DIDs:
External Advisory Group

March 2014 Session

SDW DIDs External Advisory Group Meeting March 13, 2014   EDMONTON

Agenda

- Welcome and housekeeping
- Review agenda
- Round Table Introductions
- SDW Update and Terms of Reference
- Summary of what the EAG has accomplished so far
- Activities Under Way
  - TPR
  - WFS and WMS
- Review of changes at ESRD & AER

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Agenda - cont

- **Lunch Break**
- Future DIDs Product Review
- New Initiative – Human Footprint
- General discussion and wrap Up

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Round Table Introductions

- Name, Company and Role
- How does your company use the DIDs mapping product?

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SDW Mission

Maintain and promote the broadest possible distribution of Mapping and Spatial data that meets the needs of the Alberta marketplace and preserves mapping systems for the long-term benefit of Albertans.

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What is SDW?

- A Public-Private-Partnership (P3)
- Non-profit corporation with a for-profit operator, AltaLIS
- A virtual company of an Executive Director and a Board of Directors

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SDW Board

- Government of Alberta
- Telus
- Fortis Alberta
- Atco Gas
- AAMDC
- AUMA

- ACR
- AFPA
- Alberta One Call
- CAPP
- AB Energy Regulator

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External Advisory Groups (EAG)

- Our license agreement with the GoA mandates the use of EAGs
- The EAG model has been key to the success of our Cadastral, Title and DIDs products
- Will continue to be used moving forward with other products

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Terms of Reference

- Enter into regular consultations with a representative sample of key users and stakeholders of the DIDs mapping dataset.
  - Identify concerns & difficulties
  - Make recommendations for changes or additions to enhance DIDs product
  - Regularly review EAG makeup
  - Regularly review EAG effectiveness

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What has this EAG Accomplished

- This is the third meeting of the EAG and fifth formal engagement regarding DIDS.
- The EAG provides technical input and feedback to SDW and has led to:
  - Recommendations for future DIDs products
  - DIDs+ product was created and released to industry
  - DIDs TPR

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EAG's Recommendations for Potential DIDs Enhancements

Scope
Special Areas mapping - update existing mapping and complete mapping for disposition types yet to be mapped
Map HRV Historical Resource Value dispositions managed by Culture & Community Spirit
Map all dispositions that are managed in GLIMPS; including dispositions managed by Environment, Municipal Affairs, Forestry- Lands and Wildlife, Agriculture, Culture, Public Works and Transportation.
Web Mapping Service
Web Feature Service
Map Disposition As-Built locations
Private Land Disposition mapping
Metis Land Disposition Mapping
Federal Land Dispositions (First Nation & National Parks)
Link manuals for GLIMPS, etc to AltaLIS website
Spatial Accuracy Program
Mapping updated to reflect a current ATS reference

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DIDs+

DIDs TPR

- Alberta Tourism, Parks and Recreation (TPR) Dispositions Agreement has been signed with GoA to add these activities to the DIDs products
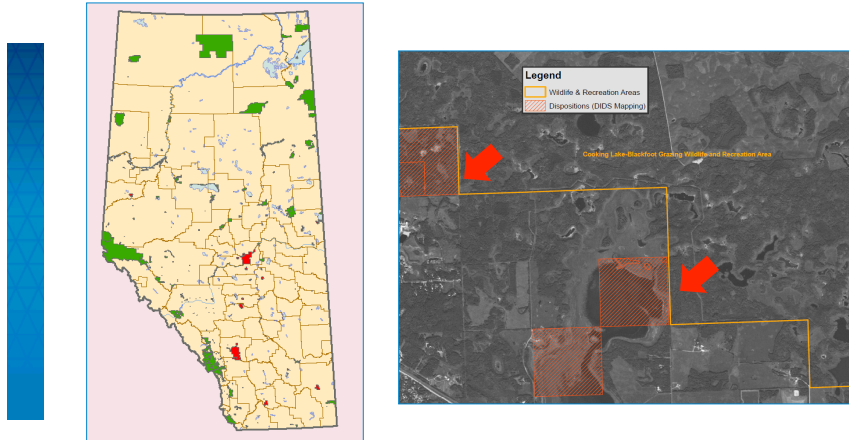- Mapping of Parks Dispositions are underway

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Activities Underway

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Alberta Tourism, Parks and Recreation (TPR) Dispositions

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TPR DIDs Mapping

- Centralized access
- Consistent data format and quality
- Supports land management and decision making
- Leverages a proven funding model and data distribution system that has been in place since 2005

