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21st Nordic Seminar on
Railway Technology

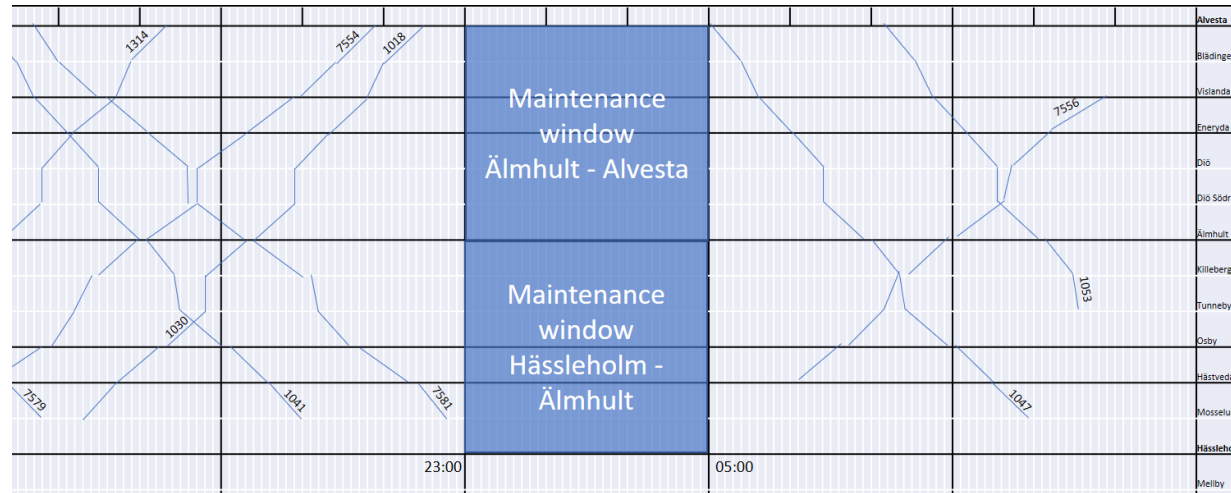
Use of Reserved Capacity for Trackwork in Sweden

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TRAFIKVERKET

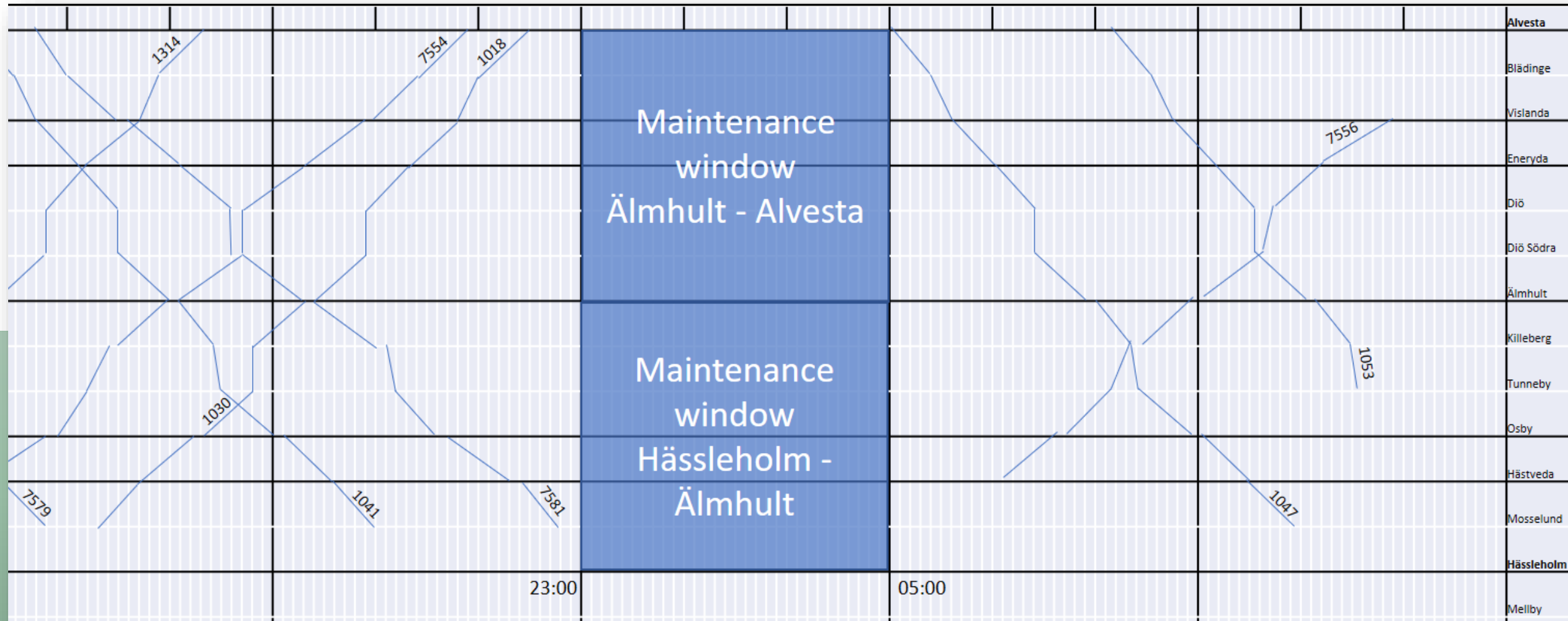
Trackwork and Maintenance Windows



Trackwork - maintenance or renewal of railway infrastructure components that require temporary capacity restrictions.

Maintenance windows - regular capacity blocked in advance during which preventive maintenance and temporary capacity restrictions are expected to be executed

