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Parceria para Cidades  
+ Inteligentes e Sustentáveis

# IV ENCONTRO NACIONAL LIMPEZA URBANA

Roadmap para Cidades Competitivas e Atrativas

**3 e 4 novembro 2022**

RIA PARK HOTEL & SPA, ALMANCIL – LOULÉ

[www.associacaolimpezaurbana.org](http://www.associacaolimpezaurbana.org)





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amet, consectetur  
adipiscing elit.**



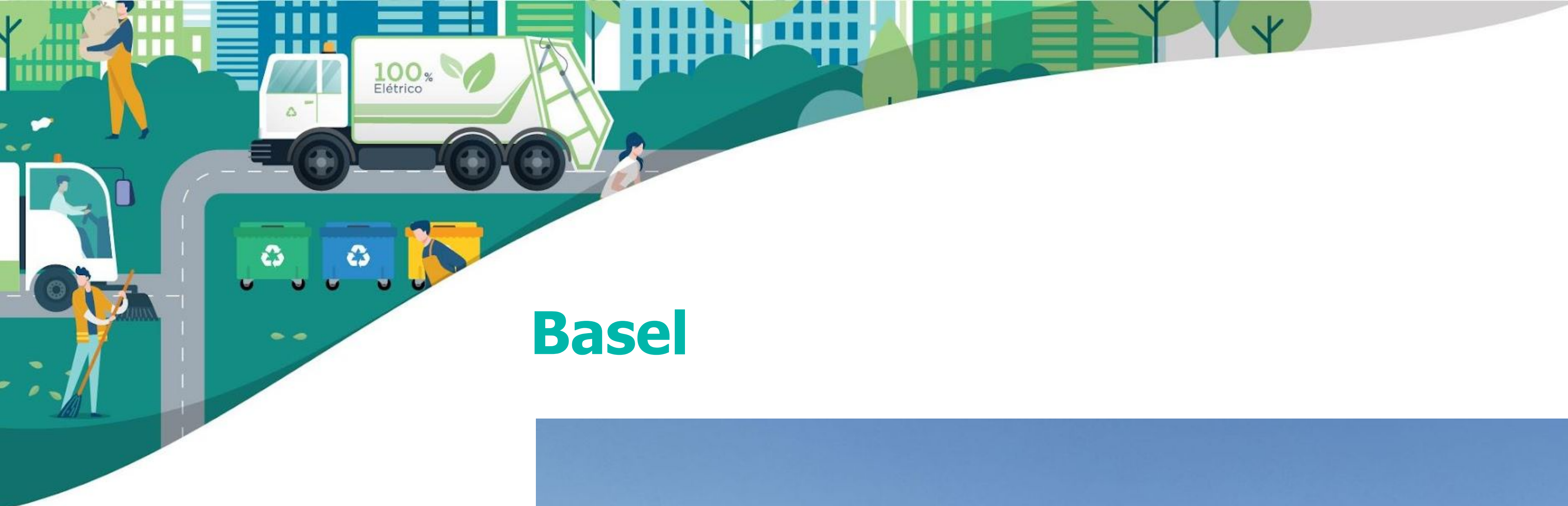
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## Process Management Basel



