# **Project Title:**

**Residential Township Management System** 

# **Document Type:**

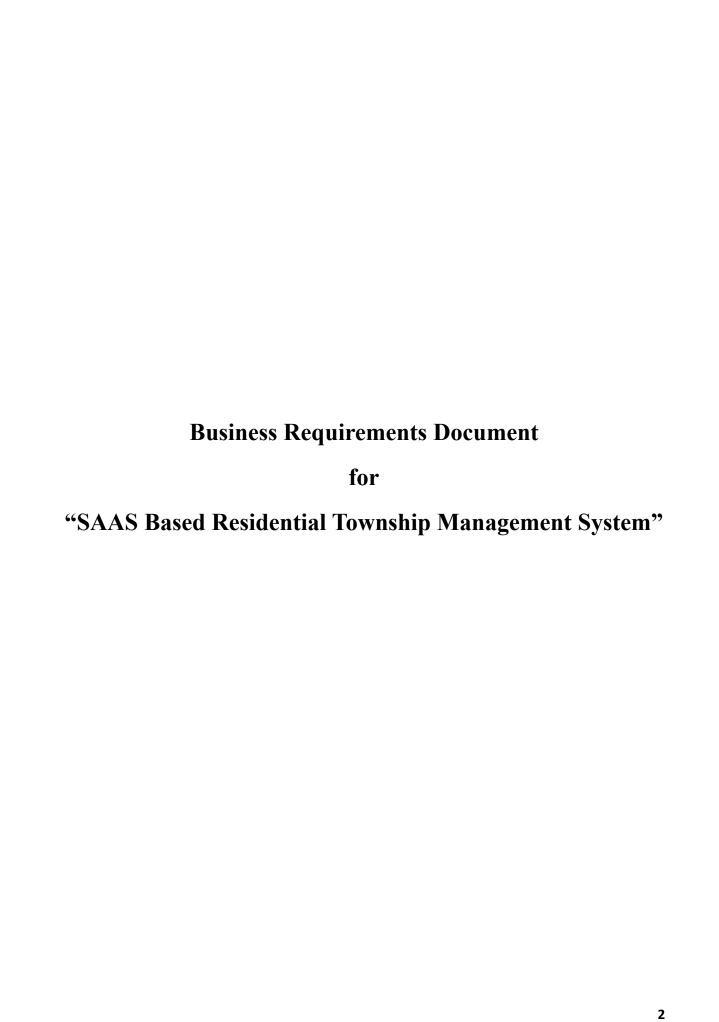
**Business Requirements Document** 

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#### **EXECUTIVE SUMMARY**

This BRD defines the business requirements for developing a Saas Based Residential Township Management System (RTMS) to streamline administrative, security, maintenance, and resident-related operations. This system will be serve as a centralized platform for township manager, residents, vendors, and security personnel.

#### **PURPOSE**

The purpose of this document is to outline the business requirements for a centralized Residential Township Management System. This system will streamline and digitize the management of residential facilities, services, residents, vendors, and internal operations of a township to enhance operational efficiency and improve resident satisfaction.

- It will serve as a centralized platform to any society, residential area.
- Register and maintain profiles of all township residents.
- Facilitate communication between residents and township management.
- Manage amenity bookings, complaints, payments, and service requests.
- Ensure secure and authenticated access to township amenities and services.
- Provide data insights and reports to support decision-making for township authorities.

# **Project Scope**

The scope of the SaaS-Based Residential Township Management System is to develop a cloud-based platform that automates and manages daily operations in residential townships. It includes modules for user management, billing, maintenance requests, visitor tracking, and communication. The system is designed to improve administrative efficiency and resident convenience through web and mobile access.

#### **Key Deliverables:**

- User Interface: Role-based access for residents, admins, and staff.
- Visitor Management System: Visitor pre-approval, check-in/out logs.
- Complaint & Maintenance Module: Ticketing system for service requests with tracking.
- **Billing & Payment System:** Automated fee generation, online payment gateway integration, and receipt handling.
- Notice Board & Communication Tools: Admin announcements, emergency alerts, and message board.
- Facility Booking Module: Calendar-based booking system for community amenities.
- **Reports & Analytics Dashboard:** Monthly summaries for management insights and transparency.
- **Mobile & Web Application Interface:** Responsive UI/UX for easy access on phones and desktops
- Cloud Deployment & Database Setup: Scalable and secure hosting with centralized data storage
- User Training & Documentation: Manuals, on boarding guides, and admin training

