



Tramola

Matsim User Meeting 2025

Moritz Dück

Bavarian Vacation Chaos?



MATSim workflow challenges

Working with large text files

120 Mb



network.xml.gz

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```



MATSim workflow challenges

Working with large text files

120 Mb



network.xml.gz

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```



```
tree = ET.parse(xml_file)
root = tree.getroot()

links_section = root.find('links')
if links_section is None:
    print("No <links> section found.")
    return []

node_id_set = set(node_id_list)
link_pairs = []

for link in links_section.findall('link'):
    from_node = link.get('from')
    to_node = link.get('to')
    if from_node in node_id_set and to_node in node_id_set:
        link_pairs.append((from_node, to_node))
```



MATSim workflow challenges

Managing Versioning

120 Mb



network.xml.gz

```
tree = ET.parse(xml_file)
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links_section = root.find('links')
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        link_pairs.append((from_node, to_node))
```



MATSim workflow challenges

Managing Versioning

120 Mb

network.xml.gz



network_cleaner.py

```
tree = ET.parse(  
root = tree.get
```

```
links_section = root.find('links')  
if links_section is None:  
    print("No <links> section found.")  
    return
```

network.ipynb

```
node_id_set = set(node_id_list)  
link_pairs = []
```

```
for link in links_section.findall('link'):  
    from_node = link.get('from')  
    to_node = link.get('to')  
    if from_node in node_id_set and to_node in node_id_set:  
        link_pairs.append((from_node, to_node))
```

bypass_changer.py

```
for link in link_pairs:  
    if link[0] == '1':  
        link[0] = '2'  
    if link[1] == '2':  
        link[1] = '1'
```

MATSim workflow challenges

Managing Versioning

120 Mb

network.xml.gz

```
tree = ET.parse  
root = tree.get
```

```
links_section = root.find('links')  
if links_section is None:  
    print("links> section found.")  
    return  
  
node_id_s  
node_id_list  
link_pair
```

```
for link in links_section.findall('link'):  
    from_node = link.get('from')  
    to_node = link.get('to')  
    if from_node in node_id_set and to_node in node_id_set:  
        link_pairs.append((from_node, to_node))
```

network.ipynb

bypass_changer.py

120 Mb
network-fixed.xml.gz

120 Mb
network-fixed2.xml.gz

120 Mb
**network-
fixed2_bypass_cap_
3000.xml.gz**





Tramola

Scenario

munich-v1.0-5pct.plans.xml.gz
munich-v1.0-network_1.xml.gz
munich.output_config.xml

Editor

The screenshot shows the Tramola Editor interface. On the left, there's a sidebar with a 'Network' section containing filters for Capacity ≥ 5000, Freespeed, Lanes ≥ 2, Length, and Modes. The main area displays a map of a highway segment in Munich, specifically A9, with several nodes connected by lines. One specific link is highlighted in blue. To the right of the map is a detailed preview panel for 'Link: 158021'. The preview panel includes fields for Capacity (6000 veh/hour), Freespeed (33.33 m/s), Lanes (3), Length (758 m), and Modes (car). There are also buttons for 'Reverse direction' and 'Add opposite direction', and sections for 'Add property' and 'Delete'.

Property	Value	Unit
Capacity	6000	veh/hour
Freespeed	33.33	m/s
Lanes	3	
Length	758	m
Modes	car	



