GIS – A POWERFUL TOOL FOR EFFECTIVE TRANSPORTATION PROGRAM MANAGEMENT

UNDERSTANDING THE CAPACITIES OF GIS IN TRIBAL TRANSPORTATION PLANNING AND BEYOND

"Without data, you're just another person with an opinion."

- W. Edward Deming,
Data Scientist

GIS Asset Management for Tribal Transportation Planning

Introduction

- GIS is not coming, it is here.

- Are you Ready for GeoRIFDS?

- What is Asset Management?

- How can a GIS based Asset Management System be utilized to improve your Tribal Transportation planning efforts?

- How can GIS be utilized to manage planning efforts throughout all Tribal departments?

- Real World Examples of GIS tools:

  - Paskenta Band of Nomlaki Indians, Corning, CA

  - Zuni Pueblo, Zuni, NM

  - Shoalwater Bay Indian Tribe, Tokeland, WA

- Q & A

What is GIS?
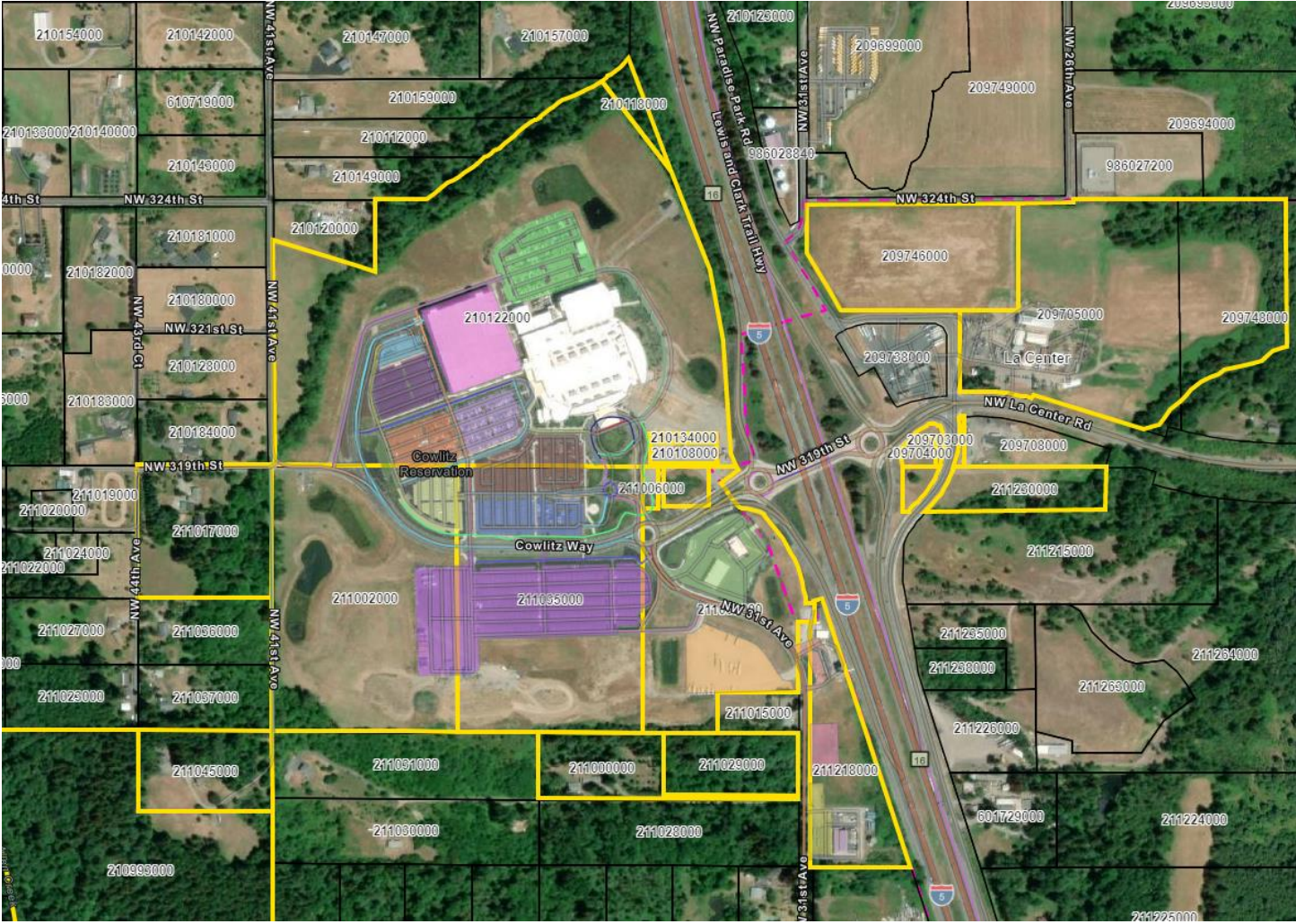
- A Geographic Information System (GIS) is a computer based system that captures, manages, analyzes, and represents all types of data related to positions on Earth's surface.