4. November 2022  
Dominik Egli  
Tiefbauamt Basel



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## Basel

Area: 23,85 km<sup>2</sup>  
Population: 170'000



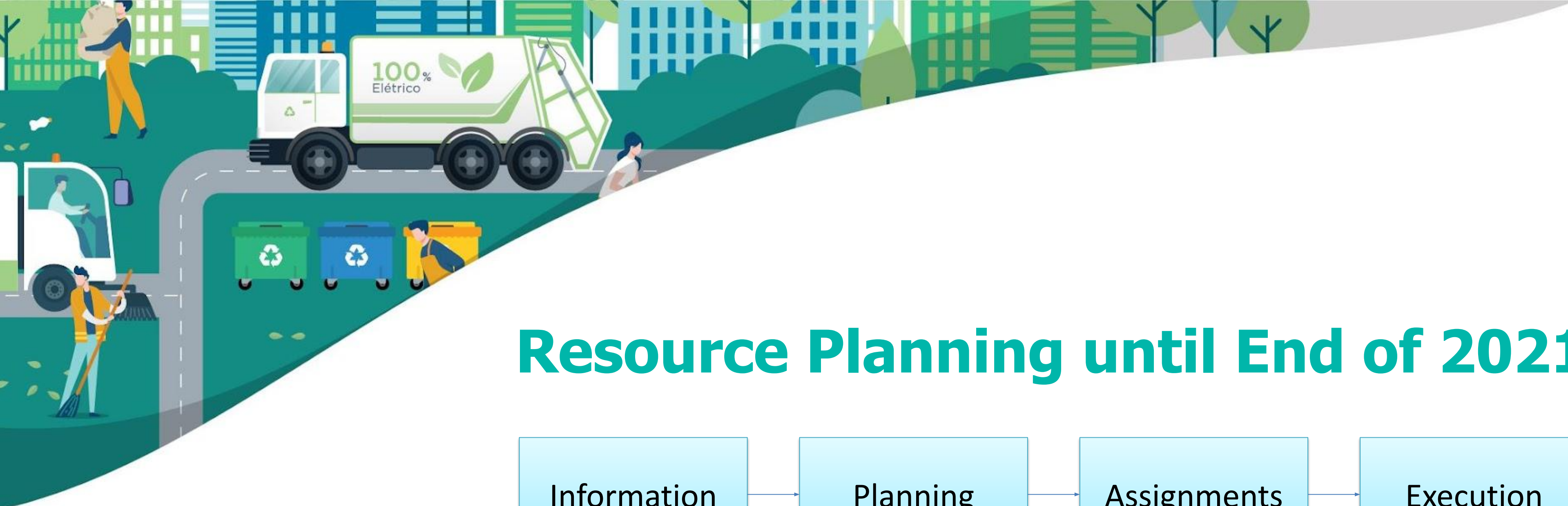


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## Stadtreinigung

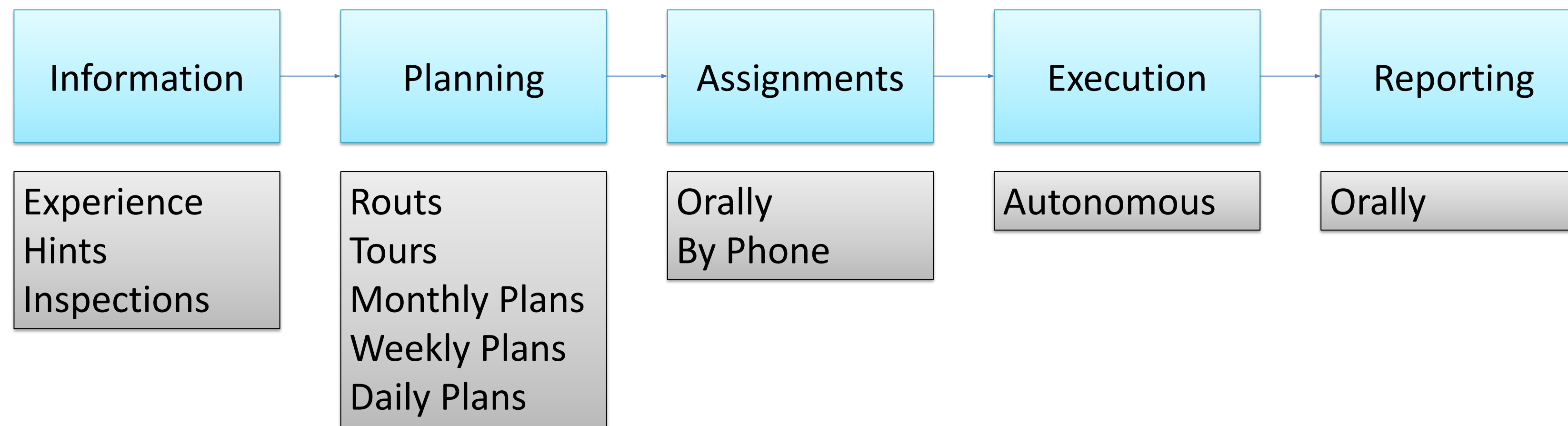
- Tasks: Cleanliness of Roads and Places, Graffitis, Winter Services, Waste Management
- Collaborators: 260
- Garbage Trucks: 16
- Street Sweepers: 24
- Waste Bins: 1100
- Collection Stations: 54





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## Resource Planning until End of 2021



Twelve more or less autonomous teams.



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## Technological Change and Needs Orientation

