Better freight vehicles in NZ

Impacts of VDAM Rule on road and infrastructure

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VDAM Rule 2010

- Enabled greater use of the capability of the network
- Allowed more productive vehicles by increasing length
- Improved safety by double-bunking of logs and reducing the total number of trucks on the network for the same freight task
- Allowed higher mass

HPMV Route investment 2012-15

- The High Productivity Freight Network has opened up 4900 km of most productive corridors to 58T vehicles.
- This is 5% of total road network carrying 50% of New Zealand's road freight kilometres

But…

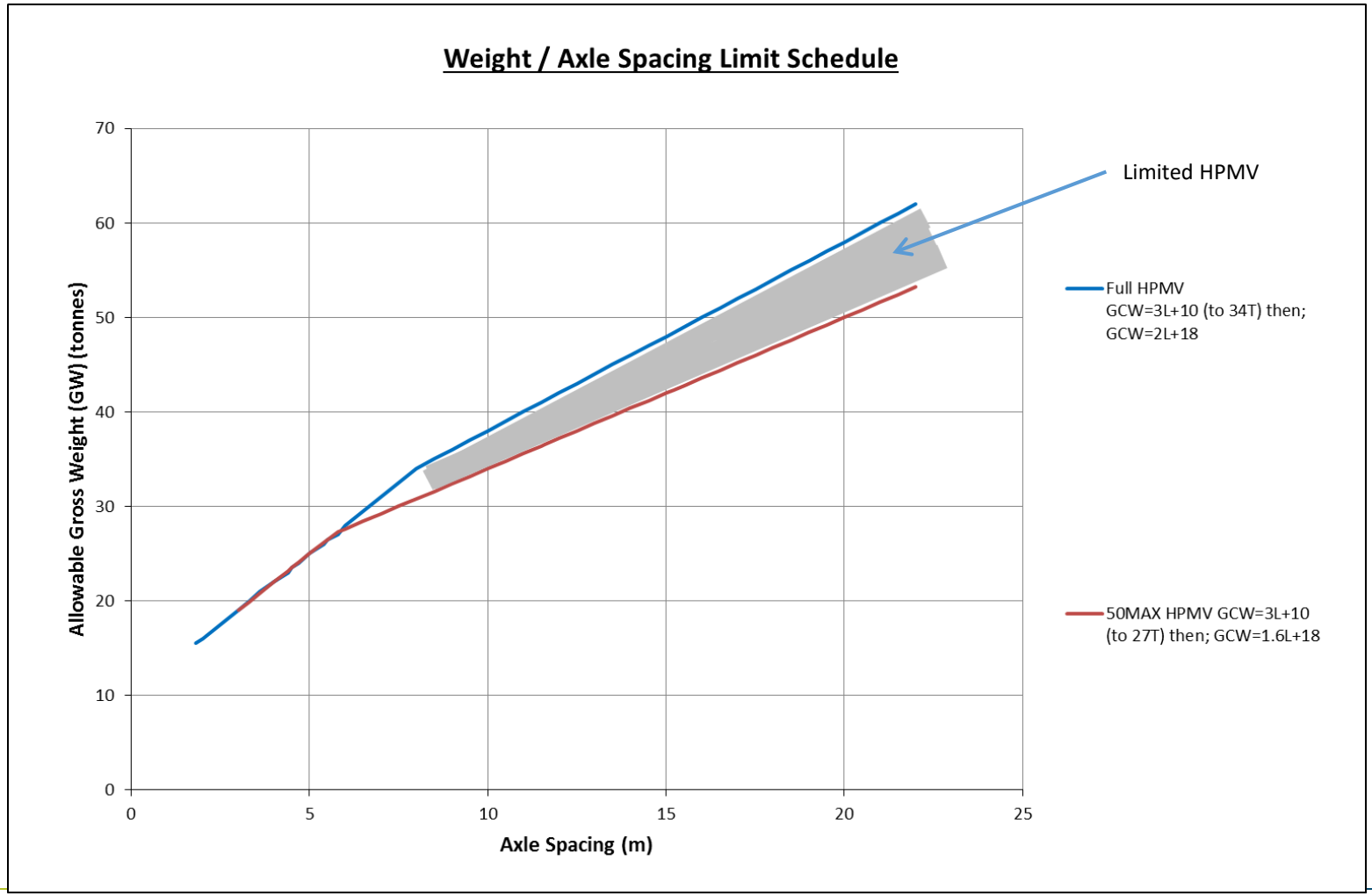
There are limits

Bridge Limits

		Acceptable Span Range		
Design Loading	Construction Date	Lower Bound HPMV (with Class 1 AWF)	Ltd. HPMV (with Class 1 AWF)	Full HPMV (with Class 1 or HPMV AWF)
HN-HO-72	1972-	All spans	All spans	All spans
H20-S16-T16	1961-1971	All spans	0 – 50m	0 – 45m
H20-S16-44	1944-1960	0 – 30m	0 – 25m	0 – 20m
H20-S16-41	1943	All spans	0 – 25m	0 – 20m
Traction Engine	1933-1942	0 – 25m*	0 – 17m*	-

* Provided bridge is unposted and is assessed as being able to safely support Class 1 vehicles.

Bridge Limits



Pavement Limits

- New Zealand soils are much softer than those of large continents
- Rigid pavements are not generally viable due to ongoing settlement