- With a unique capability to analyze and integrate many types of data, GIS is a powerful tool for making sense of complex data in a spatial context, allowing for more effective planning and decision making.

What is Transportation Asset Management?

Transportation Asset Management (TAM)-

- a strategic and systematic process of operating, maintaining, upgrading, and expanding physical assets effectively throughout their life cycle.

- focuses on planning and engineering practices for resource allocation and utilization, with the objective of **better decision making based on quality information** and well-defined objectives.

- *Currently, your Tribal transportation facility records in the Road Inventory Field Data System (RIFDS) are managed as tabular data in an Oracle database.*

- *The data can be accessed in formats such as reports, tables, and PDF versions of documents that were provided to support the addition of facilities into your Tribe's NTTFI and Long Range Transportation Planning. The documents have no spatial relation to the facilities they reference.*

- *This is changing – GeoRIFDS is coming and GIS is the backbone of the new system.*

Benefits of a GIS Asset Management System

What are some specific benefits of having a GIS based AMS?

- **Better data management – all you data localized in one very functional format.**

- **More effective planning - show all assets and how they relate to one another to broaden your view and understanding of what's really going on with your assets.**

- **Improved efficiency – By using GIS to map and track assets, managers/planners can easily locate and manage assets, saving time and reducing costs associated with upgrades, maintenance, and repair.**

- **Improved communication – GIS tools allow you to "Tell the Story" in a user friendly visual format supplemented with documents.**

