

Economic impact modelling enables the Shire of Serpentine Jarrahdale to explore how change in employment or output (sales) in one sector of the local economy will impact on all other sectors of the economy, by modelling the flow-on effects across different industries.

This provides the Shire of Serpentine Jarrahdale with powerful evidence to advocate against industrial closures or strategically target new industry sectors which are likely to have the greatest positive economic impact.

Different industries will have different flow on effects. Adding jobs in a particular sector will not only add to the value of that sector, but also to other industries related to the supply chain (eg. suppliers, wholesalers) and service industries (retail, food services, administration) which will expand to service the additional workforce. Jobs in associated industries may be added in the local area or outside it, based on journey to work information.

The economic impacts are calculated using an input-output model which is derived from the local economy microsimulation model by National Economics (NIEIR).

To use the model, simply input the number of jobs (per year) to be added (+) or removed (-) from the economy in a particular industry sector. The results show the theoretical addition (or loss) to the local economy of jobs and value added by industry sector. It also shows the proportion of the new employment that would occur inside and outside the Shire of Serpentine Jarrahdale.

To model construction impacts related to a project, input the total cost of construction or direct jobs created. The results shown will represent total direct and indirect impacts over the life of the construction period. To estimate annual impacts, simply divide the total impacts by the estimated life of the project in years (e.g. divide results by 3 if the project will take 3 years to build, or 1.5 for 18 months).

Industry: Professional, Scientific and Technical Services (Except Computer System Design and Related Services)

Impact modelled: ADDITION of 100 jobs

Company name:

Impact Summary

Shire of Serpentine Jarrahdale - Modelling the effect of adding 100 jobs in Professional, Scientific and Technical Services (Except Computer System Design and Related Services) - Inflation adjusted

Summary	Output (\$m)	Value-added (\$m)	Local jobs	Residents jobs
Starting position Shire of Serpentine Jarrahdale (year ended June 2019)	--	--	--	--
Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	86.20	46.59	176	765
All industries	1,489.86	653.07	6,316	16,432
Impacts on Shire of Serpentine Jarrahdale economy	--	--	--	--
Direct impact on Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector	49.11	26.55	100	--
Industrial impact	9.31	4.55	36	--
Consumption impact	6.49	3.21	39	--
Total impact on Shire of Serpentine Jarrahdale economy	64.92	34.31	175	120
▪ Type 1 multiplier (direct & industrial)	1.19	1.17	1.36	--
▪ Type 2 multiplier (direct, industrial & consumption)	1.32	1.29	1.75	--
Impact on Western Australia economy	--	--	--	--
Total impact - Western Australia outside Shire of Serpentine Jarrahdale	26.85	13.83	110	154
Total impact Western Australia economy	91.77	48.14	285	274
Impact on Australian economy	--	--	--	--
Total impact outside Western Australia economy	19.83	9.46	69	70
Total impact on Australian economy	111.60	57.59	354	345

Source: National Institute of Economic and Industry Research (NIEIR) ©2019. Compiled and presented in economy.id by id, the population experts.

Note: All \$ values are expressed in 2016/17 base year dollar terms.

Impact on Output

The direct addition of 100 jobs in the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the Shire of Serpentine Jarrahdale economy is estimated to lead to a corresponding direct addition of \$49.11m in Output from the local Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector. From this direct expansion in the economy it is anticipated that there would be a flow on effects into other related intermediate industries, creating a further increase of \$9.31m in Output. This represents a Type 1 employment multiplier of 1.19.

There would be an additional contribution to the Shire of Serpentine Jarrahdale economy through consumption effects as correspondingly more wages and salaries are spent in the local economy. It is estimated that this would result in a further increase in Output of \$6.49m .

The combination of all direct, industrial and consumption effects would result in total estimated rise in Output of \$64.92m in the Shire of Serpentine Jarrahdale economy, representing a Type 2 Output multiplier of 1.32.

These impacts would not be limited to the local economy. Industrial and consumption effects would flow outside the region to the wider Australian economy to the tune of \$46.68m in Output.

The combined effect of economic multipliers in the Shire of Serpentine Jarrahdale and the wider Australian economy is estimated to be \$111.60m added to Australia's Output.

