



## Private Sector Perspective on Transport Project Appraisals: LIMAK's Experience

**Limak Construction**  
**21 March 2019**



# Limak Group at a Glance



## From a Leading Contractor to a Leading Conglomerate

- Established in 1976
- \$ 2.1 bn total revenues in 2018/06
- \$ 6.86 bn total assets in 2018/06

### Construction

- Numerous dam, irrigation plant, highway, airport, port, railways, pipeline, treatment plant and turn-key projects with a total value of over US\$ 10.3bn in local and international markets

### Hotels

- Owner and operator of 7 hotels in Turkey and 1 hotel in Cyprus
- Total capacity of 6,098 beds
- 2 hotels in Turkey at the planning stage, 1 hotel in Macedonia at the construction stage.

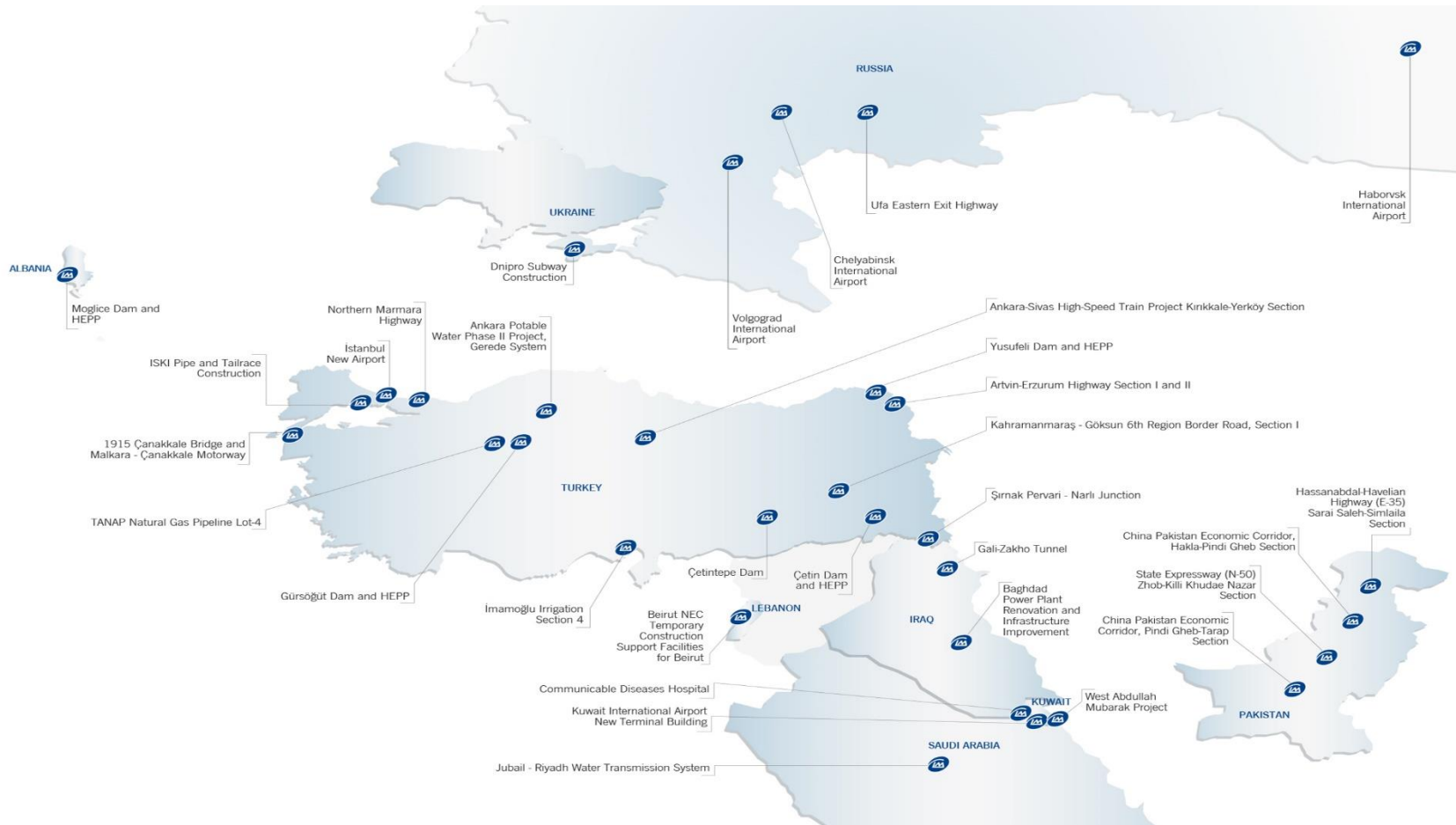
### Cement

- 2nd largest cement group in Turkey
- 1 new investment in Turkey
- 13 cement plants in Turkey, Côte d'Ivoire and Mozambique and 24 ready-mix-concrete plants in Turkey.
- 18.4 million tons of cement production capacity

