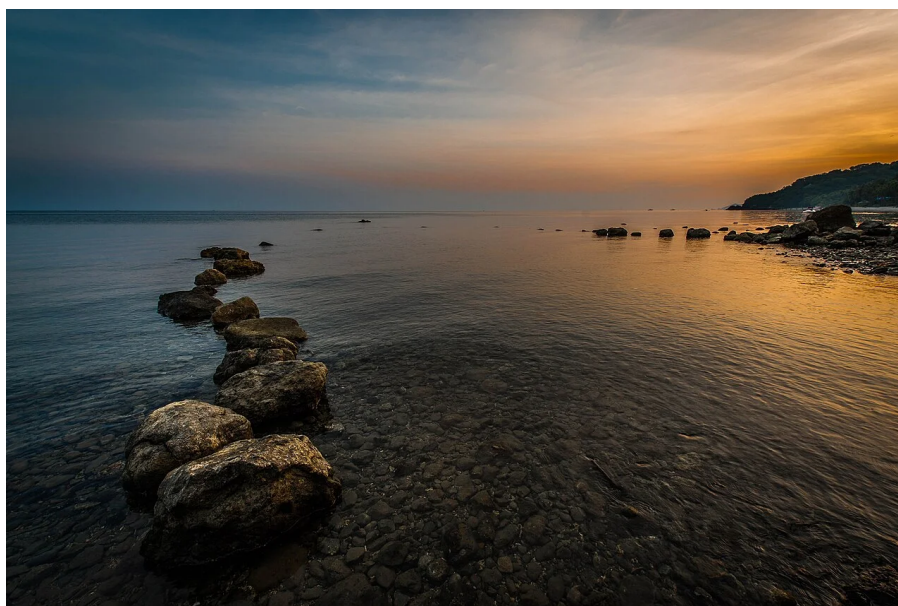


FABRICA SMART BARANGAY

**Makabagong Serbisyo. Ligtas na Komunidad.
Para sa Bawat Taga-Fabrica.**

Barangay Fabrica, Municipality of Lobo, Batangas, Philippines
Project proposal | 24 October 2026



Lobo seashore, municipal context; not identified as Fabrica. jojo nicdao (2012), CC BY 2.0. Resized. Source [8].

A practical vision for connected public service

A mobile-first community platform could make information easier to find, give concerns a traceable reference, protect confidential cases and help authorized people coordinate emergency response. Human oversight and inclusive access remain central.

Proposal only

This document and its companion website are not operational barangay services. All demonstrations use synthetic data. No emergency calls, SMS, sirens, authentication, payments or resident databases are connected. No official endorsement or approval is claimed.

Technology proponent: InnovateHub. Proposed software donation is subject to confirmation and a signed agreement.

A community-first starting point

REFERENCE	VERIFIED OR QUALIFIED CONTEXT
Population	2,021 residents, 2024 POPCEN; 2,026 in 2020. PSA classifies Fabrica as rural. PSGC 0401015009. [1]
Households	470 households in the 2015 census, reported by PhilAtlas using PSA data. Historical figure; not a current household count. [2]
Geography	Approximate locator 13.6403 N, 121.2019 E. PhilAtlas lists Lagadlarin, Masaguitsit, Balatbat and Poblacion as adjacent. Legal boundaries need LGU maps. [2]
Coast and facilities	LGU identifies Gerthel Beach in Fabrica. PhilHealth lists Lobo Municipal Hospital in Fabrica as of 30 September 2026; this does not establish live capacity or project participation. [3,4]
Livelihood and roads	NIA names Fabrica Poblacion Irrigators Association. DPWH FY2024 lists a Fabrica road project; listing is not completion evidence. [5,6]

What still needs field validation

Current household count; official boundaries; evacuation sites; transport routes; internet signal by area; power interruptions; responder coverage; siren coverage and point-specific hazards. Use government hazard resources and MDRRMO validation, without assigning an unsupported barangay-wide rating. [7]

Eight proposed digital services

SERVICE	RESIDENT BENEFIT
AI assistant / directory	Answers grounded in approved public records; verified requirements and the right office.
Concerns / confidential cases	Reference numbers and ownership; sensitive records limited to assigned trained caseworkers.
Announcements / notifications	Approved updates and consent-based preferences; no assumed guaranteed delivery.
Project transparency / SOS	Source-backed public progress; traceable emergency intake and human coordination.