Impact on Local Employment (jobs)

The direct addition of 100 jobs in the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the the Shire of Serpentine Jarrahdale economy would lead to a further increase in indirect demand for intermediate good and services across related industry sectors. These indirect industrial impacts (Type 1) are estimated to result in an additional 36 jobs, representing Type 1 Employment multiplier of 1.36.

This addition of jobs in the local economy would lead to a corresponding increase in wages and salaries, a proportion of which would be spent on local goods and services, creating a further 39 jobs through consumption impacts.

The combination of all direct, industrial and consumption effects would result in a total estimated increase of 175 jobs located in the Shire of Serpentine Jarrahdale. This represents a Type 2 Employment multiplier of 1.75.

Employment impacts would not be limited to the local economy. Industrial and consumption effects would flow outside the region to the wider Australian economy creating a further 179 jobs.

The combined effect of economic multipliers in the Shire of Serpentine Jarrahdale and the wider Australian economy is estimated to be an addition of 354 jobs.

Impact on value added

The direct addition of 100 jobs in the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the Shire of Serpentine Jarrahdale economy would lead to a corresponding direct increase in value added of \$26.55m. A further \$4.55m in value added would be generated from related intermediate industries. These indirect industrial impacts represent a Type 1 value added multiplier of 1.17.

There would be an additional contribution to the Shire of Serpentine Jarrahdale economy through consumption effects as correspondingly more wages and salaries are spent in the local economy. It is estimated that this would result in a further increase in value added of \$3.21m.

The combination of all direct, industrial and consumption effects would result in an estimated addition in value added of \$34.31m in the Shire of Serpentine Jarrahdale economy, representing a Type 2 value added multiplier of 1.29.

These impacts would not be limited to the local economy. Industrial and consumption effects would flow outside the region to the wider Australian economy to the tune of \$23.29m in value added.

The combined effect of economic multipliers in the Shire of Serpentine Jarrahdale and the wider Australian economy is estimated to be \$57.59m added to Australia's value added.

Impact on GRP

10.5.3 - attachment 1

Value added by industry represents the industry component of Gross Regional Product (GRP). The impact on the Shire of Serpentine Jarrahdale's GRP as a result of this change to the economy is directly equivalent to the change in value added outlined in the section above.

In summary, GRP in the Shire of Serpentine Jarrahdale is estimated to increase by \$34.31m.

The effect on the Australian economy (including Shire of Serpentine Jarrahdale) is estimated to be a growth in Gross Domestic Product (GDP) of \$57.59m.

Impact on employment by industry sector

This table shows a detailed breakdown of how employment will be affected by the addition of 100 jobs in the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the Shire of Serpentine Jarrahdale economy. This includes both the direct industrial impact (Type 1) and ongoing consumption impact (Type 2).

Employment by industry sector

Shire of Serpentine Jarrahdale - Impact of 100 new jobs in 'Professional, Scientific and Technical Services (Except Computer System Design and Related Services) ' output (Type 1 & 2 combined impact)