#### **Exclusions:**

- **On-Premise Installation:** The system will be hosted on the cloud only; no local server deployments.
- **IOT Integration:** Integration with smart devices like RFID gates, CCTV, or sensors is not included in this phase.
- **Multi-Language Support**: The application will support only one language (e.g., English) initially.
- **Commercial Property Support:** The system is designed exclusively for residential townships, not for commercial or mixed-use properties.
- **Custom Reports or Dashboards:** Only standard reports are included; custom analytics will require separate development.
- **Third-Party Vendor Management**: No direct integration with external vendors or contractors (e.g., housekeeping, delivery services).
- Offline Functionality: The system requires an internet connection to function; no offline mode is supported.

#### **KEY BENEFITS**

#### Objective:

To enable the efficient on boarding, verification, and lifecycle management of township residents through a centralized digital system.

#### • Centralized Management:

Enables township administrators to manage residents, finances, facilities, and communication from a single cloud-based platform.

#### • Cost-Efficient:

No need for on premise servers or heavy IT infrastructure—low upfront investment with predictable subscription-based pricing.

#### • Real-Time Communication:

Facilitates instant announcements, alerts, and updates to residents and staff via mobile/web platforms.

#### • Streamlined Operations:

Automates billing, visitor logging, complaint tracking, and service scheduling, reducing manual workload.

#### • 24/7 Accessibility:

Accessible from anywhere through the internet, allowing admins and residents to use the system anytime.

#### • Data Security & Privacy:

Regular updates, backups, and encryption protocols ensure residents' personal and financial data is protected.

#### • Scalability:

Can handle multiple societies and growing user bases without performance issues, thanks to the SaaS model.

#### • Transparency & Accountability:

Maintains detailed logs of transactions, communications, and service activities, ensuring transparency in management.

#### • User Convenience:

Residents can pay bills, book amenities, and raise complaints through a mobile app, reducing in-person visits.

#### • Easy Maintenance & Updates:

Updates and improvements are rolled out automatically by the provider, ensuring the system is always up to date.

#### **KEY FEATURES:**

#### • Resident On boarding:

Self-registration via mobile app/web portal

### • Admin-assisted registration at township office:

ID and address proof upload (e.g., Aadhaar, PAN, rental agreement)

# • Profile Management:

View and update personal details (name, photo, contact info, emergency contact)

Manage household members and dependents

Upload/manage documents (lease agreement, vehicle papers, etc.)

### • House Mapping:

Residents linked to specific flats/villas/units

Option for owners, tenants, and family members

Automatic deactivation on lease expiry (for tenants)

#### • Status & Access Control:

Active/inactive/suspended status management

Role-based access (Owner, Tenant, Family Member, Staff)

#### • Notifications:

Alerts for registration approval, renewal reminders, events or document expiry

#### **EXPECTED OUTCOMES**

The implementation of the Residential Township Member System is expected to achieve the following outcomes:

### • Enhanced Resident Experience:

Streamlined digital services through a centralized platform.

Easy access to information, bookings, and services via mobile/web app.

Faster resolution of complaints and service requests.

#### • Improved Security and Access Control:

Systematic visitor tracking with real-time logs and approval workflows.

Reduced manual errors and unauthorized entries through digital verification (QR/OTP).

Emergency alert features to ensure resident safety.

#### • Operational Efficiency for Township Management:

Automation of routine administrative tasks (registration, dues management, announcements).

Centralized dashboard for performance tracking and decision-making.

Reduced dependency on manual registers, paperwork, and in-person visits.

#### • Transparent Communication and Governance:

Timely notifications and updates shared with all residents.

Improved trust and accountability between residents and management.

Digital audit trails for all transactions and requests.

#### • Cost and Resource Optimization:

Reduction in resource wastage through better planning (e.g., facility bookings).

Lowered administrative costs through digitization.

Efficient tracking of maintenance dues and timely payments.

#### • Data-Driven Insights:

Real-time access to resident, visitor, and service data.

Custom reports for tracking usage patterns, payment trends, and complaint resolutions.

# **Project Constraints**

#### • Technical Constraints:

**Platform Compatibility:** Ensuring the software works seamlessly across web, iOS, and Android platforms.

**Security Risks:** Mitigating risks such as unauthorized access, data leaks, and cyber threats through encryption and secure authentication.