### Infrastructure & Energy

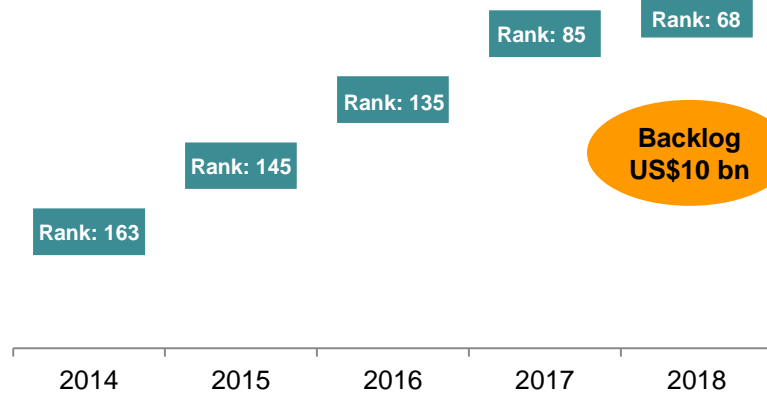
- 16 electricity generation assets (8 operational HEPPs, 1 operational CCGT, 2 operational coal fired power plant, 1 operational solar power plant, 1 operational geothermal project, 2 HEPP in construction phase and 1 solar power plant project in construction phase)
- 3 electricity trading companies
- 2 electricity distribution and retail companies
- 2 airports in operation, 1 airport under construction phase (partially operational)
- 1 port
- 1 high speed railway station
- 2 toll road projects in construction phase (partially operational)
- 1 bridge & toll road and motorway in construction phase

## Current Projects



# Limak Construction

## ENR Rankings Confirm Limak Construction's Performance



## Recently Awarded Projects

- Ufa City Highway Construction, Russia
- South Abdullah Al Mubarak Project, Kuwait
- Jubail - Riyadh Water Transmission System, Saudi Arabia
- Çetintepe Dam, Turkey
- ISKI Istanbul Europe Side Tailrace and Pipe Cons., Turkey
- Chelyabinsk International Airport, Russia
- Khabarovsk International Airport, Russia

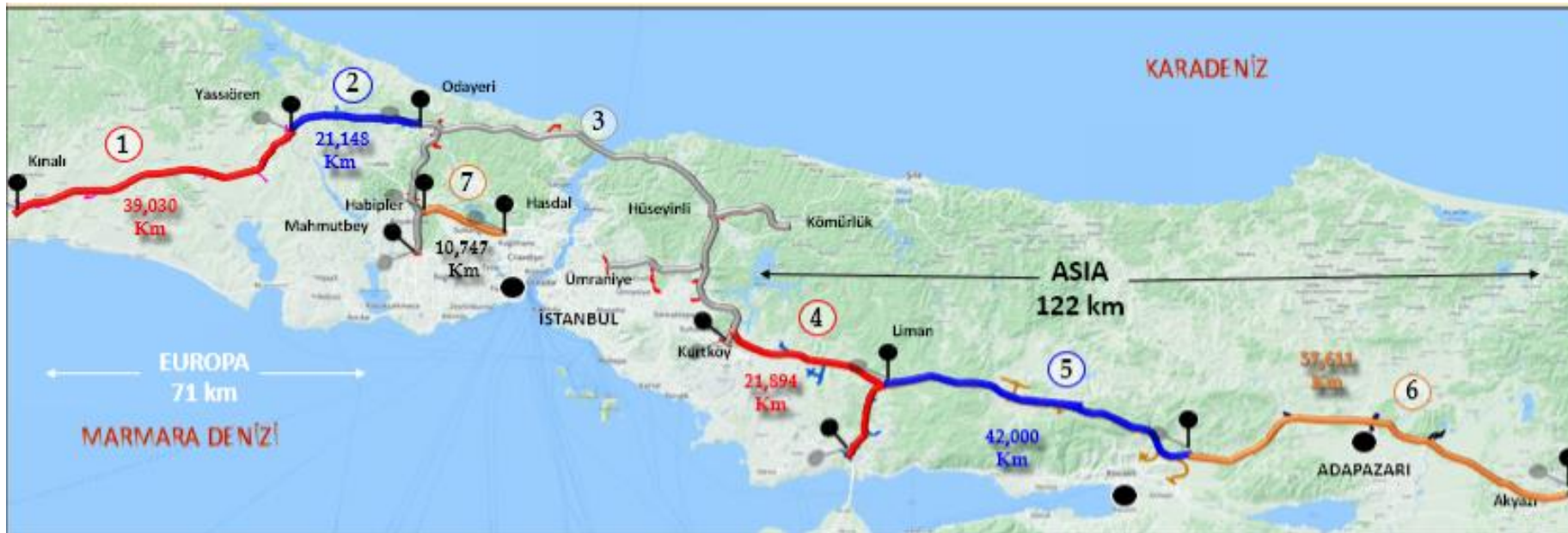
## Major Ongoing Projects

Project Name	Country
Istanbul Airport (New)	Turkey
Kahramanmaras Goksun Highway	Turkey
Northern Marmara Highway (Kurtköy-Akyazı & Kınalı-Odalı)	Turkey
TANAP (Trans Anatolian Natural Gas Pipeline Project) Onshore Pipeline Project	Turkey
Cetin HEPP	Turkey
Yusufeli Dam and HEPP	Turkey
1915 Canakkale Bridge and Malkara-Canakkale Motorway	Turkey
Devoll Hydropower Project 1-2	Albania
Kuwait International Airport	Kuwait
CPEC Western Route, Hakla-D.I.Khan Motorway	Pakistan
Iraq Gali-Zakho Tunnel Construction Project	Iraq
Volgograd Int. Airport New Terminal Building Phase 2	Russia
Subway Construction	Ukraine

