

Application of GIS for Environment Impact Assessment

EIA Scoping

Why conduct Scoping?

It is a critical step in the EIA preparation, as it identifies the issues that are likely to be of most importance during the EIA and eliminates those that are of little concern.



Proposed Development

Retail – Shopping Mall

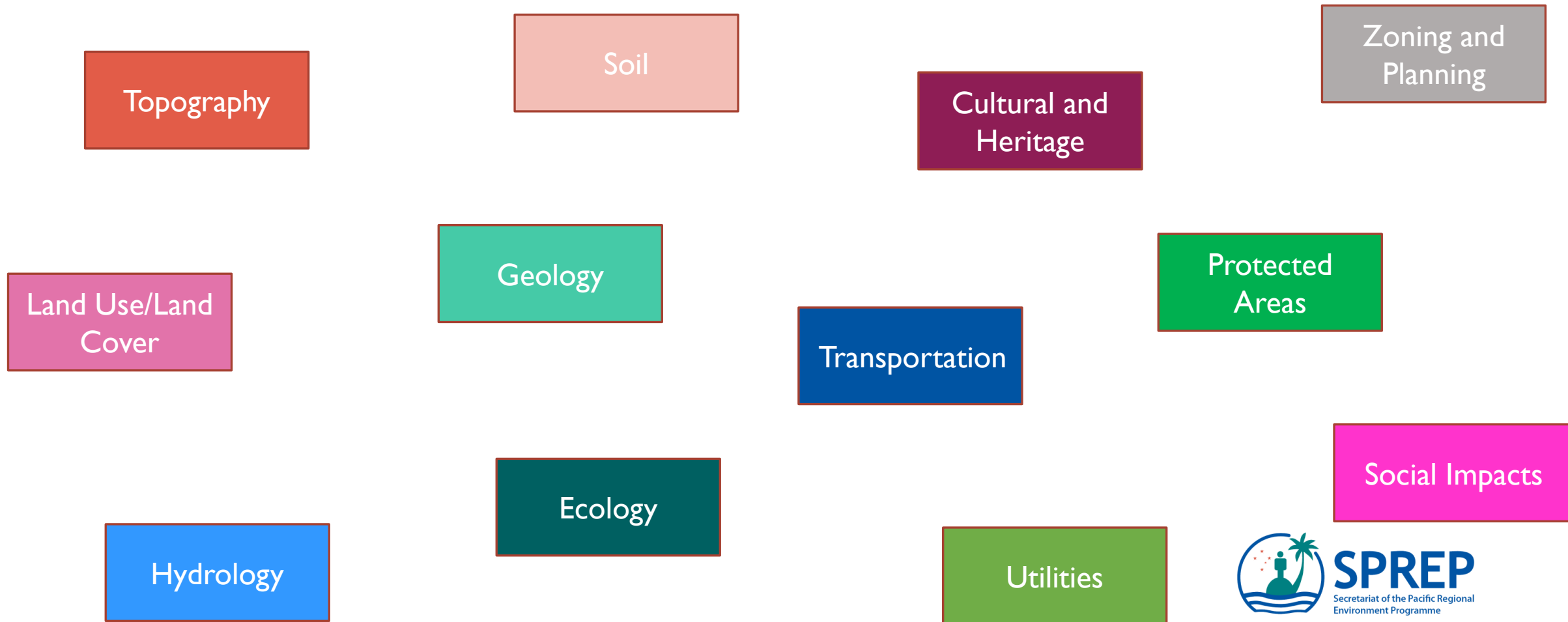
Health - Medical Centre

Extractive Industry - Mining

Tourism - Hotel

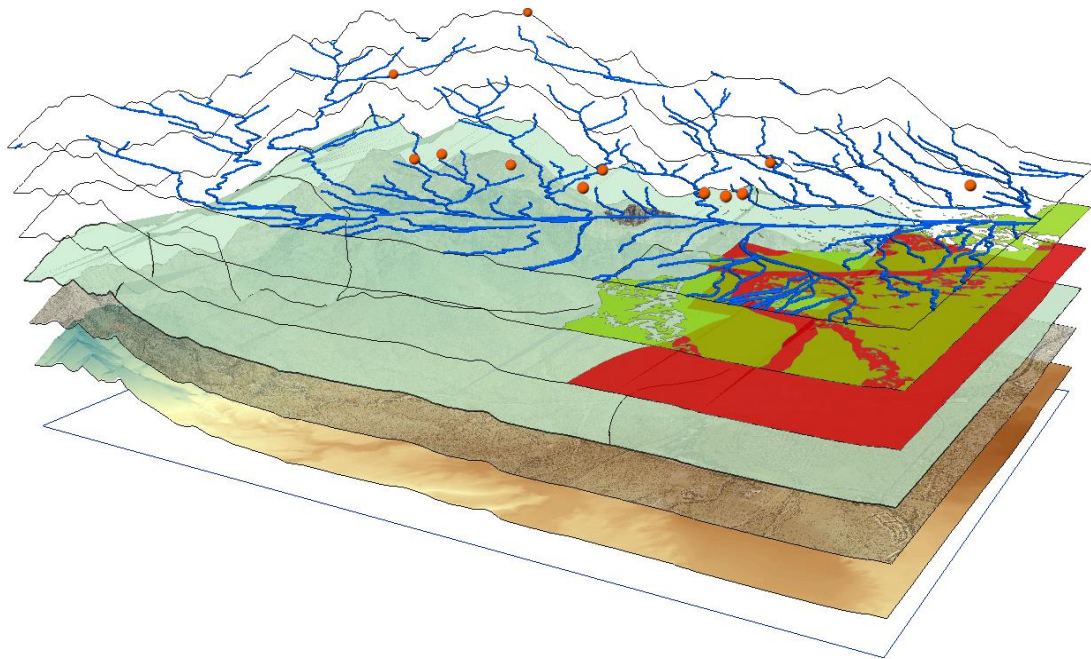
Using GIS in the Scoping Process

GIS as a tool assists enforcing authorities to decide of the boundaries of the EIA based on the maps and data collected in the screening stage, including the project area. Using maps, authorities can establish what the EIA will include in accordance with the terms of reference (TOR).



GIS application in the Scoping process

Overlaying these datasets and conducting analysis enables us to visualize how the development will impact the surrounding environment based on the baseline information collected.

