Community Based Decision Making

B.C. Links to Learning 2023

February 2, 2023

FIRST NATIONS
LAND MANAGEMENT
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Presenter

Adam Wright, RPP, MCIP

Planner, Land Code Governance

LABRC

First Nations

204 First Nations have been added to the Framework Agreement since 1996

54 First Nations are actively developing a land code

105 First Nations are currently implementing a land code
+ 3 who have gone onto a self-Governing Agreement

1/3 of all First Nations in Canada are involved

2

2

6

4

3

3

43 27

13

4

3

30

2

11

10

28

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Meet the RC Land Code Governance Team

ANDREW BEYNON
Director, Land Code Governance

JENNIFER PREDIE
Manager, Land Code Governance

ADAM WRIGHT
Planner, Land Code Governance

STEFANIE RECOLLET
Specialist, Solid Waste

LEEANNA RHODES
Specialist, GIS

CORY KOSMIK
Specialist, Environment & Enforcement

CHANTAL KITAMURA
Specialist, Environment & Enforcement

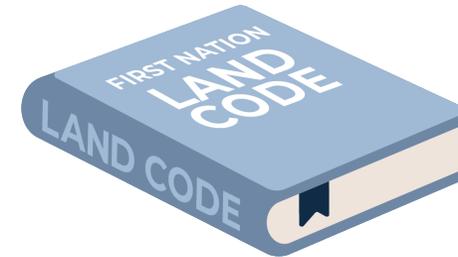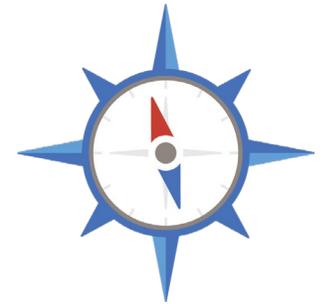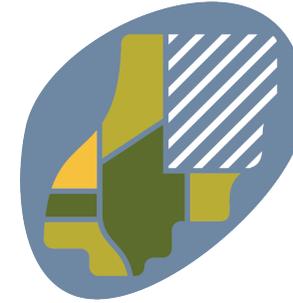**KEVIN BROUGHTON**
Advisor, Enforcement (East)

WADE DAVIDSON
Advisor, Enforcement (West)

SHARON JACK
Administrative Assistant

Getting to know you!

- **Background in:**

  - **Lands Management**

    - **Project Management**

  - **Governance / Government**

  - **Economic Development**

Presentation Overview

1. Planning & Community-Based Decision-Making: Presentation

2. Land Use Planning & Lands Governance: Mini-Workshop
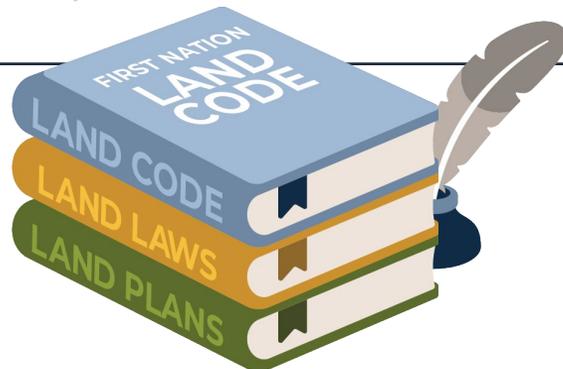

3. Comments, Reflections and Questions

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Part 1

Planning & Community-Based Decision-Making

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Land Use Pla

Planners work across fields, such as:

economic development

land use planning

velopment

environmental resource management

social planning

heritage conservation

FIRST NATION LAND PLANS

LAND PLANS

FIRST NATION LAND CODE

LAND CODE

LAND LAWS

LAND PLANS

What

Land-use planning refers to a wide range of activities that **direct the future use of land (development planning) and control the current use thereof (development management)**. The aim is to ensure the optimal use of land within a political, social, cultural, environmental and economic context.

Learn more at **cip-icu.ca**

CANADIAN INSTITUTE OF PLANNERS | INSTITUT CANADIEN DES URBANISTES
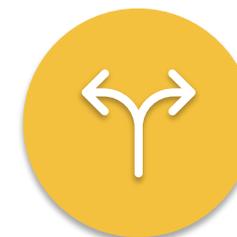
Why Do We Plan?
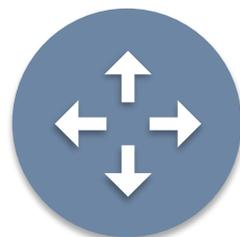
| PRIORITIES | ALTERNATIVES | ANALYSIS, VALUES | RISK & LIABILITIES | YES/NO |

To Help Improve Decision-Making and Navigate the "Tough Decisions"

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Lands Governance Planning

Lands Governance Planning is a diverse, multi-disciplinary professional field that encompasses multiple areas of practice and specialization relative to the values, goals and capacity of each First Nation.

