



AN AJEEVI EBOOK

Safe & Smart Cities

A practical guide to AI, IoT and software for safer, smarter urban infrastructure

Watch. Detect. Respond.

AJEEVI Technologies

HumanTech for a smarter world | 2026 Edition

www.ajeevi.com

ABOUT THIS EBOOK

Read this first

A practical guide for the people who plan, build and run the systems that keep cities safe and smart.

WHO IT IS FOR

City commissioners and municipal teams, smart city special purpose vehicles, police and traffic authorities, utilities, urban planners, facility managers, consultants and system integrators. No technical background is needed. Each chapter explains ideas in plain language and ends with practical steps.

HOW TO USE IT

- Read Part One to understand the foundations: what a safe and smart city is, how the technology fits together and how to deploy it.
- Use Part Two as a catalog. It describes ten use cases, one per page, so you can read only the ones that matter to you.
- Use Part Three to plan: AI agents, security and privacy, a phased roadmap, governance and measuring success.
- The contents page and the PDF bookmarks link to every chapter.

A NOTE ON EXAMPLES AND PRODUCTS

This ebook gives general guidance. Every city is different, so adapt the ideas to your laws, budgets and priorities. Product names such as GyanKendram, GyanAkshi and TransAJV refer to AJEEVI Technologies platforms. Measures and timelines are illustrative, not targets or guarantees.

ABOUT THIS EDITION

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INTRODUCTION

Why a city must be both smart and safe

Cities are growing denser, busier and more connected. Roads carry more vehicles, buildings use more energy and public spaces host larger crowds. At the same time, citizens expect services that are fast, fair and safe, and city teams are asked to do more with the people and budgets they already have.

Technology can help, but only when it is applied to real city problems. A "smart" city that cannot protect its people, or a "safe" city that cannot adapt, falls short of what citizens expect. In practice the two goals share the same foundations: sensors that observe the city, networks that carry the data, software that understands it and teams that act on it.

THE IDEA IN ONE LINE

A smart city sees and understands. A safe city acts early. The best cities do both on one platform.

THREE SHIFTS THAT MAKE THIS POSSIBLE

- **From reactive to proactive.** Instead of waiting for a complaint or a crash, systems detect early signs and alert teams.
- **From silos to one picture.** Video, sensors, helpdesk and field teams feed one command center, so departments see the same facts.
- **From records to decisions.** Data becomes alerts, recommendations and simulations that help people choose what to do next.

WHY NOW

Cameras, sensors and connectivity have become affordable. AI can now read video and sensor data at a scale no control room could handle manually. Cloud, edge and on-premise options give cities control over where their data lives. The question is no longer whether the technology exists, but how to apply it well, with clear goals, sound governance and the trust of citizens.

This ebook is written for that question. It is practical rather than theoretical, and it focuses on use cases that cities can start with today.

INTRODUCTION

Our approach: Watch. Detect. Respond.

Three verbs describe what a safe and smart city does all day.

Step	What happens	Example
Watch	Sensors and cameras observe roads, water, buildings, air and public spaces continuously.	A camera, a flow meter and a rain gauge each stream data.
Detect	Software and AI turn raw data into events: something unusual, unsafe or inefficient.	An unusual crowd build-up, a pressure drop or a stopped vehicle.
Respond	The right people are alerted, tasks are assigned and the result is tracked to closure.	A field team is dispatched and the ticket closes with photo proof.

FIVE PRINCIPLES USED THROUGHOUT THIS BOOK

- **Start with outcomes.** Choose the problems to solve first, then the technology. Every use case in Part Two begins with a challenge and ends with measures.
- **One platform, many use cases.** Share sensors, networks, data and the command center across departments, so each new use case costs less than the last.
- **Open and interoperable.** Prefer open standards and open APIs, so systems from different suppliers can work together and cities are not locked in.
- **People stay in the loop.** Software recommends and automates routine steps. Trained people make the important decisions.
- **Local control of data.** Decide where data is stored and who can see it. Build privacy and security in from day one.

ADVICE FROM THE FIELD

Start small, prove value, then scale. Two or three well-run use cases build the trust and the skills needed for the next ten.