**Third-Party Integrations**: Ensuring smooth integration with payment gateways, SMS/email providers, IOT systems (gate security), etc.

**Technology Limitations:** Working within the limitations of available frameworks, server capacity, and real-time data syncing.

#### • Financial Constraints:

**Budgetary Limitations:** Project must stay within approved funding for design, development, deployment, and maintenance.

**Return on Investment (ROI):** Justify all expenditures by showing long-term operational savings or increased satisfaction.

#### • Time Constraints:

**Development Deadlines**: Sticking to a phased release schedule for MVP, pilot, and final versions.

**Seasonal Activities:** Some modules (e.g., facility booking, maintenance) must go live before high-usage periods.

#### • Resource Constraints:

Human Resources: Availability of skilled developers, UI/UX designers, domain experts.

**Infrastructure Constraints:** Dependency on township network setups, hardware, or resident devices.

# **Project Background**

The Residential Township Management System is being developed to provide a centralized platform for residents, facility managers, and township administrators. It will streamline operations like visitor management, event handling, maintenance requests, payment tracking, and community engagement.

#### Some of challenges might come in project:

#### • Technical Challenges:

System Downtime: Risk of server outages impacting resident access.

Scalability: Ability to handle multiple societies and thousands of users simultaneously.

Integration Failures: Trouble connecting with smart devices, CCTV, or RFID systems.

#### • Operational Challenges:

Manual Processes: Existing workflows are paper-based or fragmented.

**Disjointed Communication:** Lack of a unified channel for residents, security, and management.

Compliance Management: Adhering to RERA, GST, and other legal standards.

#### • User Experience Challenges:

Non-Tech Savvy Users: Many residents may not be comfortable using complex apps.

**Multiple Roles:** Differentiating roles and access levels for admins, guards, residents, and vendors.

Mobile Responsiveness: Ensuring ease of use on mobile phones and tablets.

# **Proposed Solutions**

# • Technical Challenges:

**Cloud-Based Hosting:** Ensures uptime, scalability, and fast performance.

**Regular Security Audits:** Frequent penetration tests with data protection norms.

Integrated Dashboard: Centralized panel for managing all township operations.

**Modular Architecture:** Easily expandable for future features or societies.

#### • Operational Challenges:

Workflow Automation: Digital requests, approvals, and logs reduce manual errors.

Communication Hub: Central bulletin board, notifications, and SOS alerts.

Compliance Reports: Automated generation of GST invoices, RERA notices, etc.

#### • User Experience Challenges:

Multi-Language Support: Interfaces in local languages for better adoption.

Role-Based Access: Separate views and permissions for each user type.

Mobile-First Design: Prioritized responsive layout and app usability.

# **Opportunities**

#### • Smart Township Integration:

**IOT Integration:** Connect smart meters, CCTV, and security gates for better control.

Automated Lighting and Water Usage Reports: Helps residents track consumption and save energy.

#### • Revenue Generation:

Ad Space in App: Allow local businesses to advertise.

**Premium Features:** Offer additional services on subscription basis (like personal concierge or guest management support).

#### • Data-Driven Management:

Predictive Maintenance: Use historical data to anticipate issues before they occur.

**Resident Sentiment Analysis:** Use feedback data to improve satisfaction and community harmony.

#### • Sustainability and Green Living:

Waste Segregation Tracking: Digital logs and resident awareness.

Carbon Footprint Dashboards: Educate residents through usage stats and community goals.

#### • Expansion to Commercial Complexes:

Custom Facility Management Features: Add modules specific to commercial spaces like meeting room bookings, employee access control, and shared resource scheduling (e.g., printers, parking).

**Integration with Corporate Systems:** Enable APIs or plugins enterprise communication tools (e.g., Microsoft Teams) to suit business environments.

#### **Business Needs**

#### • Scalable Digital Platform:

Multi-Society Support: One backend serving multiple gated communities.

Real-Time Notifications: Instant SMS/email/app alerts to residents and management.

### • Resident Engagement:

Event Calendar and RSVP: Encourage social activities and participation.

Feedback System: Residents can log complaints or suggestions easily.

#### • Financial Transparency:

Bill Management: Auto-generate and share electricity, maintenance, and water bills.

Online Payments: Secure payment gateways for easy dues clearing.

### • Security and Access Control:

Visitor Pass System: Residents can issue QR-based passes in advance.