The emergency journey, explained

DEMO ONLY - NOT CONNECTED TO EMERGENCY SERVICES

The companion website offers three scenarios: responder available, no acknowledgement, and offline. Timings are compressed for presentation; no real response time is promised.

STEP	PROPOSED RESPONSIBILITY
1 / Request	Synthetic incident and fictional location; no GPS permission request in the demo.
2 / Server receipt	Unique sample reference DEMO-SOS-001. Receipt is not a promise of rescue.
3 / Acknowledgement	An assigned responder accepts. Acceptance is distinct from arrival.
4 / Progress	En-route and on-scene updates illustrate a traceable status history.
5 / Human review	An authorized dispatcher reviews closure and unresolved needs.

If nobody acknowledges

The blueprint uses an illustrative, configurable 30-second threshold. The proposed process escalates to a backup call queue and human dispatcher, checks authorization and gateway health, then issues an expiring authenticated siren command. The presentation is visual only: no sound, messaging or hardware activation.

If connectivity fails

Show NOT SENT, never a success message or “help is on the way.” Do not quietly queue an emergency as delivered. In a real incident, use available real emergency channels. Carrier-based fallback requires separate integration and testing.

Interactive app showcase

Resident home, emergency SOS, scripted AI assistant, preset concern submission, confidential case role preview, fictional announcements, responder states and a command center are available. Directory, project-transparency and notification concepts extend the eight core screens. No free-text personal information is collected.

Confidential case role switching is explanatory UI, not authentication. All case examples are synthetic and redacted.

Technology with clear responsibility

STEP	PROPOSED RESPONSIBILITY
1 / Resident	Concern and appropriate consent enter a proposed secure platform.
2 / Secure platform	HTTPS API, encrypted database and file storage, durable event queue, idempotent requests and receipt IDs.
3 / Authorized personnel	Triage and assign; role checks happen server-side in the future implementation.
4 / Responder / office	Acknowledge, act, and publish authorized status updates.
5 / Incident update	Return status to the resident; record auditable transitions and human-reviewed closure.

Separate confidential-case path

Private intake → default-deny access policy → assigned trained caseworker → safe human-led referral → audited access and defined retention. Public reporting excludes case identifiers, personal details and live locations. Official status alone does not confer access.

Hardware concept

COMPONENT	PURPOSE AND DESIGN CONDITION
Connectivity / controller	LTE or another validated link; MQTT over TLS; authenticated, expiring commands; watchdog and heartbeat.
Isolated driver / siren	Controller signals an isolated relay or MOSFET driver. Fused 12V siren load never connects directly to GPIO.
Backup power	Certified PSU, charger and battery; correctly rated fuse, regulator, wire gauge and enclosure.
Monitoring / oversight	Gateway health and receipts, tamper detection, manual silence, audit and supervised test schedule.

This is a conceptual system, not an electrical wiring plan. Qualified professionals must approve installation, load ratings, grounding, charger chemistry, environmental protection and battery/network failure drills. An offline gateway must not be reported as a successful siren activation.

Trust and readiness before rollout

Proposed safeguards

Role-based least privilege; staff MFA; encryption in transit and at rest; audit of views, edits and exports; consent-based location with accuracy and timestamp; explicit retention and deletion rules; incident response; safe referrals and human oversight.

Service access must not depend on political support. Voter profiling, campaign messaging and political targeting with service records are excluded.