- Hence axle loads are limited

Sustainable Consumption of the Network

- New Zealand leads the world in paygo road funding
- RUC reflects an average damage exponent of 4
- Many minor roads have a damage exponent of 7-10

Geometry Limits

- Austroads PBS Level 1 limit is 20m for truck and trailer or B train
- NZ has chosen to go to 23m for productivity
- This is creating some issues on a road network that has largely evolved rather than being fully designed

Pro-Forma Design	12.5m radius curve		19m radius curve (25km/h)		35m radius curve (35km/h)		50m radius curve (45km/h)	
	Trailer Radius	Required Width	Trailer Radius	Required Width	Trailer Radius	Required Width	Trailer Radius	Required Width
20m truck and trailer	6.33	6.17	14.42	4.58	31.58	3.42	46.99	3.01
18m tridem semi-trailer	5.39	7.11	13.84	5.16	31.31	3.69	46.82	3.18
19m quad semi-trailer	4.96	7.54	13.43	5.57	31.06	3.94	46.65	3.35
23m truck and trailer	4.96	7.54	13.45	5.55	31.11	3.89	46.70	3.30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Toll - Wgtn to Akld

First run - ascent from Wairarapa side

Left side

Forward

Right front wheel

Fit to the Network

- Clause 2.1(1) of the VDAM Rule states:

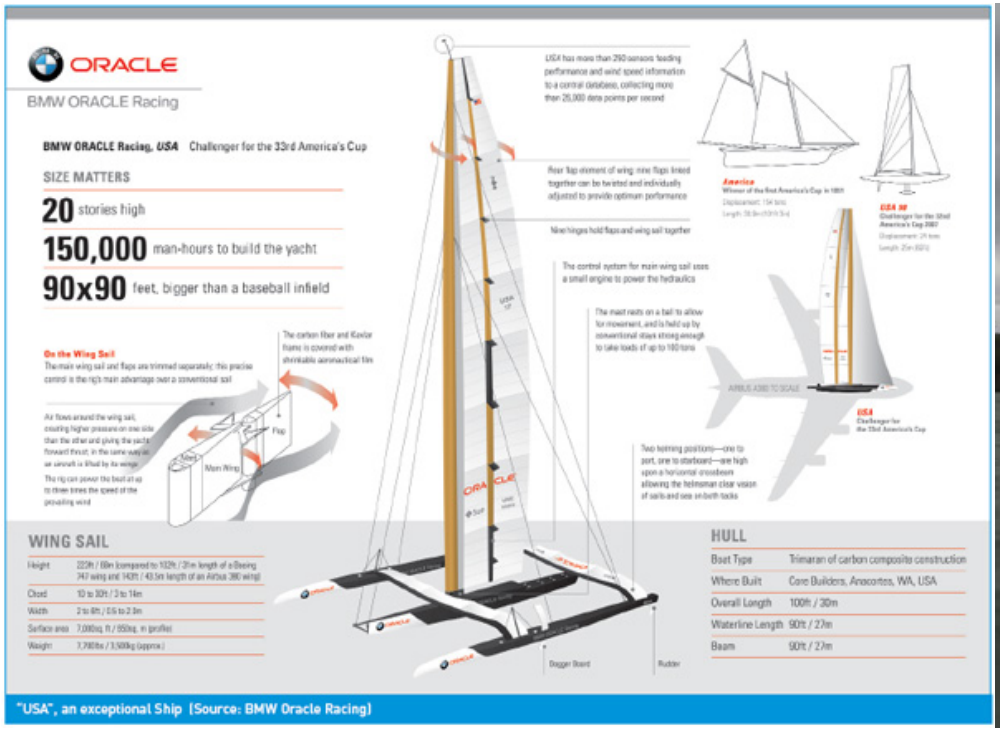
"*A vehicle and its load must comply with dimension requirements in this rule and must be manoeuvrable, fit safely on a road and interact safely with other road users*"

