

TomTom European Congestion Index



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TomTom Congestion Index

It is our mission to get drivers to their destinations faster, safer and greener.

Over the years we have invested in new ideas and technologies with the aim of bringing significant benefits to drivers, businesses and society as a whole.

In 2007 we started a groundbreaking initiative that helped us to understand how we could guide drivers in a better way. We set out to build a more precise view of traffic flow over the entire road network to enable us to give drivers more exact route information and arrival times.

With the support of millions of TomTom customers we have captured anonymous travel time information in all the territories where we are active. Rather than relying on theoretical models, we are now able to understand real-life driving patterns by time of day, day of week, time of year and around special events. This initiative is unique in that we are able to capture, evaluate and redistribute vehicle-centric travel information on a global scale.

Over the years we have built the world's largest database of historic travel times and the most detailed and accurate real-time traffic information available. Based on the insights we gained we have developed advanced routing technologies that help millions of drivers get to their destinations faster, safer and with lower emissions of greenhouse gases.

Contrary to popular belief, there are often multiple ways to reach a destination and avoid traffic congestion. Finding the fastest route is a complex task. Now, thanks to advanced routing technologies, motorists can drive with dynamic navigation systems which quickly react and adjust routes to the ever changing traffic situations.

By helping drivers to find a faster route we can also demonstrate that the total available capacity on the road network increases. If a small percentage of drivers uses different (and faster) routes, congestion can be alleviated across the entire road network, thereby benefitting all drivers.

By offering a more accurate analysis of traffic flows, we help identify and pinpoint congestion trouble spots more effectively. And by routing traffic away from congested areas we can play a key role in easing congestion in cities and urban areas.

Our historical archive of real travel times has paved the way for the creation of the TomTom Congestion Index – the most accurate and comprehensive barometer of traffic congestion in major cities all over the world.

About the TomTom Congestion Index

With the publication of the TomTom Congestion Index we are aiming to provide the general public, industry and policy makers with unique and unbiased information about congestion levels in urban areas*.

The methodology that is used in this report compares travel times* during non-congested periods (free flow*) with travel times* in peak hours*. The difference is expressed as a percentage increase in travel time*. We take into account local roads, arterials and highways. All data is based on actual GPS based measurements and for each city* the sample size is expressed in total number of measured miles for the period.

A comparison is made for the travel times* during the quarter and this is compared with the same period a year ago.

As well as assigning and ranking the overall congestion levels of over 50 cities*, the report evaluates the congestion levels* in cities at different times of the day and on different days of the week.

Individual city reports include more detailed information such as the most congested day*, average free flow speed*, time delay per year for commuters* and congestion levels on highways* and local roads.

To download a copy of the report go to: www.tomtom.com/congestionindex.

If you would like to know more about TomTom's traffic solutions, please contact your local TomTom office or sales@tomtom.com.

For questions or comments about this report, please contact us at congestionindex@tomtom.com.

Note: words with a * are explained in the glossary at the end of the report.

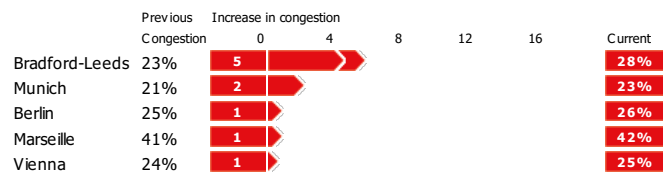
Europe

Europe congestion level

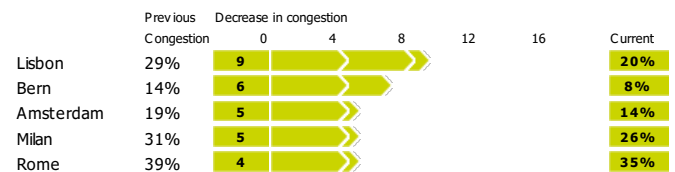
24%



Top 5 - Increasing congestion



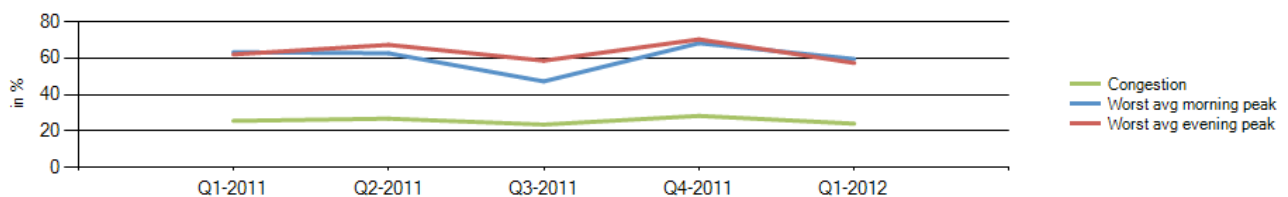
Top 5 - Decreasing congestion



Top 10 cities

Rank	Prev. Year	City	Country	Congestion	Morning peak	Evening peak	Highways	Non-Highways
1	1	--- Warsaw	Poland	42%	89%	86%	39%	45%
2	2	--- Marseille	France	41%	79%	81%	23%	52%
3	3	--- Rome	Italy	34%	76%	66%	24%	40%
4	4	--- Brussels	Belgium	34%	82%	86%	27%	40%
5	6	▲ Paris	France	32%	72%	63%	29%	36%
6	5	▼ Dublin	Ireland	30%	70%	62%	23%	42%
7	19	▲ Bradford-Leeds	United Kingdom	28%	63%	60%	23%	34%
8	9	▲ London	United Kingdom	27%	48%	50%	10%	38%
9	8	▼ Stockholm	Sweden	27%	65%	62%	22%	32%
10	11	▲ Hamburg	Germany	27%	49%	42%	17%	35%

Comparison per quarter



Europe

Rank	Prev. Year	City	Country	Congestion	Morning peak	Evening peak	Highways	Non-Highways
1	1	--- Warsaw	Poland	42%	89%	86%	39%	45%
2	2	--- Marseille	France	41%	79%	81%	23%	52%
3	3	--- Rome	Italy	34%	76%	66%	24%	40%
4	4	--- Brussels	Belgium	34%	82%	86%	27%	40%
5	6	▲ Paris	France	32%	72%	63%	29%	36%
6	5	▼ Dublin	Ireland	30%	70%	62%	23%	42%
7	19	▲ Bradford-Leeds	United Kingdom	28%	63%	60%	23%	34%
8	9	▲ London	United Kingdom	27%	48%	50%	10%	38%
9	8	▼ Stockholm	Sweden	27%	65%	62%	22%	32%
10	11	▲ Hamburg	Germany	27%	49%	42%	17%	35%
11	12	▲ Cologne	Germany	26%	54%	47%	24%	32%
12	7	▼ Milan	Italy	26%	71%	53%	18%	32%
13	15	▲ Berlin	Germany	26%	42%	44%	22%	29%
14	17	▲ Vienna	Austria	24%	42%	43%	16%	31%
15	14	▼ Oslo	Norway	24%	66%	70%	20%	31%
16	13	▼ Naples	Italy	24%	34%	43%	10%	37%
17	18	▲ Turin	Italy	23%	50%	42%	11%	29%
18	22	▲ Munich	Germany	23%	50%	36%	17%	33%
19	23	▲ Birmingham	United Kingdom	21%	51%	43%	14%	32%
20	24	▲ Luxembourg	Luxembourg	21%	51%	47%	12%	34%
21	16	▼ Barcelona	Spain	21%	49%	39%	14%	24%
22	10	▼ Lisbon	Portugal	20%	41%	49%	9%	21%
23	21	▼ Helsinki	Finland	20%	43%	43%	15%	26%
24	20	▼ Prague	Czech Republic	20%	46%	31%	13%	27%
25	26	▲ Ruhr region west	Germany	17%	38%	28%	13%	28%
26	29	▲ Copenhagen	Denmark	16%	42%	29%	5%	26%
27	27	--- Madrid	Spain	16%	41%	33%	9%	23%
28	30	▲ Ruhr region east	Germany	15%	31%	28%	11%	24%
29	25	▼ Amsterdam	Netherlands	15%	33%	31%	8%	28%
30	28	▼ Valencia	Spain	14%	21%	21%	7%	23%
31	31	--- Bern	Switzerland	8%	19%	31%	0%	30%

Amsterdam



Congestion level

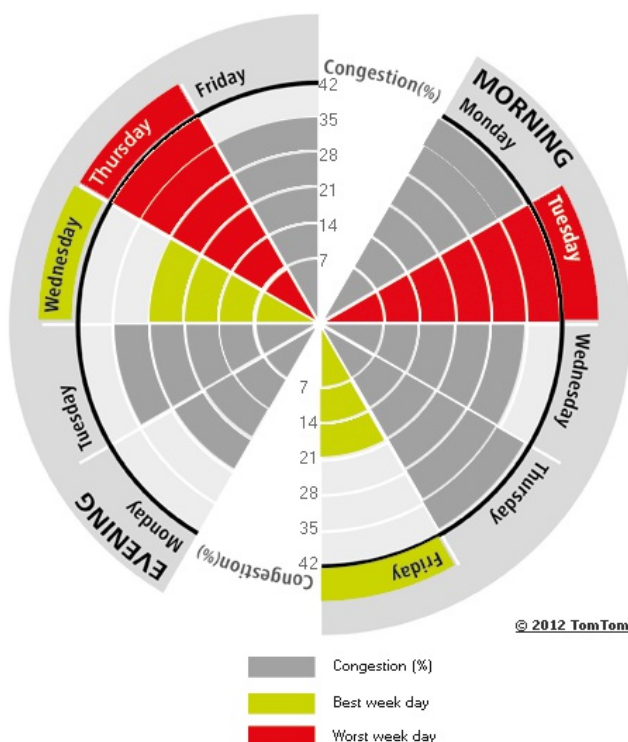
15%

Ranking

Ranking of city compared to continent	29/31
Previous ranking	25 ▼
Congestion level on highways	8%
Congestion level on non-highways	28%
Delay per hour driven in peak period	19 min
Delay per year with a 30 min commute	55 h

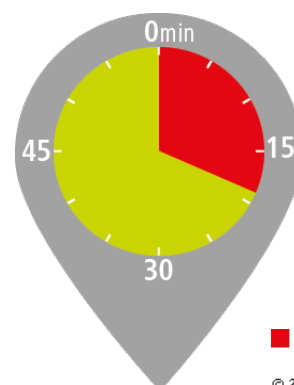
The weekly congestion pattern:

Best and worst peak periods of the week

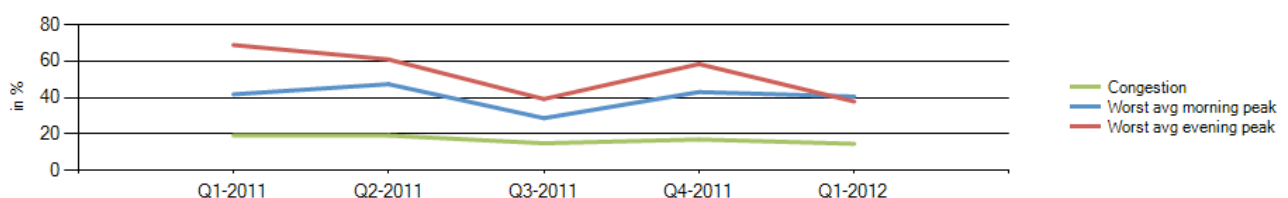


Most congested specific day	Fri 3 Feb 2012
Average free flow speed	35 mi/h
Average speed during worst peak period	32 mi/h
Total network length	575 mi
Total network length highways	124 mi
Total network length non-highways	451 mi
Total vehicle miles	6 908 941 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Barcelona



Congestion level

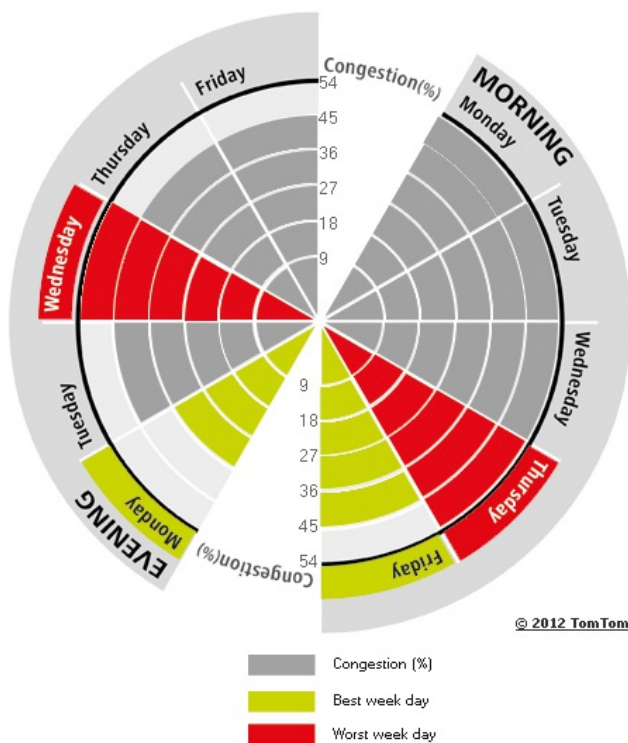
21%

Ranking

Ranking of city compared to continent	21/31
Previous ranking	16 ▼
Congestion level on highways	14%
Congestion level on non-highways	24%
Delay per hour driven in peak period	26 min
Delay per year with a 30 min commute	69 h

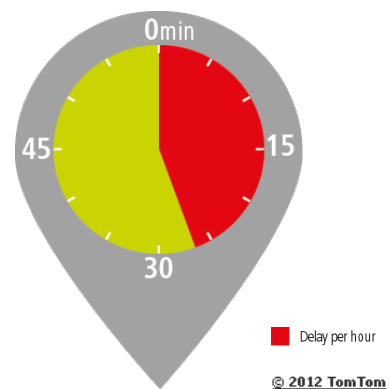
The weekly congestion pattern:

Best and worst peak periods of the week

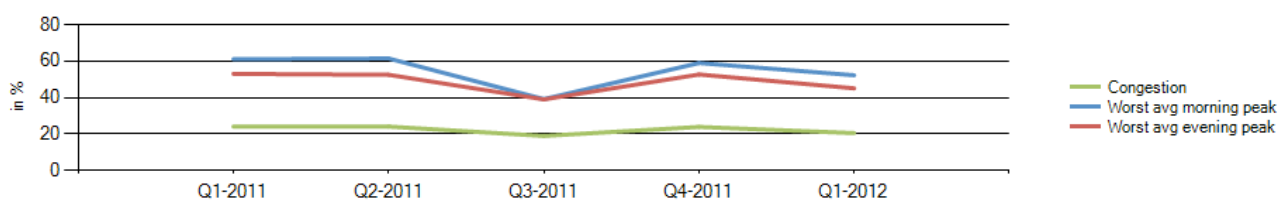


Most congested specific day	Fri 30 Mar 2012
Average free flow speed	35 mi/h
Average speed during worst peak period	31 mi/h
Total network length	391 mi
Total network length highways	105 mi
Total network length non-highways	286 mi
Total vehicle miles	2 746 715 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Bern



Congestion level

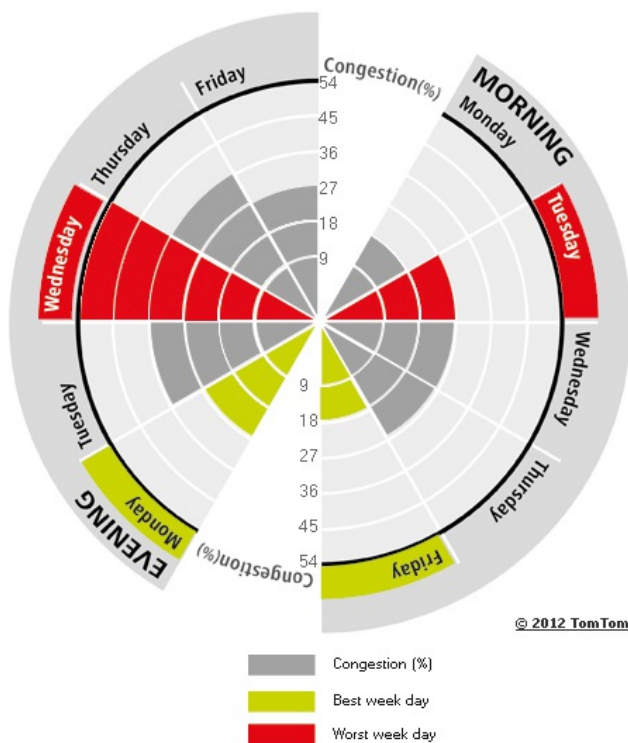
8%

Ranking

Ranking of city compared to continent	31/31
Previous ranking	31 ---
Congestion level on highways	0%
Congestion level on non-highways	30%
Delay per hour driven in peak period	15 min
Delay per year with a 30 min commute	46 h

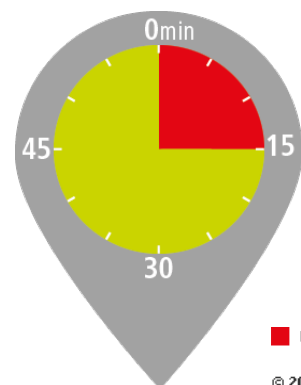
The weekly congestion pattern:

Best and worst peak periods of the week

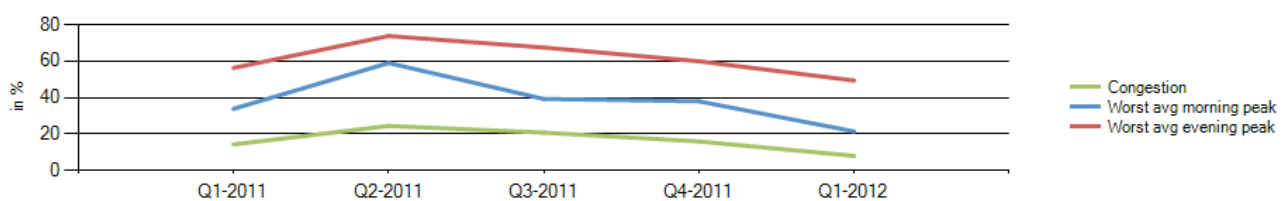


Most congested specific day	Wed 14 Mar 2012
Average free flow speed	30 mi/h
Average speed during worst peak period	27 mi/h
Total network length	126 mi
Total network length highways	21 mi
Total network length non-highways	104 mi
Total vehicle miles	338 785 mi