01

PART ONE

Foundations

What a safe and smart city is, how the technology fits together, and where the software should run.



PART ONE | CHAPTER 1

What is a safe and smart city?

A city that uses connected technology to protect people, run services efficiently and recover quickly.

There is no single definition, and no single product that makes a city smart. A safe and smart city is better understood by what it achieves. Four outcomes matter most.

Outcome	What it means	Example use cases
Safety	People are protected on streets, in buildings and in public spaces, and incidents are handled quickly.	Video analytics, incident response, road safety, fire and life safety
Efficiency	Services use less energy, water, time and money for the same or better result.	Smart lighting, water leak detection, building energy, waste collection
Resilience	The city anticipates disruptions such as floods, heat or outages and recovers fast.	Flood early warning, digital twin scenarios, predictive maintenance
Citizen service	Residents can report problems easily and see them fixed.	Citizen helpdesk, field response, ward-level reporting

WHAT A SAFE AND SMART CITY IS NOT

- **Not only cameras.** Cameras are one data source. Value comes from understanding the video and acting on it.
- **Not a one-time project.** Systems need operations, maintenance and continuous improvement, with clear owners.
- **Not technology for its own sake.** Each deployment should trace back to a problem citizens or city teams care about.
- **Not a replacement for people.** It gives teams better information and tools, so they can do their work faster and more safely.

THE CITY AS A SYSTEM OF SYSTEMS

Roads, water, power, buildings, public safety and citizen services were built separately and are often managed separately. The biggest gains appear when they are connected. A flood alert should reach the traffic team, the drainage team and the helpdesk at once. A failed street light should open a work order without anyone phoning. This ebook treats the city as a system of systems that share data and a command center.

PART ONE | CHAPTER 2

The technology stack

Five layers turn raw signals into action, and a feedback loop keeps improving them.



Layer	Role	Typical components
Sense	Observe the physical city and capture data.	Cameras, air and noise sensors, flow and pressure meters, energy meters, lamp controllers, bin sensors, rain gauges
Connect	Move data reliably and securely.	Fiber, 4G and 5G, low-power networks, Wi-Fi, gateways at the edge
Understand	Store, clean and analyze the data.	Data platform, AI video analytics, time-series analytics, GIS maps
Decide	Apply rules and models to choose what happens.	Alert rules, thresholds, AI agents, simulation and digital twin
Act	Get the right people and devices moving.	Command center, mobile apps for field teams, device control, citizen notifications

Learn closes the loop. Every incident, ticket and measurement is a data point. Reviewing results lets teams tune thresholds, retrain models, update procedures and decide where to invest next.

DESIGN RULE

Choose layers that fit together. Cameras and sensors from different makers should connect through standard interfaces to one platform, not to a separate screen each.

AJEEVI builds across these layers: rugged IoT devices (GyanYantram), AI video analytics (GyanAkshi), command center software (GyanKendram) and the sector platforms built on them.

PART ONE | CHAPTER 3

Data and integration

A safe and smart city is only as good as the data that flows into it.

Most cities already own useful systems: cameras, signal controllers, building systems and utility meters. The practical task is to bring them together without replacing everything. This is integration, and it is usually where projects succeed or stall.

Data source	Examples	How it commonly connects
Video	Street, junction and building cameras	Camera streams such as RTSP, interoperability through ONVIF
IoT sensors	Air, noise, water level, bin fill, lamp controllers	Low-power networks, cellular, gateways, MQTT or HTTP APIs
Building systems	HVAC, lighting, meters, fire panels, access control	BACnet, Modbus and vendor APIs through gateways
Utility and traffic systems	SCADA, signal controllers, flow meters	Standard protocols and secure APIs
People and operations	Helpdesk calls, apps, field job updates	Web and mobile apps, call-center integration

INTEGRATION PRINCIPLES

- **Integrate, do not rip and replace.** Connect existing systems where possible and replace only what cannot be connected.
- **Use open interfaces.** Require documented APIs and standard protocols in every tender, so new vendors can plug in.
- **One data model.** Give every asset, location and event a consistent identity, so alerts can be linked on a map and across departments.
- **Plan for data quality.** Calibrate sensors, check for gaps and flag bad readings, because poor data produces poor alerts.
- **Respect data ownership.** The city owns its data. Contracts should say so, including how data is exported at the end of a contract.