Trackwork and Maintenance Windows



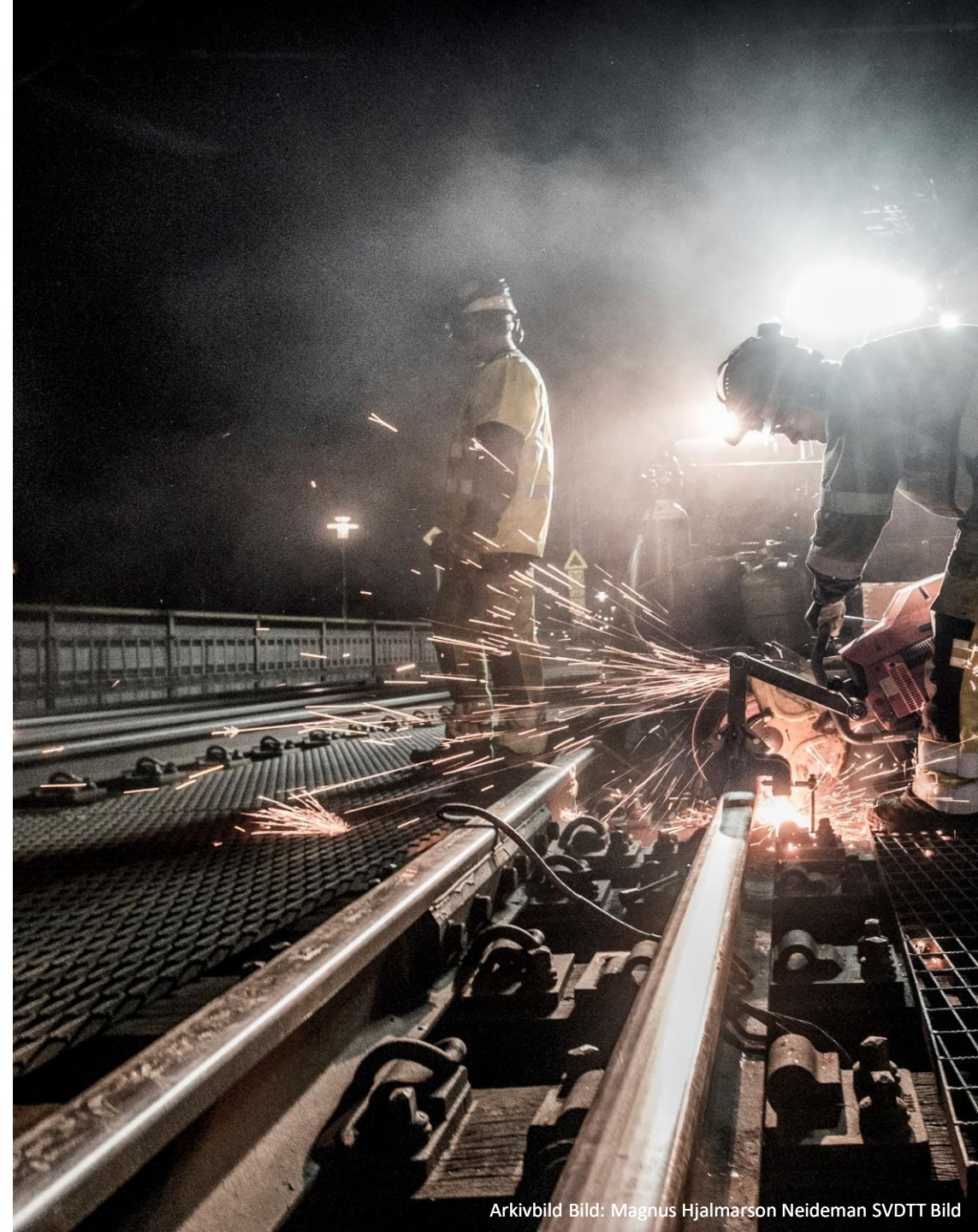
Research objectives

Aim:

Investigate the actual use of reserved capacity inside maintenance windows to perform trackwork in Sweden

Research questions:

- How much of the reserved capacity in maintenance windows is used for trackwork?
- How much of trackwork performed within and outside of planned maintenance windows?
- What is the utilisation rate of maintenance windows in 2019 and 2020?

