

Kaiapoi South and Kaiapoi East Red Zone Roding Options Assessment

Technical Note

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1. Introduction

This Technical Note outlines the assessment undertaken in December 2015 to inform the 'Residential Red Zone Future Use' project. The assessment focused on the roading access options and is not a full assessment covering all modes of transport. It was presented to a meeting of the Waimakariri District Council Councillors on the 15 December 2015 and to the Residential Red Zone Future Use Steering Group on the 16 December 2016. The tables and figures throughout this Technical Note formed the basis of the presentations.

The options assessed were provided by Waimakariri District Council staff following the development of potential land uses in both the Kaiapoi South and Kaiapoi East red zone areas.

Background to this assessment includes:

- Transport Infrastructure Recovery Strategy (updated) 2014
- [Red zone roading alignment options consultation](#) undertaken in March 2015 with the residents and landowners in Kaiapoi South and Kaiapoi East (prior to red zone land uses being developed).
- The [findings](#) of the roading options consultation process (April 2015).

2. Options Assessment Method

A multi-criteria assessment (MCA) approach was undertaken for the assessment of the proposed options. A range of assessment criteria were developed to evaluate each of the proposed options against. The assessment criteria are described in **Table 2.1**.

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Table 2.1
Criteria used for assessment

Criteria	Description of the criteria
Neighbourhood Accessibility	Access for the green zone residents in terms of directness, convenience, distance.
Adverse impacts	Impacts on residents for example increased traffic, anti-social road behaviour (can be mitigated to some extent with traffic calming), and impact on emergency services access.
Community acceptance/feedback	Likely reaction/acceptance based on the consultation feedback from March/April 2015.
Compatibility with future land uses	The ability to provide appropriate level of access to future land uses.
Access for Private Property Owners	The ability to provide appropriate level of access for Private Property Owners.
Access to the Boat Ramp/Reserve	The ability to provide appropriate level of access to the boat ramp in Kaiapoi East and reserve in Kaiapoi South.
Cost	The scale of investment required.

A qualitative scoring system was then developed for each of the criteria and applied to each of the options. A benefit / cost analysis was not undertaken. It is noted that multi-criteria assessment processes usually involve a multi-disciplinary team and the criteria can relate to more than just transport. When determining the preferred roading alignment option for both Kaiapoi South and Kaiapoi East, other factors along with transport will need to be taken into consideration.

The scoring system developed for the assessment criteria are explained in **Table 2.2**.

Table 2.2
Criteria scoring

Criteria			
Neighbourhood Accessibility	Poor accessibility	No change	Improves accessibility
Adverse impacts	Adverse impacts on residents	Little adverse impacts	No adverse impacts
Community acceptance/feedback	Likely to be fully opposed	Likely to be not favoured	Some support likely
Compatibility with future land uses	Very limited compatibility	Minimal level of compatibility	Good level of compatibility
Access for Private Property Owners	Requires special arrangements to be made	Minimal level of access compatibility	Access is part of the network
Access to the Boat Ramp/NCF Reserve	Requires long access road/gate	Minimal level of access compatibility	Access is part of the network