Tramola

Scenario

munich-v1.0-5pct.plans.xml.gz

munich-v1.0-network_1.xml.gz

munich.output_config.xml

Editor

Changsets



Close Highway A9



Hyperloop Oktoberfest



BMW priority lanes



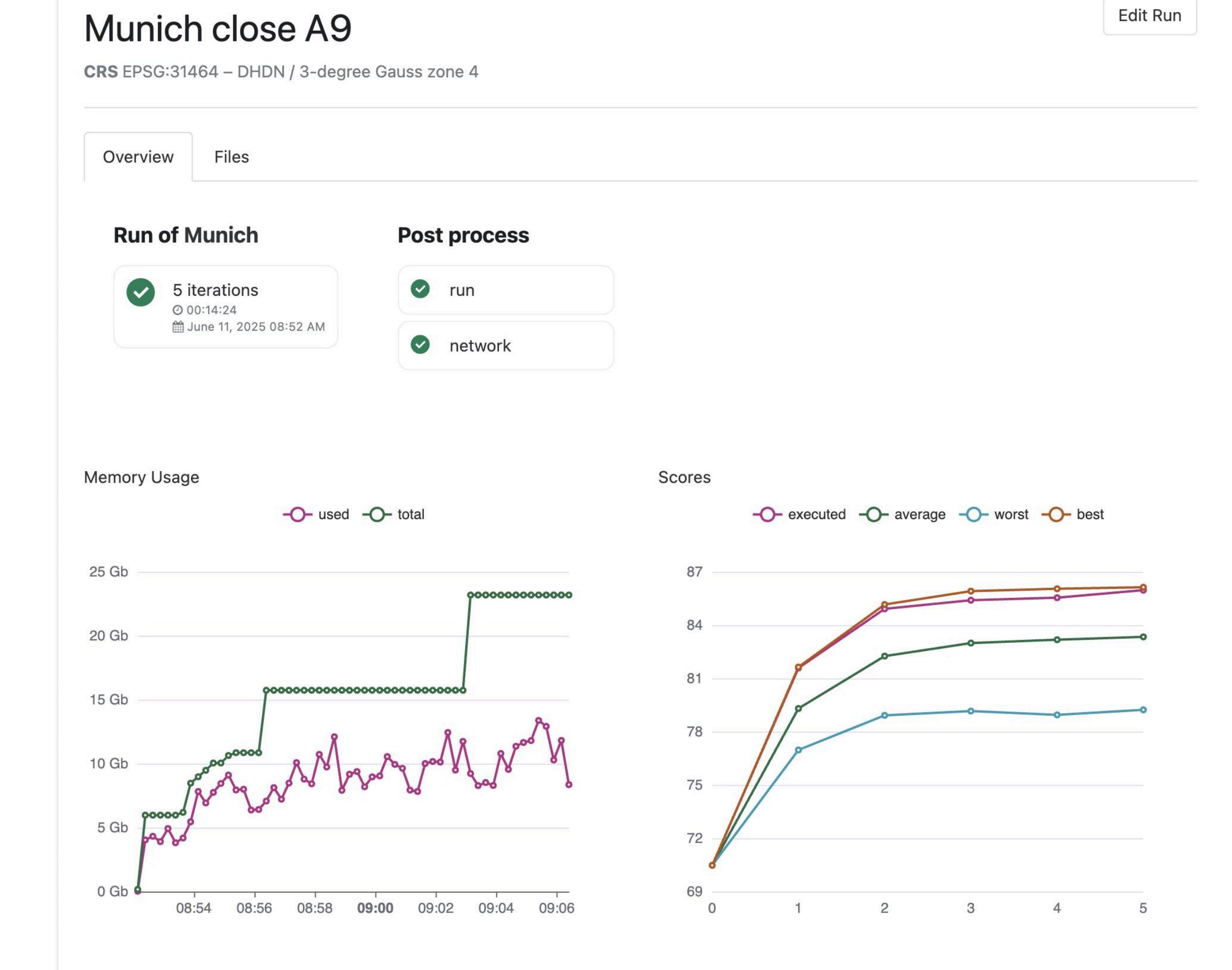
Tramola

Scenario

munich-v1.0-5pct.plans.xml.gz
munich-v1.0-network_1.xml.gz
munich.output_config.xml

Editor

Run





Tramola

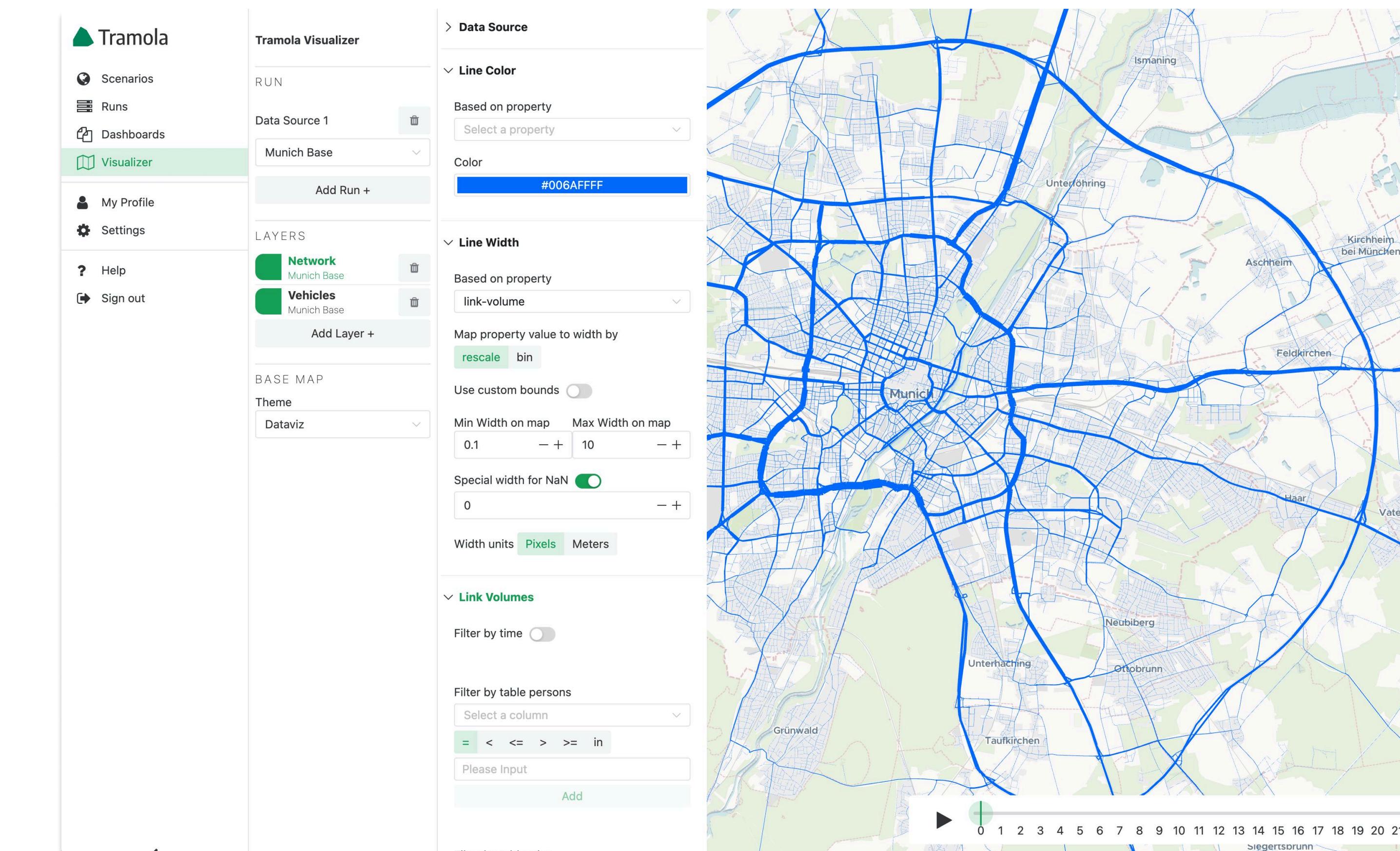
Scenario

munich-v1.0-5pct.plans.xml.gz
munich-v1.0-network_1.xml.gz
munich.output_config.xml