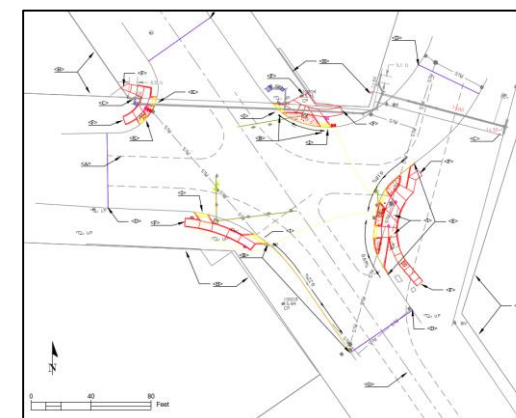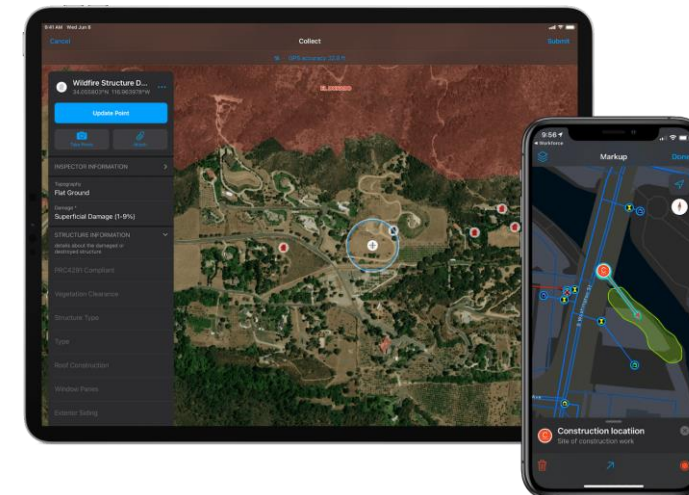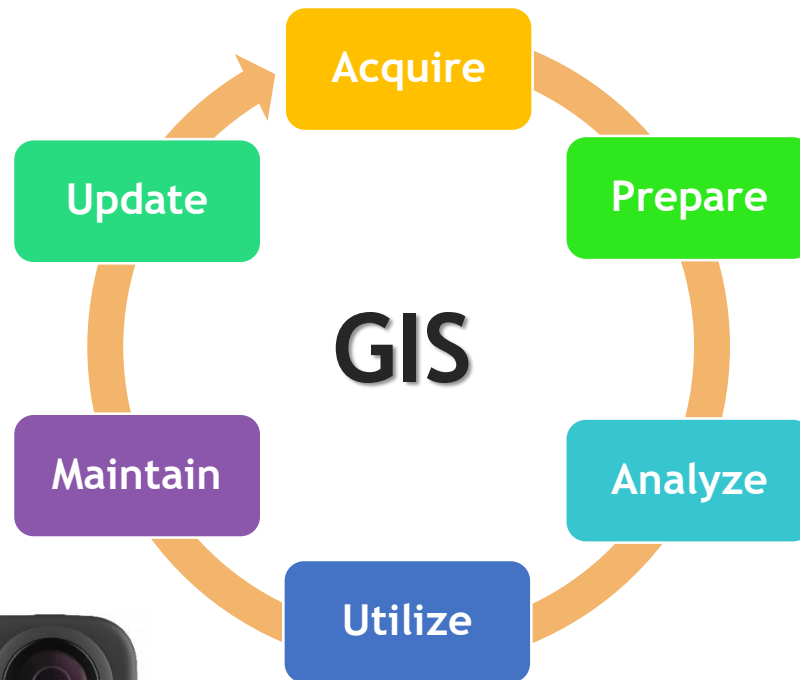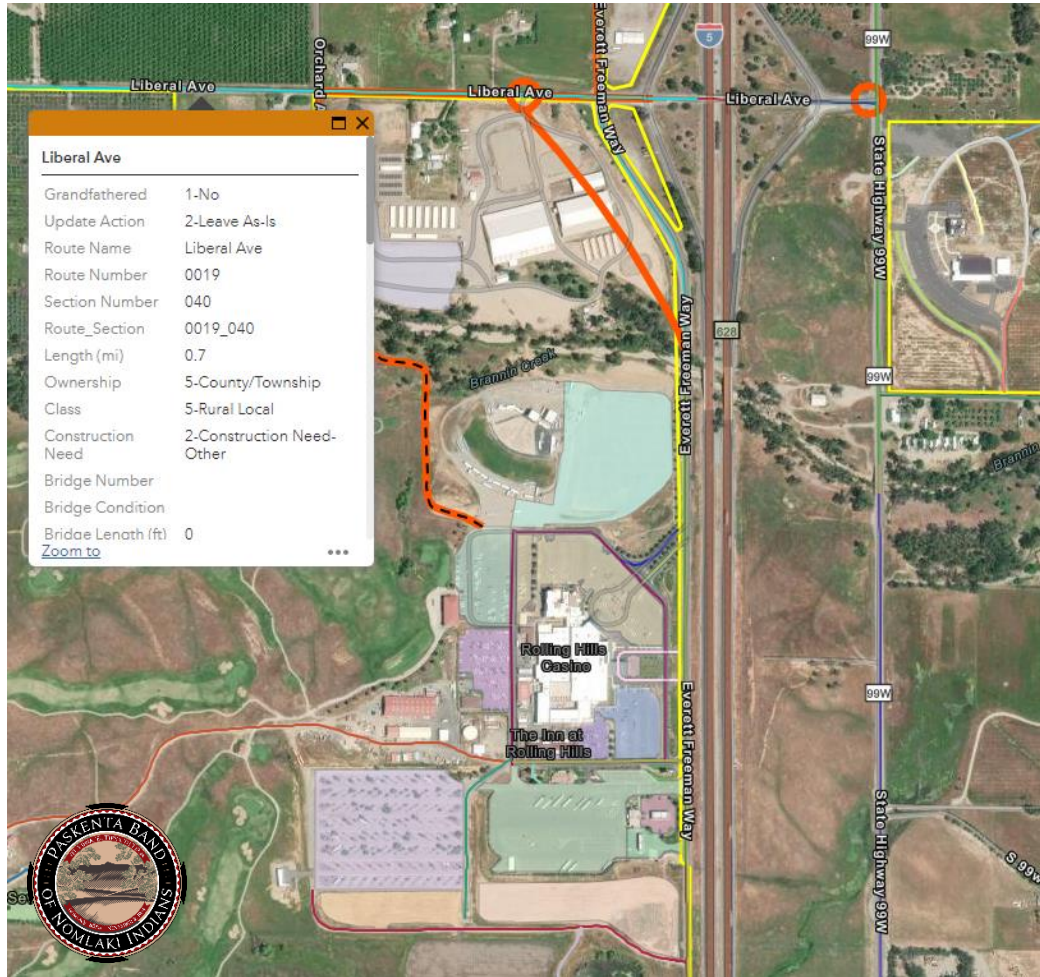| Tribal Council	• Can make well-informed decisions • Can present well-supported documentation in support of Tribal Projects and Needs
Transportation Department	• Can manage future updates and analysis easier • Can efficiently implement TTIP • Can effectively represent their issues to leadership and outside entities
Grant Writers	• Can use the report findings and cost estimates to seek out additional funding and easily produce grant from well-organized data
Other Tribal Departments	• Can coordinate their project with your projects effectively • Can potentially utilizing multiple funding sources for related projects
BIA/FHWA	• Can more easily represent your needs in Washington DC to increase TTP funding levels • Can bring your projects forward for special consideration and funding
MPOs and RTPOs	• Are aware of your project needs and may provide supplemental/support funding and coordination
City, County, State DOTs	• Are aware of your project needs and may provide supplemental/support funding and coordination