PROCUREMENT TIP

If a camera, sensor or system cannot share its data, it cannot help the city. Make open interfaces a condition of purchase.

PART ONE | CHAPTER 4

Deployment: edge, cloud and sovereign

Where the software runs affects speed, cost, resilience and control of data.

Option	What it means	Good fit when	Consider
Edge	Analytics run next to the camera or sensor.	Fast alerts are needed, or bandwidth is limited.	Device management and updates across many sites.
On-premise	Servers sit in a city-owned data center or command center.	Data must stay inside the city or agency.	Capital cost, space, power and skilled operators.
Private or government cloud	A dedicated cloud environment inside national boundaries.	You want scalability with local control.	Provider approval, data residency and exit terms.
Public cloud	Shared infrastructure from a commercial provider.	Workloads are not sensitive and need to scale quickly.	Data residency rules, costs that grow with use.
Hybrid	A mix of edge, on-premise and cloud.	Different workloads have different needs.	Needs clear architecture and monitoring.

SOVEREIGN AND AIR-GAPPED AI

Some agencies need AI that runs entirely inside their own boundaries, with no data leaving the premises. Sovereign AI means models and data are hosted and controlled in-country, on-premise or in an air-gapped environment. It lets sensitive use cases such as public safety use AI without sending video to outside services. AJEEVI supports in-country and on-premise deployments for this reason.

HOW TO CHOOSE

- Start from the data: what is sensitive, what must stay local and what can be shared.
- Match the option to each workload. Video analytics often suits the edge. Dashboards and reports may suit a central platform.
- Plan for resilience: what keeps working if the network, the cloud or one site fails?
- Write exit terms into every contract, so the city can move its data and systems if needed.

RULE OF THUMB

Decide where the data lives before you decide which software to buy.

02

PART TWO

Ten key use cases

Ten practical use cases, one page each: the challenge, how it works, what teams gain and how to measure it.



USE CASE 01 OF 10

Integrated command center

Bring cameras, sensors and field teams onto one screen.

THE CHALLENGE

Most cities run safety and service systems department by department. Police, traffic, water, power and civic teams each watch their own screens. When something happens, nobody sees the whole picture, and coordination depends on phone calls.

HOW IT WORKS

An integrated command and control center (ICCC) connects these systems to one platform. Live video, sensor alerts, helpdesk tickets and field team status appear on shared dashboards and on a city map. Rules decide which events become alerts, who is notified and how an issue escalates.

- Live video wall and a map-based view of every connected system
- Alert rules, priorities and escalation paths
- Role-based dashboards for each department
- Task assignment to field teams on mobile devices
- Event history and an audit trail for review

WHAT TEAMS GAIN

- One shared picture across departments
- Faster, better-coordinated response
- Records for after-action review and planning

METRICS TO TRACK

- Time to detect an event
- Time to dispatch a team
- Time to close an incident
- Share of alerts acted on

PRACTICAL TIP

Write the standard operating procedures (SOPs) before designing the screens. A command center only works when people know who does what when an alert fires.

Where AJEEVI fits | Platform: **GyanKendram** | AI agent: **Incident Response Agent**

USE CASE 02 OF 10

AI video surveillance and analytics

Help operators understand what cameras see, not just record it.

THE CHALLENGE

A city may have thousands of cameras, but operators can watch only a few screens at once. Most footage is reviewed only after something has gone wrong.

HOW IT WORKS

AI video analytics runs on the video feeds, either at the edge next to the camera or on central servers. It detects and counts people and vehicles, recognizes defined events and raises an alert with the relevant clip, so operators look at the right camera at the right time.