3. Kaiapoi South

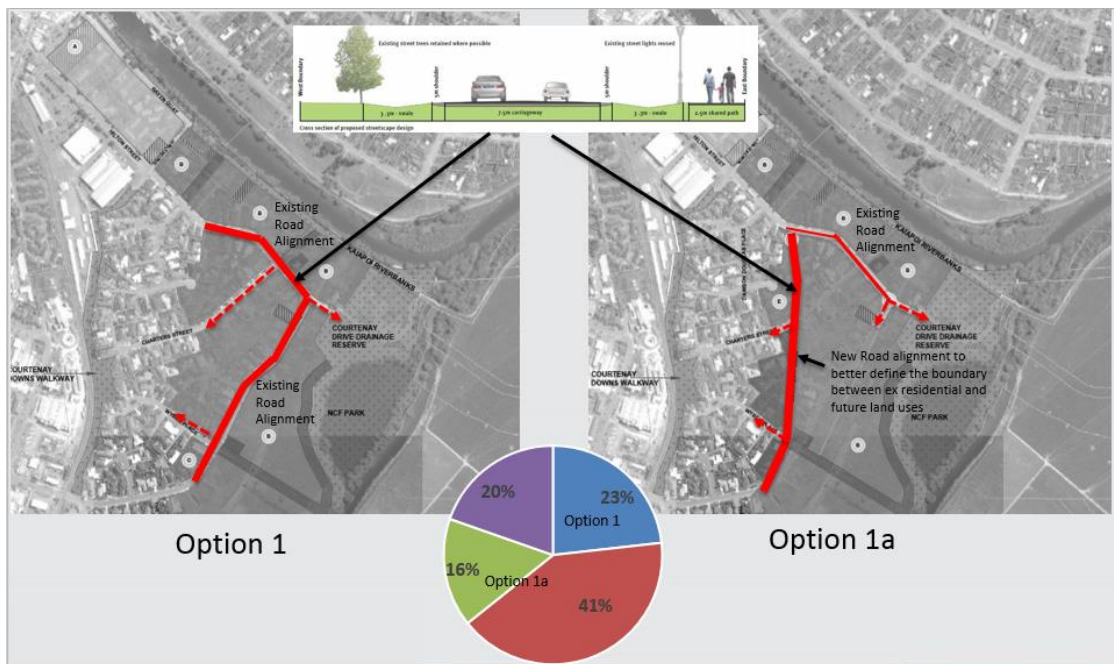
3.1 Road Alignment Options

There is now more clarity regarding the potential future land uses of the Kaiapoi South and Kaiapoi East red zoned land. It is envisaged that land use in the Kaiapoi South area will comprise a mix of the following:

- Business (potentially accommodating overflow town centre parking),
- Rural,
- Recreation and ecological linkage,
- Neighbourhood park, and
- Ngāi Tahu (reserve area not required however recognises the cultural, ecological and amenity significance of the area).

The potential land uses in the Kaiapoi South have resulted in Council re-visiting the roading alignment options previously investigated. The two options provided by Council and assessed during this stage of the project are illustrated in **Figure 3.1**.

Figure 3.1
Kaiapoi South
Options 1 and 1a



Option 1, shown in **Figure 3.1**, is essentially the same as Option 1 consulted on with the local community during March 2015. This option involves rebuilding Courtenay Drive between Wyber Place and Charters Street on the current alignment and retains access to the existing NCF reserve.

Option 1a is also the same as one of the options previously consulted on (Option 2a / 2b) and involves relocating Courtenay Drive between Wyber Place and Charters Street. This option means that residents in the green zone are not required to travel through the red zone to the same extent as Option 1, and the travel distance is shorter by approximately 160m. Access to the NCF reserve is also retained under this option albeit via a road with a lower level of service than the realigned Courtenay Drive (e.g. narrower).

The pie chart shown in **Figure 3.1** represents the first choice preferences of the Kaiapoi South community regarding the road alignment options consulted on in March 2015. The options corresponding to the options being assessed during this stage are represented in blue (Option 1) and green/red (Option 2).

This indicates that Option 1 would be the first choice of 23% of the respondents. The road realignment under Option 1a would be preferred by up to 57% of the respondents (16% would prefer to create a services easement and 41% would prefer that the services were relocated along with the road).

A third option comprising splitting Courtenay Drive into two cul-de-sacs was also explored during the March 2015 community consultation but was not favoured by the community with only 20% of respondents identifying it as their first preference. While some members of the community appreciated that it would make the area quieter by removing through traffic, it was generally felt that the connectivity between the two areas of Kaiapoi South should be retained.

3.2 Option Assessment

Option 1 retains the road on its current alignment meaning that very few properties are close to the road and this limits surveillance of activities occurring on the road, for example ‘antisocial’ behaviour. Any proposed changes in land use in the red zone area would have to be integrated with the road in its current alignment. While this wouldn’t necessarily prevent the proposed land uses from taking place, it could be considered a constraint. Existing services can be retained in their current location, therefore helping to keep costs for this option down compared to Option 1a which requires the services to be relocated.

The closer proximity of the road alignment to the houses under Option 1a means that the road is potentially better integrated with the local community. It also means that the road is ‘overlooked’ and therefore the likelihood of undesirable road behaviour is potentially reduced. This option also means that future red zone land use can be developed without having to be designed around the existing road alignment.