- Community Planning
- General land-use & development
- Long term land-use planning
- Residential & commercial planning & development
- Regional planning
- Transportation planning
- Social & policy planning
- Housing planning & policy
- Heritage planning & policy
- Environmental planning
- Parks & recreation planning
- Resource management planning
- Economic development

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Flexibility of Planning Documents

- The format of Land Use Plans and Planning documents are flexible.

- In their simplest form, a Land Use Plan is a <u>communication tool</u>.

- At the start of the planning process, it's good to determine who you are communicating with which will then help identify the best format to use.

- For example, if you are using a LUP to support Community-based decision-making than a story-telling approach may be more impactful. Conversely, if you are using a LUP to regulate and guide development and LUP law may be more effective.
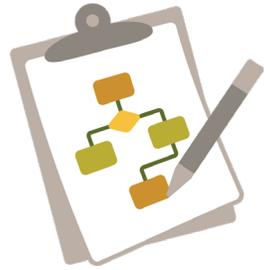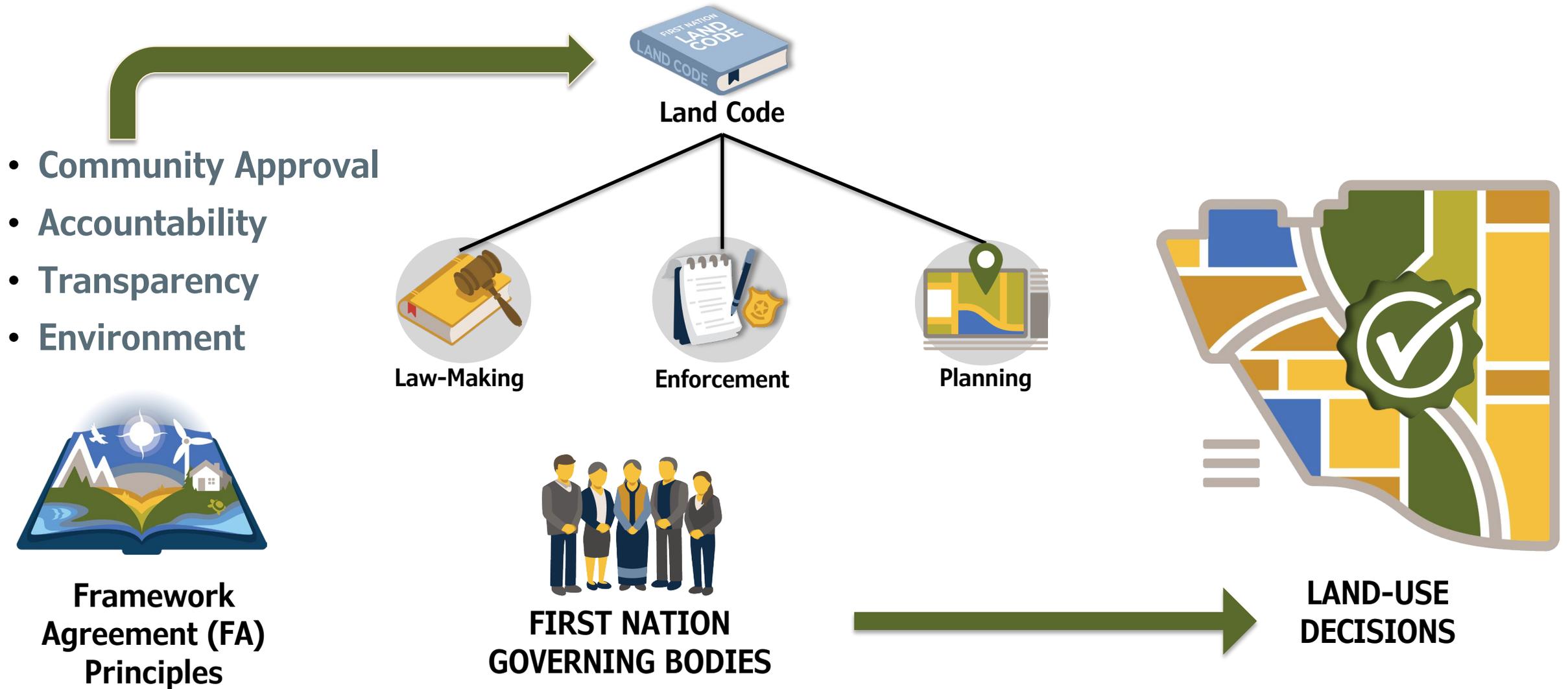
Digital Story-telling & Land Use Planning