- Fixed and PTZ cameras placed using a risk map
- Analytics for people, vehicles and defined events
- Alerts that carry a video clip and location
- A searchable archive by time, place and event type
- Privacy controls such as role-based access and retention rules

WHAT TEAMS GAIN

- Fewer missed events
- Operators focus on alerts instead of walls of screens
- Faster investigation after an incident

METRICS TO TRACK

- Alert-to-acknowledge time
- False alert rate
- Camera uptime
- Share of cameras with analytics running

PRACTICAL TIP

Start with a few high-value locations and tune the rules there. A small number of trusted alerts beats a flood of noisy ones.

Where AJEEVI fits | Platform: **GyanAkshi** | AI agent: **Video Analytics Agent**

USE CASE 03 OF 10

Incident detection and response

Spot incidents early and get the right team moving.

THE CHALLENGE

Alerts come from cameras, sensors, emergency calls and citizens. Without a single queue, important incidents compete with minor ones, and ownership is unclear.

HOW IT WORKS

An incident management layer collects alerts from every source, removes duplicates, ranks them by severity and assigns them to the right team. Field staff receive tasks on mobile devices and update status as they work. The incident stays open until it is closed with notes.

- Alert intake from video, sensors, calls and apps
- Severity ranking and duplicate merging
- Dispatch to teams with location and context
- Mobile status updates and photo evidence
- Closure notes and a complete incident history

WHAT TEAMS GAIN

- Clear ownership of every incident
- Faster response and fewer dropped tasks
- A full history for review and training

METRICS TO TRACK

- Time to assign
- Time to arrive on site
- Time to resolve
- Share of incidents closed within target

PRACTICAL TIP

Agree severity levels and target response times with every department up front, so the ranking reflects shared priorities.

Where AJEEVI fits | Platform: **GyanSatark** | AI agent: **Incident Response Agent**

USE CASE 04 OF 10

Road safety and traffic enforcement

Find dangerous driving and risky locations before they cause harm.

THE CHALLENGE

Road crashes and violations are usually recorded after the fact. Black spots are hard to rank, and enforcement is often spread thin.

HOW IT WORKS

Cameras and traffic analytics at junctions and along corridors detect events such as wrong-way driving, red-light jumping, stopped vehicles and near misses. The platform ranks locations by risk, so engineers and enforcement teams know where to act first.

- Junction and corridor cameras
- Analytics for violations, stopped vehicles and near misses
- Risk ranking of locations
- Evidence packages for enforcement review
- Links to signal timing and incident response

WHAT TEAMS GAIN

- Safer junctions
- Enforcement aimed where it matters
- Evidence for engineering improvements

METRICS TO TRACK

- Violations detected per location
- Incident detection time
- Crashes at monitored locations over time
- Time to clear a blockage

PRACTICAL TIP

Pair detection with engineering fixes. Better signage, markings and signal timing often reduce risk more than enforcement alone.

Where AJEEVI fits | Platform: **TransAJV** | AI agent: **Road Safety Agent**

USE CASE 05 OF 10

Crowd management

Know how crowded a place is, and warn before it becomes unsafe.

THE CHALLENGE

Festivals, stations, markets and gatherings can fill up faster than teams can react, and overcrowding is hard to judge by eye.

HOW IT WORKS

Camera feeds and entry counts are used to estimate crowd density and movement in defined zones. Thresholds raise alerts before a place becomes unsafe, and operators can see which exits and routes are still open.

- Density estimation in defined zones
- Entry and exit counting
- Threshold alerts and trend views
- Exit and route status
- Event-day dashboards for planners

WHAT TEAMS GAIN

- Earlier warning of overcrowding
- Safer events and public spaces
- Data to plan better next time

METRICS TO TRACK

- Time from threshold breach to action
- Peak density by zone
- Queue times at entries
- Events with a reviewed crowd plan

PRACTICAL TIP

Set zone capacities with safety and fire officers before the event, then test the alerts during a drill.

Where AJEEVI fits | Platform: **GyanAkshi** | AI agent: **Crowd Management Agent**

USE CASE 06 OF 10

Safer streets with smart lighting

Keep streets lit where people need it, and fix dark spots fast.

THE CHALLENGE

Faulty lamps stay dark until someone reports them, and lights follow fixed schedules whether or not people are on the street.