Access for private property owners and to the NCF Reserve are provided for under both options. The scoring of both options against the assessment criteria is shown in **Table 3.1**.

Table 3.1 Kaiapoi South Options Assessment

Criteria	Option 1	Option 1a
Neighbourhood Accessibility	✓	✓ ✓
Adverse impacts	✓	✓ ✓
Community acceptance/feedback	✓	✓ ✓
Compatibility with future land uses	✓	✓ ✓
Access for Private Property Owners	✓	✓
Access to the existing reserve	✓	✓
Cost (from March 2015 estimates)	Approx. \$1.2 mill	Approx. \$2.5 mill

3.3 Discussion

It appears that Option 1a would provide a marginally better outcome but for significantly greater associated costs.

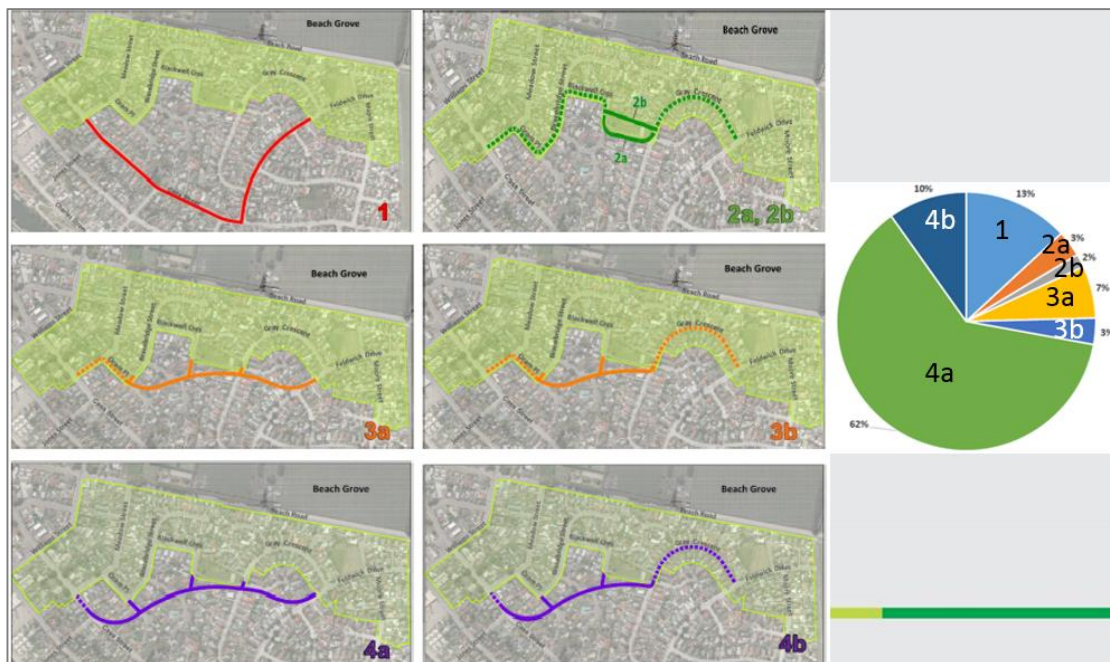
4. Kaiapoi East

4.1 Road Alignment Options

A summary of the Kaiapoi East roading alignment options which were developed and consulted on in March 2015 are shown in **Figure 4.1** and described as follows:

- **Option 1** – Retain current alignment of Cass Street and Feldwick Drive,
- **Option 2a** – A link road between Blackwell Crescent and Gray Crescent along the southern boundary of the existing reserve,
- **Option 2b** – A link road between Blackwell Crescent and Gray Crescent along the northern boundary of the existing reserve (this was an option introduced by the Kaiapoi Community Board),
- **Option 3a** – New road between Oram Place and Feldwick Drive,
- **Option 3b** – New road between Oram Place and Gray Crescent,
- **Option 4a** – New road between Cass Street and Feldwick Drive, and
- **Option 4b** – New road between Cass Street and Gray Crescent.

Figure 4.1
Kaiapoi East
Options from
March 2015



The pie chart shown in **Figure 4.1** indicates the first choice preferences of the respondents to the consultation. This indicates that clearly Option 4a was the preferred option with 62% of respondents marking it as their first choice.

