Processed Snow Roads, Runways, and Whatever

Russ Alger
Michigan Tech University
www.mtukrc.org

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Early Snow Processing Research

Questions to Answer

Snow Description	Typical Density (g/cc)	Rammsonde Hardness	Unconfined Compressive Strength (kPa)	Unconfined Compressive Strength (psi)
Fine milled, not compacted or impacted (1/2 hour after processing)	0.42	50	240	35
Fine milled and impacted (1/2 hour after processing)	[illegible]	80	310	45
Fine milled, impacted and compacted by vibration (1/2 hour after processing)	0.53 to 0.68	140 to 250	620 to 760	75 to 110
Coarse milled and compacted (not with new groomer 1/2 hour after	0.55 to 0.58	100	345	50
Coarse milled and compacted (not with new groomer 24 hours after	0.55 to 0.58	200 to 300	480 to 620	70 to 90
Ice (for comparison)	0.86	>1000	1100	160

Floating Slab?

Cold Snow Set-Up?

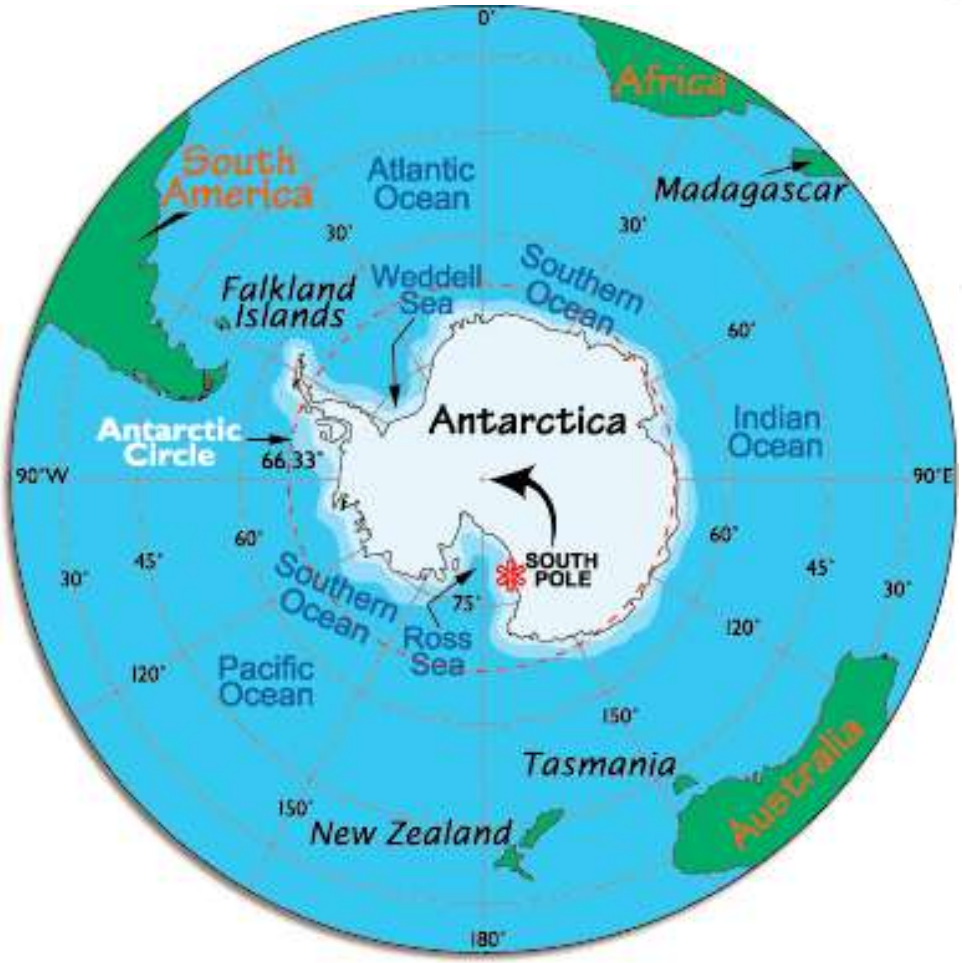
Strength Degredation?

