NTA Metro

SAVE THE DATE
Turning Dreams into Metro

Revealing the Tel Aviv Metro Procurement Strategy
NTA Metropolitan Mass Transit System
is honored to invite you to a webinar on
March 13th, 2024 at 3pm (GMT+2, local Israel time)

THE WEBINAR WILL INCLUDE:

* UPDATES ON TEL AVIV METRO PROJECT
* DECISIONS AND ASSUMPTIONS RELATED TO THE PROJECT'S PROCUREMENT STRATEGY AND TENDER PACKAGES
* OVERVIEW OF MAIN TIMELINE AND BUSINESS OPPORTUNITIES

for register

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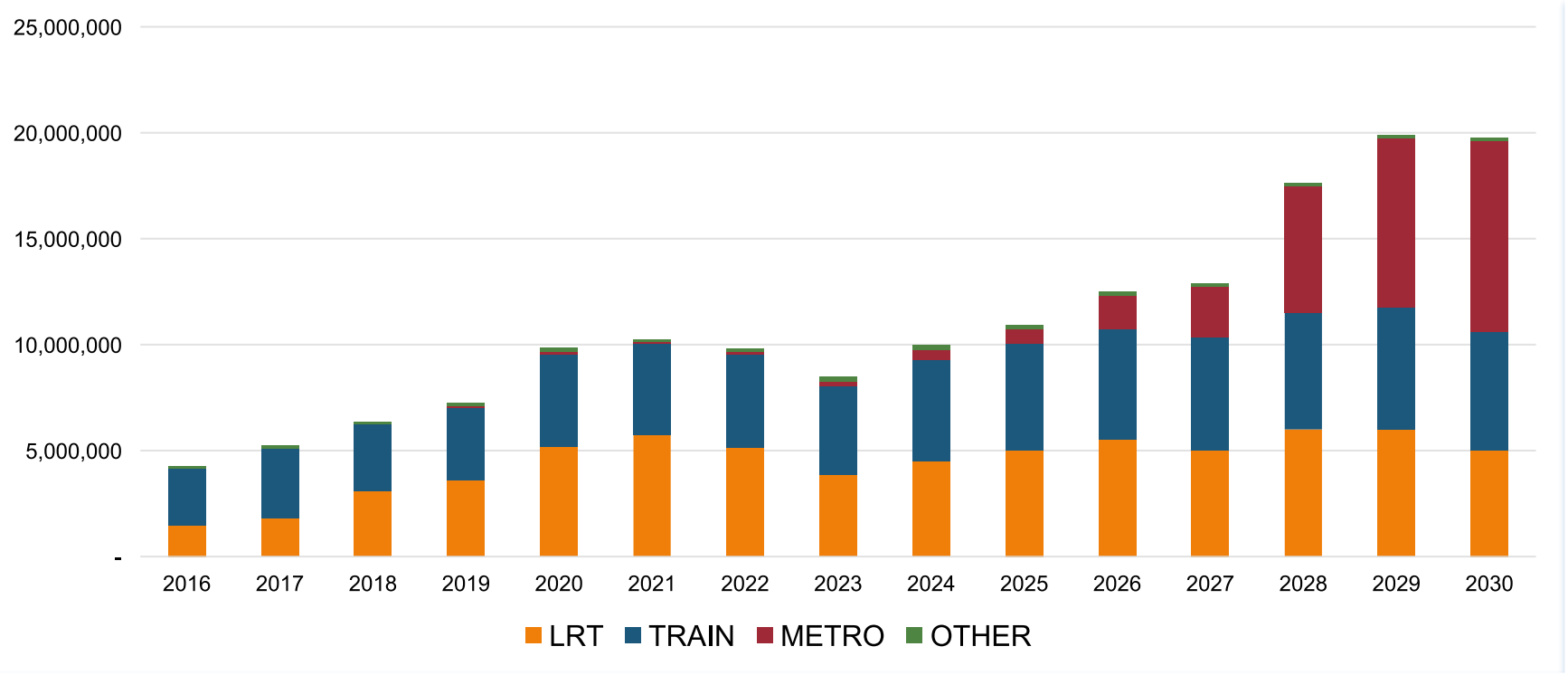
Funding the metro project

MR Iliya Katz,
Deputy to the state budget director,
Budget Department, Ministry of Finance

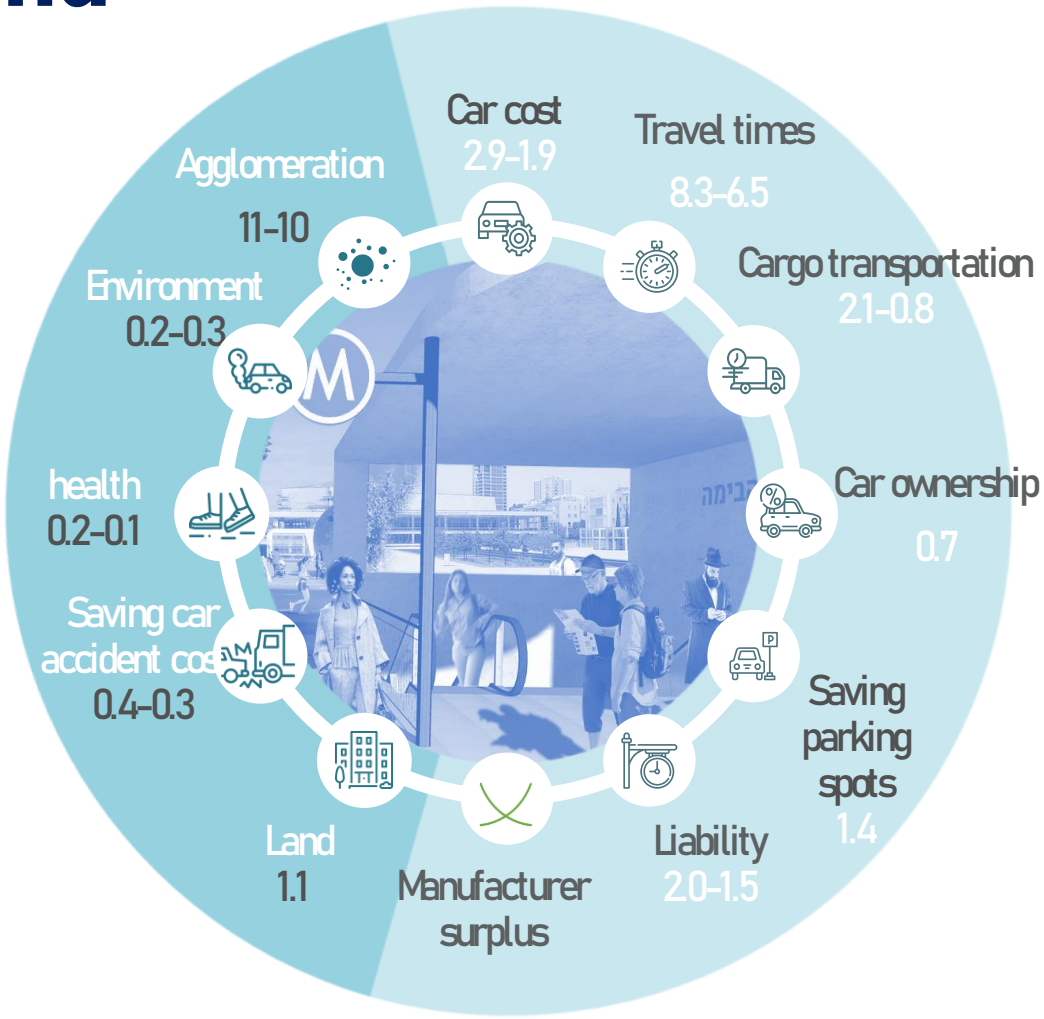
Extensive infrastructure investment planned in the next decade

Investments by types of mass transit projects, forecast and execution, Thousands of NIS



Metro project – feasibility and economic viability

NPV, Billion NIS	224-295
B/C ratio	2.8-3.3
IRR	11%-12%
Payback period	**19-21**



Metro Act

Valid legislation

Funding package

Project budget (49 billion NIS*)

Funding mechanisms

Metro levy

Valid legislation

Structure and management

Establishment of the metro authority

Government board of the project

Supervision mechanism by the Knesset

In legislative process

Regulation barriers

Prioritize to the project

Remove bureaucracy and regulatory barriers

* In terms of 2021

Funding Mechanisms for the metro projects

Betterment Levy Increase for Metro Vicinity Properties

Raising the Betterment Levy for properties surrounding the metro station to capture the increased value resulting from enhanced infrastructure.

(TIF) Around Metro Stations

A fee on existing properties surrounding metro stations during the operational period

Value Capture for Metropolitan Asset Enhancement

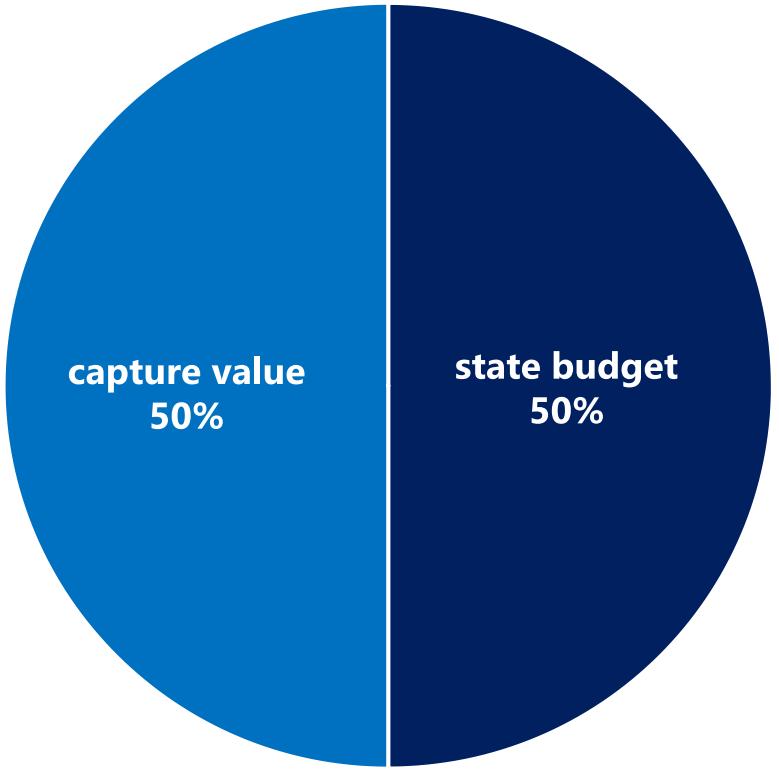
Employing a comprehensive value capture strategy to ensure sustainable development.

Congestion Fee

Applicable to all income exceeding 700 million NIS

Local Authorities

Fixed yearly payments based on the benefits derived from the metro



THANK YOU

-

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3/2024

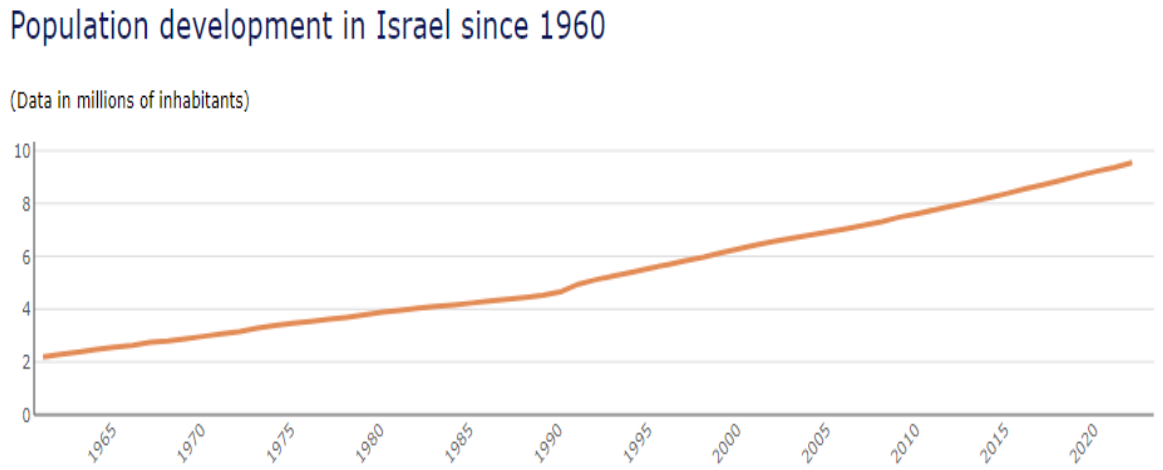
Israel Metro and other Transport Projects

Yair Erez
Head of Metro Team
The Metro Authority
Ministry Of Transportation
State Of Israel

MINISTRY OF TRANSPORT AND ROAD SAFETY

THE ISRAEL METRO AUTHORITY

- The investment gap in public transportation infrastructure between Israel and developed countries is estimated to reach 250 billion shekels.
- Israel's annual travel distance per capita is three times the OECD average.
- In recent decades, Israel's annual population growth rate of **approximately 2.0%.**



The strategic transportation plan concludes that investing in public transportation systems is necessary to support the country's continued development.