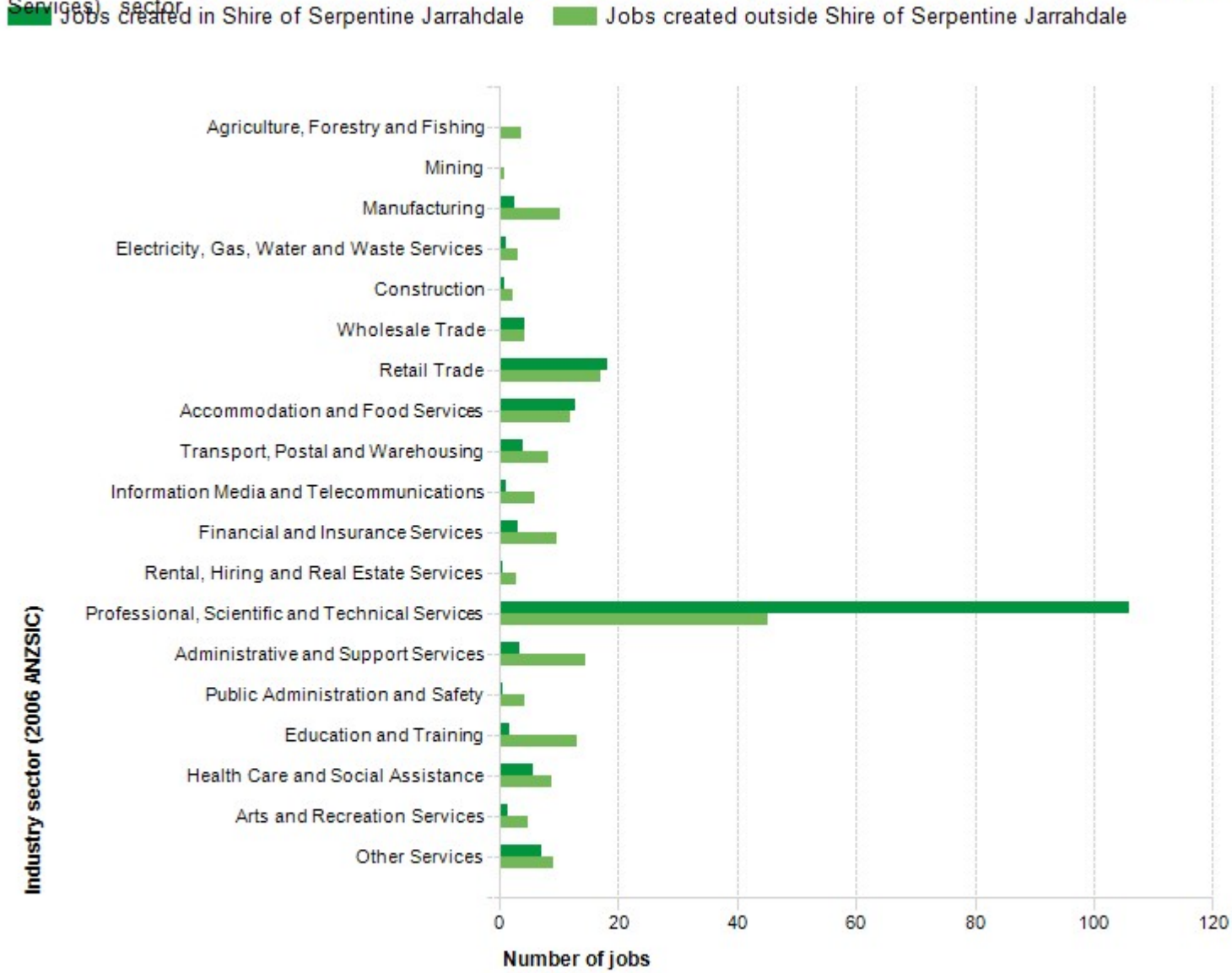
Employment impacts

Industry sectors (1-digit ANSIC)	Existing jobs in the Shire of Serpentine Jarrahdale*	Jobs created in the Shire of Serpentine Jarrahdale	Jobs created outside of the Shire of Serpentine Jarrahdale	Jobs created for Shire of Serpentine Jarrahdale residents
Agriculture, Forestry and Fishing	755	0	4	0
Mining	136	0	1	0
Manufacturing	371	3	10	1
Electricity, Gas, Water and Waste Services	40	1	3	0
Construction	1,024	1	2	0
Wholesale Trade	97	4	4	3
Retail Trade	672	18	17	11
Accommodation and Food Services	296	13	12	9
Transport, Postal and Warehousing	350	4	8	3
Information Media and Telecommunications	34	1	6	1
Financial and Insurance Services	18	3	10	3
Rental, Hiring and Real Estate Services	63	1	3	0
Professional, Scientific and Technical Services	183	106	45	77
Administrative and Support Services	150	4	14	3
Public Administration and Safety	337	1	4	0
Education and Training	980	2	13	1
Health Care and Social Assistance	317	6	9	2
Arts and Recreation Services	296	1	5	0
Other Services	198	7	9	5
Total Industries	6,316	175	179	120

Source: [National Institute of Economic and Industry Research \(NIEIR\)](#) ©2019. Compiled and presented in economy.id by [.id](#) The population experts

Employment by industry sector

Impact of 100 new jobs in Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector



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Resident employment impacts

The combination of all direct, industrial and consumption effects of adding 100 jobs to the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the Shire of Serpentine Jarrahdale economy would be an estimated increase of 120 jobs located in the Shire of Serpentine Jarrahdale and 224 jobs located outside the Shire of Serpentine Jarrahdale – a total of 345 jobs.