- This is similar to other legislation that requires vehicles to stay in their own lane unless it is safe to cross the centreline

Available Options

- Education
- Enforce the current law
- Modify PBS
- Limit certain vehicles to specific routes
- Erect warning signs

Performance Based Standards Review



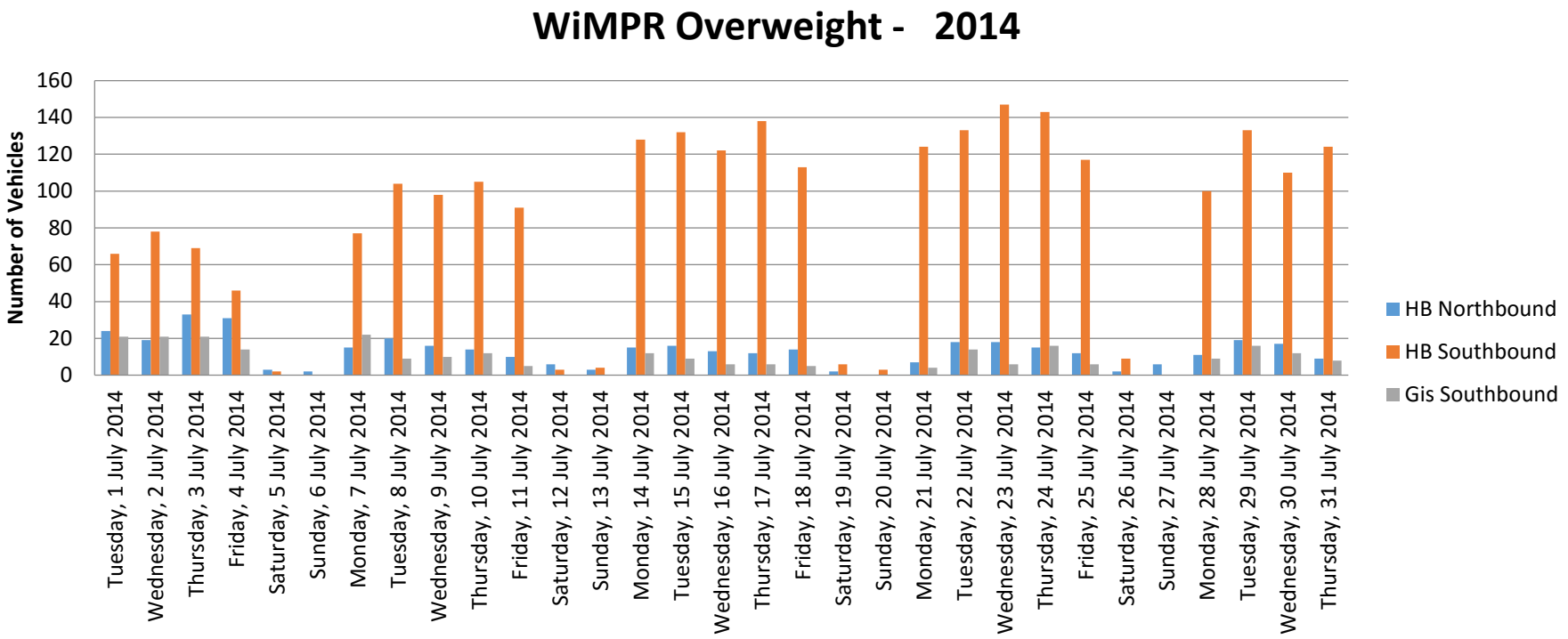
Performance Based Standards

- What is PBS
- Present use of PBS
- Trials – the discovery of problems
- TERNZ review
- PBS and the future VDAM Rule
- How do we transition?