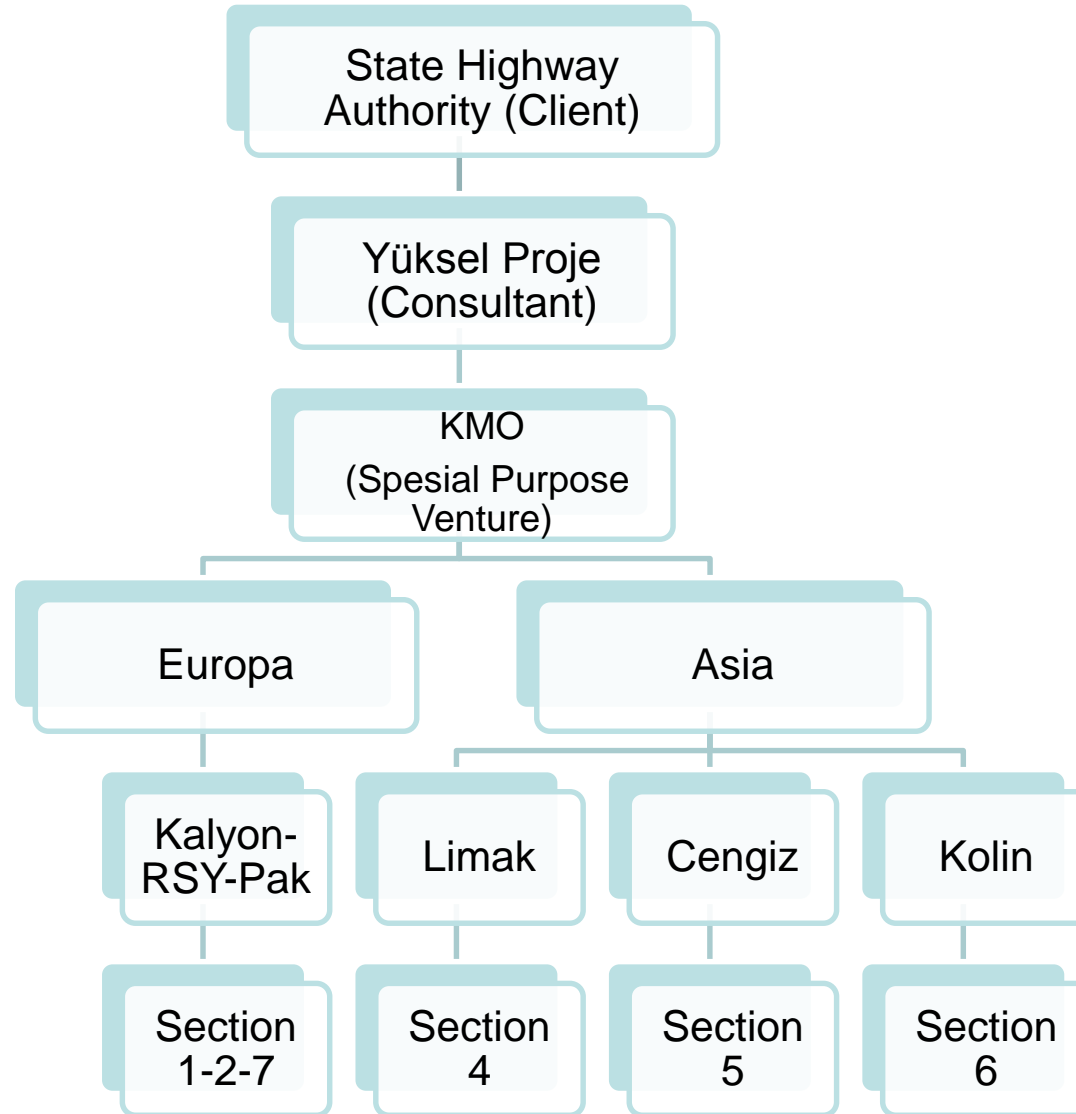
# Purpose of the Northern Marmara Motorway Project

**European side;** Providing the transportation of the Thrace region to Istanbul, with the help of the Yavuz Sultan Selim bridge and connection roads, the city traffic will be relieved and the July 15th Bridge will reduce the traffic density on Fatih Sultan Mehmet Bridge. In addition, transportation to the Istanbul New Airport will be quickly and comfortably.

**Asian side;** It will ease the transportation within the city by providing access to Istanbul and reducing the traffic density in the existing transportation axles. In addition, Transit Traffic, which passes through Istanbul, will shorten the transportation of Bursa-Izmir with Osmangazi Bridge and facilitate transportation to Central and Eastern Anatolia regions with Izmit-Akyazi sections.