Staff Attendance Logs: Digital attendance tracking for domestic help and vendors.

#### • Maintenance Operations:

AMC and Repairs Tracker: Monitor service provider SLAs and contract renewals.

Asset Inventory: Track township assets like benches, lights, gym equipment.

# **Project Scope**

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# **Project Boundaries**

The project is limited to managing residential township operations via a cloud-based platform accessible through web and mobile apps. It excludes offline functionality, hardware integration, and support for commercial or industrial properties.

#### **In-Scope:**

#### • User Management:

Resident, admin, security, and maintenance staff accounts. Role-based access control.

#### • Visitor Management:

Pre-approval of guests. Visitor logs and real-time tracking.

#### • Complaint and Maintenance Tracking:

Residents can raise service requests.

Admin can assign tasks to technicians and track resolution status.

#### • Billing and Payments:

Monthly maintenance fee generation.

Online payment integration and receipt generation.

#### • Notice Board & Communication:

Admin can send announcements and emergency alerts. Private messaging or ticketing system

- Amenities Booking: Reservation system for clubhouse, gym, pool, etc.
- Reports and Analytics: Monthly reports on expenses, complaints, and visitor logs.
- Mobile & Web Access: Cross-platform usability for residents and management.
- **Cloud Hosting**: Centralized, secure data accessible 24/7.

#### **Out-of-Scope:**

- Custom on-premise installations (non-cloud)
- IoT device integration (e.g., smart gates, sensors) in the initial phase
- Support for commercial complexes (focus is on residential)
- Multi-language support (unless specified later)

#### Limitations

The system requires a stable internet connection and supports only standard features with limited customization initially. It does not integrate with physical security devices and relies on third-party payment gateways for transactions.

• Requires Stable Internet Connectivity:

The system depends entirely on internet access for all users and modules.

• Limited Customization in Initial Phase:

Only standard features will be available; custom workflows or branding are not supported at launch.

• Single Language Interface:

The platform will initially support only one language (e.g., English).

• No Integration with Physical Devices:

The system does not support direct integration with biometric gates, CCTV, or other IOT hardware.

• Dependent on Third-Party Payment Gateways:

Payment processing relies on external services, which may involve additional transaction fees or service issues.

• Data Backup & Retention Policy May Be Generic:

Custom data retention or compliance features (e.g., GDPR, local laws) are not included by default.

To mitigate these limitations, ensure users have reliable internet access and plan future updates for enhanced customization. Design the system with open APIs to allow hardware integration later. Also, integrate multiple payment gateways to provide backup options and reduce transaction risks.

# Requirements

# **Functional Requirements**

Registration	- User registration with resident/admin/staff roles
	- Admin approval for new users
Authentication	- Secure login with password
	- Optional two-factor authentication (2FA)
	- Password recovery
Resident Management	- View/edit resident profiles
	- Assign flats/units
	- Track ownership/tenant status
Community Management	- Post announcements
	- Facility booking system
	- Manage events and feedback
Financial Management	- Generate maintenance bills
	- Online payment integration
	- View payment history
Service Provider Management	- Store provider details
	- Assign/track service requests
	- Record job status
Security Management	- Log visitor entries/exits
	- Resident visitor pre-approval
	- Emergency alerts
UI/UX	- Responsive design
	- Role-based dashboards
	- Mobile and web compatibility
Integration & API	- RESTful APIs for SMS, payment, hardware (future)
	- Support for third-party tools
Security & Privacy	- Role-based access control
	- Data encryption
	- Audit logging
Scalability & Performance	- Support multi-tenancy
	- Efficient data handling under high user load
Customer Support	- In-app ticketing system
	- Help/FAQ section
	- Support dashboard for admins
SaaS Model	- Multi-society support
	- Subscription plan management
	- Admin-level controls

# Non-Functional Requirement

Performance	- Response time ≤ 2 seconds	
	- Support for 10,000+ concurrent users	
Scalability	- Cloud auto-scaling	
·	- Modular multi-tenancy architecture	
Availability	- 99.9% system uptime	
Security	- AES-256 encryption	
	- Protection from OWASP Top 10 vulnerabilities	
Maintainability	- Modular code structure	
·	- Centralized logging and monitoring	
Usability	- Intuitive user interface	
	- Complete common tasks in ≤ 3 clicks	
Portability	- Cross-platform support (web + Android/iOS browsers)	
Compliance	- Data privacy aligned with GDPR or local laws	
Backup & Recovery	- Daily automatic backups	
	- Data recovery support	
Localization (Future)	- Ready for multilingual support (e.g., English, Hindi, etc.)	
Portability  Compliance  Backup & Recovery	- Cross-platform support (web + Android/iOS browsers)  - Data privacy aligned with GDPR or local laws  - Daily automatic backups  - Data recovery support	