Implementation roadmap

PHASE	INDICATIVE TIMING AND ACCEPTANCE GATE
1. Research / approval	Week 1 target: validate needs, consultation authority, operational owner and privacy-review plan.
2. Design / prototype	Week 2 target: journeys, accessibility and simulated screens; stakeholder walkthrough and usability feedback.
3. Development	After approved scope: secure services and access controls; verified receipts and unauthorized-access denial.
4. Controlled testing	Prototype target weeks 3-4: offline, power failure, replay/duplicate alerts, security and supervised drills; recorded remediation.
5. Training	Schedule to be agreed: confidentiality, SOPs and fallbacks; competence and duty coverage demonstrated.
6. Pilot deployment	No committed date: signed acceptance, MOA, recurring funding, privacy review and staffed response coverage.
7. Community rollout	Only after formal go/no-go: assisted onboarding, public communication, support ownership and periodic review.

What to measure

Receipt time and failed submissions; unassigned concerns and status updates; acknowledgement latency and drill failures; resident task completion and accessibility feedback; verified project updates and overdue reports. Establish a pilot baseline before setting targets.

The source’s four-week aspiration is for a prototype and controlled drill, not a guarantee of safe production readiness.

A sustainable proposal and a clear next step

Software donation concept

InnovateHub proposes donating software development, subject to confirmation and a signed memorandum. Indicative prototype development value: ₱150,000-₱400,000. A hardened pilot is separately valued for planning at ₱500,000-₱1,500,000+, depending on scope. These are unverified planning values, not cash donations or quotations; do not automatically add them together.

PROTOTYPE PARTS	ESTIMATED RANGE
IoT controller	₱230-₱400
12V siren	₱500-₱1,500
Isolated driver	₱100-₱250
Power / protection	₱300-₱700
Battery / charger	₱1,000-₱3,000
Enclosure	₱300-₱800
LTE router / SIM	₱1,500-₱3,500
Parts subtotal	₱3,930-₱10,150

Excluded: installation labor, tax, recurring connectivity, cloud infrastructure, calls/SMS, maintenance, replacement, support, training, redundancy and security review. Each needs costing and an accountable budget owner. Source: supplied blueprint and approval proposal [10].

Approval-readiness checklist

Consultation authority and scope; operational owner and municipal coordination; privacy impact and information-sharing review; donation/MOA with ownership, hosting, service levels, liability and exit plan; technical and accessibility validation; controlled drill and signed go/no-go before public launch.

The requested next step is consultation and a controlled prototype review, not authorization for public emergency use.

Evidence, attribution and open questions

1. PSA PSGC and 2024 POPCEN · Open source

Fabrica 2024 population and rural classification. Historical figures corroborated by Table 3 of the Lobo release.

PSA Lobo release, Table 3 · Open source

2024, 2020 and earlier barangay population counts.

2. PhilAtlas Fabrica · Open source

Secondary source: 2015 households, approximate coordinates and adjacency.

3. Municipality of Lobo · Open source

Gerthel Beach locality.

4. PhilHealth hospitals, 30 September 2026 · Open source

Lobo Municipal Hospital location; not real-time service availability.

5. NIA CALABARZON, 21 February 2025 · Open source

Fabrica Poblacion Irrigators Association.

6. DPWH FY2024 infrastructure program · Open source

Fabrica road project listing; no completion claim.

7. GeoRiskPH HazardHunterPH · Open source

Government point-specific hazard resource; no site assessment completed for this proposal.

8. Lobo seashore, jojo nicdao, 2012 · Open source

CC BY 2.0 (creativecommons.org/licenses/by/2.0/). Resized; municipal context, not Fabrica-specific.

9. Malabrigo Lighthouse, BongSonon, 2024 · Open source

CC0. Website image; outside Fabrica.

10. Supplied InnovateHub documents · Open source

Technical blueprint, 24 October 2026; and approval proposal below.

Approval and donation proposal · Open source

Draft and access-restricted source; no approval is implied.

Research reviewed 24 October 2026. No verified, licensed Fabrica-specific photograph was obtained. Exact cadastral boundaries, current households, local network quality, evacuation locations, point-specific hazards and response capability remain open for field validation.

Teknolohiya para sa tao.

Serbisyong abot ng bawat tahanan.

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