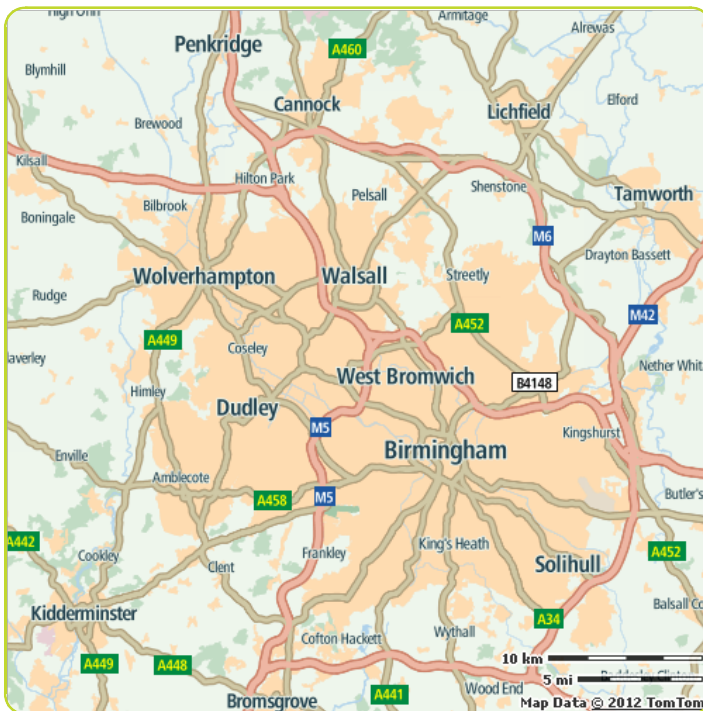
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Birmingham



Congestion level

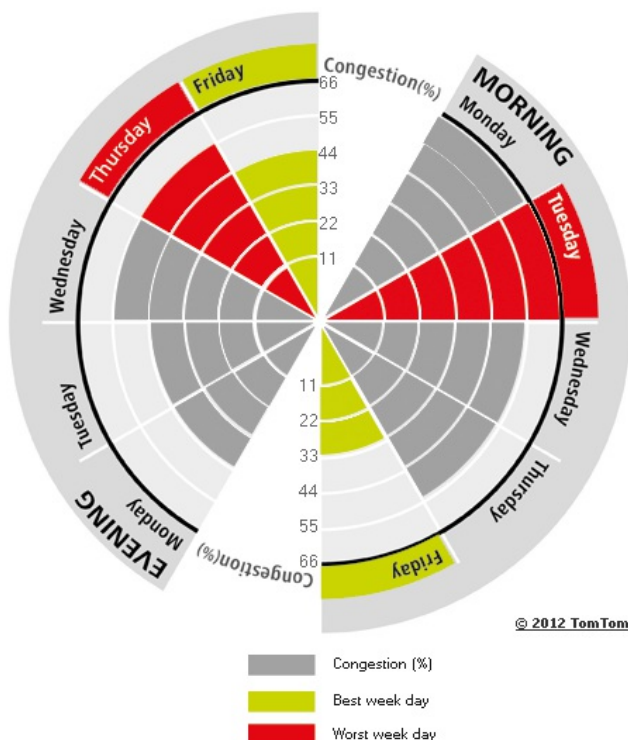
21%

Ranking

Ranking of city compared to continent	19/31
Previous ranking	23 ▲
Congestion level on highways	14%
Congestion level on non-highways	32%
Delay per hour driven in peak period	28 min
Delay per year with a 30 min commute	73 h

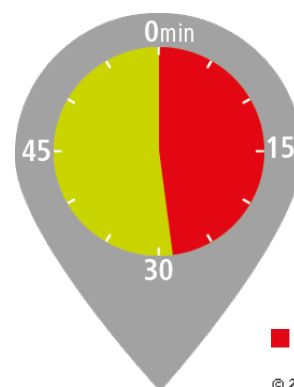
The weekly congestion pattern:

Best and worst peak periods of the week

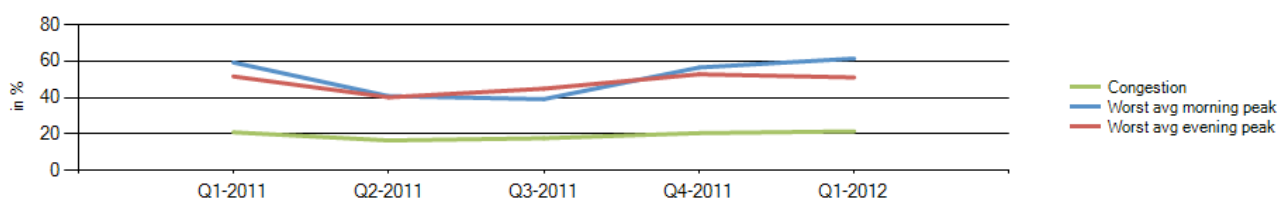


Most congested specific day	Thu 19 Jan 2012
Average free flow speed	38 mi/h
Average speed during worst peak period	32 mi/h
Total network length	1 645 mi
Total network length highways	247 mi
Total network length non-highways	1 397 mi
Total vehicle miles	11 764 722 mi

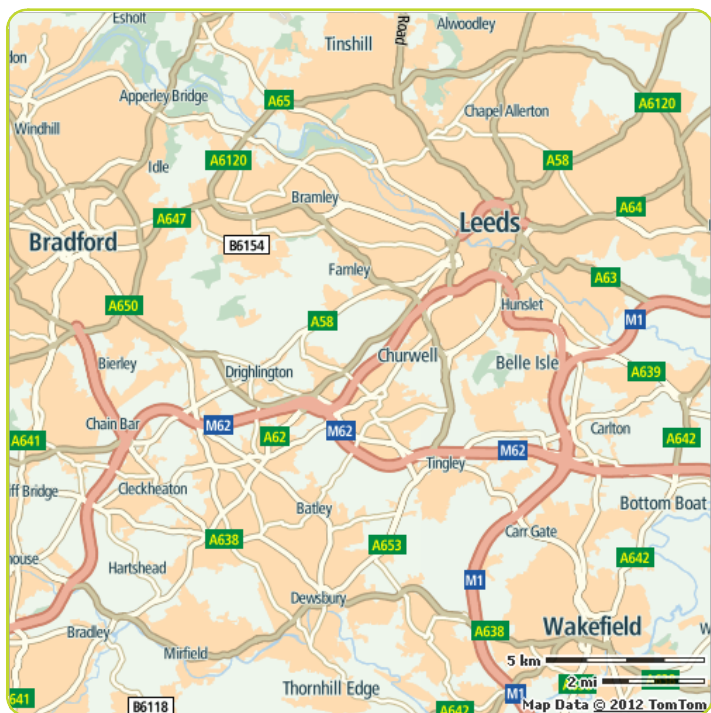
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Bradford-Leeds



Congestion level

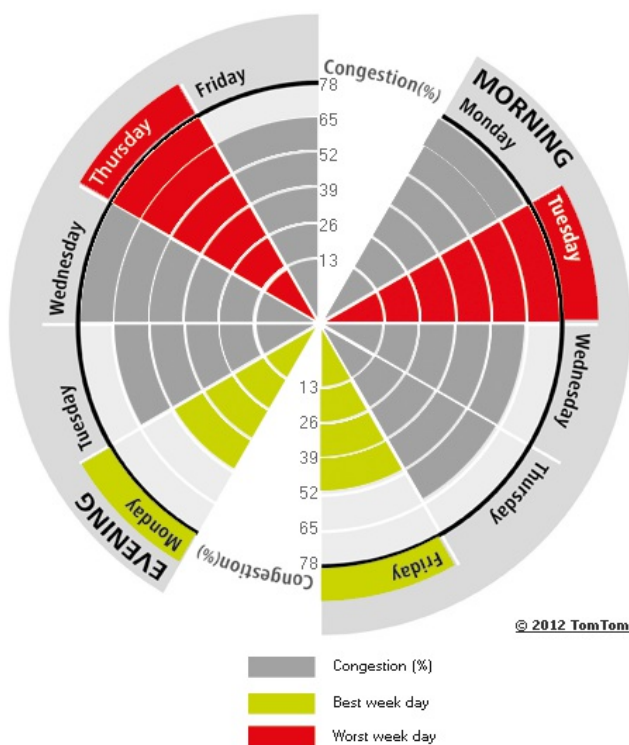
28%

Ranking

Ranking of city compared to continent	7/31
Previous ranking	19 ▲
Congestion level on highways	23%
Congestion level on non-highways	34%
Delay per hour driven in peak period	36 min
Delay per year with a 30 min commute	86 h

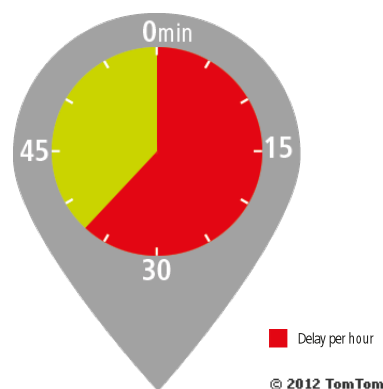
The weekly congestion pattern:

Best and worst peak periods of the week

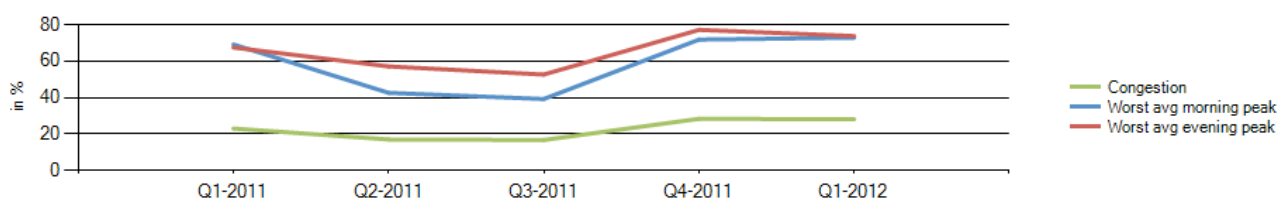


Most congested specific day	Fri 27 Jan 2012
Average free flow speed	36 mi/h
Average speed during worst peak period	30 mi/h
Total network length	760 mi
Total network length highways	98 mi
Total network length non-highways	662 mi
Total vehicle miles	4 142 003 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Berlin



Congestion level

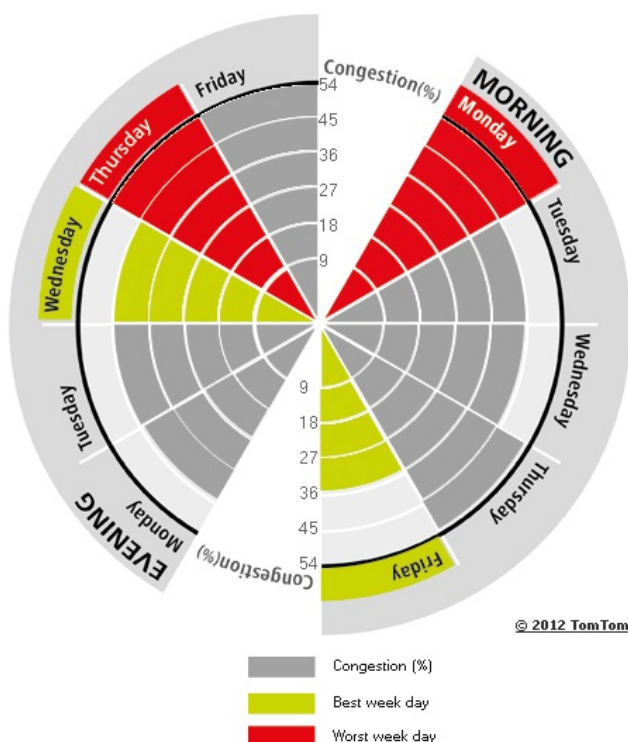
26%

Ranking

Ranking of city compared to continent	13/31
Previous ranking	15 ▲
Congestion level on highways	22%
Congestion level on non-highways	29%
Delay per hour driven in peak period	26 min
Delay per year with a 30 min commute	69 h

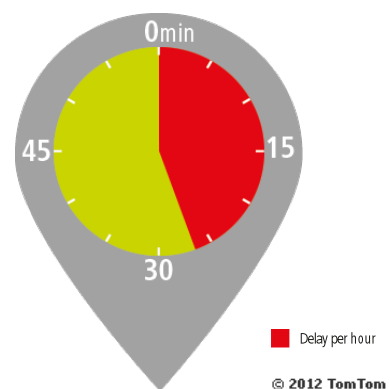
The weekly congestion pattern:

Best and worst peak periods of the week

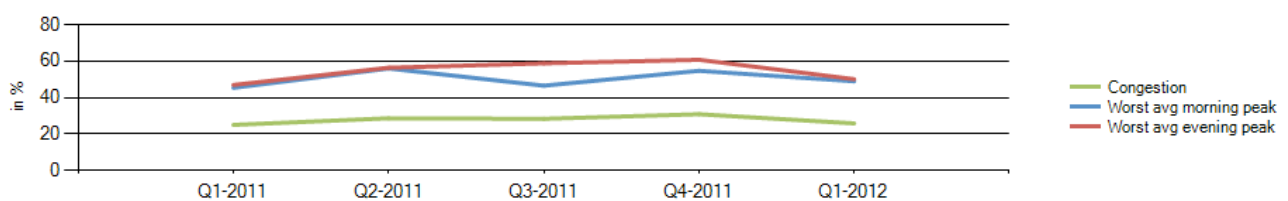


Most congested specific day	Thu 9 Feb 2012
Average free flow speed	33 mi/h
Average speed during worst peak period	29 mi/h
Total network length	1 781 mi
Total network length highways	419 mi
Total network length non-highways	1 362 mi
Total vehicle miles	4 808 424 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Brussels



Congestion level

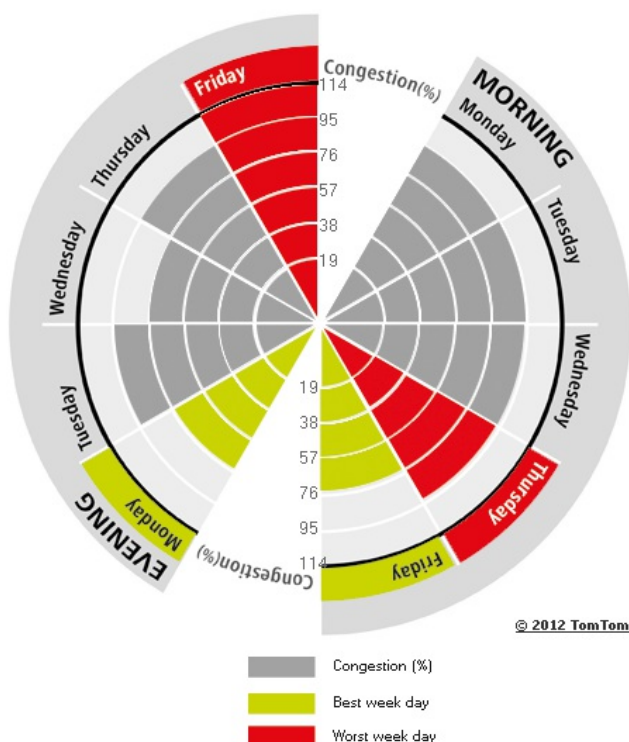
34%

Ranking

Ranking of city compared to continent	4/31
Previous ranking	4 ---
Congestion level on highways	27%
Congestion level on non-highways	40%
Delay per hour driven in peak period	50 min
Delay per year with a 30 min commute	104 h

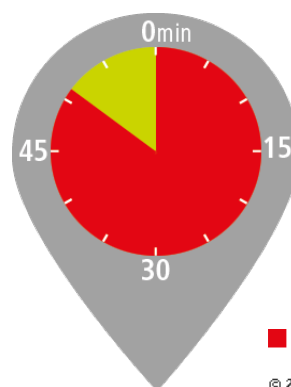
The weekly congestion pattern:

Best and worst peak periods of the week

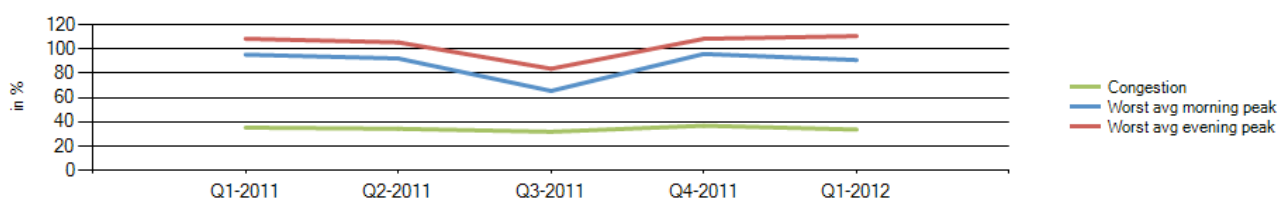


Most congested specific day	Fri 3 Feb 2012
Average free flow speed	32 mi/h
Average speed during worst peak period	26 mi/h
Total network length	808 mi
Total network length highways	122 mi
Total network length non-highways	687 mi
Total vehicle miles	3 897 642 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Cologne



Congestion level

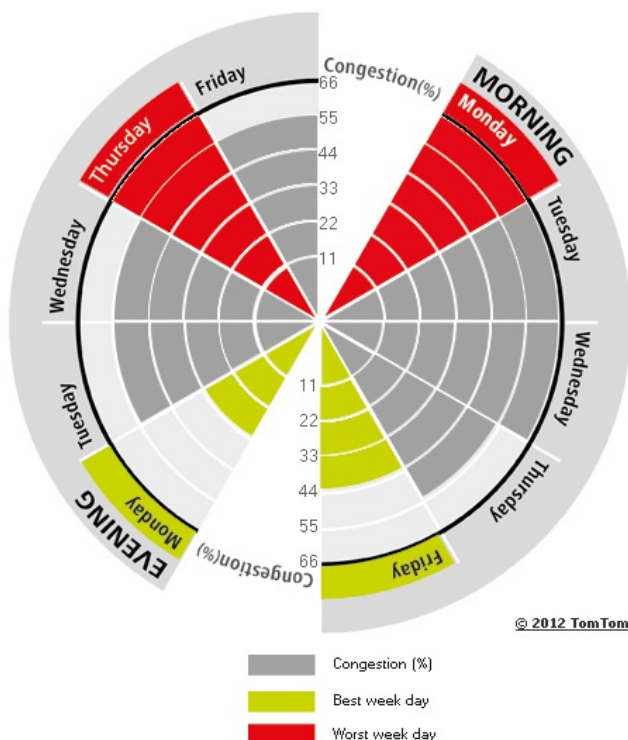
26%

Ranking

Ranking of city compared to continent	11/31
Previous ranking	12 ▲
Congestion level on highways	24%
Congestion level on non-highways	32%
Delay per hour driven in peak period	30 min
Delay per year with a 30 min commute	76 h