Editor

Run

Visualizer



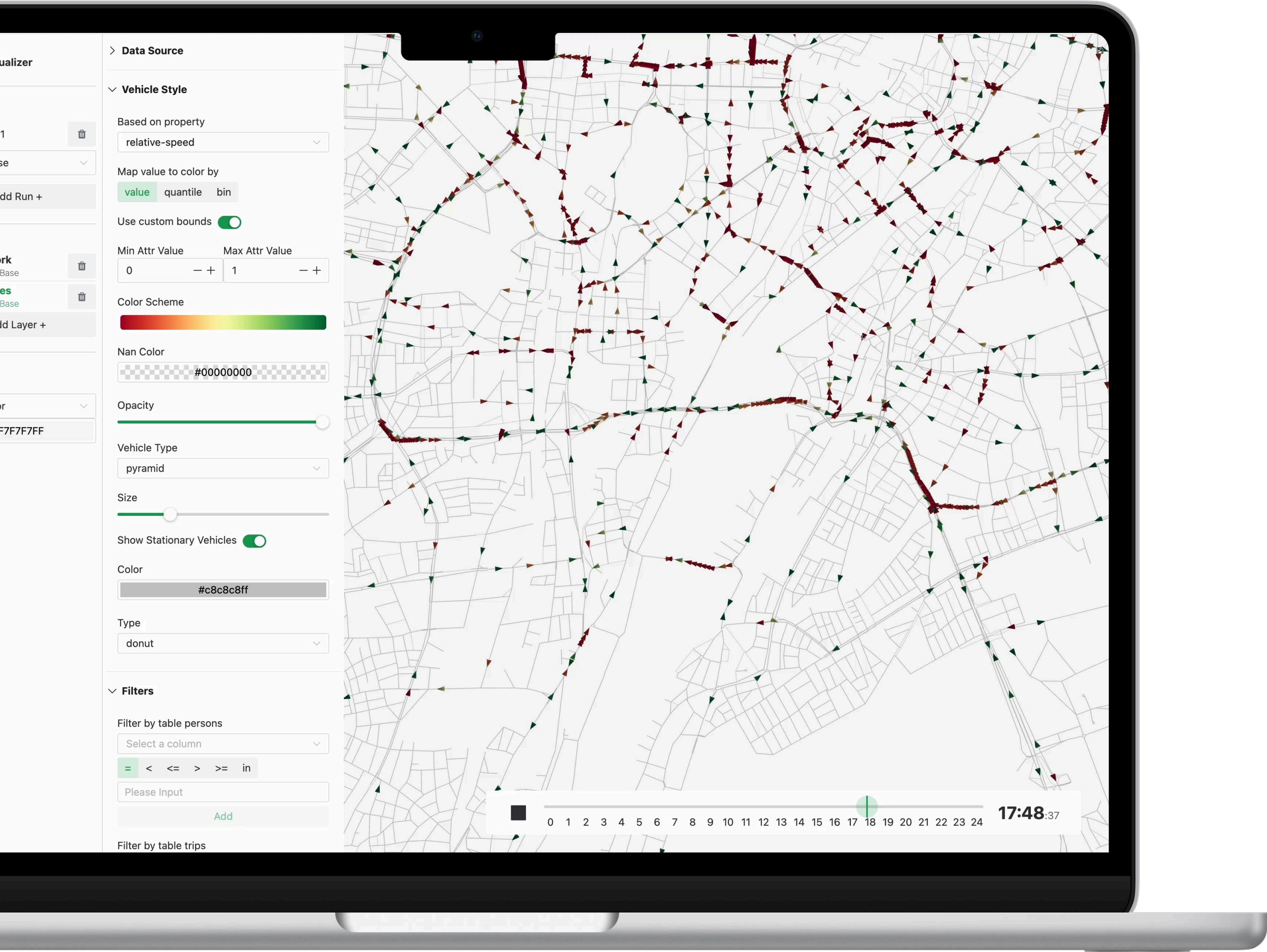


Tramola Editor

Edit network, transit and DRT

The screenshot displays the Tramola Editor application running on a tablet. The main view shows a map of a region around Munich A9, with a network of roads highlighted in blue. A 'Lasso' selection tool is active, allowing users to select specific areas or segments of the network. The left sidebar contains navigation buttons ('Back', 'Map', 'Search', 'Help') and sections for 'Changes' (with 'Unsaved Changes' count), 'Network' (with filters for 'Capacity', 'Freespeed', 'Lanes', and 'Length'), and 'DRT'. The right sidebar includes a 'Preview' section with 'Network Selection' tools ('Edit all', 'Delete all links', 'Add opposite for all', 'Reverse all') and a 'Attribute Distribution' histogram. Below the histogram is a table of network statistics:

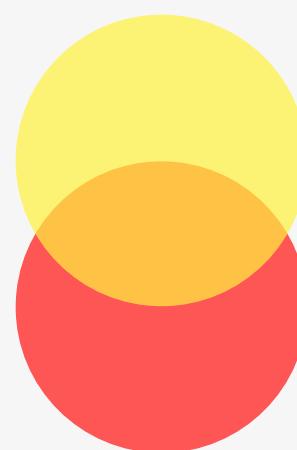
ID	Capacity	Freespeed	Lanes	Length	Direction
119253	1500	16.66	1	366	c Add
175335	1500	22.22	1	49	c Add
238717	1500	16.66	1	185	c Add
117731	600	8.33	1	226	c
117730	600	8.33	1	226	c
249778	300	2.77	1	78	c
498715	300	2.77	1	179	c
249779	300	2.77	1	78	c
498714	300	2.77	1	179	c
460984	600	8.33	1	35	c
460985	600	8.33	1	35	c
307529	3000	16.66	2	68	c Add
90602	600	13.88	1	381	c
90601	600	13.88	1	381	c
322630	600	8.33	1	204	c
322629	600	8.33	1	204	c
197735	600	13.88	1	14	c
197734	600	13.88	1	14	c
423986	6000	0.00001	3	636	c Add
109796	1500	27.77	1	27	c