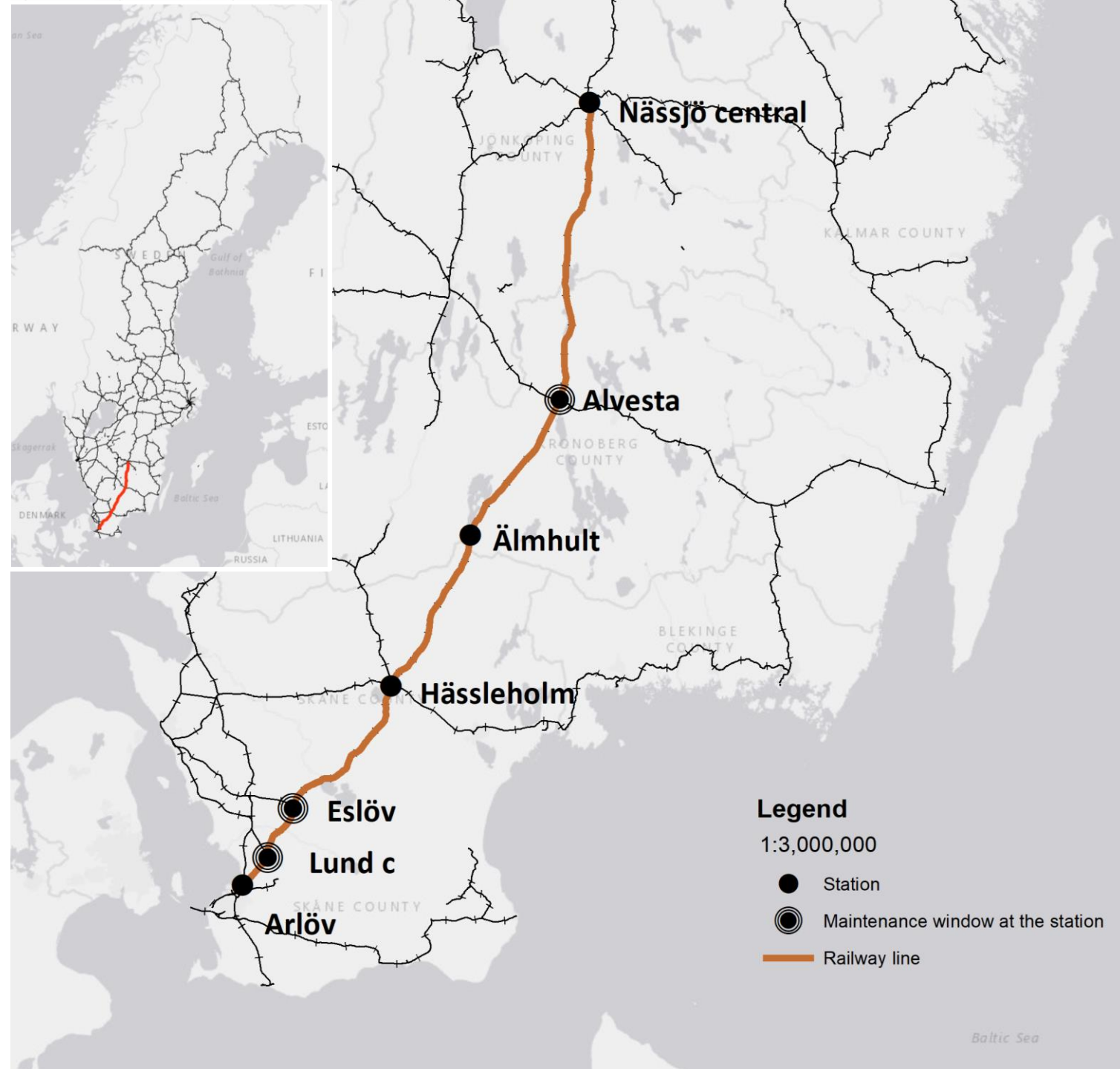


Data

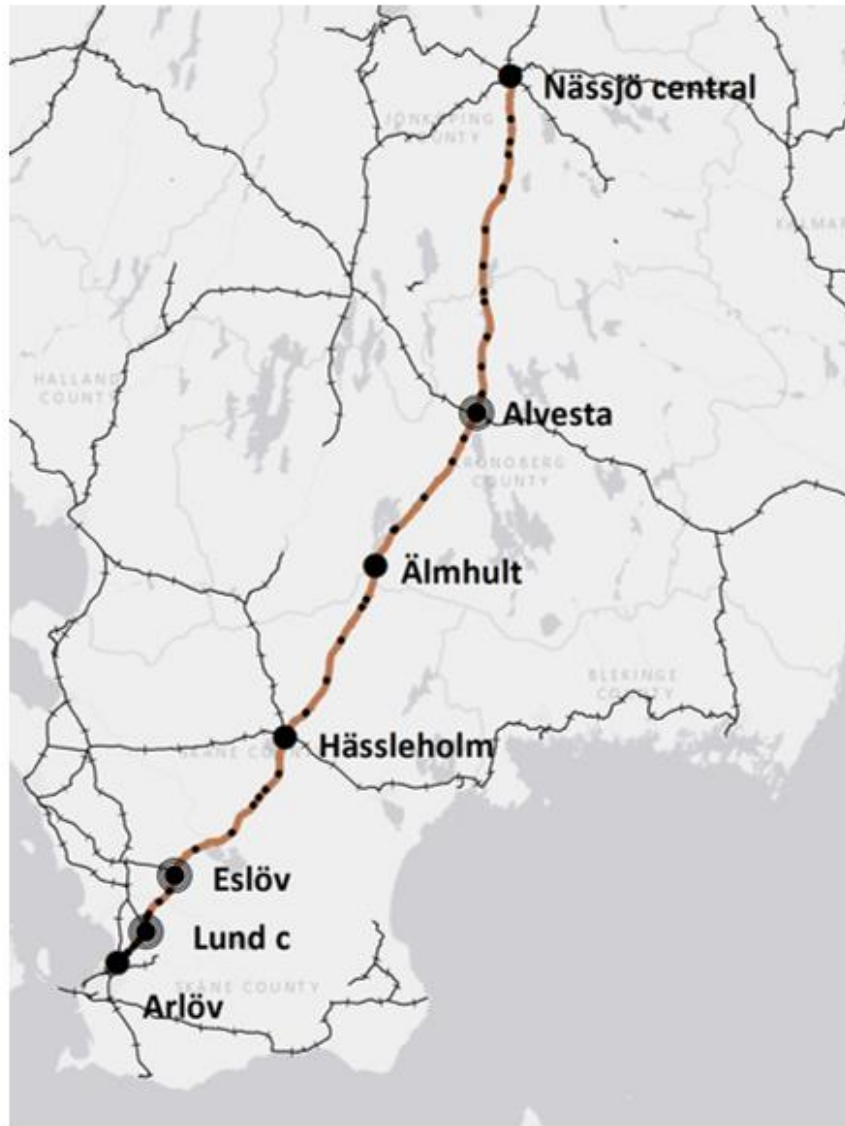
Trackwork (maintenance and renewal)	Maintenance	Maintenance windows
826 h	~ 83 % of trackwork	N=13 781 h

Arlöv – Nässjö C

July – October 2019
January – December 2020



Maintenance windows



	2019	2020
Nässjö C	MW 1	MW 5
Alvesta		
Station		
	MW 2	MW 7
Älmhult		
		MW 8
Hässleholm		
	MW 3	MW 9
Eslöv		
Station		
		MW 11
Lund C		
Station		
	MW 4	MW 13
Arlöv		