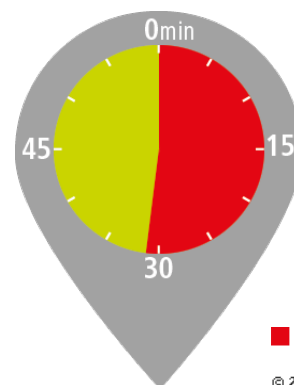
The weekly congestion pattern:

Best and worst peak periods of the week

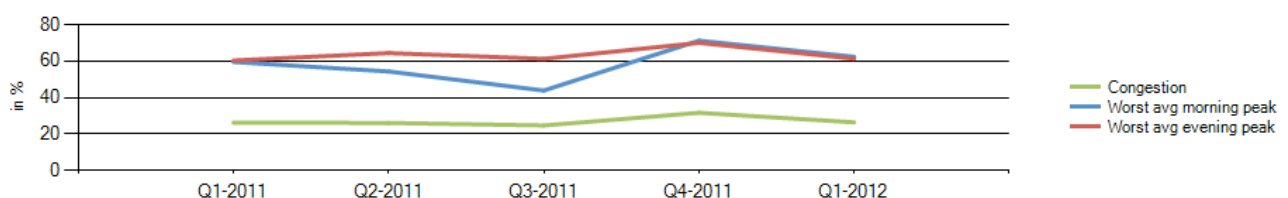


Most congested specific day	Tue 27 Mar 2012
Average free flow speed	35 mi/h
Average speed during worst peak period	30 mi/h
Total network length	1 209 mi
Total network length highways	349 mi
Total network length non-highways	860 mi
Total vehicle miles	4 545 596 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Copenhagen



Congestion level

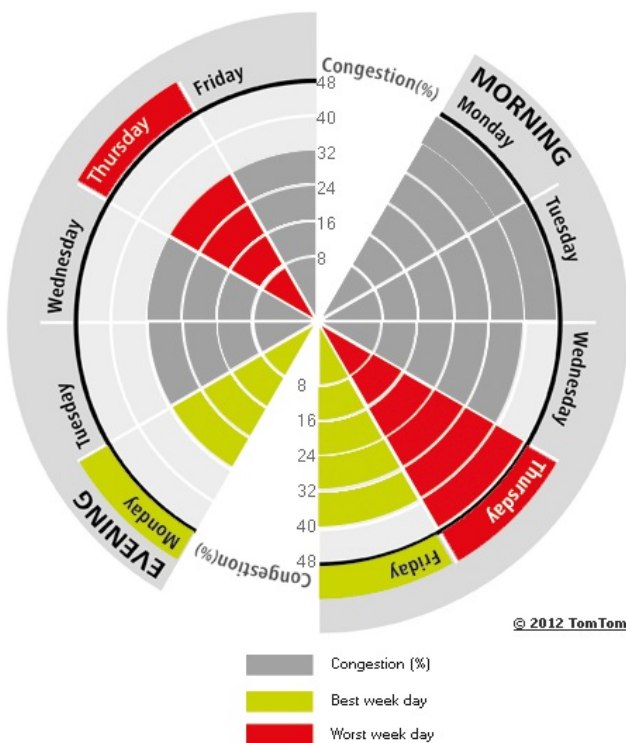
16%

Ranking

Ranking of city compared to continent	26/31
Previous ranking	29 ▲
Congestion level on highways	5%
Congestion level on non-highways	26%
Delay per hour driven in peak period	21 min
Delay per year with a 30 min commute	59 h

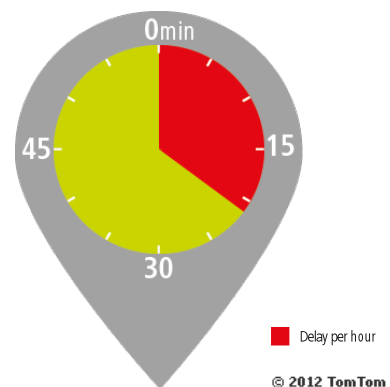
The weekly congestion pattern:

Best and worst peak periods of the week

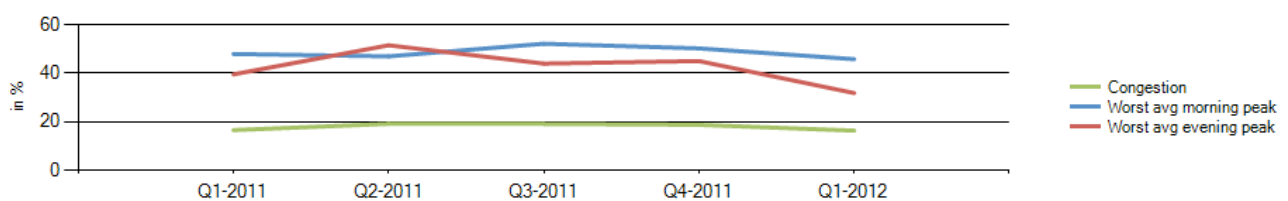


Most congested specific day	Thu 12 Jan 2012
Average free flow speed	37 mi/h
Average speed during worst peak period	33 mi/h
Total network length	816 mi
Total network length highways	157 mi
Total network length non-highways	659 mi
Total vehicle miles	2 425 925 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Dublin

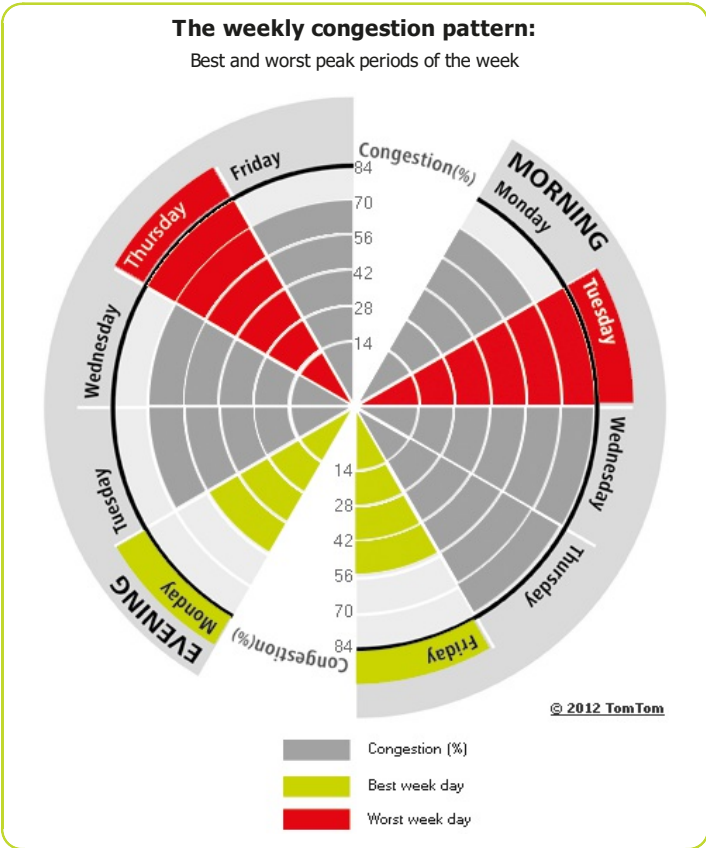


Congestion level

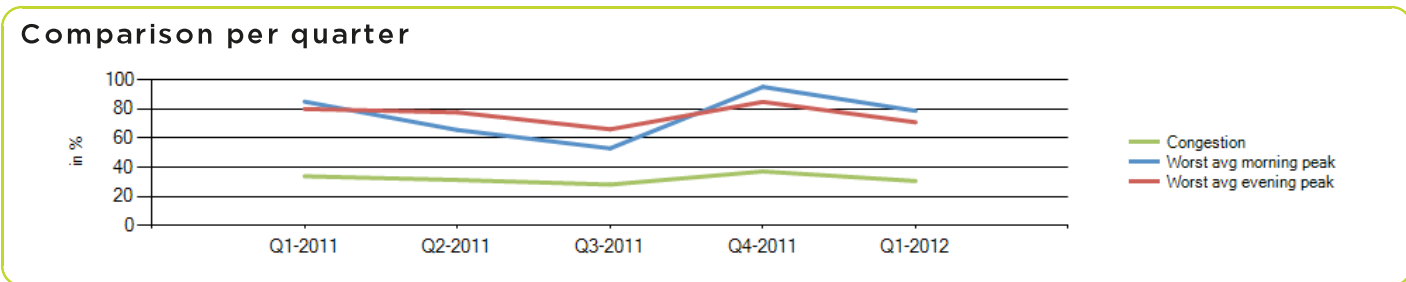
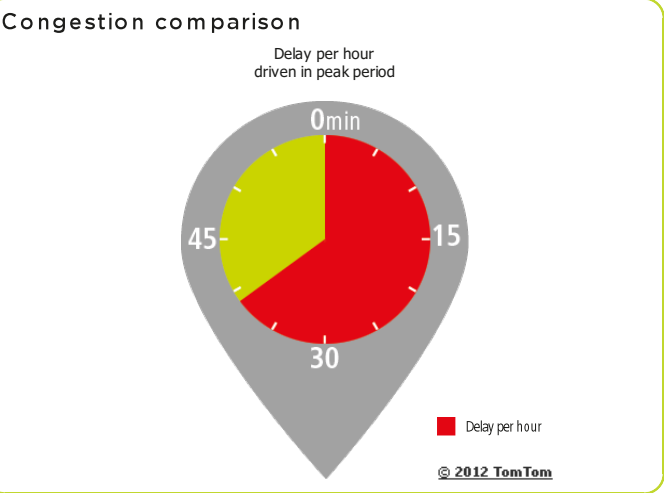
30%

Ranking

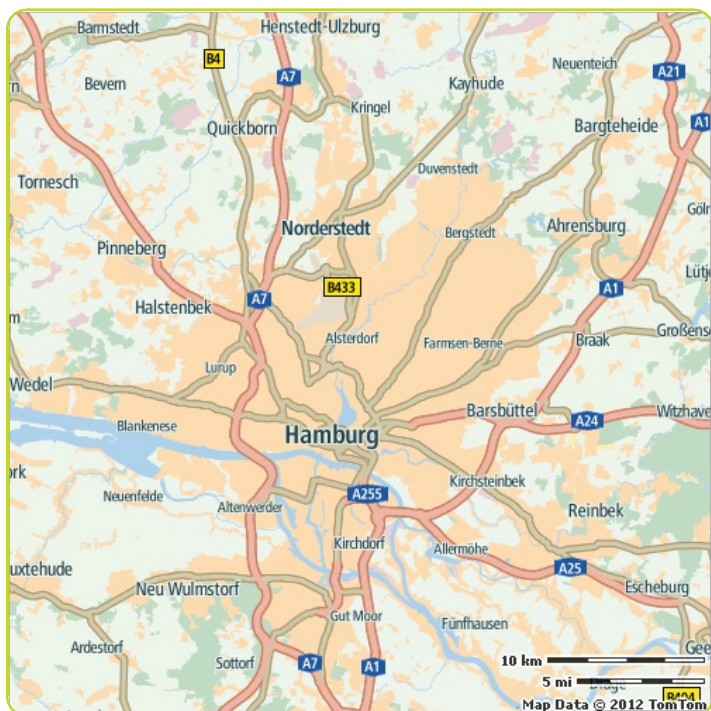
Ranking of city compared to continent	6/31
Previous ranking	5 ▼
Congestion level on highways	23%
Congestion level on non-highways	42%
Delay per hour driven in peak period	39 min
Delay per year with a 30 min commute	90 h



Most congested specific day	Wed 28 Mar 2012
Average free flow speed	34 mi/h
Average speed during worst peak period	29 mi/h
Total network length	399 mi
Total network length highways	135 mi
Total network length non-highways	265 mi
Total vehicle miles	468 647 mi



Hamburg



Congestion level

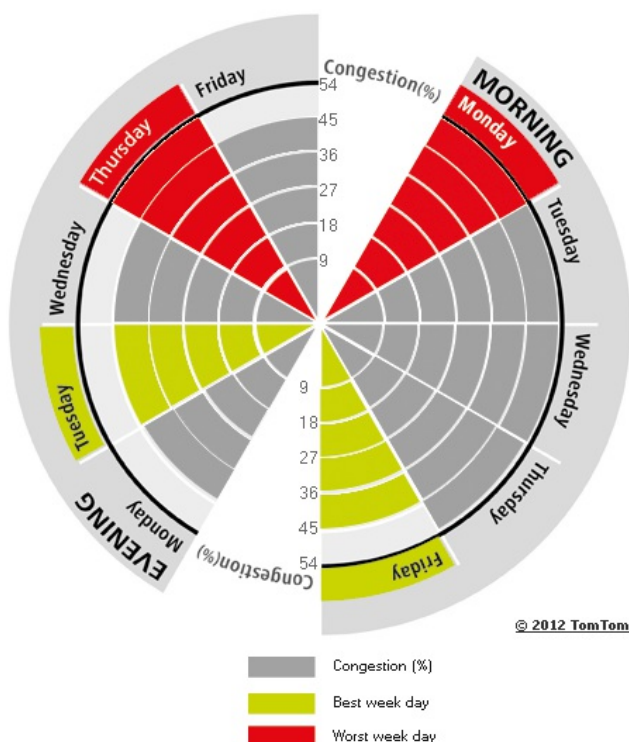
27%

Ranking

Ranking of city compared to continent	10/31
Previous ranking	11 ▲
Congestion level on highways	17%
Congestion level on non-highways	35%
Delay per hour driven in peak period	27 min
Delay per year with a 30 min commute	71 h

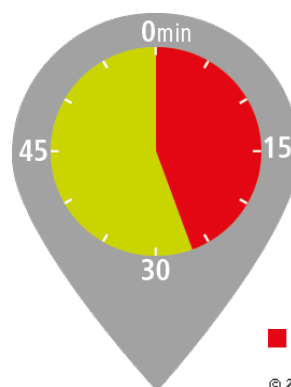
The weekly congestion pattern:

Best and worst peak periods of the week

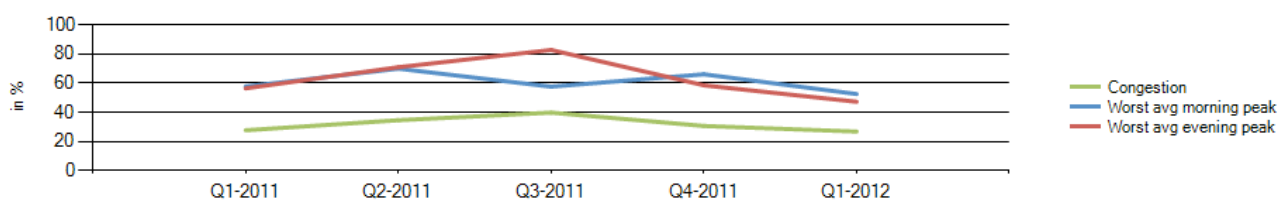


Most congested specific day	Thu 29 Mar 2012
Average free flow speed	34 mi/h
Average speed during worst peak period	30 mi/h
Total network length	1 338 mi
Total network length highways	266 mi
Total network length non-highways	1 072 mi
Total vehicle miles	3 860 681 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Helsinki



Congestion level

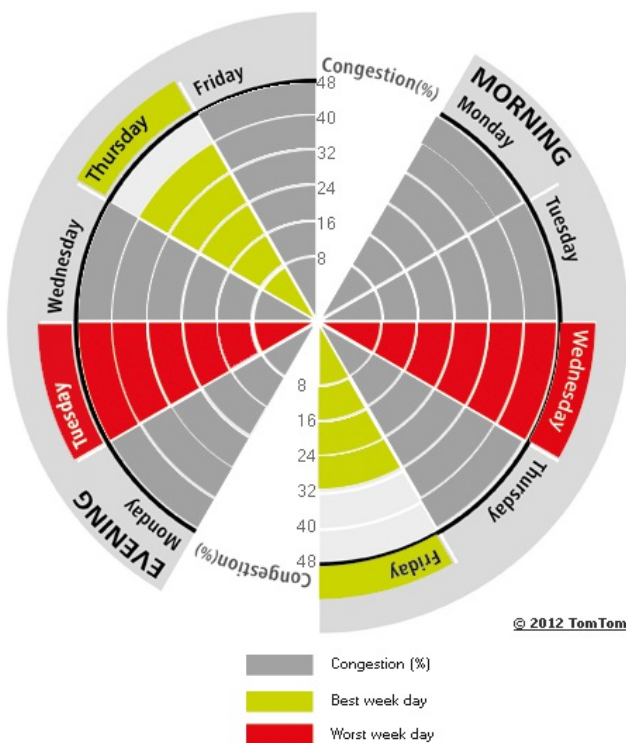
20%

Ranking

Ranking of city compared to continent	23/31
Previous ranking	21 ▼
Congestion level on highways	15%
Congestion level on non-highways	26%
Delay per hour driven in peak period	25 min
Delay per year with a 30 min commute	67 h

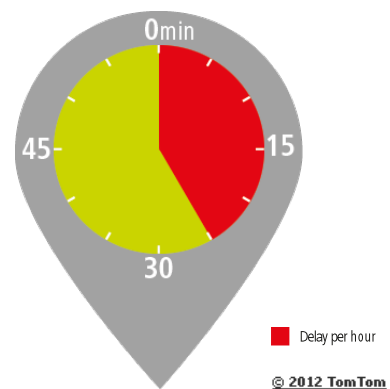
The weekly congestion pattern:

Best and worst peak periods of the week

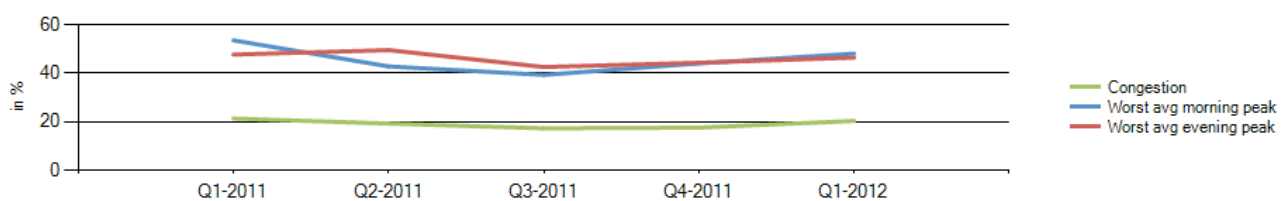


Most congested specific day	Fri 3 Feb 2012
Average free flow speed	38 mi/h
Average speed during worst peak period	34 mi/h
Total network length	683 mi
Total network length highways	191 mi
Total network length non-highways	492 mi
Total vehicle miles	2 308 515 mi