The Israeli government and the Ministry of Transportation own different government companies that design, execute, and operate transportation projects and infrastructures.
The companies are fully budgeted by the government for their activities

ISRAEL RAILWAYS

AYALON HIGHWAYS ADVANCED TRANSPORTATION FOR ISRAEL

NTA Metropolitan Mass Transit System

MORIAH The Jerusalem Development Co.

NETIVEI ISRAEL NATIONAL TRANSPORT INFRASTRUCTURE COMPANY LTD

TRANS ISRAEL National Transportation Ventures

Jerusalem Transportation Master Plan

NTA
Metropolitan Mass Transit System

- Government owned company
- In charge of designing, constructing and operating a mass transit network of 3 LRT Lines and 3 Metro Lines for the Tel Aviv Metropolitan Area
- The Metro is the largest and most complex transportation project to be carried out in Israel

Jerusalem LRT Network

Gilo - Ramot

Ein Kerem - Talpiot

Knesset – Old city

Gilo – Mt.Scopus

Eastern Line

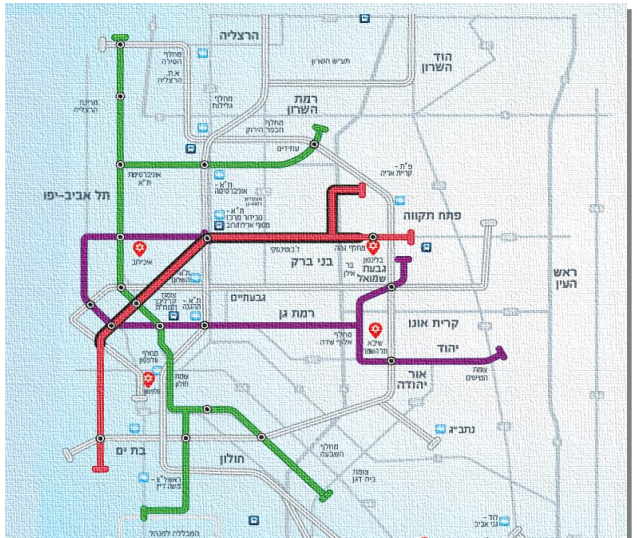
Ein Kerem – Neve Yaacov

TLV LRT Network

Red Line - 24 km Of these, about 12 km are underground

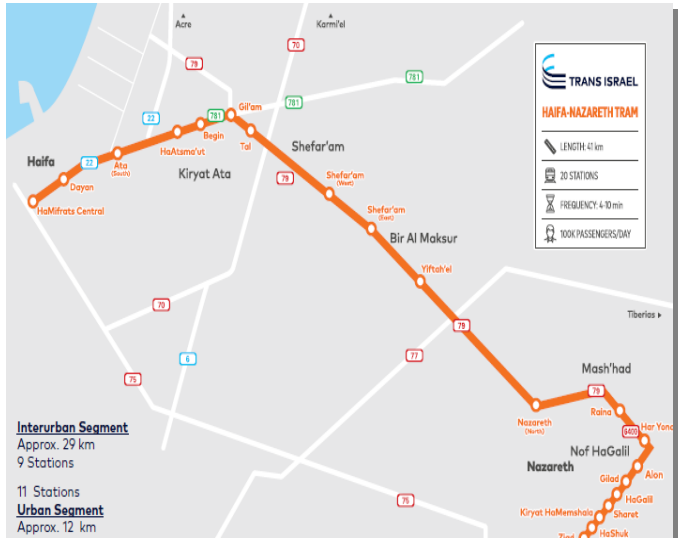
Green Line - 39 km, Of these, about 12 km are underground

Purple Line - 27 km line length



Nofit LRT Line

The light rail project between Haifa and Nazareth, will connect Haifa to Nazareth and the Galilee landscape. The project includes the construction of a track with a length of about 41 km, with 20 stations



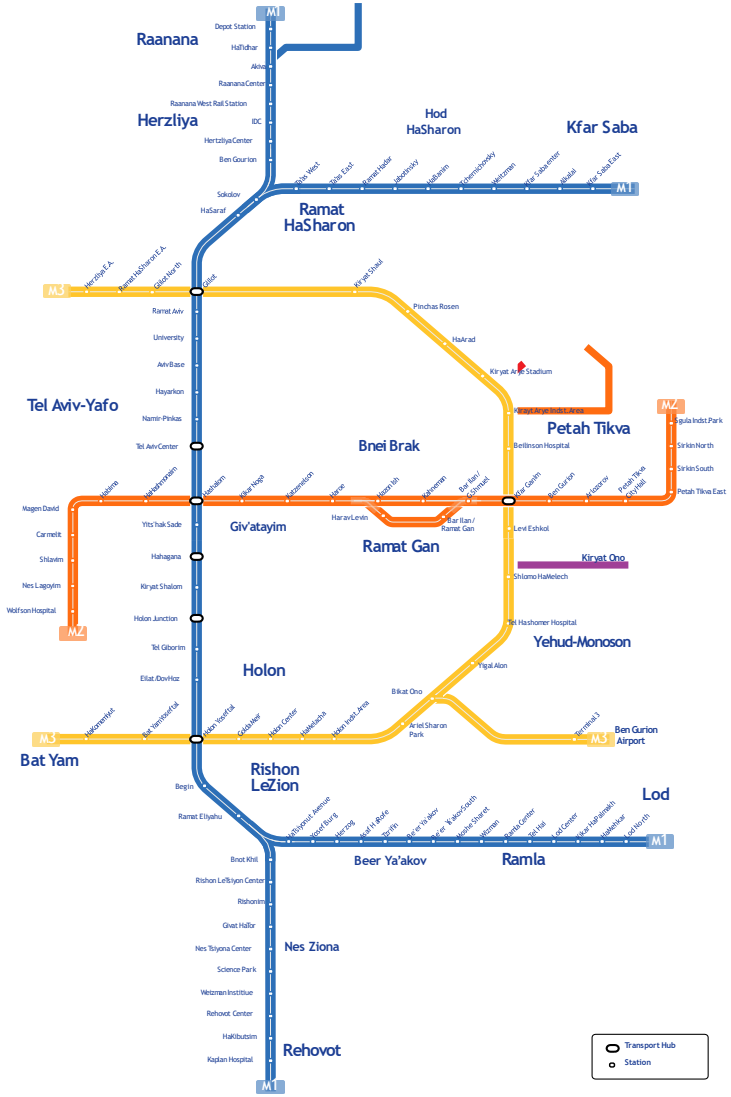
3 Lines (M1, M2, M3)

150 KM Underground network

109 Underground Stations

24 Municipalities

4 Depots



- **Tel Aviv and Gush Dan**
  Additional planning for another 2 underground metro Lines

  Status: Initial Planning

- **Jerusalem**
  2 underground metro Lines

  Status: Initial Planning

- **LRT/ Metro – Jerusalem- Bet-Shemesh**
  A LRT line linking the two cities of Jerusalem and Bet-Shemesh

  Status: Initial Planning

2 High Speed Tracks Haifa – Tel Aviv + 13 st.

The project will double the railway tracks between Haifa and Tel Aviv includes adding two new tracks alongside the two existing tracks, for a **length of 68 km**.

- 5 Billion USD
- Status: Early detailed Design

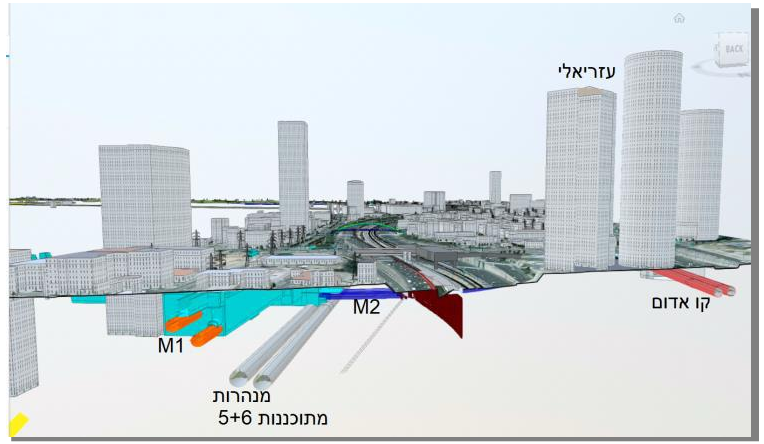
2 High Speed Tracks Tel Aviv – Beer Sheva

The project includes the construction of a **106 km long double track**.

- 3,000 M. USD
- Expected Statutory design Approval – 2024

2 Underground High Speed Tracks (30 km) in the Ayalon Corridor

Construction of tracks in a **tunnel over 30 km** along the Ayalon corridor that will allow the addition of 2 new railway tracks and 2 underground stations in the main railway corridor.



2 High Speed Tracks Karmiel – Kiryat Shmona

The railway project between Karmiel and Kiryat Shmona includes the construction of a double track with a length of about **54 kilometers**.

2 High Speed Tracks Eilat – Beer Sheva

The total **length of the project is 275 km**, of which 170 km is a new rail track.

Jerusalem line Extension (tunneling) + 2 Underground st.

Extension of the heavy rail line in Jerusalem with the construction of a **3.5 km underground tunnel** and 2 underground station.

THANK YOU

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MINISTRY OF TRANSPORT AND ROAD SAFETY