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TPR types

CODE	PURPOSE
EZE or EAS or PEZ	Easement
GRL or PGL	Grazing Lease
GRP or PGP	Grazing Permit
LOC or DLO or PLC	License Of Occupation
MLL or DML or PML	Miscellaneous Lease
MLP or PMP	Miscellaneous Permit
MSL or DMS or PMS	Mineral Surface Lease
PIL or PPI	Pipeline Installation Lease
PLA or DPL or PPA	Pipeline Agreement
PRS	Parks Reservation Notation
REA or PRA	Rural Electric Association Easement
REC or PRL	Recreation Lease
ROE or PRE	Right-Of-Entry Agreement
RRD or PRD	Registered Roadway
SMC or PSM	Surface Material License

Park Dispositions in progress

Dispositions_Not_Mapped				_ □ X
ACTIVITY_NUMBEI ▾	DESCRIPTION ▾	DOC_DATE ▾	PLAN ▾	
PEZ130003		3/7/2013	PEZ130003	
PML820905		2/22/2005	PML820905	
PML980014	Waiting for Image	8/1/1998	PML980014	
LOC140432		3/3/2014	139281MS	
PML110004		9/27/2012	PML110004	
SME130081	Waiting for Image	5/30/2013	6169SG	
PMS2179		7/28/1964	PMS2179	
PMS2336		8/7/1964	PMS2336	
PPA1824		11/4/1964	PPA1824	
PPA960001		1/23/1996	PPA960001	
PMS521		6/24/1960	PMS521	
PPA2270		1/12/1966	PPA2270	
PPA840621		10/3/1984	PPA840621	
PPA790290		6/25/1979	PPA790290	
PEZ100006		5/14/2010	PEZ100006	
PMS4192		3/10/1967	PMS4192	
PEZ850003		6/5/1985	PEZ850003	
PMS5738		12/19/1968	PMS5738	
PPA830124		8/12/1983	PPA830124	

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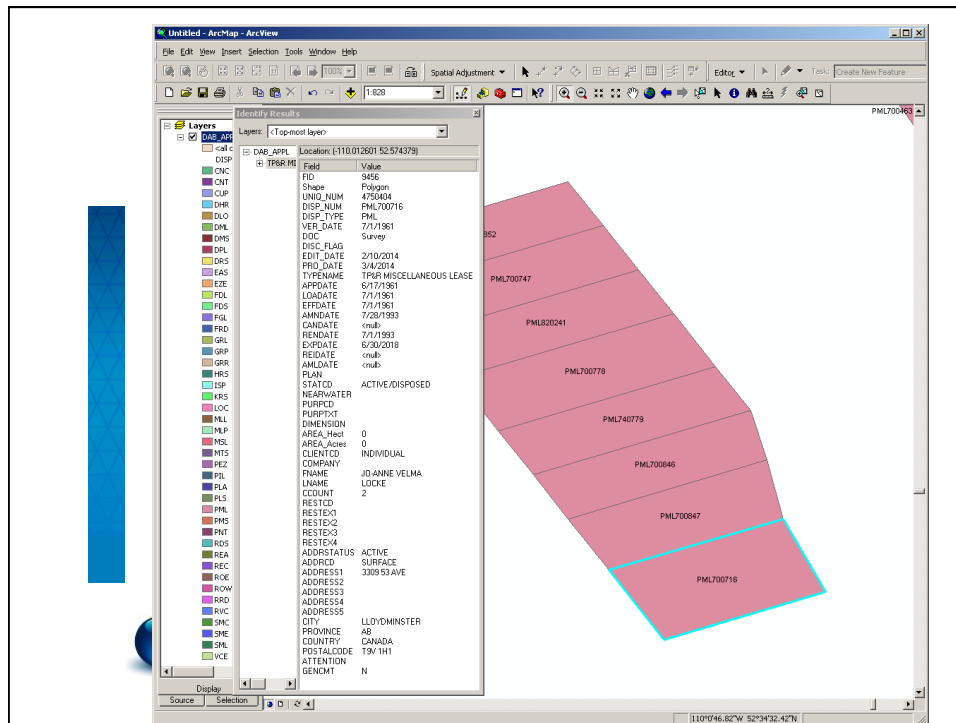
WMS / WFS

- WMS – Web Map Service
  - A map image is generated on the server
  - Symbology set by publisher
  - Can look at attributes one feature at a time
  - Essentially a "picture" is sent to the client software

- WFS – Web Feature Service
  - Full vector layer streaming
  - Symbology set by user
  - Can query attribute tables / multiple dispositions

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DIDs+ WFS

- Setting up a **prototype** WFS service
- Base **Servers** have been set up in a testing environment

  - A **geospatial server** (for GeoServer product)

  - A **database server** (for PostGIS, an open-source spatialized version of PostgresSQL)

  - For developing the platform setup procedures

  - For experimenting with clustering techniques

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DIDs+ WFS

- **GeoServer** has been set-up
  - Installed and configured as a web application on the server, allowing the potential for having multiple instances/servers in a cluster (for high performance and scalability)