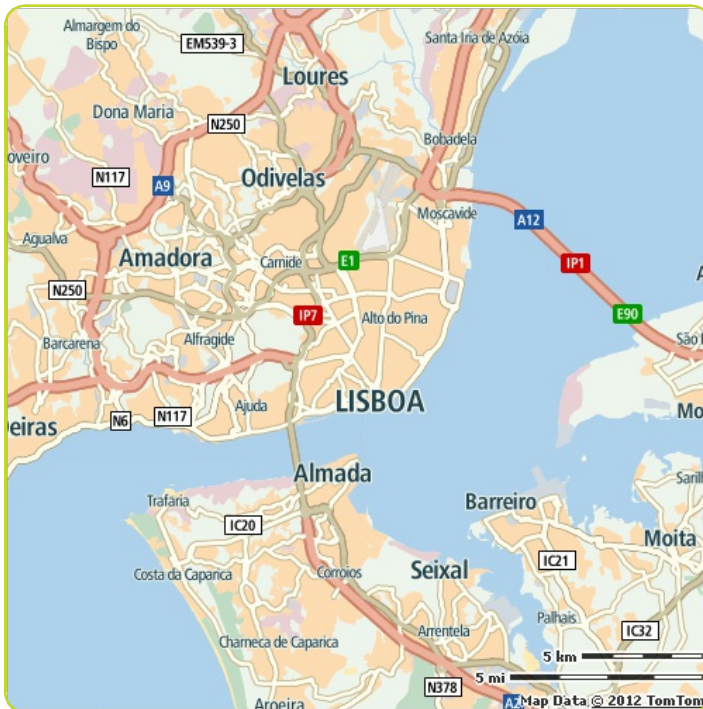
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Lisbon



Congestion level

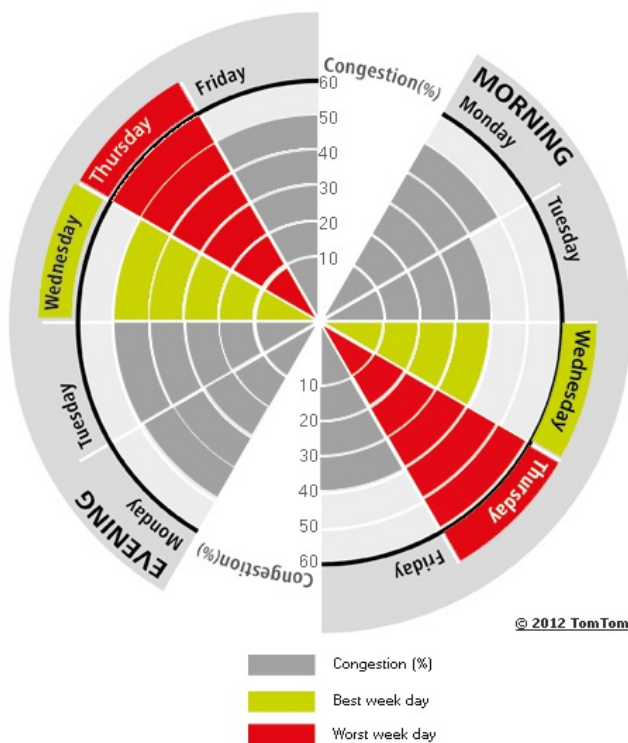
20%

Ranking

Ranking of city compared to continent	22/31
Previous ranking	10 ▼
Congestion level on highways	9%
Congestion level on non-highways	21%
Delay per hour driven in peak period	27 min
Delay per year with a 30 min commute	71 h

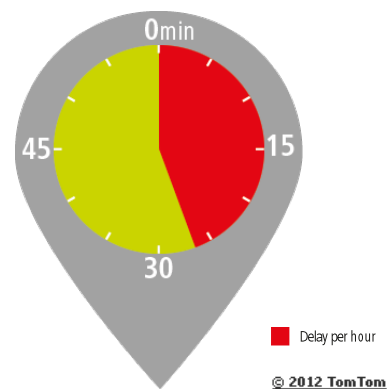
The weekly congestion pattern:

Best and worst peak periods of the week

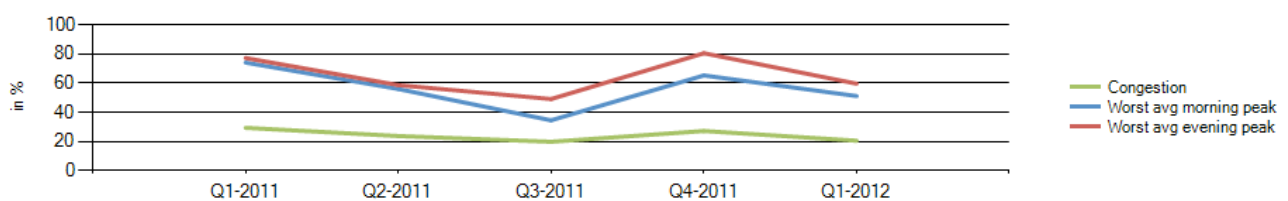


Most congested specific day	Thu 2 Feb 2012
Average free flow speed	37 mi/h
Average speed during worst peak period	32 mi/h
Total network length	329 mi
Total network length highways	16 mi
Total network length non-highways	313 mi
Total vehicle miles	922 697 mi

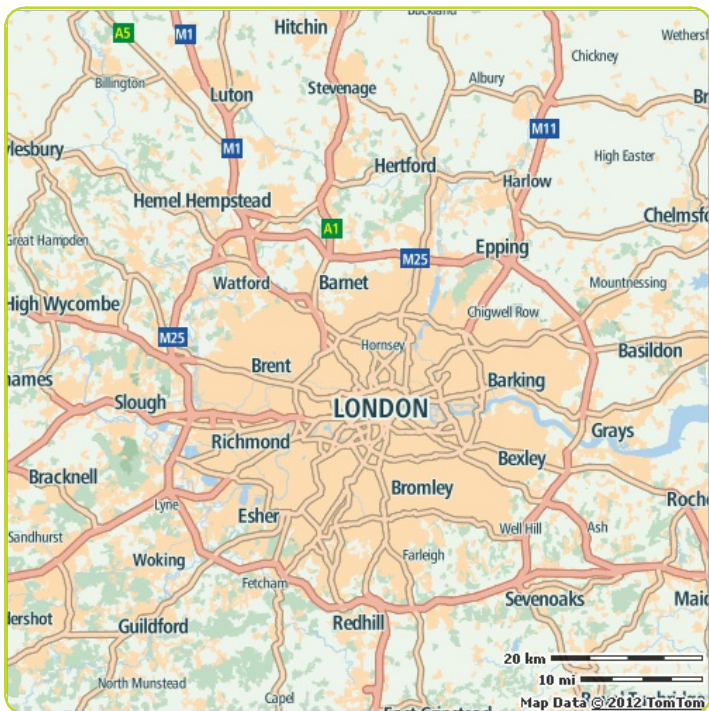
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



London



Congestion level

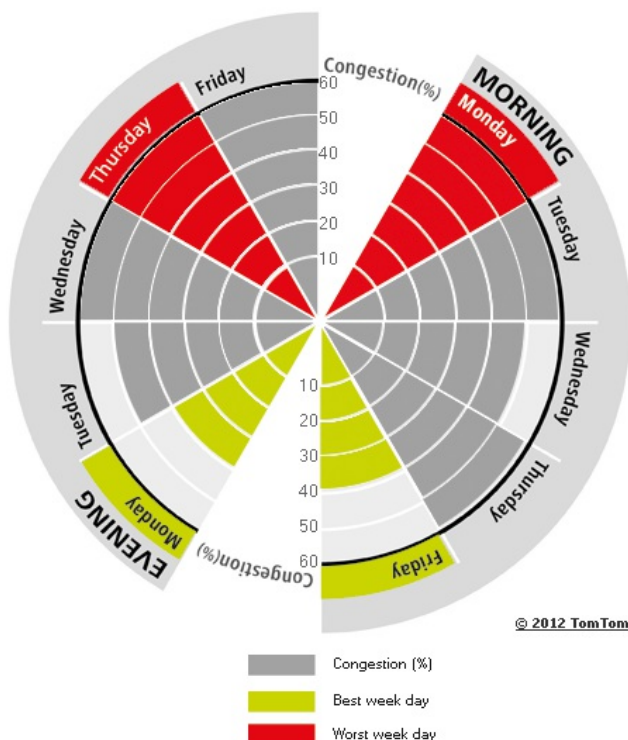
27%

Ranking

Ranking of city compared to continent	8/31
Previous ranking	9 ▲
Congestion level on highways	10%
Congestion level on non-highways	38%
Delay per hour driven in peak period	29 min
Delay per year with a 30 min commute	74 h

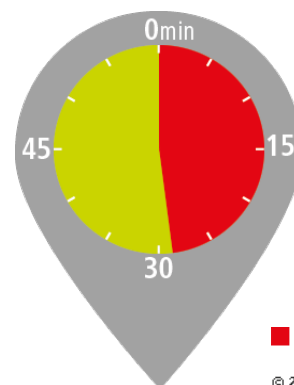
The weekly congestion pattern:

Best and worst peak periods of the week

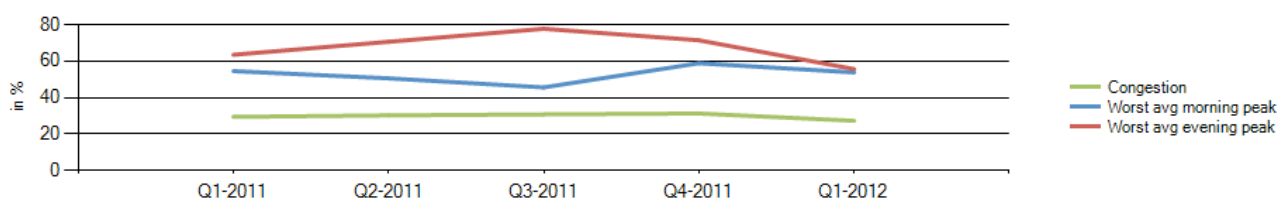


Most congested specific day	Thu 15 Mar 2012
Average free flow speed	34 mi/h
Average speed during worst peak period	29 mi/h
Total network length	4 547 mi
Total network length highways	435 mi
Total network length non-highways	4 112 mi
Total vehicle miles	40 544 393 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Luxembourg



Congestion level

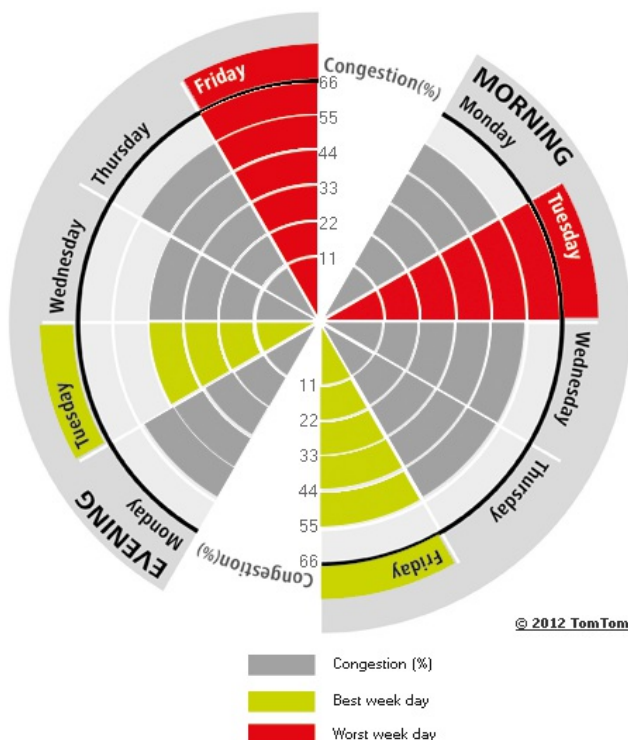
21%

Ranking

Ranking of city compared to continent	20/31
Previous ranking	24 ▲
Congestion level on highways	12%
Congestion level on non-highways	34%
Delay per hour driven in peak period	29 min
Delay per year with a 30 min commute	74 h

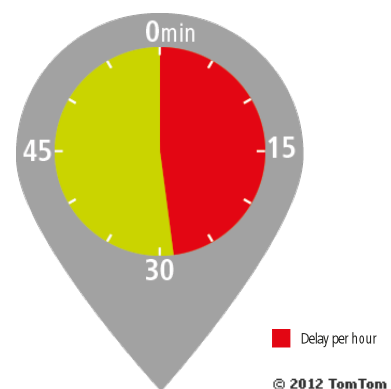
The weekly congestion pattern:

Best and worst peak periods of the week

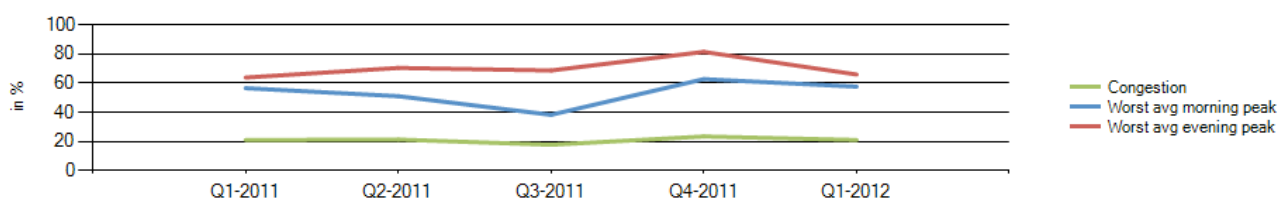


Most congested specific day	Fri 13 Jan 2012
Average free flow speed	37 mi/h
Average speed during worst peak period	32 mi/h
Total network length	199 mi
Total network length highways	43 mi
Total network length non-highways	156 mi
Total vehicle miles	380 746 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Madrid



Congestion level

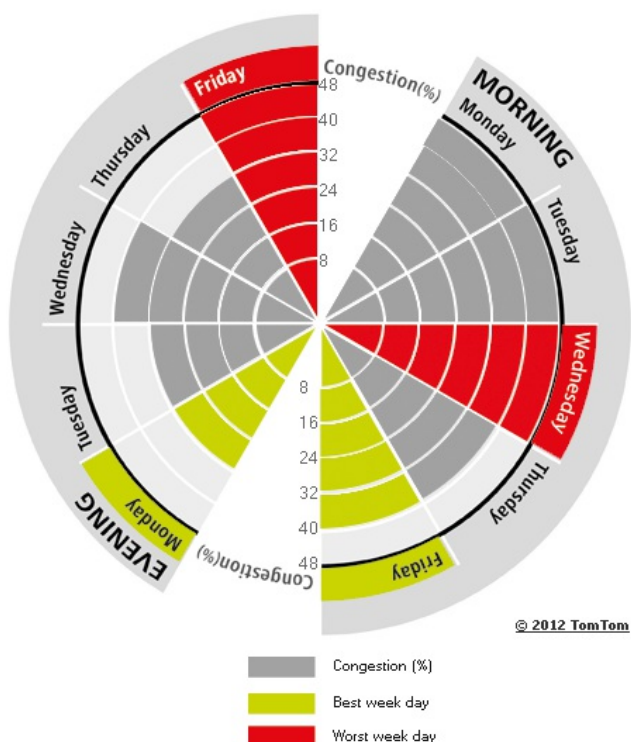
16%

Ranking

Ranking of city compared to continent	27/31
Previous ranking	27 ---
Congestion level on highways	9%
Congestion level on non-highways	23%
Delay per hour driven in peak period	22 min
Delay per year with a 30 min commute	61 h

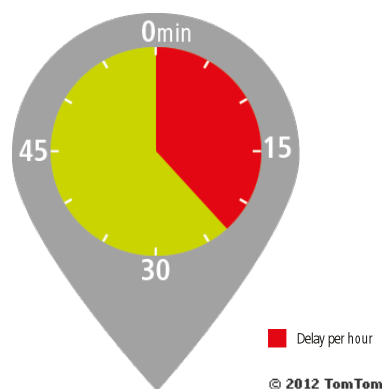
The weekly congestion pattern:

Best and worst peak periods of the week

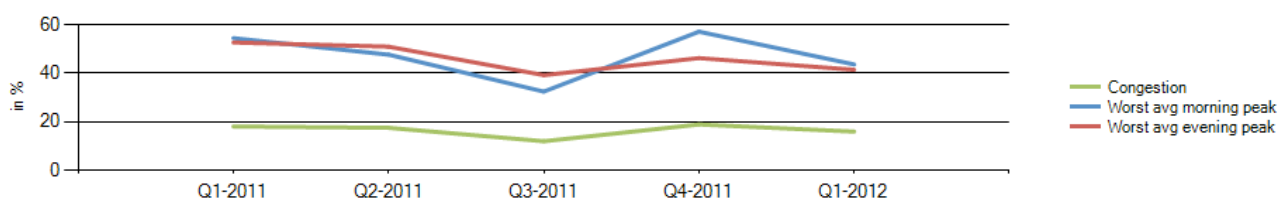


Most congested specific day	Wed 21 Mar 2012
Average free flow speed	42 mi/h
Average speed during worst peak period	39 mi/h
Total network length	2 191 mi
Total network length highways	756 mi
Total network length non-highways	1 435 mi
Total vehicle miles	11 483 871 mi

