MODELLING THE COVERAGE OF PUBLIC UTILITY PROVIDERS

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Agenda

- initial situation
- model fundamentals
- modelling the coverage of public utility providers
- implementation
- results

initial situation

FH Wiener Neustadt

fotec research + technology

Das Land Steiermark

Landes- und Gemeindeentwicklung Abteilung 16

model fundamentals

three main input parameters:

- public utility providers
  - information about the capacities
- demographic characteristics
  - grid dataset, spatial resolution of 250 m
- street graph
  - Graph Integration Platform (GIP)
  - individual transport

additional: regions

modelling the coverage of public utility providers

based on:

- calculation of service areas for different public utility providers
- spatial distribution of demography of the domain specific population group inside the calculated service areas
- distinguish between accessibility and coverage of public utility providers

classification of the coverage of public utility providers per grid cell

4 classification values:

supplied:


enough capacities to supply

partially supplied:


inside of a service area but little capacity

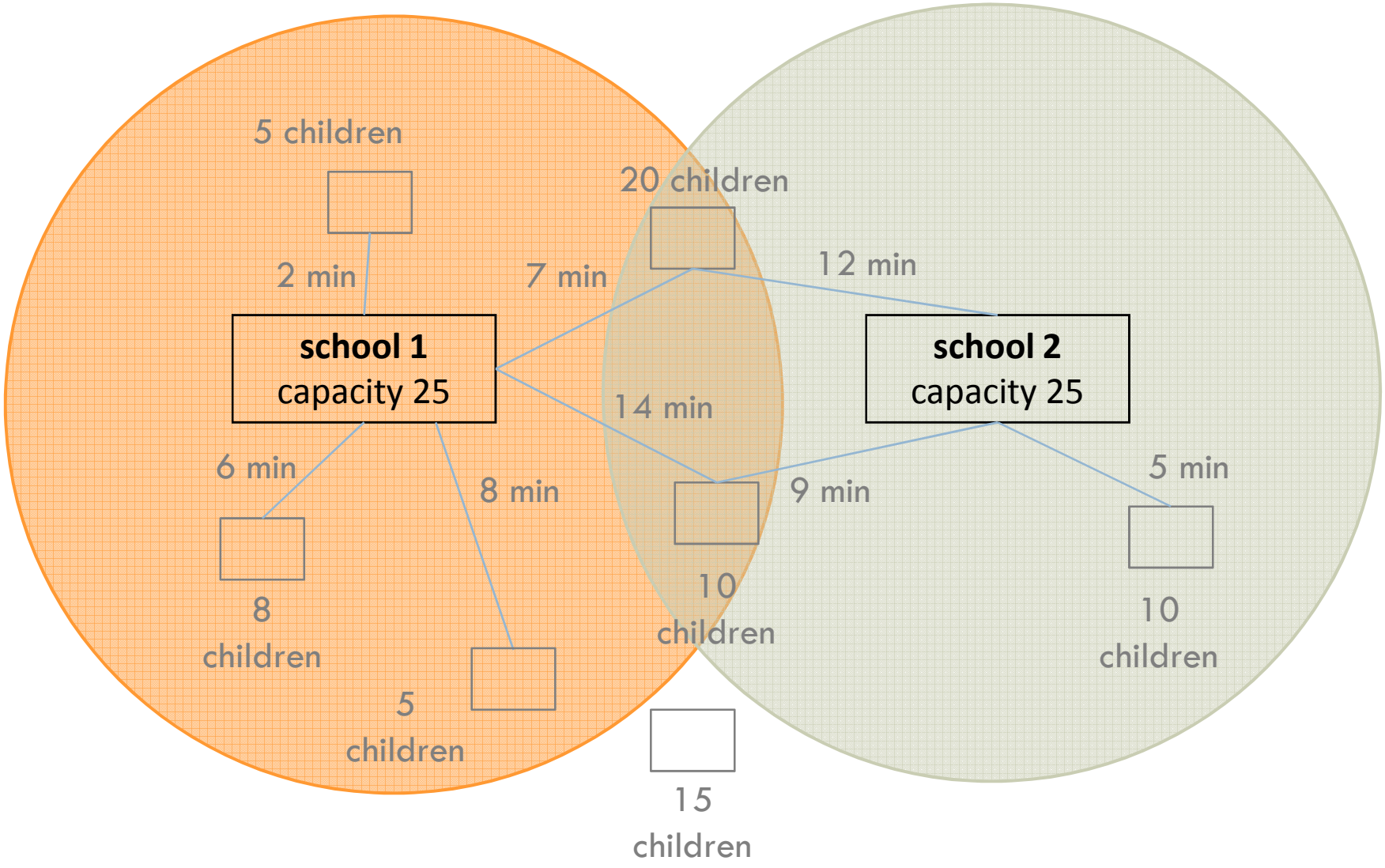
inadequately supplied:

inside of a service area but capacity is equal to zero

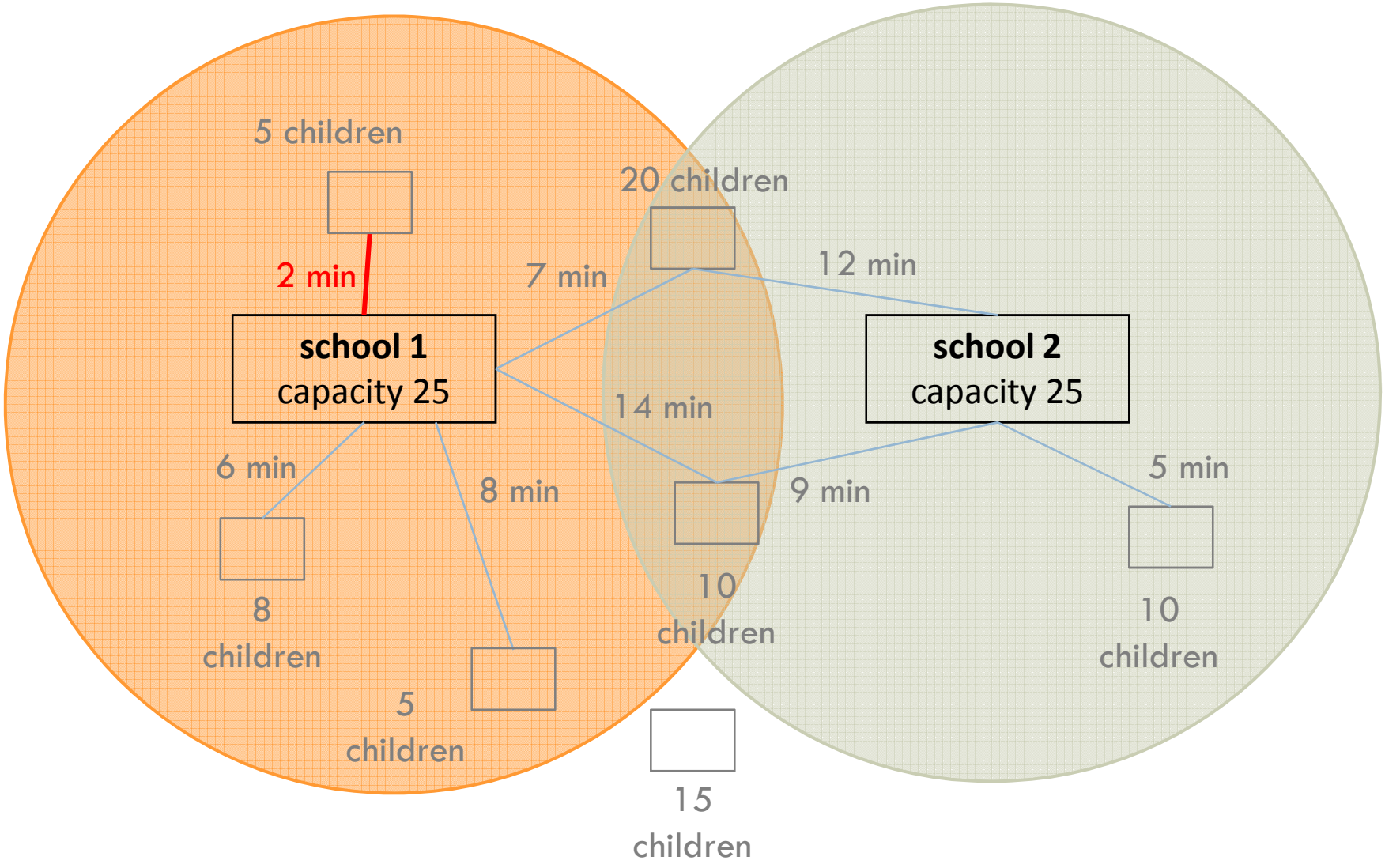
not supplied:


outside any service area

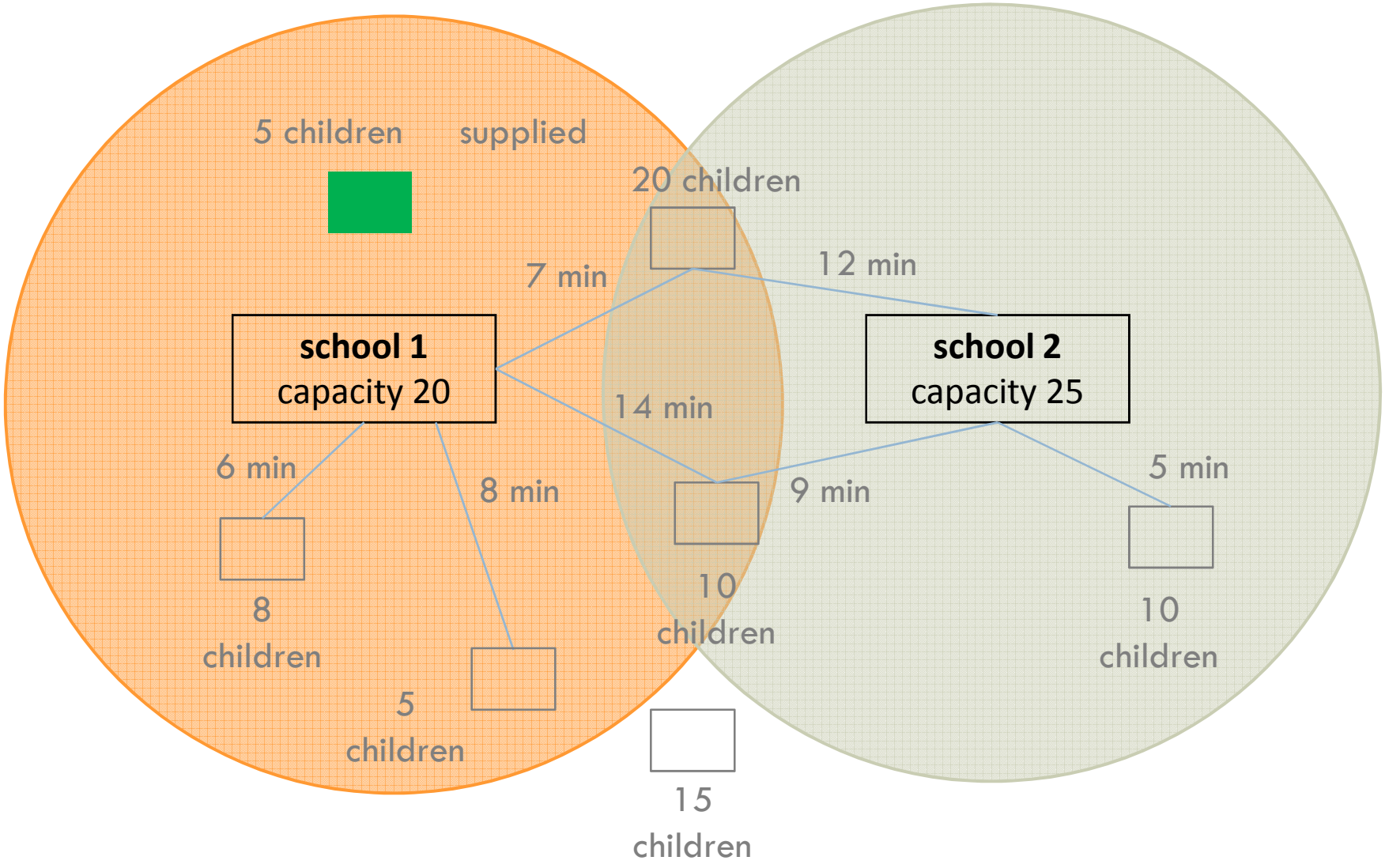
classification of the coverage of public utility providers – initial situation



classification of the coverage of public utility providers – assignment



classification – supplied



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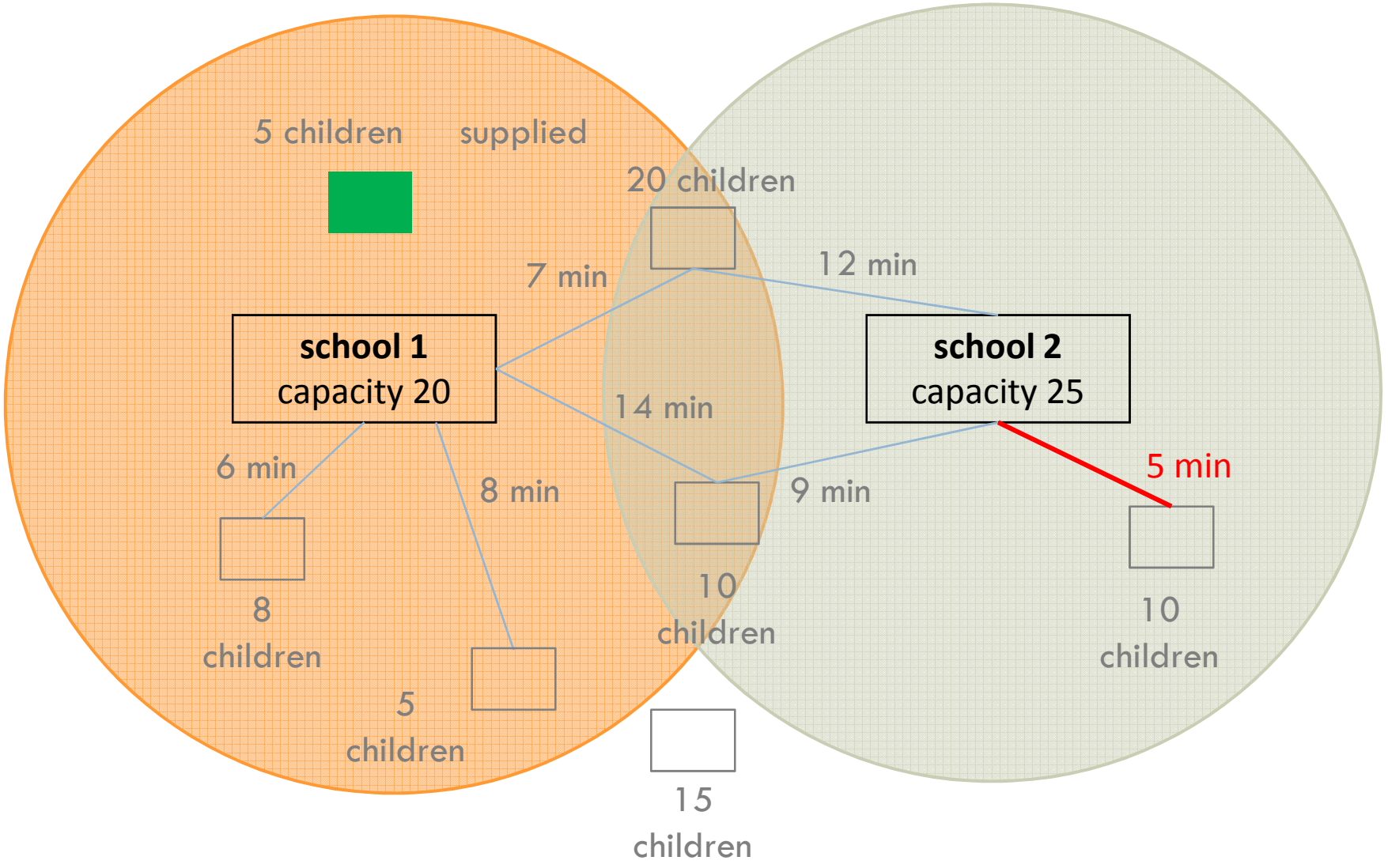

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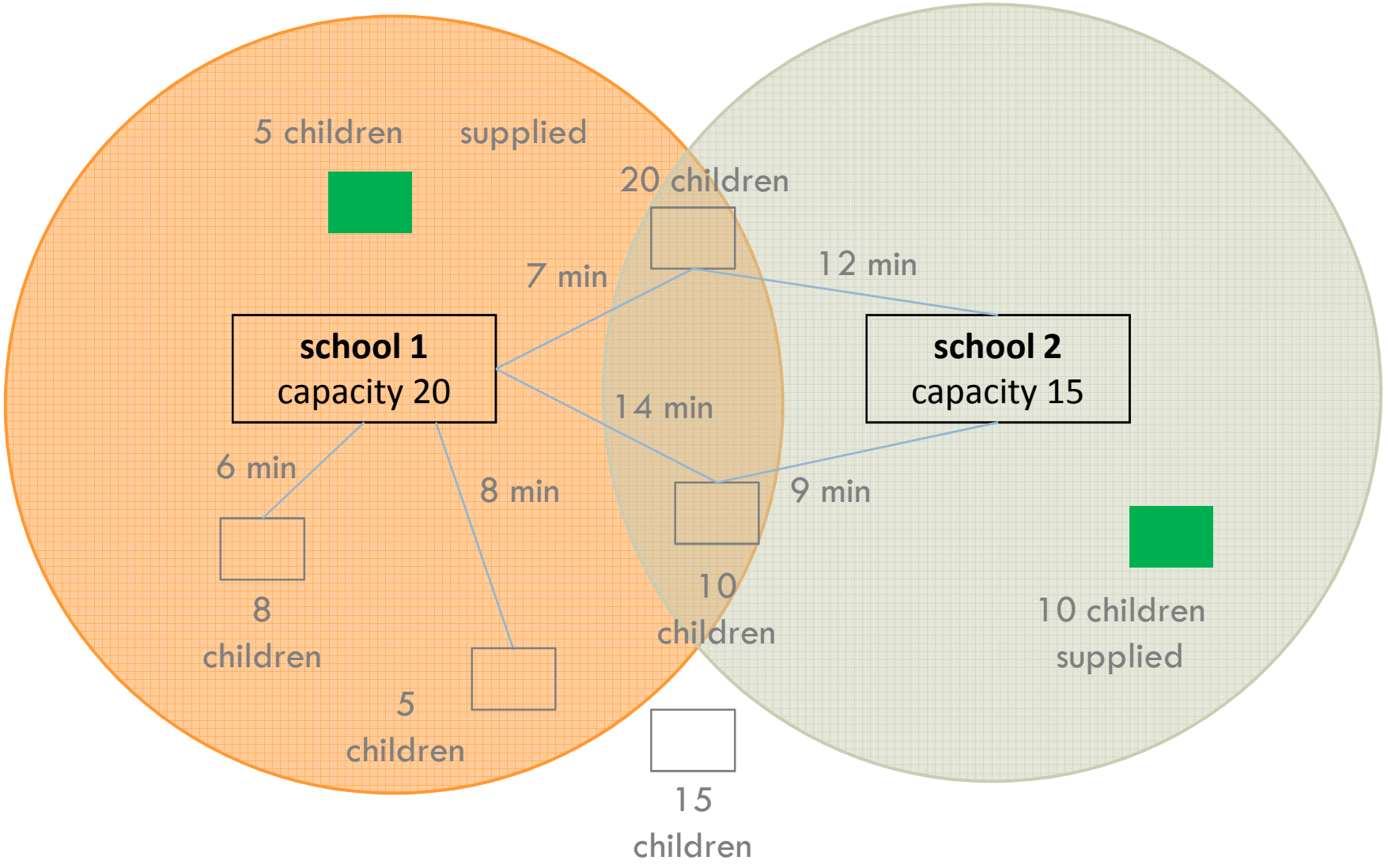