HOW IT WORKS

Connected controllers on each lamp or circuit report status, energy use and faults to the platform. Lights can be dimmed or brightened by time, ambient light or events, and failures create maintenance tickets automatically.

- Lamp or circuit controllers with communication
- Remote on, off and dimming schedules
- Fault and energy reporting
- Automatic maintenance tickets
- A link to the command center for events

WHAT TEAMS GAIN

- Fewer dark streets
- Lower energy use
- Maintenance sent only where it is needed

METRICS TO TRACK

- Share of lamps working
- Time to repair a fault
- Energy use per lamp
- Complaints about lighting

PRACTICAL TIP

Use the AJEEVI street lighting savings calculator at ajeevi.com to estimate energy savings before you set targets.

Where AJEEVI fits | Platform: **GyanYantram** | AI agent: **Street Lighting Agent**

USE CASE 07 OF 10

Fire and life safety in buildings

Bring smoke, heat and access data together to speed up response.

THE CHALLENGE

Fire panels, detectors, access control and cameras usually report separately, so confirming an event and guiding people takes time.

HOW IT WORKS

A building management layer combines detector, panel, access and camera data. It confirms events, shows the location, locks or unlocks doors as planned and guides responders and occupants.

- Integration with fire alarm panels and detectors
- Access control and door status
- Camera views for confirmation
- Evacuation and notification workflows
- Maintenance tracking for safety equipment

WHAT TEAMS GAIN

- Faster confirmation of real events
- Clearer evacuation
- Fewer false alarms

METRICS TO TRACK

- Time to confirm an alarm
- False alarm rate
- Equipment faults found before failure
- Drill completion and results

PRACTICAL TIP

Test the integrations during scheduled drills and document the results. Safety systems need regular proof that they work together.

Where AJEEVI fits | Platform: **GyanBhawan** | AI agent: **Fire and Safety Agent**

USE CASE 08 OF 10

Flood and disaster early warning

See trouble coming, and test the response before it is needed.

THE CHALLENGE

Heavy rain and rising water reach drains, roads and low-lying areas before teams are ready.

HOW IT WORKS

Rain gauges, water level sensors and weather feeds raise alerts when levels cross thresholds. A city digital twin can run what-if scenarios, such as how water might spread, so teams can plan closures, pumping and evacuation.

- Rain gauges and water level sensors
- Weather data feeds
- Threshold alerts and trend views
- Digital twin scenarios for planning
- Public notification workflows

WHAT TEAMS GAIN

- More lead time before impact
- Better-prepared teams
- Plans tested before they are needed

METRICS TO TRACK

- Lead time between alert and impact
- Sensors online
- Time to deploy pumps and teams
- Share of at-risk areas covered

PRACTICAL TIP

Place sensors where flooding has happened before and where water collects, and keep a record of every event to improve thresholds.

Where AJEEVI fits | Platform: **VayuAJV** | AI agent: **Digital Twin Agent**

USE CASE 09 OF 10

Air quality and environmental hazards

Know where the air and noise are harmful, ward by ward.

THE CHALLENGE

Air and noise readings are sparse, so pollution hotspots and sudden spikes go unnoticed.

HOW IT WORKS

Sensors report air quality, noise and weather to one platform that maps hotspots, tracks trends and raises alerts. Reports by ward support action and public information.

- Air quality and noise sensors
- Calibration and data quality checks
- Hotspot maps and trend views
- Threshold alerts
- Ward-level reports

WHAT TEAMS GAIN

- Early warnings of poor air quality
- Evidence to guide action
- Open reporting for citizens

METRICS TO TRACK

- Sensor uptime
- Time to detect a spike
- Hotspots identified
- Actions taken per hotspot

PRACTICAL TIP

Check sensor calibration regularly. Trust in the data is what makes the alerts useful.

Where AJEEVI fits | Platform: **VayuAJV** | AI agent: **Air and Noise Agent**

USE CASE 10 OF 10

Citizen helpdesk and field response

Track every complaint and field job until it is closed.