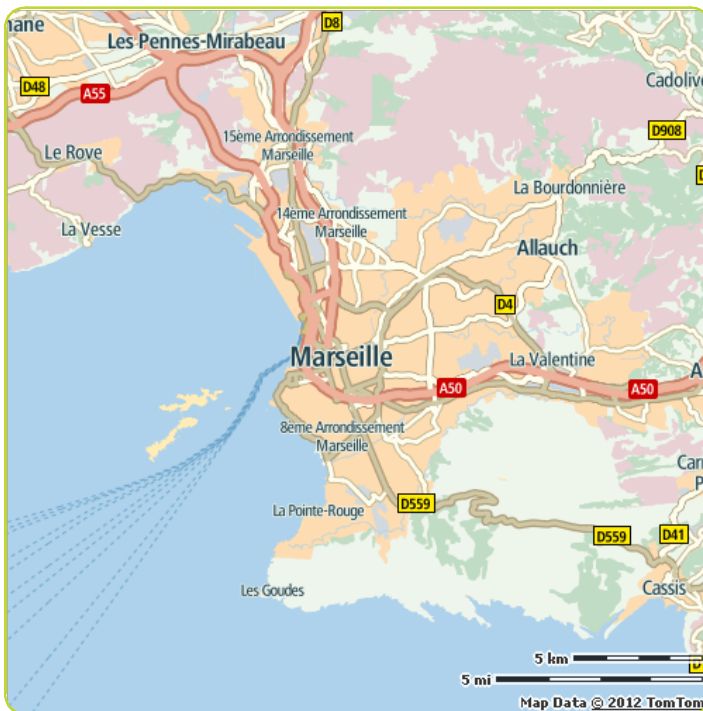
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Marseille



Congestion level

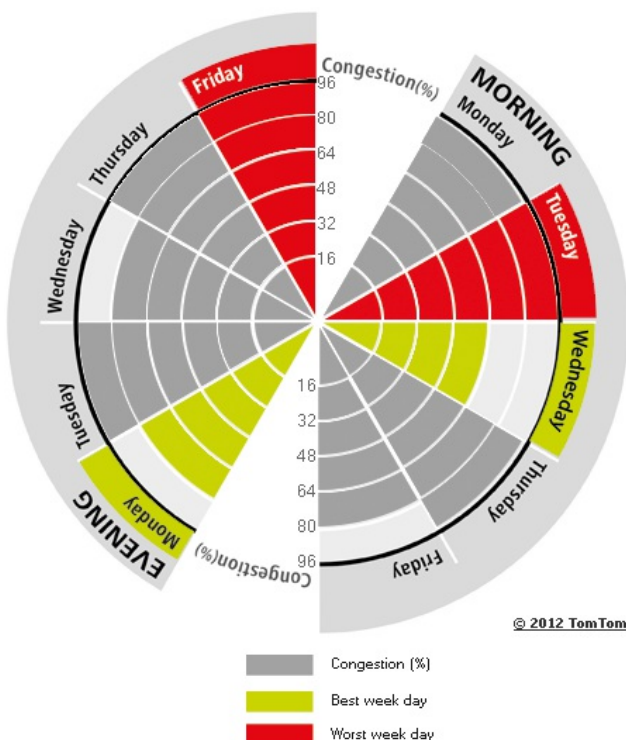
41%

Ranking

Ranking of city compared to continent	2/31
Previous ranking	2 ---
Congestion level on highways	23%
Congestion level on non-highways	52%
Delay per hour driven in peak period	47 min
Delay per year with a 30 min commute	101 h

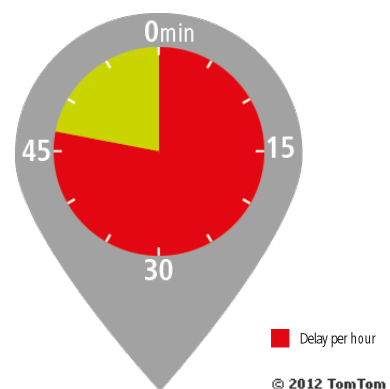
The weekly congestion pattern:

Best and worst peak periods of the week

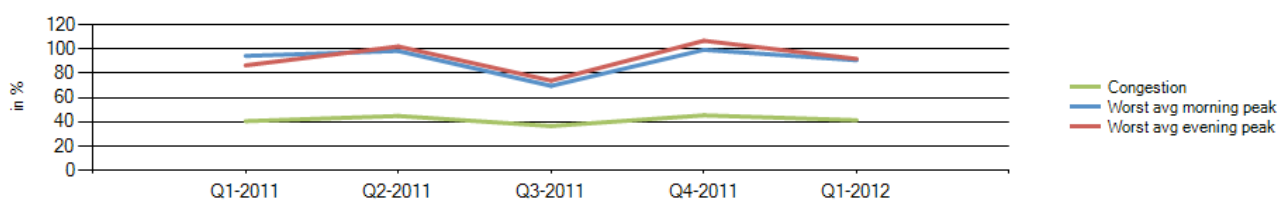


Most congested specific day	Fri 10 Feb 2012
Average free flow speed	32 mi/h
Average speed during worst peak period	25 mi/h
Total network length	305 mi
Total network length highways	48 mi
Total network length non-highways	257 mi
Total vehicle miles	598 017 mi

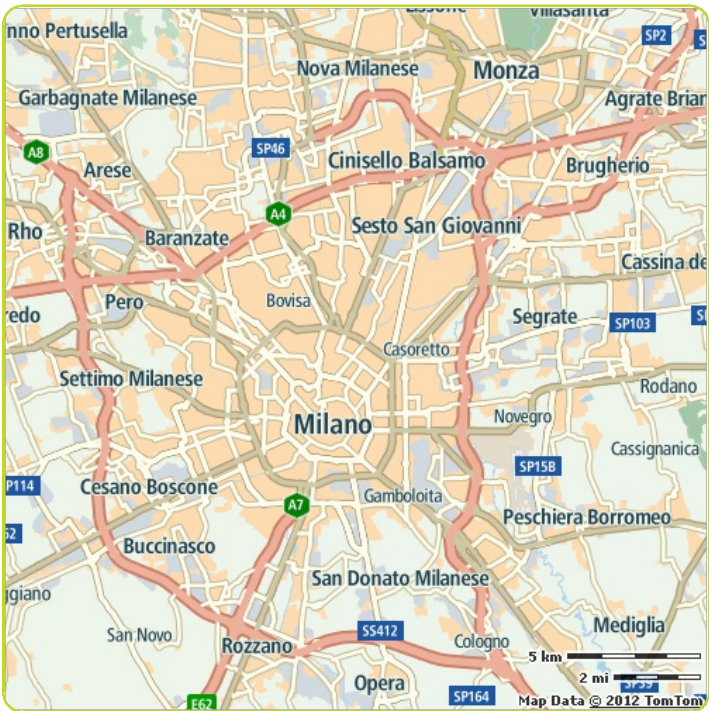
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Milan



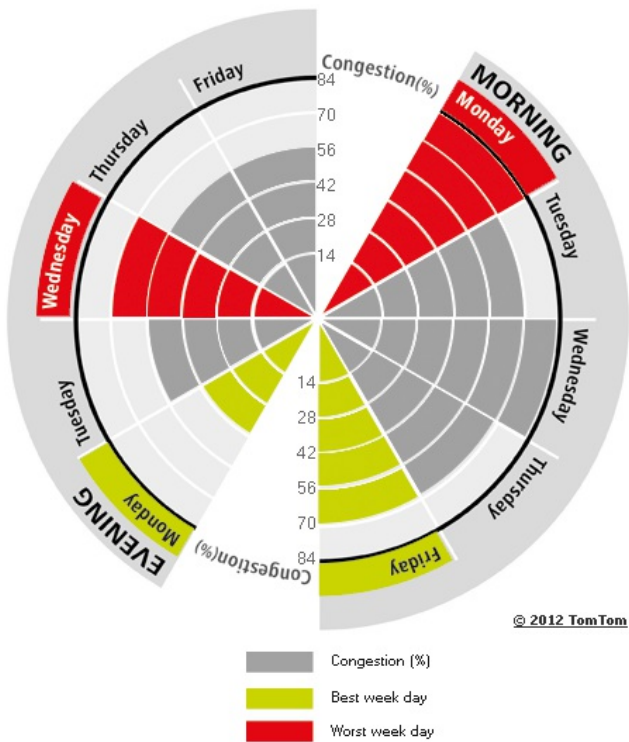
Congestion level

26%

Ranking

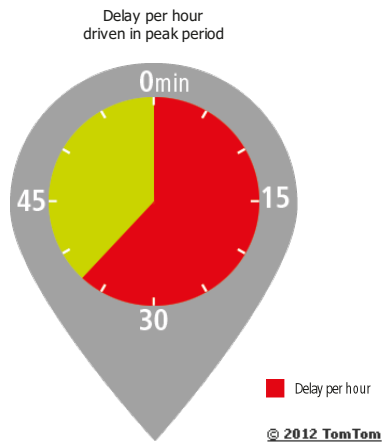
Ranking of city compared to continent	12/31
Previous ranking	7 ▼
Congestion level on highways	18%
Congestion level on non-highways	32%
Delay per hour driven in peak period	37 min
Delay per year with a 30 min commute	87 h

The weekly congestion pattern:
Best and worst peak periods of the week

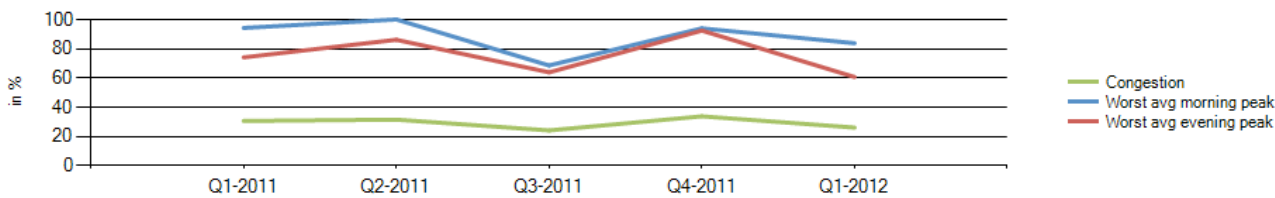


Most congested specific day	Wed 28 Mar 2012
Average free flow speed	34 mi/h
Average speed during worst peak period	28 mi/h
Total network length	1 465 mi
Total network length highways	165 mi
Total network length non-highways	1 300 mi
Total vehicle miles	6 044 062 mi

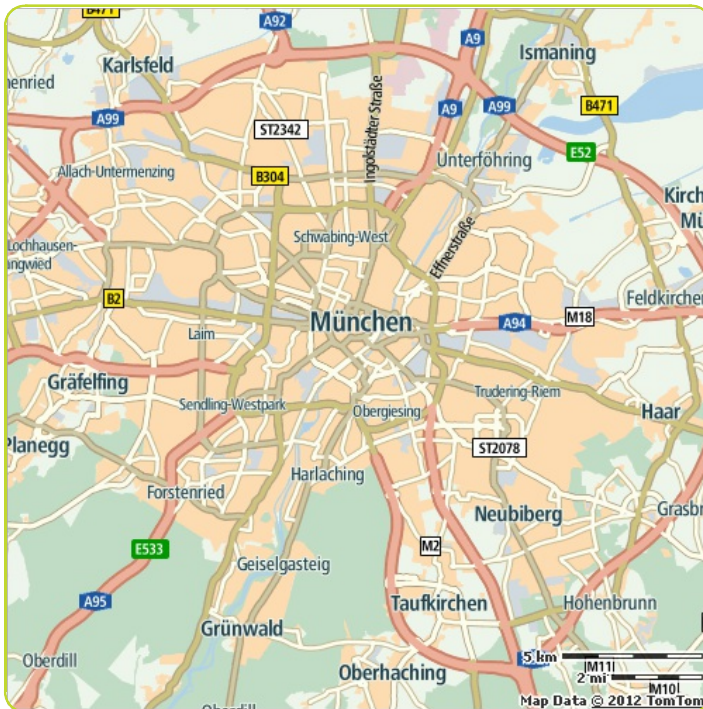
Congestion comparison



Comparison per quarter



Munich



Congestion level

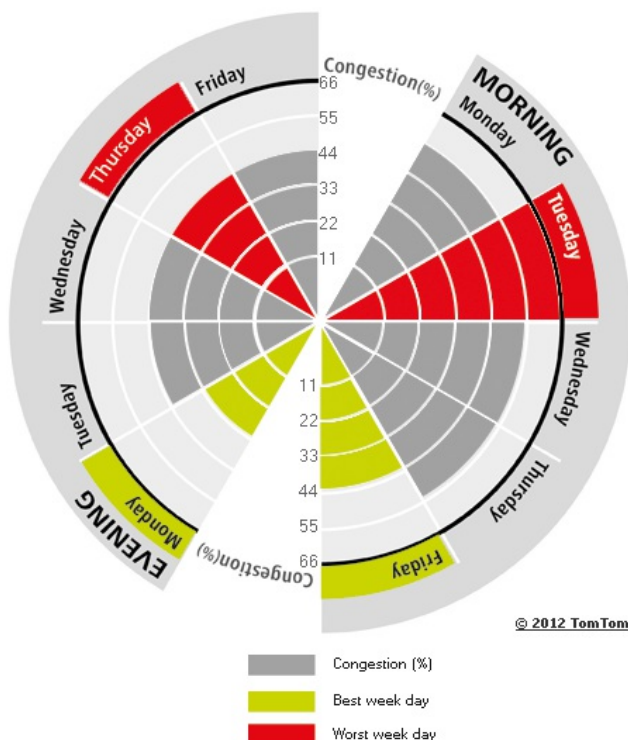
23%

Ranking

Ranking of city compared to continent	18/31
Previous ranking	22 ▲
Congestion level on highways	17%
Congestion level on non-highways	33%
Delay per hour driven in peak period	25 min
Delay per year with a 30 min commute	67 h

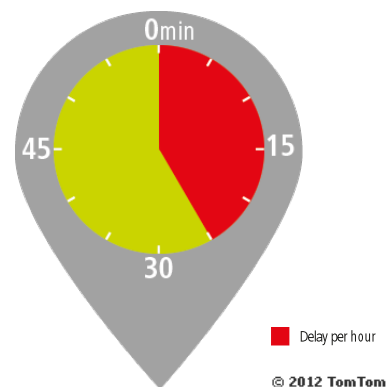
The weekly congestion pattern:

Best and worst peak periods of the week

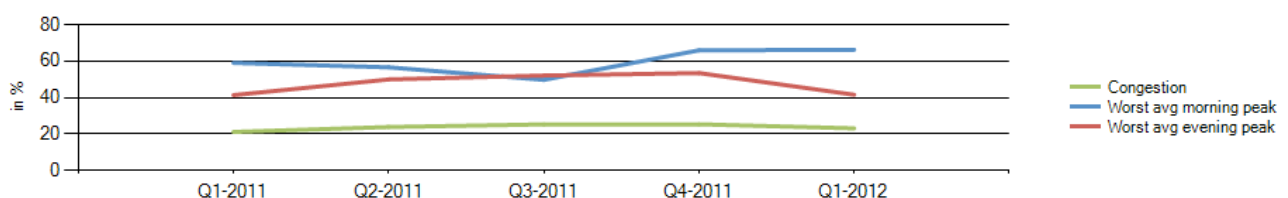


Most congested specific day	Tue 7 Feb 2012
Average free flow speed	36 mi/h
Average speed during worst peak period	30 mi/h
Total network length	1 164 mi
Total network length highways	329 mi
Total network length non-highways	835 mi
Total vehicle miles	3 528 189 mi

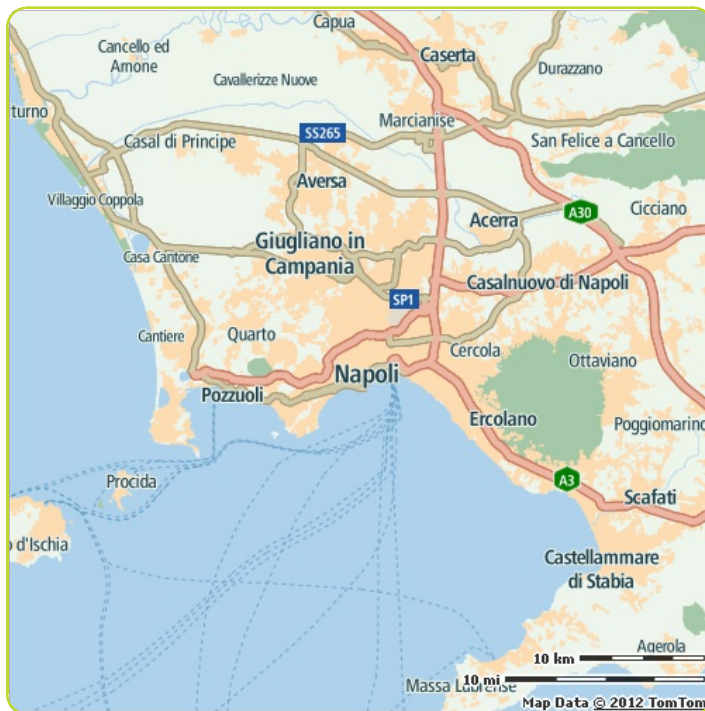
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Naples



Congestion level

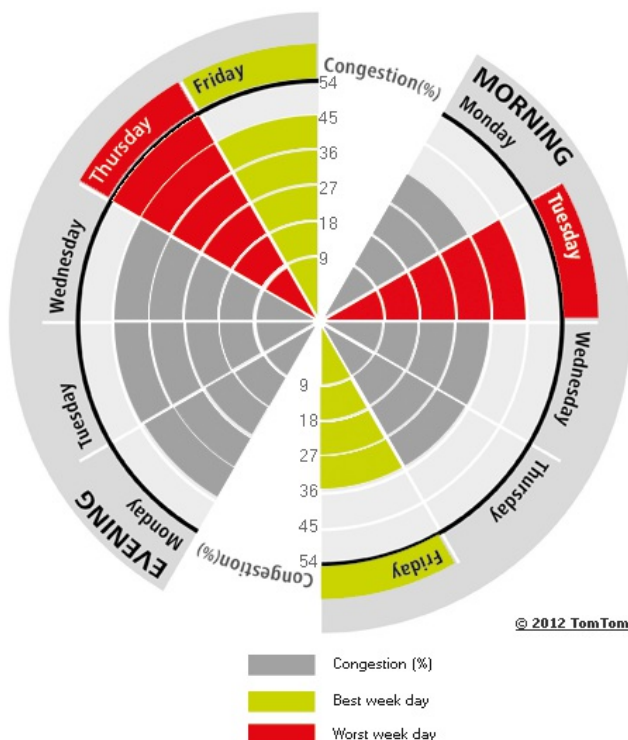
24%

Ranking

Ranking of city compared to continent	16/31
Previous ranking	13 ▼
Congestion level on highways	10%
Congestion level on non-highways	37%
Delay per hour driven in peak period	23 min
Delay per year with a 30 min commute	63 h

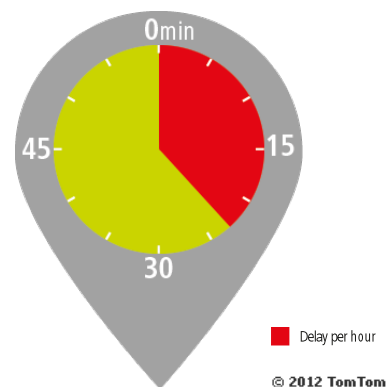
The weekly congestion pattern:

Best and worst peak periods of the week

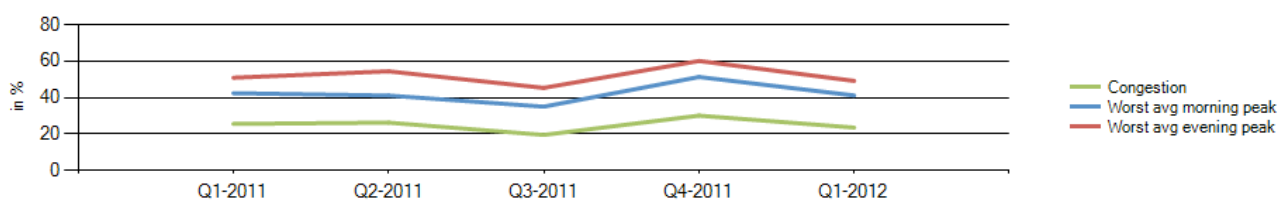


Most congested specific day	Wed 29 Feb 2012
Average free flow speed	30 mi/h
Average speed during worst peak period	26 mi/h
Total network length	1 028 mi
Total network length highways	156 mi
Total network length non-highways	872 mi
Total vehicle miles	1 125 080 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Oslo



Congestion level

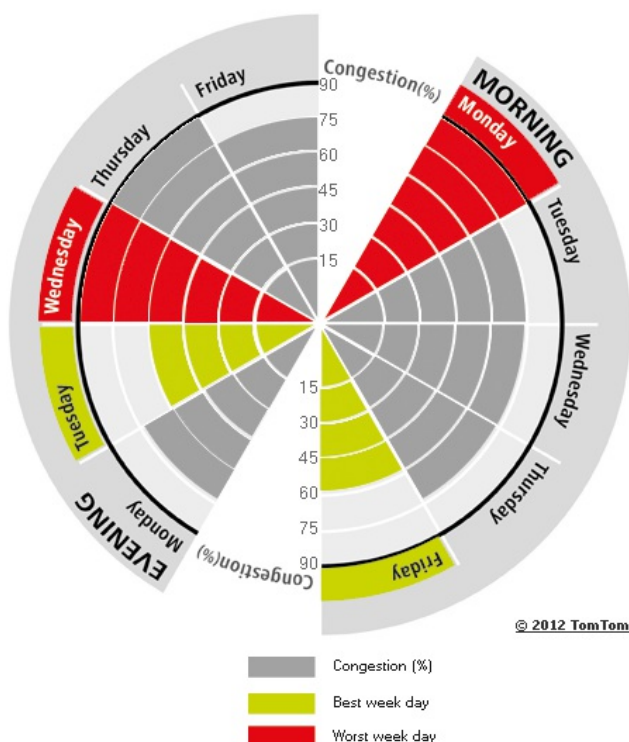
24%

Ranking

Ranking of city compared to continent	15/31
Previous ranking	14 ▼
Congestion level on highways	20%
Congestion level on non-highways	31%
Delay per hour driven in peak period	40 min
Delay per year with a 30 min commute	92 h

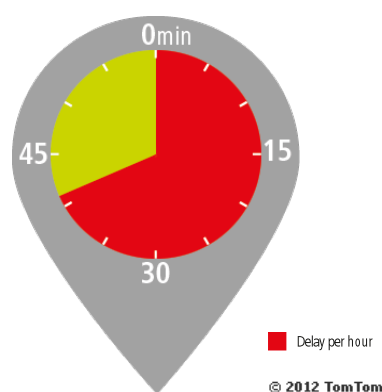
The weekly congestion pattern:

Best and worst peak periods of the week

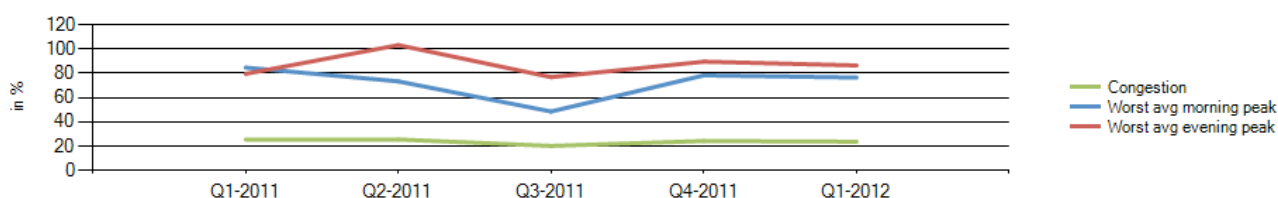


Most congested specific day	Mon 9 Jan 2012
Average free flow speed	33 mi/h
Average speed during worst peak period	27 mi/h
Total network length	334 mi
Total network length highways	78 mi
Total network length non-highways	255 mi
Total vehicle miles	639 347 mi

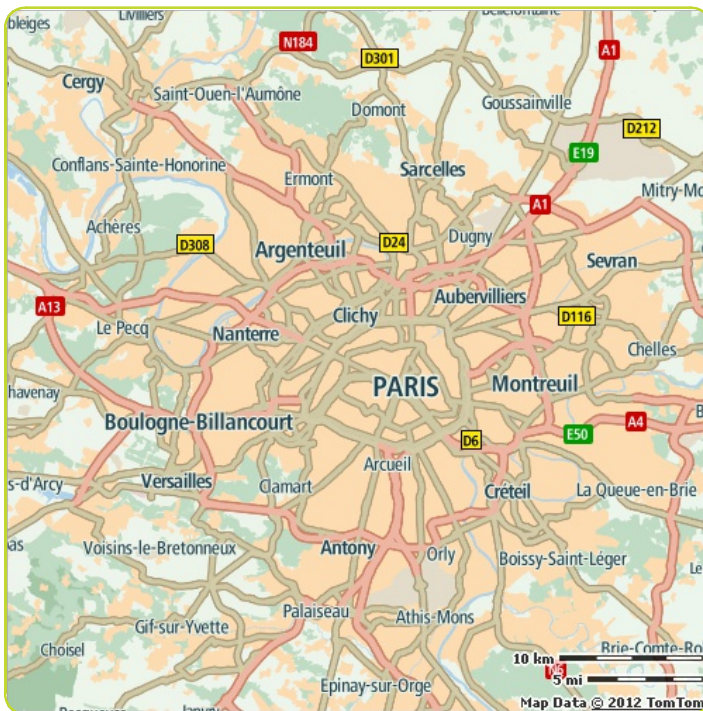
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Paris



Congestion level

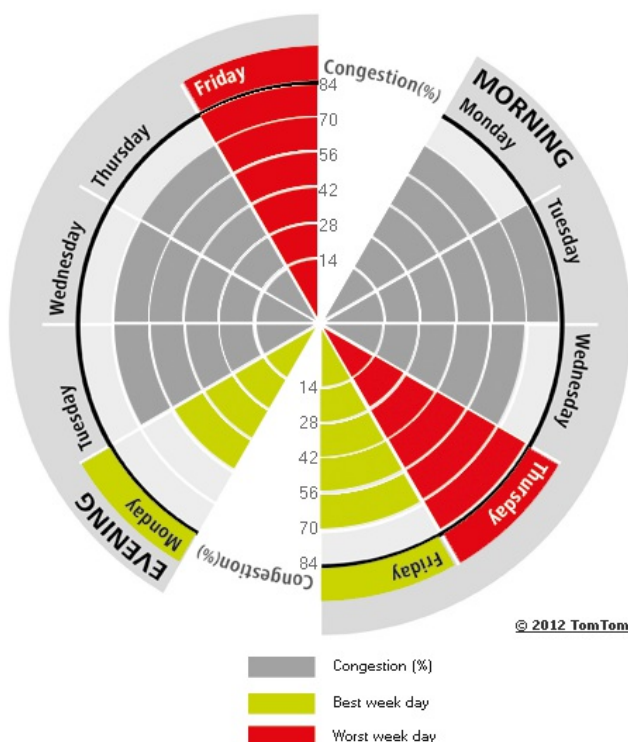
32%

Ranking

Ranking of city compared to continent	5/31
Previous ranking	6 ▲
Congestion level on highways	29%
Congestion level on non-highways	36%
Delay per hour driven in peak period	40 min
Delay per year with a 30 min commute	92 h

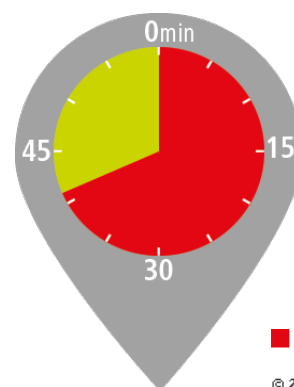
The weekly congestion pattern:

Best and worst peak periods of the week

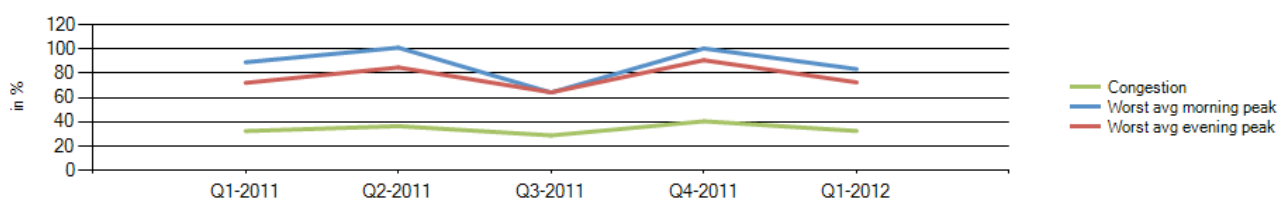


Most congested specific day	Tue 24 Jan 2012
Average free flow speed	32 mi/h
Average speed during worst peak period	27 mi/h
Total network length	4 875 mi
Total network length highways	891 mi
Total network length non-highways	3 984 mi
Total vehicle miles	36 045 439 mi

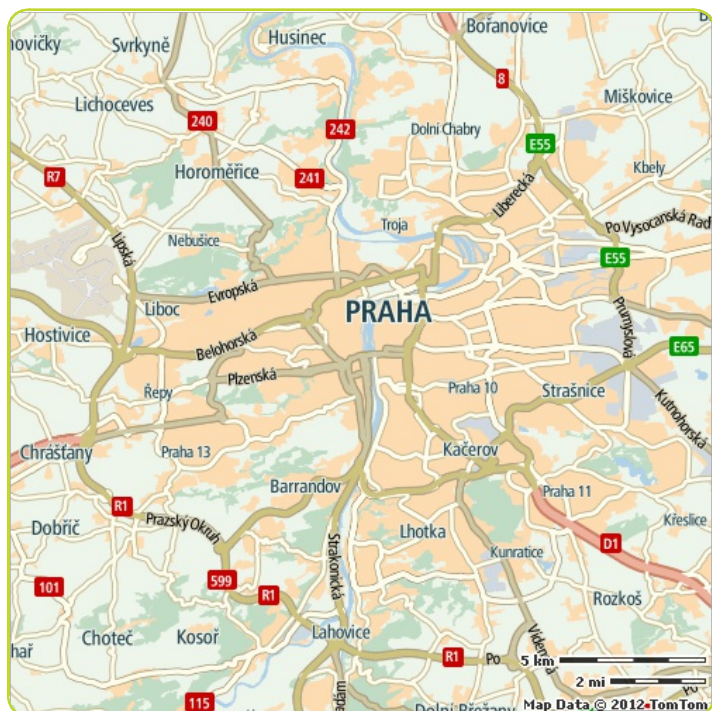
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Prague



Congestion level

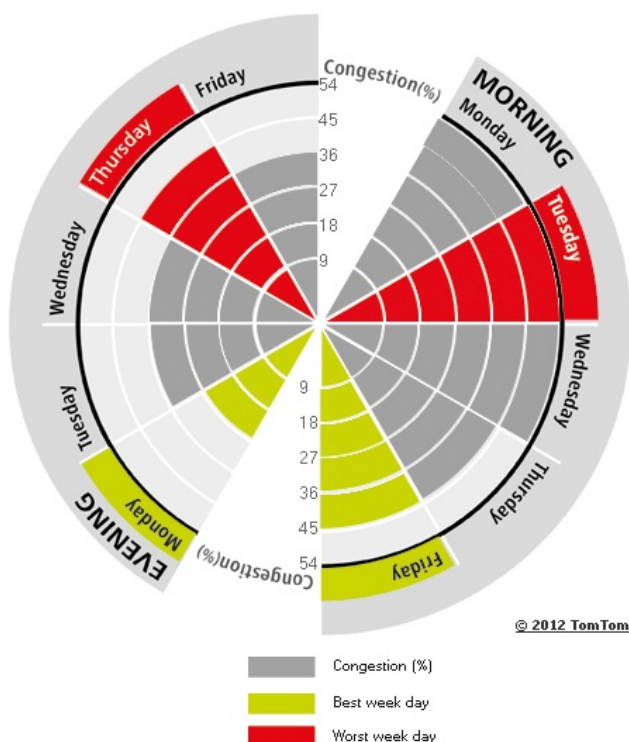
20%

Ranking

Ranking of city compared to continent	24/31
Previous ranking	20 ▼
Congestion level on highways	13%
Congestion level on non-highways	27%
Delay per hour driven in peak period	23 min
Delay per year with a 30 min commute	63 h

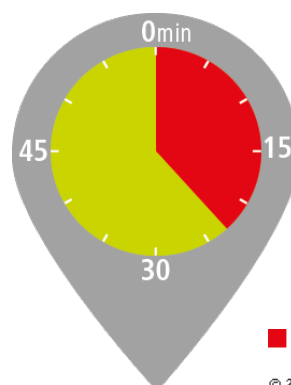
The weekly congestion pattern:

Best and worst peak periods of the week

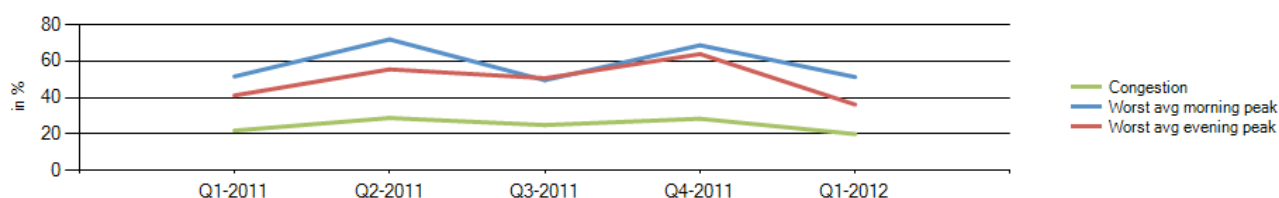


Most congested specific day	Tue 7 Feb 2012
Average free flow speed	35 mi/h
Average speed during worst peak period	30 mi/h
Total network length	652 mi
Total network length highways	145 mi
Total network length non-highways	506 mi
Total vehicle miles	1 569 164 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Rome

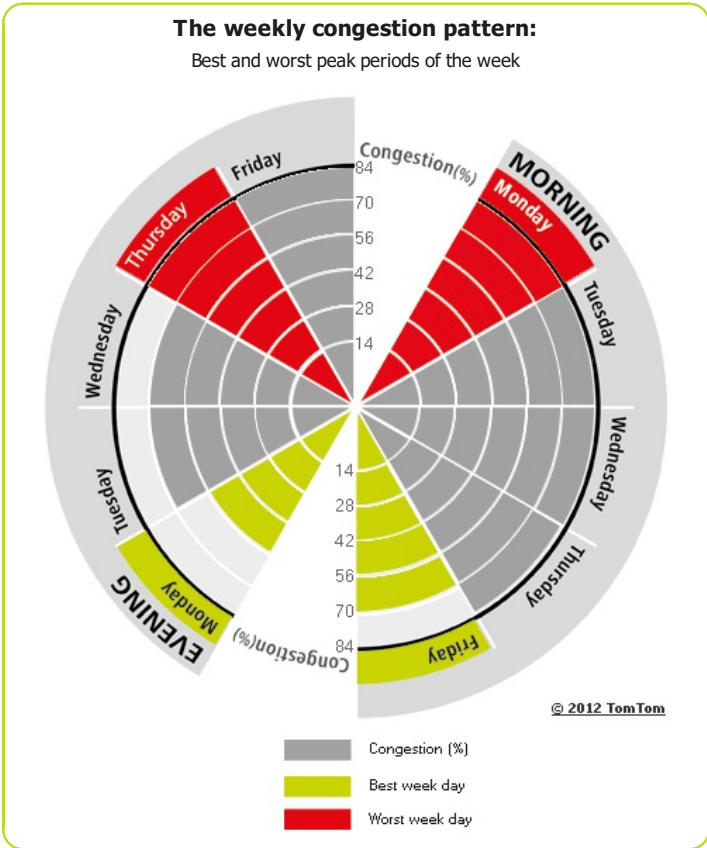


Congestion level

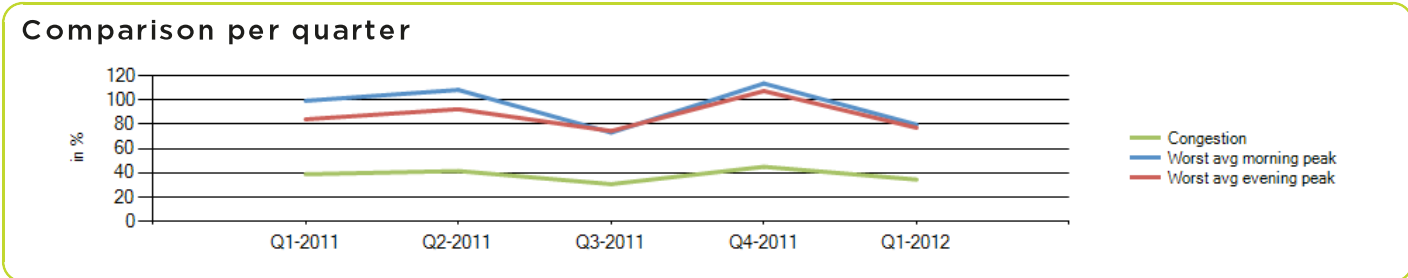
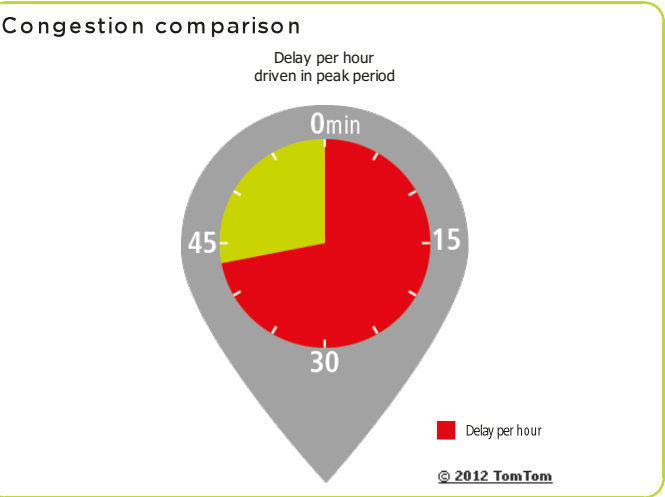
34%