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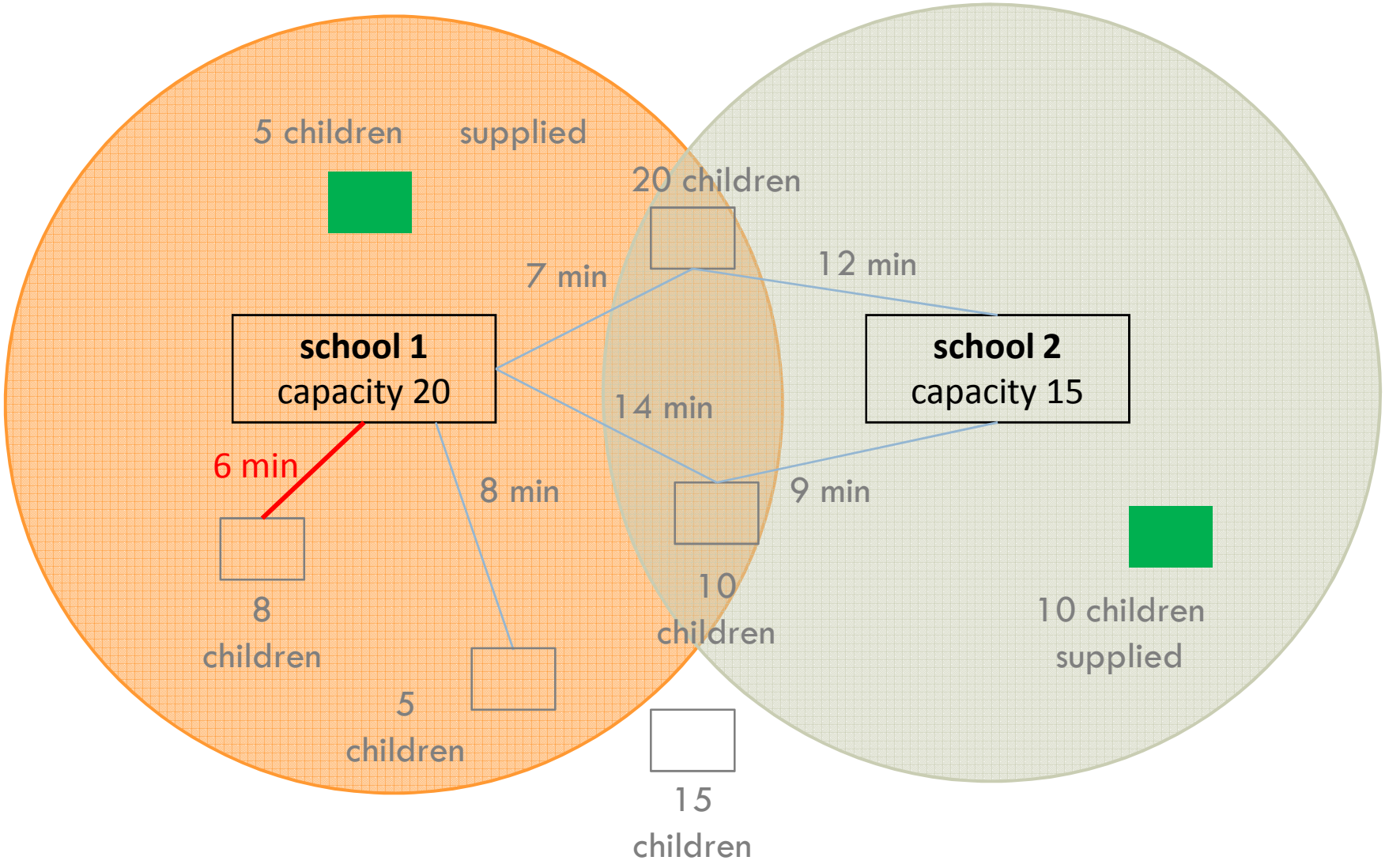

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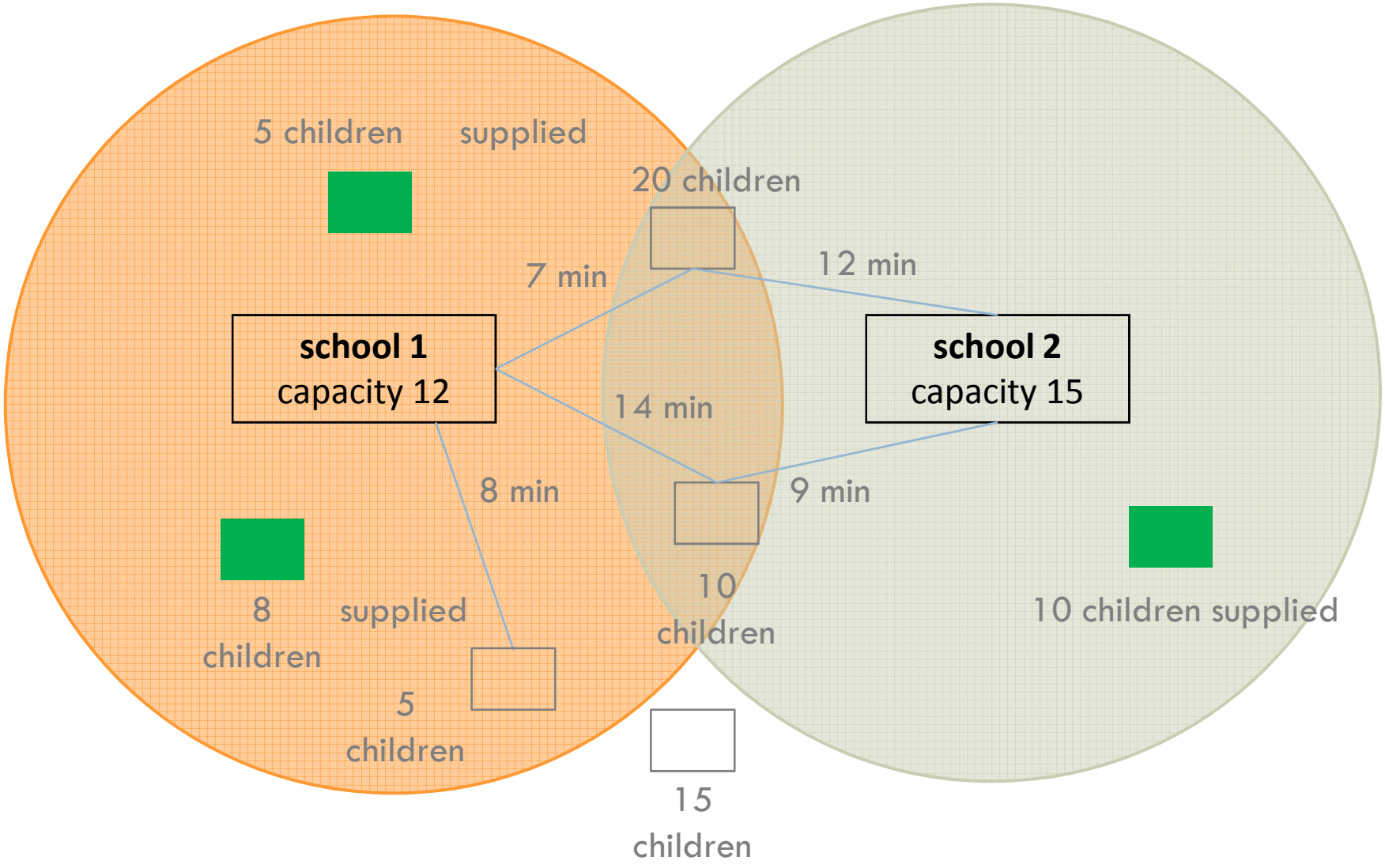

