



UNCRD Regional EST Training Course on Railway

Tehran Metro Network

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**UNCRD Regional EST
Training Course on Railways
Tokyo, Japan**

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Iranian cities with metro

Area (km2)	1,648,195
Population (Millions)	80
Number of Most Populated Cities (over 1 million)	9

City	Length (km)	Lines
Tehran	559	12
Mashhad	119	5
Esfahan	112	4
Karaj	105	6
Ahvaz	88	4
Shiraz	73	5
Tabriz	63	4
Qom	52	3
Kermanshah	13	1
Total	1184	44

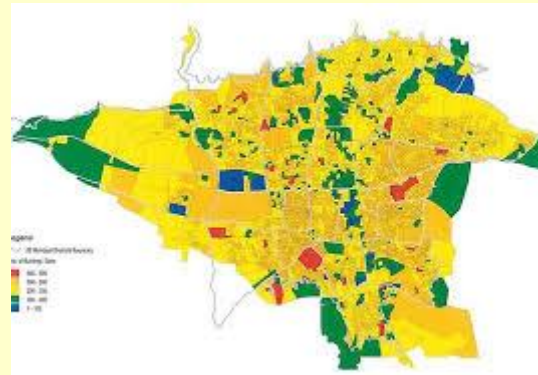


Status of urban & suburban rail lines in Iran (excluding Tehran)

Current Projects	Urban Train	Suburban Train	Total	Under Study	Under Construction
Karaj	5 Lines: 80 km	1 Line: 25 km	6 Lines: 105 km	4 Lines: 53 km	2 Lines: 52 km
Mashhad	5 Lines: 126 km	2 Lines: 106 km	7 Lines: 232 km	4 Lines: 148 km	2 Lines: 65 km
Tabriz	4 Lines: 64 km	1 Line: 20 km	5 Lines: 84 km	3 Lines: 44 km	2 Lines: 40 km
Esfahan	3 Lines: 52 km	5 Lines: 145 km	8 Lines: 197 km	4 Lines: 105 km	4 Lines: 92 km
Shiraz	6 Lines: 93 km	1 Line: 20 km	7 Lines: 113 km	5 Lines: 73 km	2 Lines: 40 km
Ahwaz	4 Lines: 88 km	2 Lines: 50 km	6 Lines: 138 km	5 Lines: 115 km	1 Line: 23 km
Qom	2 Lines: 33 km	-	2 Lines: 33 km	-	2 Lines: 33 km
Kermanshah	1 Line: 13 km	-	1 Line: 13 km	-	1 Line: 13 km
Total	30 Lines: 549 km	12 Lines: 366 km	42 Lines: 915 km	25 Lines: 538 km	16 Lines: 358 km

Tehran at a glance

- ❖ Capital of Iran
- ❖ Population: 8,300,000
- ❖ Surrounded by satellite cities and towns (total population 15.0 Million)
- ❖ Area: 800 Km²
- ❖ Population density: 10750/km²
- ❖ Residents trip: 17.0 M/day
- ❖ No. of cars: 4,000,000
- ❖ Subway: +300 km (8 lines)
- ❖ No. of buses: 8,000 (346 routes)
- ❖ No. of taxis: 80,000



Major challenges

- Tehran is surrounded by mountains, therefore natural ventilation and air flow is blocked
- “Air Inversion” in cold seasons postpones air circulation and as a result the polluted air stays in the lower layers of the air



- Private car attractiveness is still high, although many restrictive initiatives have been taken (implementation of congestion charging system for main CBD, odd-even restricted areas, elimination of fuel subsidies)

Tehran transportation system and environmental concerns

More than 4 million vehicles account for 88 percent of air pollutants produced in Tehran