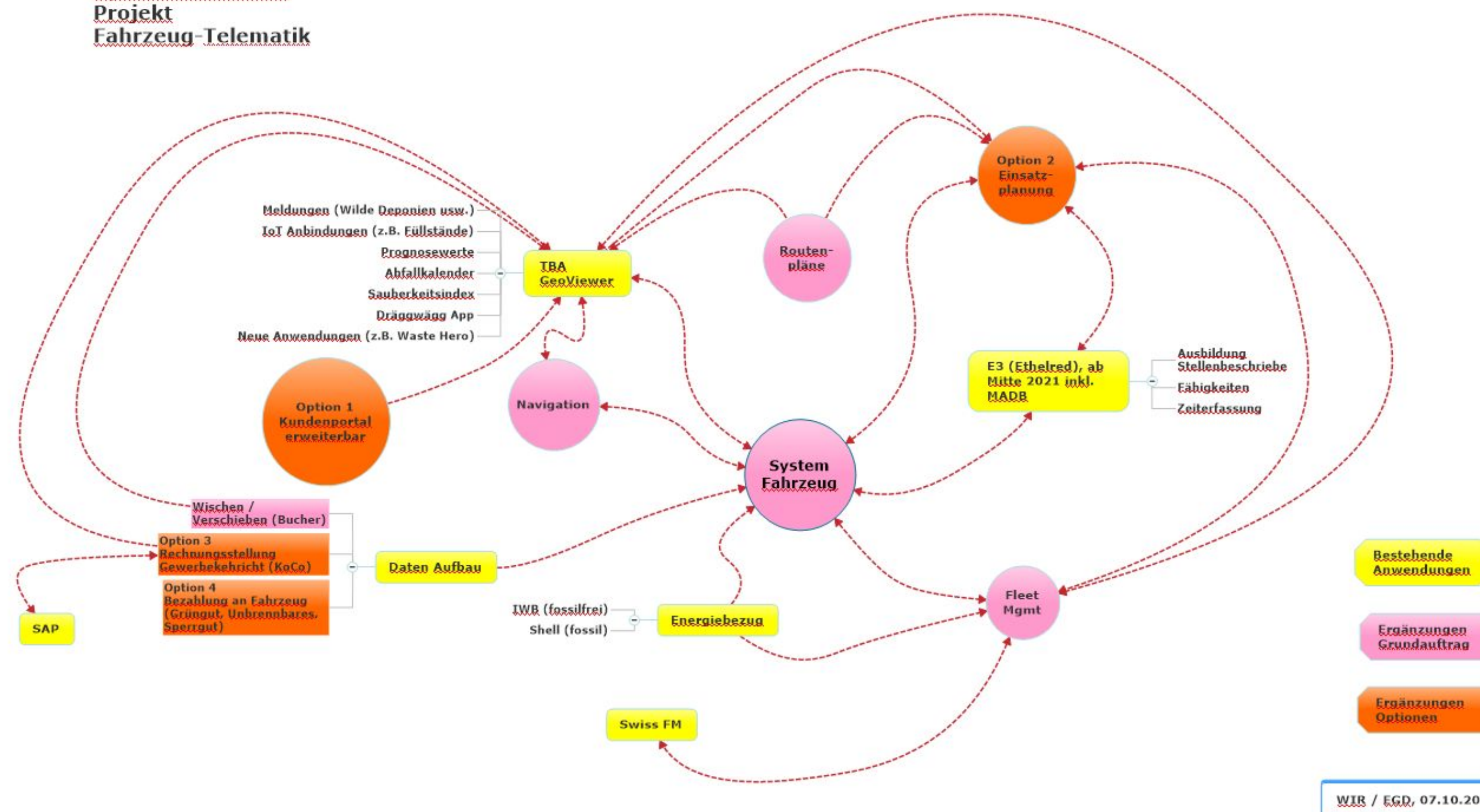
1. Much more information
  2. Superior planning tools
  3. Additional communication tools
  4. Automated reporting
- 
- Linked and integrated systems