Persistent & Deliberate Overloading

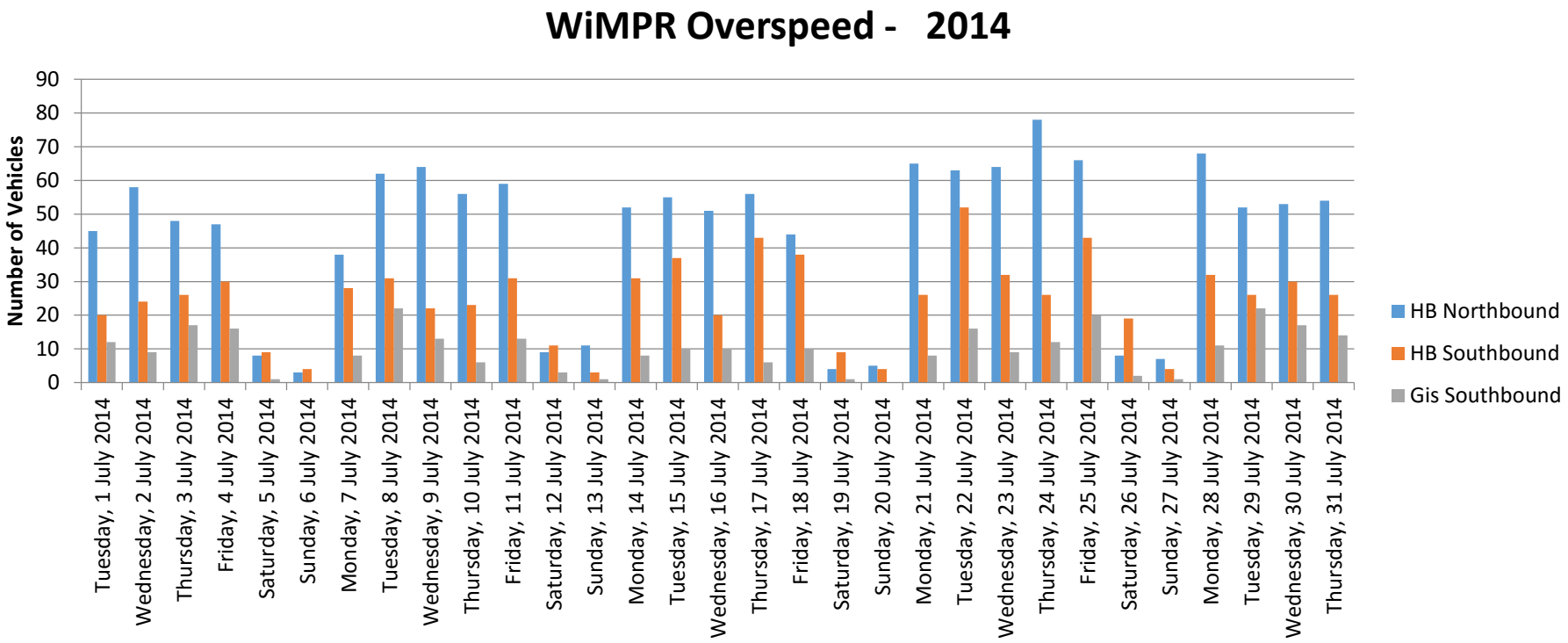
Weight by the day

Out of 200 vehicles



Speed by the day

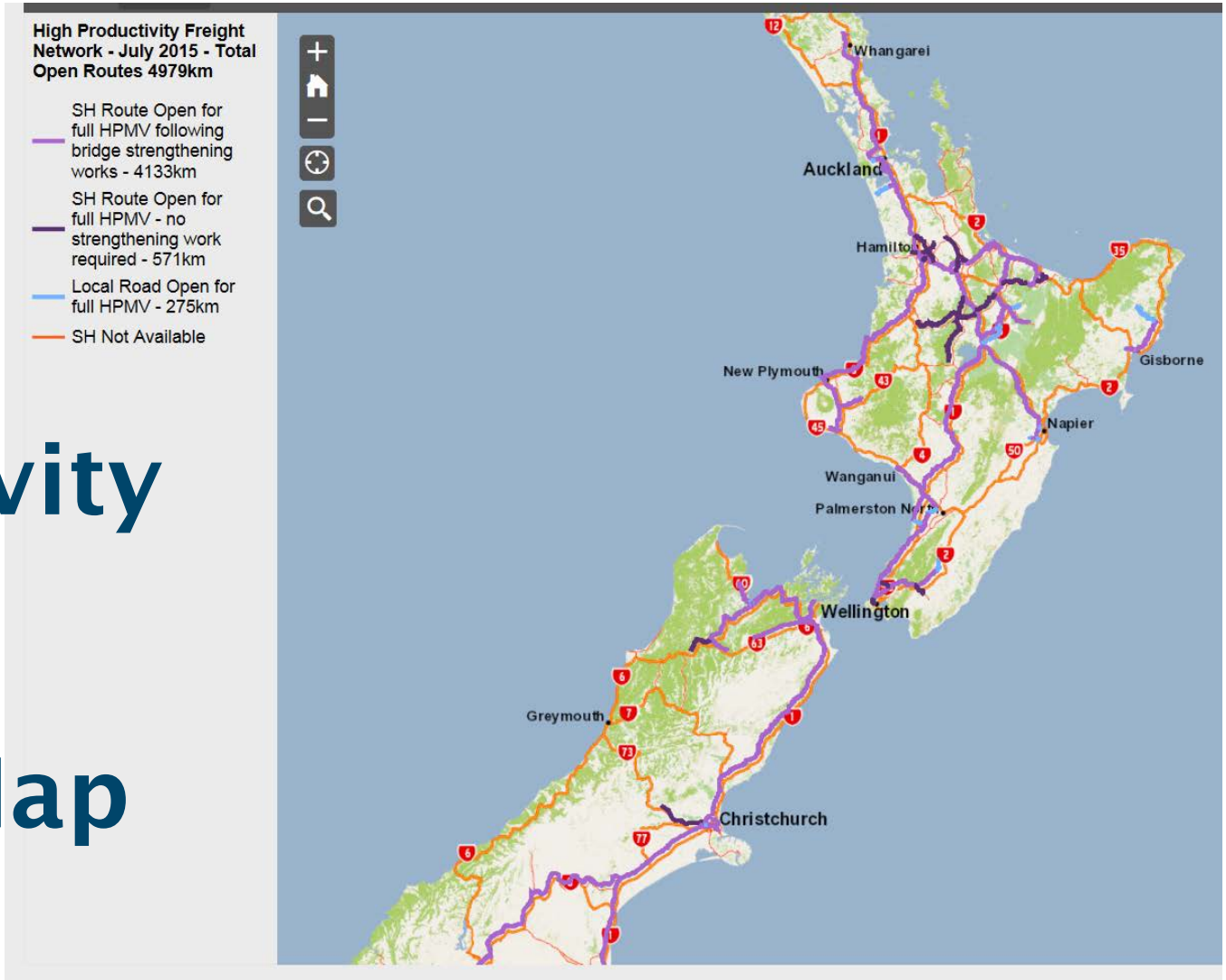
Out of 200 vehicles



VDAM Permitting manual

- Consolidation of policy and procedures for HPMV, OW, OD, 50MAX and 23-25m, plus new content
- ‘Joined up thinking’ across common permitting areas, update policy, deliver consistency, remove redundancy

High Productivity Freight Network Online Map



NZ TRANSPORT AGENCY WAKA KOTAHI

New Zealand Government


High Productivity Freight Network - July 2015 - Total Open Routes 4979km
SH Route Open for full HPMV following bridge strengthening works - 4121km
Local Road Open for full HPMV - 287
SH Route Open for full HPMV - no strengthening work required - 571km
SH Not Available
Hamilton
Tauranga
Whakatane
Rotorua
Tokoroa
Te Kuiti
Taupo
Lake Karapiro
Lake Arapuni
Lake Rotorua
Lake Rotoiti
Lake Rotoehu
Lake Rotomā
Lake Ōkataina
Lake Ōkāreka
Lake Tarawera
Lake Rotokākahi (Green Lake)
Lake Rotomahana
Lake Māhāina
Lake Aniwhenua
Lake Whakamaru
Lake Ōhākuri
Land Information New Zealand


Details
Legend
Basemaps
Prin
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