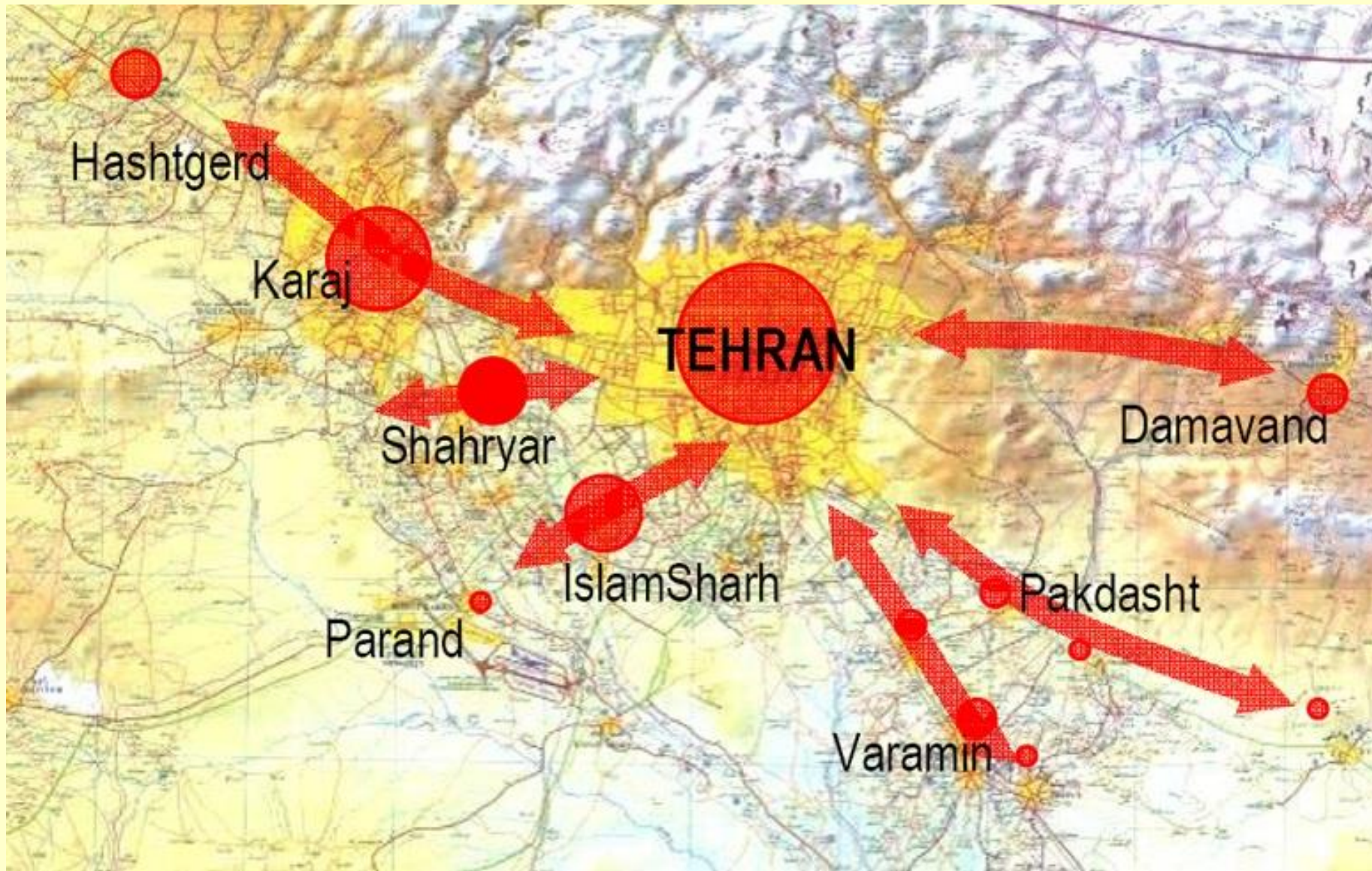
+1200 tons of air pollutants are disseminated in Tehran especially Sox, Nox, Co and also suspended particulates

Every private car consumes 9 times more energy than a public bus per passenger trip

Motorcycles are responsible for almost 50 percent of noise pollution in Tehran

Average speed of public buses is just about 14 km/hr

Greater Tehran polycentric organization - Present



City vision

In 2025,
Tehran should have Integrated,
Available, Safe, Easy, Comfortable and Clean
transportation system considering resource
limitations and other conditions for life
improvement quality.