Data Collection/Creation

"Garbage in, garbage out"

GIS based tools allow for more accurate data to be collected, whether in the initial collection, during the update process, compiling maintenance needs and tracking the work done, on through to future planning efforts.

TTP Management

Maintenance Plans

Safety Plans/RSAs

"The TTPSF emphasizes the development of strategic Transportation Safety Plans using a data-driven process as a means for Tribes to determine how transportation safety needs will be addressed in Tribal communities."
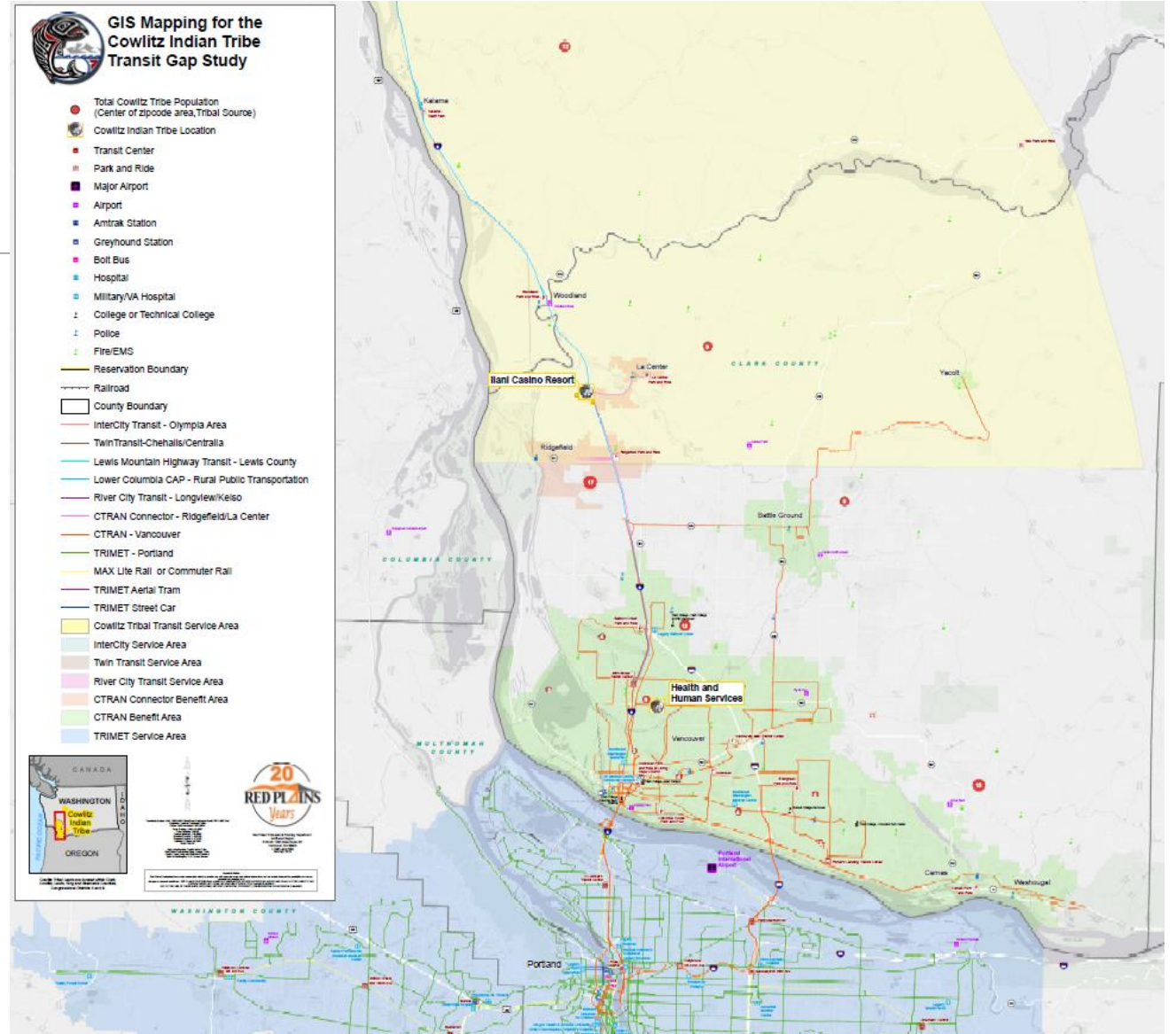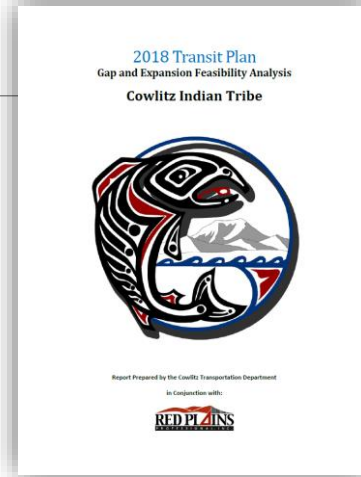-Notice of Funding Opportunity for Tribal Transportation Program Safety Funds, Federal Register - 09/21/2017
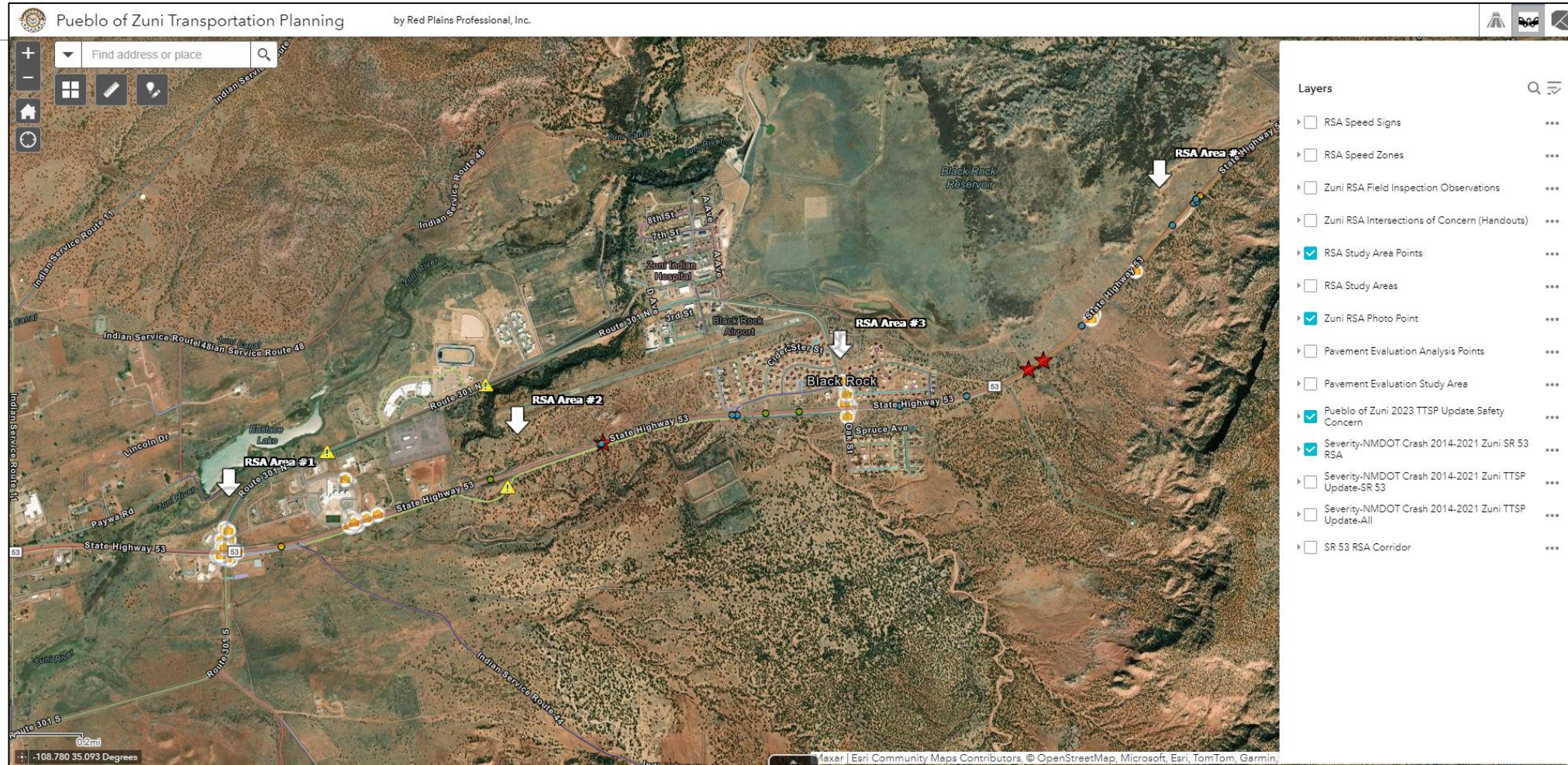
Transit Studies
# Transit Plans