THE ISRAEL METRO AUTHORITY

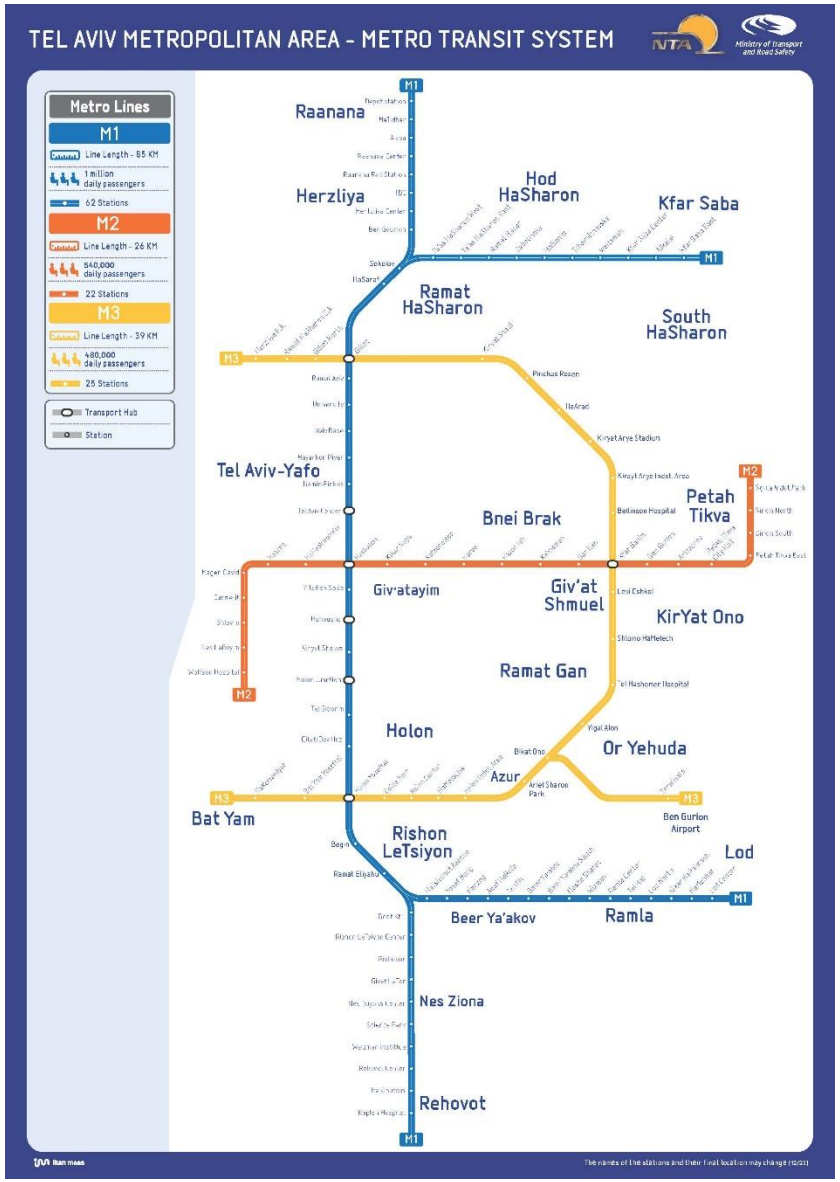
Israel Metro Project

Noa Oren
Deputy CEO – Metro, NTA

NTA- Metropolitan Mass Transit Systems

General Overview

- **3** Lines (M1/M2/M3)
- **150** km Underground network
- **109** Stations
- **24** Municipalities
- **4** Depots



Metro Line – M1

85 km Length

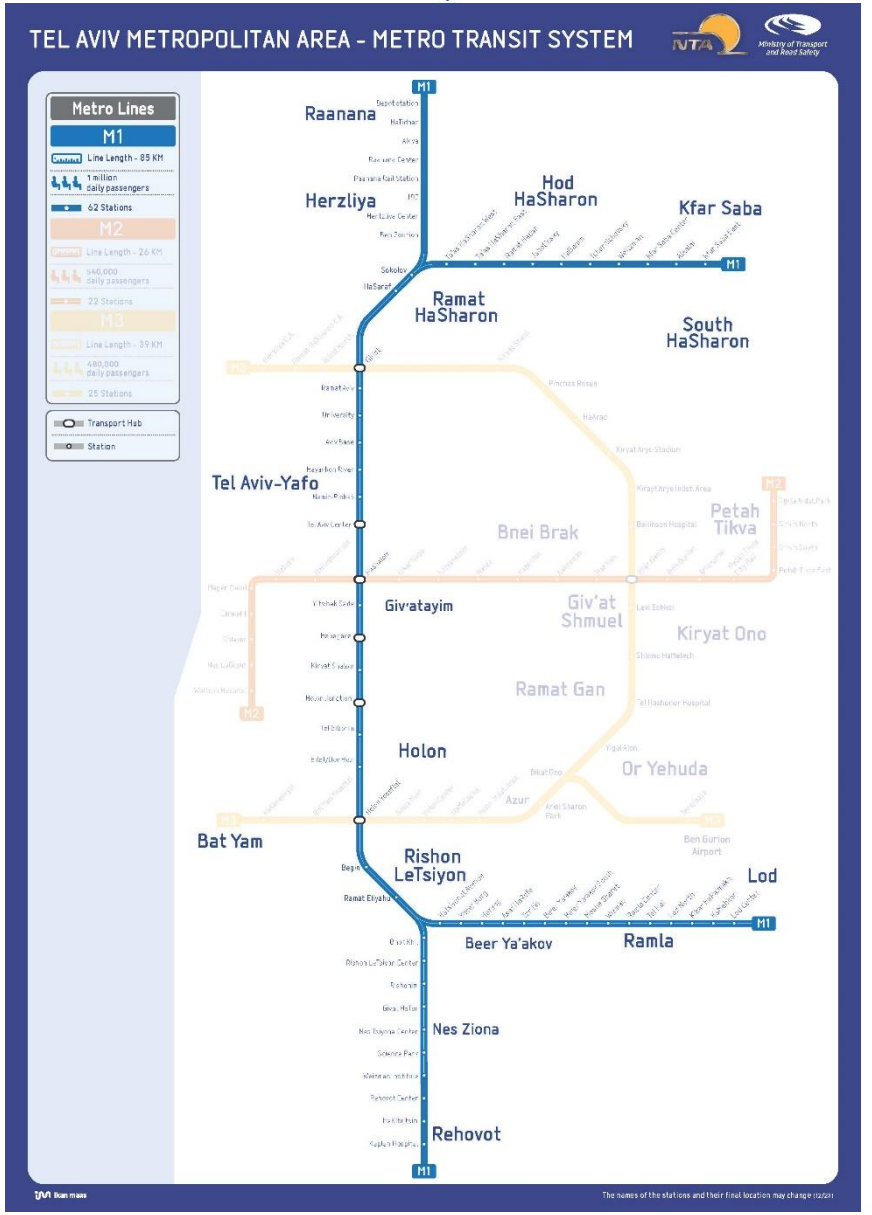
62 Stations

2 Depots

14 Municipalities

Main points of interest:

Tel Aviv university, Reichman university, Kaplan hospital, Meir hospital



Metro Line – M2

25 km Length

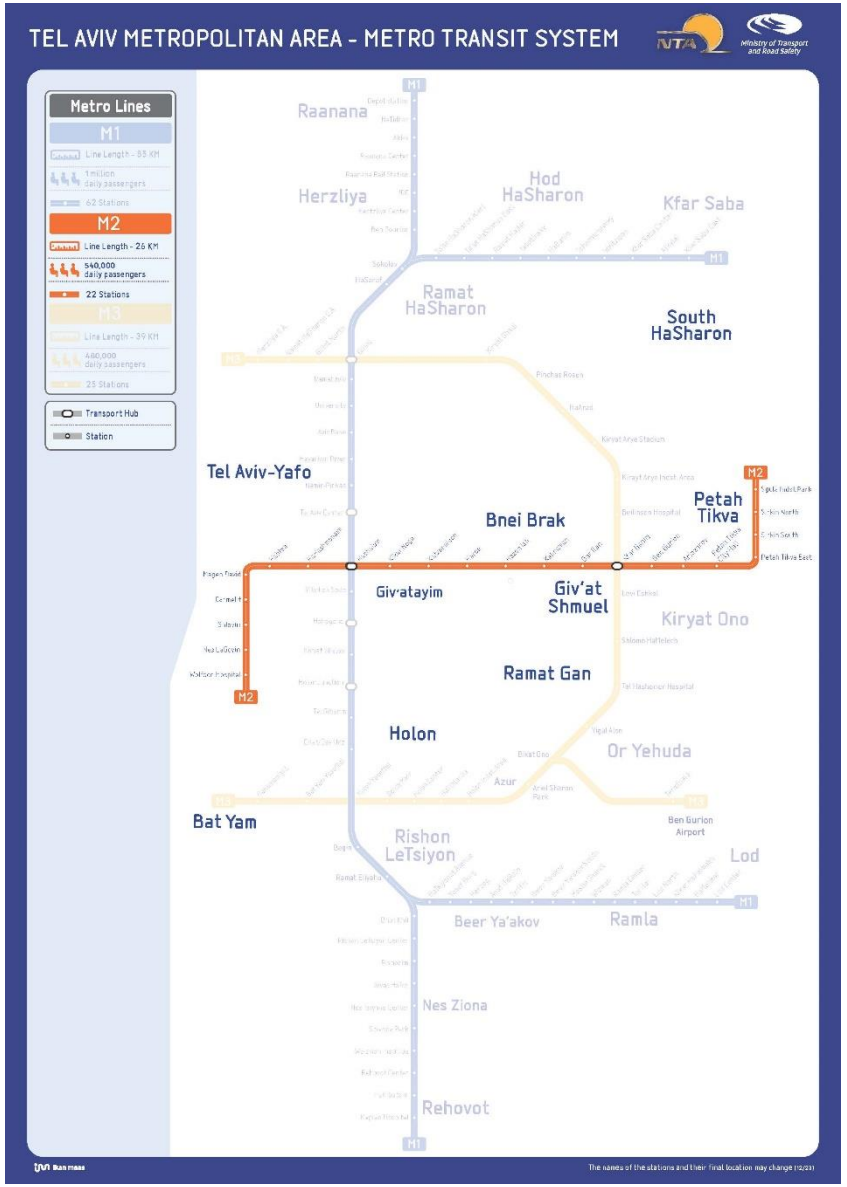
22 Stations

1 Depots

9 Municipalities

Main points of interest:

Carmel market, Habima theatre, Bar Ilan university



Metro Line – M3

39 km Length

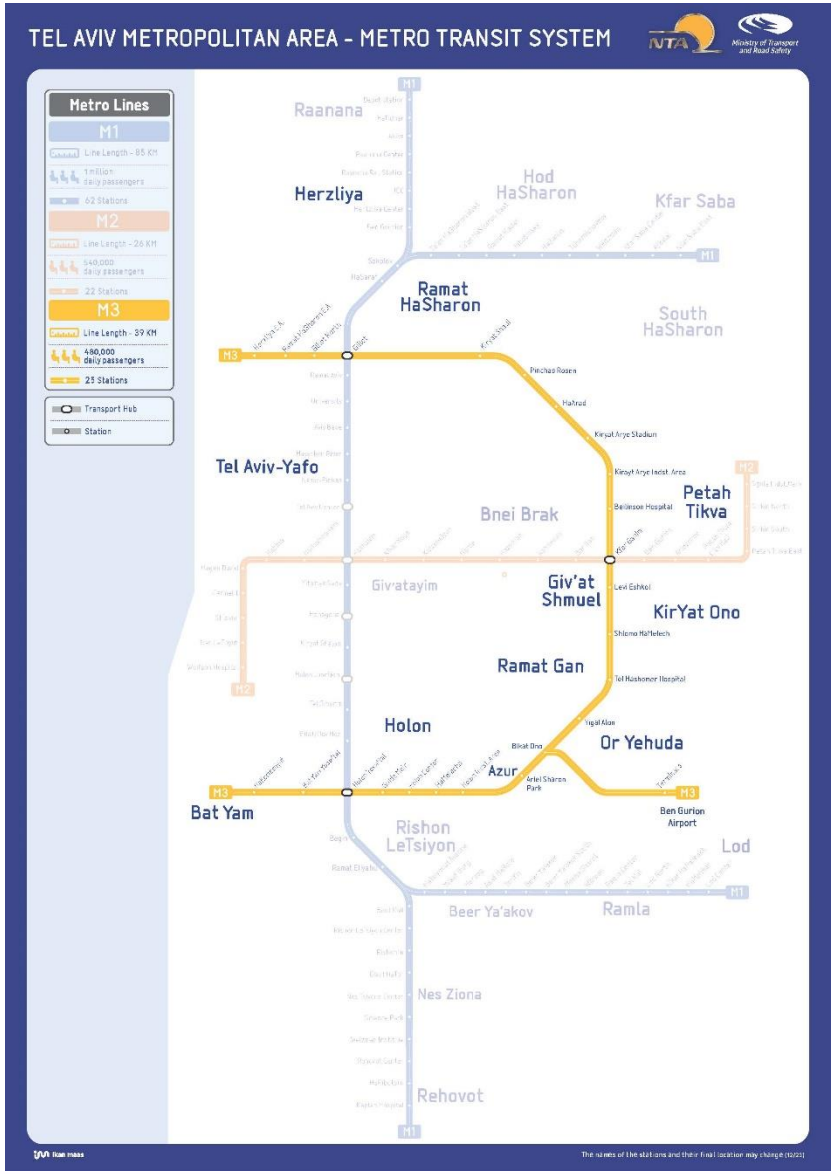
25 Stations

1 Depots

13 Municipalities

Main points of interest:

Herzliya industrial zone, Sheba hospital



Facts and Figures

2034-2037
Metro Operation Stage A

$55 billion
Estimated Cost

+30%
Increase use of public transport

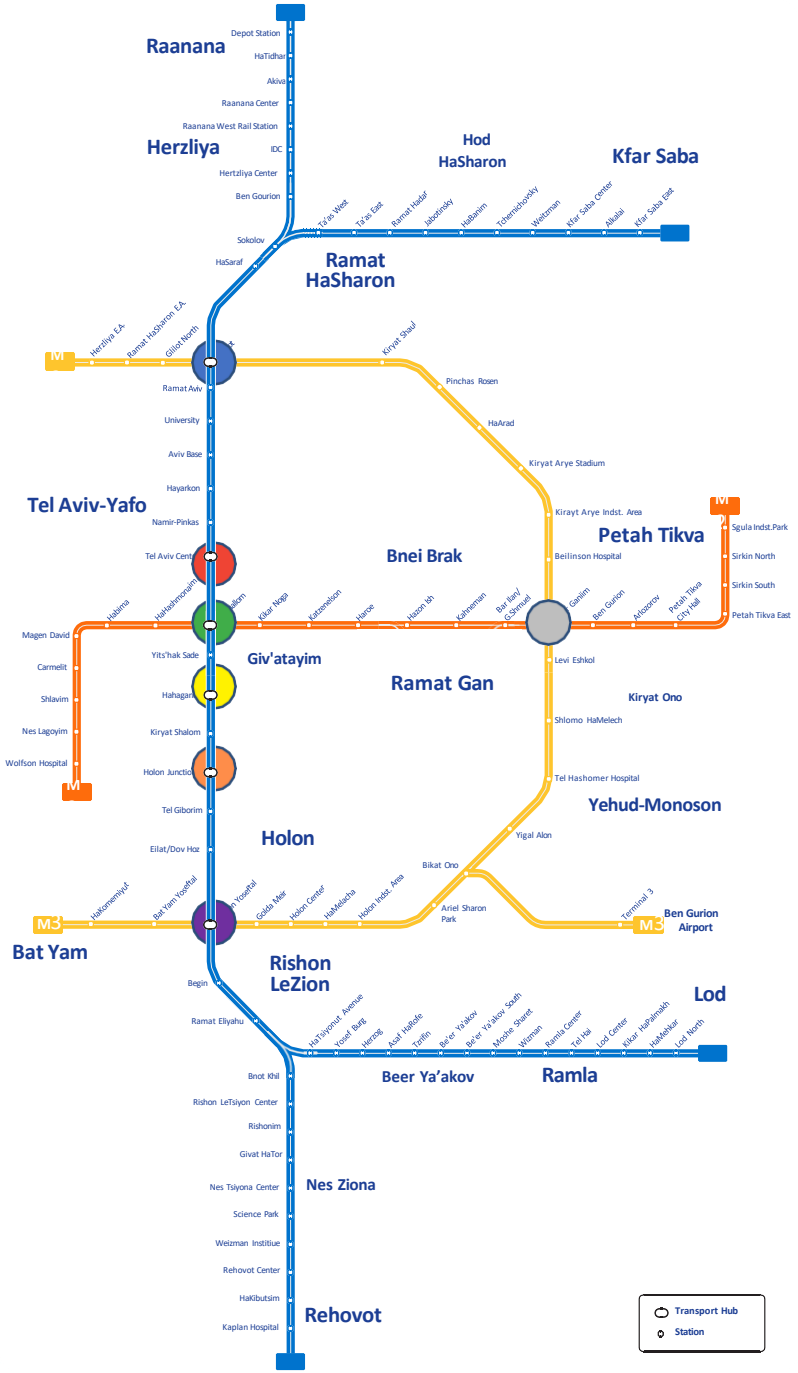
$8.5 billion
Economic benefits

2 million
Passengers per day

Transportation HUBs

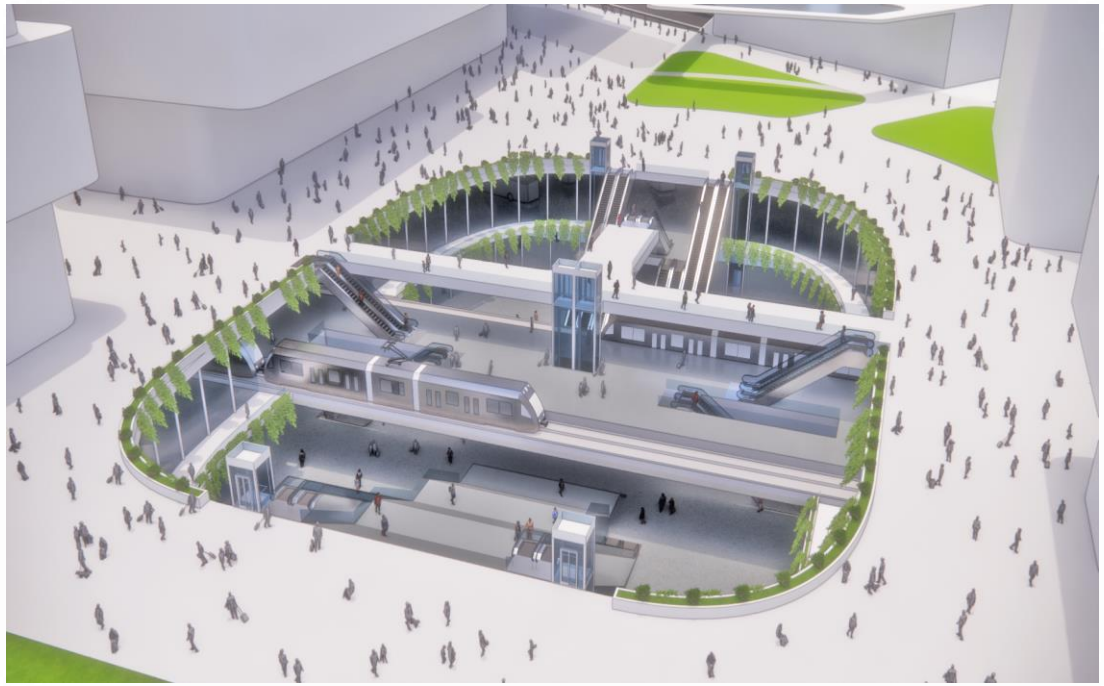
- Connectivity
- Service and Passenger Experience
- Development

TLV Center
HQ Architects



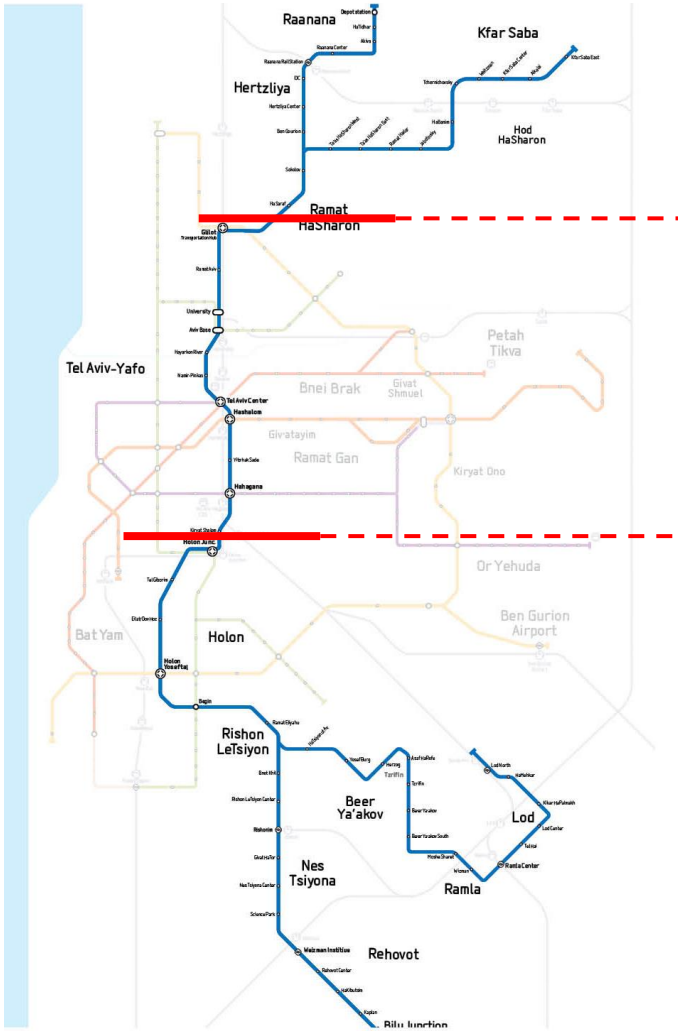
Development above Metro stations

Glilot
Gordon Architects



TLV Center
HQ Architects

M1 Statutory plans

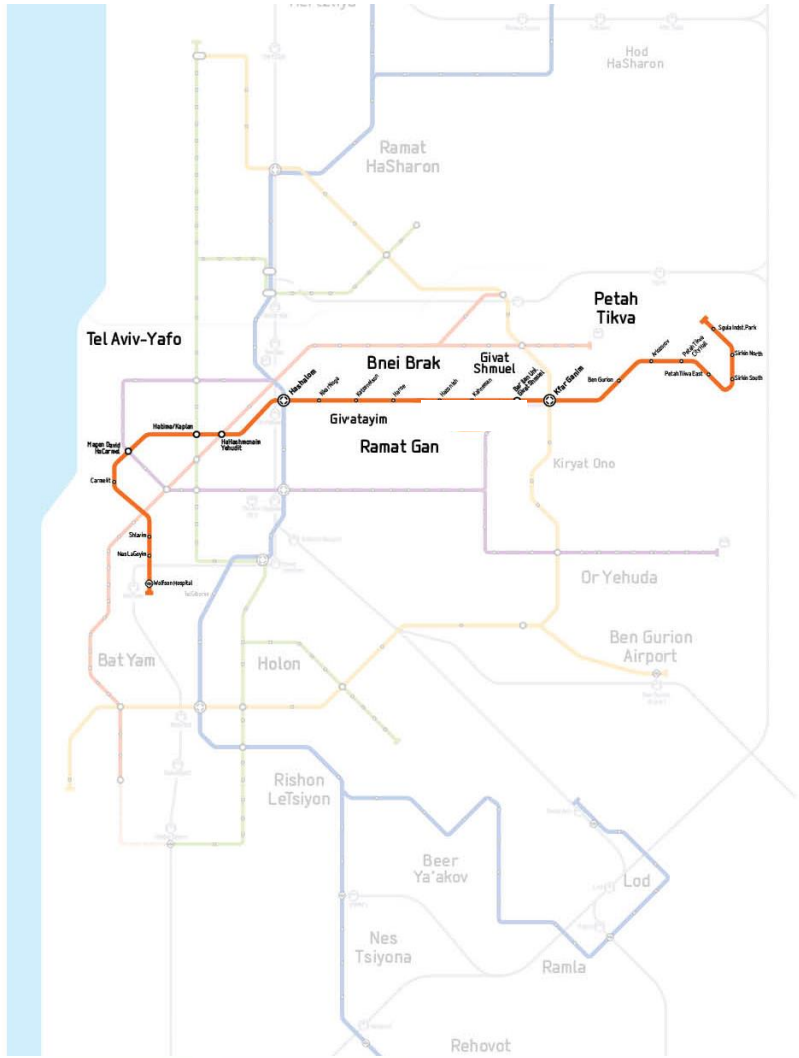


Tatal 101 c - North
Ongoing Statutory procedure
Over 200 public objections

Tatal 101 b - Central section
Authorized by VATAL in 2022
Over 100 public objections