Tehran long term urban rail plan at a glance - First version

❖ 4 Express lines 192 km

❖ 8 Urban lines 367 km

Total length: 559 km

❖ 5 Complementary tram lines, 60 km

❖ 13 Main interchange stations

❖ 54 Transfer stations

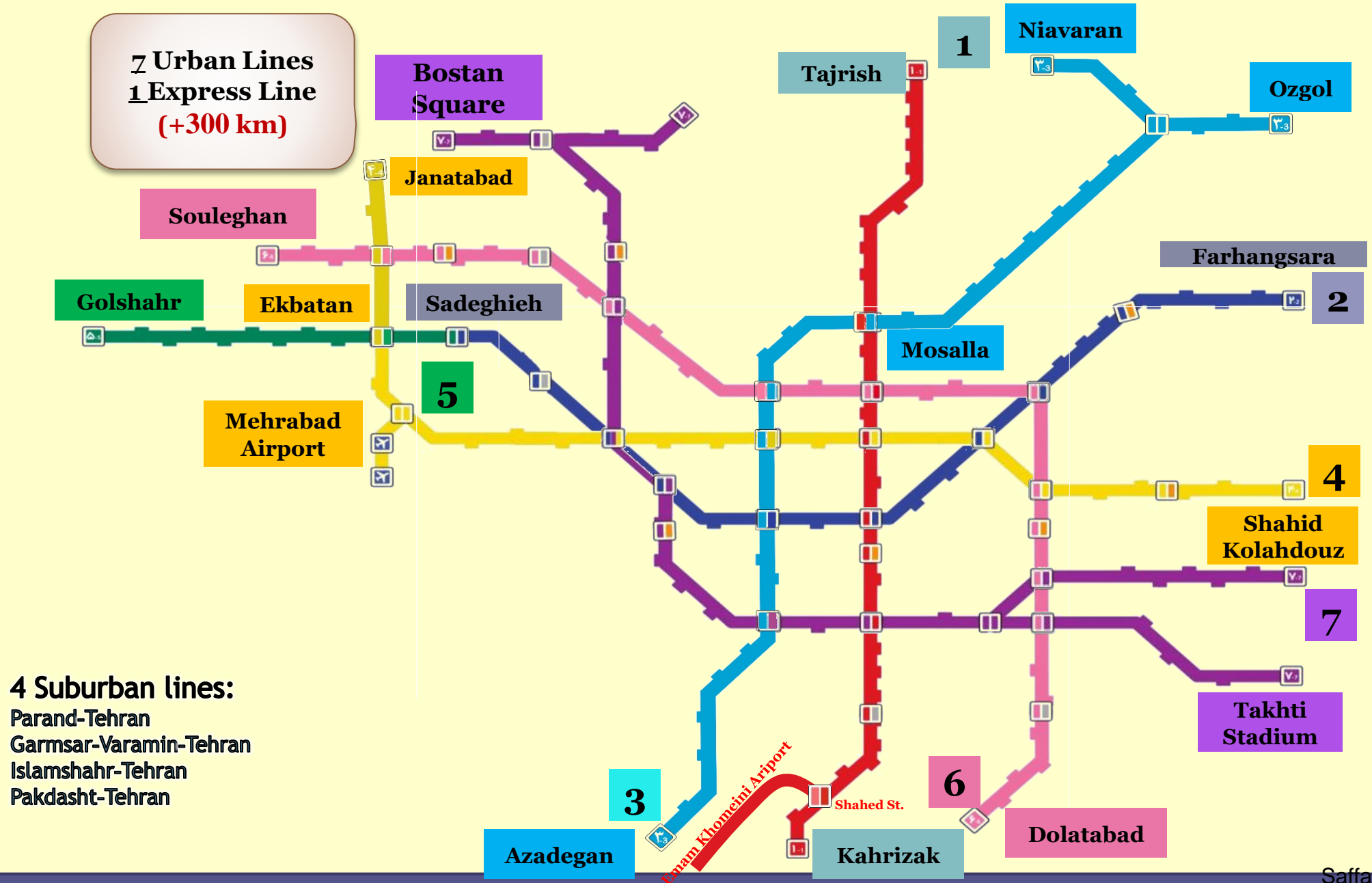
❖ 19 Park & Ride facilities

❖ 10 Public transport hubs in connection with bus, railways or airport services

❖ 10 million planned daily trips

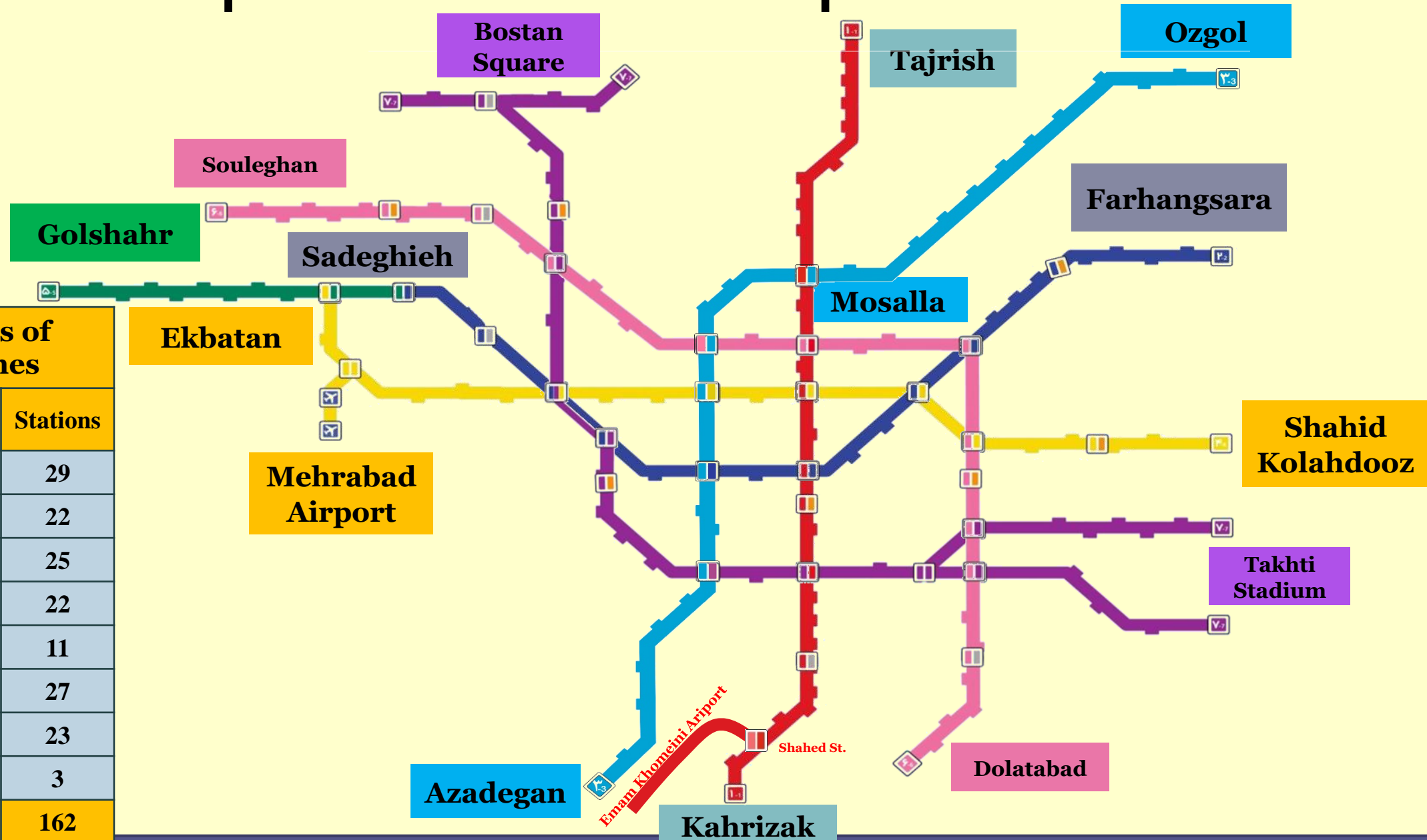


Tehran Metro Map

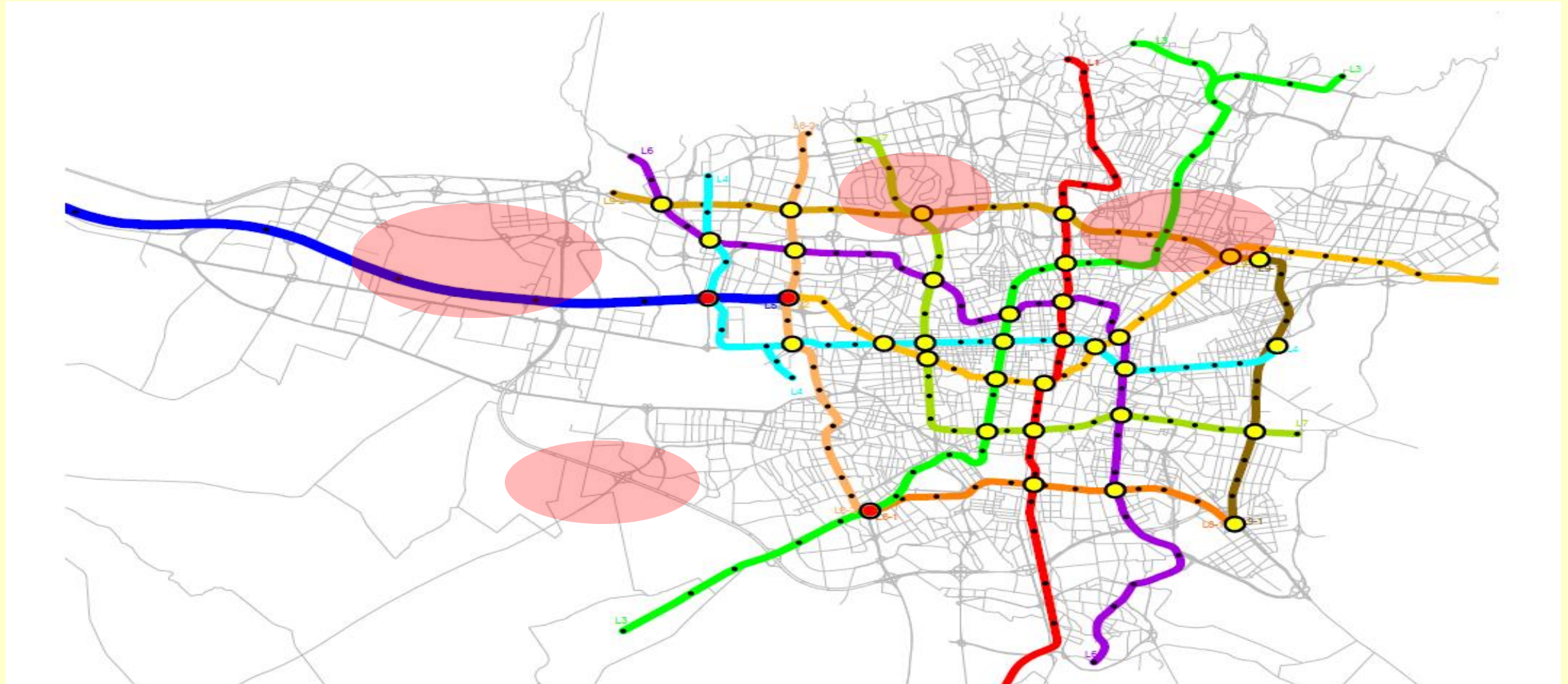


Tehran metro operational lines - September 2017

Specifications of operating lines		
Lines	Length(km)	Stations
1	42	29
2	26	22
3	37	25
4	25	22
5	45	11
6	32	27
7	27	23
1A	32	3
Total	266	162



The necessity of revision in Tehran traffic and transportation comprehensive plan to provide maximum access in areas without coverage



Introduction of superior network

The coverage of Tehran railway network equals 56.7 percent of the city area



Lines and the network coverage (proposed)