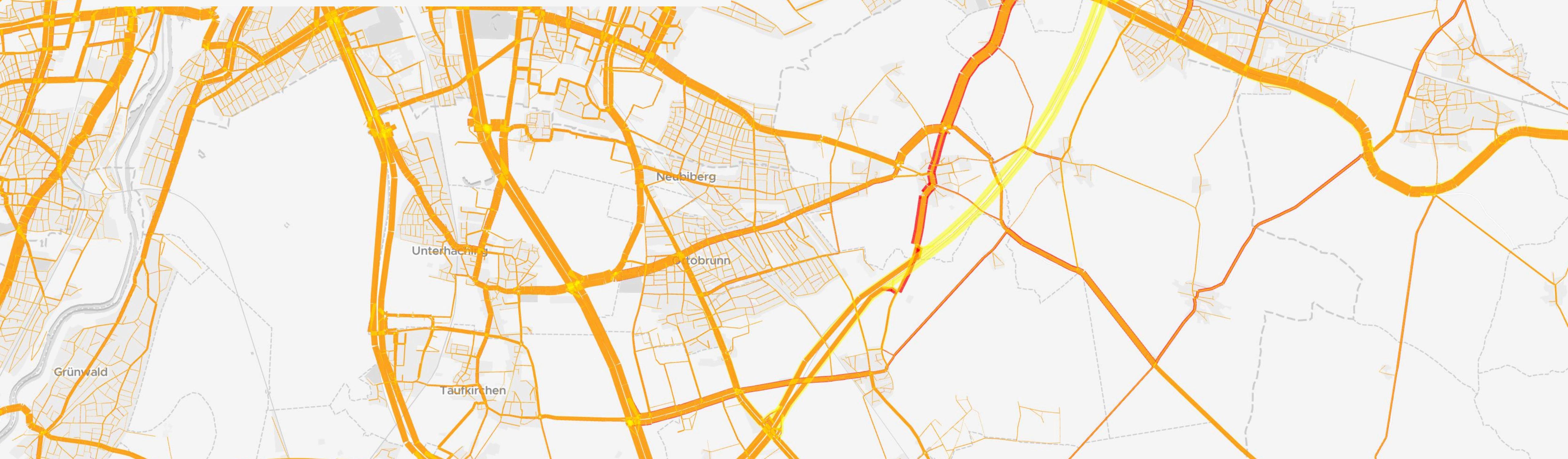
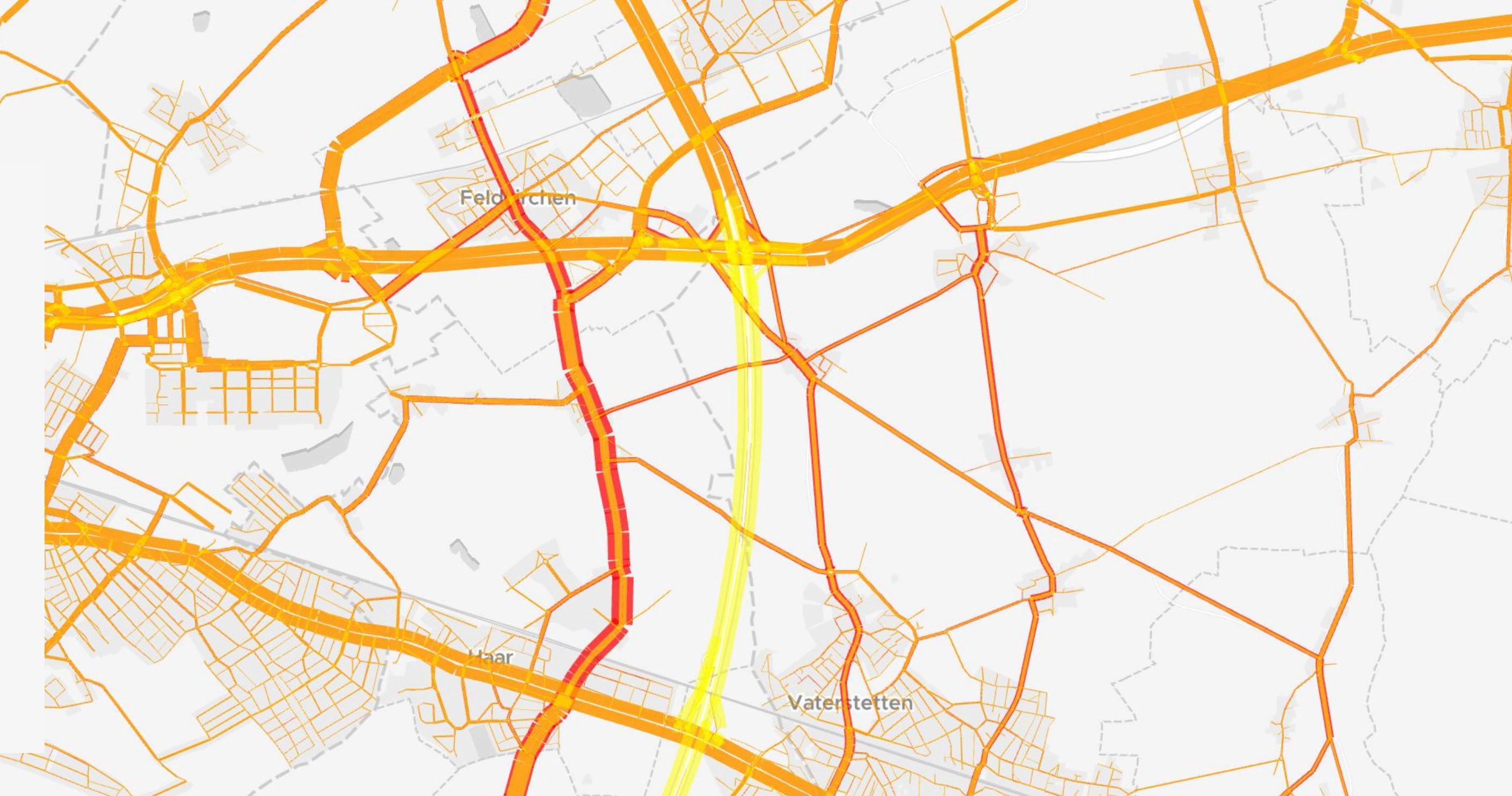
Tramola Visualizer