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# Systems Integration

Systemlandschaft  
Projekt  
Fahrzeug-Telematik

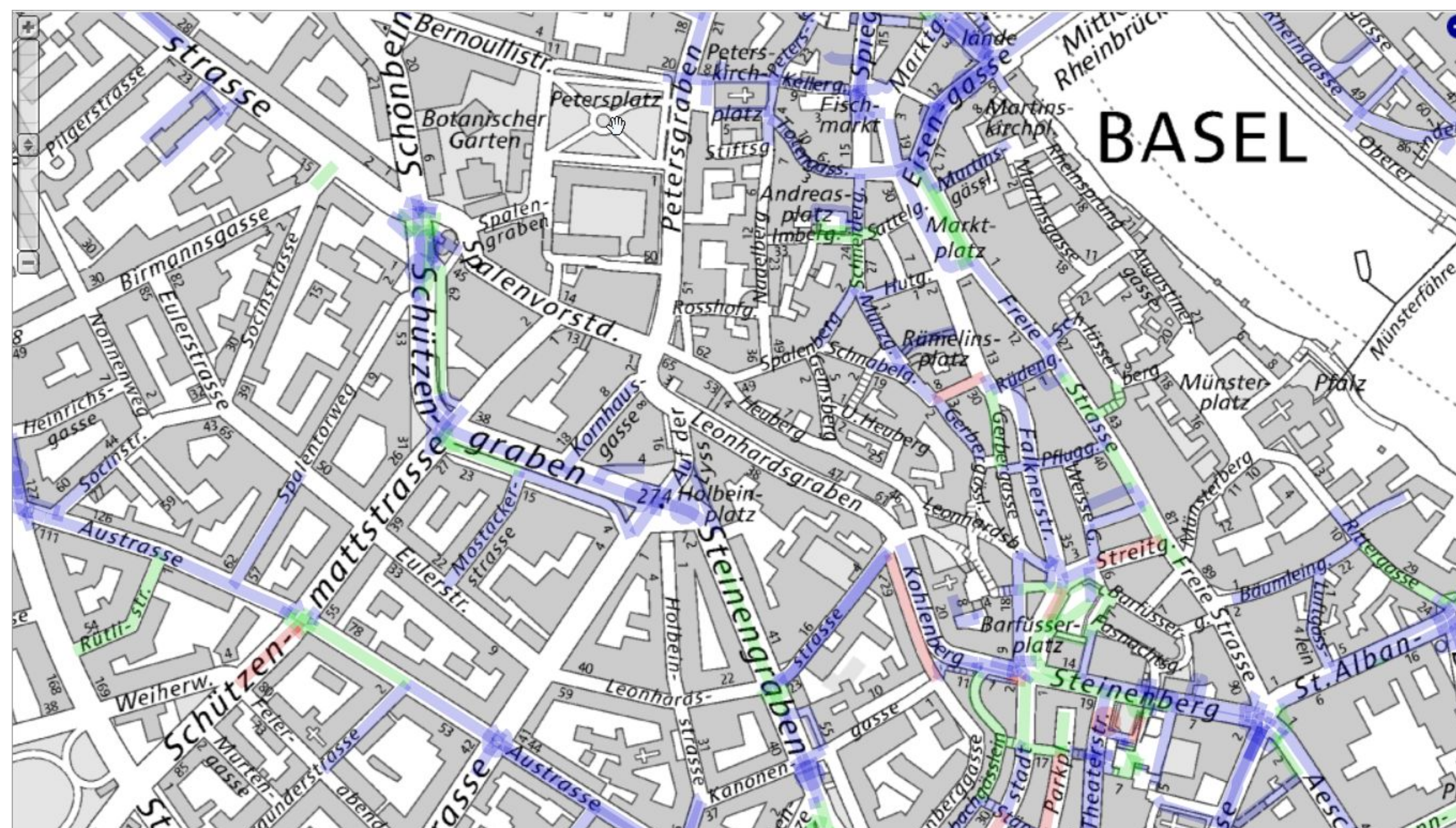






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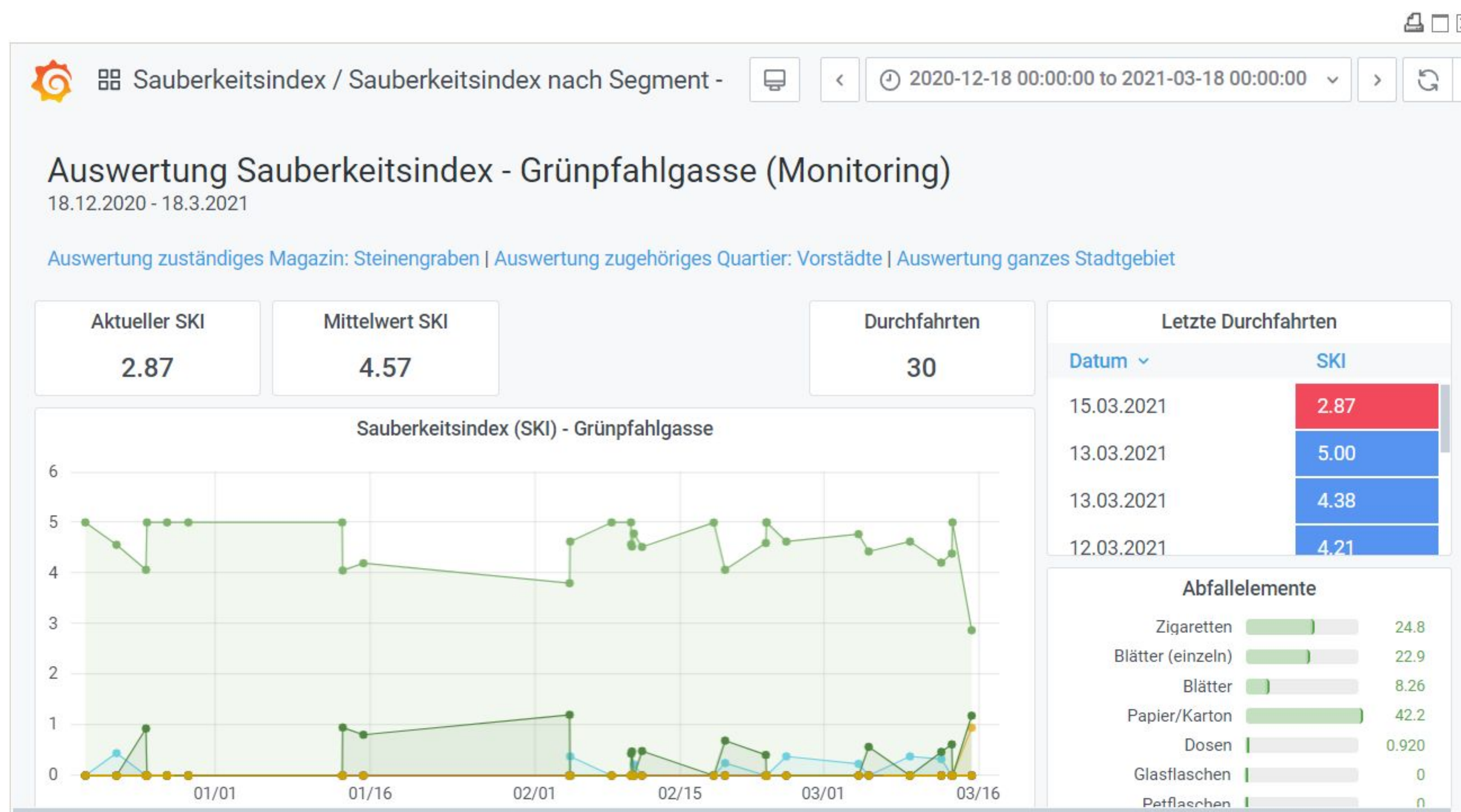
## Information – Clean City Index – Monitoring