# General Organization of Investment Project



# Northern Marmara Motorway

LIMAK CONSTRUCTION	CENGİZ CONSTRUCTION	KOLIN CONSTRUCTION	KALYON CONSTRUCTION	RSY CONSTRUCTION	PAK INVESTMENT
20%	20%	20%	20%	15%	5%

**KMO Anadolu Otoyol İşletmesi A.Ş. & Avrupa Otoyolu Yatırım ve İşletme A.Ş.**

## BOT of Kurtköy-Akyazı Section

- Total period: 8 years 9 months and 8 days
- Consists of 3 sub-sections with respective guaranteed daily traffic numbers:
  - Sub-section 4: Kurtköy-Liman – 125,000
  - Sub-section 5: Liman-İzmit – 90,000
  - Sub-section 6: İzmit-Akyazı – 60,000



## BOT of Kınalı - Odayeri Section

- Total period: 9 years 9 months and 10 days
- Consists of 3 sub-sections with respective guaranteed daily traffic numbers:
  - Sub-section 1: Kınalı-Yassıören – 75,000
  - Sub-section 2: Yassıören-Odayeri – 100,000
  - Sub-section 7: Habibler-Hasdal – 120,000



# Roles & Responsibilities

- **SPV / EPC**

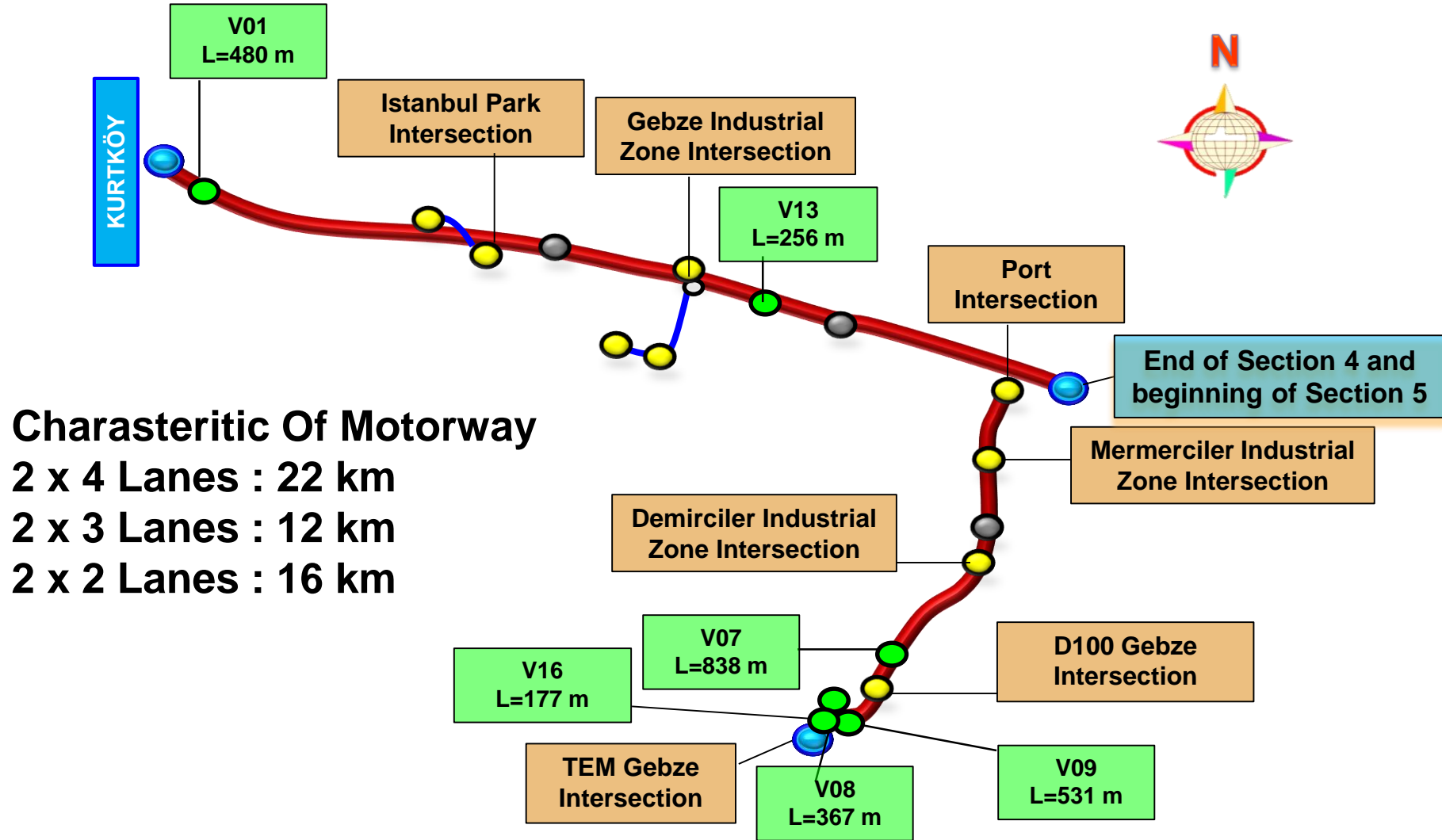
- Relations with Related Government Organizations, Client, Consultant and Local Authorities/Companies (Municipalities, Utility Companies)
- Arranging of Finance
- Expropriation
- Design (Basic Design)
- Relocation of Underground Facilities (partly)
- Selection of Subcontractors for Secondary Works (Electric, Communication, Toll Collection, Vertical/Horizontal Signage, Highway Guard Railing, Fence, etc.)