- **ArcGIS Story Maps is one example of a web-based format that enables the power of GIS and digital story-telling.**

Sounds of the Wild West (arcgis.com)

Linking Planning with the Principles of the Framework Agreement

- **Community Approval**
- **Accountability**
- **Transparency**
- **Environment**

Land Code

Law-Making

Enforcement

Planning

Framework Agreement (FA) Principles

FIRST NATION GOVERNING BODIES

LAND-USE DECISIONS

Examples of First Nation Land Laws & Planning Processes

Land Use, Zoning, and Development

Trespass, Enforcement, & Ticketing

Allotment, Interests, & Licences

Residential Tenancy

Environmental Assessment & Protection

Business Permitting & Licencing

Natural Resource Management

First Nation Expropriation

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TMPD

Planning Processes Under the Framework Agreement (FA)

Laws that Regulate Land Development
(not an exhaustive list)

- Zoning Laws
- Development Laws
- Envi. Protection Laws
- Community Quality Laws
- Design Laws / Guidelines

Policies and Plans that Guide Land Development

- Community Plans
- Land Use Plans
- Forest Management Plans
- Cultural Heritage Policy
- Consultation Protocol
- Comprehensive Community Plans
- Land Registry Policy

Procedures and Tools to Guide Projects

- Land Development Procedures
- Development Application Form
- Checklists & Guides
- Environmental Laws (checklist)
- Zoning Laws (checklist)
- Invoicing / Contracts / Fee Schedules
- Leases

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Land Development Procedures

Land Development Procedures are the guidelines of an individual First Nation community on how to implement their development-related Laws. Land Development Procedures clarify the processes that all proponents (including the First Nation itself) must follow for any proposed development on First Nation Lands.

Interests in lands or structures

- Lease
- Sub-lease
- Licences
- Permit
- Easements
- Rights-of-Way

Connecting to Utilities and other Services

- Electricity
- Renewable energy
- Internet
- Telephone
- Natural gas
- Drinking water
- Wastewater

Transportation infrastructure

- Roads
- Intersections
- Bridges
- Parking lots
- Sidewalks
- Public trails
- Airports

Land Development Procedures

Land Development Projects can permanently change a community, its landscape and built environment

Sustainable Development means identifying risks, liabilities and benefits of a project, from various perspectives

Environment & Climate Change	Legal Risks & Liabilities
Cultural Heritage	Financial & Economic
Public Works & Infrastructure	Process, Planning & Engagement

Community Health & Wellbeing

...making informed, development related decisions based on technical data, traditional knowledge and community consent

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Additional Development Considerations

Land Interest

Survey(s)

FNLRS

Insurance

Indemnification

Public Works & Infrastructure

Legal & Liabilities

Culture & Heritage

Standards

Staff time

Land Valuation

Lease/Rent rates

Fees/Taxation (if applicable)

Opportunity Cost

Highest & Best Use

Project Feasibility

Land Development Procedures

Land Development Procedures help to ensure due diligence is performed by a First Nation, and that land development proposals undergo a _consistent_ assessment that supports a fair review and approval process _before_ proceeding.

Projects need to be understood for their potential impacts, risks, liabilities, and benefits for a community:

- Environment & Climate Change
- Legal Risks & Liabilities
- Cultural Heritage
- Process, Planning & Engagement
- Community Health & Well-being
- Financial & Economic
- Public Works & Infrastructure
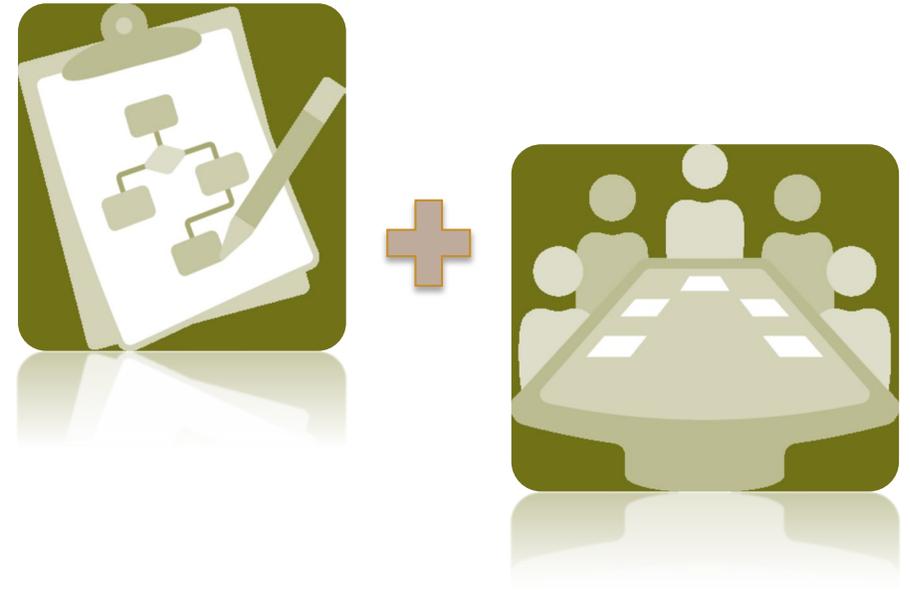
For each of these areas, there may be specific laws, plans, processes, procedures, decisions, and expertise to consider, depending on the development.

- Resulting from COVID-19, First Nations had to pivot how they engage their Community members.

- Looking back at engagement events:
  - Dd the hybrid approach work?
  - Did social distancing events work?
  - Was on-line a better option for some?

- Points for Consideration:
  - Communities and People were amazingly creative and used multiple approaches to engage more meaningfully with Community members.

Generating a Real World Gaming Environment From Geospatial Data

Marcus Manson - British Columbia Institute of Technology - Bachelor of Science in Geomatics

Objective

The objective of this project is to create an accurate representation of the real world in the video game Minecraft by using geospatial data provided by Malahat First Nation.

Background

The problem was creating a process that allowed for unclassified LiDAR data to be the source for generating a world that could be used in the popular game Minecraft.

Issues Encountered

The first import of the terrain had too sparse ground cover (Figure 1), to fix this implemented Delaunay triangulation to interpolate between missing data points.

Figure 1: Sparse Ground
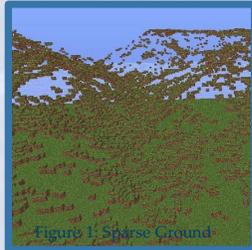
The First import of the tree cover used a set tree dimension and resulted in an unrealistic vegetation cover (Figure 2) that did not utilize the tree heights available. To fix this the mathematical logic and conditional statements within the python scripts was re-written to use the tree height and canopy radius per tree.

Figure 2: First Tree Import

Methodology

Figure 3: Classified LiDAR of project area
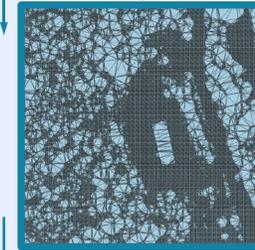
Figure 4: Francesco Ground SHP
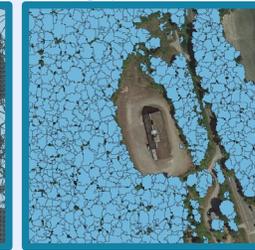
Figure 5: Francesco Tree SHP

Figure 6: Python Ground Script

Figure 7: Python Tree Script

Figure 8: Final Minecraft Map

Figure 9: Satellite overview of project area

1. Acquire LiDAR data

LiDAR provided by Malahat was unclassified and in LAS 1.2 format covering approximately 2 square kilometers.

2. Auto LiDAR Classification routines

Executed routines for classifying ground, above ground features separated into High, Medium, Low vegetation and creating road polygons with the aid of shaded relief surface.

3. Manual LiDAR QA/QC

Resolved misclassified points including:
- Edges and corners
- High/Low points
- Buildings as High Vegetation
- Heavy vegetation obscuring Buildings
- Road polygon bounding fence

4. Francesco

Parsed the classified LiDAR data (Figure 3) and generated the ground surface shapefile (Figure 4) and the tree polygon shapefile (Figure 5) to provide the associated CSV files needed for the Python scripts.

5. Python code development

(Figure 6 & 7) using Visual Studio Code that read the CSV files to deal with the coordinate shift from UTM to Minecraft and assigning 180 Million blocks.

6. Blank Minecraft Map

Created scripts for generating a blank word for further editing due to the limitations in the way Minecraft world generation works.

7. Map Edits

Use of open-source program "MCEdit" to read the Python script and execute the actual editing of the blank world.