Ranking

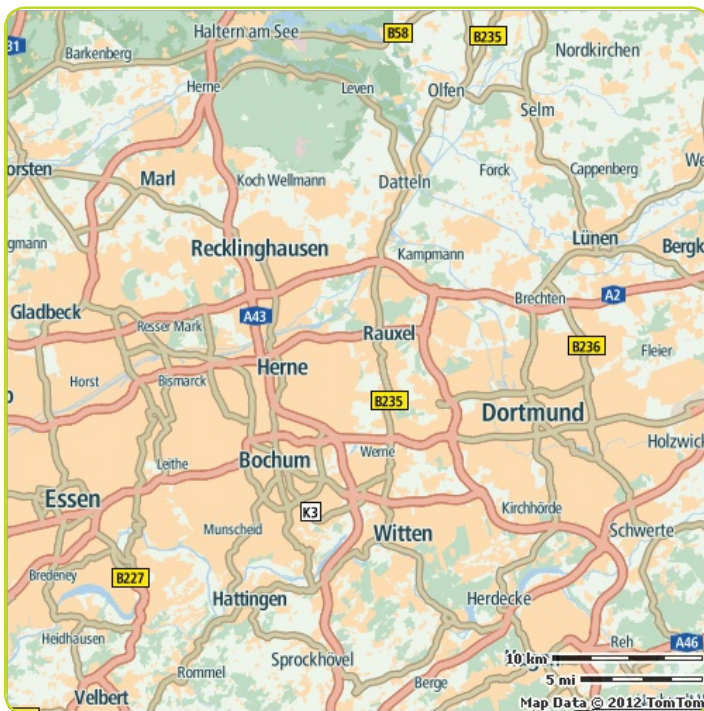
Ranking of city compared to continent	3/31
Previous ranking	3 ---
Congestion level on highways	24%
Congestion level on non-highways	40%
Delay per hour driven in peak period	42 min
Delay per year with a 30 min commute	94 h



Most congested specific day	Fri 3 Feb 2012
Average free flow speed	37 mi/h
Average speed during worst peak period	30 mi/h
Total network length	797 mi
Total network length highways	135 mi
Total network length non-highways	662 mi
Total vehicle miles	3 443 122 mi



Ruhr region east



Congestion level

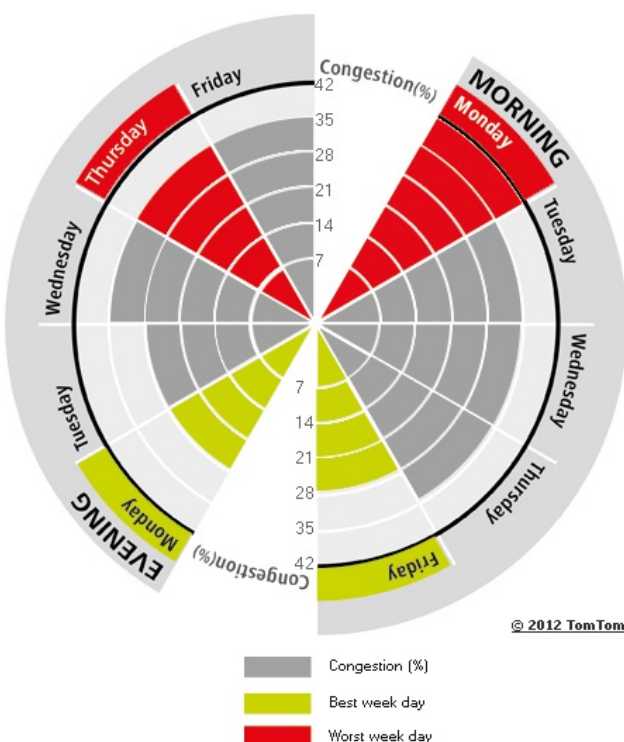
15%

Ranking

Ranking of city compared to continent	28/31
Previous ranking	30 ▲
Congestion level on highways	11%
Congestion level on non-highways	24%
Delay per hour driven in peak period	17 min
Delay per year with a 30 min commute	50 h

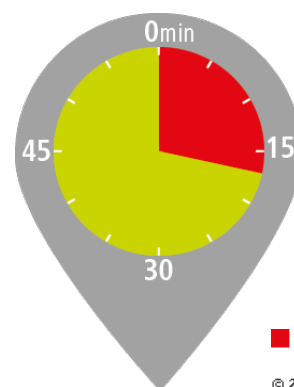
The weekly congestion pattern:

Best and worst peak periods of the week

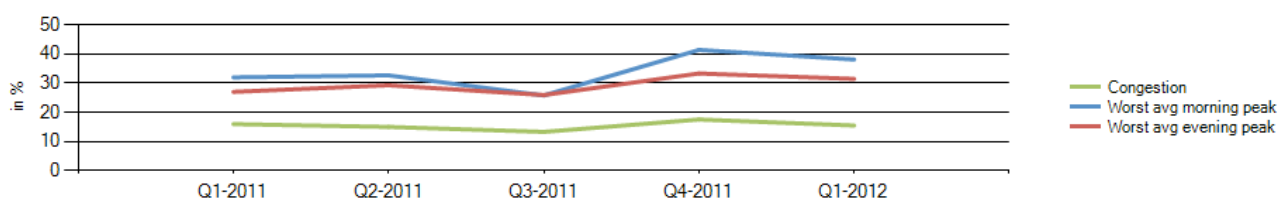


Most congested specific day	Thu 19 Jan 2012
Average free flow speed	34 mi/h
Average speed during worst peak period	31 mi/h
Total network length	1 878 mi
Total network length highways	388 mi
Total network length non-highways	1 491 mi
Total vehicle miles	4 185 280 mi

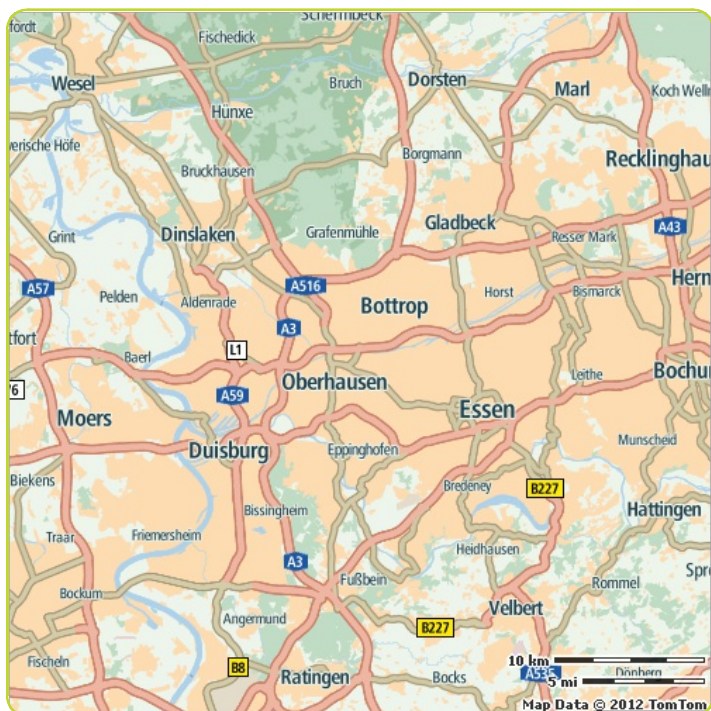
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Ruhr region west



Congestion level

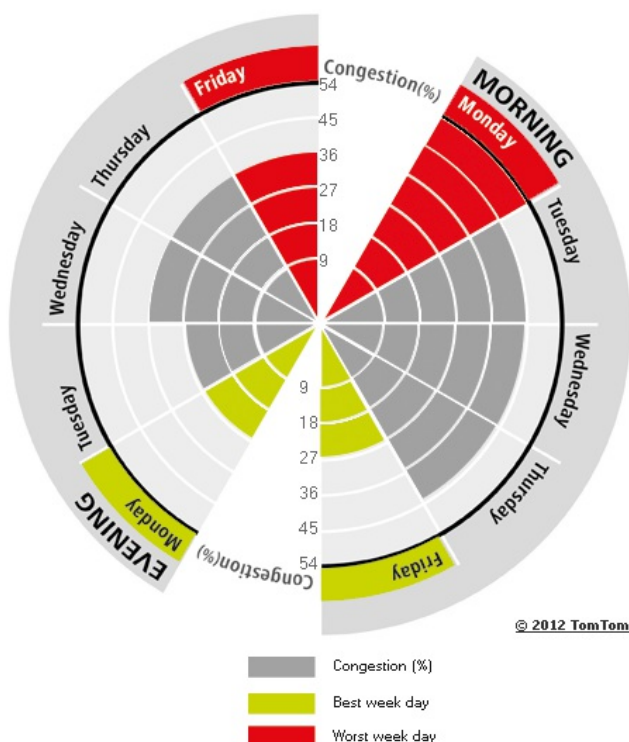
17%

Ranking

Ranking of city compared to continent	25/31
Previous ranking	26 ▲
Congestion level on highways	13%
Congestion level on non-highways	28%
Delay per hour driven in peak period	19 min
Delay per year with a 30 min commute	55 h

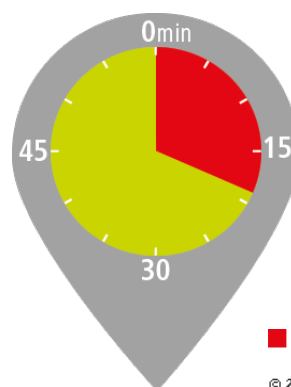
The weekly congestion pattern:

Best and worst peak periods of the week

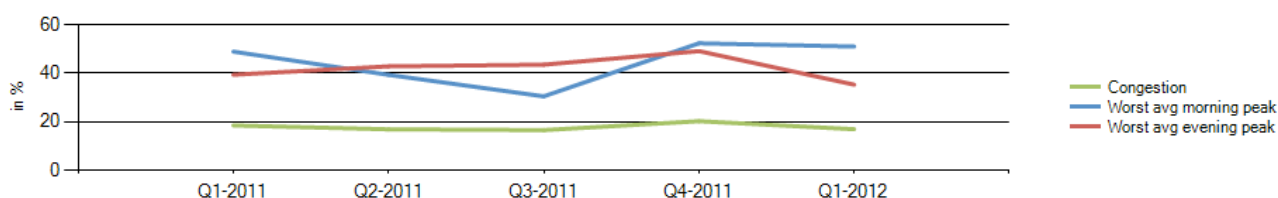


Most congested specific day	Wed 21 Mar 2012
Average free flow speed	34 mi/h
Average speed during worst peak period	30 mi/h
Total network length	1 861 mi
Total network length highways	423 mi
Total network length non-highways	1 438 mi
Total vehicle miles	5 651 512 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Stockholm



Congestion level

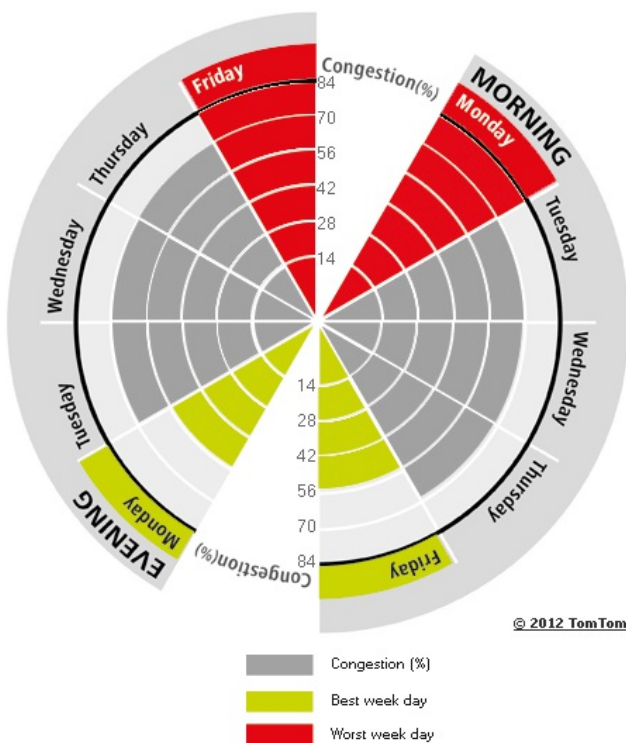
27%

Ranking

Ranking of city compared to continent	9/31
Previous ranking	8 ▼
Congestion level on highways	22%
Congestion level on non-highways	32%
Delay per hour driven in peak period	38 min
Delay per year with a 30 min commute	89 h

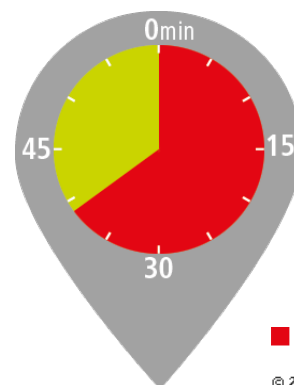
The weekly congestion pattern:

Best and worst peak periods of the week

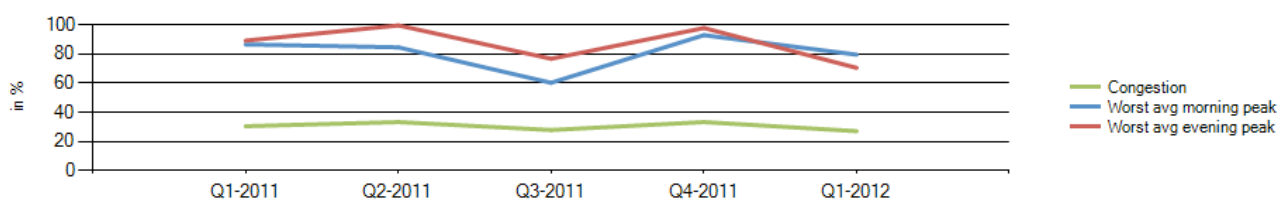


Most congested specific day	Fri 3 Feb 2012
Average free flow speed	33 mi/h
Average speed during worst peak period	28 mi/h
Total network length	691 mi
Total network length highways	141 mi
Total network length non-highways	550 mi
Total vehicle miles	917 483 mi

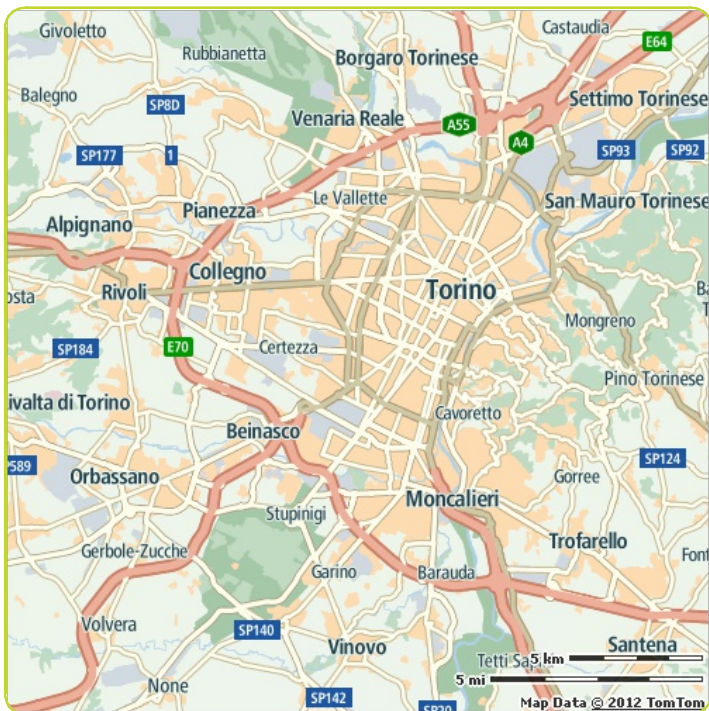
Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Turin



Congestion level

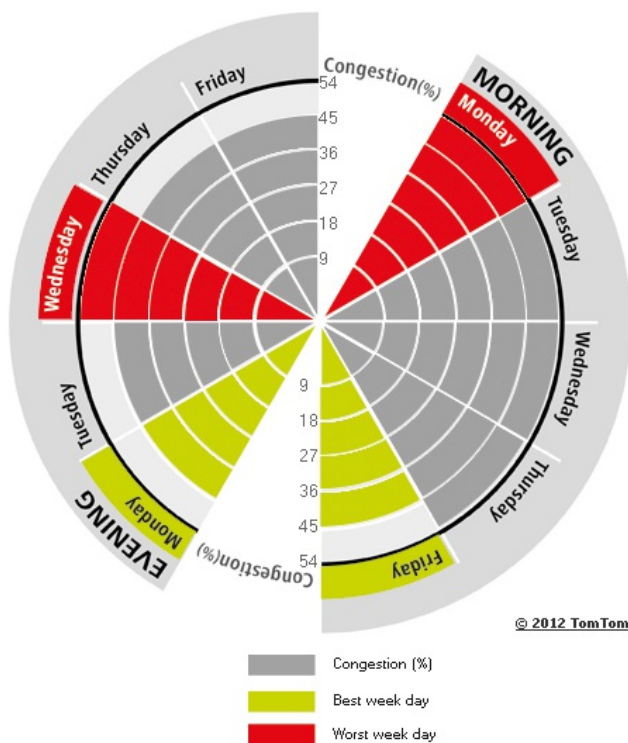
23%

Ranking

Ranking of city compared to continent	17/31
Previous ranking	18 ▲
Congestion level on highways	11%
Congestion level on non-highways	29%
Delay per hour driven in peak period	27 min
Delay per year with a 30 min commute	71 h