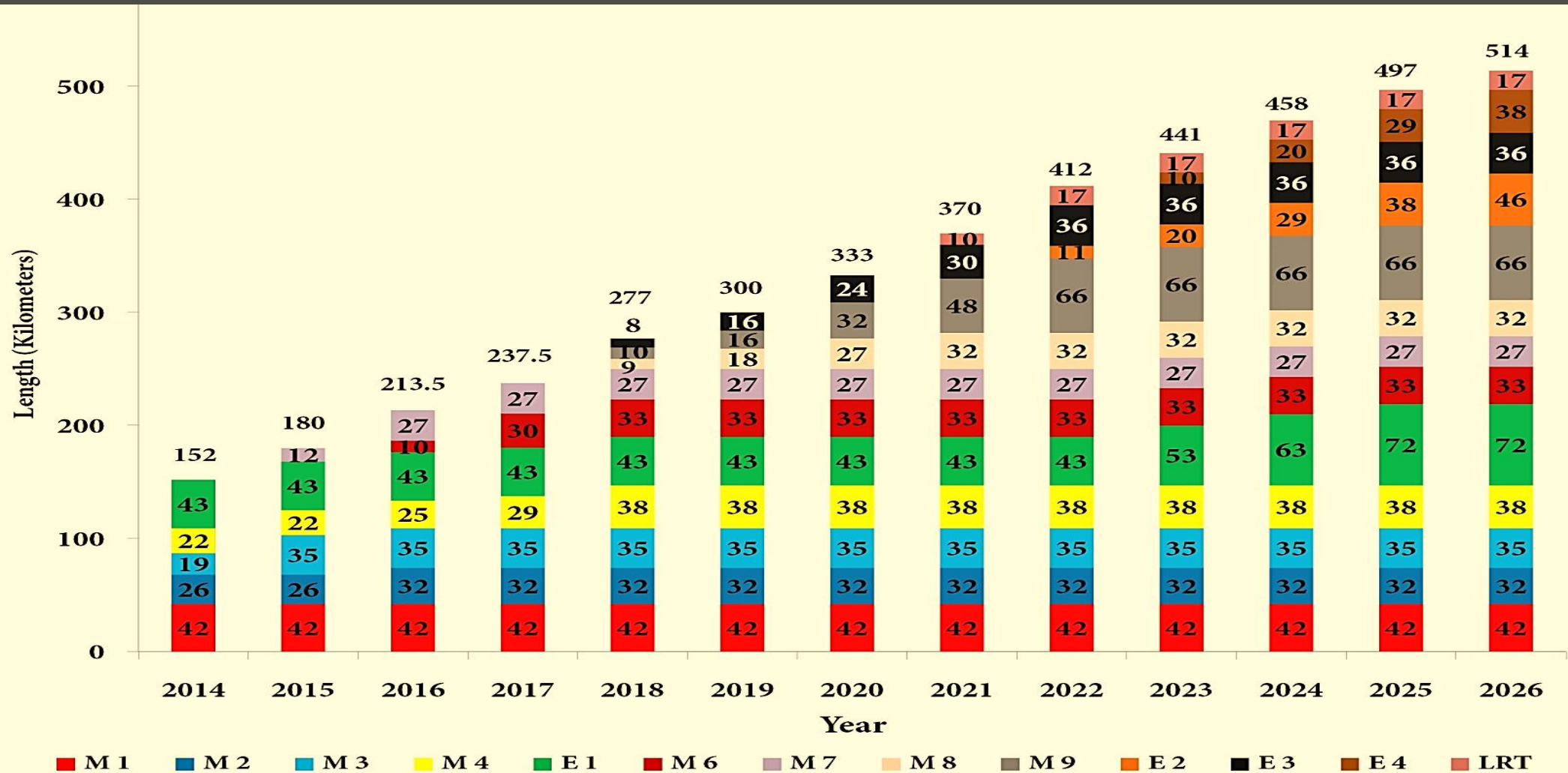


Number of Passengers	Number of Stations	Length (km)	Line
921954	29	42	1
689425	25	32	2
718580	28	37	3
1252056	32	38	4
875221	31	37	6
613612	23	27	7
560534	25	32	8
509571	21	27	9
611486	25	39	10
93736	33	17	LRT
723261	23	72	E 1
561907	19	46	E 2
246907	18	36	E 3
541551	16	38	E 4
140000	4	52	1A
300000	5	15	EsL.
9359801	357	587	SUM

NOTE: The length and the number of the stations in express lines are for urban districts