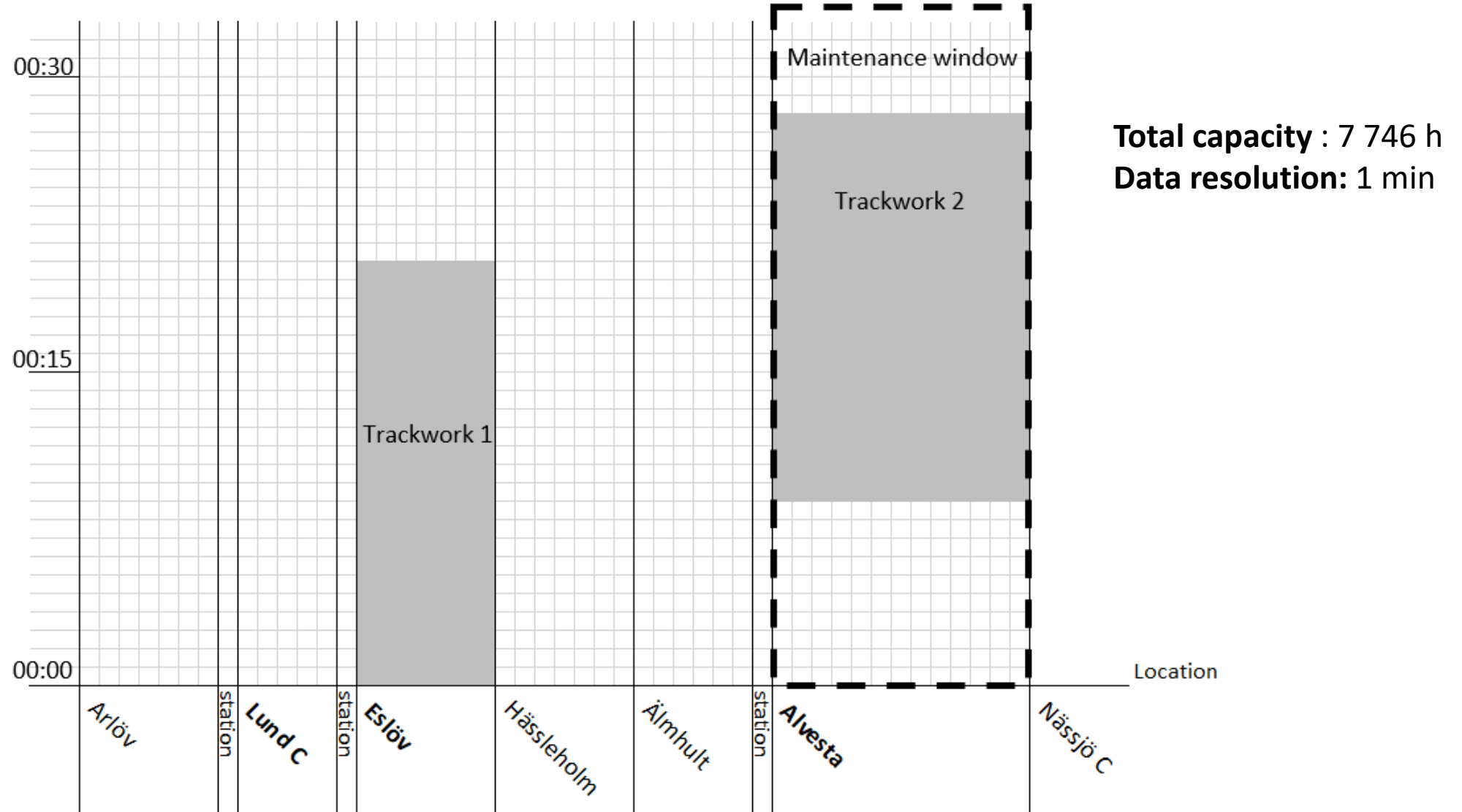
MW 6

MW 10

MW 12

Night time:
From 23:00 till 05:00

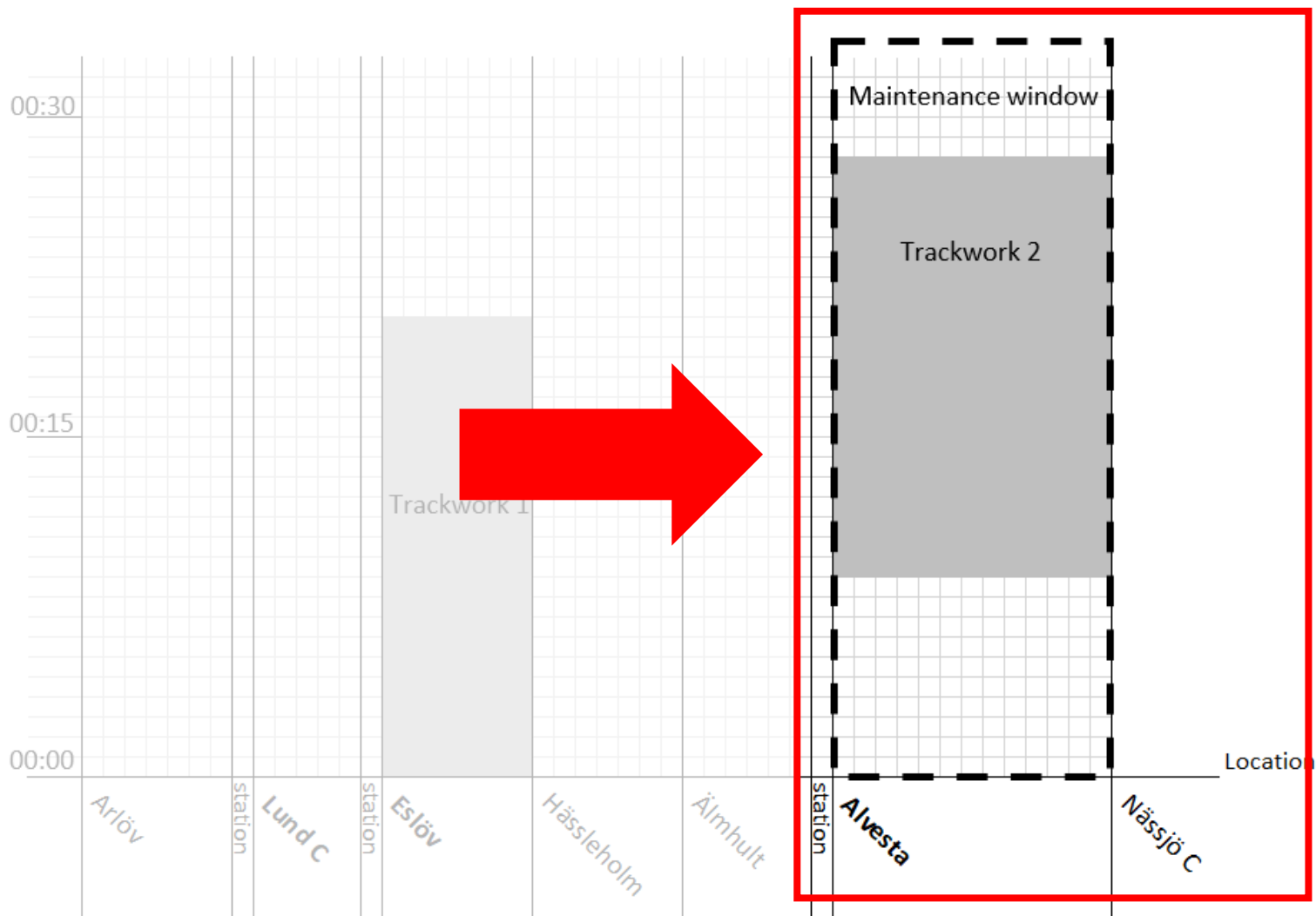
Data analysis



A photograph of a railway track receding into the distance, with the word "RESULTS" overlaid in the center. The track consists of two parallel steel rails mounted on concrete sleepers, which are laid on a bed of dark gravel. The rails are secured to the sleepers with rusty metal clips. The track leads towards a hazy horizon under a soft, warm light, suggesting either dawn or dusk. The overall tone is contemplative and forward-looking.

RESULTS

How much planned maintenance windows is used?



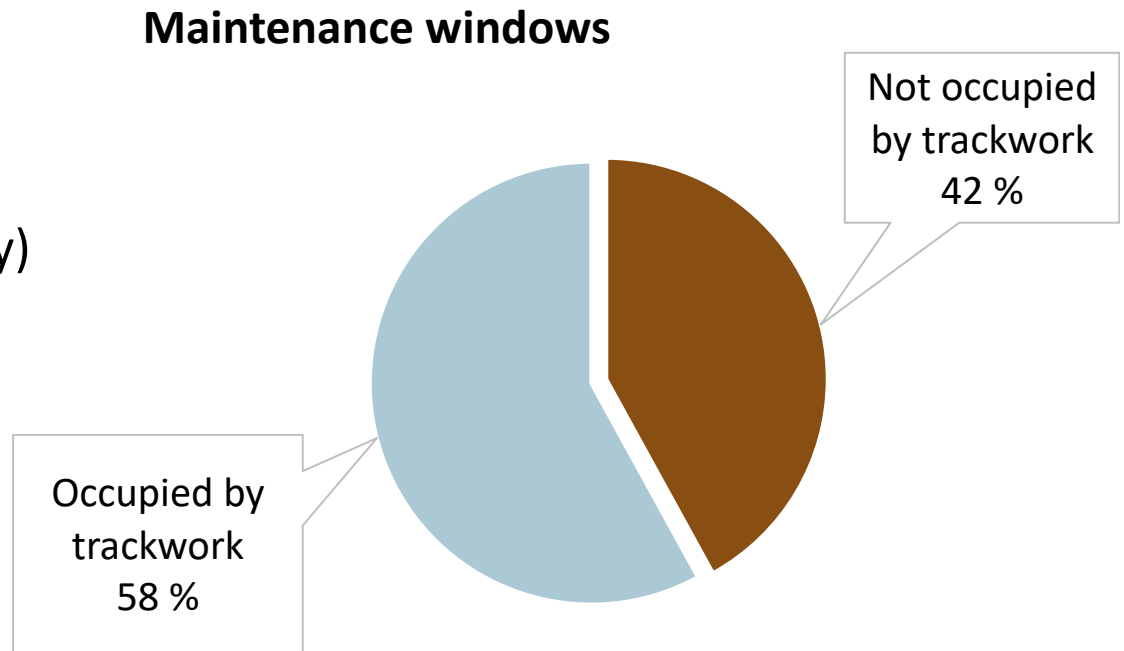
How much of the reserved capacity in maintenance windows is used for trackwork?

Total capacity : 7 746 h

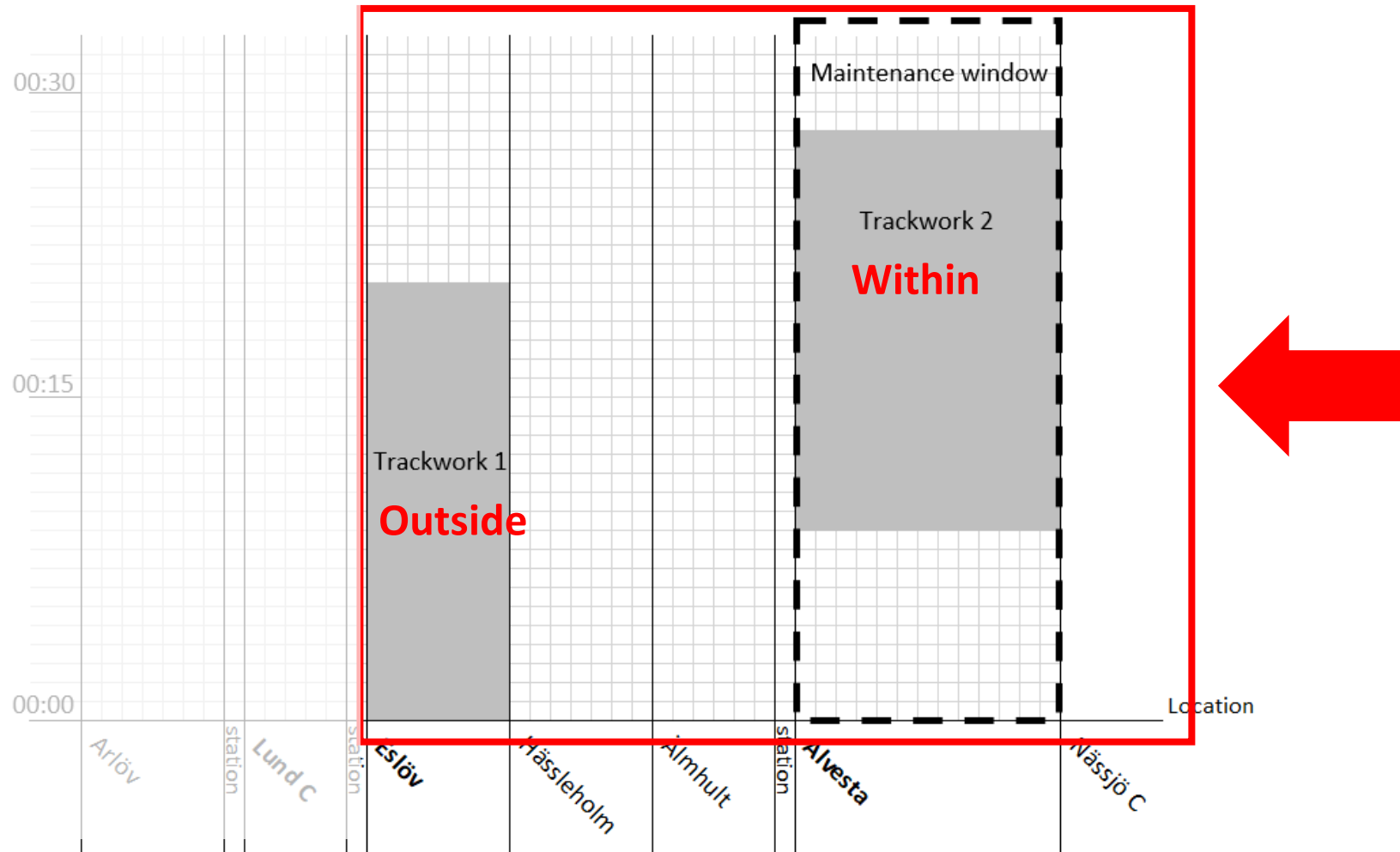
Trackwork: 826 h (11% total capacity)