Tatal 101 a - South
Authorized by VATAL in 2022
Over 100 public objections

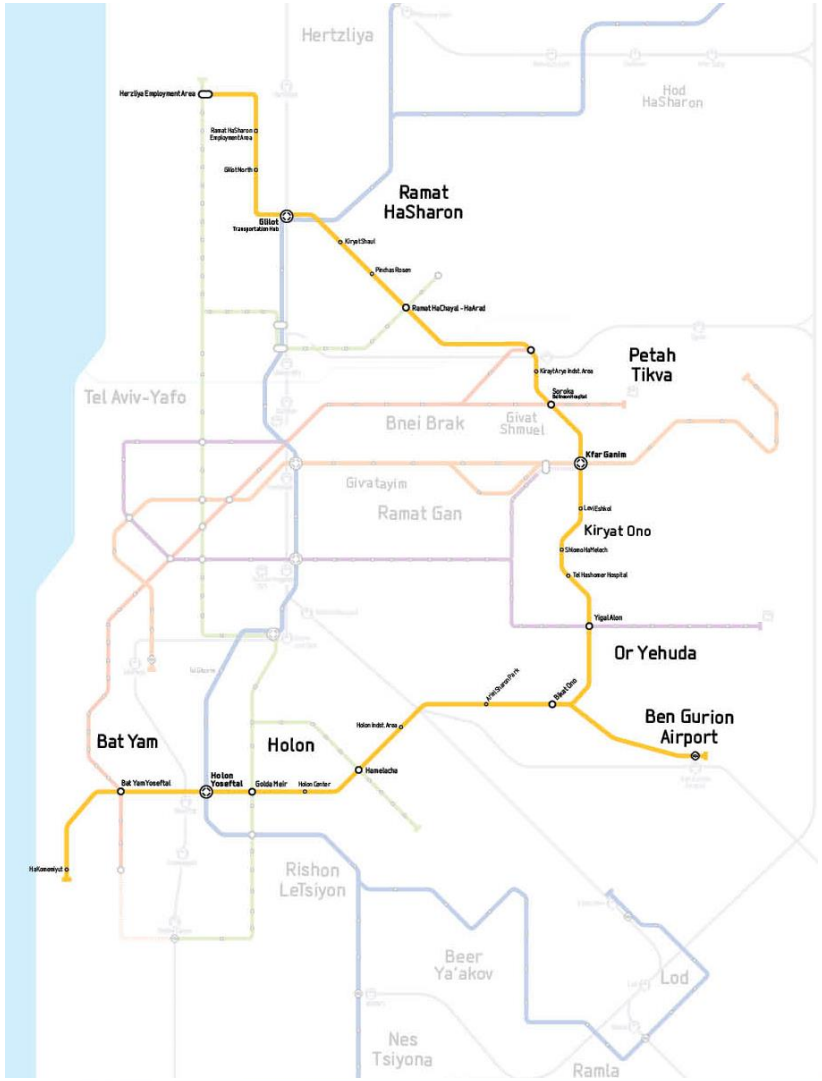
M2 Statutory plan



Tatal 102

- Authorized by VATAL in 2023
- Awaiting authorization by government
- Over 300 Public objections

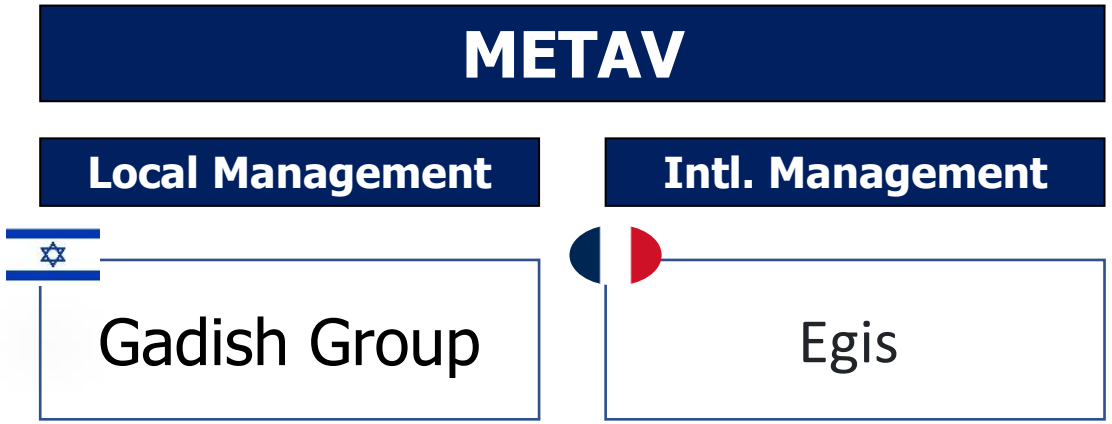
M3 Statutory plan



Tatal 103

- Authorized by VATAL in 2022
- Over 150 public objections

Metro Network Manager (NM)



Line Manager (LM) for each Metro line

Line	Local Management	Intl. Management	Local Design	Intl. Design
M1	Dana Engineering Ltd. / Yaniv Zohar Engineering	MM S.P.A	Levy Shtark Zilberstein consulting engineering Ltd.	MM S.P.A
M2	David Ackerstein Ltd.	WSP UK Ltd.	Decker building & engineering Ltd.	WSP UK Ltd.
M3	Davelman Perzlina Projects and building management Ltd	ARTELIA	Mahod Engineering Ltd.	ARTELIA

Thank You & Shalom

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Project Management Structure and Key Stakeholders

NTA – Metropolitan Mass Transit System LTD.

Government - owned company,

Responsible of designing,

constructing and operating a mass

transit network of the Tel Aviv

Metropolitan Area.

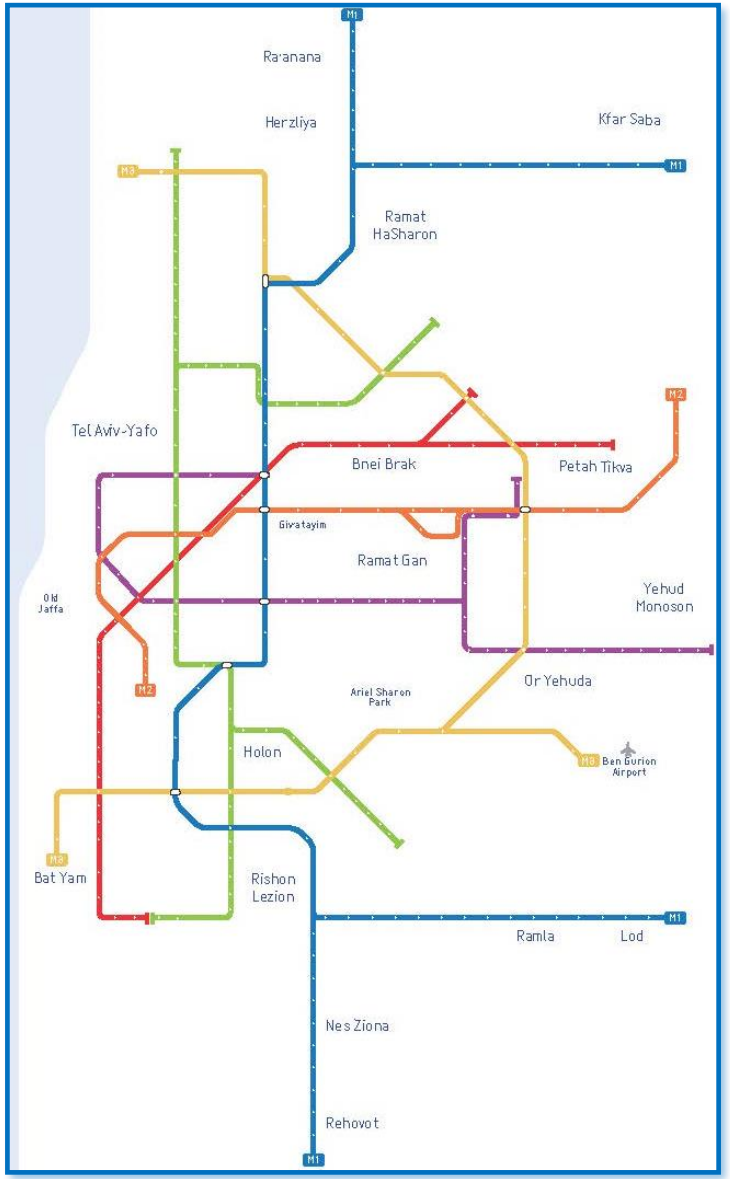
Tel Aviv Metropolitan Metro Transit System

40
Billion $

3
Metro Lines

13
Billion $

3
LRT Lines



Tel Aviv Metropolis

The Tel Aviv Metropolitan area is the business and financial heart of the country and the center of a significant part of the economic activity responsible for most of the national product in the economy of Israel.