- **Responsibilities of Contractors**

- Construction of Motorway
- Detailed Design
- Provision of Manpower
- Provision of Material & Equipment
- Relocation of Underground Facilities
- Management of Secondary Works Subcontractors



# Brief Information About Project (Section 4)



# Main Motorway

- Earth Works
  - Excavation 34.000.000 m<sup>3</sup>
  - Back Fill 32.000.000 m<sup>3</sup>
- Super Structure
  - Sub Base + Base 2.600.000 ton
  - Bituminous Base + Binder + Stone Mastic Asphalt 1.600.000 ton

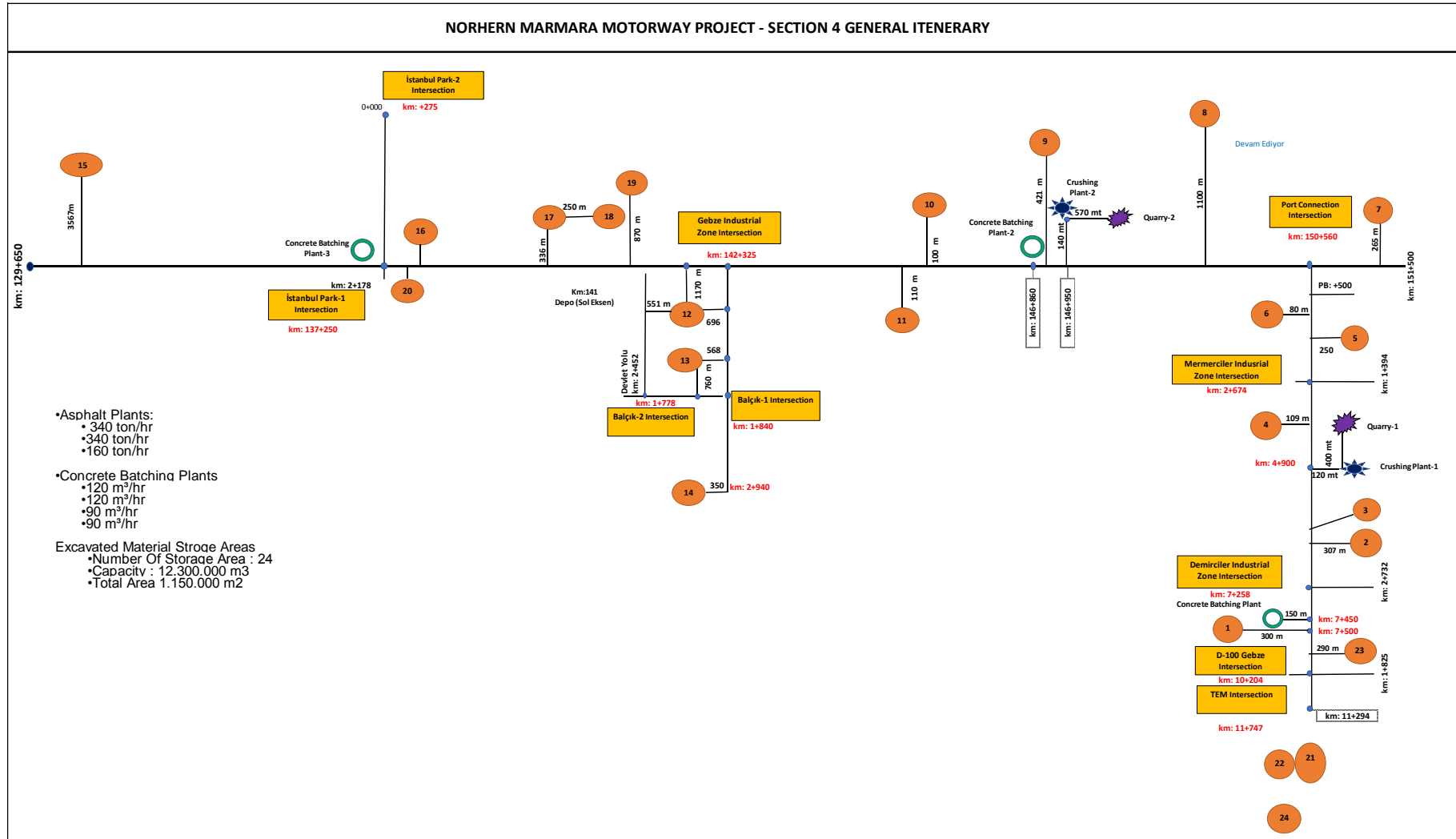


# Expropriation

	Toplam		Özel Mülk			Tüzel Kişilik			Maliye Hazinesi			Orman Arazisi		
	Parsel (ad)	Alan (m2)	Parsel (ad)	Alan (m2)	%	Parsel (ad)	Alan (m2)	%	Parsel (ad)	Alan (m2)	%	Parsel (ad)	Alan (m2)	%
<b>Kesim -1</b>	1.093	7.388.216	860	5.563.520	%75,3	41	274.776	%3,7	192	993.787	%13,5		556.133	%7,5
<b>Kesim -2</b>	144	8.150.373	106	702.796	%8,6	3	9.670	%0,1	35	293.551	%3,6		7.144.355	%87,7
<b>Kesim -7</b>	81	1.449.275	34	544.969	%37,6	16	220.261	%15,2	31	684.044	%47,2			%0,0
<b>Avrupa</b>	1.318	<b>16.987.864</b>	1.000	6.811.285	<b>%40,1</b>	60	504.707	<b>%3,0</b>	258	1.971.382	<b>%11,6</b>	0	7.700.488	<b>%45,3</b>