Maintenance windows: 781 h (10% total capacity)

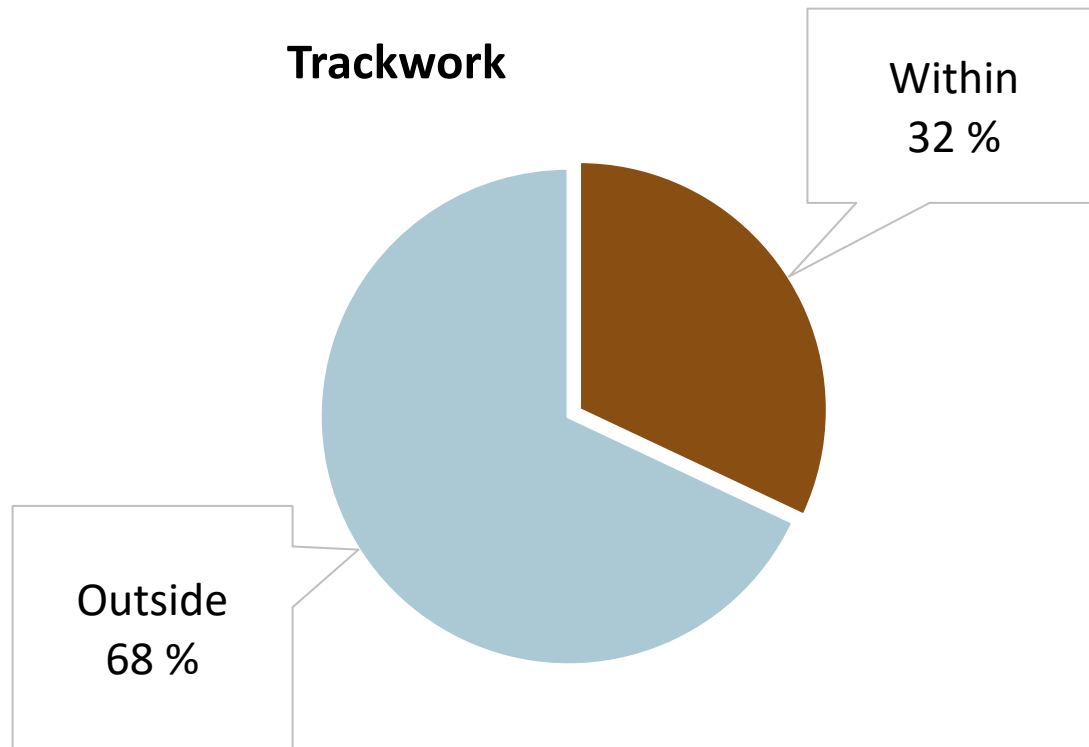
Maintenance windows for a night time



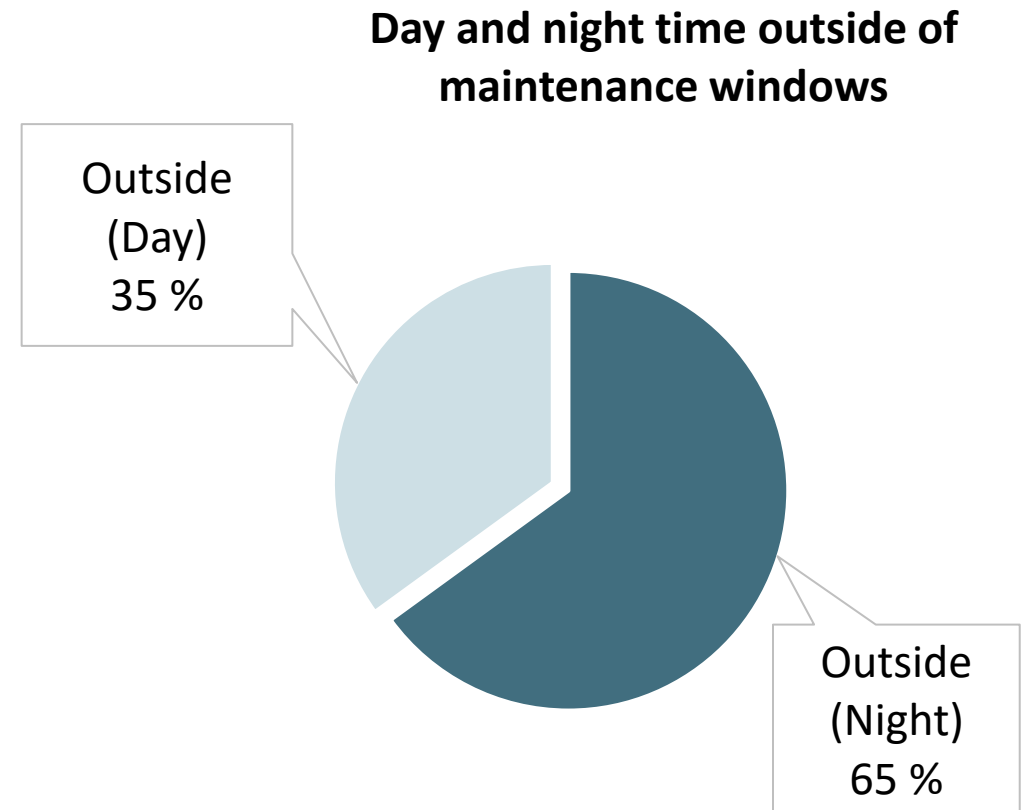
How much of trackwork is performed within and outside of planned maintenance windows?



How much of trackwork is performed within and outside of given maintenance windows?