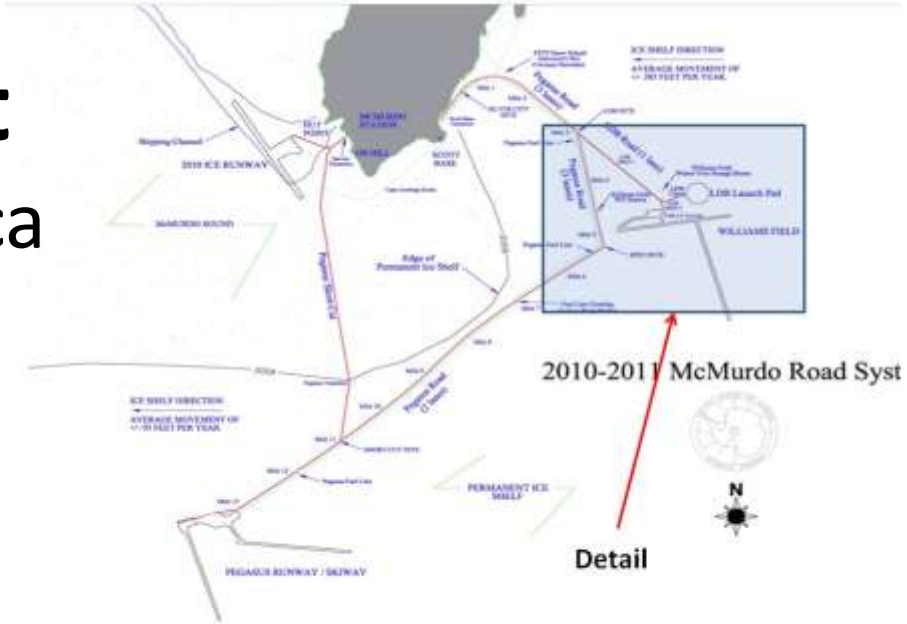
Layering?

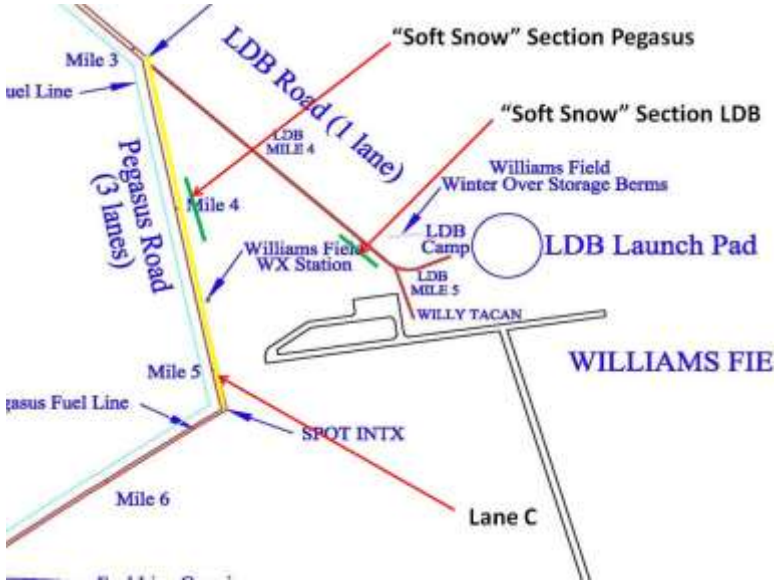
Cost - Not So Good Either

The Current Project

"Snow Paver" in Antarctica







To “The Ice”


