Business Requirements Document (BRD)

Road Watcher

December 2024

Version 3.0

# Document Revisions

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| --- | --- | --- |
| **Date** | **Version Number** | **Document Changes** |
| 01.11.2024 | 1.0 | Initial Draft |
| 15.11.2024 | 1.5 | Second Draft |
| 01.12.2024 | 2.0 | Third Draft |
| 15.12.2024 | 2.5 | Fourth Draft |
| 30.12.2024 | 3.0 | Final Draft |
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# Approvals

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| --- | --- | --- | --- | --- |
| **Role** | **Name** | **Title** | **Signature** | **Date** |
| Project Sponsor | NONE |  |  |  |
| Product Owner | LE THIEN KIM |  |  |  |
| Project Manager | TRUONG NGUYEN KHANH HOANG |  |  |  |
| Client | THAI HUY TAN |  |  |  |
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# Introduction

## Project Summary

### Objectives

### *Road Watcher is a mobile application created to address the challenge of unreported potholes in the VNU-HCM area. The goal is to provide a simple interface for users to report potholes with photos and locations, helping residents avoid potholes on the road and allowing authorities to track and manage repairs efficiently. The solution aligns with the business objectives of safety, improved operations, and citizen engagement.*

### Background

*The project was proposed to address numerous complaints about road conditions around VNU-HCM. The lack of a single application to record pothole information resulted in inconsistent reporting and delays in repairs. Road Watcher was initiated as a solution to streamline the reporting process and improve the speed of pothole resolution.*

### Business Drivers

* *Improve public safety and reduce vehicle damage.*
* *Enhance operational efficiency in issue tracking and repair.*
* *Promote civic engagement from local residents and students.*
* *Reduce communication friction between residents and local maintenance departments.*

## Project Scope

### In Scope Functionality

* User registration and login.
* Pothole report submission with photo, location, and description.
* Real-time map display of reports.
* Status updates and notifications.
* Admin panel for managing and updating reports.
* Charts of pothole information by area, size, date and danger.

### Out of Scope Functionality

* Sensor-Assisted Pothole Detection.
* Integration with Navigation Systems.
* Offline Reports.

### Assumptions

* Users have internet access when using the application.
* Users use the app to navigate and avoid potholes.
* Users will provide honest and accurate reports.

### Risks

* Low user adoption due to lack of awareness
* Delayed admin response reducing perceived app value
* Privacy concerns over location sharing

## Project Timeline

* Phase 1: Complete requirements gathering and simulation by 10/11/2025.
* Phase 2: Complete interface design by 20/11/2025.
* Phase 3: Complete front-end development by 30/11/2025.
* Phase 4: Complete back-end development by 25/12/2025.
* Phase 5: Conduct pilot testing and gather feedback by 30/12/2025.

## Key Stakeholders *(Optional)*

* Project Manager: responsible for keeping timeline on track
* Product Owner: ensures business needs are translated into features

# Business Requirements

The requirements in this document are prioritized as follows:

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| --- | --- | --- |
| **Value** | **Rating** | **Description** |
| 1 | Critical | This requirement is critical to the success of the project. The project will not be possible without this requirement. |
| 2 | High | This requirement is high priority, but the project can be implemented at a bare minimum without this requirement. |
| 3 | Medium | This requirement is somewhat important, as it provides some value but the project can proceed without it. |
| 4 | Low | This is a low priority requirement, or a “nice to have” feature, if time and cost allow it. |
| 5 | Future | This requirement is out of scope for this project, and has been included here for a possible future release. |

## Functional Requirements

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| **Req#** | **Priority** | **Description** | **Use Case Reference**  ***(Optional)*** | **Impacted Stakeholders** |
| FR-001 | 1 | Users must be able to register and log in. |  | Users |
| FR-002 | 1 | Users can submit a pothole report with photos, description, and location. |  | Users |
| FR-003 | 1 | Users can view all pothole reports on a map. |  | Users |
| FR-004 | 1 | Users receive notifications about status updates. |  | Users |
| FR-005 | 1 | Admin can log in and view reports. |  | Admin |
| FR-006 | 1 | Admin can update report statuses (pending, in progress, resolved). |  | Admin |
| FR-007 | 2 | Admin can assign reports to maintenance teams. |  | Admin |

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## Non-Functional Requirements

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| **ID** | **Requirement** |
| NFR-001 | The app must be available on Android and iOS. |
| NFR-002 | All user data must be encrypted and securely stored. |
| NFR-003 | The system must support up to 10,000 concurrent users. |
| NFR-004 | The app should have at least two languages. |
| NFR-005 | The app should use minimal battery and data consumption. |

# Appendices

## List of Acronyms

* GPS: Global Positioning System.
* API: Application Programming Interface.

## Glossary of Terms

* Report: User-submitted pothole profile, including image, location, and description.
* Administrator: Authorized staff responsible for managing reports

## Related Documents

* Figma design prototype: [https://www.figma.com/design/B1TbqtWogew5BN3HewHAv8/Road\_Watcher?node-id=0-1&t=4NVbi4YdYcU1Tm3Q-1](https://www.figma.com/design/B1TbqtWogew5BN3HewHAv8/Road_Watcher?node-id=0-1&t=4NVbi4YdYcU1Tm3Q-1%20)
* Use case documentation
* SRS documentation