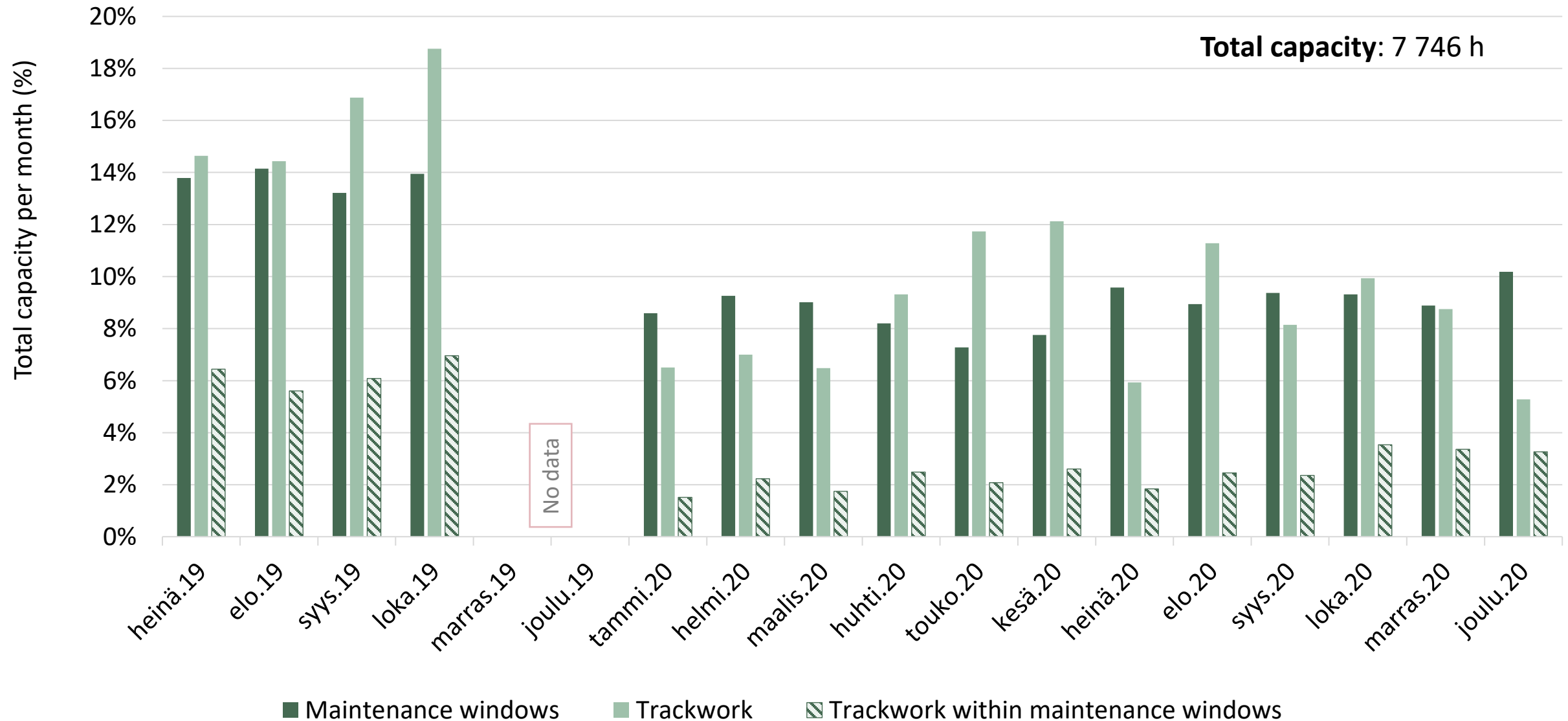


Trackwork: 826 h (11% total capacity)