WARNING


DANGER


CATERPILLAR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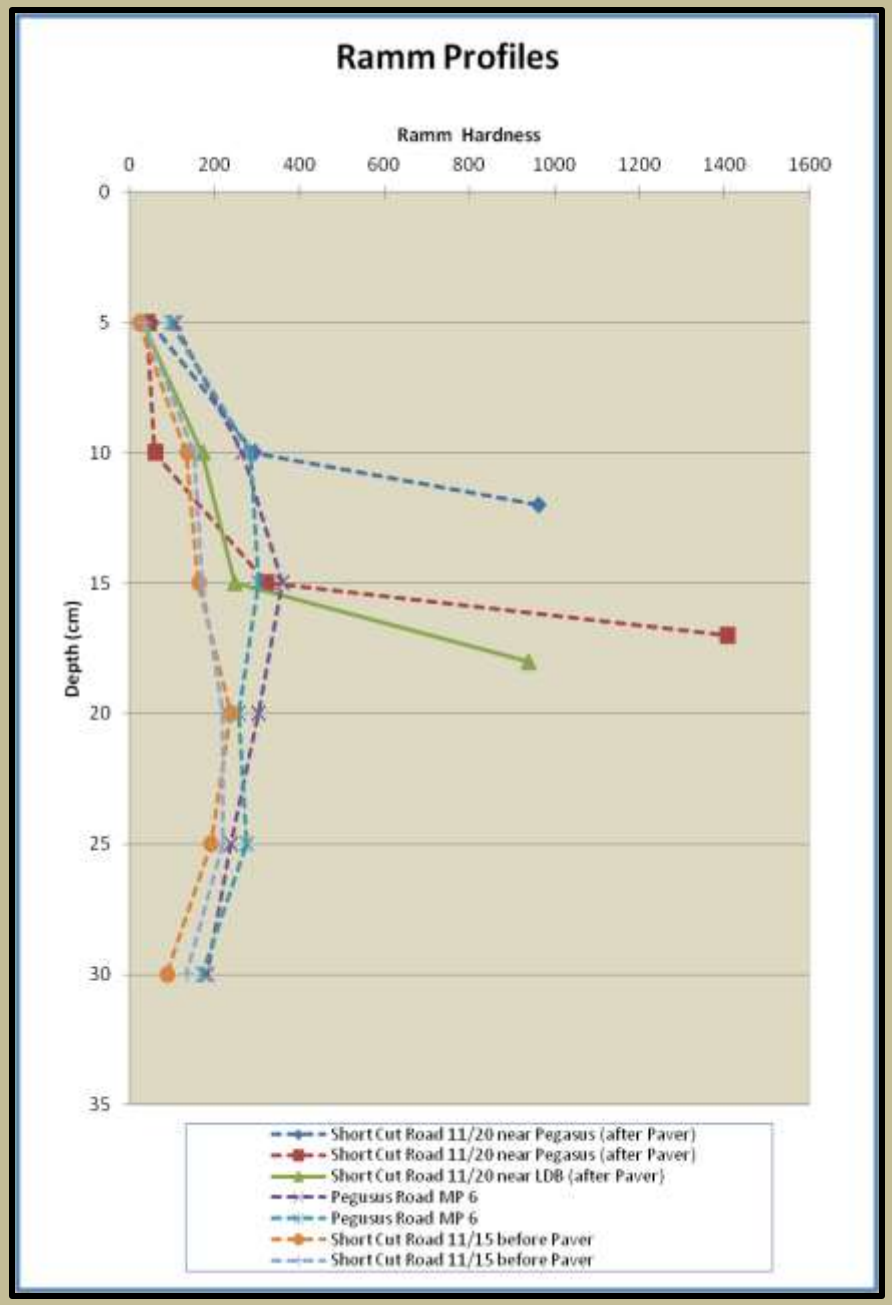

Snow Description	Typical Density (g/cc)	Rammsonde Hardness	Unconfined Compressive Strength (kPa)	Unconfined Compressive Strength (psi)
Fine milled, not compacted or impacted (1/2 hour after processing)	0.42	50	240	35
Fine milled and impacted (1/2 hour after processing)	0.5	80	310	45
Fine milled, impacted and compacted by vibrator (1/2 hour after processing)	0.58 to 0.68	240 to 480	520 to 760	75 to 110
Coarse milled and compacted (not with new groomer 1/2 hour after	0.55 to 0.58	100	345	50
Coarse milled and compacted (not with new groomer 24 hours after	0.55 to 0.58	200 to 300	480 to 620	70 to 90
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The Next Steps
Use in More Conditions
Build a Thick Pavement
Monitor Interface Degredation