

**Wetlands BMP Workshop**  
**Roads Plenary and Keynote Panel**  
**January 21, 2016**  
**Edmonton, AB**

Day 2 included a panel discussion with the keynote and roads plenary speakers. Members of the panel included: Thorsten Hebben, AEP; Paul LeBlanc, Louisiana Pacific Ltd.; Chris Smith, DUC; Lorne McNeilly, Landmark Solutions Ltd.; Rob Udy, Landmark Solutions Ltd.; and Mark Partington, FPInnovations. All workshop participants present had the opportunity to ask the panel questions about their presentations and their work. [Disclaimer](#)

Q: Why did AB develop their own wetland classification system?

A: Needed consistent classification across the province that was applicable everywhere – hence merging/ combining more than one system.

Q: Applicability of the Water Act to peatlands?

A: Water's act doesn't provide the level of clarity and specificity to include or exclude specific types of water bodies, we are still struggling with how people perceive wetlands, particularly muskegs as wastelands – gave a means of excluding it from the waters act in the past. We have moved beyond that now and use the verbiage in the legislation to say peatlands are waterbodies, but also need to consider there are a lot of peatlands and a lot of activities so there is the ability to not include peatlands in permitting

Q: decommissions the road, what do we do with the materials at the end? Are there projects on the lifecycle of the material, how do we dispose of clay?

A: A lot of info with geosynthetics (biodegrade, how quickly, how) as well there has been studies on what to do with some of the stockpiled materials, but not widely available publications of what to do with that.

- Trade-off using clay vs sand with layers means less material. A lot of E in bringing in clay. There is always the questions as to whether the whole road needs to be decommissioned or just portions to restore functions – no answer but a topic of discussions

Q: Oil and gas perspective, integrated land management, has there been consideration in the way O&G projects progress. We build roads not knowing where the resource is, then we're asked once we prove the resource we are asked to use existing corridors and again for putting in pipelines. Any thoughts on BMP to address all those issues, as we disturb the same issue as we go wider and wider with a corridor?

A: Yes there are practices knowing the long term cycle of the road.

- This is part of conversations in government, fits under the Land use framework, also brought up at regulatory level, thinks we're on the right trajectory, need more comprehensive discussion with the operators.
- Instead of looking at the site level, look at the landscape level.

Q: What does June 1<sup>st</sup> implementation of the wetland policy mean?

A: Implementation in the green area means that any new application is subject to the wetland policy regarding wetlands, not subject to replacement but will be subject to those pieces introduced through the policy i.e. Wetland assessments, bmps – in terms of reclamation requirements we will work towards more clear requirements

Q: What type of applications are you referring to, what about applications in process prior to implementations or expanding.

A: Anything new. Doesn't matter what the application will be, if there will be a wetland impact we manage it in view of the wetland policy. Still being formalized with AER.

Q: One of the goals of the pile supported road project was to maintain wetland function, what did you do to understand wetland function?

A: Took the lead from their client (Cenovus)

Q: Construction in permafrost?

A: Chris – DU has not done anything but have some observations, NWT seismic lines impact permafrost. Rob – Engineer in NWT working on crossings, engaged to come up with options on road and wet crossings for maintaining permafrost

Q: Ecotyping and how the process is used in reforestation and restoration (for Paul), retrofitting with mega culverts, impact on fish movement (For rob)?

A: Wetlands do get cut, black spruce swamps, these are replanted vs. natural regen of aspen. Wetlands cut are tracked via GIS through entire wetland through their whole lifespan.

- Not a fan of closed bottom structures for fish passage, would not be recommended for fish. No closed bottom culvert for fish bearing crossings – megaflo w culvert is intended to maintain subsurface flow, not be in place for fish passage.

Q: Observation through presentations, in road construction process, obvious our standing operating procedures are the same across the country, operators know the book and follow it, but it doesn't work

in wetlands. We say that in every presentation we saw. Changing conifer swamp, ditch and changing it to a shallow open water. We do it everywhere, and don't need to ditch through wetlands. Not required if we want to maintain these wetlands.