Transit Related Uses:

- *Transit Plans*
- *Gap Studies*
- *Expansion Studies*
- *Feasibility Studies*

2018 Transit Plan
Gap and Expansion Feasibility Analysis
Cowlitz Indian Tribe

Report Prepared by the Cowlitz Transportation Department
in Conjunction with:
RED PLAINS

GIS Mapping for the Cowlitz Indian Tribe Transit Gap Study
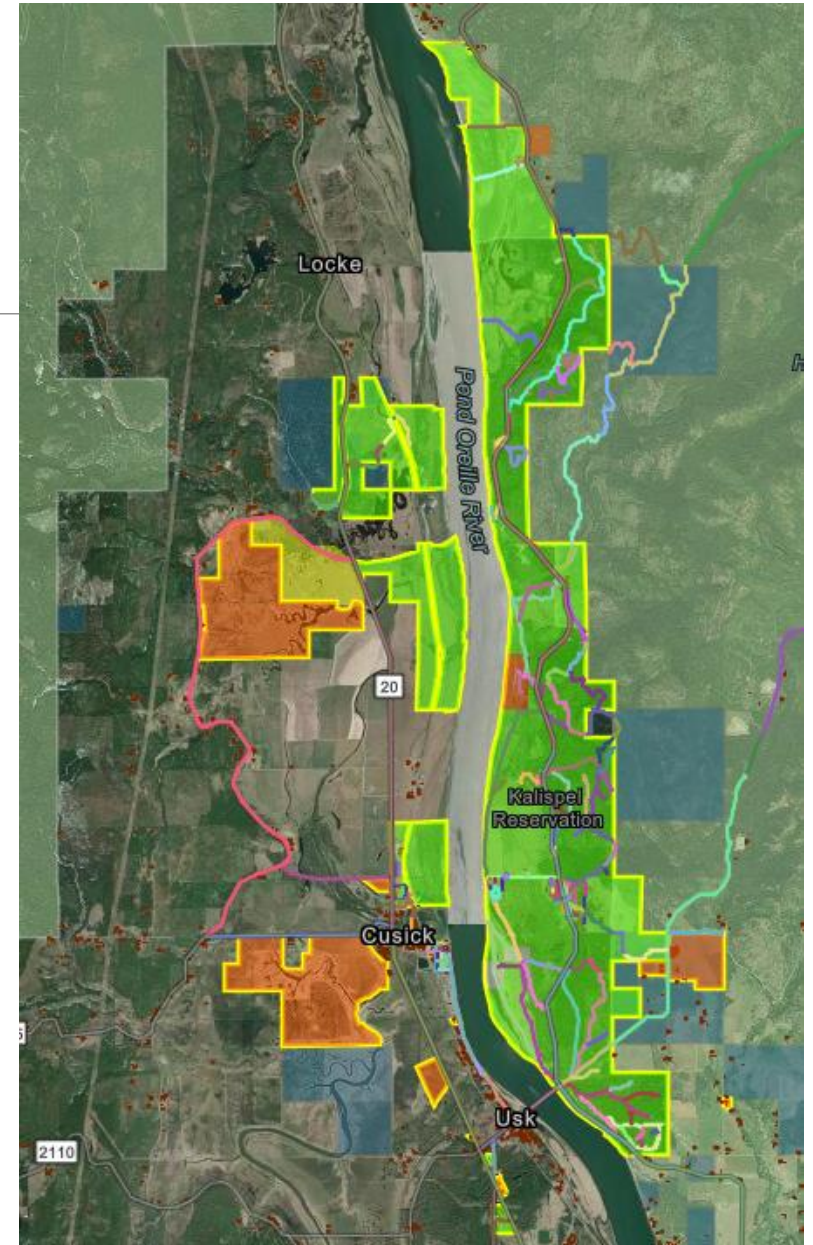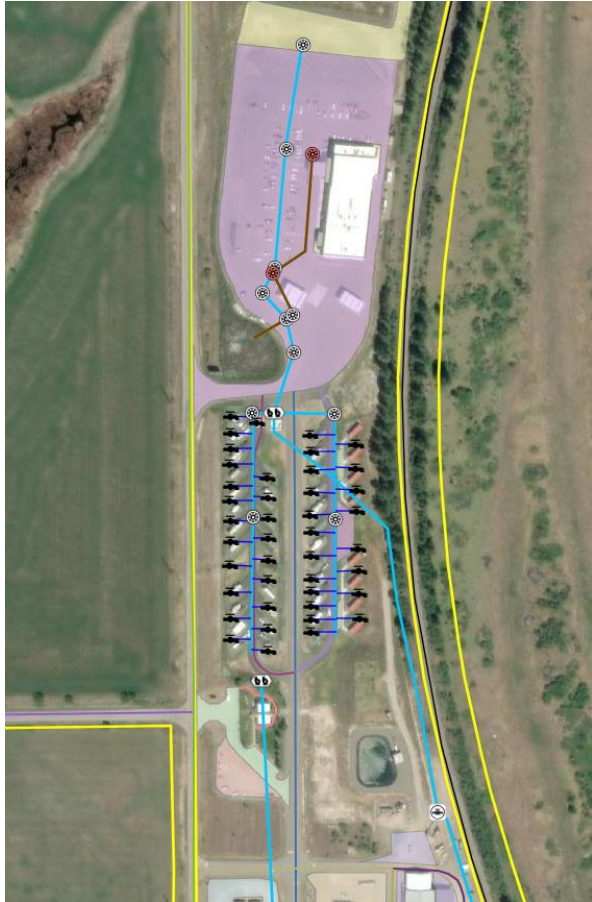
Land Use Planning and Development