# **Key Stake Holders**

# **Internal Key Stake Holders**

- **Project Manager** Responsible for overall project execution, timelines, and coordination.
- Business Analyst Gathers and translates client requirements into technical documentation.
- **Software Developers** Build the system features and backend functionalities.
- UI/UX Designers Design user-friendly, accessible interfaces for mobile and web.
- **QA/Testers** Ensure the system functions correctly and meets quality standards.
- **DevOps Engineers** Handle deployment, scaling, and system performance.
- **Product Owner** Defines feature priorities and maintains the product roadmap.
- Customer Support Team Provides user support and addresses issues post-launch.

#### **External Stake Holders**

- Residential Society Admins Use the platform to manage the township operations.
- Residents (End Users) Use features like bill payment, complaints, facility booking, etc.
- **Service Providers and Vendors** Interact with the system for task updates and service logging.
- Security Personnel Use modules like visitor management and emergency alerts.
- Township Management Board Makes strategic decisions and oversees implementation.
- Payment Gateway Providers Support online transaction handling.

# **Schedule and Milestones**

# **Key Phases & Deliverables:**

Phase Milestone		Deliverables
Requirement Gathering Stakeholder workshops completed		BRD, Use Cases
Design & Prototyping UI/UX approved by township committee		Wireframes, Mock-ups
Development Core modules (e.g., billing, complaredy		MVP Build
Testing UAT signed off by residents		Test Reports, Feedback
Deployment	Pilot launch in Phase 1 of township	Go-Live Report
Maintenance         3 months post-launch support		SLA Compliance

# Phase 1: Planning and Initiation (2-3 weeks)

#### **Milestone 1: Project Kick-off**

- Define the scope of ResiConnect: including modules for resident on boarding, visitor control, facility bookings, maintenance billing, internal communication, and security integrations.
- o Identify stakeholders: township developer, society management committee, IT team, facility management team, and end-users (residents).
- Develop a comprehensive project plan with a clear roadmap, deadlines, deliverables, and responsibilities.

#### **Milestone 2: Requirements Gathering**

- o Conduct stakeholder workshops and resident surveys.
- Document the Business Requirements Document (BRD) capturing pain points, expectations, and must-have features.
- o Define user personas (resident, guard, admin, committee member).
- Capture regulatory requirements such as RERA compliance, local municipal guidelines and data privacy laws.

# Phase 2: Design and Development (6-10 weeks)

# Milestone 3: System Design

- o Architect the platform as a modular, scalable SaaS or self-hosted solution.
- o Create detailed wireframes for web portal and mobile app (Android & iOS).
- Define system flows: resident registration, complaint escalation, payment reminders, gate pass generation.
- o Create system design document and API contracts.

#### **Milestone 4: Core Development**

- o Resident Onboarding: Owner/tenant profiles, document uploads.
- o Flat Management: Link units with owners, residents, and tenants.
- Billing & Payments: Automated billing, payment gateway integration (Razorpay, Paytm, Stripe).
- O Visitor Management: Real-time check-in/check-out with QR codes and pre-approved lists.
- Security Desk Module: Guard app for managing visitors, emergency alerts.
- o Facility Booking: Timetable-based reservation system for clubhouses, gyms, halls.
- o Complaint Management: Trackable support tickets with SLA-based escalation.
- o Communication Tools: SMS, push, and in-app announcements with scheduling.
- o Integrate external APIs: SMS (Twilio), Email (SendGrid), IoT for boom barriers.

#### **Milestone 5: Testing and UAT**

- o Perform functional, UI, load, and security testing.
- o Engage select committee members and security staff for UAT.
- o Ensure multi-device compatibility and localization.

# Phase 3: Deployment and Go-Live (2-3 weeks)

# Milestone 6: Infrastructure Setup and Deployment

- o Host backend on AWS/GCP with autoscaling and data redundancy.
- o Set up staging and production environments.
- o Import master data of flats, residents, vehicles, and facility timings.

