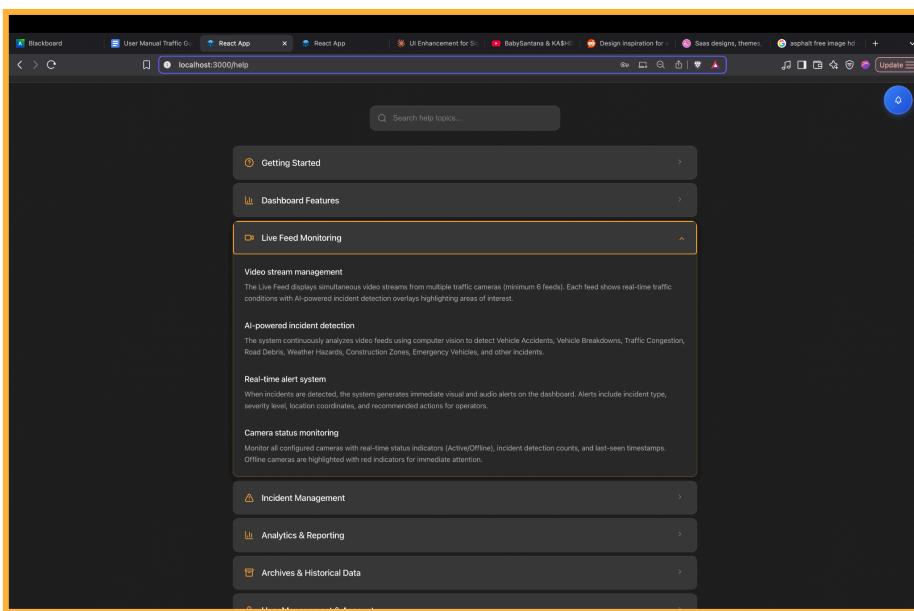
Access comprehensive help documentation:

- Click "Help" in the main navigation
- Search for specific topics
- Browse by category

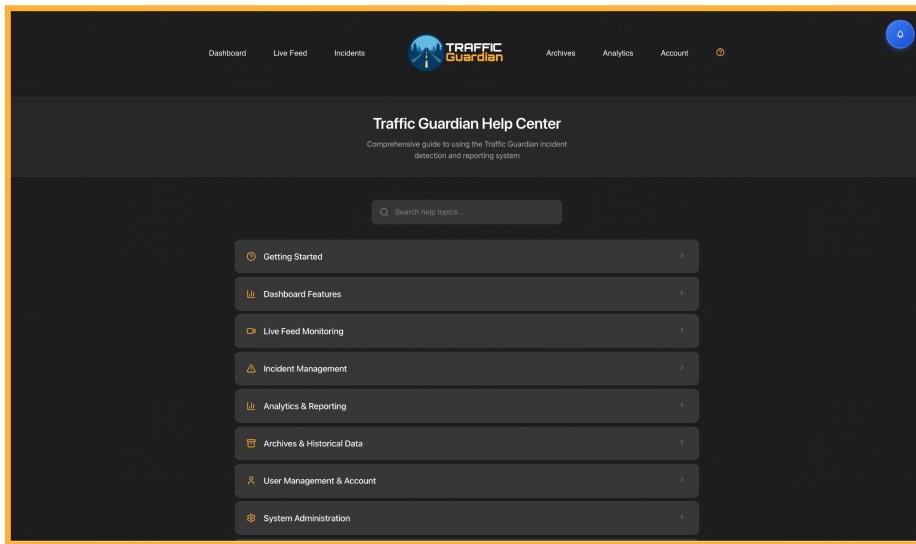
## Help Categories

### Available Documentation:

- Getting Started: Basic system introduction
- Dashboard Features: Interface overview
- Live Feed Monitoring: Camera operations
- Incident Management: Complete procedures
- Analytics: Data analysis guidance
- User Management: Account settings
- Troubleshooting: Common problems and solutions



## Search Functionality



- Type questions in plain English
- Auto-complete suggestions
- Results ranked by relevance
- Search terms highlighted in results

## Contact Support

### When to Contact Support:

- Technical issues beyond the troubleshooting guide
- Account access problems
- System performance issues
- Feature requests or training needs

### Support Contacts:

- System Administrator: Technical issues
- Help Desk: General questions
- Training Coordinator: Additional training

## Contact Information

**System Support:** Contact your local system administrator

**Training:** Available through your organisation's training coordinator

**Emergency:** Follow your organisation's emergency response procedures

**Project Team:** Quantum Quenchers

**Email:** quantumquenchers@gmail.com

**Institution:** University of Pretoria, COS301 Capstone Project