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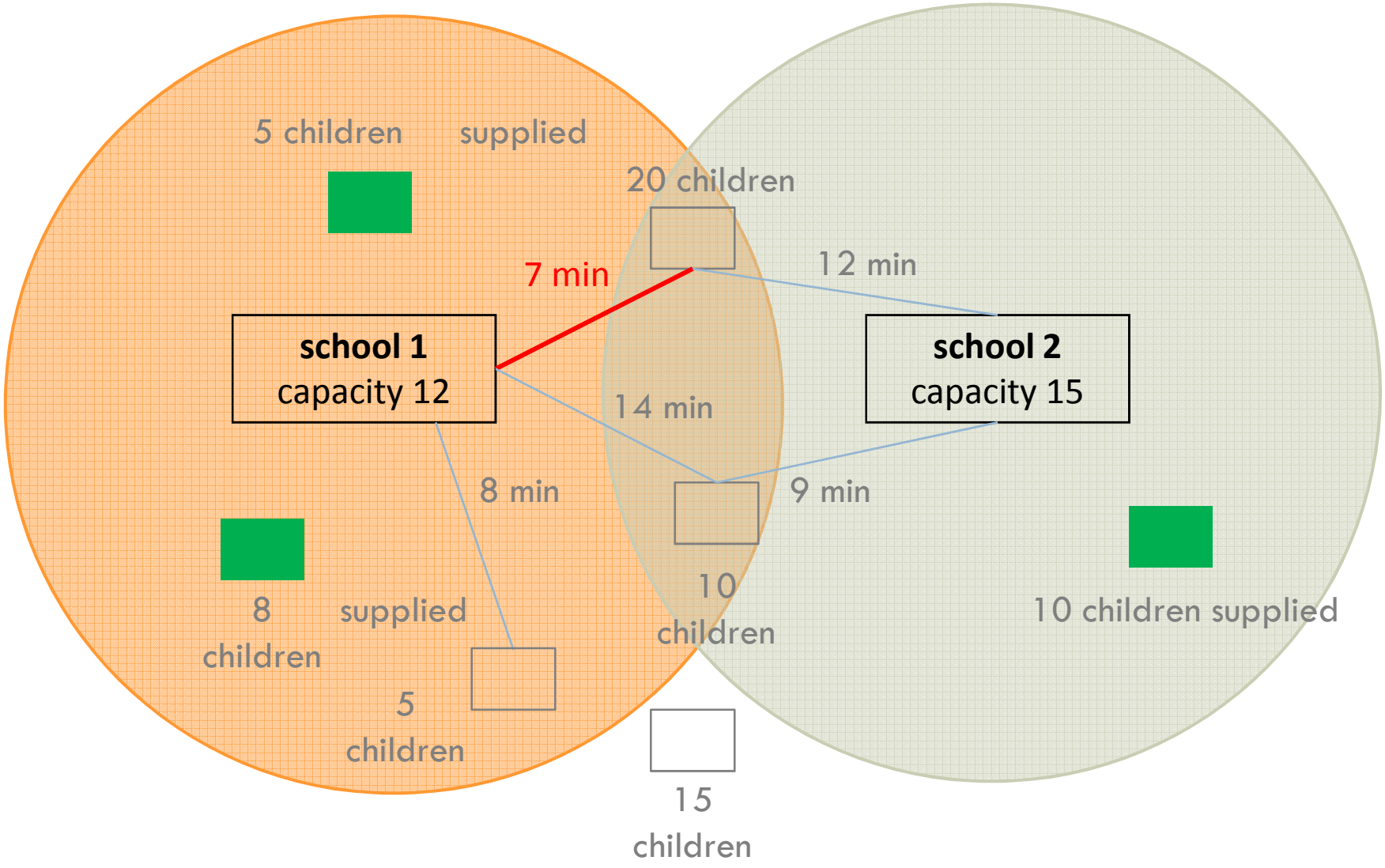
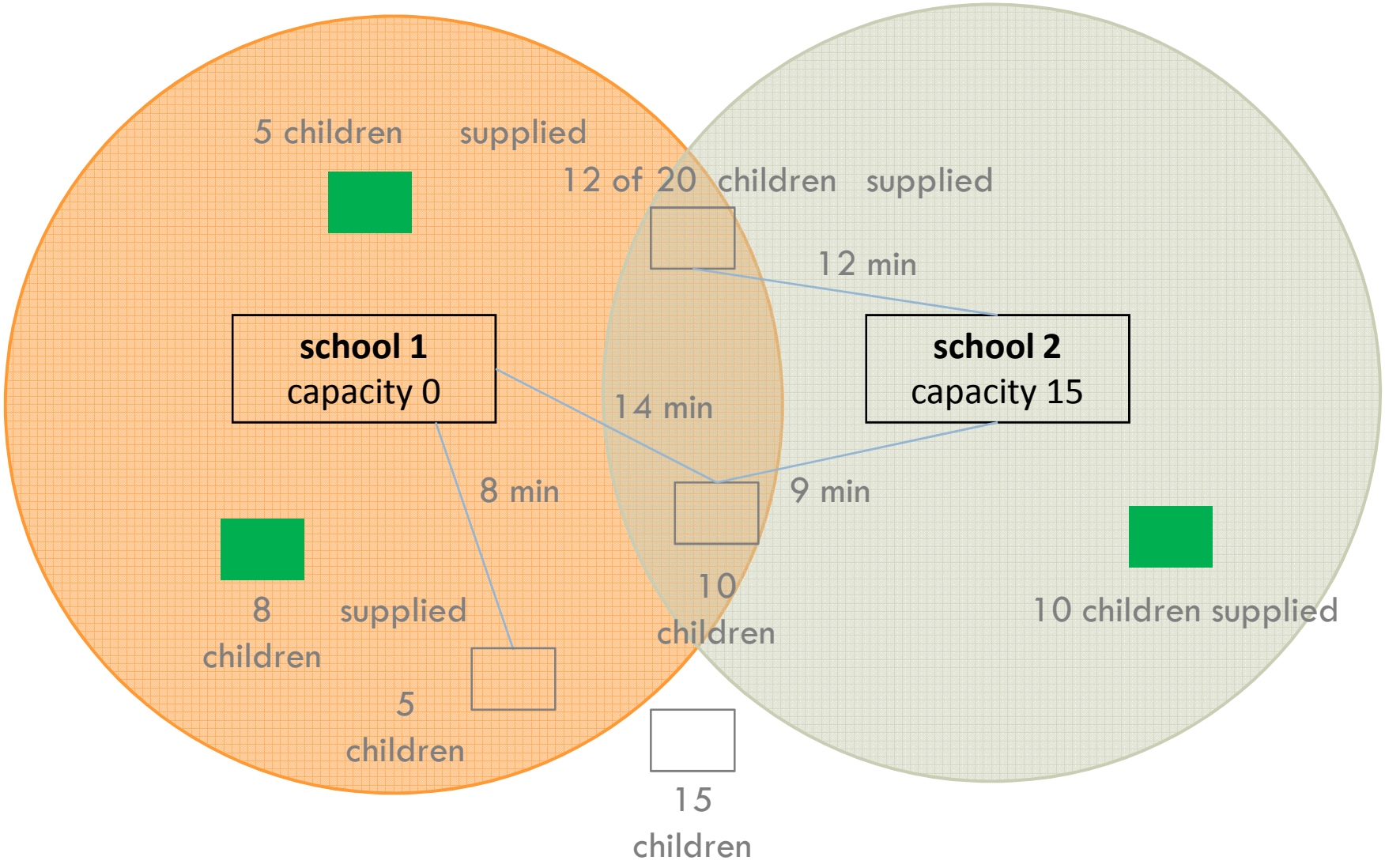