#### Milestone 7: Rollout and Onboarding

- O Distribute app links via SMS/email to all residents.
- o Conduct training sessions for society admins, security guards, and facility teams.
- o Launch internal helpdesk and chatbot support.

# Phase 4: Post-Go-Live & Enhancements (Ongoing)

#### Milestone 8: Monitoring and Feedback Loop

- o Monitor key KPIs: App usage, ticket closures, payment completion rate, visitor logs.
- o Run monthly check-ins with committee for enhancement inputs.
- o Track uptime, latency, and app store ratings.

#### Milestone 9: Advanced Modules & Feature Additions

- Roll out advanced features:
- o E-voting for meetings & polls.
- O Vendor marketplace (maid, plumber, grocery).
- o Municipal integrations (garbage pickup, water usage).
- o Community forums & bulletin board.
- o Multi-society admin dashboard for developers.

#### Resources

#### **Human Resources:**

These are the key personnel required to design, develop, test, deploy, and maintain the system:

**Project Manager** - Oversees overall execution and coordination.

**Business Analyst** - Gathers and documents functional requirements.

UI/UX Designer - Designs intuitive user interfaces and resident-friendly flows.

Frontend Developers - Develop web and mobile user interfaces.

**Backend Developers** - Build core system logic, APIs, and database connections.

Database Administrator (DBA) - Manages data integrity, optimization, and backups.

**QA/Test Engineers** - Perform functional, usability, performance, and security testing.

**DevOps Engineer** - Automates deployments and handles CI/CD pipelines.

**Security Analyst** - Ensures compliance with data privacy and implements access controls.

Customer Support Executives - Provide user assistance post-launch.

#### **Technical Resources:**

These are the tools, platforms, and services needed for software development and operations:

**Development Tools** - IDEs (e.g., VS Code), GitHub/GitLab for version control.

**Technology Stack** 

Frontend: React.js / Angular / Flutter (for mobile)

Backend: Node.js / Django / Laravel

Database: PostgreSQL / MySQL / MongoDB

**API & Integration Tools** - REST/GraphQL APIs, Payment Gateway SDKs, SMS/Email APIs.

Testing Tools - Selenium, Postman, JMeter for test automation and performance.

Monitoring & Logging Tools - New Relic, LogRocket for real-time tracking.

Analytics Tools - Google Analytics for user behaviour and engagement tracking.

Security Tools - SSL certificates, firewalls for secure authentication.

#### **Infrastructure Resources:**

Cloud Hosting – AWS / Azure

CI/CD Tools - GitHub Actions

Storage & Backups – AWS S3 / Azure Blob

**Domain & SSL Certificates** – For secure site access

**Load Balancer & CDN** – For traffic handling and fast delivery

Support Tools - Helpdesk and CRM

### **Other Resources: (Reference)**

These are existing township/residential management solutions that can help inform our product design and requirements:

My Gate

No Broker Hood

**Apna Complex** 

We had referred are some app which **are available** on app store and play store which helped us to understand product design and requirements.

# **Risk and Mitigation (Detailed Framework)**

Risk Categories: Technical, Operational, Financial, Legal/Compliance, Stakeholder

### I. Risk Identification & Assessment

Risk ID	Risk Description	Category	Probability (H/M/L)	Impact (H/M/L)	Risk Score (P×I)
R01	Low resident adoption of digital portals	Operational	Medium	High	$M \times H = High$
R02	Data breach/cybersecurity threats	Technical/Legal	Medium	High	$M \times H = High$
R03	Budget overruns due to scope creep	Financial	High	High	H×H = Critical
R04	Delays in third-party vendor integrations	Technical	High	Medium	$H \times M = Medium$
R05	Regulatory non- compliance (e.g., GDPR, local laws)	Legal	Low	High	L×H = Medium

# II. Mitigation Strategies For Each High/Critical Risk:

Risk ID	Preventive Measures (Proactive)	Contingency Plans (Reactive)	Owner
R01	Conduct resident training workshops pre-launch.	Roll out hybrid (manual + digital) processes during transition.	Operation Manager
	Gamify engagement (e.g., rewards for portal usage).		
R02	Implement end-to-end encryption.	Activate incident response team; notify authorities within 72 hours if breached.	CISO/IT Lead
	Regular penetration testing.		
R03	Define strict change control processes.	Prioritize MVP features; defer non-critical scope to Phase 2.	Project Manager
	Allocate 10% budget buffer.		
R04	Sign SLAs with vendors for timeline guarantees.	Switch to backup vendors or temporary manual workflows.	Tech Lead
	Use middleware for API flexibility.		
R05	Engage legal team early for compliance checks.	Pause project to address gaps; budget for fines/penalties.	Legal Officer

<sup>\*(</sup>We had referred some app like **MyGate and Zomato** which are available on app store and play store which helped us to understand Risk and Mitigation.)