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# Information – Clean City Index – Monitoring





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# Information – Clean City Index – Reporting

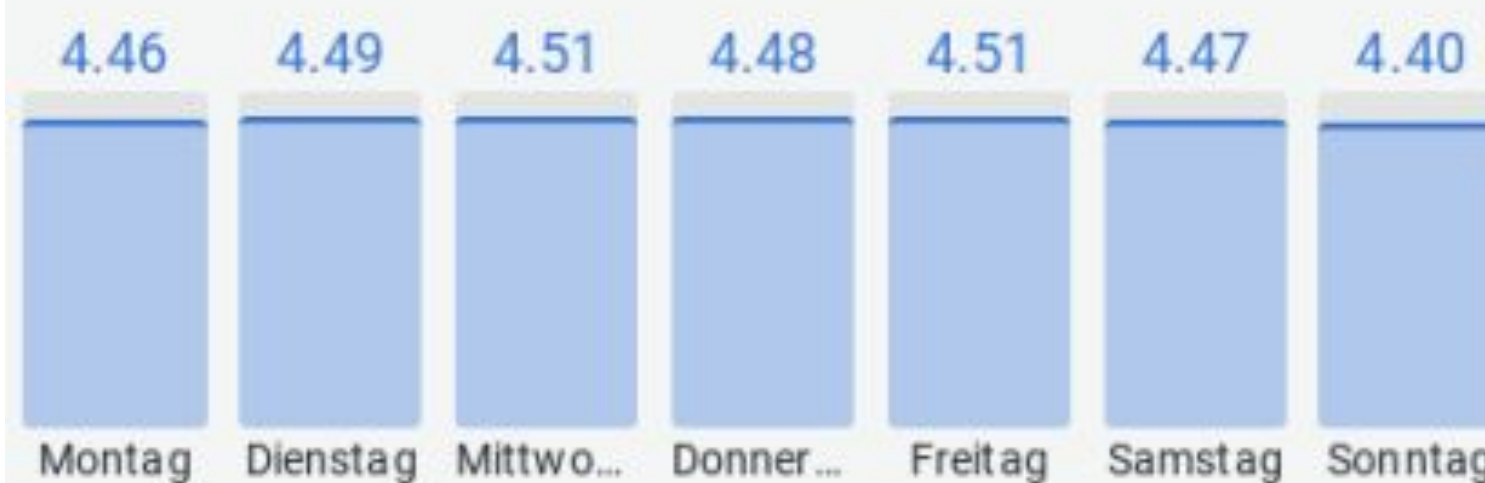
SKI pro Quartier in 2021

Altstadt Grossbasel	4.55
Altstadt Kleinbasel	4.54
Am Ring	4.52
Bachletten	4.51
Breite	4.70
Bruderholz	4.58
Clara	4.48
Gotthelf	4.50
Gundeldingen	4.57
Hirzbrunnen	4.65
Iselin	4.56
Kleinhüningen	4.44
Klybeck	4.43
Matthäus	4.45
Rosental	4.58
St. Alban	4.68
St. Johann	4.52
Vorstädte	4.62
Wettstein	4.65