Easy, expressive and tailored to MATSim

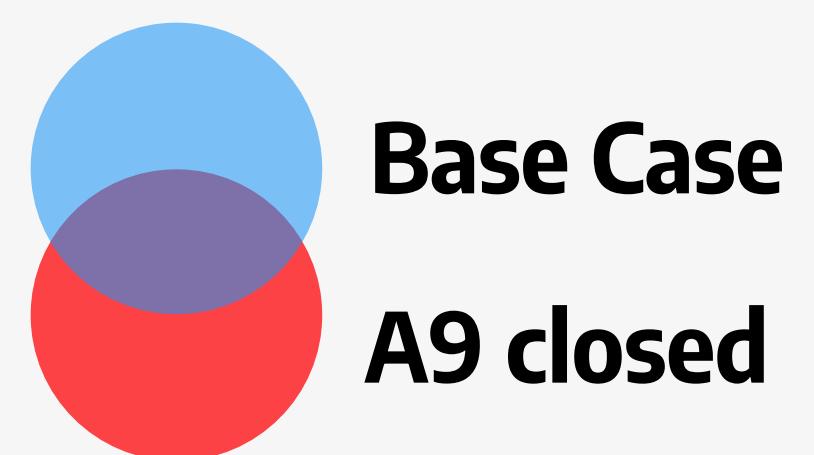
Link Volumes Aggregated for the whole day