classification – partially supplied



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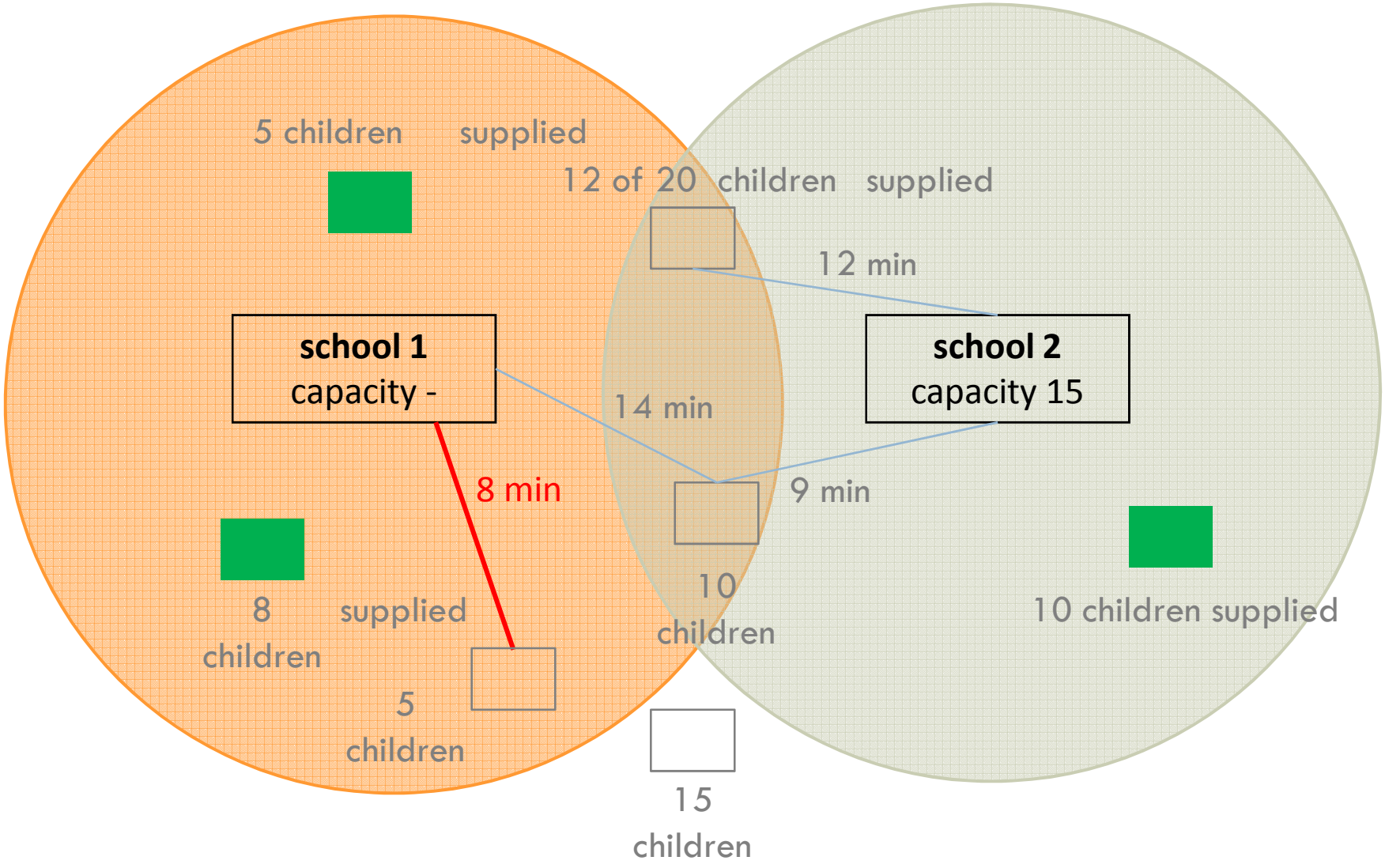
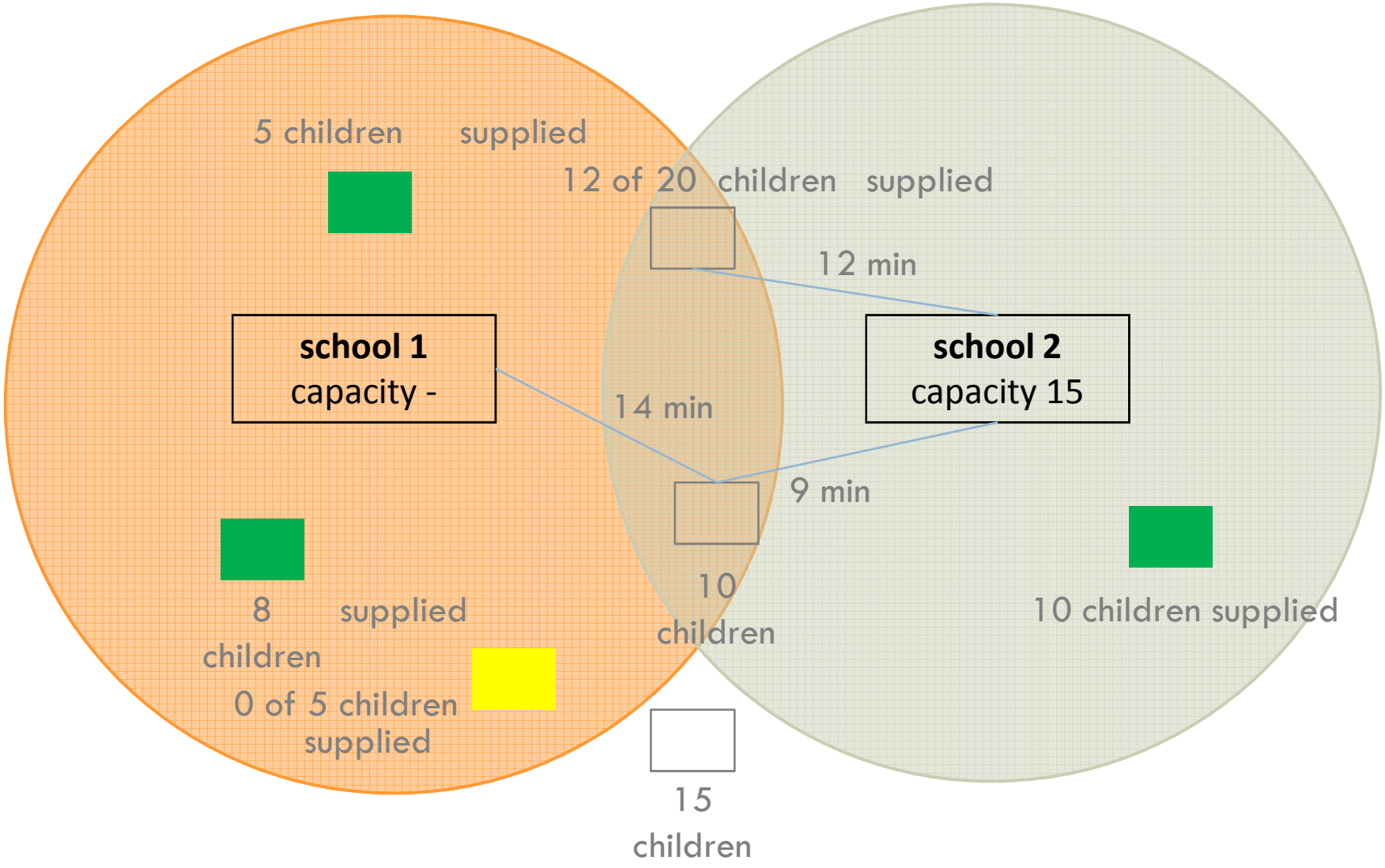


classification – inadequately supplied



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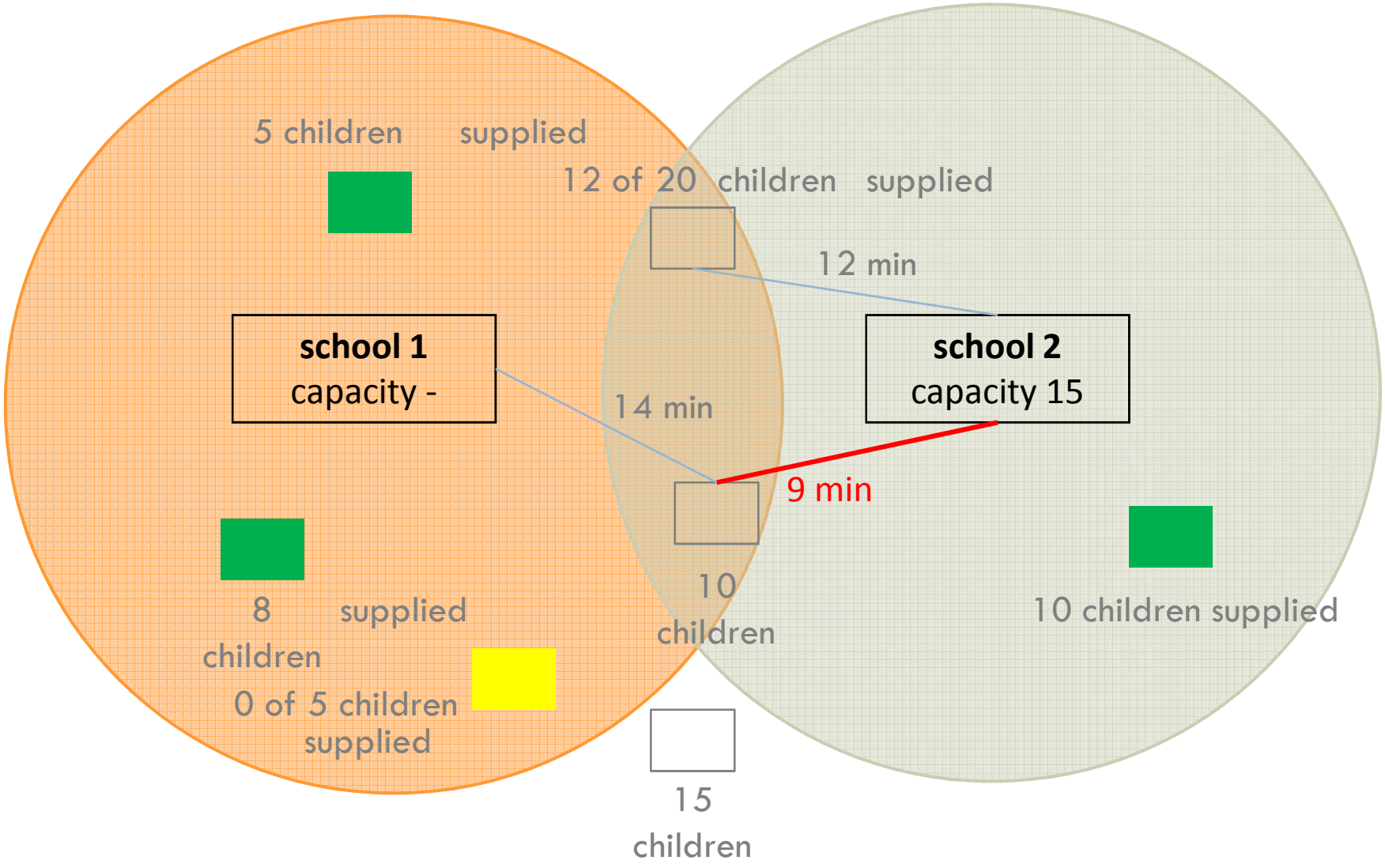