A: Bumpy roads, culverts in wetlands. Been done for the past 50 years, doesn't work and attracts beavers. Alpac's SOP is not to ditch through wetlands (now) – though that is not for the great majority.

Q: Is there a price differential building an old school ditching vs. the best and new.

A: No there's not. Feels strongly it's cheaper to do 10% extra to build a robust crossing that will survive and survive the elements. Cheaper to do it right the first time. Rob, ballpark cost on his project in presentation: \$10,000 per linear metre but required a lot of testing as new things.

Q: Initial cost to develop technology was \$10,000, now that you know what you're doing, what would be the cost to deploy again?

A: probably wouldn't do that same treatment again, but we think we'll take this to build a causeway, drive piles in, put mats down, then put 80cm deep fill for a permanent road. This would be competitive with traditional road replacement when you consider the full cycle, i.e. Reclamation, leaving the timber poles in place and wetland should recover.

Q: How long does corduroy last in wetlands

A: Most highways in North on corduroy last indefinitely if left wet, those that wet and dry would probably be around 40 years if installed properly. Water level is key, keep below water. If the logs are getting wet and dry then they will degrade faster – also depends on tree type. Required proper installation, and using geotextiles is a huge help to keep logs down.

Q: beavers are a problem, is this a problem? How would you factor that in?

A: Only really an issue with high flowing water but it is incorporated into design. If you minimize the flow passage you increase the change of beaver, understanding the system that is there can help address those things. Few culverts increase chance of beaver activity impacting. Corduroy almost eliminates the beaver risk by allowing multiple flow through locations.

Q: Do they map groundwater flow patterns in projects and is this important?

A: Hydrologic flow is extremely important, something typically that has not been done, often difficult, looking for indications of it. Important at the larger scale beyond the site level.

- We didn't consider it on that specific project in presentation but something that is in discussions and needs to be considered. Wells on either side of the road demonstrated water continued to

flow, would argue it would be the same if it was groundwater input instead of just surface water.

Q: Water moving is important, but also how much water is moving?

A: Monitoring equipment didn't get in before construction, so important but we don't know. What is also important is the position of the wetland in the landscape and the catchment – connectivity and position in the landscape, a project AI is working on.

Q: Road construction using piles, what are the considerations to employ the same technologies for other structures, i.e. Well pad.

A: Teaming up with a bunch of people in the room to make that happen. Doing testing at the Evergreen Center. Believes it is possible and could be a tool to use.

Q: What will be in the field guide (FPI's National Roads and Wetlands Handbook) for negating the impact roads on wetlands, will it include various types of roads from winter to semi-permanent and permanent roads, and has it considered work regarding type of wetland you're going through?

A: The guide is geared to forest sector but can be applicable to others. Intended for field practitioner. Provide examples on the use but no background research.

- Know your wetlands chapter
- Designs, water passage, winter roads
- Touches on many aspects, but limited in depth because of the target audience.
- How much applicable to the oil and gas sector? General principles are just as applicable to other sectors, but there may be differences in terms of the costs that are considered feasible.

Q: How do we move from a good idea to standard practice? Is it simply stapling a page into the procedures guide?

A: The concern I have as a standard practice is that it can be applied in the wrong situation, there is so much variability.

- Jaret talked about this and gave a very good example of how it could be done
- Industry doing it for industry is a good first step, validates it to the operators if the sector is developing it for the sector. Information has to come from the right people.

Q: Comment Doug Kulba Alberta Environment and Parks. The Evergreen Centre for Resource Excellence and Innovation is located on a 14 acre plot in Grand Prairie it was developed in 2009 as a collaborative effort between industry and government to showcase innovative resource solutions. I invite anyone interested in learning about, developing, testing, researching, and showcasing best practices to visit to the centre and become a part of the centre's collaborative team.

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