Feasibility Planning:

- Future Land Use/Long Term Planning

- Topographical Surveys

- Cultural/Historical Resources

- Geotechnical Investigations

- NEPA – EIS/EA/CatEx
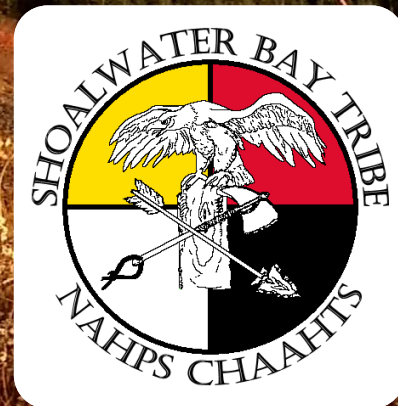
- Wetlands Surveys

- Parcel Data/Land Ownerships
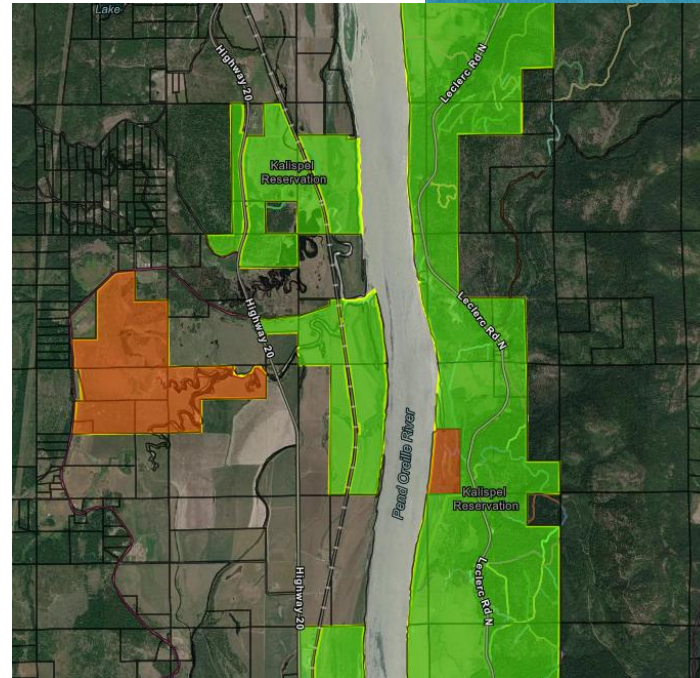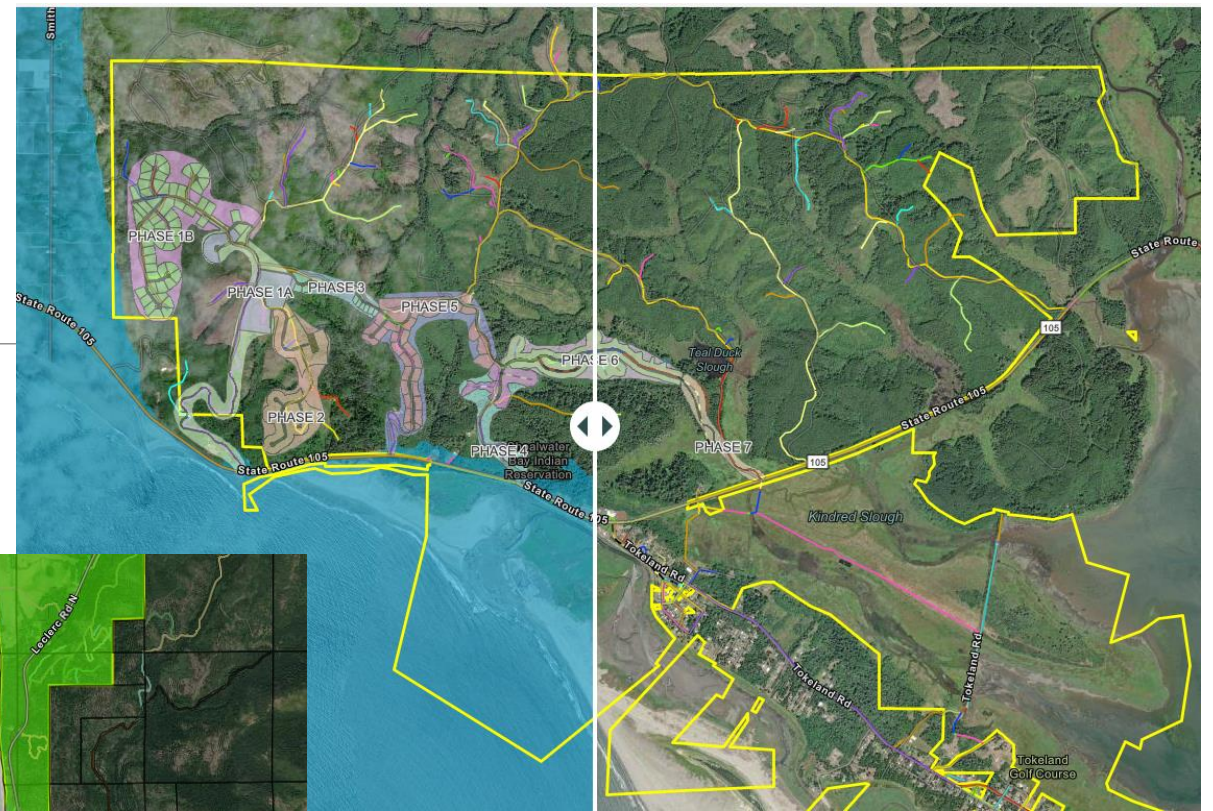
Asset Management Systems

Transportation, Utilities, Facilities, Land Management...?

Thank you to our Tribal Partners
for allowing us to share these projects.

Web Applications

https://red-plains.xyz/SBITStory

https://red-plains.xyz/PuebloofZuniTranportationPlanning

https://red-plains.xyz/PaskentaBandofNomlakiIndian

Login: redplainsguest

Password: !RedplainsGIS24$

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Thank you for your time and interest in understanding how to utilize GIS in your Tribal Transportation Program!

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