It is now envisaged that the red zone land use in the Kaiapoi East area will comprise a mix of the following:

- Business (potentially including parking for boat trailers),
- Rural,
- A district sport and recreation reserve (including facilities such as four full sized playing fields, changing rooms, parking, dog park and community BMX track),

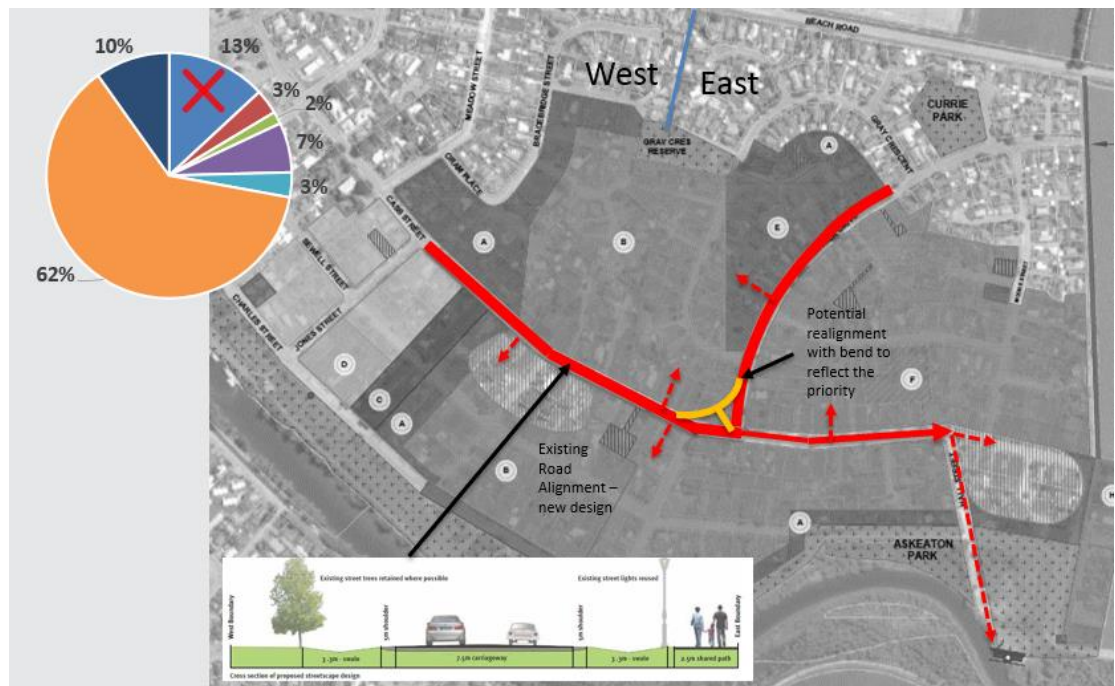
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- Recreation and ecological linkage,
- District cemetery, and
- Motor home park.

The potential land uses in the Kaiapoi East red zone have resulted in Council re-visiting the roading alignment options for the area. Three options have been provided by Council and assessed during this stage of the project. It is understood the options maximise the areas of red zone land to accommodate sports fields. This is the reason that options 3a, 3b, 4a and 4b from the March 2015 process are not being assessed.

Option 1, shown in **Figure 4.2**, is similar to Option 1 consulted on during March 2015 which received a first choice preference from 13% of respondents. Under the revised Option 1, the current alignment of Cass Street and Feldwick Drive is retained albeit with a slight realignment of the Cass Street / Feldwick Drive intersection to form a bend that makes the east end of Cass Street the minor road.