- A **WFS service** of the **DIDs+ Applications** dataset
  - A copy of the Alberta DIDs+ Applications dataset has been set up as a WFS service in GeoServer (using a shapefile as the data source)

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POTENTIAL ALTALIS WEB MAPPING SERVICE ARCHITECTURE

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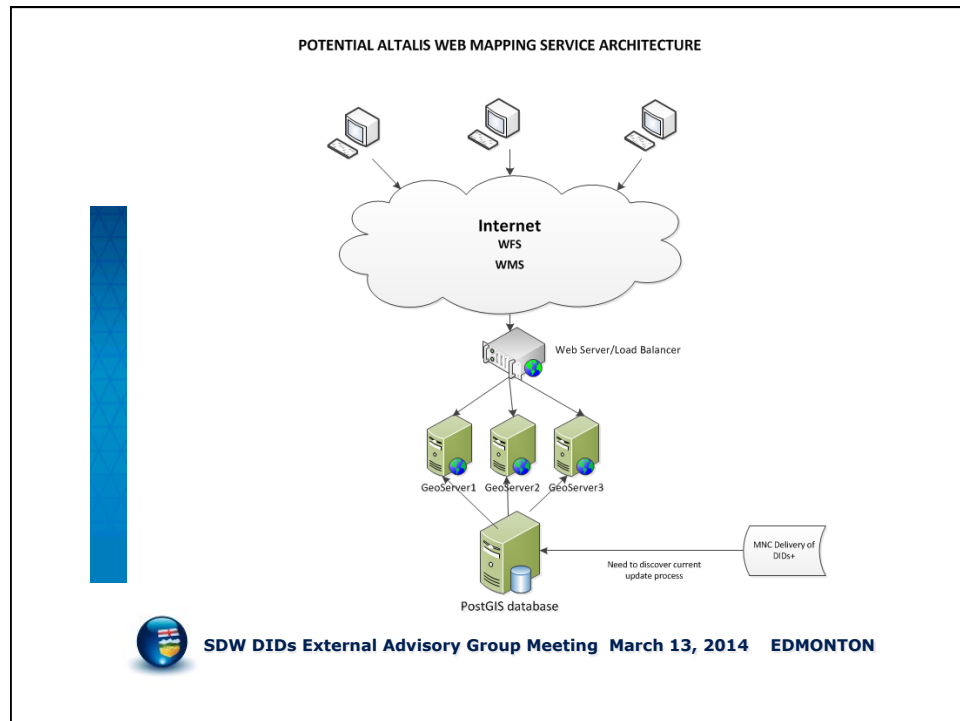
DIDs+ WFS

- **WFS Client Applications Testing**
  - A WFS client called uDig has been successfully used to connect to the WFS service and display the features on a map
  - ArcGIS Desktop (with Interoperability Extension) has been successfully used to connect to the WFS service and display the features on a map

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DIDs+ WFS

- Next Steps
  - Set up a PostGIS database to serve as the data source for the DIDs+ data, load the DIDs+ data into it, and evaluate performance

  - Set up two or more GeoServers as a cluster to understand how the service can scale

  - Set up a map cache generator and serving platform (using the same GeoServer servers)

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DIDs+ WFS

- **DEMO**

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Digital Integrated Dispositions (DIDs)

Alberta Energy Regulator (AER)
Implementation

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Digital Integrated Dispositions (DIDs)

- Responsibilities – AER/AESRD
- AER Implementation
  - Phase 2
  - Phase 3
- Impact on DIDs Mapping
  - DIDs Activity Type Changes

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Responsibilities of AER

- *Alberta Energy Regulator (AER)*
  - Transfer of responsibilities from ESRD to AER, including applications for development of
    - Oil and gas wells, pipelines, coal, oil sands, in situ, facilities applications and those pertaining to energy development on public lands
  - Responsible Energy Development Act (REDA)

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AER Implementation

- Phase 2: Implemented December 2, 2013
  - *Public Lands Act*: AER responsible for land-use authorizations and dispositions for energy-related activities
  - *Mines and Minerals Act*: AER responsible for all exploration activity, except for that related to metallic and industrial minerals (remains with ESRD)

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AER Implementation

- Phase 3: Starting March 29, 2014
  - ***Environmental Protection and Enhancement Act (EPEA):*** energy-related EPEA applications
  - ***Water Act***: energy-related Water Act applications

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Impact on DIDs Mapping

- Need for transaction segregation within GLIMPS
- Impact on Common DIDs Activity Types, such as:
  - MSL, LOC, PIL, PLA, MLL, VCE

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Total Active Records

Land Activity	Active Records	ESRD	AER
MSL	90,843	3	90,840
PIL	10,200	0	10,200
VCE	900	829	71
PLA	69,238	1,435	67,803
LOC	63,259	6,530	56,729
MLL	3,484	2,488	996