Base Case
A9 closed



Link Volumes Aggregated for the
whole day





Scenarios

Runs

Dashboards

Visualizer

My Profile

Settings

Help

Sign out

Tramola Visualizer

RUN

Data Source 1



Munich close A9



Data Source 2



Munich Base



Add Run +

LAYERS

Network



Munich close A9

Vehicles



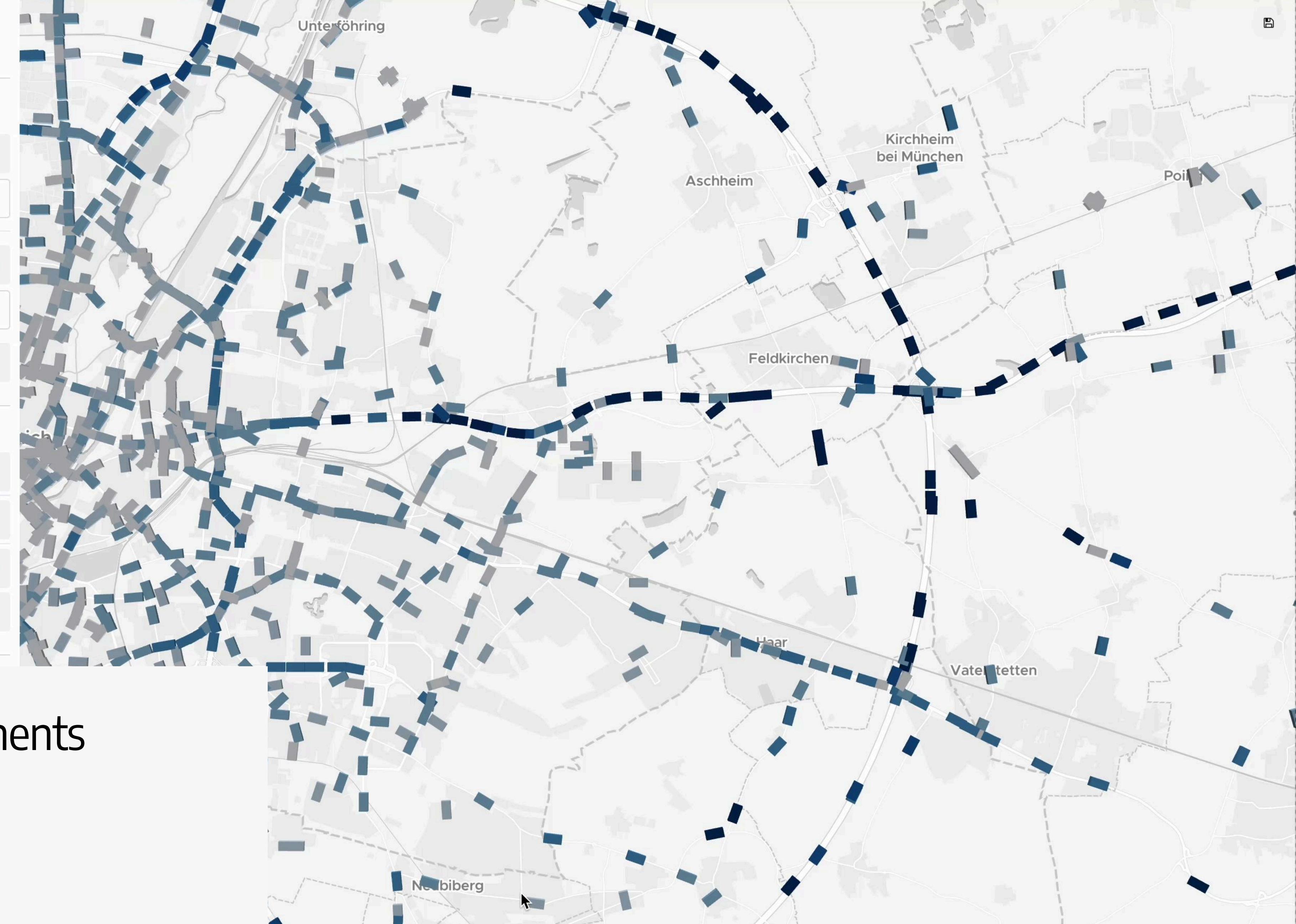
Munich close A9

Vehicles

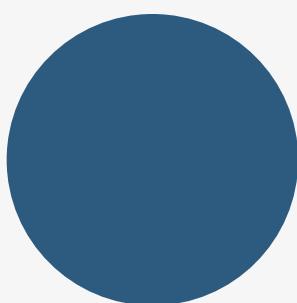


Munich Base

Add Layer +



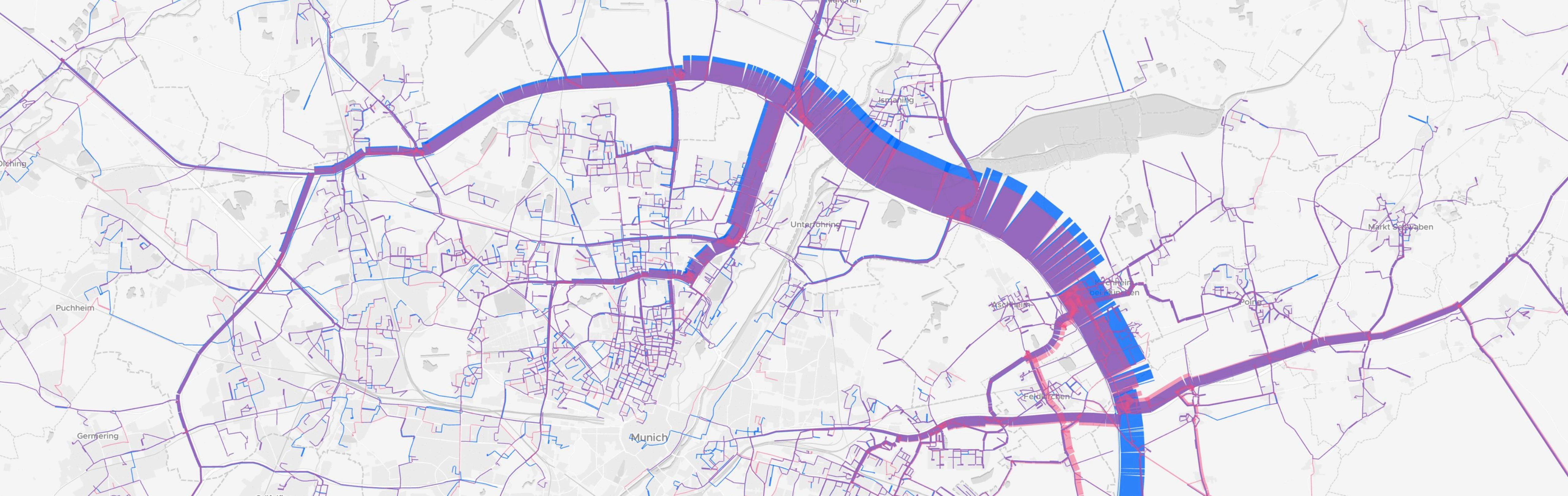
Visualize Vehicle Movements



Base Case

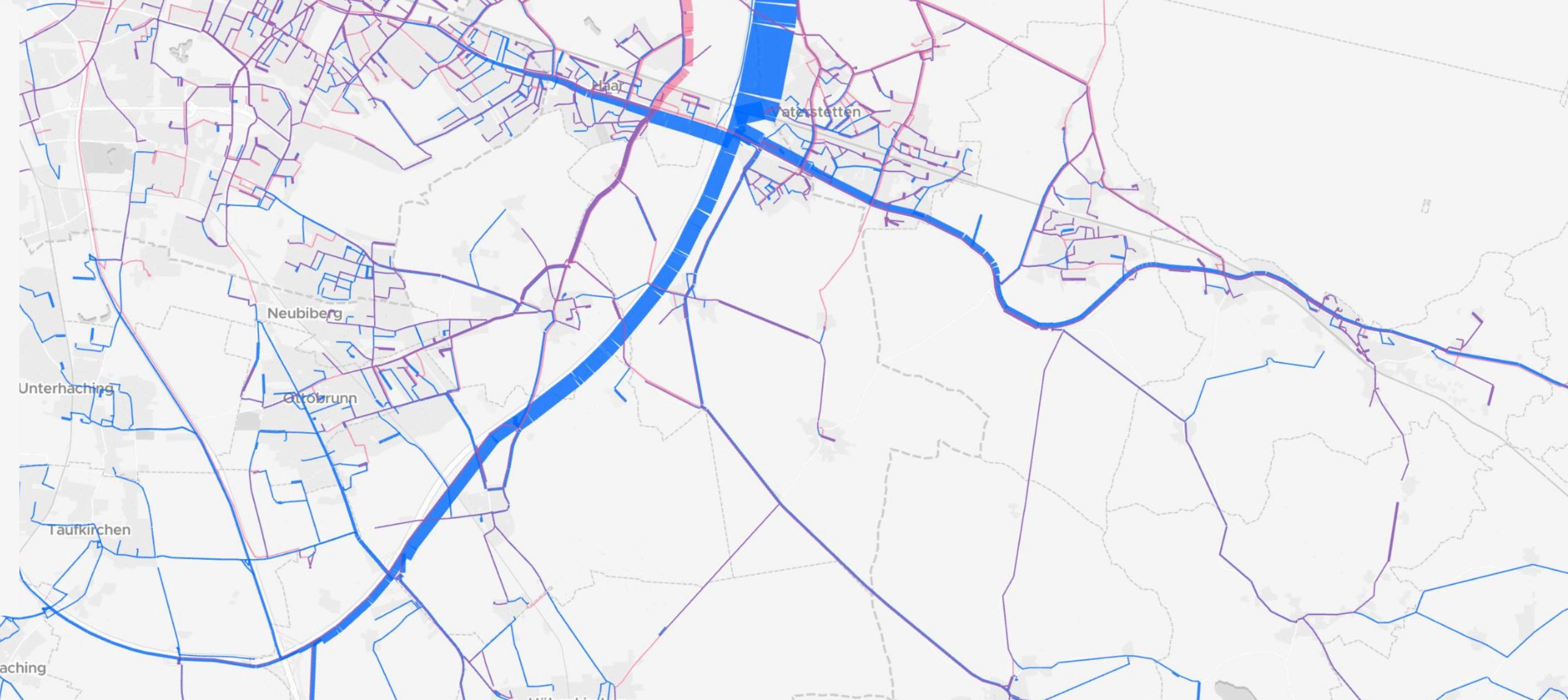
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