Figure 4.2
Kaiapoi East
Option 1

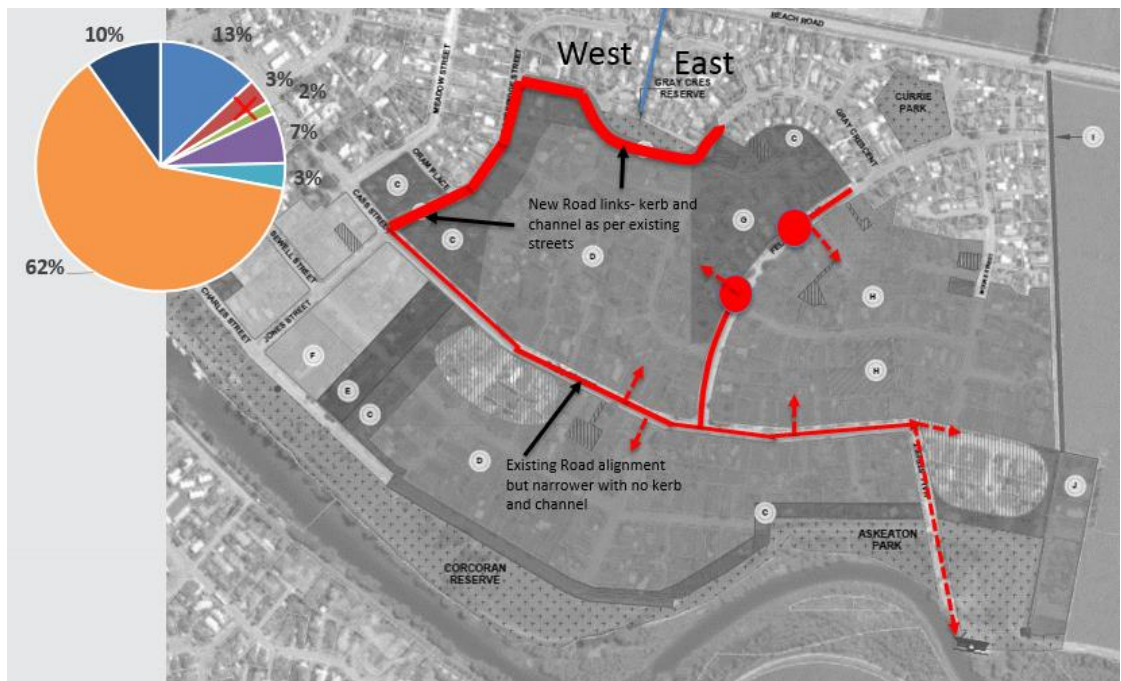


Option 1a, shown in **Figure 4.3**, is similar to Option 2a / 2b consulted on during March 2015 which received a first choice preference from 3% of respondents.

Under Option 1a two new road links are created, one from Cass Street through to Bracebridge Street and one from Blackwell Crescent through to Gray Crescent. This results in indirect access being provided for residents of the Gray Crescent and Feldwick Drive areas. It also increases the volume of traffic using Bracebridge Street, Blackwell Crescent, and Gray Crescent.

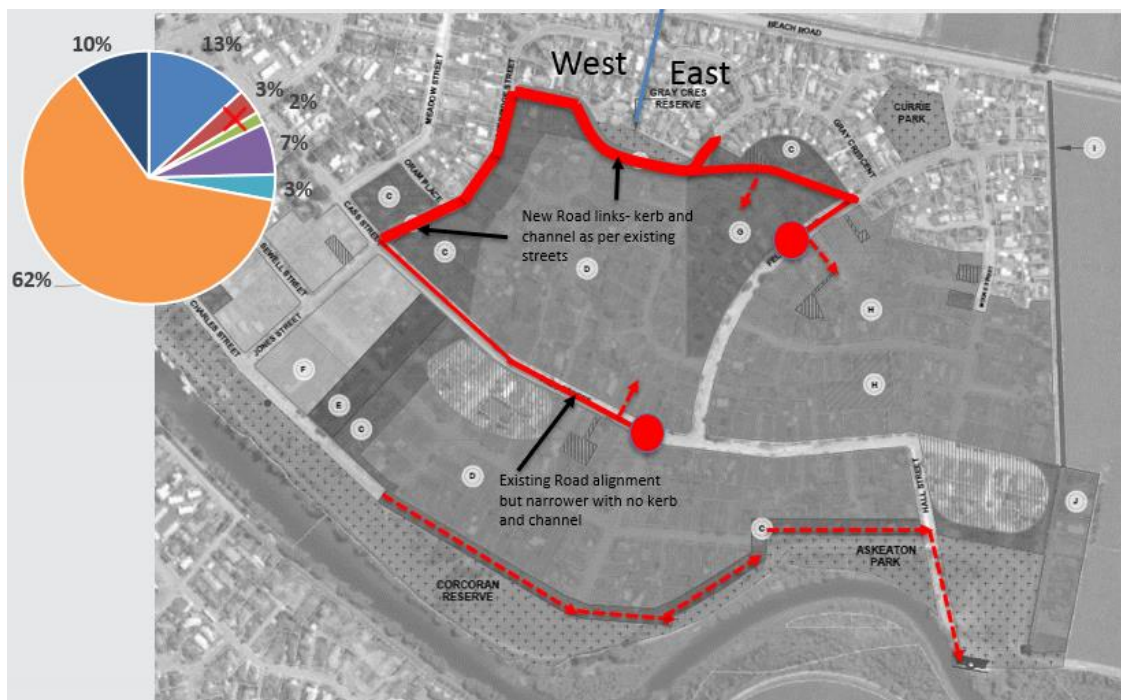
Cass Street would be retained to provide access for a private property owner, potential sports grounds and the boat ramp. Feldwick Drive would be spilt into two so that no through access is possible but access to several private property owners is retained.