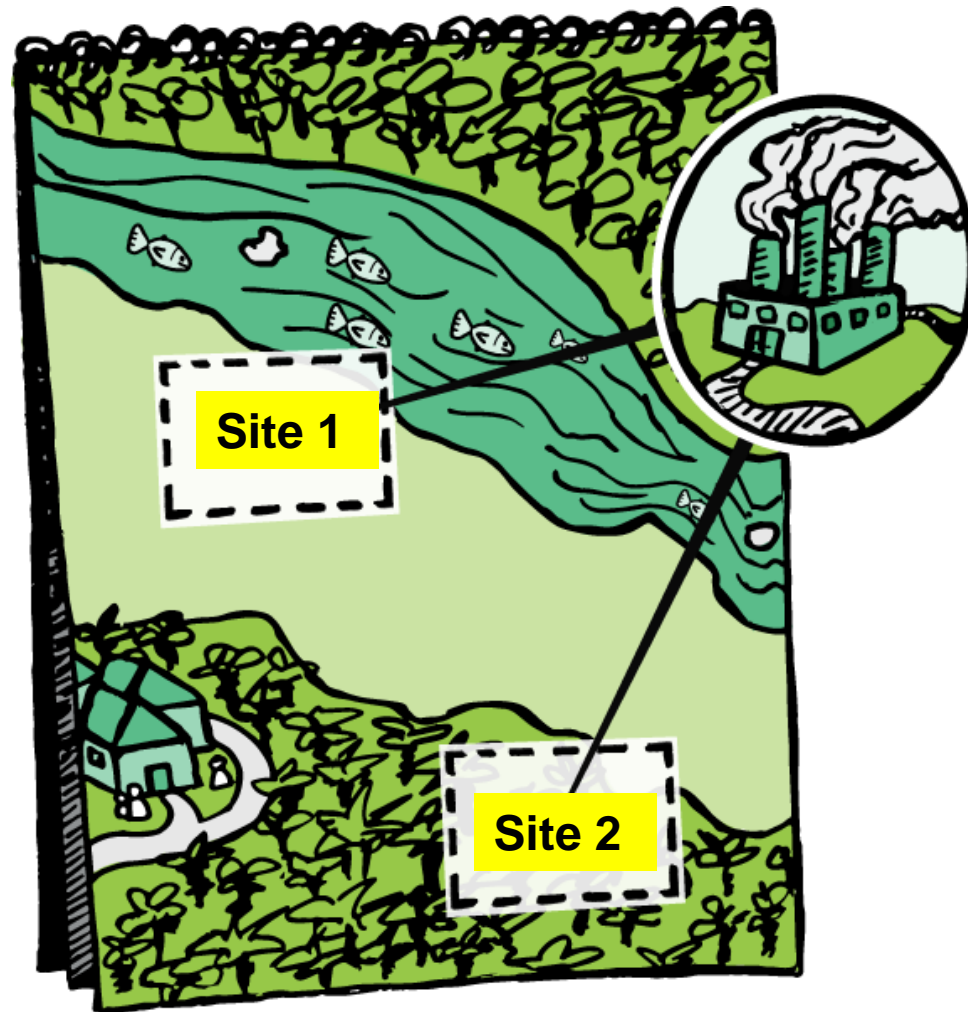


Spatial Datasets Required for the Areas of Influence

- Topography
- Soil
- Geology
- Land Cover
- Social
- Economic
- Protected Areas
- Land Use
- Ecology
- Transportation
- Cultural and Heritage