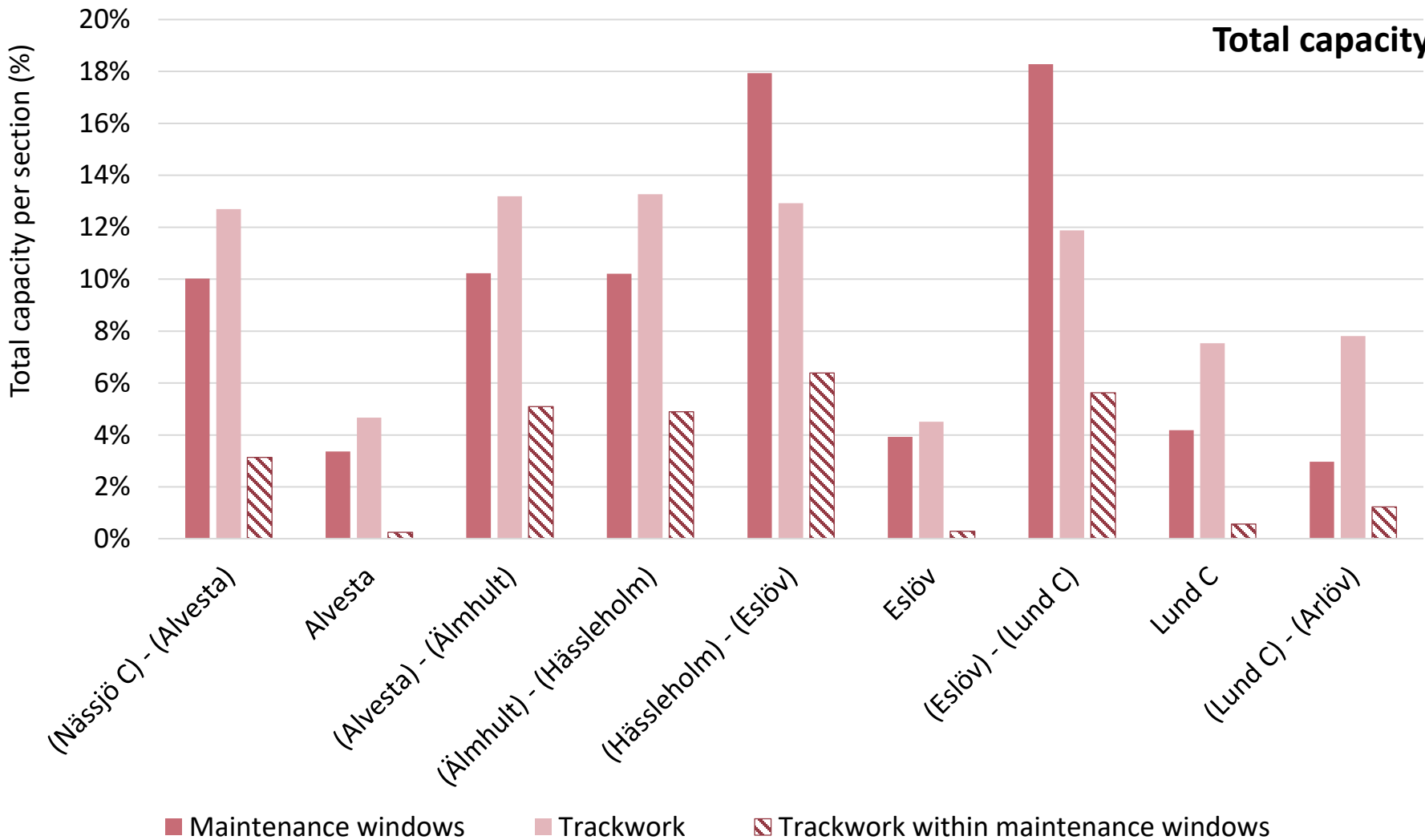


Analysed maintenance windows: night time

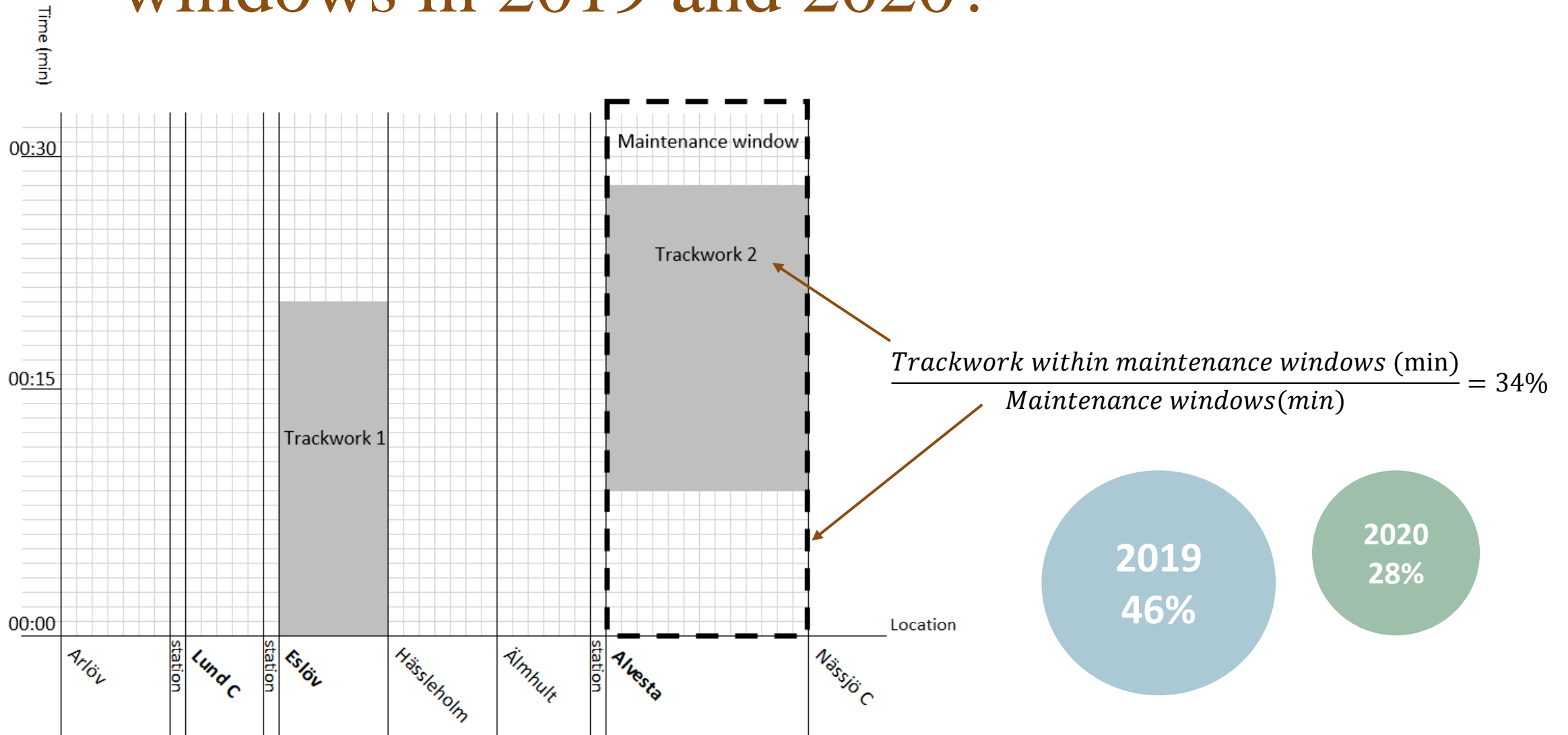
Trackwork and maintenance windows capacity occupation by month



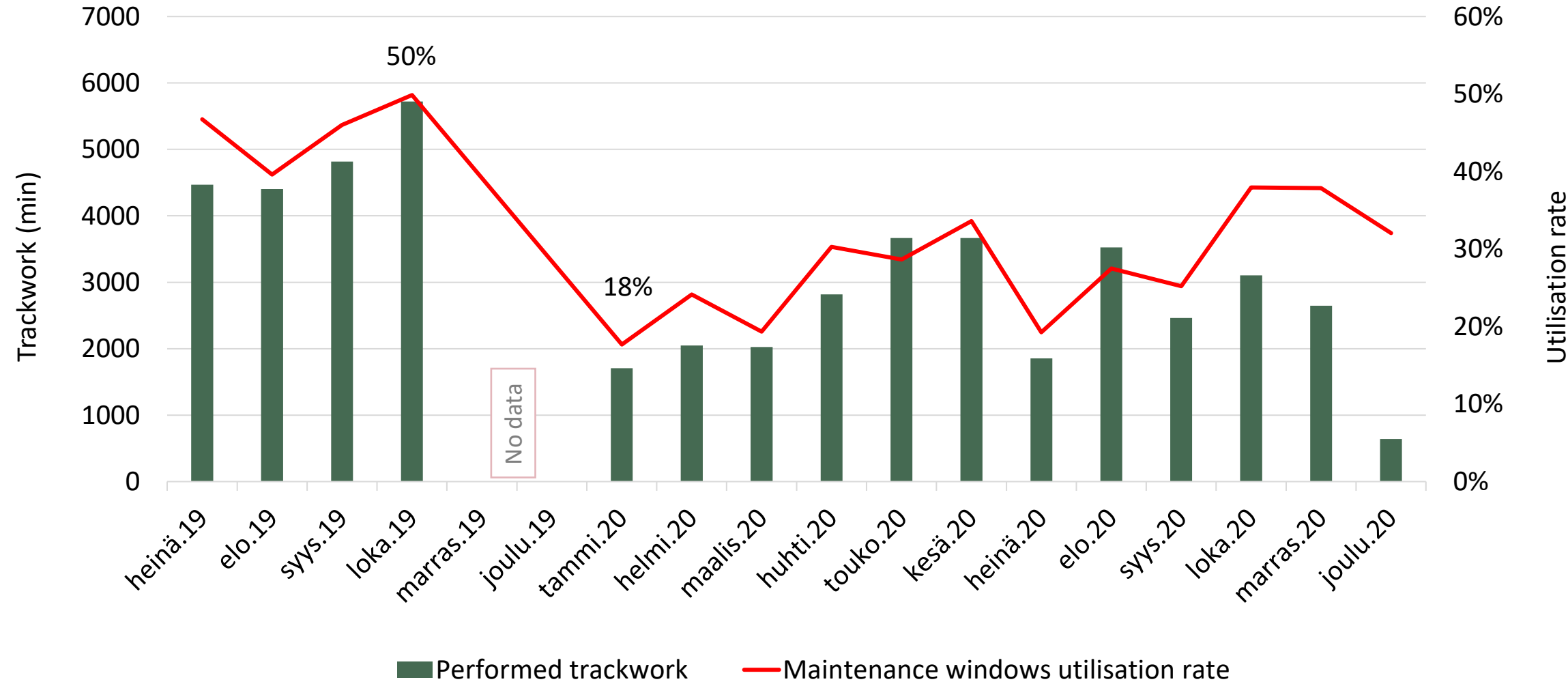
Trackwork and maintenance windows capacity occupation by location