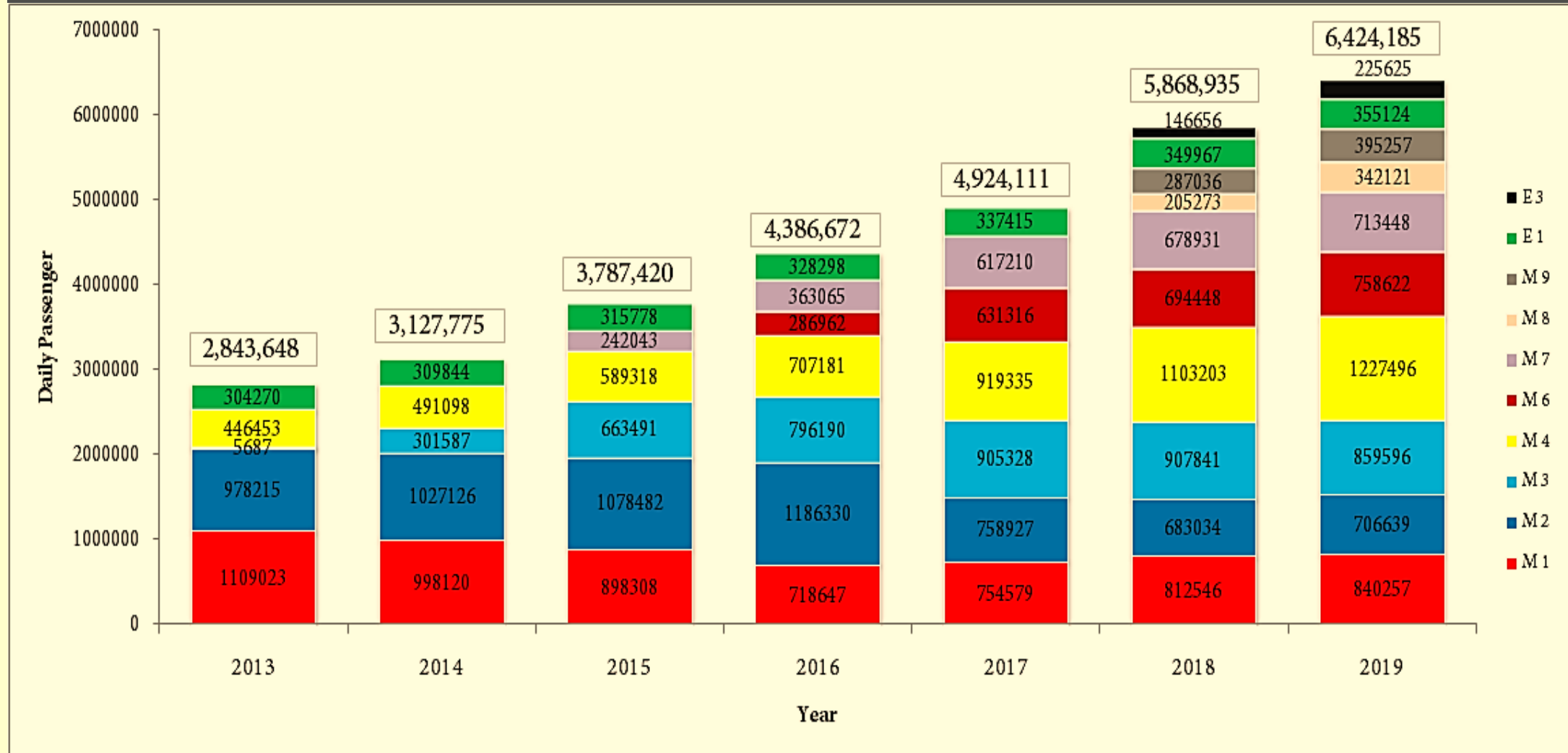
Lines and the network coverage

Length of Urban Metro Lines in Operation



Lines and the network coverage

Number of daily passengers