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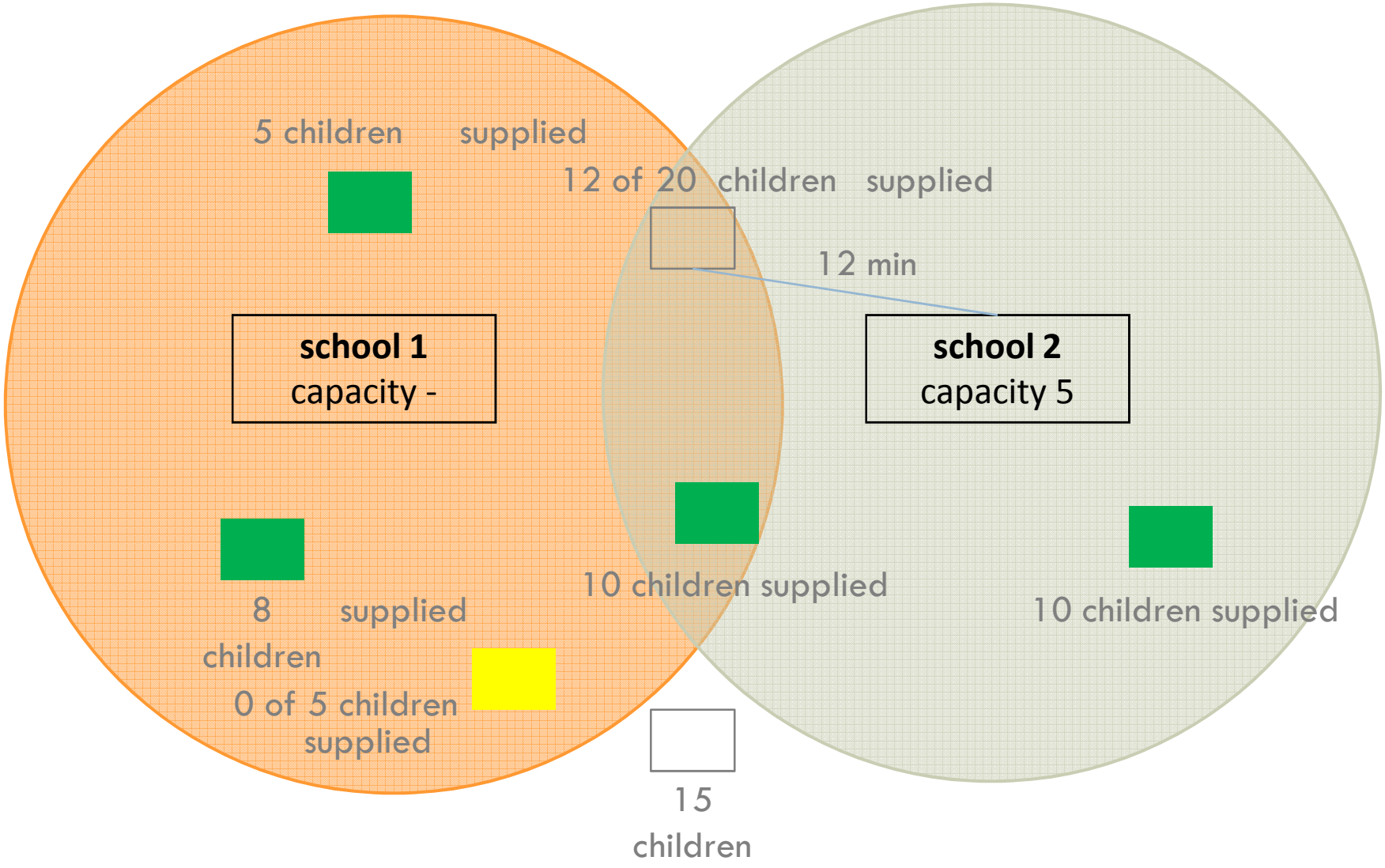

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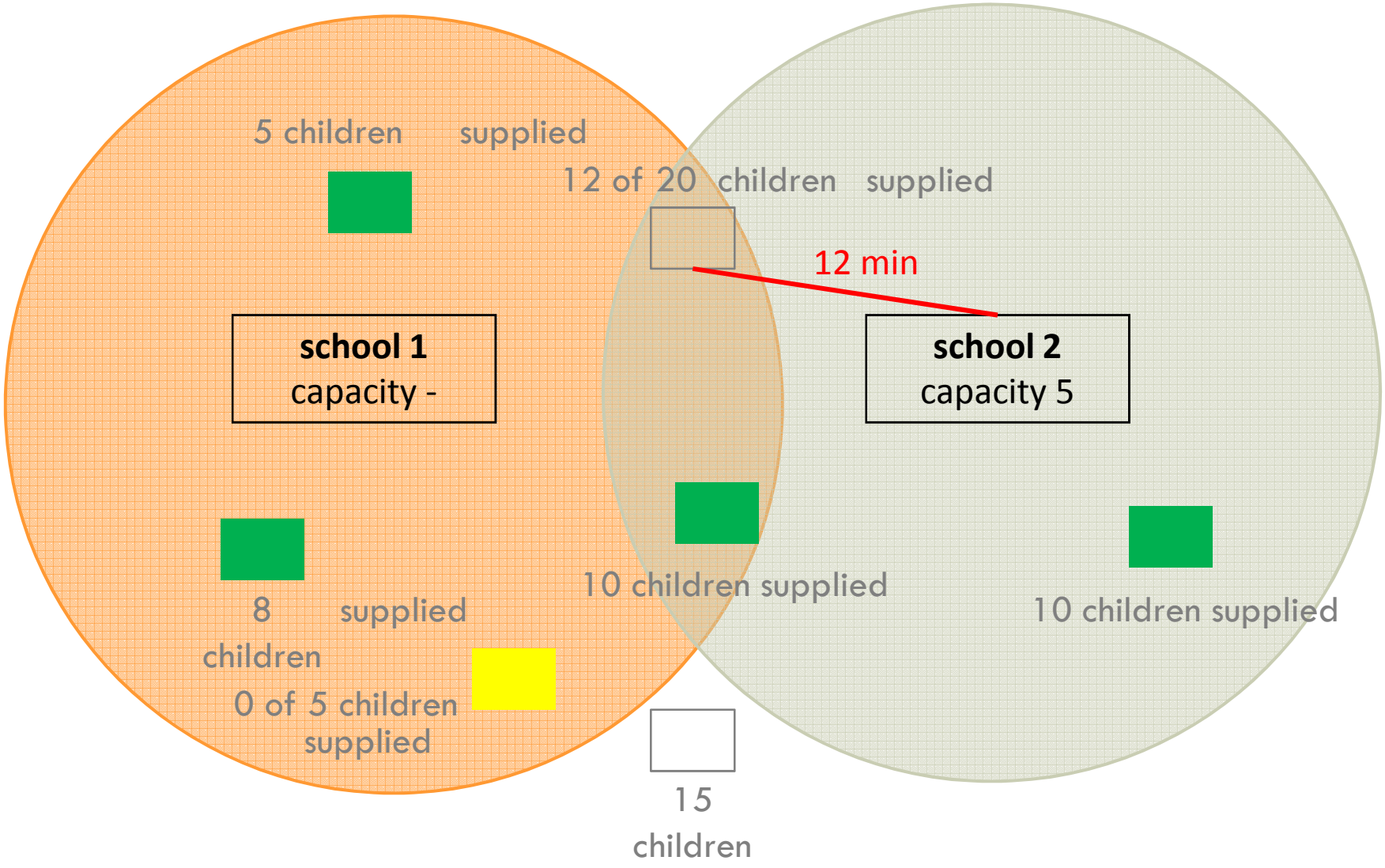