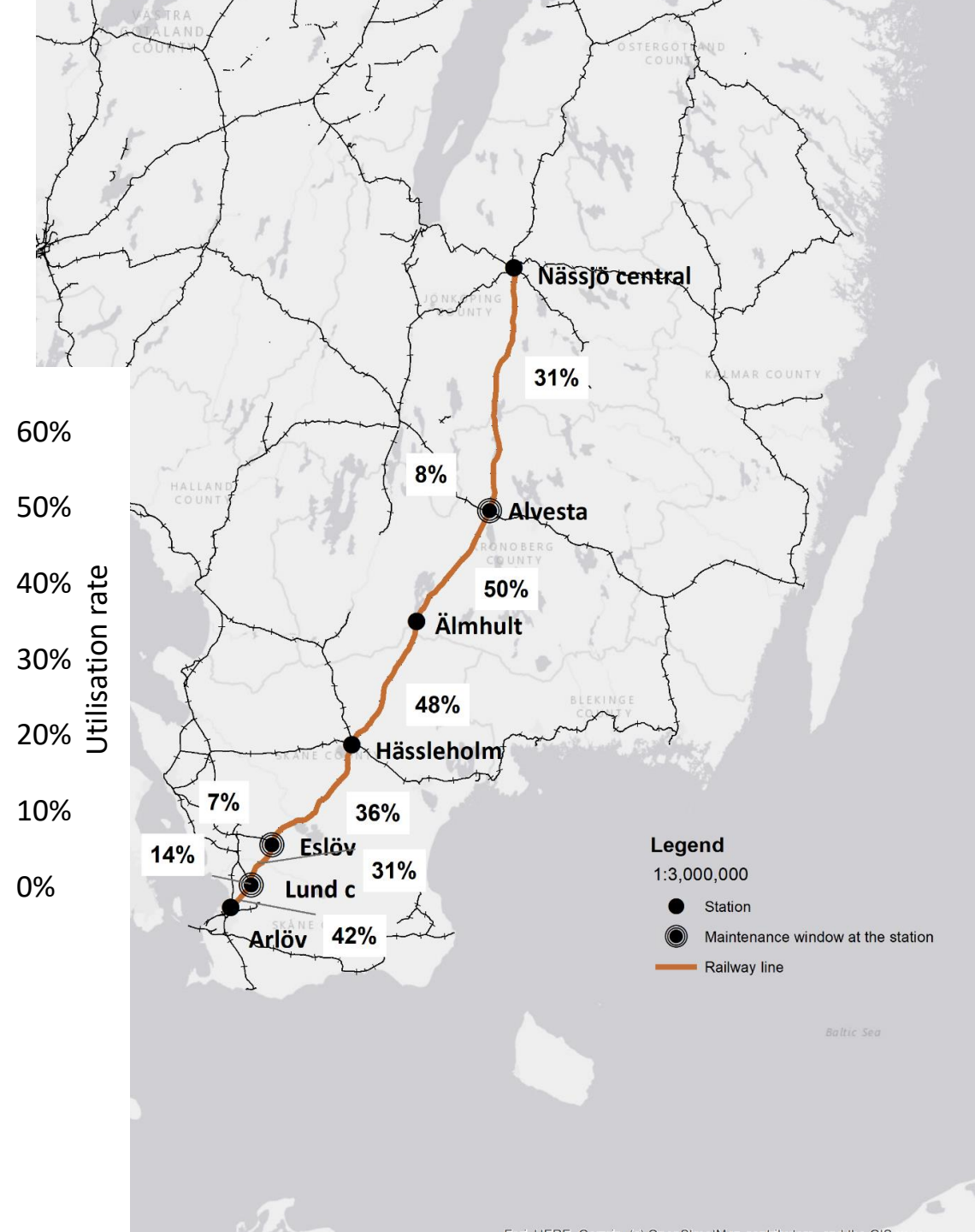
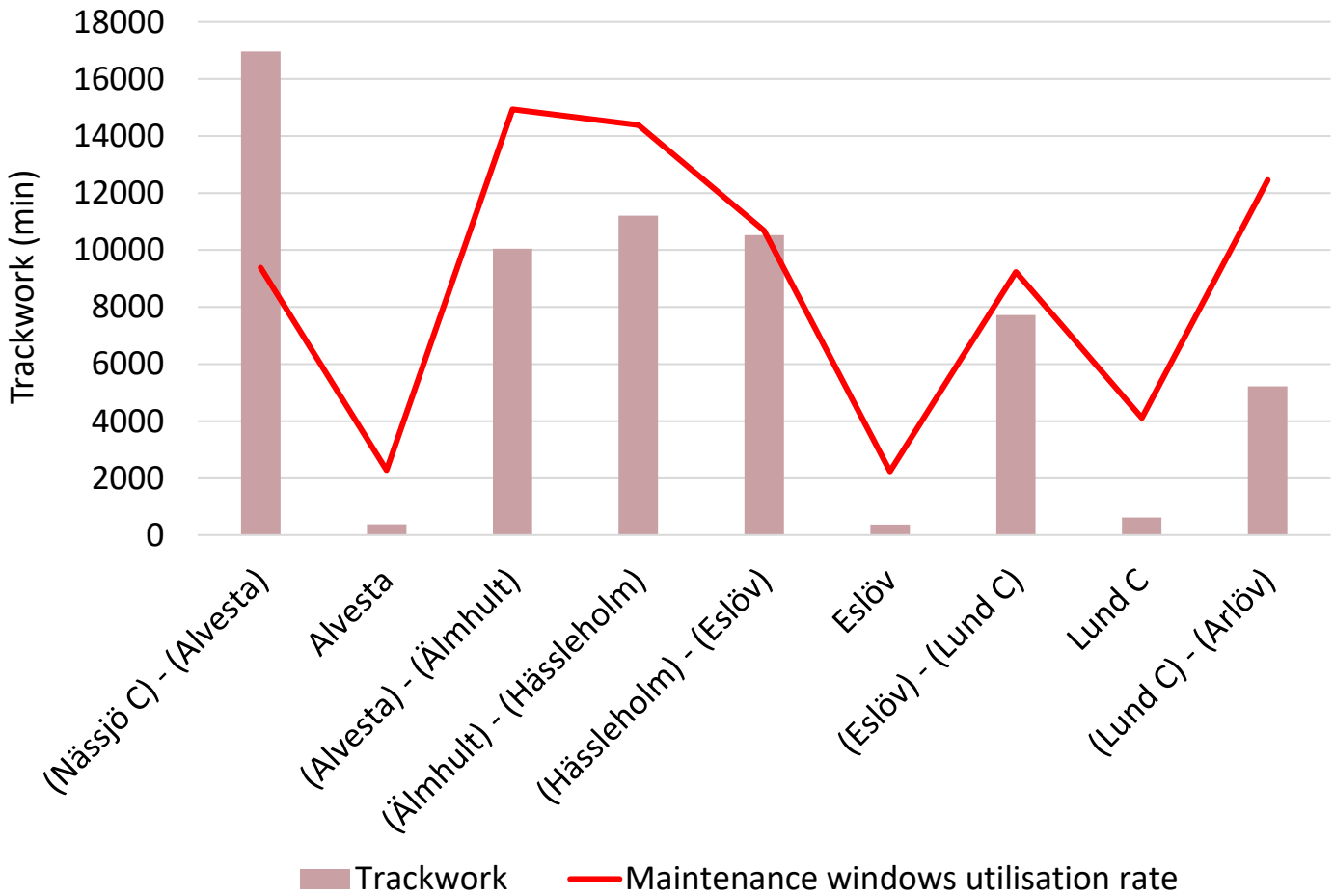
What was the utilisation rate of maintenance windows in 2019 and 2020?



Maintenance windows utilisation rate by month



Maintenance windows utilisation rate by location



Conclusion

- 11% of total railway capacity was utilised for trackwork, while 10% of capacity was booked in maintenance windows
- 29% of trackwork performed within maintenance windows in 2019 and 2020
- The estimated maintenance windows utilisation rate is 34%
- Use of maintenance windows depends on a volume of planned trackwork, time and location

Thank you for your attention!

Questions?

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