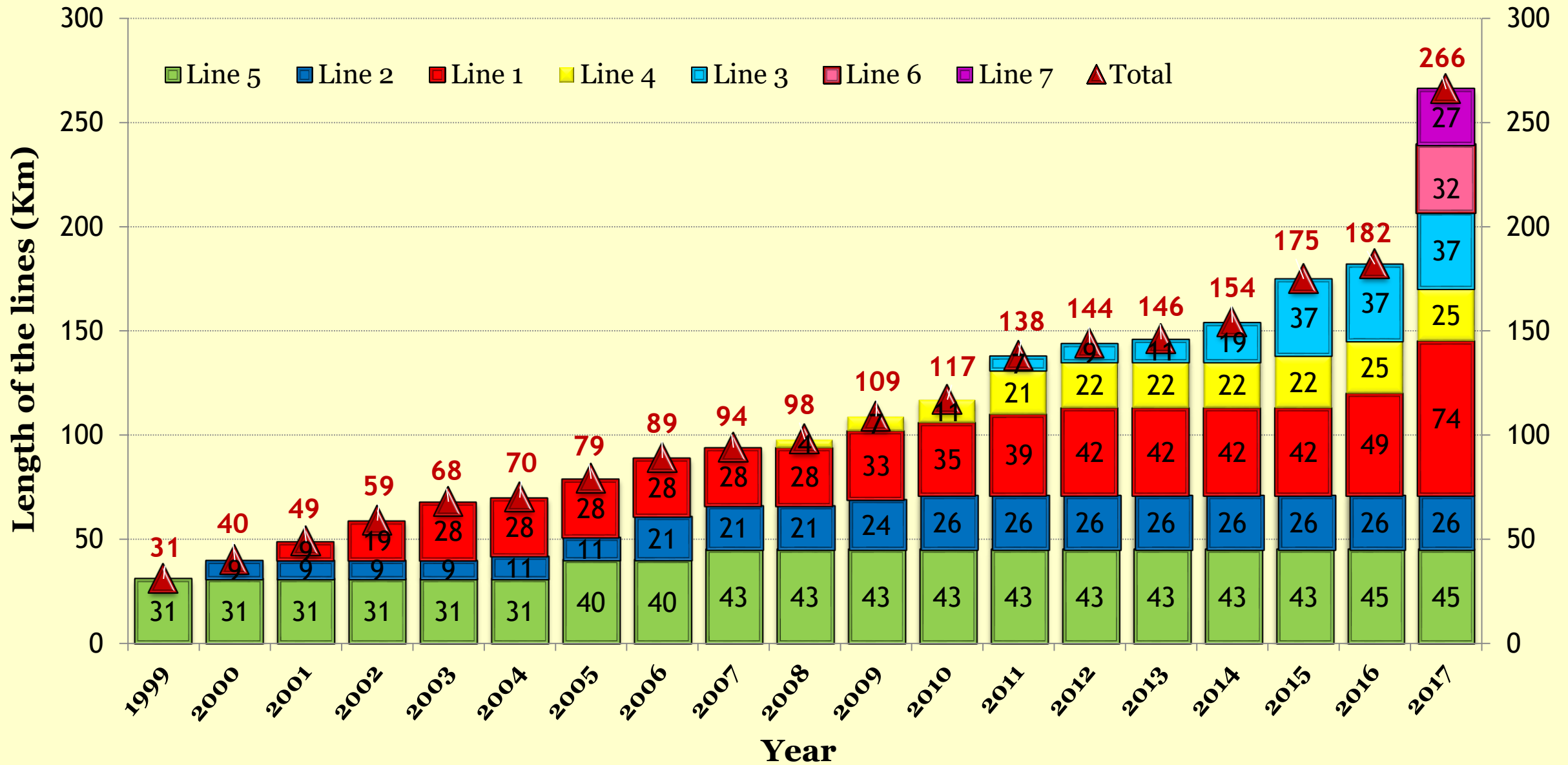




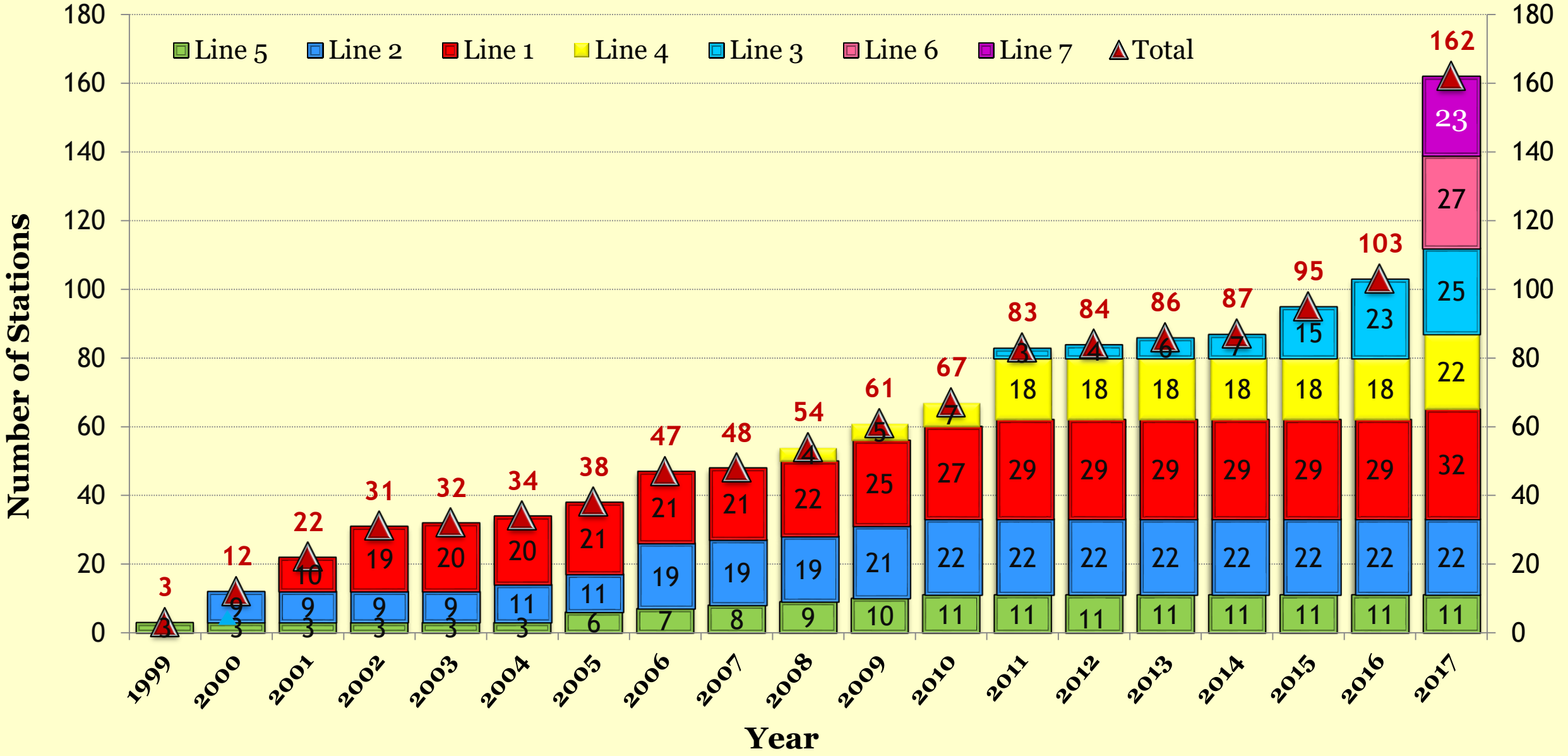
Achievements, facts and figures



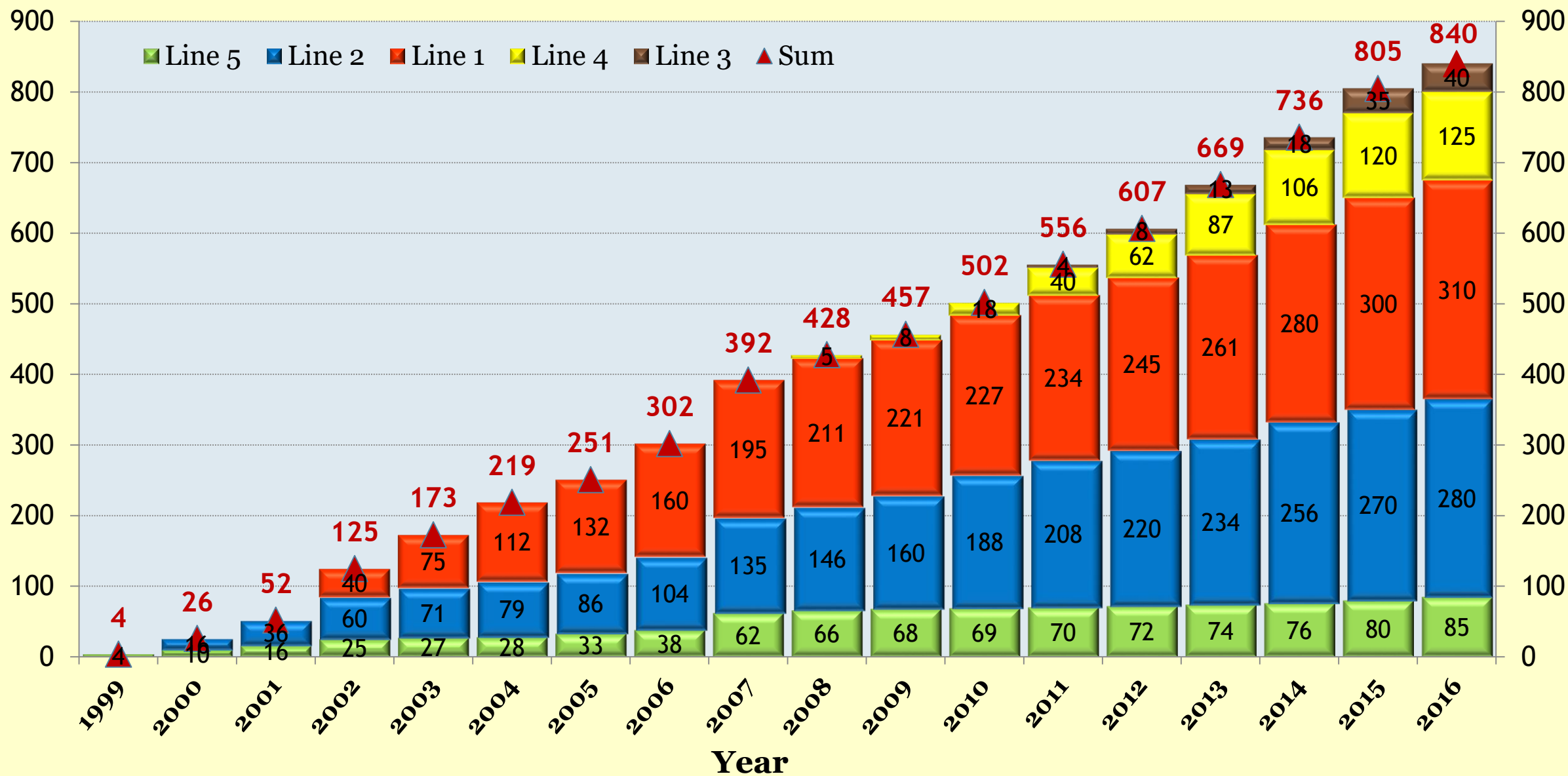
Length of the operational lines - September 2017