# III. Monitoring & Control

Triggers: Define thresholds (e.g. adoption rate <30% after 2 months = trigger R01 mitigation)

Tools: Risk registers, JIRA dashboards, stakeholder heat maps. Tools: Risk registers, JIRA dashboards, stakeholder heat maps.

#### IV. Risk Communication Plan

	Communication		
Stakeholder Method		Frequency	<b>Content Focus</b>
	Formal reports +		
Township Council presentations		Monthly	High-impact risks, budget
Residents	Newsletters, SMS updates	Bi-Weekly	Adoption tips, security
	Stand-up meetings, RAID		
<b>Development Team</b>	logs	Daily/Weekly	Technical blockers
	Contractual review	· · · · · · · · · · · · · · · · · · ·	
Vendors	meetings	Bi-monthly	SLA compliance

# V. Key Risk Metrics (KPIs)

Adoption Rate: % of residents actively using the portal. Security Incidents: # of breaches/threats detected. Budget Variance: Actual vs. planned spend. Regulatory Audit Results: Pass/fail status.

# Working:

**Alignment with BA**: Focuses on business impact (e.g. resident engagement, compliance) vs. just technical risks.

Actionable: Clear ownership and steps for each risk.

Stakeholder-Centric: Tailored communication for councils, residents, and vendors.

# **Assumptions**

### **Technical Assumptions**

#### **Device Availability:**

Most residents, guards and committee members own and regularly use internet-enabled smartphones capable of running Android/iOS apps.

#### **Third-Party API Stability:**

Services like Razorpay, Twilio, SendGrid, Google Maps, and Firebase will remain stable, accessible, and compliant with terms of service during the lifecycle of the project.

#### **Hosting Uptime & Scalability:**

Hosting partners (AWS/GCP) will provide a minimum of 99.9% uptime, ensuring minimal service disruption. Scalability options (horizontal/vertical) will be available on demand.

#### **Platform Compatibility:**

Targeted mobile platforms (Android 9+, iOS 13+) and web browsers (Chrome, Safari, Edge) will be commonly used by users without significant OS fragmentation.

#### **Internet Connectivity:**

Users and guards will have access to stable internet connections to interact with the app and backend systems.

# **Business Assumptions**

#### **Timely Access to Master Data:**

Township management will provide accurate and complete datasets, including resident rosters, flat mappings, staff lists, vendor details, and facility schedules, in a timely manner.

#### **Budget & Resource Commitment:**

Initial development, licensing, deployment, and maintenance budgets are already approved, and resources will be available as planned (technical, human, financial).

#### **Resident Tech Adoption:**

A significant portion of residents will be open to using the ResiConnect app for routine interactions such as bill payments, visitor approvals, and complaints.

#### **Society Cooperation:**

The Society Management Committee (SMC) and Facility Management (FM) teams will actively collaborate in decision-making, testing, and ongoing rollout communication.

#### **Compliance Support:**

All business stakeholders will ensure compliance with applicable housing, IT, and data protection regulations, including GDPR or Indian IT Act mandates.

#### **Operational Assumptions**

#### **Staff Digital Readiness:**

Security personnel, housekeeping supervisors, and committee members are digitally literate enough to undergo training and use tablet/mobile apps effectively.

#### **Effective Communication Channels:**

Email, SMS, and WhatsApp announcements will reach >90% of all households for on boarding instructions, feature updates, and feedback collection.

#### **Facility Team Cooperation:**

Facility managers will supply accurate information regarding availability, schedules, holidays, and usage policies for common areas.

#### **Training Participation:**

All relevant stakeholder groups (residents, security guards, SMC) will participate in training sessions and feedback loops as part of the on boarding process.

#### **Maintenance Protocols Availability:**

SLAs, escalation matrices, emergency contacts, and internal SOPs for billing, complaints, and maintenance will be shared by management for system integration.