44%

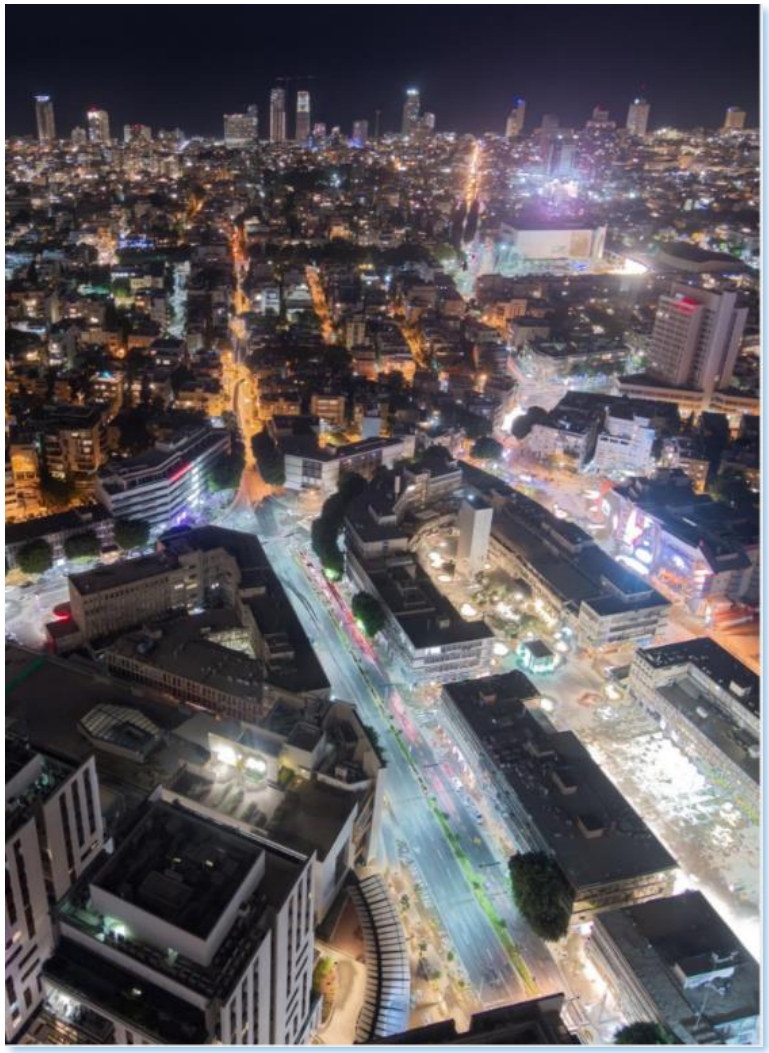
of the population in Israel

50%

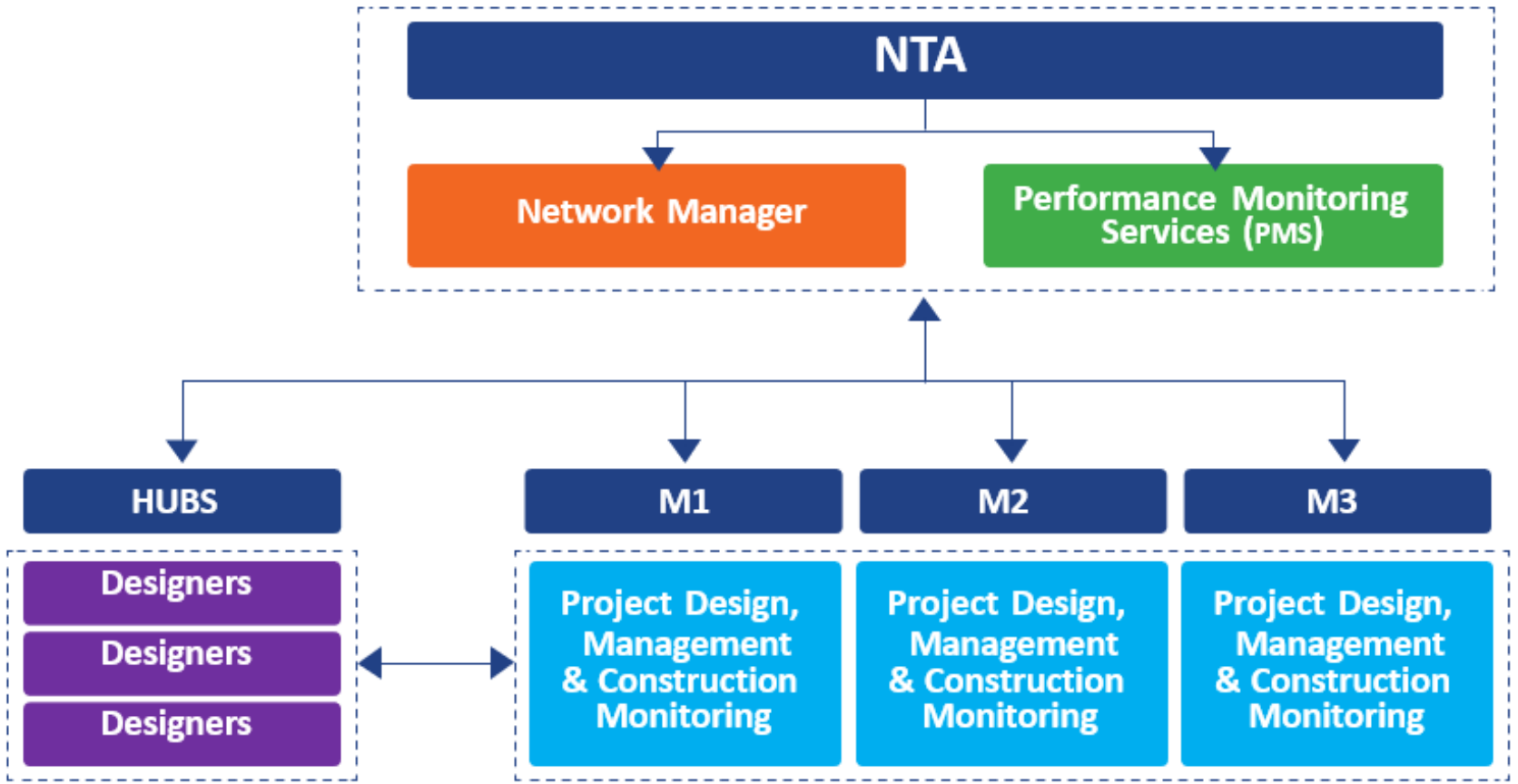
of jobs

62%

of business product



Schematic Programme Management Structure



High-level overview Line Manager's Phases Work

	Pre-Development	Development	Delivery	Operation
Objective	Development of Programme strategy, formulation, standards, tools, procedures, DSM, etc.	Design, plans, specifications, Advanced Works, tender prep, etc. until nomination of all works contractors	Design, plans, construction implementation for Infra #1 Works and Infra #2 Works, etc. until full commercial operation	Commercial operation of a Metro Project or a part thereof (per Line)
Scope	The entire Network (as a whole)	Per each phase and stage of the Metro Project (per Line)	Per each phase and stage of the Metro Project (per Line)	Per each operation phase (partial and/or full commercial operation)
From	Issuance of NTP to NM	Issuance of ED to Line Manager	Issuance of NTP for all works contractors (Infra #1 and #2)	From commencement of partial and/or full commercial operation
Up to	Issuance of ED to LM	Completion of tender procedures and nomination of all works contractors	Completion of construction works, T&C and achieving commercial operation	
LM SOW	Not Included	Basic Scope M1 (Stage 1, Stage 2) M2 M3 (Stage 1, Stage 2)	Infra #1 (Stage 1, Stage 2) Infra #2 (Stage 1, Stage 2)	Until final settlement of all works contractors, accounts

Basic Scope
Optional
Not Included

The key to the project's success

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Metro Network Assumptions

Main Pillars

- **Definition:** Main technical critical programme decisions.
- **Each pillar decisions took in consideration to following aspects:** Engineering, cost, time, service, operation and maintenance.

Pillar	Recommendation
Grade of Automation	GoA4 – Unattended and Driverless
Length of Platforms and vehicle	M1- train capacity of ~1012 passengers, 3.2m width, ~115m length. Design for 90 sec headway. M2- train capacity of ~860 passengers, 3.2m width, ~92m length. Design for 90 sec headway. M3- train capacity of ~860 passengers, 3.2m width, ~92m length. Design for 120 sec headway.
Electrification	1500VDC Rigid Overhead Catenary System
Tunneling	Double twin TBM, 6.5m diameter. Combination of mining method for stations- depending on location.

Interoperability

- System interoperability: some systems will have interoperability between all metro lines, such as: fire safety, cyber, fare collection etc.
- Lines M2 and M3 will have physical connection (track connectivity) at Kfar Ganim area. Line M3 will lead the design there.
- Lines M1 and M3 will have physical connection (track connectivity) at Glilot area. Line M3 will lead the design there as part of stage execution B of the project.

Interoperability-cont.

- For M2 and M3 lines, NTA will nominate one system contractor which will design and install unified systems (and unified OCC).
- Two operators will nominate to the network- one for M1, one for M2 and M3 lines. The design allows unified operator in the far future.

Programme Procurement Strategy

Programme Procurement Strategy – Work Packages

- Early works (utilities relocation, depot earthworks, high voltage substations) as a separate work packages in a BOQ detailed design
- Launching shafts work packages in a BOQ detailed design, the critical ones will procure in a separate work packages, others by the infra 1 contractor.
- **3-4 Infra 1 packages which include:**
  - ✓All work packages are Design-Build
  - ✓Each section is 3-7 stations, 2.5-7 BNIS.
  - ✓Each element include tunneling, outer-box, inner-box (if applicable), utilities and landscaping.

Programme Procurement Strategy – Work Packages-cont.

- **Two (2) Infra 2 packages in the network which include:**
  - ✓ Design-Build work package.
  - ✓ One package for M1, one package for M2+M3.
  - ✓ Scope include: Track (?), electrification, fit out, building systems, railway systems, integration, testing and commissioning.
  - ✓ Turn-key work packages, PPP option - yet to be decided.
  - ✓ Operation and maintenance scope - yet to be decided.

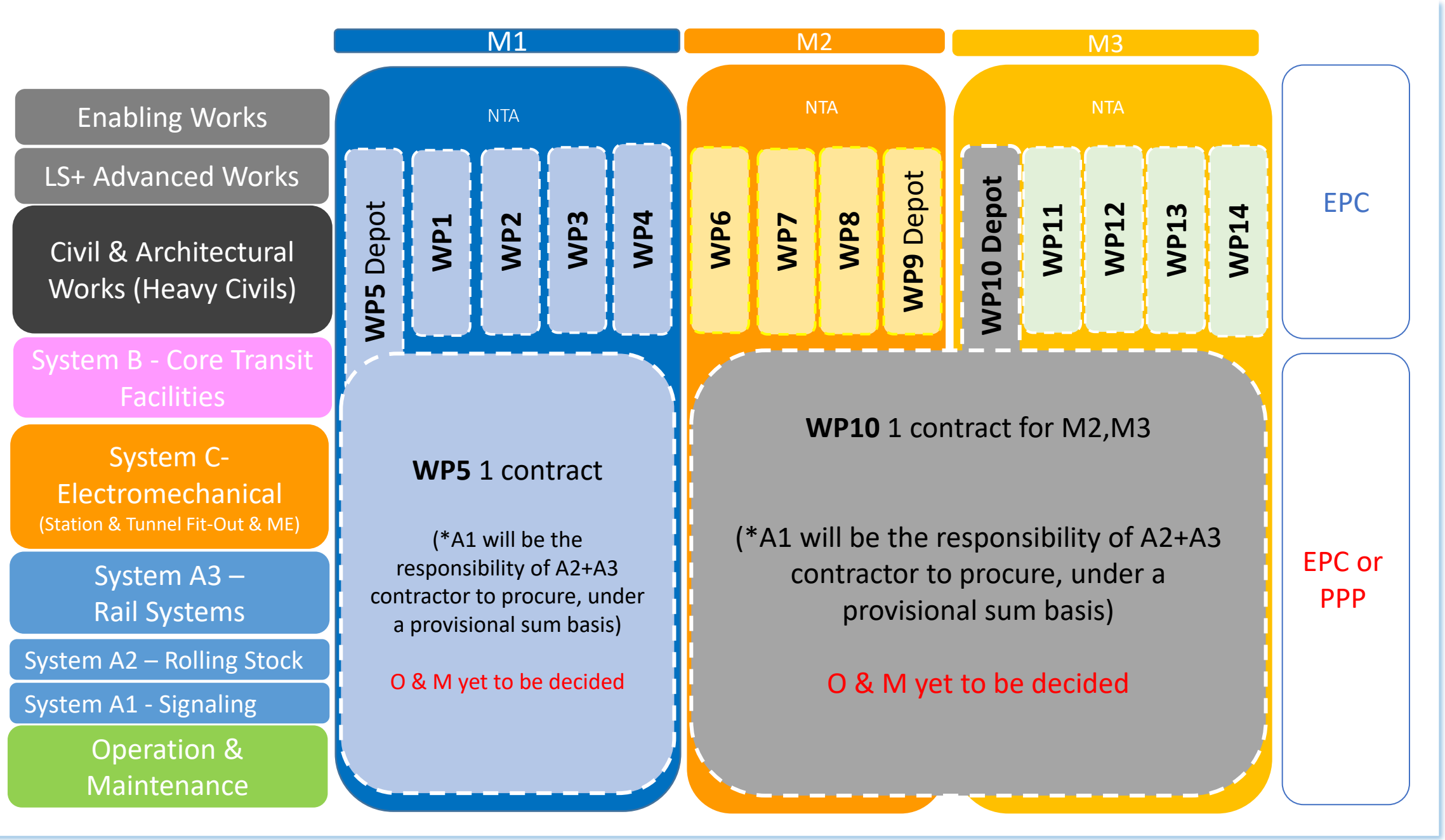
Procurement Strategy – Open Issues

- **Track:**
  - Part of infra 2 package

    or
  - Part of the first to nominate infra 1 contractor
- **Infra 2 Turn-key project:**
  - In a PPP scheme

    or
  - Budget fully by the state
- **O&M package:**
  - Part of infra 2 package (short period or long period)

    or
  - Separate package


Enabling Works
LS+ Advanced Works
Civil & Architectural Works (Heavy Civils)
System B - Core Transit Facilities
System C- Electromechanical
(Station & Tunnel Fit-Out & ME)
System A3 – Rail Systems
System A2 – Rolling Stock
System A1 - Signaling
Operation & Maintenance
M1
M2
M3
NTA
NTA
NTA
WP5 Depot
WP1
WP2
WP3
WP4
WP6
WP7
WP8
WP9 Depot
WP10 Depot
WP11
WP12
WP13
WP14
WP5 1 contract
(*A1 will be the responsibility of A2+A3 contractor to procure, under a provisional sum basis)
O & M yet to be decided
WP10 1 contract for M2,M3
(*A1 will be the responsibility of A2+A3 contractor to procure, under a provisional sum basis)
O & M yet to be decided
EPC
EPC or PPP