Figure 4.3
Kaiapoi East
Option 1a



Option 1b also proposes the creation of new road links from Cass Street to Bracebridge Street and from Blackwell Crescent through to Feldwick Drive as shown in **Figure 4.4**. Cass Street would be retained to provide access for a private property owner and a potential sports grounds. Feldwick Drive would be reduced split into two so that no through access is possible but access to several private property owners is retained. The boat ramp is access from a new road extending from Charles Street along the base of the stop bank.

Figure 4.4
Kaiapoi East
Option 1b



Once again this option is largely similar to Option 2a / 2b which was previously consulted on and only favoured by 3% of respondents. This difference between this option and Option 1a is that the link from Blackwell Crescent through to Feldwick Drive would provide a slightly more direct route for Feldwick Drive residents. It would also mean that traffic flows on Gray Crescent would remain largely similar to existing flows. However, it increases the volume of traffic using Bracebridge Street and Blackwell Crescent.

4.2 Option Assessment

The assessment has been undertaken with consideration to two areas with Kaiapoi East, west of Gray Crescent Reserve and east of Gray Crescent Reserve as the impacts differ for each area as outlined in **Table 4.1**.

Table 4.1
Kaiapoi East
Options
Assessment

Criteria	Option 1		Option 1a		Option 1b	
	West	East	West	East	West	East
Neighbourhood Accessibility	✓	✓	✓	✗	✓	✗
Adverse impacts	✓ ✓	✓	✗	✗	✗	✗
Community acceptance/feedback	✓ ✓	✓	✗	✗	✗	✗
Compatibility with future land uses	✓ ✓	✓	✓ ✓	✓	✓ ✓	✓
Access for private property owners	✓ ✓	✓	✓	✓	✓	✓
Access to the boat ramp	✓ ✓	✓	✓	✓	✓ ✓	✓
Cost (rough order)	Approx. \$1.8 mill		Approx. \$2.7 mill		Approx. \$3.7 mill	

Option 1 utilises the existing road corridor and could easily facilitate access to the future land uses in the red zone. However, with this option there is the potential for residents in the north east area to feel disconnected from the rest of the community. As very few properties would overlook the road, the lack of surveillance could result in undesirable behaviour however the potential land uses selected are likely to mitigate this. Retaining the main access to the potential land uses such as sports grounds from Cass Street will be appropriate from a road hierarchy perspective, rather than use of residential streets such as Blackwell Crescent.

Option 1a is anticipated to result in adverse impacts due to the indirect route residents of Gray Crescent and Feldwick Drive are made travel. The significant increase in traffic volumes along Bracebridge Street, Blackwell Crescent, and Gray Crescent are likely to be undesirable by residents who currently experience relatively low traffic volumes along these sections of road.

As per Option 1a, Option 1b is anticipated to result in potential adverse effects due to the indirect route residents are required to travel and the increase in traffic volumes along sections of the network in the area. This option also has the highest associated costs out of the three options assessed.

4.3 Discussion

The assessment indicates that Option 1 is likely to provide a noticeably better outcome for the community with the lowest associated costs out of the three options assessed.

5. Summary

The assessment undertaken is a considered a 'high level' assessment based on potential impacts of roading alignments provided by Council and informed by previous feedback from the community. It is recommended that options are refined and the community involved in the decision making as appropriate.

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