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AER Land Activity Types

- LOC – License of Occupation
- MSL – Mineral Surface Lease
- PLA – Pipeline Agreement
- PIL – Pipeline installation
- MLL – Miscellaneous Lease
- RVC – Vegetation Control Easement

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ESRD Land Activity Types

- DLO – License of Occupation (LOC)
- DMS – Mineral Surface Lease (MSL)
- DPL – Pipeline Agreement (PLA)
- DML – Miscellaneous Lease (MLL)
- VCE – Vegetation Control Easement

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DIDs Implementation / Use

- Digital Integrated Dispositions (DIDs) is a mapping product
- GLIMPS (LSAS) official registry containing *all* approved activities on Public Lands
- Disposition activity plans show approved extent of interest on Public Lands

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Discussion

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Lunch Break

Resume Afternoon Session in half an hour

- Review Future DIDS Products
- New Initiatives
- General discussion
- Wrap Up
- **Close Session 2:30pm**

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Future DIDs Products Review

Scope
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Special Areas
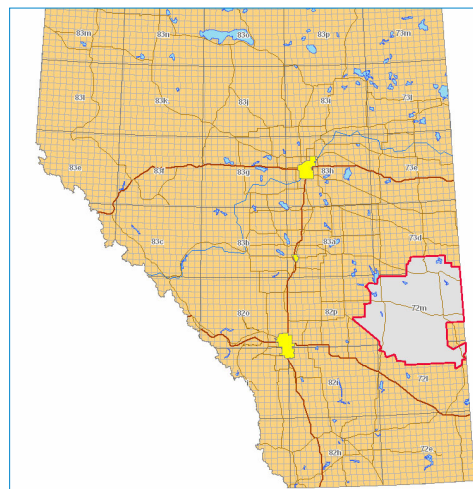
- Wellsites, Roads & Easements (12,800)

- Future: Pipelines and Grazing leases

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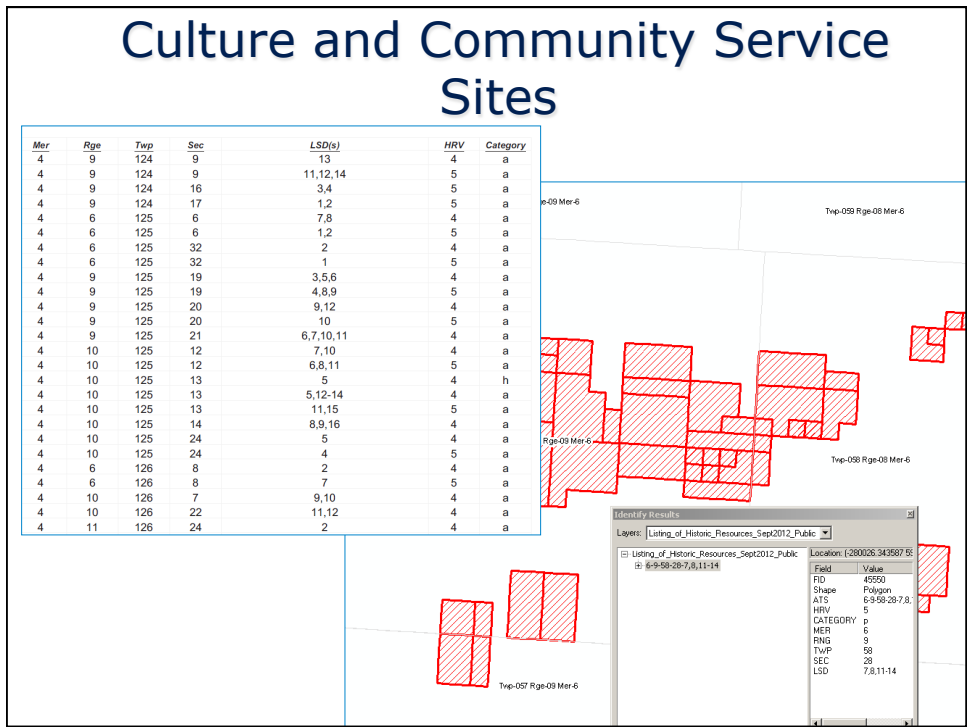
Map All Activities in GLIMPS

Approximately 100 types (70,000 activities)
Examples:
- Temporary Field Authorization (TFA) 33977
- Public Pit license (PPL) 6290
- Coniferous Timber Permit (CTP) 5849
- Drilling Waste Disposal (DWD) 3433
- Range Improvement Agreement (RIA) 1387
- Ecological Corridor Agreement (ECA) 1214
- Hay Permit (HAP) 666