8. Loading the new game file into Minecraft for QA/QC (Figure 8).

Recommendations

The step to create a blank Minecraft map for further editing due to the way the games world generation works is a limitation it is recommended to implement the use of a pre-existing map generation program or create one that can work in-line with the python scripts to remove that extra step.

If color ortho imagery was available, the LiDAR data could be colorized to generate more diverse Minecraft generation such as accurate sand along the shoreline or a more diverse vegetation selection instead of just one tree type.

Geospatial data products offer a huge variety of derived products that with more time could be used to develop a more diverse video game generation including building generation.

Conclusion

The process was a success in the end and the Minecraft Map produced through the python scripts created an accurate representation of the geospatial data that seeded it (Figure 10).

The issues encountered were solved by adding in ground interpellation methods to fill sparse data and manipulating the Python scripts to allow the LiDAR data to dictate vegetation generation.
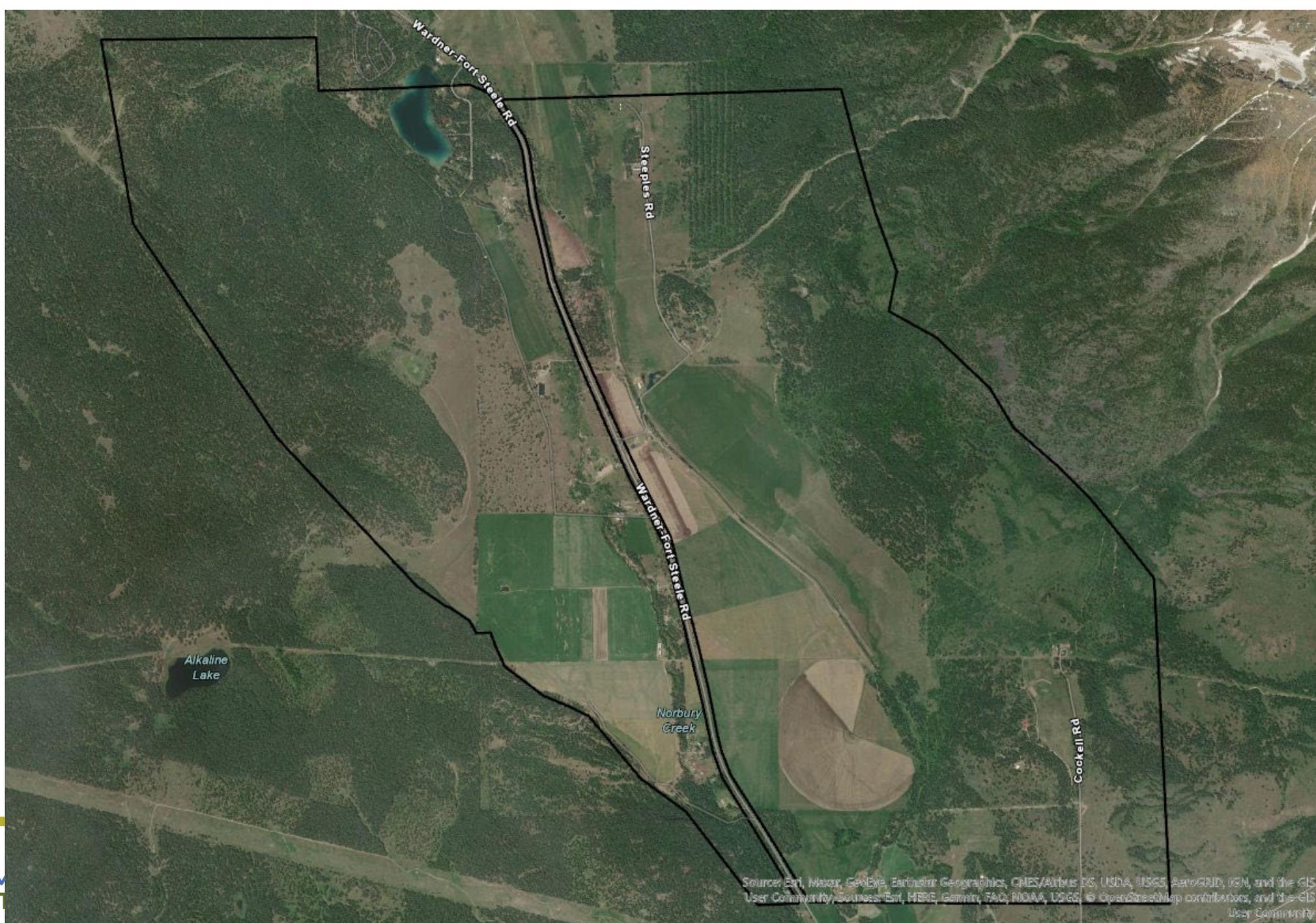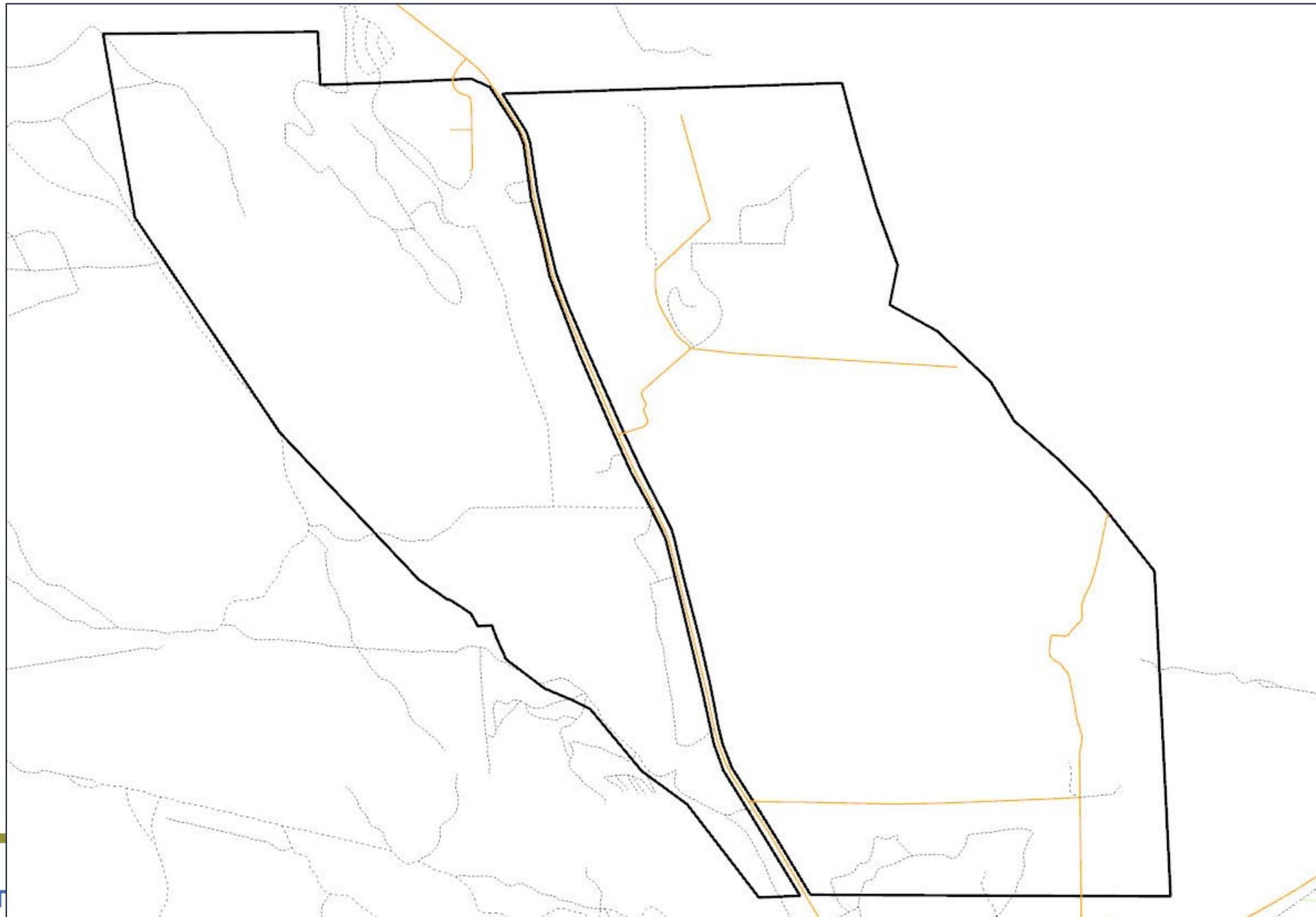