- Hydrology
- Utilities

Scenario: Company X wants to propose a development in Guadalcanal.

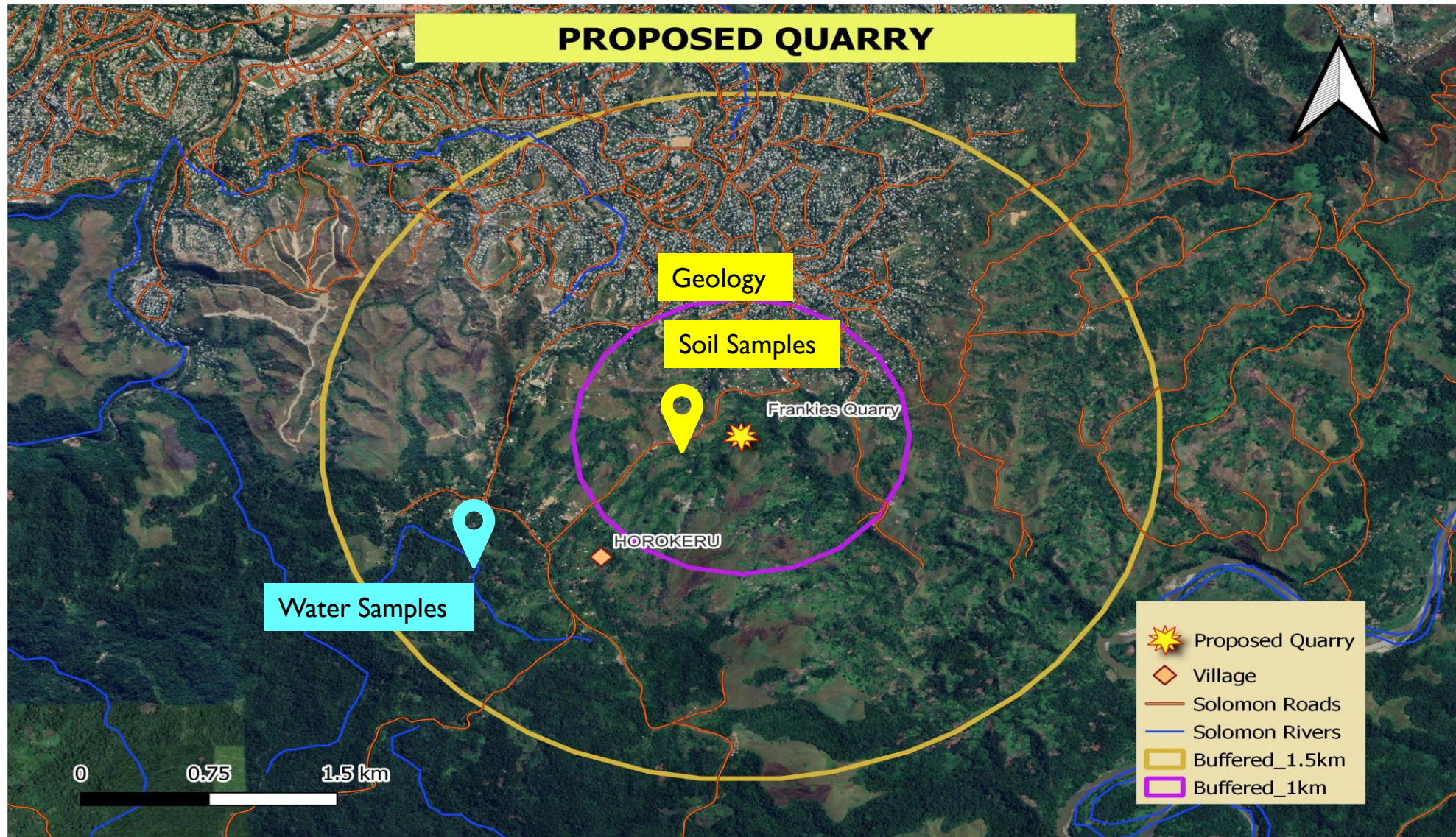
Question: How can you use GIS to show this in the scoping stage of the EIA process?