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Temporary Field Authorization
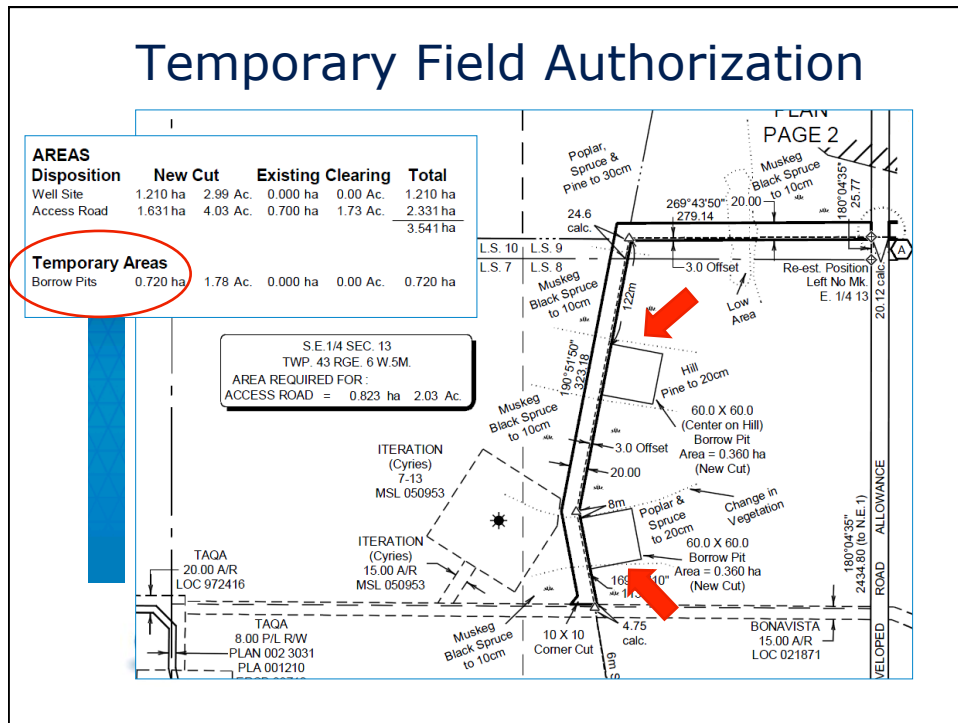
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Web Map Services (WMS)

- WMS testing is currently underway with Base Features (BF) data

- Decision on DIDs+ WMS will be made once BF WMS and DIDs+ WFS testing is complete

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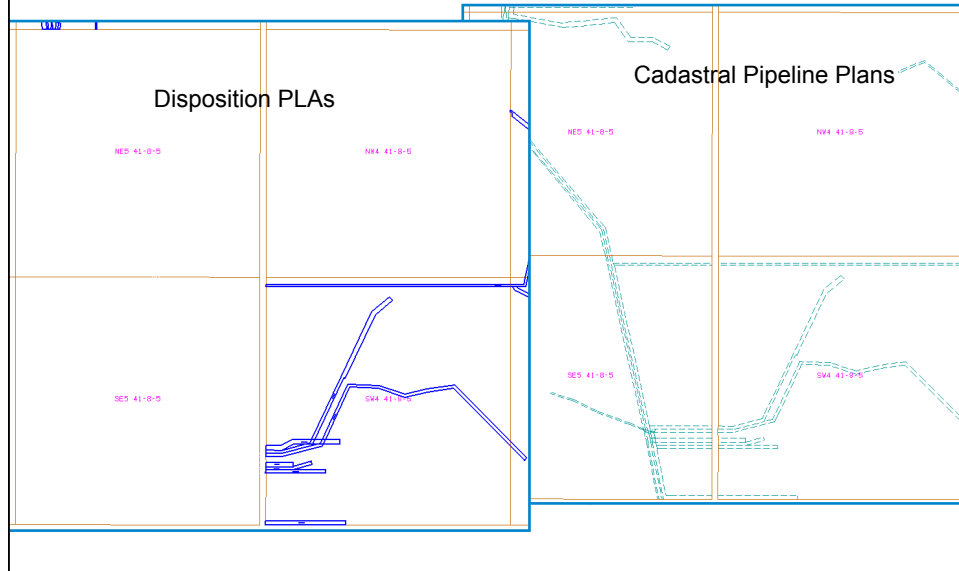
Web Feature Services (WFS)