	Toplam		Özel Mülk			Tüzel Kişilik			Maliye Hazinesi			Orman Arazisi		
	Parsel (ad)	Alan (m2)	Parsel (ad)	Alan (m2)	%	Parsel (ad)	Alan (m2)	%	Parsel (ad)	Alan (m2)	%	Parsel (ad)	Alan (m2)	%
<b>Kesim -4</b>	717	9.339.230	523	3.581.695	%38,4	27	121.826	%1,3	167	908.336	%9,7		4.727.373	%50,6
<b>Kesim -5</b>	1.707	8.791.427	1.616	3.212.310	%36,5	12	12.798	%0,1	79	192.283	%2,2		5.374.036	%61,1
<b>Kesim -6</b>	3.551	12.889.498	3.138	8.187.183	%63,5	156	285.829	%2,2	257	1.660.349	%12,9		2.756.137	%21,4
<b>Anadolu</b>	5.975	<b>31.020.155</b>	5.277	14.981.188	<b>%48,3</b>	195	420.453	<b>%1,4</b>	503	2.760.968	<b>%8,9</b>	0	12.857.546	<b>%41,4</b>

# General Itinerary of The Project



# Relocation of Underground Facilities

- **Electricity, Telephone & Data Cable**

- TEIAS (20)
- TELEKOM Istanbul + Izmit (5 + 11)
- SEDAS (9)
- AYEDAS (7)

- **Natural Gas & Crude Oil**

- IGDAS (6)
- BOTAS (7)
- NATO (1)
- PALGAZ (2)

- **Water & Sewage Lines**

- ISKI (9)
- ISU (9)

**TOTAL 86 Major Relocation**

# Bridge & Upper/Under Passages

- Bridge 15 pcs
- Upper Passage 17 pcs
- Under passage 22 pcs



# Working In/Near Intensive Living & Industrial Zones



# Viaducts

- V01 (480 m)
- V07 (838 m, Combination of Conventional & Balanced Cantilever Systems)
- V08 (367 m, partly steel beams)
- V09 (531 m)
- V13 (256 m)
- V16 (177 m, partly steel beams)