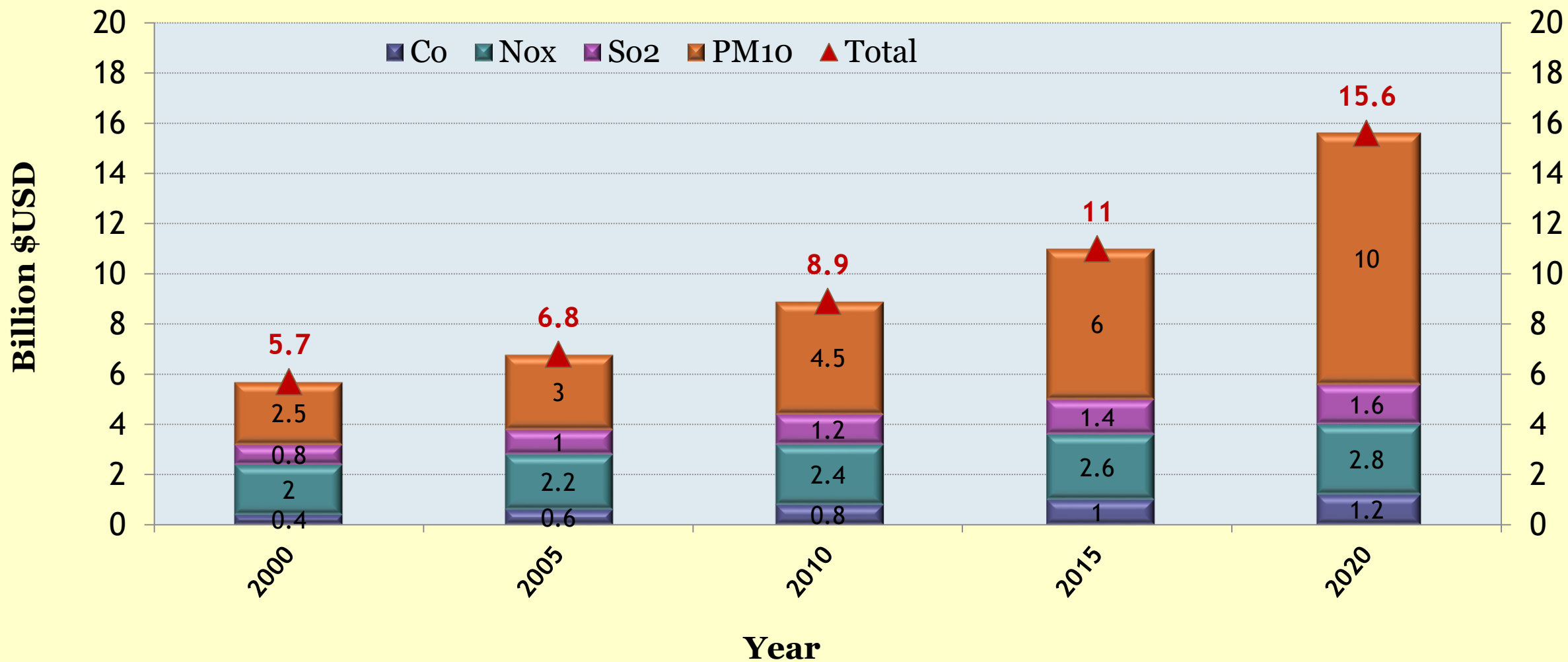
Number of the operational stations - September 2017



Yearly ridership



Air pollution damages in Iran



Metro saves 0.67 liter of gas per passenger trip

Fuel consumption and Tehran metro network

Fuel consumption saving		Million trips	Description
Million \$USD	Million liter		
91	336	560	Number of trips till 2004
2,430	9,000	15,000	Trip estimation till 2021
12,809	47,440	79,000	Trip estimation till 2051

Price of one liter of imported fuel is 23 cent

Passenger satisfaction



Thank you for your time