- Prototype in progress

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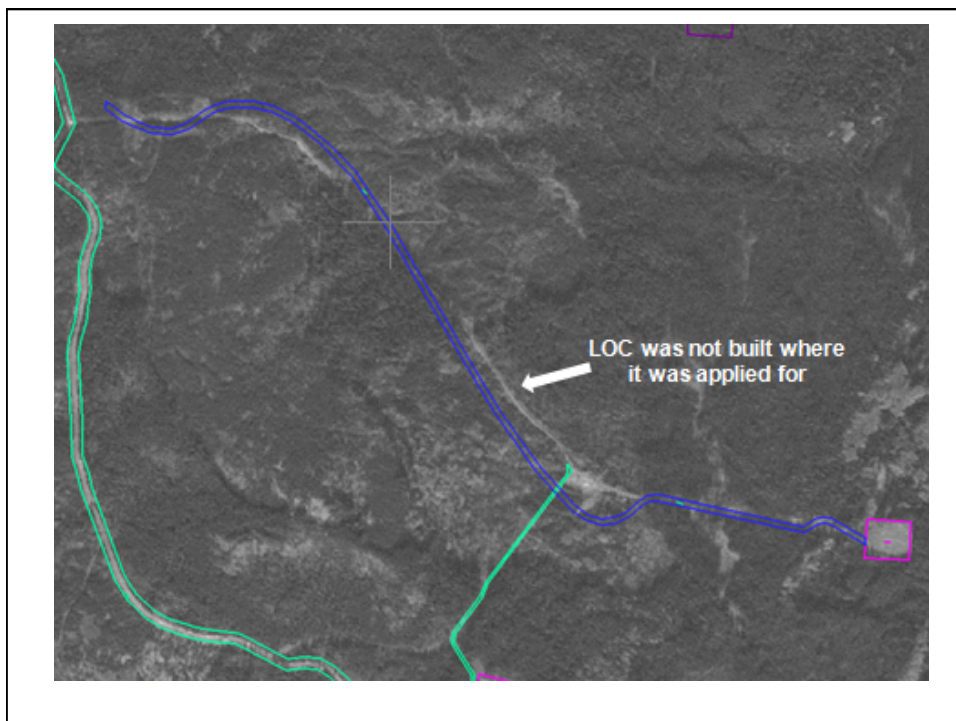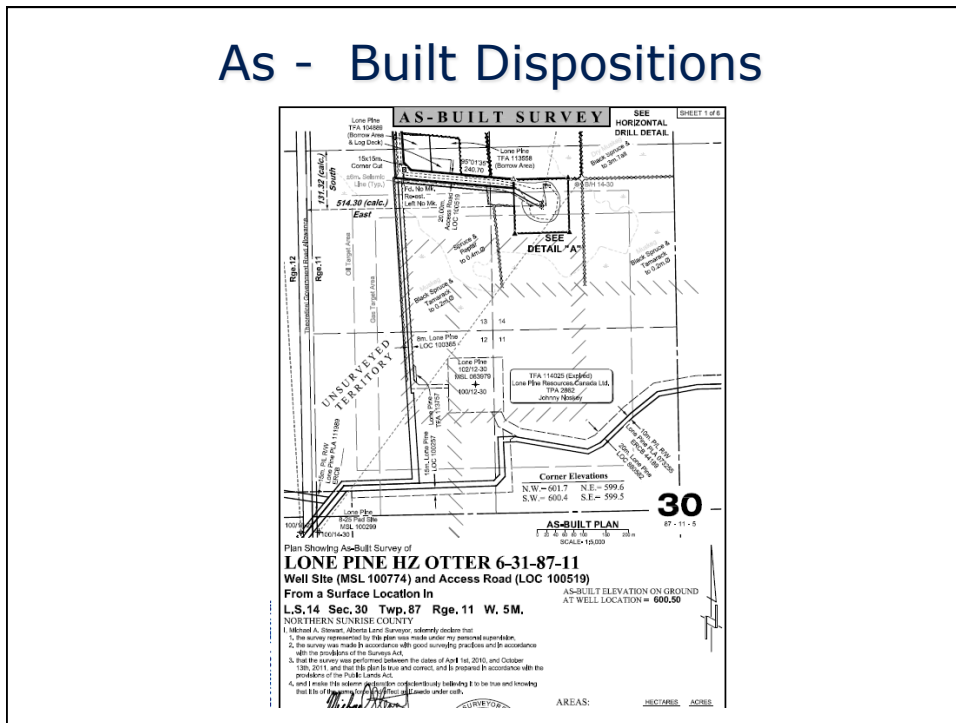
Private Land Disposition mapping
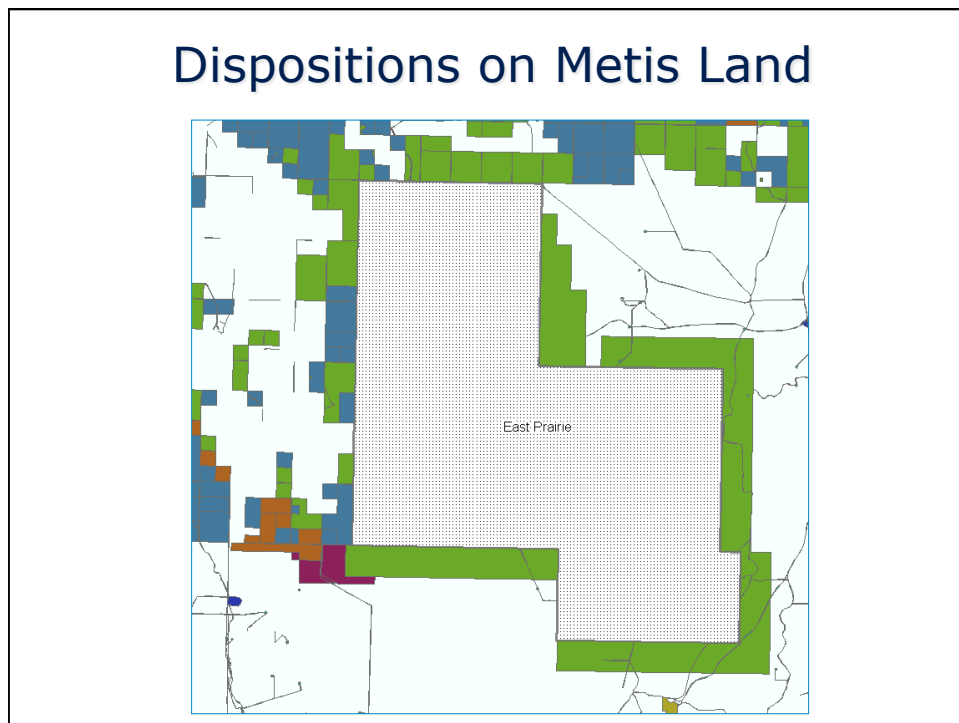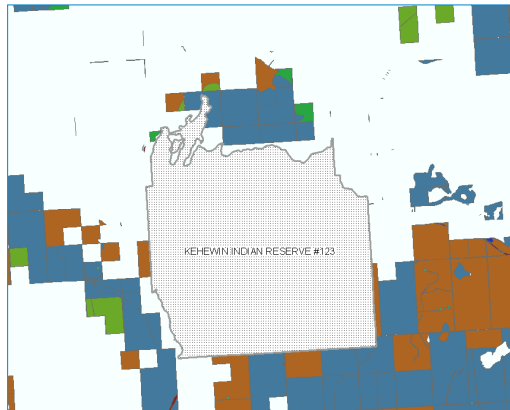