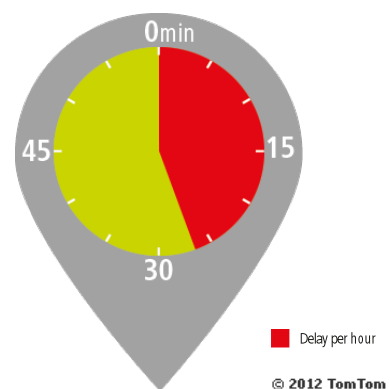
The weekly congestion pattern:

Best and worst peak periods of the week

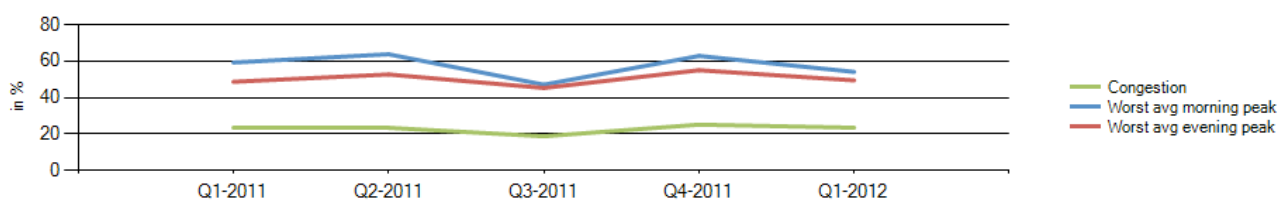


Most congested specific day	Wed 1 Feb 2012
Average free flow speed	34 mi/h
Average speed during worst peak period	30 mi/h
Total network length	895 mi
Total network length highways	89 mi
Total network length non-highways	806 mi
Total vehicle miles	1 696 988 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Valencia



Congestion level

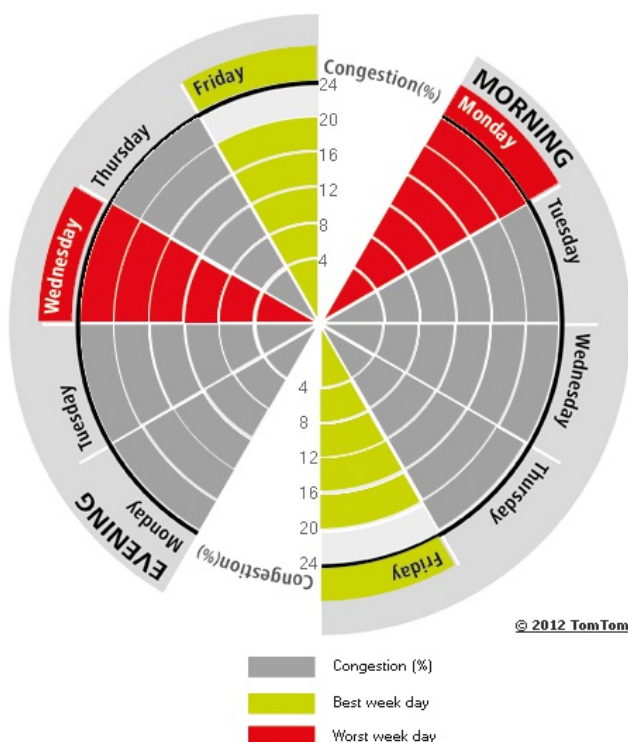
14%

Ranking

Ranking of city compared to continent	30/31
Previous ranking	28 ▼
Congestion level on highways	7%
Congestion level on non-highways	23%
Delay per hour driven in peak period	12 min
Delay per year with a 30 min commute	38 h

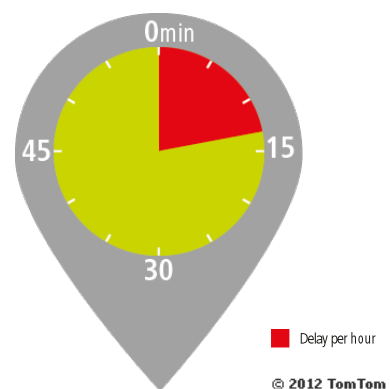
The weekly congestion pattern:

Best and worst peak periods of the week

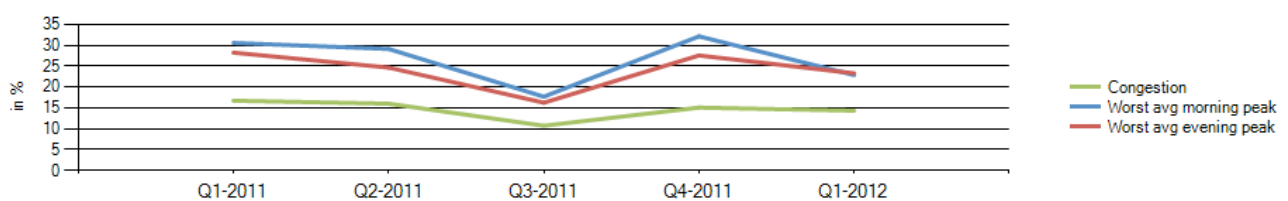


Most congested specific day	Mon 16 Jan 2012
Average free flow speed	38 mi/h
Average speed during worst peak period	37 mi/h
Total network length	516 mi
Total network length highways	146 mi
Total network length non-highways	370 mi
Total vehicle miles	996 472 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Vienna



Congestion level

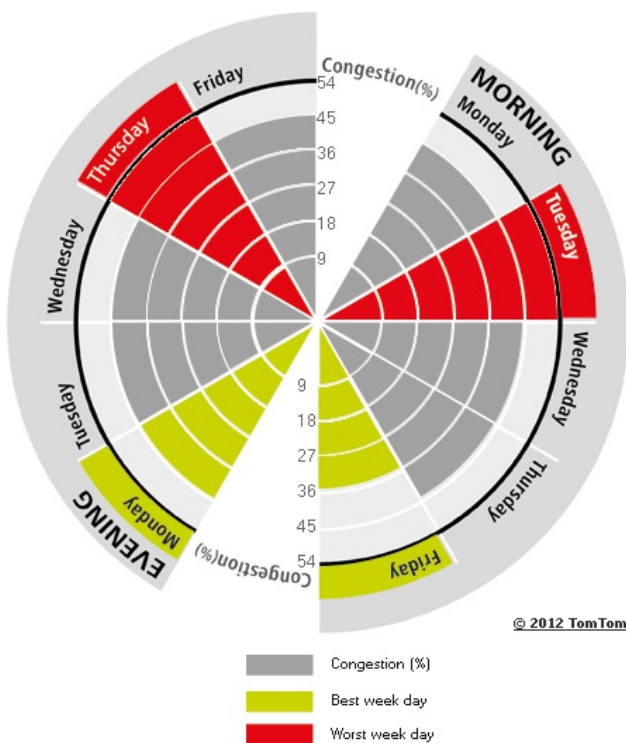
24%

Ranking

Ranking of city compared to continent	14/31
Previous ranking	17 ▲
Congestion level on highways	16%
Congestion level on non-highways	31%
Delay per hour driven in peak period	25 min
Delay per year with a 30 min commute	67 h

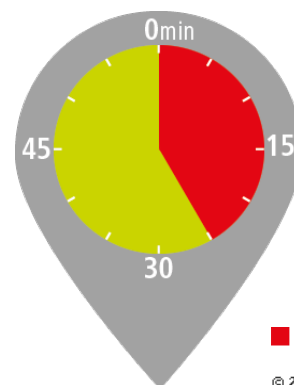
The weekly congestion pattern:

Best and worst peak periods of the week

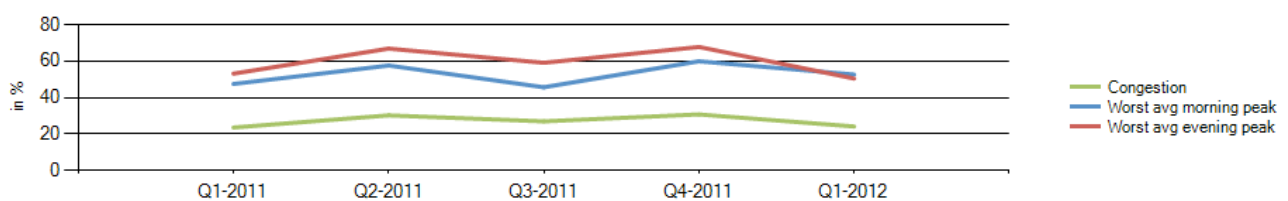


Most congested specific day	Tue 7 Feb 2012
Average free flow speed	32 mi/h
Average speed during worst peak period	28 mi/h
Total network length	815 mi
Total network length highways	142 mi
Total network length non-highways	674 mi
Total vehicle miles	2 541 887 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Warsaw



Congestion level

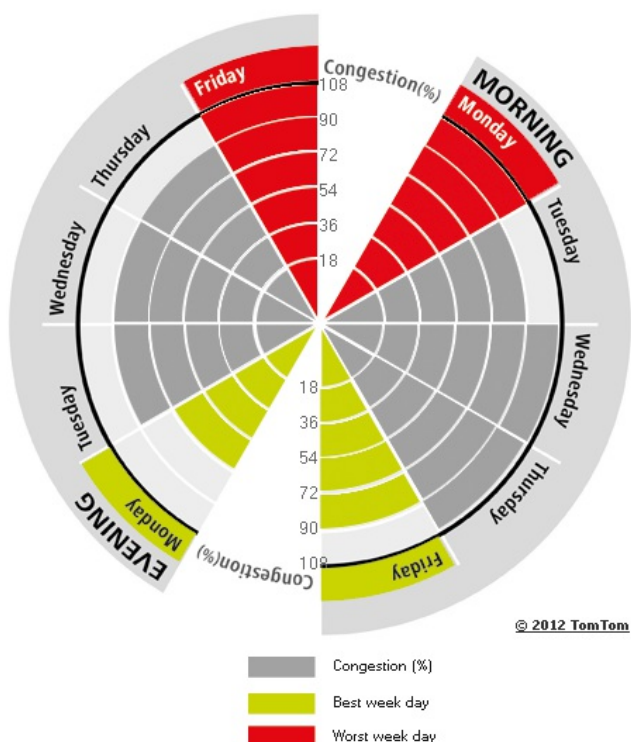
42%

Ranking

Ranking of city compared to continent	1/31
Previous ranking	1 ---
Congestion level on highways	39%
Congestion level on non-highways	45%
Delay per hour driven in peak period	52 min
Delay per year with a 30 min commute	106 h

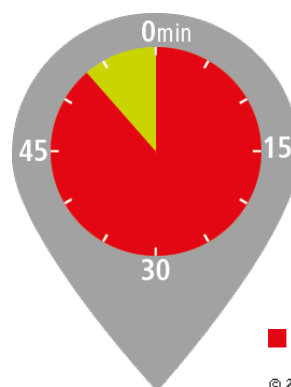
The weekly congestion pattern:

Best and worst peak periods of the week

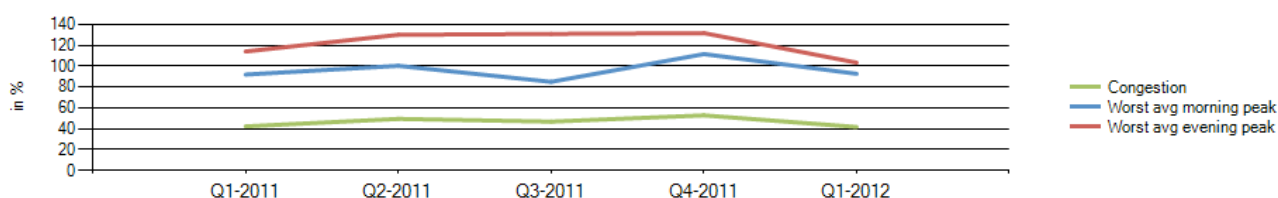


Most congested specific day	Wed 15 Feb 2012
Average free flow speed	37 mi/h
Average speed during worst peak period	30 mi/h
Total network length	613 mi
Total network length highways	224 mi
Total network length non-highways	389 mi
Total vehicle miles	644 112 mi

Congestion comparison

Delay per hour
driven in peak period

Comparison per quarter



Evaluated cities

Europe

Rank	City	Country	24/7	Morning peak	Congestion Level (%)		Weekdays	Weekend	Average speed (mi/h)
					Evening peak				
1	Warsaw	Poland	42	89	86		50	18	34
2	Marseille	France	41	79	81		46	23	28
3	Rome	Italy	34	76	66		40	17	33
4	Brussels	Belgium	34	82	86		41	13	29
5	Paris	France	32	72	63		37	19	30
6	Dublin	Ireland	30	70	62		35	19	32
7	Bradford-Leeds	United Kingdom	28	63	60		31	15	33
8	London	United Kingdom	27	48	50		30	18	31
9	Stockholm	Sweden	27	65	62		31	13	31
10	Hamburg	Germany	27	49	42		30	15	32
11	Cologne	Germany	26	54	47		31	12	32
12	Milan	Italy	26	71	53		31	11	31
13	Berlin	Germany	26	42	44		29	14	31
14	Vienna	Austria	24	42	43		28	12	30
15	Oslo	Norway	24	66	70		28	8	31
16	Naples	Italy	24	34	43		27	15	28
17	Turin	Italy	23	50	42		27	13	32
18	Munich	Germany	23	50	36		26	14	34
19	Birmingham	United Kingdom	21	51	43		24	9	35
20	Luxembourg	Luxembourg	21	51	47		25	6	34
21	Barcelona	Spain	21	49	39		24	9	34
22	Lisbon	Portugal	20	41	49		24	8	35
23	Helsinki	Finland	20	43	43		23	11	36
24	Prague	Czech Republic	20	46	31		24	7	33
25	Ruhr region west	Germany	17	38	28		20	6	32
26	Copenhagen	Denmark	16	42	29		19	7	35
27	Madrid	Spain	16	41	33		19	6	41
28	Ruhr region east	Germany	15	31	28		18	5	32
29	Amsterdam	Netherlands	15	33	31		17	6	34
30	Valencia	Spain	14	21	21		16	9	37
31	Bern	Switzerland	8	19	31		11	0	30

Keywords

Keywords	Definition
Average Free Flow Speed	Measured average road speed during a free flow situation (usually at night).
Average observed speeds	Average observed speeds within specific time periods.
Cities	In this report urban areas in all countries with TomTom HD Traffic are evaluated. In these countries all urban areas that include a country capital and all urban areas that have over 800 000 inhabitants are included. A maximum of 20 urban areas per country is evaluated.
City	See Cities.
Congestion level	See TomTom Congestion Level.
Delay per hour driven in peak period	Delay in minutes per hour driven during morning and evening peak times compared to free flow situations. For example, 22 minutes delay per hour at peak times indicates that a one hour journey driven at free flow times will take an additional 22 minutes at peak times.
Delay per year for commuters	See Time delay per year for commuters.
FRC	Functional Road Class, an industry standard that defines different road categories. FRC0 = highways, FRC1 = international roads/slip roads, FRC2 = major roads, FRC3 = secondary roads, FRC4 = connecting roads.
Free flow	See Free flow situation.
Free flow condition	See Free flow situation.
Free flow situation	A journey made without any delay caused by traffic congestion. This most typically occurs during the night.
Free Flow Speed	See Average Free Flow Speed.
Highways	See FRC.
Most congested day	See most congested specific day.
Most congested specific day	The day with the highest Congestion Level.
Non-highways	See FRC
Peak hours	See Peak period.
Peak period	Based on real traffic measurements, the busiest one-hour-long period in the morning and in the evening period were determined for every evaluated city.
Road network	In this report all speed measurements on roads classified as FRC0 through FRC4 within the urban areas contribute to the statistics.
Time delay per year for commuters	Delay per year with a 30 minute commute. Based on 230 work days per year and two peak periods per day.
TomTom Congestion Level	Increase in overall travel times when compared to a free flow situation. For example, a Congestion Level of 12% corresponds to 12% longer travel times compared to a free flow situation.
Total network length	Total length of the evaluated network in miles.
Total network length highways	Total length of the evaluated network in miles for FRC0 and FRC1 only.
Total network length non-highways	Total length of the evaluated network in miles for FRC2, FRC3 and FRC4 only.
Total vehicle miles	Total distance covered by all TomTom user measurements, used for this specific report.
Travel time	TomTom's historic traffic database contains over six trillion anonymous speed measurements. These speed measurements are used to calculate the travel times on individual road segments and entire networks.
Urban area	Geographical area that takes population size and network layout into account. Speed measurements within the defined urban area contribute to the statistics.
Urban network	The road network in an urban area.

Explanation of tables and figures

Pages for continents

Section	Description
Congestion Level	Average Congestion Level across all cities evaluated on the continent.
Map of the continent	Image of the continent showing the 5 most congested cities.
Top 5 - increasing congestion	Top 5 cities with largest increase in the Congestion Level compared to the previous quarter.
Top 5 - decreasing congestion	Top 5 cities with largest decrease in the Congestion Level compared to the previous quarter.
Top 10 cities	Ranking of cities according to Congestion Levels.
• Rank	Rank according to Congestion Levels.
• Previous rank	Rank according to city Congestion Levels in the previous year.
• Congestion	Congestion Level.
• Morning peak	Average Congestion Level during morning peak periods on work days.
• Evening peak	Average Congestion Level during evening peak periods on work days.
• Highways	Average Congestion Level for highways only.
• Non-highways	Average Congestion Level for non-highways only.
Comparison per quarter	Change in Congestion Levels over the last year.
• Congestion	Average Congestion Level for all the cities evaluated.
• Worst average morning peak	Highest Congestion Level during the 5 morning peak periods (work days) in all cities evaluated.
• Worst average evening peak	Highest Congestion Level during the 5 evening peak periods (work days) in all cities evaluated.

Pages for cities

Section	Description
Congestion Level	Average Congestion Level across all roads in the city.
Ranking of city compared to continent	Rank of the city according to Congestion Level compared to other evaluated cities on the continent.
Congestion Level on highways	Congestion Level for highways only.
Congestion Level on non-highways	Congestion Level for non-highways only.
Delay per hour driven in peak period	Average delay in minutes for a one hour journey driven in the peak periods.
Delay per year with a 30 minute commute	The total accumulated delay over one year for a 30 minute commute driven in the peak periods on work days.
Speed during worst peak period	Average speed during most congested weekly rush hour.
The weekly congestion pattern	Average Congestion Levels for the 10 peak periods in a week (morning and evening peak hours on 5 working days).
Comparison per quarter	Change in Congestion Level over the past quarters.
Congestion	Average Congestion Level across the city.
Worst average morning peak	Highest Congestion Level during the 5 morning peak periods (work days).
Worst average evening peak	Highest Congestion Level during the 5 evening peak periods (work days).