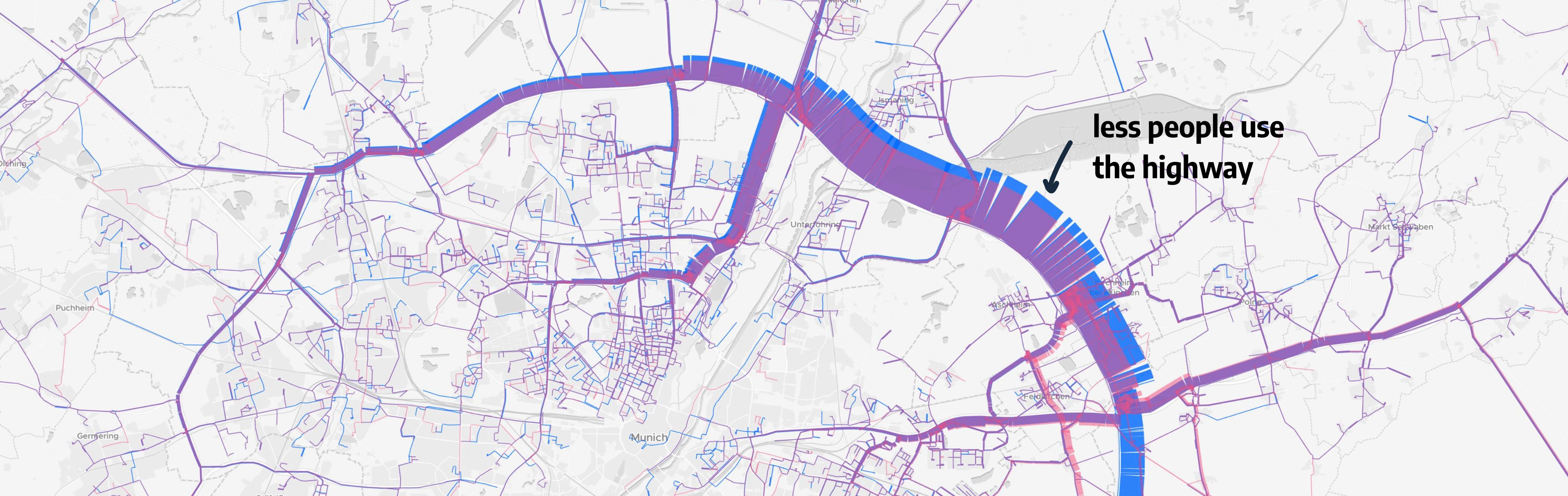
17:59:06



Flow Bundle Analysis (Spinnenanalyse)