THE CHALLENGE

Reports of broken lights, hazards and service problems arrive by phone, app, web and email, and get lost between departments.

HOW IT WORKS

Requests from every channel go into one system, are classified, routed to the right team and tracked until closure. Citizens receive updates, and managers see backlogs and repeat problems.

- Multi-channel intake
- Automatic classification and routing
- Field job assignment with photo proof
- Status updates to citizens
- Dashboards for backlog and repeat issues

WHAT TEAMS GAIN

- Faster fixes
- Clear accountability
- Better service for citizens

METRICS TO TRACK

- Time to first response
- Time to close
- Reopen rate
- Citizen satisfaction

PRACTICAL TIP

Publish target resolution times and report against them. Visible commitments build trust.

Where AJEEVI fits | Platform: **GyanRakshak** | AI agent: **Citizen Helpdesk Agent**

03

PART THREE

Making it real

AI agents, security and privacy, a phased roadmap, governance, measures and a readiness checklist.



PART THREE | CHAPTER 5

AI agents in the city

Software agents that watch live data, understand context and help teams act.

An AI agent is software that observes a stream of data, decides what matters within rules set by people, and then recommends or takes an action. Because agents never tire, they extend the attention of a control room across thousands of cameras, sensors and tickets. Each agent below focuses on one job, and all can report to the same command center.

#	Agent	Area	What it does
1	Traffic Signal	Mobility	Adjusts signal timing as traffic builds up.
2	Parking	Mobility	Tracks bay occupancy and guides drivers to free spaces.
3	Road Safety	Mobility	Spots dangerous driving and ranks risky locations.
4	Transit and Fleet	Mobility	Tracks vehicles and reacts to delays.
5	Leak Detection	Water	Finds likely leaks by comparing flow and pressure.
6	Water Quality	Water	Watches quality sensors and alerts on drift.
7	Pumping Optimization	Water	Plans pump schedules to cut energy use.
8	Demand Forecast	Water	Predicts water demand by area.
9	Building Energy	Energy and Buildings	Tunes HVAC and lighting to occupancy and weather.
10	Predictive Maintenance	Energy and Buildings	Warns before equipment fails.
11	Solar and Power Quality	Energy and Buildings	Monitors solar output and power quality.
12	Fire and Safety	Energy and Buildings	Combines fire, heat and access data for faster response.
13	Video Analytics	Public Safety	Detects, counts and classifies events on camera.
14	Incident Response	Public Safety	Prioritizes alerts, assigns teams, tracks closure.
15	Crowd Management	Public Safety	Estimates crowd density and warns early.
16	Air and Noise	Environment and Streets	Maps air and noise hotspots and trends.
17	Waste Collection	Environment and Streets	Plans collection around real bin fill levels.
18	Street Lighting	Environment and Streets	Dims or brightens lights and finds faulty lamps.
19	Citizen Helpdesk	Operations and Planning	Routes complaints and follows up until closed.
20	Digital Twin	Operations and Planning	Runs what-if scenarios on the city model.

DESIGN RULES FOR CITY AGENTS

- **People stay in control.** Start with recommendations. Allow automatic actions only for low-risk steps agreed in advance.
- **Explain every alert.** Show the data behind each alert, so operators can trust or challenge it.
- **Limit permissions.** Each agent can read and do only what its job needs.
- **Log everything.** Keep a record of what each agent saw, decided and did.

PART THREE | CHAPTER 6

Security, privacy and trust

Citizens will accept connected technology only if it is secure and respects their privacy.

Cameras, sensors and software that protect a city also create responsibility. Security and privacy are not add-ons. They shape the design, the contracts and the daily operation.

SECURITY PRACTICES

- **Secure by design.** Encrypt data in transit and at rest, change default passwords, and keep devices and software patched.
- **Network separation.** Keep operational networks apart from public and office networks, and control every connection between them.
- **Role-based access.** Give each person only the access their job needs, and review access regularly.
- **Audit trails.** Record who viewed what and when, especially for video and personal data.
- **Standards and testing.** Align with recognized practice such as ISO/IEC 27001 and guidance from CERT-In, and test systems regularly.
- **Plan for incidents.** Have a response plan for cyber incidents, and rehearse it.