# Toll Collection Systems

- 4 OGS/HGS/Cash Toll Collection Points
- 4 Free Flow Toll Payment Locations

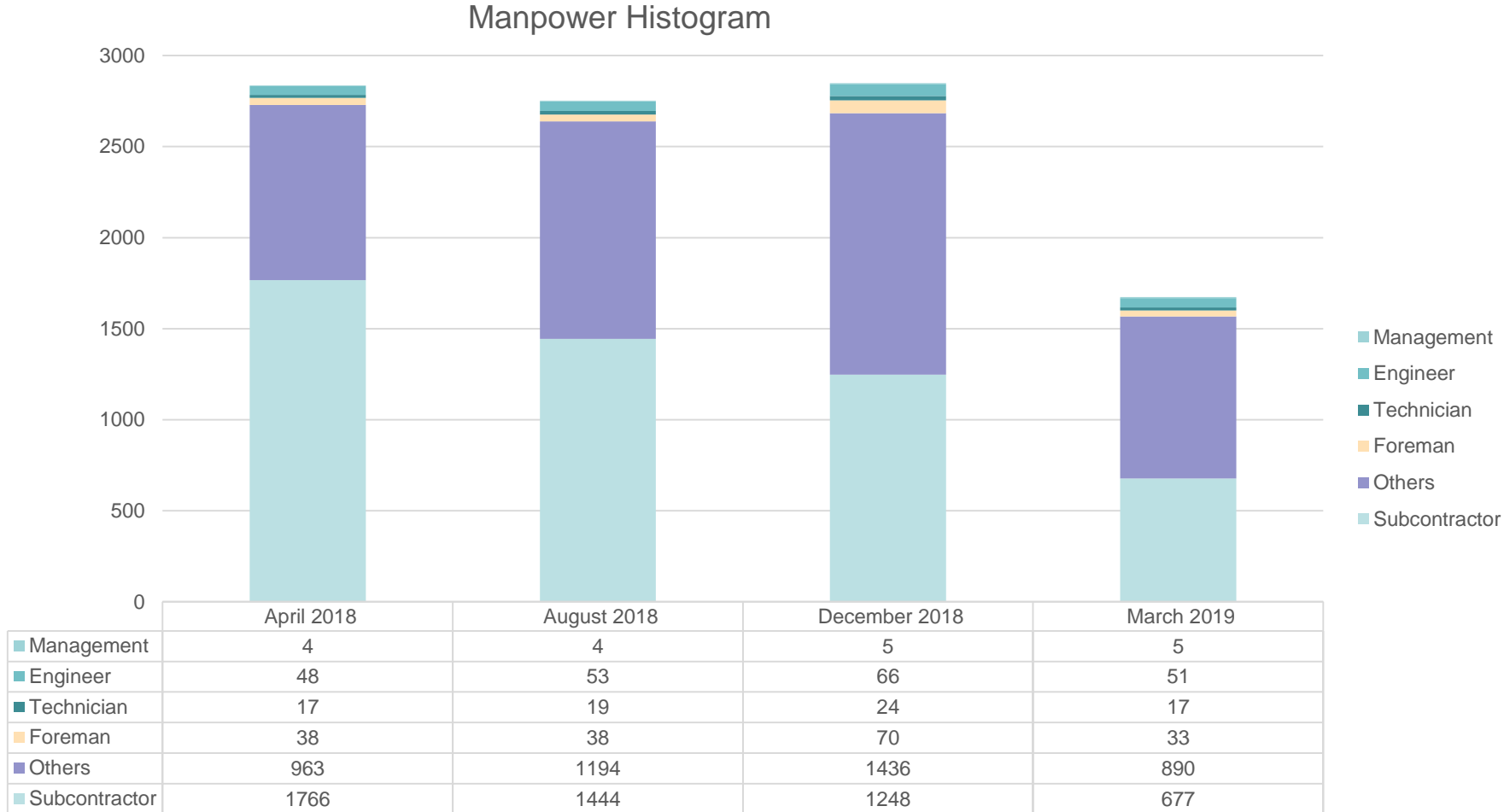


# Intersections

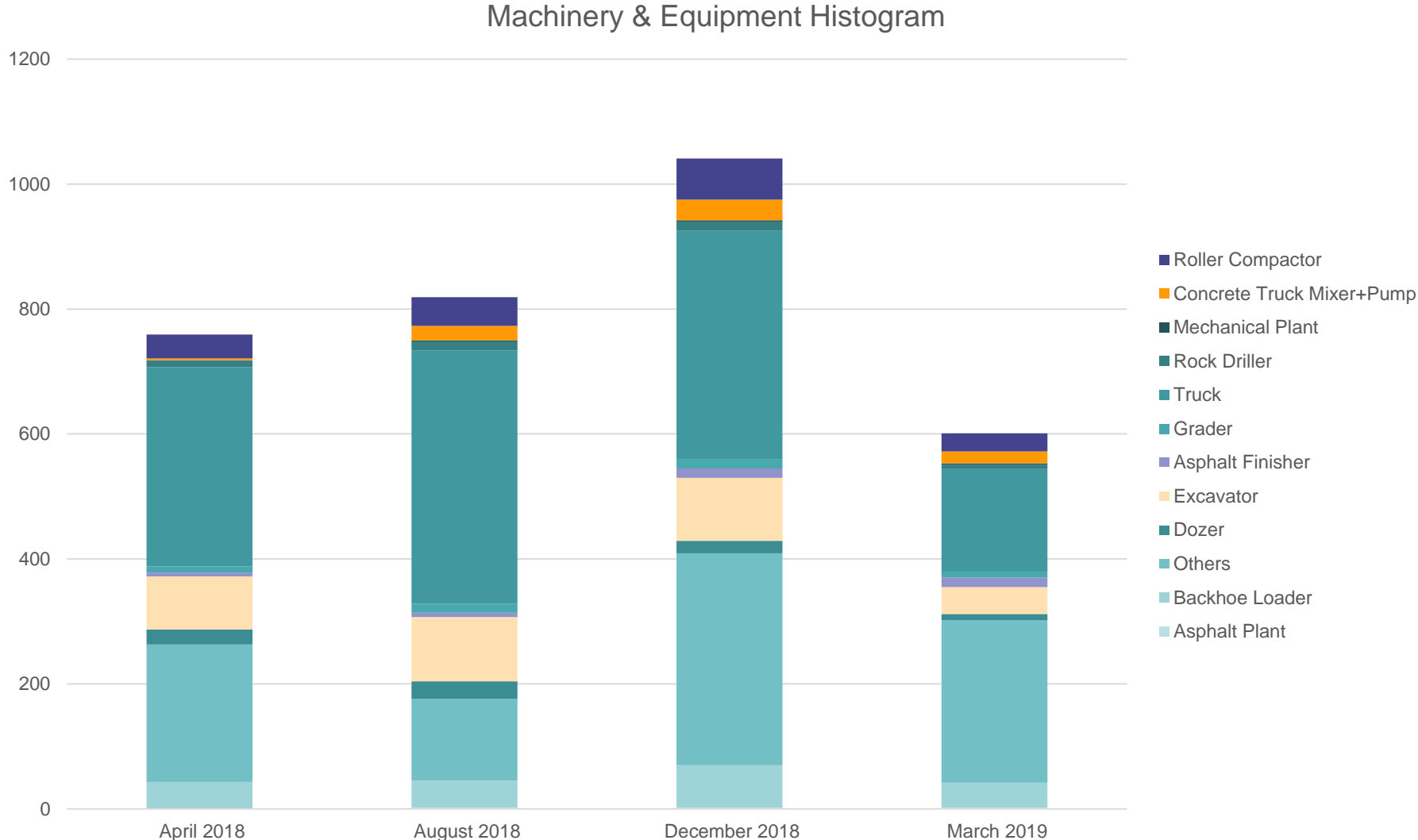
- **Istanbul Park 1 & 2 Intersections**
- **Gebze Industrial Zone Intersection**
- **Balçık 1 & 2 Intersections**
- **Port Intersection**
- **Mermerciler Industrial Zone Intersection**
- **Demirciler Industrial Zone Intersection**
- **D100 Gebze Intersection**
- **TEM Intersection**