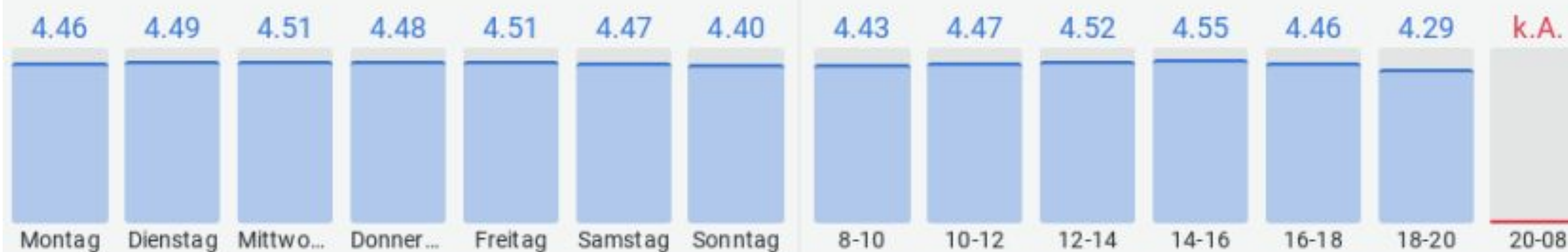
SKI der letzten 10 Jahre



SKI nach Wochentag in 2021



SKI nach Tageszeit in 2021





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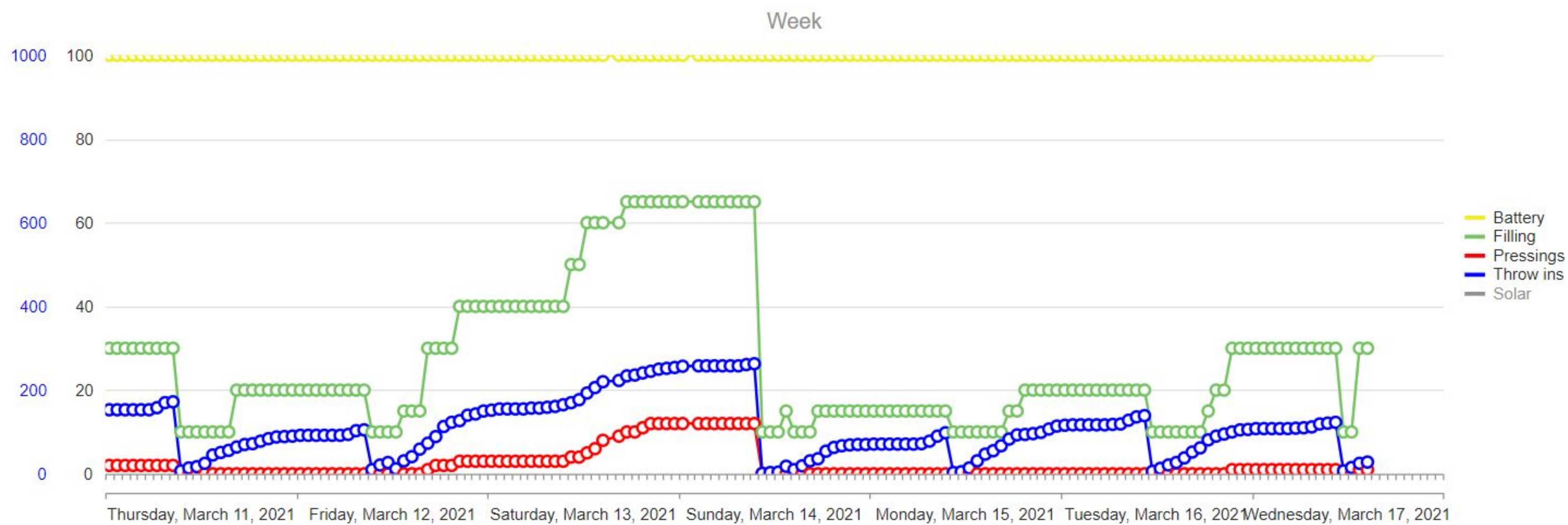
## Information – Solar Bins