As some of the Shire of Serpentine Jarrahdale’s residents leave the area to work and residents of other areas enter the Shire of Serpentine Jarrahdale to work, not all of these jobs will be filled by Shire of Serpentine Jarrahdale residents. It is estimated that of the 345 jobs created, 120 or 34.9% would be expected to be filled by Shire of Serpentine Jarrahdale residents.



Industry employment impacts

10.5.3 - attachment 1

The combination of all direct, industrial and consumption effects of adding 100 jobs to the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the Shire of Serpentine Jarrahdale economy would result in an estimated increase of 175 jobs located in the Shire of Serpentine Jarrahdale. Of the 175 jobs created within the Shire of Serpentine Jarrahdale, 106, or 60.6% would be added within Professional, Scientific and Technical Services the sector. This includes the direct jobs created in the sector, and the effect of flow-on jobs within the same sector.

The largest increase in jobs outside Professional, Scientific and Technical Services would be in Retail Trade (18), Accommodation and Food Services (13) and Other Services (7).

A total of 179 jobs are estimated to be created outside the Shire of Serpentine Jarrahdale, with the largest number being in Retail Trade (17) Administrative and Support Services (14) and Education and Training (13).

Impact on value added by industry sector

This table shows a detailed breakdown of how adding 100 jobs in the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the Shire of Serpentine Jarrahdale economy will impact on the value added of each industry sector. This highlights the relationships between industry. This includes both the direct industrial impact (Type 1) and ongoing consumption impact (Type 2).

Value-added by industry

Shire of Serpentine Jarrahdale - Impact of 100 new jobs in 'Professional, Scientific and Technical Services (Except Computer System Design and Related Services) ' output (Type 1 & 2 combined impact)

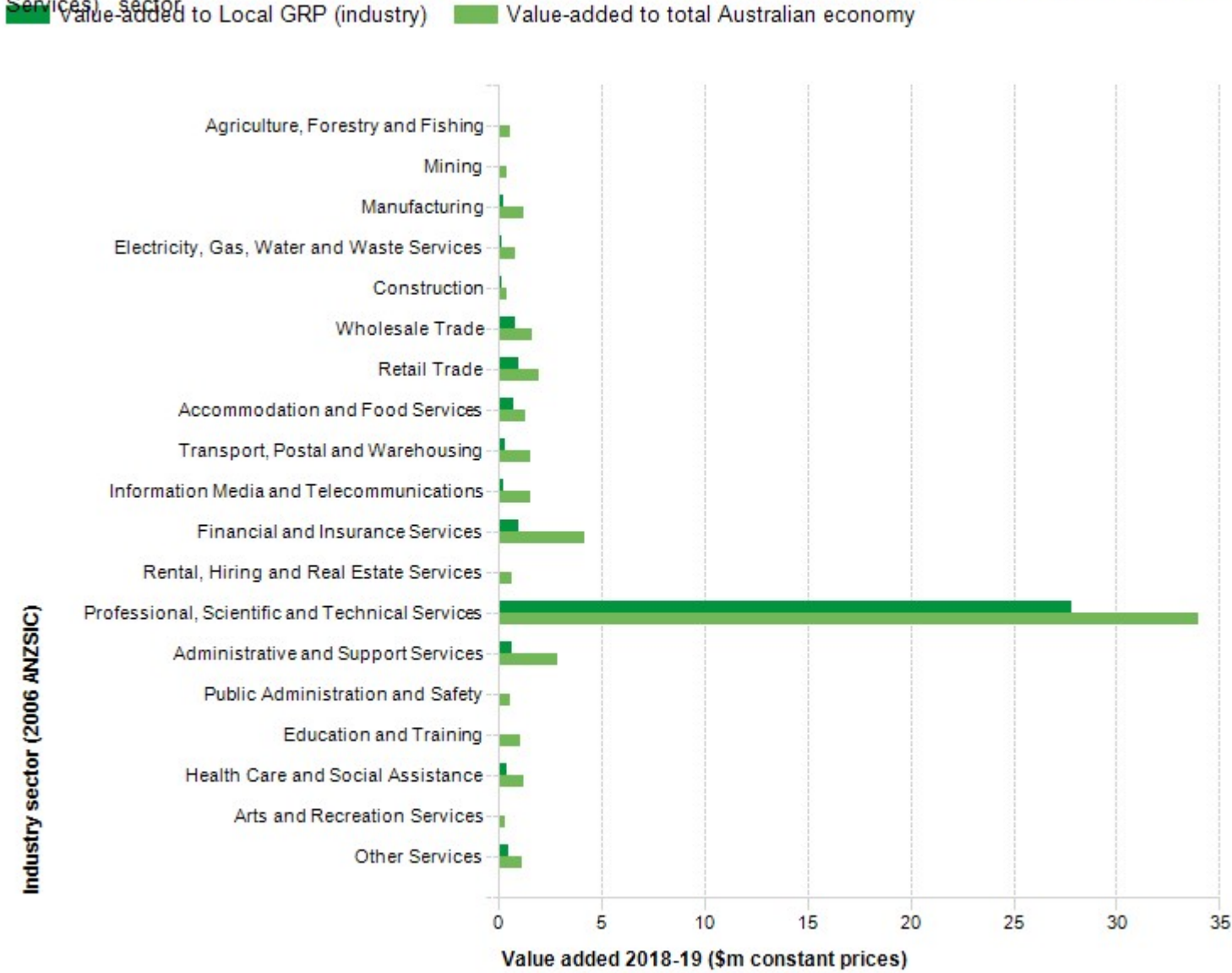
Value added 2018-19
(\$m constant prices)