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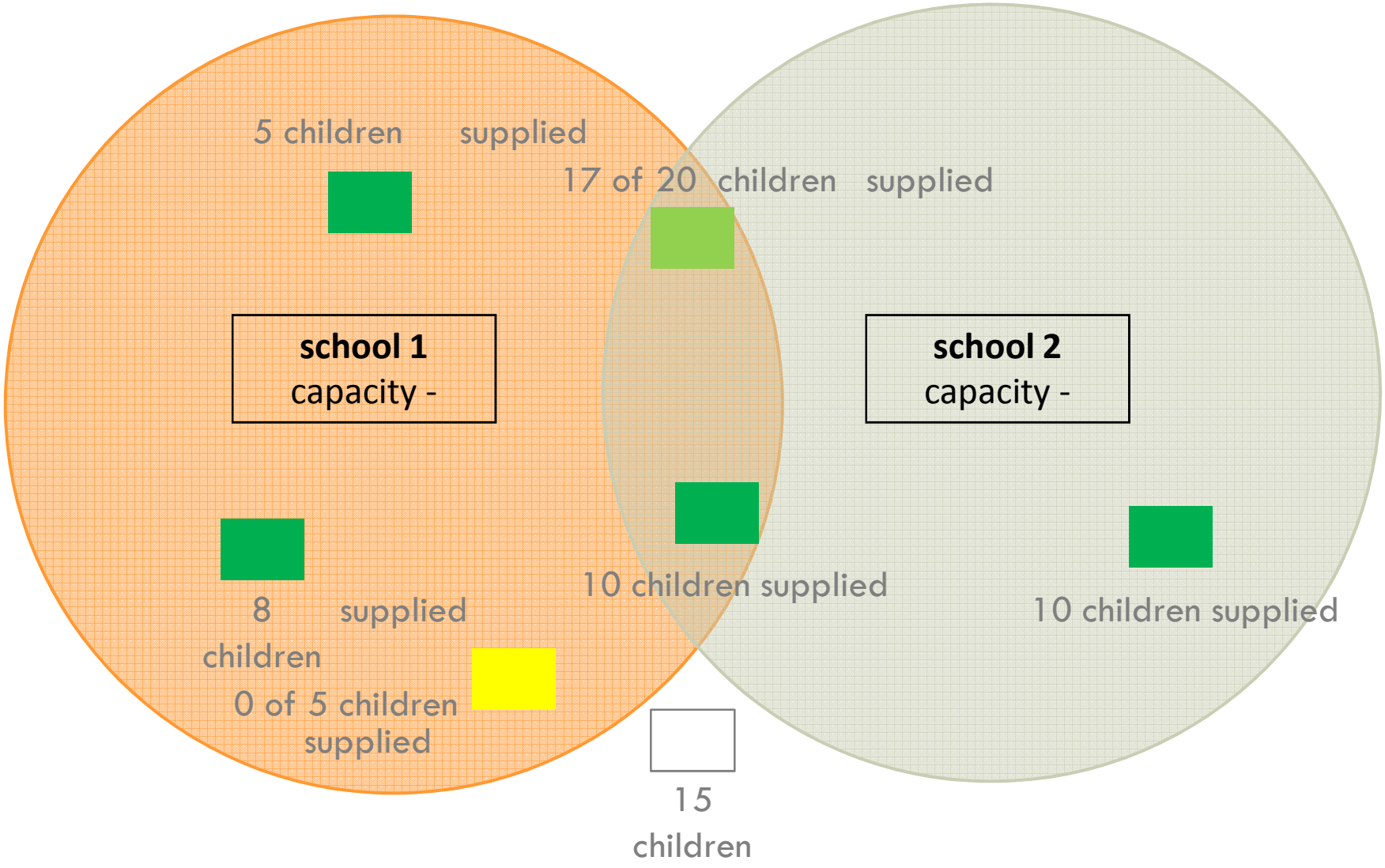
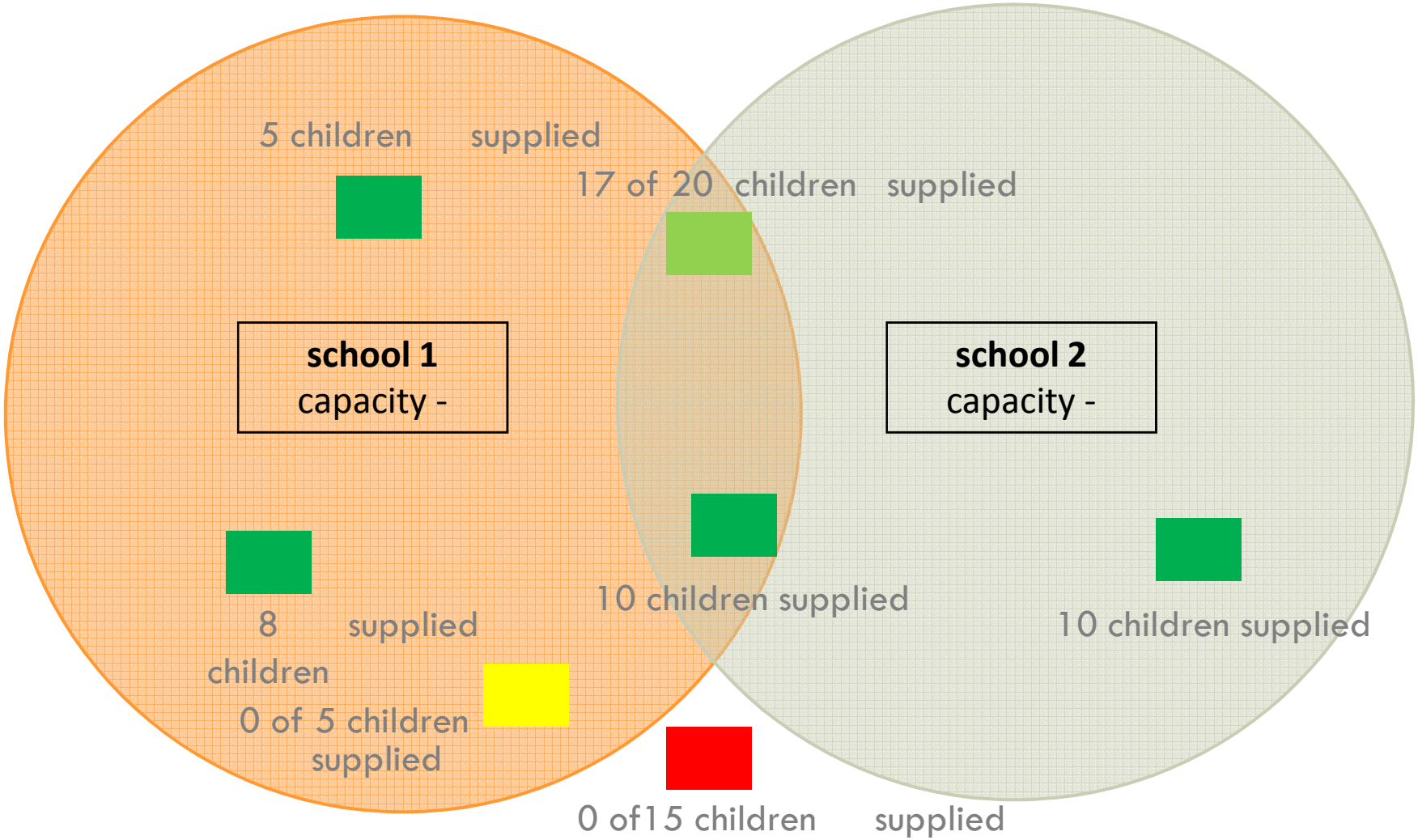
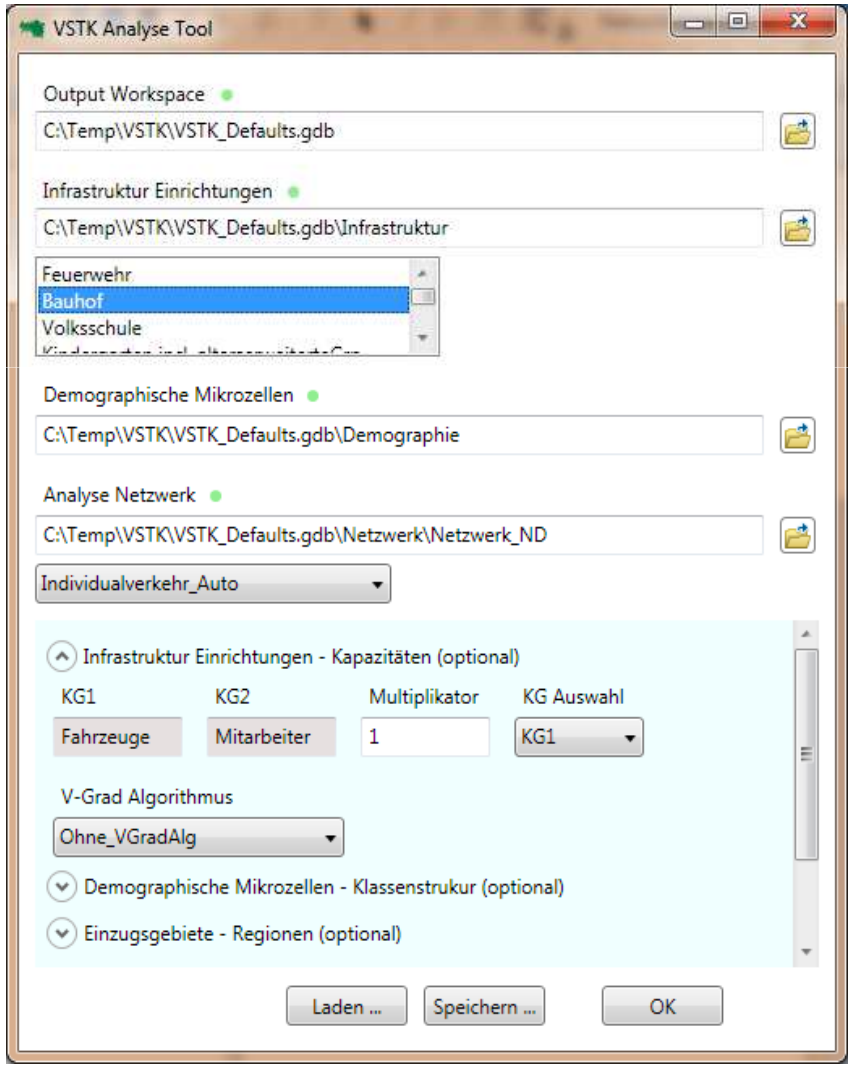