Disposition PLAs

Cadastral Pipeline Plans

Dispositions on Metis Land

East Prairie

Dispositions on Federal Lands

- First Nations and National Parks

Link Manuals for GLIMPS to AltaLIS Website

Spatial Accuracy Program

- Similar to the Cadastral Accuracy

Legend
- > 10m = 20 twps
- 243 twps previously adjusted

CAD Accuracy Project	2008	2009	2010	Total
Townships Reviewed	381	365	175	921
Townships Adjusted	102	83	58	243
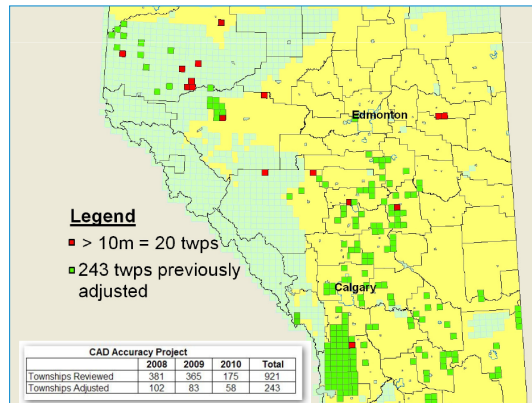
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Map to the Current ATS

NE 27-41-8-5
Current

NE 27-41-8-5
Version 4.1
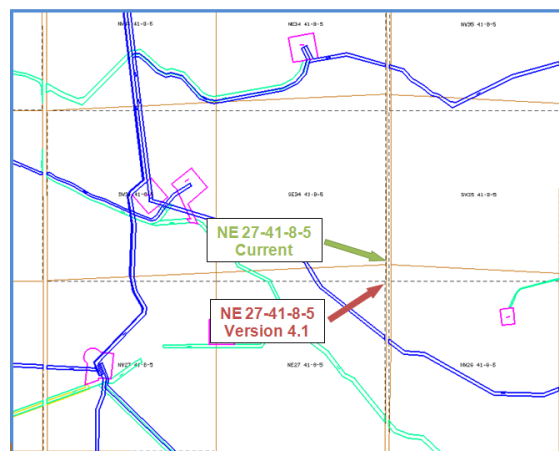
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New Initiative

Human Footprint

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EAG Context

At the Nov 2012 EAG, the question was asked "What are as-builts?". They could be:

- Pipeline center line as constructed or road centerline as constructed
- Extent of lease once built
- Location based on air-photo
- Infrastructure location