Figure 10: Minecraft

Acknowledgments

Part 2

Land Use Planning & Lands Governance: Mini-Workshop

Map of Reserve lands

Map: Major
Roads and
Community
Roads

TMPD IR 1

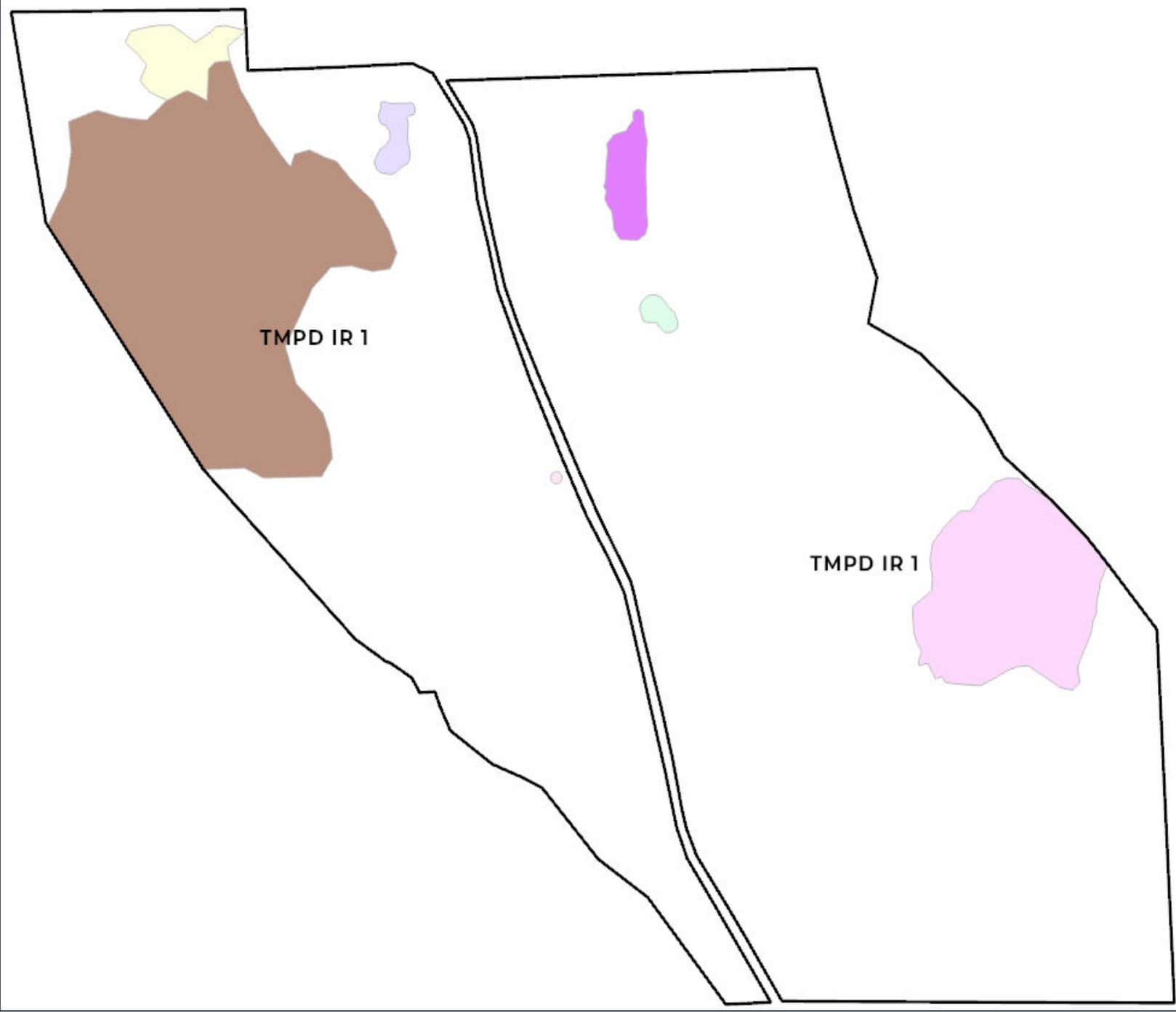TMPD IR 1

- **Brown:** Existing Forestry Operations

- **Light Pink:** Potential for Large Scale Quarry

- **Dark Pink:** Existing Small-Scale Quarry

- **Yellow:** Sensitive Ecosystem

- **Purple:** Culturally Sensitive Lands

- **Green:** Contaminated Lands

- **Brown:** Existing Forestry Operations

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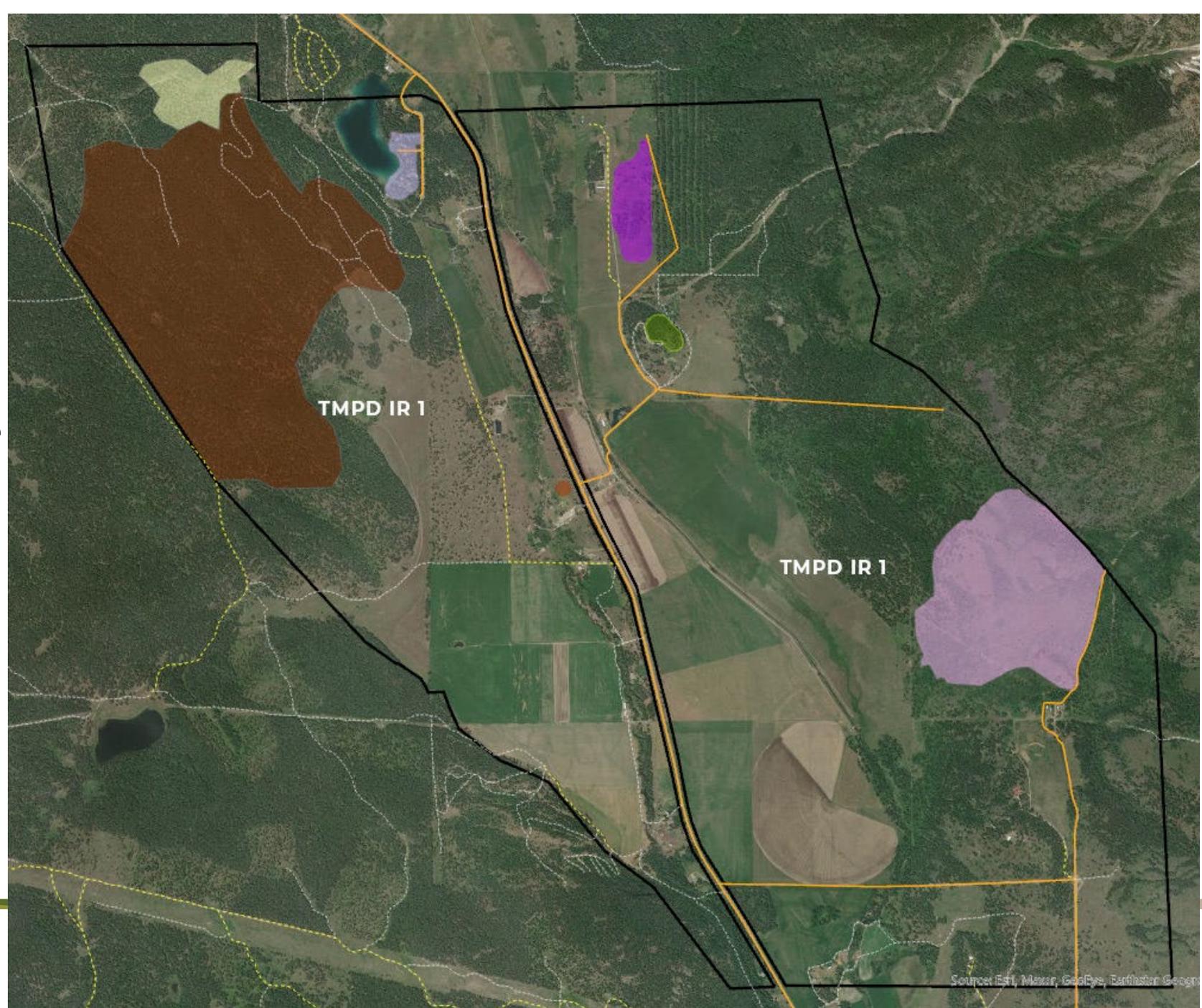
Assess the Land Base - Consider the areas that your Community wants to:

- **Protect**

- **Improve**

- **Maintain**

- **Address Member Housing Considerations**

  - **Take 15 minutes to review the map, ask questions and identify the areas that you want to Protect, Improve, Maintain and Develop Member Housing**

ADDITIONAL INFORMATION

- Existing Forestry Operations have been running for 20+ years, currently threatened by downturn in forestry industry.

- Large Scale Quarry would benefit from an extensive EA to ensure long-term environmental protection and profitability.

- Small Scale Quarry has 3-4 years left in production, remediation plan has not yet been developed.

- Culturally Sensitive Lands were recently identified by Elders through Community Engagement

- Contaminated Lands are a result of previous activities completed under the Indian Act, A Phase 2 ESA is currently underway.

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Part 3

Comments, Reflections & Questions

Questions & Discussion

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