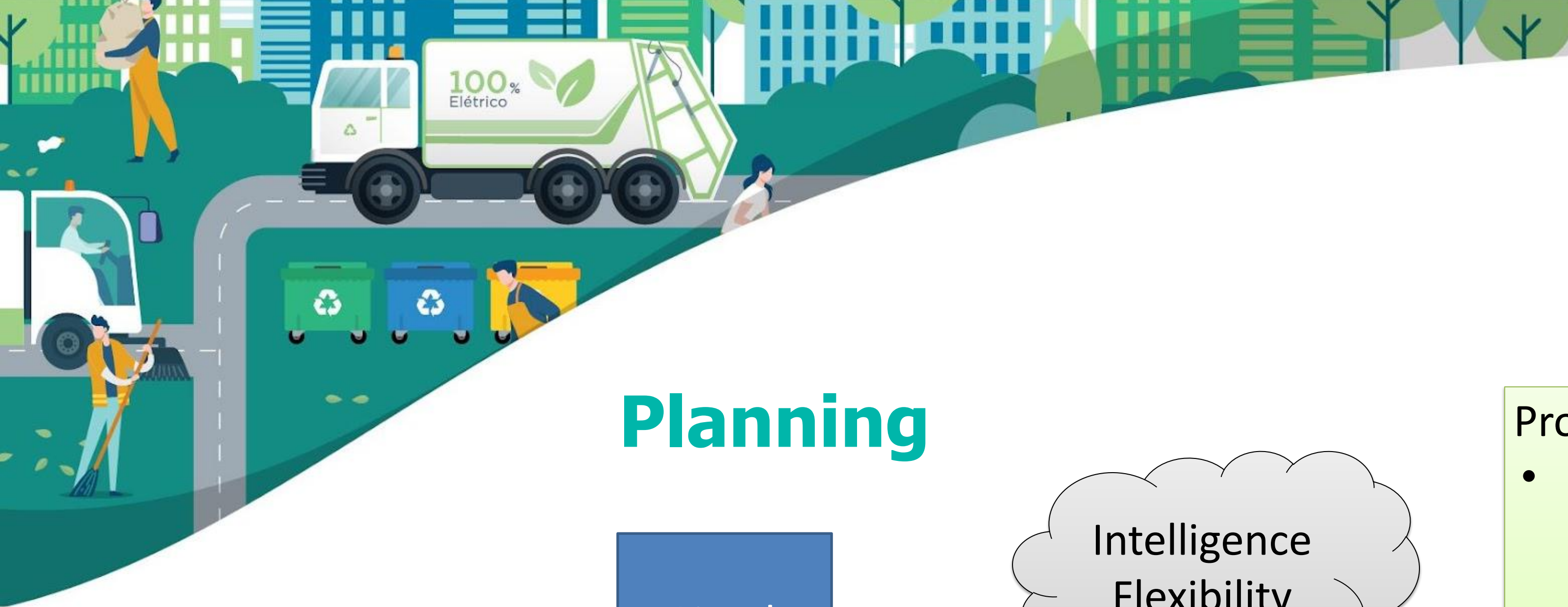
<input type="checkbox"/>	Serial	Name	Street	City	District ↓	Last contact	Throw ins	Pressings	Filled	Last emptied
<input type="checkbox"/>	MFU2020094	Ultra Fill	Oberer Rheinweg 135	Glaibasel	Wettsteinbrücke	3/17/2021 2:11:27 PM	34	0	0%	3/17/2021 2:11:27 PM
<input type="checkbox"/>	MF210038	Ultra Fill 120 LTR	Greifengasse Manor	Glaibasel	Wettsteinbrücke	3/17/2021 1:59:57 PM	112	0	0%	3/17/2021 8:55:02 AM
<input type="checkbox"/>	MF210022	Ultra Fill 120 LTR	Greifengasse Tramhaltestelle	Glaibasel	Wettsteinbrücke	3/17/2021 1:54:58 PM	100	0	20%	3/17/2021 7:49:23 AM
<input type="checkbox"/>	MFU2020113	Ultra Fill	Oberer Rheinweg 25	Glaibasel	Wettsteinbrücke	3/17/2021 2:03:37 PM	49	0	0%	3/17/2021 2:03:37 PM
<input type="checkbox"/>	MFU2020116	Ultra Fill	Museum Tinguely	Glaibasel	Wettsteinbrücke	3/17/2021 1:51:58 PM	10	0	10%	3/17/2021 10:54:47 AM
<input type="checkbox"/>	MFU2020092	Ultra Fill	Schaffhauserrheinweg 101	Glaibasel	Wettsteinbrücke	3/17/2021 2:21:34 PM	21	0	10%	3/16/2021 1:45:05 PM
<input type="checkbox"/>	MFU2020124	Ultra Fill	Schaffhauserrheinweg 35	Glaibasel	Wettsteinbrücke	3/17/2021 2:41:56 PM	1	0	10%	3/17/2021 2:17:18 PM
<input type="checkbox"/>	MFU2020121	Ultra Fill	Schaffhauserrheinweg 99	Glaibasel	Wettsteinbrücke	3/17/2021 2:21:18 PM	12	0	0%	3/17/2021 2:21:18 PM
<input type="checkbox"/>	MF210039	Ultra Fill 120 LTR	Greifengasse Manor	Glaibasel	Wettsteinbrücke	3/17/2021 2:34:13 PM	122	1	30%	3/17/2021 7:54:11 AM