PRIVACY AND ETHICS

- **Purpose limitation.** Collect data only for stated purposes, and tell the public what they are.
- **Retention rules.** Keep data only as long as needed, then delete it.
- **Minimize personal data.** Prefer analytics that count and detect events over analytics that identify people, unless the law and the use case clearly require it.
- **Follow the law.** Comply with applicable laws, including the Digital Personal Data Protection Act, 2023 in India, and seek legal advice for sensitive uses.
- **Human oversight.** A person reviews decisions that affect individuals.
- **Transparency.** Publish policies, and offer a way for citizens to ask questions and raise concerns.

WHY IT MATTERS

Trust is built slowly and lost quickly. Publish your data and privacy policy before the first camera goes live.

PART THREE | CHAPTER 7

A phased roadmap

Start with a focused foundation, expand with confidence, then optimize.



Phase 1: Foundation	Phase 2: Expand	Phase 3: Optimize
Typical timing: first 6 months	Typical timing: 6 to 18 months	Typical timing: 18 months onward
Pick two or three high-value use cases, such as video analytics, incident response and lighting.	Add use cases that reuse the same platform: road safety, crowd management, water, buildings, air quality.	Run digital twin scenarios for planning and emergencies.
Build the command center core, networks and data platform.	Connect more departments and sensors.	Use predictive maintenance to fix assets before they fail.
Integrate existing cameras and systems.	Roll out mobile apps for field teams and citizen channels.	Share data with partner agencies under clear rules.
Write SOPs, train operators and agree service levels.	Introduce AI agents, starting with recommendations.	Review results, retire what does not work and invest where value is clear.

Timings are illustrative. Adjust them to your city, funding and readiness.

MILESTONES TO REVIEW AT EACH PHASE

- The use cases are live, used daily and trusted by the people who rely on them.
- Measures from Chapter 9 show improvement against the starting point.
- Security, privacy and operations are documented and tested.
- Budget, staff and support contracts are in place for the next phase.

ADVICE FROM THE FIELD

Pilot first. A small, well-run deployment that people trust is the best argument for the next phase.

PART THREE | CHAPTER 8

Governance, procurement and operations

Good technology fails without clear ownership, sound contracts and trained operators.

Role	Responsibility
City leadership	Sets goals, approves budgets and policies, and sponsors cross-department cooperation.
Command center team	Operates the platform around the clock, manages alerts and coordinates response.
Departments	Own their use cases, provide field teams and act on tasks from the command center.
IT and security	Run infrastructure, manage access, protect data and handle cyber incidents.
Partner and AMC provider	Deliver, support and maintain systems under agreed service levels.

PROCUREMENT CHECKLIST

- **Outcomes first.** Write requirements around results and measures, not only equipment lists.
- **Open interfaces.** Require documented APIs and standard protocols.
- **Data ownership and exit.** Confirm the city owns its data and can export it in usable formats.
- **Service levels.** Define uptime, response and repair times, and link payment to them.
- **Local support.** Check for trained engineers, spares and response times near your city.
- **Cybersecurity.** Ask for security testing, patching commitments and incident reporting.
- **Scalability.** Confirm the platform can add use cases without rebuilding.
- **Total cost.** Compare multi-year costs including maintenance, connectivity and training.

OPERATIONS THAT KEEP SYSTEMS HEALTHY

- Plan annual maintenance contracts (AMC) and spares from the start.
- Monitor the health of cameras, sensors and networks, and fix faults quickly.
- Train operators and refresh the training when systems change.
- Review incidents regularly and update procedures.

PART THREE | CHAPTER 9

Measuring success

What gets measured gets improved. Choose a few measures per use case and track them from day one.