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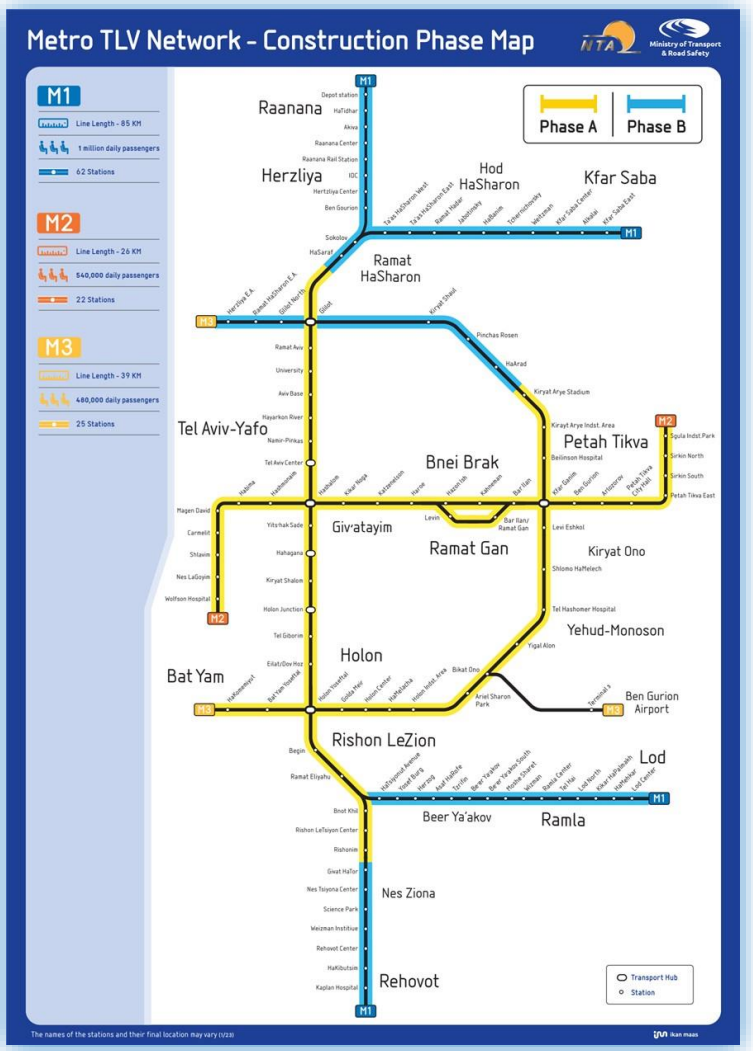
Narrative Schedule

Stage Execution 1 and 2



The metro project divided to two main execution stages.

Stage 1

M1 – HaRishonim to Glilot
M2 – Full line
M3 – Bat Yam to Kiryat Arie

Stage 2

M1 – Rannana, Kfar Saba, Lod and Rehovot branches
M3 – Kiryat Arie to Herzliya

Programme Main milstones

End of
2025

First Infra 1 tender publish

Early
2027

Infra 2 tenders publish

2034

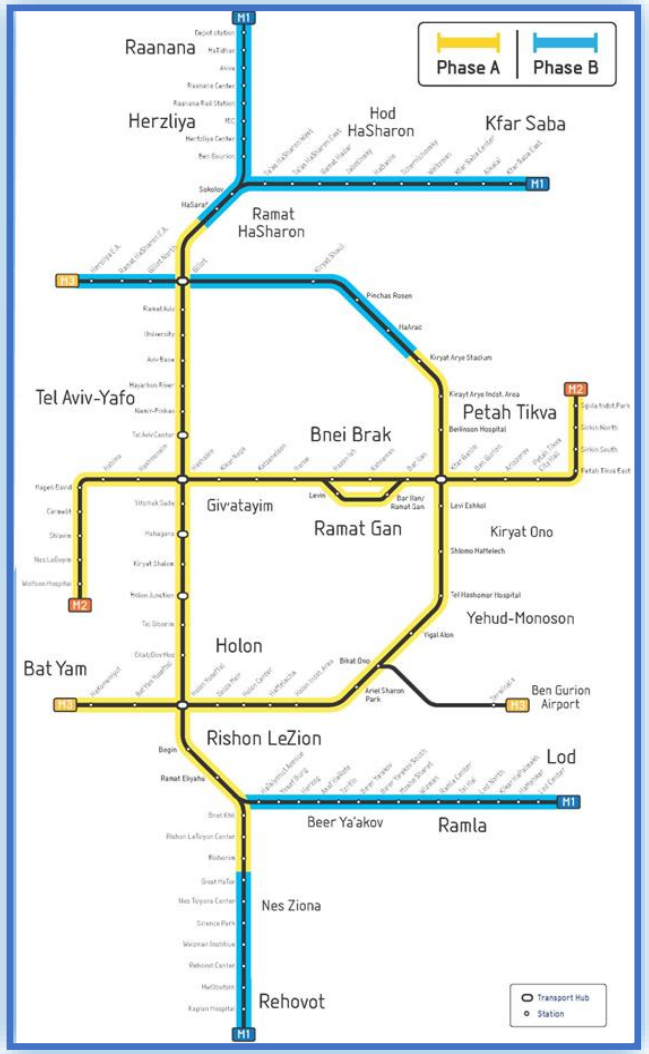
Partial Operation

2037

Stage Execution 1 operation

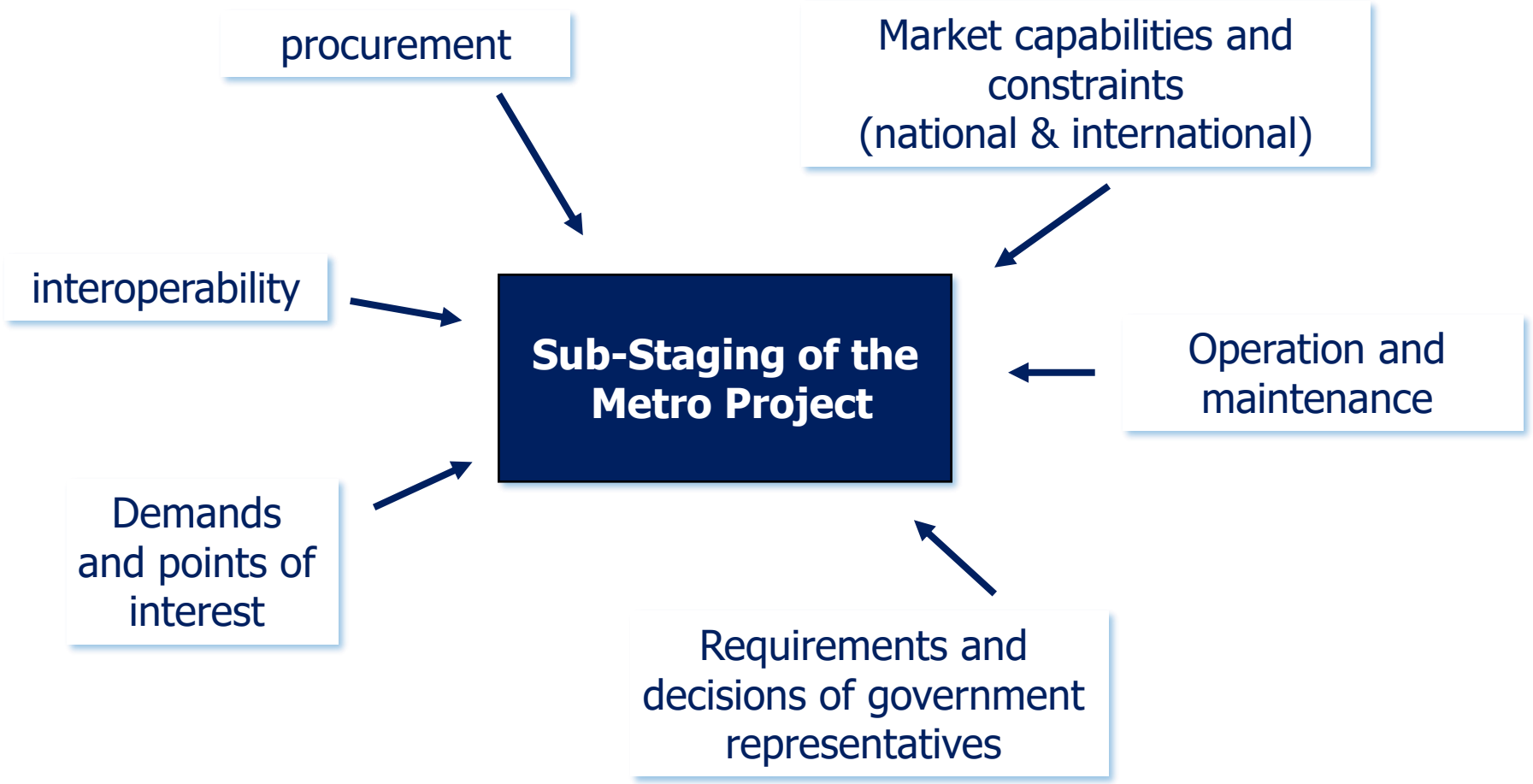
Sub-stages and Work Pacakge

Main STAGES 1&2

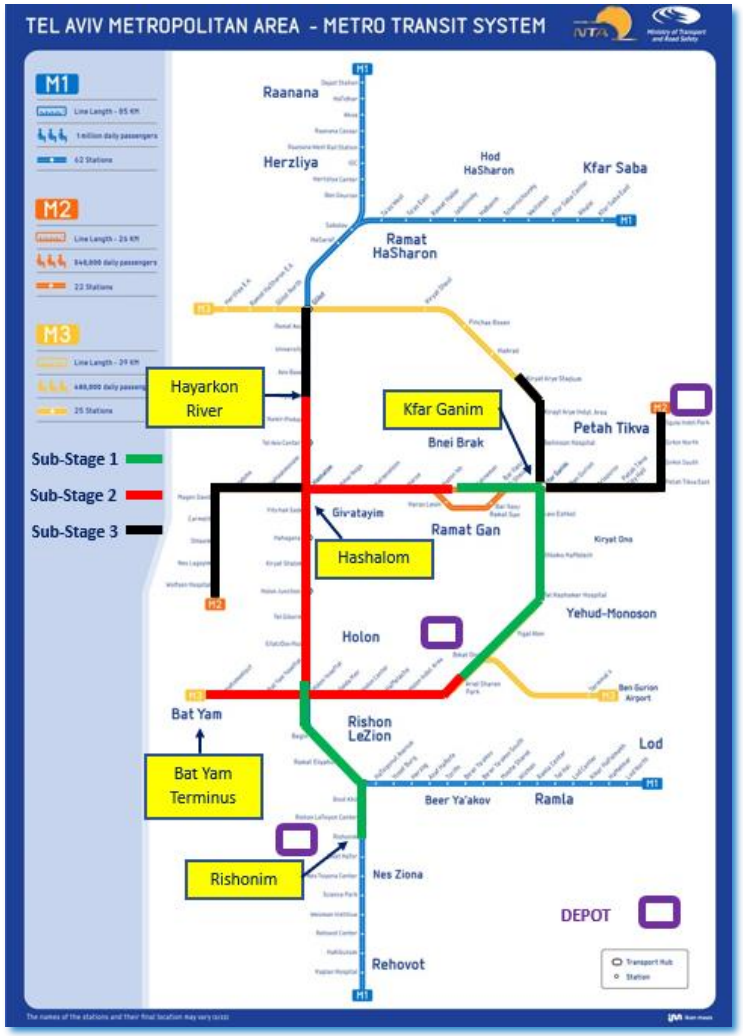


stations	Length (km)	To	From		
20	28	Glilot	Rishonim Depot	M1	Stage 1
22	26	Bat Yam	Segula Depot	M2	
16	24	Kiryat Arie	Bat Yam	M3	
58	**78**			**Total**	
42	58	Completion Of Branches (Lod branch, Rehovot branch, Kfar Saba branch, Ra'anana branch)		M1	Stage 2
7	11	Herzeliya	Kiryat Arie	M3	
49	**69**			**Total**	