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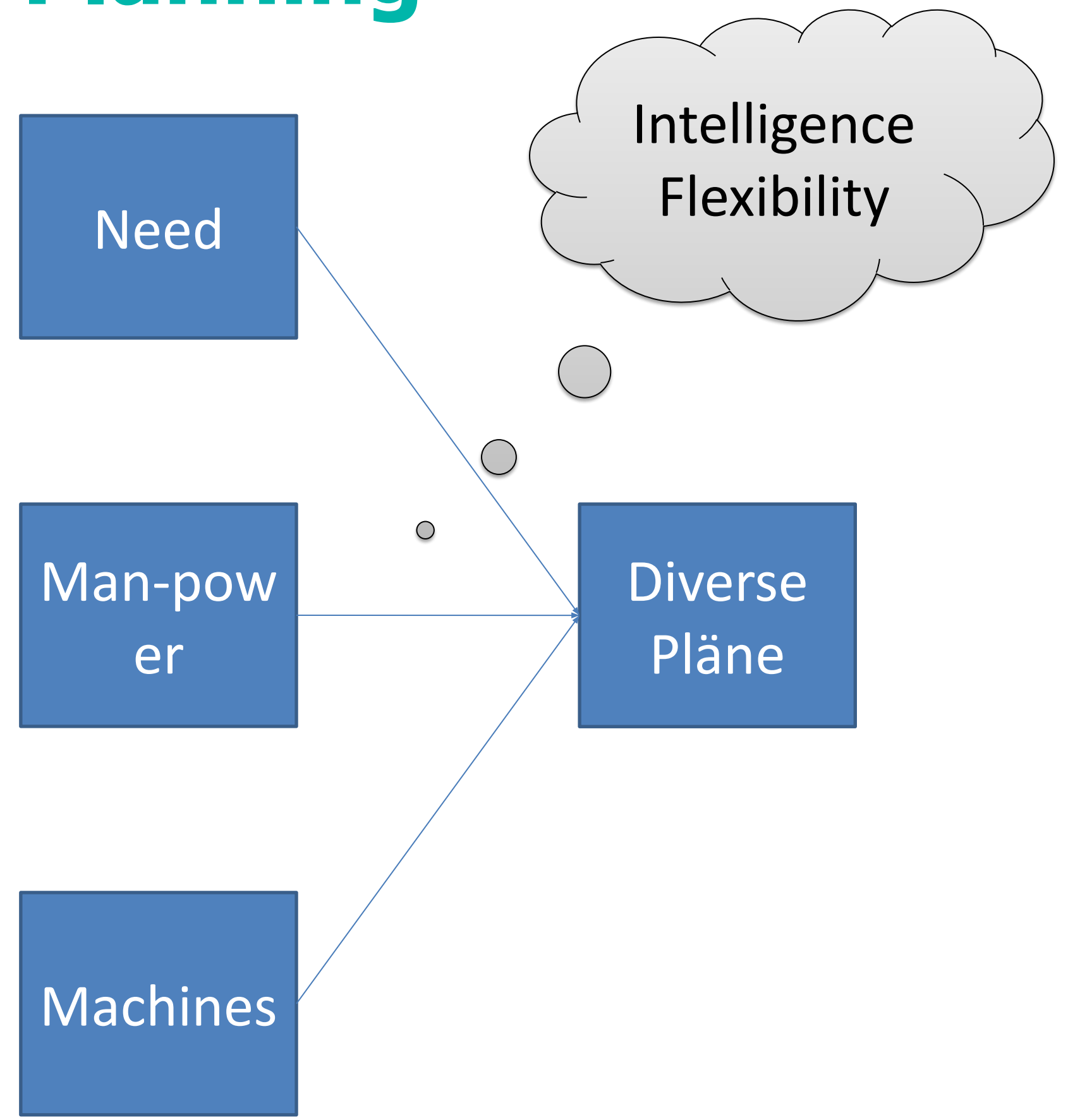
## Information – Solar Bins





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## Planning



### Project 1 – Cleanliness:

- Based on historical CCI-data, day of week, weather forecast etc, an algorithm predicts the development of the cleanliness in the streets.
- Combined with available resources (man power, machines), the algorithm creates routes which can be directly transmitted onto the boardcomputers.

### Project 2 – Bins:

- Based on historical data, an algorithm predicts the development of the filling levels of the bins.
- Combined with available resources (man power, machines), the algorithm creates routes which can be directly transmitted onto the boardcomputers.