classification – not supplied



implementation



- ArcGIS® Desktop Add-in
- .NET Framework in C#
- GUI: WPF

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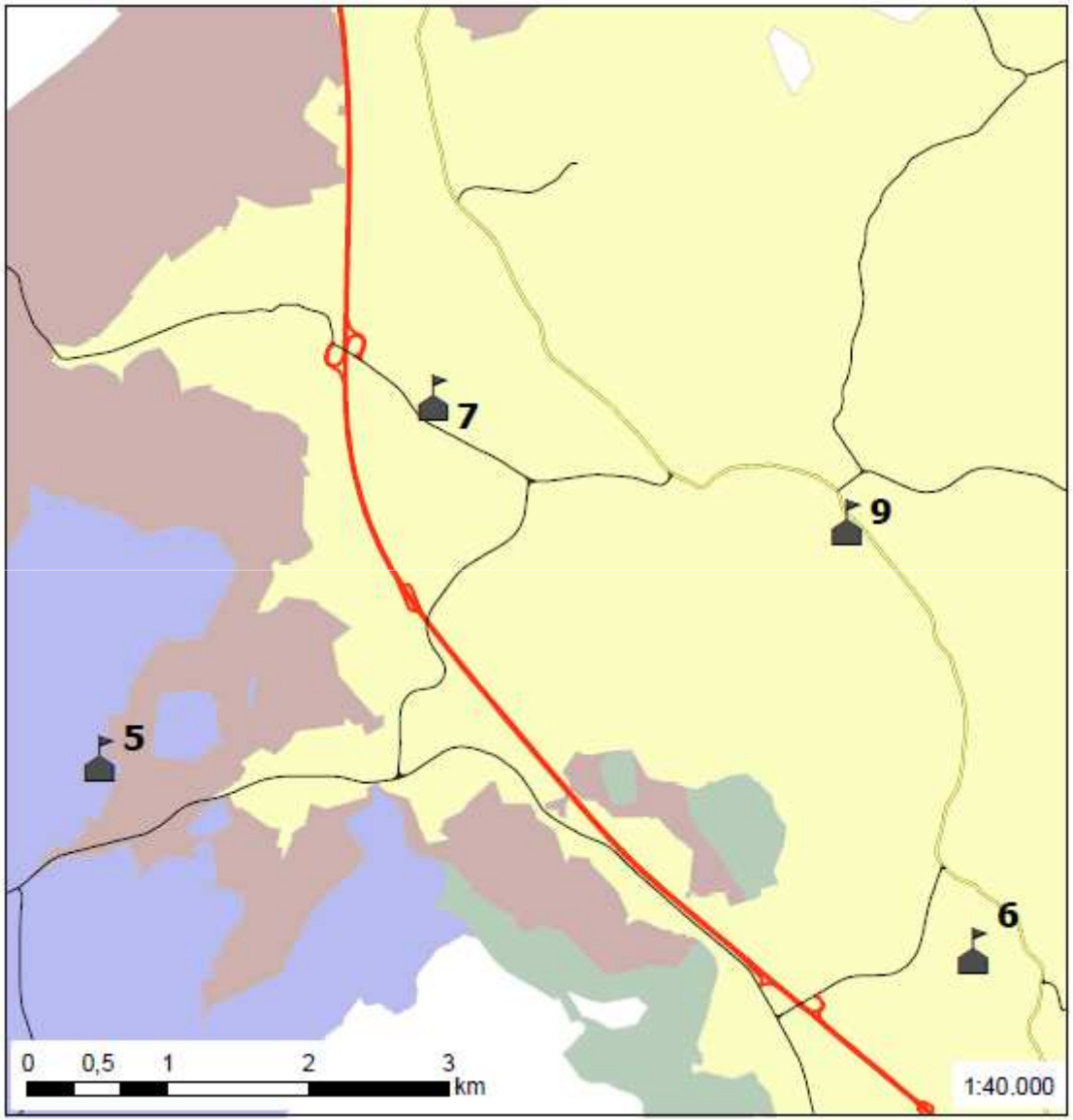
results – example

- Kalsdorf near Graz
- 5 minutes travel time
- individual motorized traffic
- no regionalization



Legend:

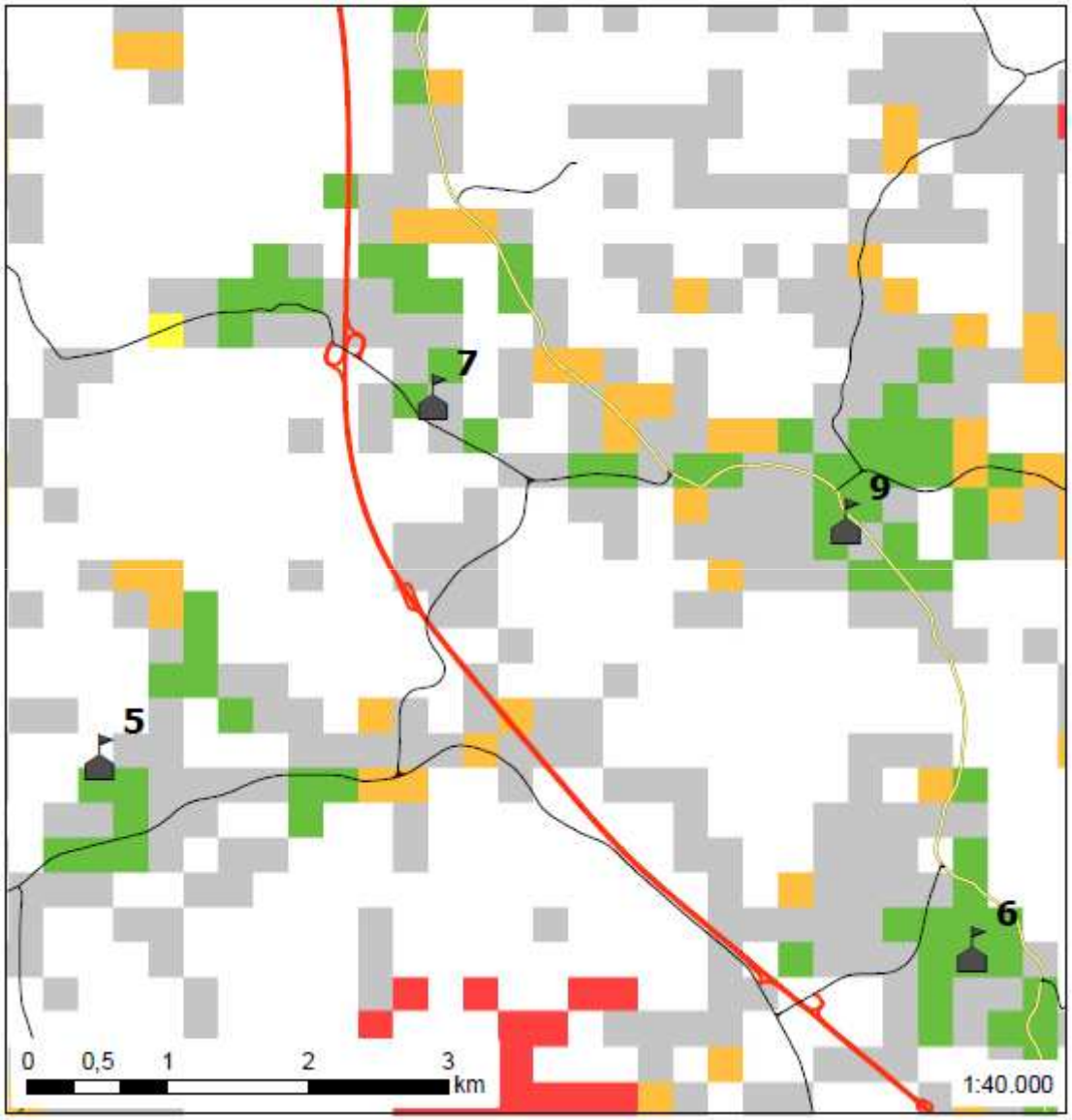
Public Utility Provider

Streets categories

- Highway
- Federal Road
- Main Road

Service Area public utility provider

- 5
- 6
- 7
- 9



Legend:

Public Utility Provider

Streets categories

- Highway
- Federal Road
- Main Road

Classification of Capacity Utilization categories

- supplied
- inadequate supplied
- partially supplied
- not supplied
- no demand

THANK YOU