Industry sectors (1-digit ANSIC)	Current local value-added*	Value-added to the Shire of Serpentine Jarrahdale	Percentage change	Value-added to Australian economy
Agriculture, Forestry and Fishing	\$120.31	\$0.01	0.0%	\$0.59
Mining	\$31.07	\$0.04	0.1%	\$0.39
Manufacturing	\$38.87	\$0.23	0.6%	\$1.23
Electricity, Gas, Water and Waste Services	\$5.73	\$0.15	2.6%	\$0.83
Construction	\$120.76	\$0.14	0.1%	\$0.44
Wholesale Trade	\$17.54	\$0.81	4.6%	\$1.61
Retail Trade	\$34.20	\$0.98	2.9%	\$2.00
Accommodation and Food Services	\$17.16	\$0.71	4.1%	\$1.34
Transport, Postal and Warehousing	\$37.47	\$0.33	0.9%	\$1.60
Information Media and Telecommunications	\$6.05	\$0.25	4.1%	\$1.55
Financial and Insurance Services	\$4.04	\$0.99	24.5%	\$4.15
Rental, Hiring and Real Estate Services	\$13.01	\$0.12	0.9%	\$0.67
Professional, Scientific and Technical Services	\$47.58	\$27.79	58.4%	\$34.01
Administrative and Support Services	\$14.04	\$0.62	4.4%	\$2.83
Public Administration and Safety	\$38.15	\$0.06	0.2%	\$0.57
Education and Training	\$60.44	\$0.09	0.1%	\$1.03
Health Care and Social Assistance	\$21.56	\$0.44	2.0%	\$1.23
Arts and Recreation Services	\$11.92	\$0.07	0.6%	\$0.35
Other Services	\$13.20	\$0.48	3.6%	\$1.17
Total Industries	\$653.07	\$34.31	5.3%	\$57.59

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Value-added by industry

Impact of 100 new jobs in Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector



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The combination of all direct, industrial and consumption effects of adding 100 jobs to the Professional, Scientific and Technical Services (Except Computer System Design and Related Services) sector of the Shire of Serpentine Jarrahdale economy would result in an estimated increase in value added of \$34.31m in the Shire of Serpentine Jarrahdale economy.

The Professional, Scientific and Technical Services sector of the economy is estimated to increase in value added by 58.4%, with the total Shire of Serpentine Jarrahdale economy estimated to grow by 5.3%.

The main impacts in value added within Shire of Serpentine Jarrahdale, outside of Professional, Scientific and Technical Services, are in Financial and Insurance Services (0.99m), Retail Trade (0.98m) and Wholesale Trade (0.81m).

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