Use case	Example measures
Integrated command center	Time to detect, dispatch and close; share of alerts acted on
AI video analytics	Alert-to-acknowledge time; false alert rate; camera uptime
Incident response	Time to assign, arrive and resolve; incidents closed within target
Road safety	Violations and crashes at monitored locations; time to clear blockages
Crowd management	Time from threshold breach to action; peak density by zone
Smart lighting	Share of lamps working; repair time; energy per lamp
Fire and life safety	Time to confirm alarms; false alarm rate; faults caught early
Flood early warning	Lead time before impact; sensors online; area covered
Air quality	Sensor uptime; time to detect spikes; actions per hotspot
Citizen helpdesk	Time to first response and to close; reopen rate; satisfaction

HOW TO USE THESE MEASURES

- **Record a baseline.** Measure how things work today, before launch, so improvement is visible.
- **Set targets with the departments involved.** Shared targets create shared ownership.
- **Review monthly.** Show results on the command center dashboard and discuss what to change.
- **Report to citizens.** Publish a short summary of outcomes, so the public can see the benefit.
- **Watch the whole system.** Track platform health, such as devices online and data quality, alongside outcomes.

KEEP IT SIMPLE

Choose fewer measures and track them well. A short list that people trust beats a long list nobody reads.

PART THREE | CHAPTER 10

Common pitfalls and a readiness checklist

Most problems in smart city programs are about people and process, not technology.

Pitfall	How to avoid it
Buying technology before defining the problem	Start from outcomes and measures, then choose tools.
Separate systems with separate screens	Integrate through one platform and open interfaces.
No operating procedures	Write SOPs and train operators before go-live.
Too many alerts	Tune rules on a few locations first and add more gradually.
Neglecting maintenance	Budget for AMC, spares and monitoring from day one.
Weak data quality	Calibrate sensors, check for gaps and flag bad readings.
Privacy as an afterthought	Publish policies, minimize personal data and limit access.
Vendor lock-in	Require open APIs, data ownership and exit terms.
Trying to do everything at once	Start with two or three use cases and scale on proof.
Ignoring citizens	Give residents a way to report issues, and share the results.

READINESS CHECKLIST

Question	Yes / No
Do we have two or three clear problems to solve first?	[]
Does each have an owner and agreed measures?	[]
Do we know which systems and data already exist?	[]
Have we decided where data will live and who can see it?	[]
Are SOPs, staff and training planned?	[]
Is funding secured for operations, maintenance and AMC?	[]
Have we set a privacy and security policy?	[]

REFERENCE

Glossary

Plain-language definitions of the terms used in this ebook.

Term	Meaning
AI agent	Software that watches data, decides within rules and recommends or takes action.
AMC	Annual maintenance contract for support and repair of installed systems.
API	Application programming interface. A documented way for systems to exchange data.
BMS	Building management system that controls HVAC, lighting, access and safety.
Digital twin	A live digital model of a city or asset, used to monitor and test scenarios.
Edge	Computing done close to the camera or sensor instead of in a distant data center.
GIS	Geographic information system. Software that works with maps and location data.
ICCC	Integrated command and control center that brings city systems onto one platform.
IoT	Internet of Things. Connected devices and sensors that send data.
ITS	Intelligent transport systems for managing traffic and road safety.
NRW	Non-revenue water. Water produced but not billed, for example through leaks.
PTZ camera	A camera that can pan, tilt and zoom.
Sovereign AI	AI whose models and data are hosted and controlled within a country or organization.
SLA	Service level agreement. Agreed targets for uptime, response and repair.
SOP	Standard operating procedure. Written steps for how a task or incident is handled.
SCADA	Systems that monitor and control utility and industrial equipment.



ABOUT AJEEVI

HumanTech for a smarter world

AJEEVI Technologies builds AI, IoT and software for smarter urban infrastructure. Made in India. Built for the world.

Our platforms help cities, utilities, campuses and industries watch, detect and respond across traffic, water, energy, buildings and public safety.

PLATFORMS

GyanAkshi	AI and video analytics
GyanYantram	IoT devices and sensors
GyanKendram	Integrated command center
GyanBhawan	Smart buildings and BMS
JalAJV	Water intelligence
VayuAJV	Environmental intelligence
TransAJV	Smart mobility
GyanSatark	Public safety
GyanRakshak	Citizen and operations helpdesk

TALK TO US ABOUT YOUR CITY

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