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SDW and EAG Role

- SDW is exploring the role it can play in supporting the development of a Human Footprint product
- We'll demonstrate 3 initiatives that have been undertaken
- Looking for input – how can you use this type of information in your role and what data is important

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Current Efforts to Map Human Footprint

- There are no provincial or industry standards for "Human Footprint"
- Different organizations are using different technologies for different needs
- A provincial-wide, authoritative and accessible dataset is required

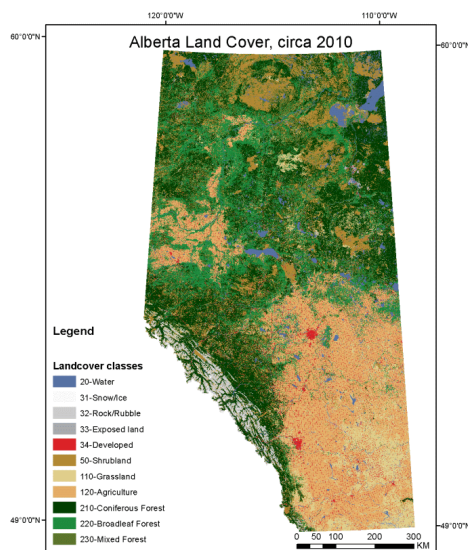**SDW DIDs External Advisory Group Meeting March 13, 2014   EDMONTON**

ABMI

- Defines HF as "the temporary or permanent transformation of native ecosystems to support residential, recreational or industrial land uses".
- Created Human Footprint GIS layers to meet their research needs
- Map is typically 2-4 years out of date but is provincial wide and based on LUF

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ABMI

Alberta Land Cover, circa 2010

Legend

Landcover classes
- 20-Water
- 31-Snow/Ice
- 32-Rock/Rubble
- 33-Exposed land
- 34-Developed
- 50-Shrubland
- 110-Grassland
- 120-Agriculture
- 210-Coniferous Forest
- 220-Broadleaf Forest
- 230-Mixed Forest

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COSIA

- Canada's Oil Sands Innovation Alliance (COSIA) is an alliance of oil sands producers focused on accelerating the pace of improvement in environmental performance in Canada's oil sands through collaborative action and innovation.

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COSIA Members

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COSIA – Footprint Pilot Project

- Footprint feature
- Disposition number
- Owner/creator
- Unique Well Identifier (UWI)

- Approval number
- Status
- Product type
- Well type
- Road class
- Reclamation status

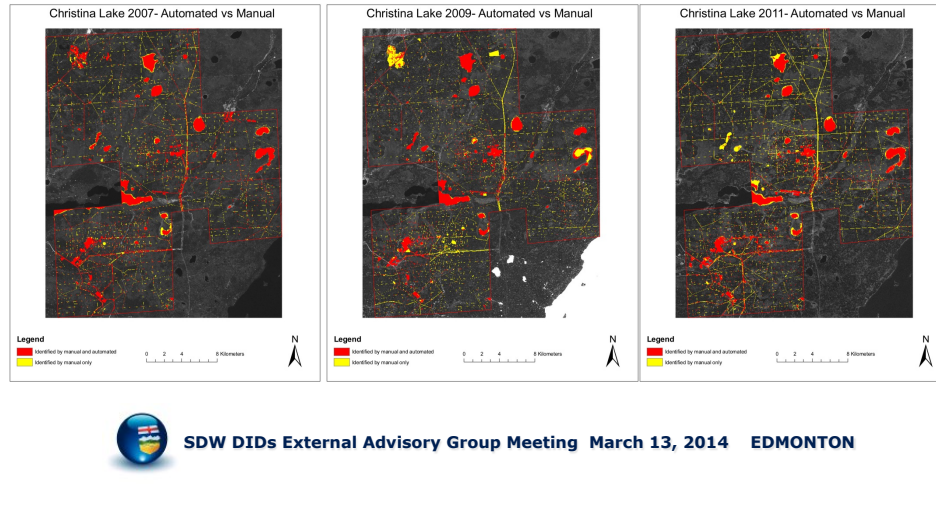**SDW DIDs External Advisory Group Meeting March 13, 2014   EDMONTON**

NRCAN, ERCB and AITF

- Defined Anthropogenic Footprint as "the extent of any land cleared or directly modified by human activity"
- Completed pilot project with on automated change detection using SPOT satellite data
- Human vs automated work was compared during the pilot

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Example

Christina Lake 2007- Automated vs Manual | Christina Lake 2009- Automated vs Manual | Christina Lake 2011- Automated vs Manual

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Your Input on Human Footprint

- If SDW was to proceed with a Human Footprint product what data would be important?
- How would your organization use something like Human Footprint layer?

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General Discussion

- Parking Lot

- Open the floor for final comments

- Follow up survey

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Wrap Up Session

- Thank you for your participation

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