Parameters for analyzing the execution Sub-Staging 1



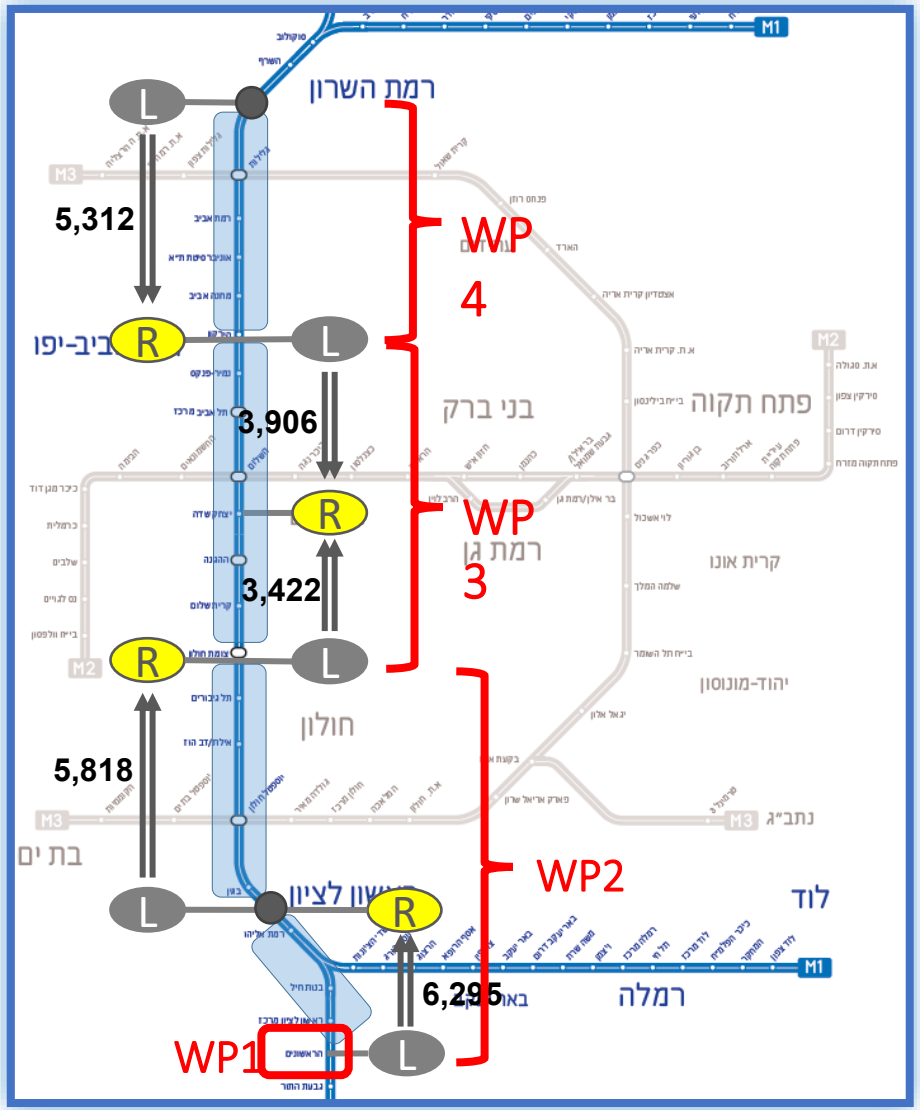
Sub – Staging 1 & Work Packages



The sub-Staging of the Metro project are of Strategic value to NTA in which the implementation packages were defined, the chronological-topographical stages according to which the main activities on the lines will be promoted.

The schedules of the strategic Sub-staging are **binding on the line management** eht retal dna seinapmoc eht fo noitcurtsnoc eht etomorp lliw ohw srotcartnoc naD hsuG ni senil ortem respectively.

	M1		M2		M3	
	Months	KMs	Months	KMs	Months	KMs
SUBSTAGE 1	127	9.5	127	3	127	9.5
SUBSTAGE 2	148	11	148	4	148	9
SUBSTAGE 3	160	7	160	16.5	160	5.5



Work Packages INFRA1
Line M1

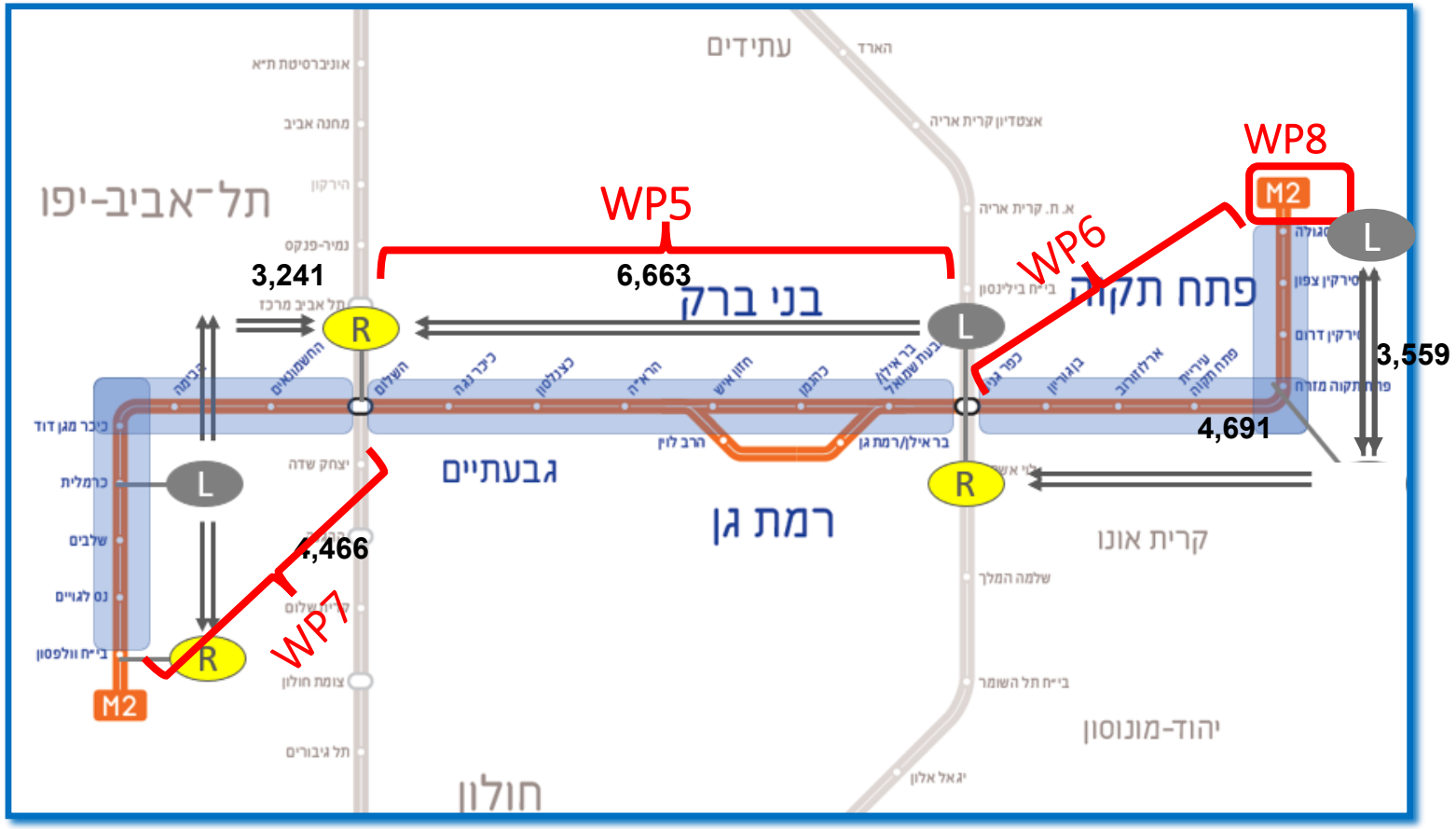
WP1 – Rishonim Depot

WP2 – Portal Rishonim to Holon Junction

WP3 – Holon Junction to Hayarkon

WP4 – Hayarkon to Glilot PT

Work Packages INFRA1
Line M2

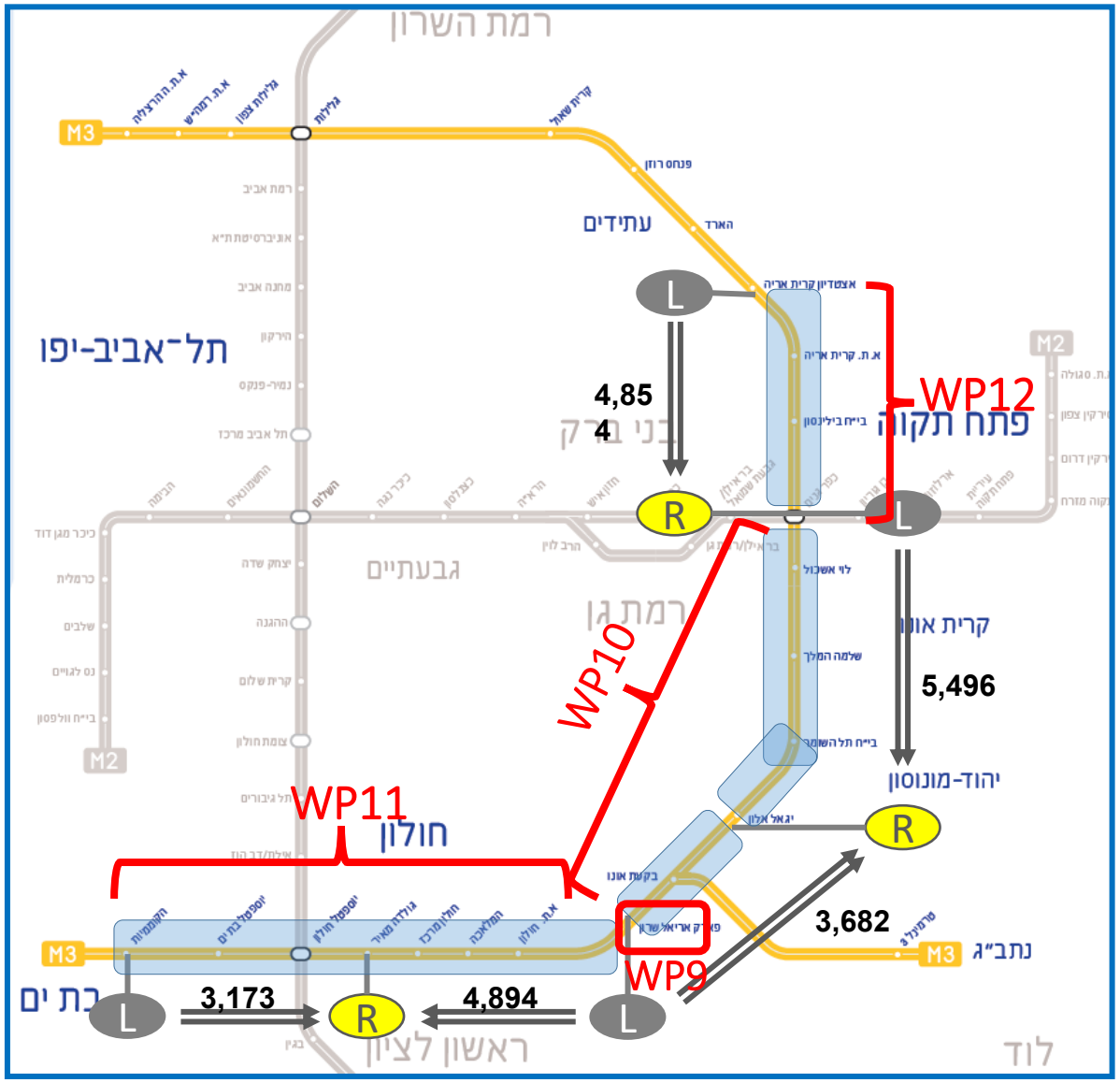


WP5 – Kfar-Ganim to Hashalom

WP6 – Segula Depot to Kfar-Ganim

WP7 – Hashalom to vollfson

WP8 – Segula Depot



Work Packages INFRA1
Line M3

WP9 – Ariel Sharon Depot

WP10 – Ariel Sharon to Kfar-Ganim

WP11 – Ariel Sharon to Bat-Yam Teminus

WP12 – Kfar-Ganim to Kiryat-Arie

Progamme tender strategy focus

Advance Works The tenders will be conducted on a local contractor basis in the form of framework agreements or dedicated tenders.

Infra 1 Works DB tenders that require previous experience in heavy civil engineering ,tunneling, and subterranean infrastructure works are intended for local and international markets.

Thank You

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