Spatial Data Required

- Villages
- Rivers
- Forest
- Agriculture
- Transport
- Culture and Heritage
- Protected Areas
- Utilities
- Soil
- Social and Economic
- Health

GIS tool as a Key contribution of scoping in the EIA process



Case Studies - Fiji



Data Capture and Analysis & Environment Assessment



Data Management



Data Presentation

Data Capture



Assessment of the riverbanks for stability during the development

Data Capture



Stockpile area assessment

Data Capture



Water sampling was conducted prior to the development as a baseline data

Data Capture



The overall condition of the environment is assessed.

Inspection Checklist

Department Checklist

RIVER SAND & GRAVEL EXTRACTION INSPECTION CHECKLIST

1. Site Inspected	Inspection Date	LD File No.
Person(s) Conducting Inspection	Designation	MRD File No. Signature
Extraction Type	License No.	Location Division (CE / W / N)

2. License Holder	Telephone
Date Issued	-Office Date Expired
Contractor (If any) / On-site Contact Person	Telephone
Mailing Address	
Area	District Province
E-mail address(optional)	

Data Management

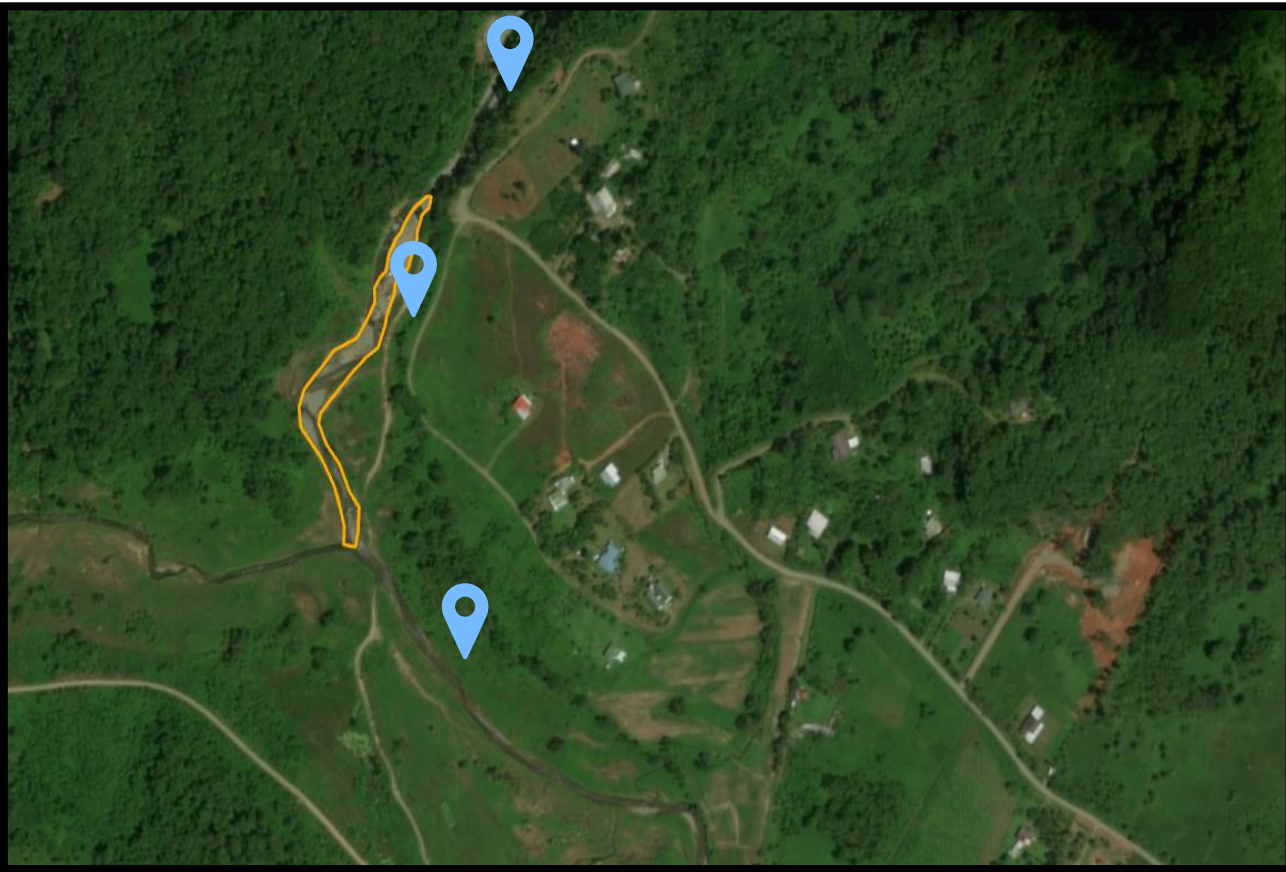
Boundary - 0.006013	
OBJECTID	1
Shape_Length	0.006013
Shape_Area	0
Company	John Frankie
Number_Gravel_Pits	2
River_Creek	Fantasy Creek
Access_road	The extraction site is accessible from the main Queens road through the Chevalier Road.
Vegetation_cover	River bank vegetation mainly consists of shrubs and medium trees.

**Attribute for Gravel
Extraction Boundary**

Extraction_Site - 4	
OBJECTID	4
Company	<Null>
File_Reference	<Null>
Issue_Date	10/03/2023
Expiry_date	<Null>
Contractor	<Null>
Date_Bond_Payment	<Null>
Environmental_Bond	<Null>
Status	RENEWAL
Target_Volume_EIA	3000
EIA_Status	APPROVED
Consultant	<Null>
Year_EIA_Compiled	<Null>
Village	<Null>
Mataqali	<Null>
District	SERUA
Inspection_Date	15/03/2024
Volume_Extracted_Month	223
Sampling	<Null>
Number_of_Samples	<Null>
Last_Inspected_by	VANI
Current_Inspector	VANI
Comments	Purpose of extraction is for filling material at Naboro landfill.

**Attribute for Gravel
Extraction Pit**

Data Presentation



Gravel Extraction Boundary identified and Water sampling points



Gravel Extraction pits identified within the boundary

VINAKA



Any
Questions?