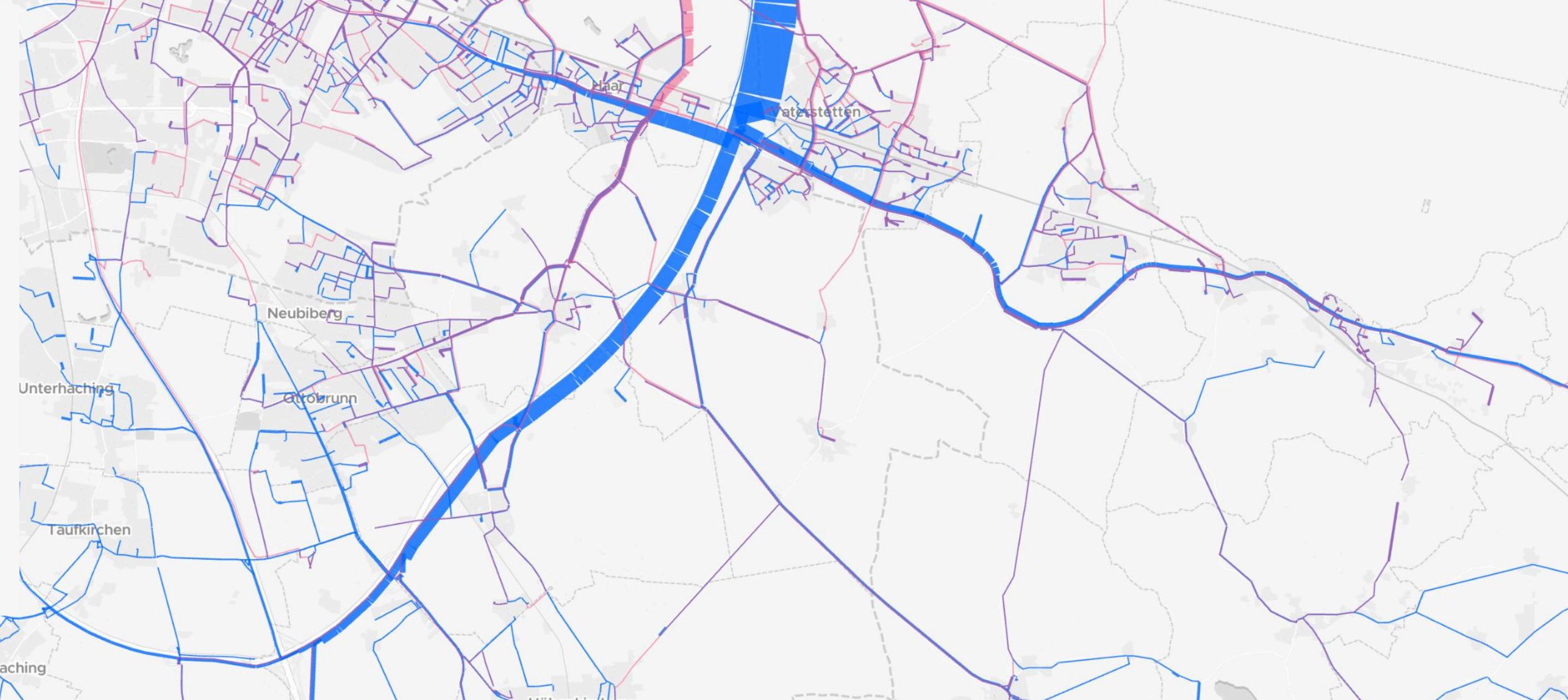
- █ base case
- █ A9 closed





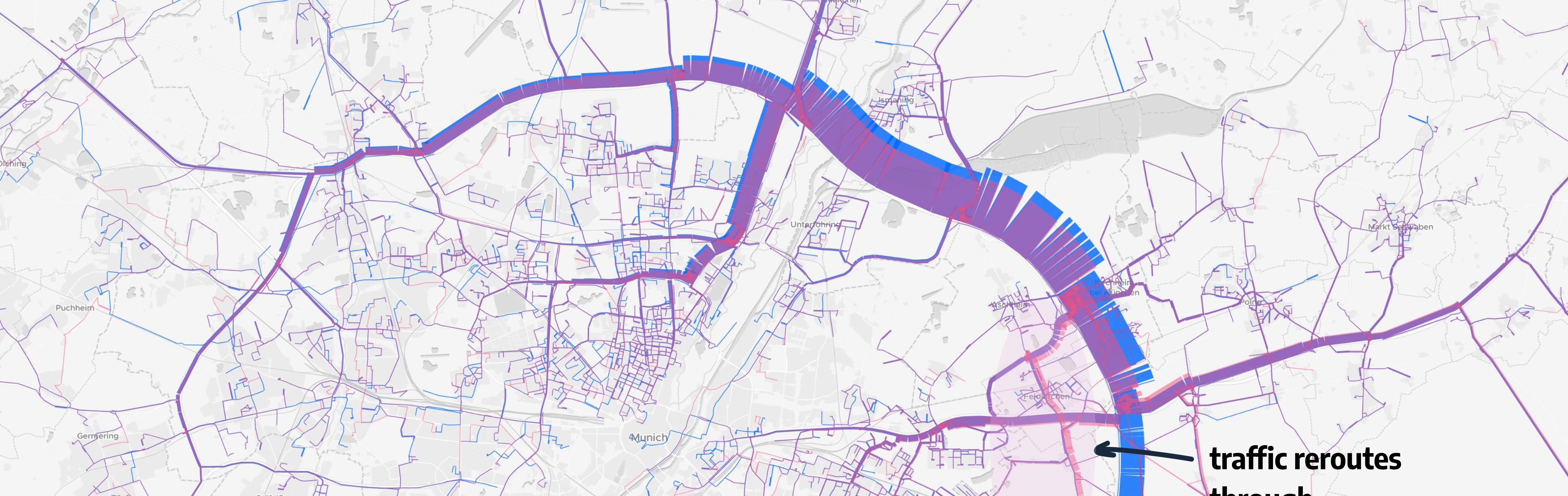
Flow Bundle Analysis (Spinnenanalyse)

- █ base case
- █ A9 closed

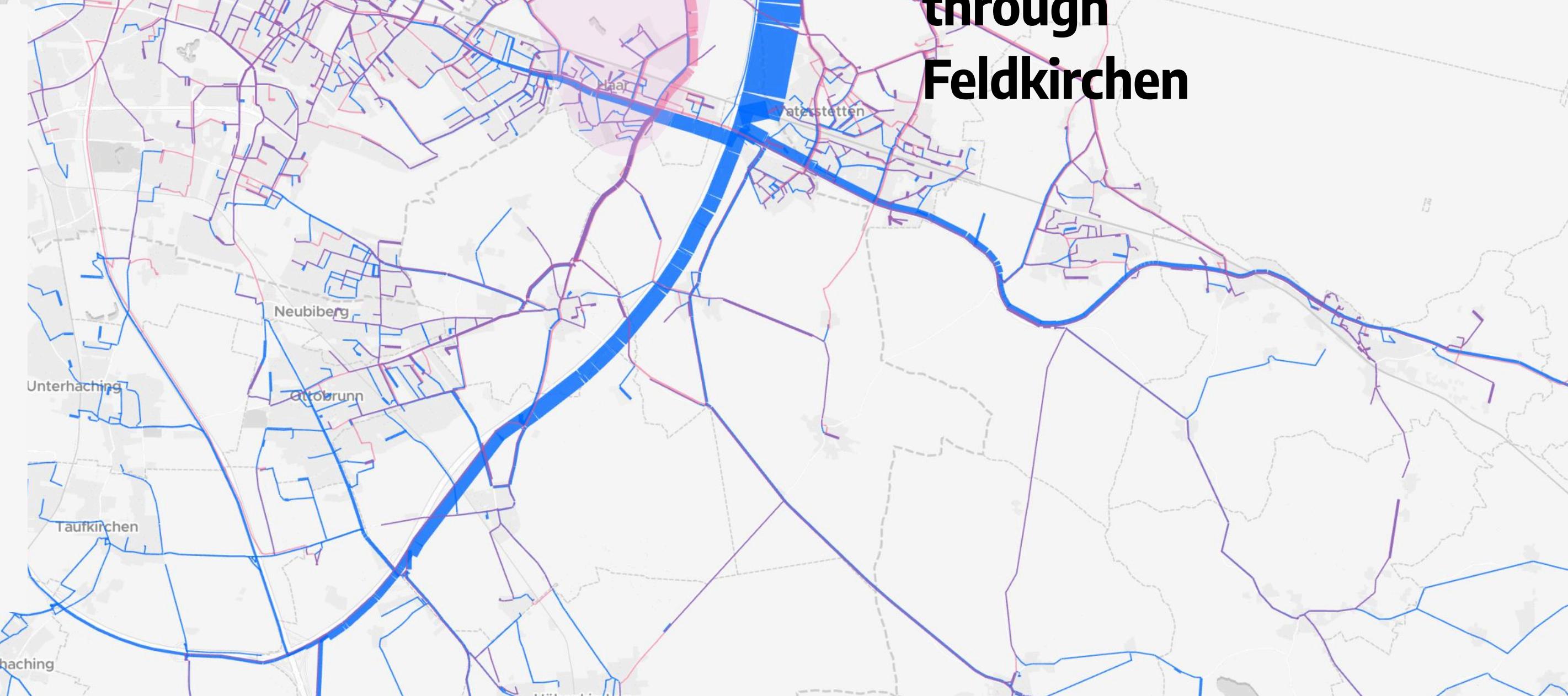


Flow Bundle Analysis (Spinnenanalyse)

- █ base case
- █ A9 closed



**traffic reroutes
through
Feldkirchen**





DRT Editor

Vehicles, Stops and Service Areas at your control

Outlook

Model Validation

Identify issues with your input data and validate your network right inside of Tramola

Easy Scenario Export

Export your scenario with changesets applied, so you can continue to work with your favorite workflow

Difference Plots & Transit Analysis

Analyse the impacts of your case studies with the click of a button

More?

Approach us! We want to learn how we can best support you.

Simunto

Thank you!

Happy to chat after the session!

simunto.com/tramola