# Manpower Histogram



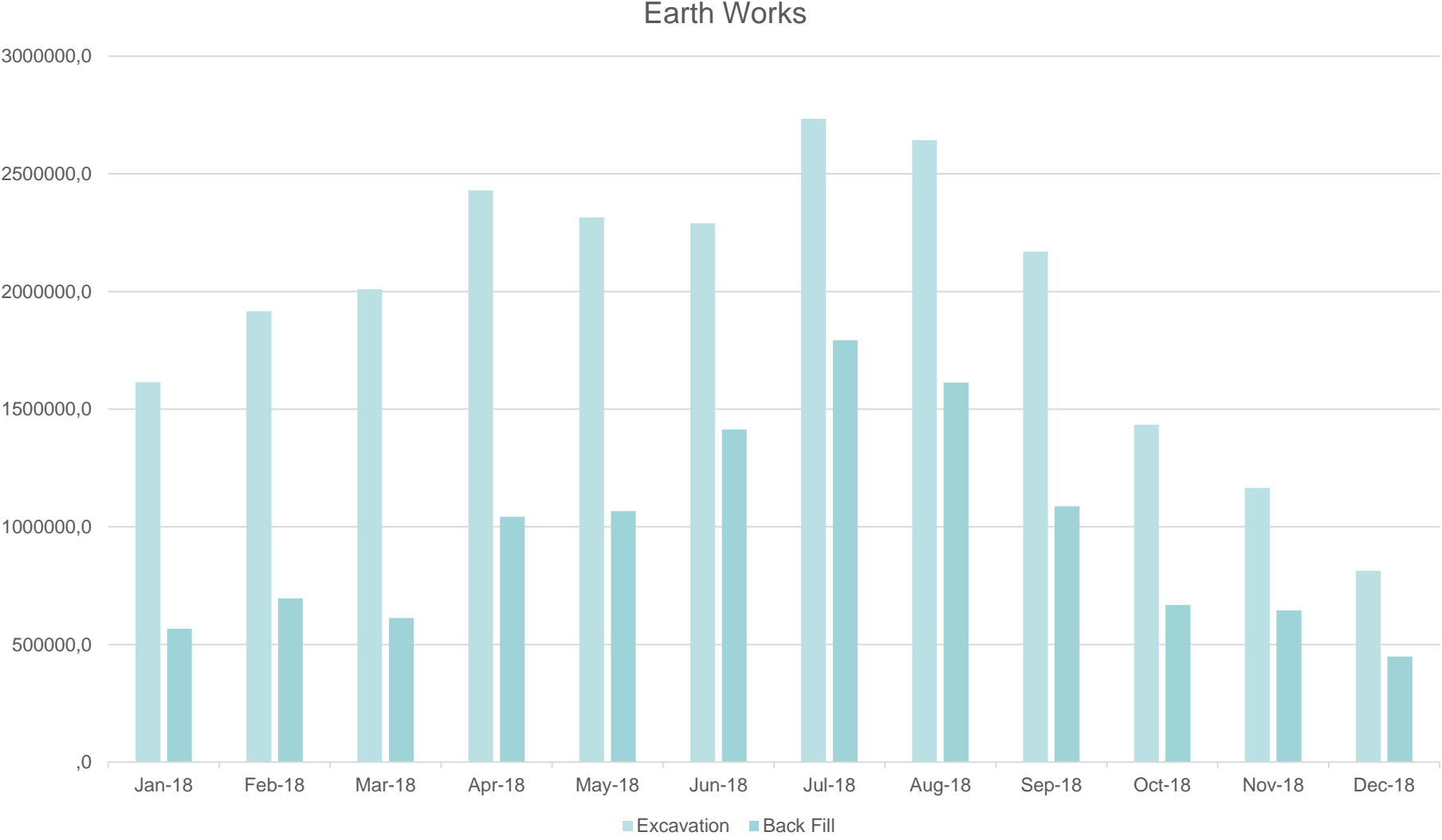
# Machinery & Equipment Histogram



# Super Structure



# Earth Works



# Conclusion

- ✓ Construction Period for 1st Phase is 28 Months
- ✓ Total Construction Period 36 Months (for Section 4)
- ✓ Approval of Alignment, Expropriation, Basic Design and Relocation of Underground Facilities in similar period
- ✓ Executive Number of Manpower and Equipment to catch the tight Work Program
- ✓ Less productivity due to late Court decisions, late relocation of underground facilities and permits/provisions of dumping areas
- ✓ Working in/and close proximity of Crowded Areas of Istanbul & Kocaeli (including Industrial Zones)
- ✓ Working in/near Main Highways of Turkey (D100 State Highway, TEM Motorway and Gebze-İzmir Motorway)

**Thank You**